

Testing property valuations: are valuation inputs consistent and do they reflect market evidence?

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ABSTRACT

Property Indices such as the ROZ/IPD Real Estate Index rely on valuations. For this valuation guidelines, that should be used by the valuers, have been developed. Recent studies on uniformity and consistency of valuations for the ROZ/IPD Real Estate Index indicated that both the guidelines and compliance with the guidelines needed improvement. It was for this reason that ROZ initiated the screening of valuation inputs and outputs to detect extraordinary data before the construction of the Index. In this paper the methods and results of the screening are presented.

Keywords: valuation, real estate indices, Dutch real estate

Introduction

Valuations have always been the Achilles heel of property indices. Especially when no valuation guidelines have been established, subjective elements might lead to unacceptable differences between similar objects. Therefore the ROZ developed in the Netherlands valuation guidelines which should be used by the Valuers. However, recent work suggests that even when identical input is used in valuations, there will still be quite some variation in the valuation output (Smit, 2002). Therefore a tightening of the guidelines to improve uniform valuations was suggested. Another study found that compliance with the existing guidelines needed improvement (Van de Ridder, 2003).

One of the next obvious questions is: can extraordinary valuation inputs and outputs be detected before the construction of the Index? This question was actually the basis for a practical task, performed during the update period of the Dutch ROZ/IPD Property Index 2003. The specialist job of looking for extraordinary valuation inputs and outputs was done by ROZ staff in The Hague, complementary to all the work done by IPD in London. In this paper we present the methods and results of this work, based on the rough data.

One of the first issues to deal with, is how to define “extraordinary”. One could take a strict statistical approach by testing on certain hypotheses. However, the Dutch Index contains only 38 property portfolios, both large and small. This means that there are some limitations to the use of statistical tests. Smaller portfolios may show some more sensitivity to extraordinary results than large portfolios. On the other hand, the impact on the Index average will subsequently be smaller in the case of small portfolios. The approach taken was, that we first defined a set of expected normal market valuation characteristics. These are based on the ROZ valuation guidelines and the Dutch property market conditions and developments in the year 2003. The valuation characteristics have been described first, in the next chapter. The results from screening on extraordinary inputs are described subsequently. Both the results for the Index average, and the bandwidths for individual portfolios are given.

Methodology

The ROZ/IPD valuation guidelines

The formal guidelines, as set forth in the “ROZ/IPD Valuation guidelines” (ROZ, 2002), are devoted to market value and based on the highest and best use premise. Two methods are allowed for the calculations of value: the “traditional method” and the “discounted cash flow method”. In Dutch the traditional method is referred to as the “BAR/NAR-methode”. The BAR (Bruto Aanvangsrendement) is the quotient of first years gross income and value. Defined as a yield, it is the reciprocal referred to in international literature as the Gross Income Multiplier (GIM). The NAR (Netto Aanvangsrendement) is the quotient of first years net income and value; the reciprocal is known as the Net Income Multiplier or overall capitalization rate (Lusht, 2001). The discounted cash flow method is based on discounting expected future cash flows such as net operating income, capital expenditures and selling proceeds. For projecting future cash flows, an inflation scenario is provided by ROZ, that is obtained from Consensus Forecasts. The applicable discount rate for discounting future cash flows to their present value needs to be conformably to the market.

A distinction is made between the valuation of commercial and residential property. Commercial property needs to be valued as if let (“waarde in verhuurde staat”). This is also true for residential property. However, as most residential properties consist of more than one unit, the assumption is made that the entire property will be sold to a third party. The relevance of this assumption is related to two aspects of residential property. First, individual units can be sold separately. Second, given the traditionally low rent-to-value ratio for Dutch residential property, selling individual units will yield higher returns. Stating it differently, selling individual units is actually more attractive than renting them out. The selling of individual units, also referred to as part-selling, is however a different specialism than the management of investment property. The valuer must take the potential proceeds from part-selling into account, which follows from the highest and best use premise of market value. The best way to deal with this matter, is under the assumption that the entire property will be sold to a third party. This will usually be a company that has specialised in part-selling. The highest revenues from part selling will be obtained when the units are sold as if vacant. They are therefore used in the DCF calculations for future revenues from part-

selling. Needless to say, rental income declines as the process of part-selling continues during the years ahead.

Valuation calculations

For both commercial and residential property, the general formulas under the traditional method are the Net Initial Yield (1) and the Gross Initial Yield (2). The link between these two yields is the Operating Expense Ratio (3):

$$(1) \quad NIY = \frac{NOI}{GMV} * 100\%$$

$$(2) \quad GIY = \frac{CRP}{GMV} * 100\%$$

$$(3) \quad NIY = GIY * (1 - OER)$$

In (1), the Net Initial Yield (NIY) is equal to the Net Operating Income (NOI) expressed as a percentage of Gross Open Market Value (GMV). The Gross Initial Yield (GIY) expresses the Current Rent Passing (CRP) as a percentage of Gross Open Market Value. In the case of Discounted Cash Flow calculations, the general formula for commercial property is:

$$(4) \quad GMV = \sum_{t=1}^n \frac{NOI_t}{(1+r)^t} + \frac{SP_n}{(1+r)^n}$$

And for residential property the general formula is:

$$(5) \quad GMV = \sum_{t=1}^n \frac{NOI_t + PSP_t}{(1+r)^t} + \frac{FSP_n}{(1+r)^n}$$

For both commercial and residential property the annual cash flow, Net Operating Income (NOI) consists of gross income minus operating expenses. Gross income is expected to increase each year due to anticipated rental growth. The sale proceeds are treated differently for commercial property and residential property. For commercial property the

sale proceeds (SP) at the end of period n are commonly calculated in the traditional method, that is: rent passing in period $n+1$ divided by a gross income yield. The latter is called the exit yield. For residential property the part sale proceeds (PSP) in each year are determined by the remaining number of units multiplied by the tenancy turnover rate multiplied by the vacant value of the units that are sold. In the first year, the remaining number of units equals the initial amount of units of the property. The final sale proceeds (FSP) at the end of the holding period concerns only the remaining units. The discount rate (r) is used to calculate the present values of the cash flows. For both commercial and residential property the Gross Open Market Values are corrected for purchasers' costs, usually 7%, to arrive at the Net Open Market Values.

The data requirements for the Valuation File include: gross open market value, purchasers' costs, net open market value, method of valuation, total vacant value, market net yield, rental growth assumption, exit gross yield, exit gross rent and tenancy turnover rate. Other data per property, such as actual rent passing, floorspace for commercial properties and the number of residential units is available in other files.

Expected valuation characteristics for residential property

The Dutch residential market consists of 6,6 million houses (Ministry of Spatial Planning, Housing and the Environment (VROM), 2002), almost equally distributed between owner occupiers (54%) and rented housing (46%) . There are practically no legal restrictions to owning a house, and generally no regulations other than the transfer tax of 6% exist that interfere with the pricing of individual houses. In the rental sector circumstances are different; the regime of rent control dominates the market. It is estimated that approximately 97% of the rental sector falls under the rules of the rent control, whilst only 3% does not (Wensing, 2004). The system of rent control is a pricing system based on points. The rent for each house in the rental sector can be determined according to its number of points. There are fixed tables for matching the number of points to a rent level. The points are allocated for characteristics such as floorspace (f.i. 1 point per sqm), heating facilities, kitchen size, sanitary and quality of the neighbourhood. The maximum increase in rents is decided by parliament each year. As of the 1st of July of 2004, the upper limit for rent control is set at € 597,54 per residential unit per month. Above this limit, rents are not regulated, and referred to as "liberalized". With 2,5 million houses, the housing corporations dominate the rental sector. Rent control governs practically all their assets;

their average rent is €338,- per residential unit per month. This is also true for private investors (411.000 units with an average rent of €352,-). Institutional investors, the participants in the ROZ/IPD Index, operate in the upper end of the market (198.000 units with an average rent of €499,-). Turning to the pricing efficiency of the residential market, one would next expect the market for owner occupied homes to be more efficient than the market for rented houses. There is certainly evidence to support this view, although the image is certainly not one of just black and white. This is due to the interaction between the markets of owner occupied and rented houses.

The regime of rent control was once designed to protect the wealth of low income households. As a consequence, for a large part of the rental sector these regulated rents are set below their market levels (Ter Rele and Van Steen, 2001). This can be illustrated easiest by an example. Two exactly identical houses in terms of physical characteristics, age and type of neighbourhood would achieve the same rent, even if one would be located in a remote area such as the northeast of Groningen and the other in a satellite town of Amsterdam such as Amstelveen. However, if sold in vacant condition in the open market place, the house in Amstelveen would be much more expensive than the one in Groningen. In reality, a situation as given in the example will only occur by chance. Houses do differ in terms of physical conditions, age and types of neighbourhoods. This will be the case when comparing the rental housing stock across the country, but also locally. For instance, in the 4 largest cities, approximately 50% of the houses have no more than 3 rooms, 45% have 4 to 5 rooms and only 5% have 6 rooms or more. For the entire country other statistics apply: 28% of stock has no more than 3 rooms, 60% has 4 to 5 rooms and 12% has 6 rooms or more (VROM, 2003). Furthermore, particularly institutional investors operate in the liberalised segment of the market. Their rents are likely to show more correlation to values. Appropriate market evidence for rents, values and yields is limited, though sufficient to provide a basic framework that the parameters in the ROZ/IPD will have to comply with. First, Dutch national housing statistics indicate that values and rents are positively correlated. Based on averages for the twelve administrative entities called provinces, the correlation coefficient between house prices and rents is 0,38. Though not very strong, the correlation is positive. This applies to a more heterogeneous group (both lower segment social housing and upper segment owner-occupied houses are included in the provincial averages) than the houses that comprise of the ROZ/IPD database. It would not be appropriate to use these national figures for assessing yields. Secondly, in a study

commissioned by the central government, both regional rent levels and values were investigated (Nahuis and Van Schaaijk, 1997). For a total of 36 residential regions, covering the entire country, it was found that rents showed less regional variation than values. The rents were based on actual figures, where-as the values were derived from regression analysis based on floor-space, number of rooms, regional characteristics etc. The advantage of this material is, that both the rents and the values apply to a fairly homogenous group of residential property as the regression for values was based on similar variables as the point-pricing system for rents. A major disadvantage is, however, that the actual regression model is not presented. The figures indicate the following: correlation between rents and values is 0,52. Furthermore, using single linear regression, 27% of the variation in rents can be explained by variation in values ($R^2 = 0,27$). The slope of the linear equation is positive. As a next step, the quotient of annual rents and values (defined here as the rent-to-value ratio) are compiled from these statistics. Related to both rents and values, these rent-to-value ratios provide the following insights, based on linear relations: variation in rent-to-value ratios can be well explained from variation in values ($R^2 = 0,75$) though hardly from variations in rents ($R^2 = 0,0021$). The slope of the linear equations are both negative. *From this market evidence, we expect the correlation between rents and vacant values to be positive. As the ROZ/IPD dataset concerns two measures for each individual property (rent and vacant value) implicates a high level of homogeneity, the correlation is expected to be at least 0,52. We expect variations in rent-to-value ratios to be explained from variations in vacant values, not from variations in rents. Furthermore, the correlation between vacant values and rent-to-value ratios is expected to be negative.*

In the case of the DCF valuations, a brief description of the actual market developments and circumstances will assist in the assessment of certain valuation input variables. During the late nineteen nineties house prices soared. As the economy started to cool off during 2001, so did the market for owner occupied houses. Particularly the financial, airline and tourist sectors were affected, causing Amsterdam residents to be the first to be reserved when buying a house. Instead renting became very popular. After all, the international environment showed uncertainties, houses were expensive and the safe option of renting a house was also an attractive, cheap option. Gradually the entire Dutch market for owner occupiers has by now, spring 2004, changed into a buyers market (Dutch Association of Real Estate Brokers (NVM), 2004). However, supply of rental housing falls short to the actual demand. A survey conducted by the central government indicates, that the total quantitative shortage of housing has increased from 85.000 residential units in 1998 to

166.000 in 2002. Furthermore, in the same period the number of people wanting to move from an owner-occupied house to a rented house has doubled whilst the people wanting to move in opposite direction has sharply declined (VROM, 2003). This has caused waiting lists for rental housing to grow significantly. Housing corporations reported that the average time for people to be on such lists has increased from 23 months in 2000 tot 35 months in 2002 (Dutch Association of Social Housing Corporations (AEDES), 2003). In the large cities the situation is worse. As a parallel movement, tenancy turnover rates declined from 9,9% in 2000 to 8,5% for social housing. *Given the pressure on the rental sector of the residential market, we expect the assumed market rental growth rates in the valuations to be above expected inflation. We also expect assumed tenancy turnover rates to be fairly in line with the given market evidence.* Regarding the latter a word of caution is appropriate. First, tenancy turnover rates for social housing need not necessarily be equal to tenancy turnover rates for rental housing offered by institutional investors. After all, they concern different price segments. Secondly, the assumed tenancy turnover rates in a valuation context may include extra tenancy turnover as a result of assumed extra part selling with discounts to the selling price.

Discount rates cannot be observed directly from investment transactions. One approach to estimating the discount rate is the use of surveys of investor expectations (Lusht, 2001). *Our expectation for the discount rate for residential property is based on the most recent investors' survey that indicates the required Internal Rate of Return for residential property to be 7,1% (Troostwijk, 2003).*

In the case of the traditional BAR/NAR valuations, the overall cap rates are input variables provided in the valuation files. Gross Initial Yields can be calculated from the figures on current rent and the Gross Open Market Values. *We expect that the overall cap rates will differ from the Gross Initial Yields only by the Operating Expense Ratio (Lusht, 2001).*

The only valuation output variable is Capital Growth. This is the relative difference between the year end values of 2003 related to the year end values of 2002. There is sufficient market evidence to assess this variable. The Kadaster publishes average increases for single family houses and multi family houses per province and the country as a whole. The Dutch Association of Real Estate Brokers, NVM, publishes increases in house prices for several residential property types in 80 regions. In order to have sufficient mass in the ROZ/IPD dataset, a comparison with the figures from the Kadaster is preferred. Furthermore, the Kadaster keeps records from all transactions, where-as the NVM keeps

records from transactions dealt with by only their own members. Usually the differences are not too substantial. For the year 2003 the Kadaster reported an average increase in prices of 2,7% for single family houses and 3,1% for multifamily houses (Kadaster, 2004). The figures show quite some regional variation. When looking at the two largest provinces, South Holland showed above average increases in house price, whilst in North Holland prices showed little change at all. In the smaller provinces the variation is quite large. *We expect the overall capital growth in the ROZ/IPD dataset to be in the range of 2,7-3,1%. A close resemblance to the Kadaster figures is particularly expected for North and South Holland.* In the other provinces limited sample sizes in the dataset may interfere with the requirement of having close resemblance.

Expected valuation characteristics for offices and retail

The major actors on the office market are the government, various groups of investors and owner-occupiers. Office ownership and occupancy are not regulated. Accordingly, both rents and building prices are the result of market conditions. The total office stock is estimated to be approximately 42 million sqm. (Bak, 2003), more than half of which is located in the 5 largest cities (Amsterdam, Rotterdam, The Hague, Utrecht and Eindhoven). Amsterdam South constitutes the upper end of the market in terms of locational quality (accessibility by several transportation modes, a broad range of facilities and overall appearance) and rent levels. A large part of the office stock is located in typical office locations, although the concept of a Central Business District has never evolved in The Netherlands. Institutional investors own approximately 5,5 million sqm. offices.

The retail market is one of the more regulated markets. The market is structured in a hierarchical pattern, much in line with Christaller's doctrine. The shopping areas in the old city centres form the top end of this structure. As cities expanded rapidly in the second half of the last century, shopping centres were developed in the new residential areas. In order of size one can distinguish large suburban shopping centres, district shopping centres and neighbourhood shopping centres. These centres were developed under strict planning regimes. In the past decade settlement criteria for retailers have been relaxed. This has brought about numerous developments of retail warehousing at city edges. Retail property is also governed by a system of rent control. This was designed to protect small retailers against powerful landlords. In essence, the system smoothes market movements in the actual leases. This is achieved by giving both the retailer and the landlord the right to bargain for new terms based on the 5 years average rent level instead of the actual current

market rent. This gives the retailer protection when rents are going up, and it protects the landlords interest when rents are going in opposite direction.

For both office and retail sufficient market evidence is available from various brokers to assess rents and yields. The only source of changes in capital values is the ROZ/IPD Index. These can thus not be assessed. Each year real estate agent DTZ publishes market evidence on rents in bandwidths, f.i. office rents in the centre of Amsterdam range from €150 to €250 per sqm. per year. These are available for 161 office locations in 72 cities, and 244 retail locations in 85 cities. Comparing the rents in the ROZ/IPD dataset was achieved as follows. First, the properties in the dataset were linked to the appropriate location. Next the property's rent per sqm. was expressed as a ratio of the upper limit of the bandwidth. Ratios of less than 1 comply with our expectation, whilst ratio's of more than 1 would be considered extraordinary. An identical approach was taken for the Gross Initial Yields. Here we considered ratios of below 1 to be extraordinary. Gross initial yields are available from the same source and cover 2 types of locations ("best" and "other") in 4 regions ("north", "west", "east" and "south"). *In short, we expect sqm rents to be typically below the upper limit of the bandwidth supplied by a major real estate agent (DTZ), and Gross Initial Yields to be typically above the lower limit of the bandwidth.*

The office market was characterised by supply shortages in the late nineteen nineties, and construction started to boom. With the slowdown of economic activity since 2001, demand for office space started to fall. Over the past 2 years, most of the construction pipeline reached it's final stage, causing a huge increase in supply. As at the beginning of 2004, the total supply is just over 5 million sqm; the average vacancy rate is estimated at just over 10% (DTZ, 2004). A vacancy rate of 5% is generally associated with normal market equilibrium circumstances. Take-up was 1,4 million sqm in 2003, implicating that much of the new supply will have to wait a while before it will be occupied. As the market has changed from expansion to replacement, eventually vacancies are expected to shift from the new to the old offices. The effect of supply surplus on rents is expected to occur gradually. The retail market has also expanded over the past years, though more gradually than the office market. Currently, supply is estimated to be 800.000 sqm. In 2003 take-up was approximately 690.000 sqm. With the current supply figure, the retail market is in equilibrium. *Given the current situation of over-supply in the office market, we expect the assumed market rental growth in the valuations to be below expected inflation. Given the current equilibrium circumstances*

for retail, we expect the assumed market rental growth in the valuations to be in line with expected inflation.

Apart from the cash flows from operations, within DCF valuations there is furthermore the issue of the estimated sale proceeds at the end of the holding period. A common way of calculating this, is by incorporating a traditional valuation. Future value is then based on a rent and an exit-yield that are considered appropriate at that point in time. There are no standard textbook solutions of how to deal with the exit yield. Usually it is assumed, that as time passes by, buildings experience some form of obsolescence. Adjustments for obsolescence can be taken into account with upward adjustment, of approximately 50-100 base points of the exit yield compared to the current Gross Initial Yield (Van Gool, Jager and Weisz, 2003). *Accordingly, we expect exit yields to be typically 50-100 base points higher than the current Gross Initial Yields.*

Finally, as with residential property, we expect the discount rates to be in line with that of the most recent investors' survey. These indicate a discount rate for offices of 8,3% and 8,1% for retail property.

Results

For each type of property (residential, retail, offices) just over 80% of the properties have been valued by external valuers. Due to the limited sample size for the internal valuations, it proved troublesome to compare the valuation characteristics between external and internal valuers for retail and offices. DCF calculations have been preferred for residential (68%) and offices (62%). The traditional method was favoured for retail properties (68%). DCF calculations provide more angles for assessing the valuation inputs than the traditional valuations. This means quite extensive testing was possible for residential and offices, but not for retail.

Residential

Consistent with our expectation, the correlation between values and rents is positive, and higher than 0,52. The correlation coefficient for all the residential properties is 0,76. For individual portfolios, the figure ranged from 0,58 to 0,94. This range for individual portfolio's is quite large. One of the possible factors causing this is the age of the leases. The current rent for older leases is the result of past market conditions and indexation, for younger leases the rent is a result of actual or recent market conditions. However, the databank does not have records on the average age of the leases. The external valuers on average show a stronger correlation between vacant values and monthly current rents, as can be seen from the table below:

Correlation coefficient of vacant values and monthly rents >0,52?			
	Minimum	Average	Maximum
Internal valuations	0,58	0,61	0,92
External valuations	0,62	0,80	0,94
All valuations	0,58	0,76	0,94

Also consistent with our expectations, variations in rent-to-value ratios are explained by variations in vacant values and not by variations in rents. The R^2 of vacant values and rent-to-value ratios is 0,35 for all valuations (0,38 for the internal valuations and 0,31 for the external valuations), whilst the R^2 of rents and rent-to-value ratios is 0,0 for all valuations.

Furthermore, vacant values and rent-to-value ratios are negatively correlated. The relevance of this is, that residential properties in the higher market segments can be associated with lower rent-to-value ratios and vice versa. It must be noted, that rent-to-value ratio's are not by definition the same as Gross Initial Yields, which is one of several major determinant of investors' returns. Nevertheless, when substituting Gross Initial Yields for rent-to-value ratios similar results were obtained. This means, that residential properties in the higher market segments are also associated with lower Gross Initial Yields. The results for the correlation on vacant values and rent-to-value ratios are as follows:

Correlation coefficient of vacant values and rent-to-value ratios			
	Minimum	Average	Maximum
Internal valuations	-0,31	-0,62	-0,80
External valuations	-0,15	-0,56	-0,82
All valuations	-0,15	-0,59	-0,82

There appears to be quite some consensus, on average, amongst the internal and external valuers, that rents will indeed increase with a rate higher than expected inflation in the future. For one individual portfolio, the assumed rental growth is below expected inflation (1,83% p.a.), which may be considered extraordinary. The results are given in the table below:

Assumed annual market rental growth above inflation (2,1%)?			
	Minimum	Average	Maximum
Internal valuations	2,12%	2,58%	2,71%
External valuations	1,83%	2,55%	2,96%
All valuations	1,83%	2,56%	2,96%

Reporting of the tenancy turnover rate needs improvement; only for twothirds of the standing investments this figure has been provided. Based on the available data, particularly the external valuers seem to be fairly optimistic about tenancy turnover. Once again it must be pointed out, that the evidence (8,5%) is based on social housing statistics and are traditionally known to be lower than that of investors. Nevertheless, on average the assumption made by the in house valuers (9,0%) appears to be more realistic than that of

the external valuers. The impact of slightly higher tenancy turnover rate on values can be significant as the sale proceeds from part selling will be received earlier in the projected cash flow schedules. The reported data are summarised in the table below.

Tenancy turnover rates in line with market evidence (approximately 8,5%)?			
	Minimum	Average	Maximum
Internal valuations	7,29%	9,04%	10,98%
External valuations	7,25%	10,45%	11,65%
All valuations	7,25%	10,25%	11,65%

Concerning the discount rates, there appears to be quite some agreement amongst the in house and the external valuers. The discount rate for the in house valuations are, on average, equal to that of the results from the investors survey. This seems hardly surprising, investors obviously provided the same discount rates in the survey as they applied in their own valuations. Although the external valuers may have applied slightly lower discount rates, the differences are certainly not substantial.

Discount rates in line with market evidence (7,1%)?			
	Minimum	Average	Maximum
Internal valuations	5,89%	7,10%	7,50%
External valuations	5,90%	6,92%	7,50%
All valuations	5,89%	6,98%	7,50%

When turning to the traditional valuations, the inputs of Net Initial Yields and Operating Expense Ratios were typically in line with the Gross Initial Yields. Only for one portfolio the reported figures showed some shortcomings.

So far most of the valuation inputs are in line with expectations, a few exceptions confirming the rule. It is now interesting to see if the same applies to the valuation output, expressed as Capital Growth. It is important to keep in mind, that the evidence is based on the two main property types (single family houses and multi family houses) per province. The relevance of this is, that there are only two large provinces and the rest are smaller provinces. Given the fact that the regional spread of the residential portfolios is almost equally to that of the national housing stock, this means that in the case of the smaller

provinces the figures from the databank are based on very small samples. Subsequently, it could be argued that comparing capital growth for these small groups to their market evidence is perhaps not as appropriate as in the case of the larger provinces. The actual results confirm that the capital growth for the two large provinces (North Holland and South Holland) was similar to the increases in house prices as reported by the Kadaster. For the smaller provinces, capital growths were seen to be either higher, lower or in line with the increases in house prices. On average, the capital growth per property type was fairly in line with the figures from the Kadaster. The headline results are provided in the table below.

Capital Growth in line with increases in house prices according to Kadaster?			
	% of residential standing investments	Capital Growth (ROZ/IPD)	Increases in house prices (Kadaster)
North Holland, single family houses	10,9%	1,29%	0,49%
North Holland, multi family houses	10,4%	-0,38%	-0,67%
South Holland, single family houses	11,3%	3,64%	4,38%
South Holland, multi family houses	14,2%	3,59%	3,68%
Netherlands, single family houses	44,3%	2,81%	2,70%
Netherlands, multi family houses	55,7%	2,58%	3,10%

Offices and retail.

Although market evidence for rents and yields is sufficiently available for offices and retail, the possibilities for matching the evidence to the properties in the databank should not be overstated. In the case of retail rents only a 37,5% coverage could be achieved. This is for a large part caused by the structure of the market; market evidence is available for a large group of prime retail locations but not for district and neighbourhood centres. Also, retail rents may differ a lot even within small geographic areas. Where retail rents are at their highest in specific prime shopping streets, there may be sidestreets that are not a part of the actual main shopping area. In such sidestreets rents will be substantially lower than in the main shopping streets despite the fact that the two are directly connected. With 82% the coverage for linking market evidence to the individual properties was much better. Here also the market structure matters, though now in opposite direction. Rent levels vary across cities, and even across specific locations within the four largest cities. Market evidence is

available for each separate large office location within these four cities. Furthermore, for similar properties in terms of functionality and age office rents do not usually vary much within most cities. Because of this, a high coverage could be obtained. The actual results are consistent with our expectations; market rents are typically below the maxima of the bandwidths. Consistent with the market structures and the availability of market evidence the spread is larger for retail than for offices. No extraordinary input could be detected, which is a good result from the perspective of plausibility. However, a word of criticism is also appropriate. Particularly for retail it has proved troublesome to assess the market rental values using this approach; coverage is low and the spread in ratios is subsequently high. It would take more information to deal with these flaws, such as incorporating additional information in the set of market evidence. This could, for instance, be done by consulting other databases for rent transactions and also by taking locational aspects into account. Here a trade-off in costs between screening for plausibility and entering the area of valuation accuracy is at stake. Given the fact that the results do not indicate a widespread overestimating of market rents, the trade-off is settled in favour of simply screening for plausibility. The results are summarized in the next table.

Market rent / maximum of bandwidth < 1?			
	Minimum	Average	Maximum
Offices	0,56	0,86	1,01
Retail	0,22	0,46	0,69

A similar matter is concerned for screening on extraordinary Gross Initial Yields. The difference is, that for these a high coverage can be obtained, although the application of the appropriate segment information now becomes crucial. The evidence on yields is provided for four regions (north, west, east and south) and two locational qualities (best and other). However, particularly the information on the locational quality is not available in the databank. Instead, there are several segments for both offices and retail that can be qualified either “best locations” and “other locations”. In the case of the segment “prime retail in the largest cities” the classification “best locations” is obvious. In the case of “offices in residential areas” any classification becomes troublesome. Offices in Amsterdam South near the Vondelpark are in this segment, but also offices in residential areas in Zeist, a satellite town of Utrecht. The locational quality of the latter should be considered “other”, though this is not as obvious for the Amsterdam South offices. The point that is made

here, is that locational qualities are very much the domain of practitioners and attempts to remotely fitting these to properties in the databank will always be open to debate. Taking the purpose of the screening into account, we chose to only allocate the qualification “best location” to the segment “office location in large city” and “prime retail” in the larger cities. By doing this, the lower end of the bandwidths are already set at higher levels than if more segments had been granted the qualification “best location”. In general, Gross Initial Yields do tend to stay above the minimum level of the bandwidth, as shown in the next table:

Gross Initial Yield / minimum of bandwidth > 1?			
	Minimum	Average	Maximum
Offices	0,98	1,13	1,29
Retail	1,04	1,13	1,23

The differences in relative supply for offices and retail are reflected in the assumptions of rental growth. This is below expected inflation for offices and in line with expected inflation for retail:

Assumed annual market rental growth below expected inflation (2,1%) for offices and in line with expected inflation for retail?			
	Minimum	Average	Maximum
Offices	1,32%	1,85%	2,41%
Retail	1,56%	2,07%	2,49%

The sensitivity of assumed rental growth to relative supply can also be illustrated by comparing the four largest office cities, that represent about onethird of the offices in the databank. Satellite towns are not included in these figures, neither in the vacancy rates nor in the assumed rental growths. The figures are as follows:

Offices	Amsterdam	Utrecht	Rotterdam	The Hague
Market vacancy rate (DTZ)	12,7%	9,4%	8,0%	7,3%
Assumed annual rental growth	1,73%	1,75%	1,91%	2,05%

The input of the exit yields is well in line with our expectations in the sense that on average sufficient base points have been added to the Gross Initial Yields (91 for offices and 102 for retail). However, given the current market conditions it would not have been surprising if there had been more base points added in the case of offices compared to retail. After all, one could argue that obsolescence will be more serious in markets with a higher relative supply (see next table).

Exit yields typically 50-100 base points higher than Gross Initial Yields?			
	Minimum	Average	Maximum
Offices	9 b.p.	91 b.p.	154 b.p.
Retail	61 b.p.	102 b.p.	166 b.p.

The results for the discount rates are not in line with our expectations. On average the same discount rate has been applied for offices and retail, whilst both were below the evidence we compared it against. Particularly the figures for offices are remarkable. First, all the office portfolios show discount rates that are below the evidence. Second, the exit yields for offices were also lower than for retail. This may indicate that the office valuations are kept relatively high compared to the actual market circumstances. One probable explanation for this could be that the valuations lag behind the actual market circumstances. Further research into this is however beyond the scope of this paper.

Discount rates in line with market evidence (offices: 8,3% and retail: 8,1%)?			
	Minimum	Average	Maximum
Offices	7,40%	7,82%	8,02%
Retail	6,94%	7,80%	8,40%

Finally for the traditional valuations, the inputs of Net Initial Yields and Operating Expense Ratios were typically in line with the Gross Initial Yields.

Summary and conclusions

Property Indices such as the ROZ/IPD Real Estate Index rely on valuations. For this, valuation guidelines have been developed. Recent studies on uniformity and consistency of valuations for the ROZ/IPD Real Estate Index indicated that both the guidelines and compliance with the guidelines needed improvement. It was for this reason that ROZ initiated the screening of valuation inputs and outputs to detect extraordinary data before the construction of the Index. The screening of the inputs and outputs are based on a set of valuation characteristics that both the Index and individual portfolios would have to comply with.

The valuation characteristics are, in the case of residential property:

1. A high correlation between vacant values and monthly current rents;
2. Variations in rent-to-value ratios should be explained by variations in vacant values, not by variations in monthly current rents;
3. Negative correlation between vacant values and rent-to-value ratios;
4. Assumed rental growth above expected inflation
5. Discount rates in line with required returns from the most recent investors' survey;
6. Net Initial Yields are linked to Gross Initial Yields by the Operating Expense Ratio;
7. Capital growth in line with changes in house prices as reported by the Kadaster.

In the case of offices and retail the characteristics are:

1. Rents typically below the upper limit of the bandwidth reported by a major real estate agent and Gross Initial Yields typically above the lower limit of the bandwidth;
2. Assumed rental growth below expected inflation for offices and in line with expected inflation for retail
3. Exit yields typically 50-100 base points higher than the Gross Initial Yields
4. Discount rates in line with required returns from the most recent investors' survey;
5. Overall cap rates are linked to Gross Initial Yields by the Operating Expense Ratio.

The obstacles in the actual screening were some shortcomings in the data provision (tenancy turnover rates) and difficulties in linking properties to market evidence (retail rents). In general the Index was found to comply with these characteristics, except for the

discount rates on retail and more particular, offices. For the latter all portfolios showed average discount that were consistently lower than the required rates of return from the most recent investors' survey. Although part of the risks on the current Dutch office market had been accounted for via modest assumed rental growth, other parameters (such as the exit yield) indicate that risks have not been taken fully into account. However, it requires more research to get more precise answers to the question if the applied discount rates for offices have indeed been too low. Another issue is the compliance of the individual portfolios to the valuation characteristics. Extraordinary inputs have been found, though not the extent that say one or two portfolios have outperformed the Index just because of that. Finally, a word on the relation between these results and the valuation guidelines is appropriate. The work in this paper was not intended to question nor to enforce stricter valuation guidelines than the current ones. It is the authors opinion, that this type of research will aid in the right application of the guidelines by identifying best practices and gaps therein.

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