

Valuation is Computerised: Market Analysis is Business

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ABSTRACT

In the Netherlands every four years all nearly eight million properties have to be revalued for taxation purposes. More than 6.5 million properties are residential and the valuation of these residential properties is done merely by computerised models.

The last revaluation has shown that only a limited number of the about 400.000 sales each year can be used directly in the valuation models. Because of limited rights on the property, special conditions for the sale, reconstruction before of just after the sale etc. a lot of sale prices are not good estimations of the market value of the property.

For that reason the preparation for the next revaluation is directed primarily on the analysis of sales prices of residential property. The analysis not only results in the selection which sales prices do give a good estimation of market price. For all other sales prices the analysis will result in a reliable estimate of market value. After the market analysis all sales prices can be used for the valuation and for explaining the valuation results to the taxpayer.

A detailed procedure how the market analysis should be performed is described and given by the Council for Real Estate Assessment to all municipalities as part of the guidelines for the revaluation 2003.

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REAL ESTATE TAXATION IN THE NETHERLANDS

In the Netherlands there are several taxes in which the market value of real property is an element for the levying of tax.

The 496 municipalities levy rates on real property from the owners as well as from the users of the property based on the market value of the property. Nearly all property is taxed by the municipalities. Nearly seven million residential properties are included, but also nearly a million nonresidential properties. Not only commercial properties like office-space, shops, agricultural buildings and industrial plants are taxed but also non commercial properties like schools, hospitals, theatres etc. The revenues for municipalities are about €3 billion each year.

The in the Netherlands very important polderboards levy tax on built property on the basis of the market value from the owner. Unbuilt land is taxed according to the area of the land. The revenues of the tax based on the value of built property by the polderboards are smaller, about €300 million. These tax revenues are however more important for the polderboards, because polderboards do not get any financial means from central government. The municipalities get more than 80% of their financial means from central government.

The central government levies tax from the owner occupier of residential property in the income tax (imputed income). Revenues from this tax are also about €3 billion.

ASSESSMENT OF REAL ESTATE

The special Act for the Assessment of Real Estate in the Netherlands regulates for all the taxes mentioned the same assessed value is used for each property. All properties are assessed once and these values are available for all tax levying authorities.

The assessment and appraisal are conducted under the responsibility of the 496 municipalities in the Netherlands. The appraisals have to be carried out every four years. So the assessed value of a property will be used during a period of four years. The appraisal is based on the market situation on January 1st two years before the start of the period in which the assessed value is used.

For taxation during the years 2001 - 2004 the assessment is based on the market situation of January 1999. The appraisals have been carried out during the years 1999 and 2000.

The Act for the assessment of real estate puts the responsibility on the municipalities to:

- accomplish an entire appraisal every four years
- officially inform all owners and users of real property of the assessed value
- handle objections to the assessed values if any
- transfer the assessed value and other essential data to one or more polderboards
- transfer the assessed value and other essential data to the national revenue office.

Only a limited number of the municipalities, mostly the larger municipalities, will carry out the appraisal under their own control. Most of the municipalities contract parts of the appraisal process or the entire project out to a private company or to private valuers.

APPRAISAL PROJECT 1999

Mainly during the years 1999 and 2000 the work was carried out for the reassessment of all properties. In February and March 2001 all owners and users were informed of the new assessed value. In total there were about eight million documents sent. In general these new assessments were approved by the taxpayer. About a half million formal objections were sent to the municipalities.

Taxpayers did not only get the new assessed value, but also a short valuation report. Some municipalities sent the valuation report on paper with the official assessment bill. Other municipalities made the valuation reports available on the Internet. The last category of municipalities only sent a valuation report to taxpayers who asked for such a report.

An example of the valuation report for a residential property is given. A mayor part of the report are the data on comparable sales prices and the object characteristics of the properties sold. Some municipalities were able to present on the valuation report pictures of all properties that were used as a comparison.

VALUATION REPORT RESIDENTIAL PROPERTY

Address property:

Street: Wassenaarseweg Datum date: January 1st, 1999
Number: 80
Postal code: 2596 CZ
City: Den Haag
Additional identification: garage Wassenaarseweg 68 included

Cadastral parcels involved in valuation:

Cadastral munic.:	section:	parcelnumber:	letter:	app.number:	area:
's-Gravenhage	AE	1001	G		150 m ²

Object characteristics:

Type of property: Single family home
Neighbourhood: Benoordenhout
Building year: 1925
Size of property: 350 m³
(annexes excludes)
Annexes: Shed, garage

Special characteristics:

. renovated in 1985

Market data:

Assessed property is sold:

Transfer date:	sale price:	special circumstances:
February 1st, 1998	€280.000	

Other relevant market data

Street	Wassenaarseweg	Wassenaarseweg	Wassenaarseweg
Number	xx	yy	zz
Postal code	2568 CZ	2568 AA	2568 CA
City	Den Haag	Den Haag	Den Haag
Type of property	Singl. fam. home at corner	Single family home	Single family home
Neighbourhood	Benoordenhout	Benoordenhout	Benoordenhout
Building year	1920 - 1940	1931	1919
Size	350 m3	340 m3	335 m3
Annexes	Shed, garage	-	Shed
Parcel area	175 m2	140 m2	140 m2
Transfer data	15 april 1999	12 maart 1998	1 augustus 1998
Sales prices	€310.000	€280.000	€220.000
Assessed values	€305.000	€290.000	€260.000

Assessed value: €295.000

In spite of the fact that the main results of the revaluation were positive some important lessons were learned. It is recognised that in fact only a limited number of sales prices were actually used for the appraisal, for the quality control of appraisals and for the valuation reports. From all the sales of residential properties in the years 1998 and 1999 (the two years around the datum date) only 30% were used for the appraisal. The mayor reason for this fact was that during the appraisal it was no longer possible to analyse specific circumstances concerning the transaction. The fact that most buyers improved their property just after the transaction made it impossible to analyse the sales price using the correct object characteristics at the time of the transaction.

This is one of the reasons why the emphasis on continuous analysis of sales prices was increased. The sales data should not be analysed on the moment that the data is needed for the appraisal, but as soon as possible after the transaction took place.

Another important lesson from the 1999 revaluation were the cost of the project. The total costs for the appraisal and assessment of real estate are over €175 million each year. This is about three percent of the revenues of the taxes based on the assessed values. In the Netherlands the political decision was made that the total costs must be limited to around €125 million.

Preparing assessment 2003

At the end of 2001 the guidelines for the reappraisal 2003 were sent to all municipalities. These guidelines intend to decrease costs of appraisal and assessment with at least the same quality of assessments (accuracy of estimated value, content of the valuation report, etc.). By using a larger part of the available sales prices it is even possible that quality will improve while lowering the costs.

To reach these aims three elements of the guidelines for the reappraisal 2003 (in Dutch: Waarderingsinstructie 2003) are essential:

- continuous updating of object characteristics
- continuous and intensified market analysis
- intensified use of computer-assisted mass appraisal models.

By making the guidelines available more than a year before the datum date for the next reappraisal it must be possible that all transaction within the years 2002 and 2003 are analysed on the intensified manner described in the new guidelines. So in fact the reappraisal 2003 is already started.

COMPUTER-ASSISTED MASS APPRAISAL

When using computer-assisted mass appraisal in the Netherlands it is very important that the appraisal model not only reaches an accurate estimate of the actual market value of the property, but also give the best available comparable sales to explain the assessed value to the taxpayers. The explanation of the individual estimation to the taxpayer and in some cases to the tax judge in an appeal procedure has always been a very important requirement for measuring the quality of CAMA-models. The "old-fashioned" CAMA models based on general multiple regression analysis did not meet these requirements adequately. The contemporary CAMA models, in which there are more possibilities for calibrating the model to the sales prices, can meet these requirements. These models have separated instruments for:

- calibrating the model to market information
- quality control (for instance based on ratio-analysis)
- selecting comparable sales for explaining the assessed value.

UP TO DATE OBJECT CHARACTERISTICS

During the years 1999 and 2000 a lot of energy was spent on improving the quality of object characteristics. This was done mostly by large scale project in which all object characteristics were surveyed or at least checked. These large scale projects have had a large influence on the total costs of the appraisal. On the other hand the improved quality of the object characteristics has also improved the performance of the CAMA-models.

In a market with increasing values for residential properties the (new) owners have a financial possibility of improving their property. Improvements can change for instance the size of the property and the annexes like garages etc. Improvement can also mean eliminating a lack of maintenance in the past. All these kinds of investments of the owners will result in changes in the object characteristics that should be registered in the tax cadastre. When each year five to ten percent of properties are improved in one way or another, the registered object characteristics are after a period of four years without updating useless for the next appraisal. Therefore, continuous updating of object characteristics is required in the guidelines.

However, not all alterations will be reported to the municipalities. For larger improvements a building permit is required and this is a sign to the municipality that a survey of that property is needed to register up to date object characteristics. For smaller types of improvements other types of signs will help municipalities updating characteristics without the need of large scale surveys. Examples of signs that alert municipalities are:

- dissimilarities between aerial photos and large scale base maps (using GIS systems these dissimilarities can be detected automatically)
- information from real estate agents for instance on Internet
- findings from the market data analysis
- remarks about the property or comparable properties that are given by taxpayers during appeal procedures.

When all these kinds of signs are used for updating the object characteristics, it is possible to do the next computer assisted reappraisal based on the available data without a large scale project for checking all properties. When the municipalities use these signs to check to

registered object characteristics it is important not only to administer the changed characteristics, but also to administer the moment the characteristics that did not change were checked. In that way the municipality is able to explicate to the taxpayer or to the tax judge the last moment on which the property data were inspected.

RELIABLE MARKET DATA

Computer-assisted mass appraisal models do not only need up to date object characteristics but also market prices. The more market data is available and the better these sales prices approach real market value the better the valuation model will perform. Therefore, in the Netherlands the focus for the next years will be on an intensified market analysis.

In the past a large percentage of the sales prices was not used for the (computer assisted) valuation because the sales prices did not match with other available prices or there were special circumstances during the transaction (for instance the property was sold to family, or the property was sold by a bank because of financial problems of the owner). Not using all these sales prices for the valuation caused the following problems:

- market segments with a limited percentage of sales prices and where part of these sales prices were not used in the valuation models had a poor fitting to actual market value. This problem occurred for instance for special types of residential property at the high end of the value range.
- errors made in the estimated value (for instance because of errors in object characteristics) were not discovered during the quality control, because the available market price was not used for this control.
- during appeal procedures tax payers used sales prices to support their appeal which sales prices were not used for the valuation and in the valuation reports. Based on these additional sales prices the tax judge sometimes came to a different assessed value.

Therefore the guidelines for the 2003 reappraisal start at the assumption that all sales prices can and should be used for the valuation and the quality control. Because of special circumstances at the transaction or because of alterations to the property after the transaction, it is for some transaction necessary to use in the valuation model an estimated market value derived from the price instead of the price itself.

ACTIVITIES FOR MARKET DATA ANALYSIS

An explicit analysis of sales prices includes the following elements:

- determining if there were special circumstances during the transaction which influenced the price paid
- determining whether the price paid is a correct approximation of the actual market value. If necessary a market value will be derived from the price paid
- checking the registered object characteristics because these characteristics will be used for calibrating the valuation model
- analysing if the price paid corresponds to general market developments or if the price indicates a specific development in market value (for instance the market value of apartments increases more than the market value of single family homes, but also the

market value of houses nearby a water front increases more than the value of other houses).

When this explicit analysis should be done for all sales prices, the costs of the appraisal and assessment of property will increase instead of reduce. Therefore is chosen for a more efficient procedure in which only sales prices which do not match the expectations will be analysed. All other sales prices will be used directly in the valuation models etc.

To evaluate whether a price matches expectations the price is confronted with an estimated value for the object. In fact for each sales price a ratio is calculated. This means that there is a great resemblance between the market analysis and the quality analysis. For both types of analyses a ratio between an actual price and an estimated value for the same object is calculated.

There are two methods allowed to calculate ratios for the market analysis:

- using the appraisal model and using all latest data on market information and object characteristics an estimated valuation for the date of sale is calculated and this estimation is used for the ratio between sale price and valuation.
- the sales prices are combined with the officially assessed values and the ratio is evaluated taking into account the market developments between the datum date for the last assessment and the transaction date.

Both methods will result in a large number of transactions for which the calculated ratio indicates that the market data confirm the data in the tax administration. All these transactions can be used for the valuation models, for the quality control and for producing the valuation reports. No further analysis is needed for these transactions.

Where the ratio indicates that the market price is not in accordance with expectations the transaction will be analysed.

In this analysis primary three elements are evaluated:

- is the price paid a sound approximation of the market value or was the price paid influenced by special circumstances?
- is the estimated value for the property incorrect because the registered object characteristics are not right (anymore)?
- do the assumptions in the appraisal model (still) agree with the actual market for residential property.

For that reason in fact the market analyses consist of the following steps:

- calculate the ratio between price and value estimate from the appraisal model on the moment of the transaction
- evaluate whether the ratio indicates that price is in accordance with expectations. If so, the analysis of this market data is finished.
- evaluate whether an unexpected ratio is caused by errors in registered object characteristics or recent alterations of the property and whether the ratio is as expected after the adjusted characteristics are used for the market value estimate. If so, the analysis of this market data is finished.
- evaluate whether an unexpected ratio is caused by special circumstances at the transaction. If so these special circumstances (e.g. sale to family) are registered and an

adjusted market price is derived from the price paid. This market price will be used for calibrating the appraisal model and for the quality control of the appraisal.

- evaluate whether the unexpected ratio is caused by new (or not earlier recognised) market developments that are not yet implemented in the valuation model. If so the model should be adapted.

The market analysis not only results in sales prices (or adjusted market prices) that can be used for valuation models, quality control and explanation of assessed values to the taxpayer. The market analysis also plays a major role in updating object characteristics (not only for the properties sold but also for adjacent properties). Last but not least the market analysis also improves continuously the performance of valuation models.

EXPECTATIONS FOR COSTS

When the guidelines for the 2003 appraisal were defined, a major part of the debate was dealing with the aspect of costs. It is expected that the market analysis will be more expensive than in the past years. This can mean that each year several millions of euros will be invested extra in market analysis. In spite of these higher costs for the market analysis it is expected that the total costs for appraisal and assessment will decrease with €20 million or more each year because of this approach.

CONCLUSIONS

In the Netherlands the emphasis for the 2003 reappraisal for taxation purposes is not on valuation models, information systems or professional skills, but primarily on market analyses. This decision is expected to bring the following benefits:

- lower total costs for appraisal and assessment of real estate for taxation purposes
- more market data available resulting in better valuation models and better opportunities to control the quality of assessments
- more market data available to explain the assessment to the taxpayer
- more even spread of activities for the appraisal in time
- the analysis also helps updating object characteristics.