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## PERCEPTION OF REAL PROPERTY MASS APPRAISAL IN SLOVENIA

*The purpose of the present research is to establish the perception of the generalised market value obtained from the real property mass appraisal system among the participants at the real estate market, especially influence attributed by the participants to the generalised market value and an extent to which the generalised market value substitute the individual appraisal of property value. The research was carried out among professionals and general public. It has been established that the majority of the respondents know the relevance of the generalised market value. 1/3 of them believe that the generalised market value established during mass appraisal fully corresponds with the market value of their property, and another third believe that the deviation is less than 10%, which leads to the conclusion that the confidence in the generalised market value is very high. 2/3 of the respondents believe that the generalised market value could be used for property tax assessment as well as for other purposes. However, most are referring to average property in urban centres (apartments, commercial real property).*

*Keywords:* real property appraisal, mass appraisal, tax value, generalised market value, value perception, real estate market.

*JEL:* G12, D40.

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## СПРИЙНЯТТЯ МАСОВОГО ОЦІНЮВАННЯ НЕРУХОМОСТІ В СЛОВЕНІЇ

*У статті показано, як сприймається узагальнена ринкова вартість, отримана на основі масового оцінювання нерухомості, учасниками ринку нерухомості, особливо впливу, визначеного учасниками для узагальненої ринкової вартості та в якій мірі узагальнена ринкова вартість може замінити індивідуальну оцінку вартості майна. Дослідження було проведене серед професіоналів і широкого загалу. Було встановлено, що більшість респондентів знають про відносність узагальненої ринкової вартості. Одна третина з них вважають, що узагальнена ринкова вартість, визначена в ході масового оцінювання, повністю відповідає ринковій вартості їхньої власності, ще третина вважає, що відхилення складає менше 10%, що приводить до висновку про те, що довіра до узагальненої ринкової вартості дуже висока. Дві третини опитаних вважають, що узагальнена ринкова вартість може бути використана для визначення майнового податку, а також для інших цілей. Проте більшість мають на увазі при цьому звичайну власність в міських центрах (квартири, комерційну нерухомість).*

*Ключові слова:* оцінка нерухомості; масова оцінка; податкова вартість; узагальнена ринкова вартість; сприйняття вартості; ринок нерухомості.

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## ВОСПРИЯТИЕ МАССОВОЙ ОЦЕНКИ НЕДВИЖИМОСТИ В СЛОВЕНИИ

*В статье показано, как воспринимается обобщенная рыночная стоимость, полученная на основе системы массовой оценки недвижимости, участниками рынка недвижимости, особенно влияния, определяемого участниками для обобщенной рыночной стоимости, и в какой степени обобщенная рыночная стоимость может заменить индивидуальную оценку стоимости имущества. Исследование было проведено среди*

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*профессионалов и широкой общественности. Было установлено, что большинство респондентов знают об относительности обобщенной рыночной стоимости. Одна треть из них считают, что обобщенная рыночная стоимость, определенная в ходе массовой оценки, полностью соответствует рыночной стоимости их собственности, еще треть считает, что отклонение составляет менее 10%, что приводит к выводу о том, что доверие к обобщенной рыночной стоимости очень высоко. Две трети опрошенных считают, что обобщенная рыночная стоимость может быть использована для расчёта имущественного налога, а также для других целей. Однако большинство при этом имеют в виду обычную собственность в городских центрах (квартиры, коммерческую недвижимость).*

*Ключевые слова:* оценка недвижимости; массовая оценка; налоговая стоимость; обобщенная рыночная стоимость; восприятие стоимости; рынок недвижимости.

**1. Introduction.** Central and Eastern European countries have undergone significant institutional and structural changes to create market-oriented economies in the 1990s (Kasman S., Kasman A. and Duygu, 2010). The importance of a properly functioning real estate market is widely recognised within this process. It has important implications for national economies with an important role in the efficient allocation of resources, housing and labour mobility, investment and mobilisation of real estate wealth. The relationship between the strength of a real estate market and the health of a country's financial sector can be most dramatically illustrated by looking at the behaviour at real estate markets in times of banking and economic crisis (Adlington et al., 2000). An important component within the process of development of the real estate market is the real estate valuation. The goals of real estate valuation in transitional economies are essentially the same as in developed ones: for the purposes of sale/purchase, occupation, investment, development, or redevelopment. It is rare to use valuation for stock markets or flotations/mergers (Trifonov, 2004). Some countries, like Slovenia, as described in the next chapters, attempt to establish valuation for taxation purposes: so-called mass appraisals.

Some North European countries (Denmark, the Netherlands, Sweden, Finland) and Baltic states ensure public access to the data on realised property sales and rentals to all citizens (Mitrovic, 2010). The data on comparable transactions have material influence on the transparency of the real estate market. They can be used for taxation purposes and for further statistical processing. In less demanding real estate transactions, the generalised market value could even be an argument for a transaction price of a property.

"Valuation based" property taxes are growing in popularity with governments around the world either as "standalone" land tax systems or as a "top-up" to other fiscal measures (Tretton, 2007). The introduction of the real property mass appraisal project in Slovenia has been in progress for a few years, and its purpose is to attribute to each property a generalised market value as a basis for taxation. The generalised market value is the value, established during the mass appraisal process and it represents an approximation of the property's market value. Based on the mass appraisal model, the Surveying and Mapping Authority of the Republic of Slovenia prepared a test appraisal and in autumn 2010 sent to the owners of 1,186,000 properties notices containing 84,000,000 data (Petek, 2010). Thus the owners were informed about the

generalised market value of their properties as well as about the key parameters necessary for its determination.

In media in Slovenia, the data about the generalised market value of real property were not accepted very well. The reason could be the fact that real property taxes are difficult to enact because they are so politically unpopular. One reason is that these taxes are very visible to the voters. Another reason is that homeowners have become a very influential political group (Muller, Almy and Engelshalk, 2010). Erjavec and Poler Kovacic (2011) have found that 58.8% of the analysed Slovene media (5 dailies with the largest circulation have been included in the research) expressed a negative position to the test calculation of the generalised market value, 29.4% of the articles in the analysed printed media were neutral, and only 11.8% of the articles had a positive approach. Despite the negative response in the media, the professional public is of the opinion that the generalised market value represents sufficiently reliable information on property value in the case of very liquid properties (e.g., apartments or offices).

**2. Theoretical background and hypotheses.** Real property appraisal can be divided into individual and mass appraisal. Individual appraisal is the appraisal of a certain (individual) property on a certain date. Mass appraisal is the procedure of appraising groups of real property of the same type on a certain date, whereby standardised and statistical procedures for property value appraisal are being used. Both approaches are based on the application of the same data and information on real property and the real estate market, however, with the difference that individual appraisal analyses the appraised property in great detail, while in mass appraisal a large number of real property of the same type in the whole country is taken into account. In addition, individual appraisal uses a greater number of more detailed data about the local real estate market and about the property subject to appraisal (Gloude-mans, 1999).

The first theory of real property mass appraisal was developed in 1920 by John A. Zangerle (Eckert, Gloude-mans and Almy, 1990). In order to achieve uniformity in the system, he introduced costs tables. Further development of the mass appraisal method depended on the development stage of the computer science.

According to International valuation standards (2011), today mass appraisal systems are typically utilised by appraisal authorities with statutory powers to find and collect valuation data. The statutory process will usually involve other government agencies in the provision of qualitative and quantitative information essential to the process. Therefore, mass appraisal can be defined as a systematic appraisal of groups of properties using standard procedures rather than of a single property. Two related modelling traditions exist today, both deploy multiple regression analyses for estimation: the model driven by hedonic approach, and the data driven statistical approach (Kauko, d'Amato, 2008).

In the algorithms used for property mass appraisal, credible data obtained from the market are of key importance for high-quality value appraisal. Any appraisal, either single-property appraisal or mass appraisal, uses a model, that is, a representation in words or an equation of the relationship between value and variables representing factors of supply and demand (Standard on mass appraisal of real property, 2011). Sales data are required in all applications of the sales comparison approach, in the development of market-based depreciation schedules in the cost approach and in the derivation of capitalization rates or discount rates. Income and expense data must

be collected for income-producing property, as these data are required in the application of the income approach to value. Current cost and depreciation data adjusted to the local market are required for the cost approach (Standard on mass appraisal of real property, 2011).

Effective mass appraisal is constrained by a wide range of factors and requires substantial financial resources, trained personnel, adequately selected appraisal methods and a well-maintained and up-to-date property database. For taxation purposes, the mass appraisal system is more effective than the individual appraisal system. The main reason is the substantial time and cost saving, as it is possible to appraise large number of properties in a relatively short period of time. This is impossible with an individual approach to property appraisal.

The main focus of our research is on different aspects of perception of the generalized market value of real estates, which is the result of mass appraisal process. Our analysis is focused on two target groups — it was carried out separately among professionals (certified real estate appraisers, court certified appraisers, real estate agents, real estate agency employees), and the general public (real property owners and/or potential buyers). We hypothesise that with the public access to real property values participants in the property market become better informed about the value of properties and the real property situation. In Slovenia, the model of accessing data on property values has been closed for public until now, and therefore is of only limited applicability. Even though the owners received notices of the values of their properties, a buyer was able to obtain such data only through an expert. In 2012, the data on generalised market value have become publicly accessible in the real estate register via a web application to all users. Until now, many owners did not know the exact value of their real property, and they were also not able to exactly define price levels in the real estate market but at the same time the awareness about the difference between the generalised market value and the market value of real property is important. Therefore, the hypotheses H1a and H1b were formed:

H1a: The majority of real property owners and/or potential buyers are not aware of the fact that the generalised market value and the market value of real property differ.

H1b: The majority of professionals in the real estate field are aware of the fact that the generalised market value and the market value of real property differ.

Therefore, the hypothesis H1c:

H1c: There is a significant difference regarding awareness of the difference between the generalised market value and the market value of real property between these two groups.

Regarding the fact that the generalised market value is based on data with a certain delay, it could be expected also that important difference between tax values and market values of properties is expected by professionals as well as by non-professionals. According to Voss (2009), the most important difference between tax values and market values of properties is caused by different valuation dates. Josten (2000) underlines that the deviations between the market value and the value for tax purposes are considerable. They depend on the valuation method, the type and the age of buildings. The range of the difference between these two values was analysed and the following hypotheses were formed:

H2a: The perception of certain range of differences between market values and generalised market values by real property owners exists.

H2b: The perception of certain range of differences between market values and generalised market values by professionals exists.

Therefore, the hypothesis H2c:

H2c: There is no significant difference regarding the perception of the certain range of difference between generalised market value and market value of real property between these two groups.

Generalised market values from mass appraisal are primarily used for taxation, but also for real estate appraisal and for mortgages. In Lithuania, for example, the results of mass appraisal are used for calculation of real property taxes, but also for other public purposes. The users of data are various institutions and organisations, as well as residents. It is very important to offer an opportunity to all interested institutions and persons to receive property values quickly (Bagdonavicius and Deveikis, 2011). Although in Slovenia the primary focus is on mass appraisal for ad valorem tax purposes (Standard on mass appraisal of real property, 2011), the generalised market value can be also used by different stakeholders and for different purposes: by banks to determine mortgage values for secured lending, by real estate institutions as a declarative value for further processing procedures (e.g., calculation of indices, capitalization measures etc.), by participants in the real estate market as an argument in negotiations and partly as a substitute for individual value appraisal in market transactions etc. The following hypotheses were formed:

H3a: The majority of real property owners and/or potential buyers are aware that the generalised market value can be used for different purposes.

H3b: The majority of professionals in the real estate field are aware that the generalised market value can be used for different purposes.

Therefore, the hypothesis H3c:

H3c: There is no significant difference regarding the awareness that the generalised market value can be used for different purposes, among these two groups.

**3. Methodology.** Hypotheses were tested on the random sample data of N=138 respondents in 2011 in Slovenia. The questionnaire was sent to 200 randomly selected people (real property owners and/or potential buyers) in the urban areas and to 100 randomly selected professionals (certified real estate appraisers, court certified appraisers, real estate agents, real estate agency employees). The sample consists of 82 general public respondents (41% response rate) and 56 professionals (56% response rate). Most of the professionals were real estate agents (40%) as well as certified real estate appraisers and court certified appraisers (34.55%), 16.36% of other professionals in the real estate field (e.g., lawyers specialising in real property) and 9.09% of other professionals involved in appraisals. The majority of the respondents are owners of at least one or more properties (81.20%), 17.40% of the respondents own no property.

SPSS 19.0 was used for the analysis. For the purposes of hypotheses testing the 95% confidence intervals for proportion were calculated (H1a, H1b, H2a, H2b, H3a, H3b) and parametric or nonparametric tests (depending on type and/or distribution of variables) for the difference between the groups of general public and professionals were used (H1c, H2c, H3c). The null hypotheses were rejected at the 5% significance level.

#### 4. Results.

4.1. *Awareness about the difference between generalised market value and market value of real property.* Based on the 95% confidence interval estimate for the proportion ( $\pi$ ), it is estimated that between 53.4% and 69.81% of the population are aware of the fact that generalised market value and market value of real property differ. But professionals and general public significantly differ ( $p < 0.05$ ), 95% confidence intervals for both groups are:

$$P(39.02\% < \pi_{\text{general public}} < 49.81\%) = 95\%$$

$$P(88.50\% < \pi_{\text{professionals}} < 100\%) = 95\%$$

In addition, on average over one half of the respondents do not know where the real property data for the calculation of generalised market value were taken from. As expected, most of the professionals know the source of these data. The largest percentage of knowledge about the source of the data was recorded among certified real estate appraisers (on average 88.90%). On the contrary, on average 74.40% of general public do not know where the property data were taken from.

Therefore, hypotheses H1a, H1b and H1c are not rejected. The majority of real property owners and potential buyers (71.8%) are not aware of the fact that generalised market value and market value of real property differ, while on the other hand the majority of professionals in the real estate field (94.6%) are aware of the fact that generalised market value and market value of real property differ. The difference between these two proportions is statistically significant ( $p < 0.05$ ).

4.2. *Perception of the range of differences between the appraised generalised market value and market value of properties.* Based on the 95% confidence interval estimate for the proportion ( $\pi$ ), it is estimated that the proportion of owners who believe that generalised market value is consistent with market value of their property (or properties) in population is between 25.27% and 43.20%. The owners included into the general public group and those from the group of professionals do not differ significantly ( $p > 0.05$ ); 95% confidence intervals for both groups are:

$$P(23.87\% < \pi_{\text{general public}} < 48.47\%) = 95\%$$

$$P(18.61\% < \pi_{\text{professionals}} < 45.39\%) = 95\%$$

Therefore, it can be concluded that the perceptions of certain range of differences between market values and generalised market values by real property owners who belong to either of both groups (general public and professionals) exist — hypotheses H2a and H2b are not rejected, as well as hypothesis H2c.

The relative frequency distributions of the respondents in both groups, regarding the perceived difference between the generalised market value and the market value of their property, is presented in Figure 1.

Although inconsistencies between the appraised market value and perceived market value of their properties are found in the sample as presented by Figure 1, it is surprising that all the respondents think that the value of their property does not differ from the generalised market value for more than 20%. Thus, both professionals and non-professionals have recognised that the property mass appraisal model in Slovenia is in general highly effective and exact despite the fact that the generalised market value is based on the data with a certain delay. According to the data of the Royal Institution of Chartered Surveyors, the average unweight difference between



sale price and market adjusted valuation for so well-developed markets as France, Germany, the Netherlands and the UK in 2008 was 13.3%, 14.2%, 12.0% and 11.8%, respectively. The measure records the absolute difference between market adjusted valuation and sale price, regardless whether the adjusted valuation is above or below the sale price. The market adjusted valuation is the most recent valuation, which must have been recorded at least 3 months prior to sale date. This is then adjusted to market movements in values by applying capital growth rates up to the third month before sale. Finally, capital expenditure between the last actual uninfluenced valuation month and the updated valuation month is added to the updated valuation (RICS Report, 2009).

Perception of the range of differences between the appraised generalised market value and market value of properties (% of respondents)

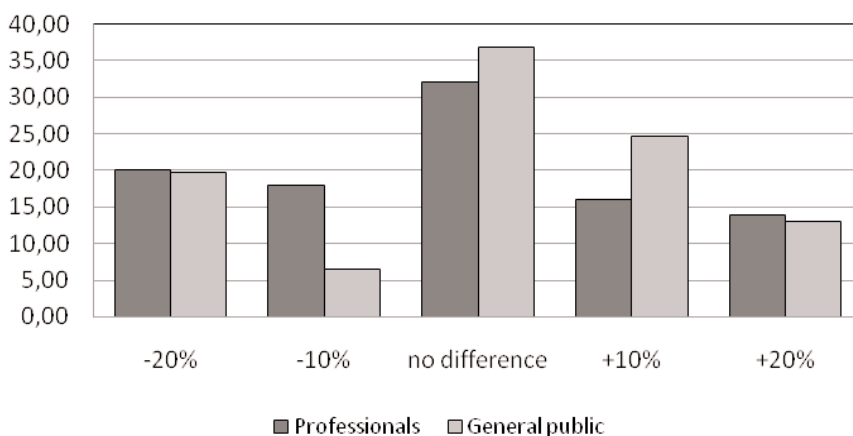


Figure 1: Perception of the range of differences between the appraised generalised market value and market value of properties.

Although a certain inconsistency between appraised market value and market value of properties exists, the transparency at the real estate market is expected to be better. To illustrate previous results, we wanted to know the perceived influence of the information on generalised market value on the transparency of the real estate market. On average, only 14% of the general public respondents and 13% of the professionals believe that the information will have no influence on the transparency of the real estate market. On average, the opinions of professionals and non-professionals differ in terms of intensity of the influence. Most of the non-professionals (about 46%) think that the information regarding generalised market value will have medium influence on the transparency of the real estate market, while most of the professionals (about 32%) think that the information will have only slight influence on the transparency of the market.

4.3 *The use of the generalised market value with regard to its purpose.* The respondents were asked whether generalised market value can in their opinion be used as a substitute for individual value appraisal for different purposes where the property value is needed. Based on the 95% confidence interval estimate for the proportion ( $\pi$ ), it is estimated that between 52.86% and 71.04% of the population perceive gen-

eralised market value as a substitute for individual value appraisal in different situations, differences between the general public group and the group of professionals are not statistically significant ( $p > 0.05$ ); 95% confidence intervals for both groups are:

$$P(48.04\% < \pi_{\text{general public}} < 73.27\%) = 95\%$$

$$P(49.92\% < \pi_{\text{professionals}} < 77.00\%) = 95\%$$

Therefore, it can be concluded that the perceptions of usability of real estate generalised market value for different purposes is established in both — hypotheses H3a and H3b are not rejected, no significant differences between two groups is found, therefore, hypothesis H3c is rejected.

As presented by Figure 2, on average most of the respondents think that the generalised market value will be especially applicable in the assessment of tax on real property transfer, inheritance and gift tax. The third most frequently mentioned uses are according to the respondents secured lending and non-formal purposes (as information on value).

As presented by Figure 3, on average most of the respondents in both groups think that appraised generalised market value is most appropriate for typical properties in urban centres. "Typical" properties include land, residential houses, typical commercial property as well as parts of buildings — apartments, garages, commercial and hospital-ity real property. For this real property segment, most market data are available.

A part of the respondents believe that appraised generalised market value is useful also for average real property in outlying areas and for property used for public purposes (schools, kindergartens, municipality buildings). According to the respondents, it is least useful for agricultural real property and for specialised types of real property.

**5. Discussion and Conclusion.** Publicly accessible data based on generalized market value of real properties have substantial influence on the transparency of the real estate market and thus enable participants in the real estate market to be evenly informed. This is also acknowledged by the majority of non-professional participants at the real estate market, who will, on the basis of publicly accessible data, find it easier to form an opinion on the value of properties in the market; of the professionals, public access to the data is mostly supported by certified real property appraisers, who will be able to make more credible appraisals of real property value using the market comparison approach.

Even though it was obvious from the daily media that general public in Slovenia did not accept the information on generalised market value very well, the results of the survey show it differently. Both general public and professional participants at the real estate market distinguish between the market value obtained from the mass appraisal and the market value established in individual value appraisal, while at the same time 2/3 of the respondents believe that generalised market value agrees with market value or moves with it at a maximum interval of  $\pm 10\%$ . Consequently, the majority of the respondents think that generalised market value can in addition to property tax be also used for tax on real property transfer (63.09% of all the respondents) and for inheritance and gift tax (61.90% of all the respondents). Half of the respondents also think that generalised market value could be used in secured lending. Despite the substantial confidence in gen-



eralised market value which can be concluded from the responses, most of the respondents still think that generalised market value is credible only in the case of typical real property in urban centres.

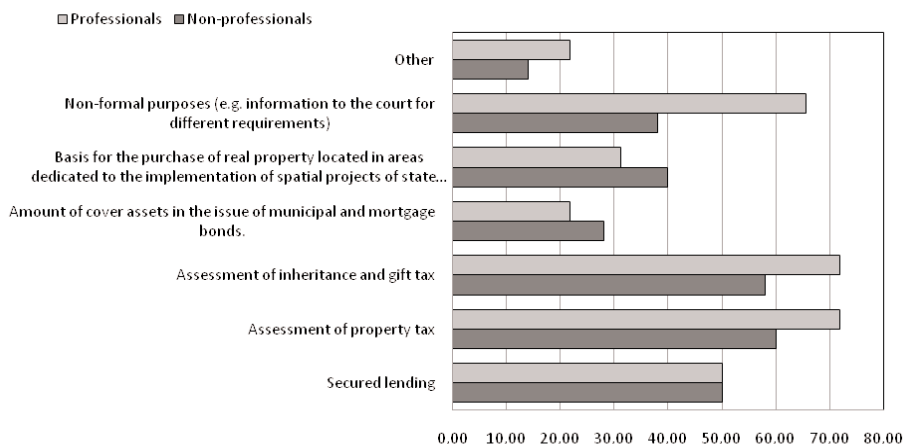


Figure 2. The use of generalised market value by purposes, % of the respondents

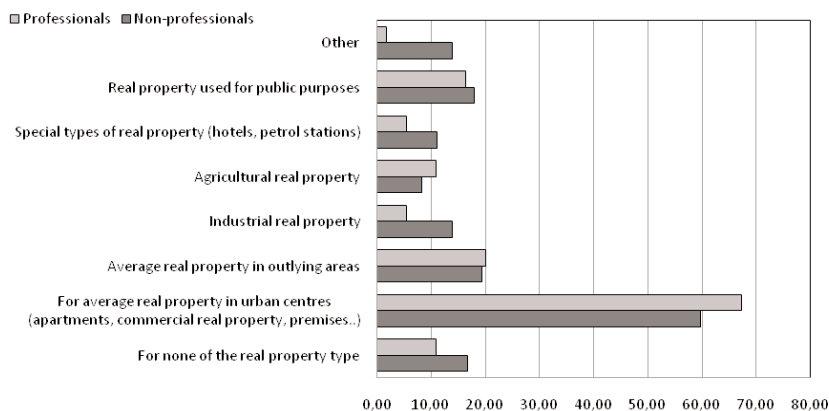


Figure 3. The use of generalised market value for different types of real property, % of respondents

The advantages of mass appraisal system are undoubtedly a unified value appraisal for the whole country, recording of a large number of data and cost effectiveness of the system given the number of value appraisals. The introduction of public access to generalised market value will undoubtedly bring substantial changes to the real property market in Slovenia as well as to the appraiser profession. From the opinions of both professional and non-professional public, it can be concluded that generalised market value in less demanding real property transactions will even substitute individual value appraisals, which does not mean that it will completely substitute the need for individual appraisals. Only 10.15% of all the respondents believe

that generalised market value can be used for the purposes other than taxation in industrial real property, while in special types of real property (hotels, petrol stations) this percentage is even lower. Furthermore, generalised market value is considered to be of little use in all types of real property outside urban centres, even in typical properties. Only 19.53% of the respondents think that generalised market value can be used in these properties for the purposes other than taxation.

The conclusions in the field of the real property market are as follows:

- generalised market value will have impact on the transparency of the real estate market;
- generalised market value enjoys a relatively high level of confidence in terms of exactness;
- real property tax will have no influence on the real property market, or it will lead to a minimum negative correction.

The conclusions in the field of real property value appraisals are as follows:

- generalised market value can substitute individual value appraisal in all types of taxes (real property tax as well as tax on real property transfer, inheritance and gift taxes);
- generalised market value can be used in secured lending;
- for the purposes other than taxation generalised market value is useful only in typical real property within urban centres;
- generalised market value can substitute individual value appraisal only in the cases stated above, but not in more demanding transactions;
- generalised market value cannot substitute individual value appraisals of more demanding properties (outlying areas, special properties, such as hotels etc.).

Real property appraisers are obviously facing a challenge, when individual appraisal will be substituted by mass appraisal in simple cases in urban centres, and they themselves will have to focus on more demanding cases of value appraisal. In addition to special properties and properties on less active markets, they will also have to deal with value appraisals based on non-market bases. The appraisers' profession is faced with the challenge to achieve even higher levels of general competence, and also to create specialised profiles to focus on certain types of real property or on certain local markets. Thus, a considerable improvement will also be achieved in the quality of individual value appraisals.

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