

# **REAL ESTATE APPRAISAL AND IMPLICATIONS TO THE REAL ESTATE CADASTRE IN THE REPUBLIC OF SERBIA**

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## **SUMMARY**

The Real Estate Cadastre had been established in the Republic of Serbia, as a unique property register of real estate, to contribute to the sustainable economic development, better environmental management, security of property rights, active real estate market and upgrading land administration. The Real Estate Cadastre is a modern registration system for real estate and property rights; the system assuring reliability and control of data from cadastral-legal procedures; the system based on standards and accepted international practice; the system striving to be compatible with data held by other state institutions.

Real estate appraisal in the Republic of Serbia holds characteristics of all countries undergoing transition, where real estate appraisal is projection of prices and values, based on the current market conditions and information available to the appraisers. Market transparency is an important condition for market economy development, and information from the real estate market available to the public shall contribute to a more secure operation of this market, increased number of transactions and greater security of the market participants. Establishing of the Real Estate Cadastre as property register under the provisions of legality, constitutive power, public availability, reliability and mandatory registration provides quality and quantitative infrastructural base for acceleration and implementation of numerous transitional processes.

State cadastral organs hold modern databases on real estate and latest data, which is the basic prerequisite for the market value of the real estate to be objectively determined by those organs. Modern techniques and technologies of spatial and other property-related data acquisition and georeferencing will provide for development of new appraisal systems against individual appraisals, for the works to be performed in an efficient, current and complete manner for all real estate in the country, which always leads to objectively appraised values, i.e. there are always appropriate values for all the purposes required (property taxation, real estate market, spatial and urban planning, insurance, mortgages, conversion of real estate status to other forms).

## **1. INTRODUCTION**

Implementation of the Real Estate Cadastre and Registration Project in the Republic of Serbia had created possibilities for a more efficient system for managing land, real estate, property rights and encumbrances to provide support for real estate market development and fiscal mobilization of funds, through a more efficient and fair application of property tax, based on the reliable real estate records. First researches in the field of new real estate appraisal

systems against the existing, traditional ones had been implemented within the pilot projects implemented in the Republic Geodetic Authority.

Real estate mass appraisal concept is a procedure which provides data on real estate market value for all real estate in a country, being the basis for establishing property tax and many other purposes for which the real estate market value is being used. Collecting real estate market data (transactions with reliable prices) requires good systems for collecting transactions and their presentation on the real estate market.

## **2. REAL ESTATE CADASTRE AS A FOUNDATION OF ECONOMIC DEVELOPMENT**

Real Estate Cadastre is modern, quality, reliable and public register of real estate, containing data on: land, buildings and building separate parts (apartments and offices, other constructions), property rights and encumbrances and limitations. Provisions of priority, legality, constitutively, public availability, reliability, uniqueness and mandatory registration are being applied in the Real Estate Cadastre. Real Estate Cadastre is a quality infrastructural foundation for realization of numerous transitional processes, providing for development of more efficient system for managing real estate and property rights, by establishing a unique Real Estate Cadastre information system.

Basic needs of the users are related to providing property security services, business processes covering transactions processing, registration and information provision function, so the assumption can be made that the user requirements will rise regarding data content and quality. It is important to recognize that data structure and delivery format are as important as data contents, which means that development of new ways for the Republic Geodetic Authority to provide its services will soon be stimulated, as a governmental institution that must be ready to respond to that.

Having in mind restrains of local economic environment, together with the fact that the country is undergoing transition, currently being in the phase of economic, property and political reforms, which should lead to capital market development, as an important segment of market economy, results of the “Real Estate Cadastre and Registration” project will contribute to achievement of defined development goal of land administration in the Republic of Serbia, formulated as: *“Contribute to the sustainable economic development and poverty alleviation, better environmental management, security of property rights and active real estate market through an efficient land management”*. Defined development goal of land transformation obligates the Republic Geodetic Authority to strengthen its institutional capacities, making them sustainable for the future; to realize competences and responsibilities towards developmental goal, and to make results achieved in the Real Estate Cadastre establishing sustainable.

### 3. REAL ESTATE MARKET ANALYSIS

Real estate market in the Republic of Serbia has properties and specific traits usual for underdeveloped markets: high level of non-liquidity, heterogeneity of real estate as an investment instrument, high level of transaction costs, duration of transaction process itself and lack of data on real estate transaction prices. That is also the major obstacle and greatest methodological difficulty in efforts to objectively analyze status of this market. Real estate market in the transitional society, without a doubt, is one of the important indicators of true liberalization of inherited economy. The right to freely purchase and sell real estate is, by all means, one of the pillars of each democratic society. Organized real estate market turns assets into capital, and real estate value may be directly determined only when buyers and sellers can acquire property in institutionally and legally regulated manner, which is procedurally simple and publicly available.

The first step on the road of real estate purchase is real estate appraisal, and for that purpose, stakeholders had been identified, being: ministries, banking sector, local governments, realtors, court expert witnesses, law firms, insurance companies.

Research had been focused on institutional mechanisms and methods for acquisition of real estate market data, for the purpose of establishing a unique database of market prices and linking all relevant information and attributes on real estate. When tax administration determines market value, the main problem is that this administration does not hold sufficiently detailed and accurate latest data on real estate and property rights, i.e. there is a lack of connection between tax administration and state cadastral organs in the field of data exchange, thus in the field of comprehensiveness and objectiveness of tax baselines for calculation of property tax. The very fact that the state cadastral organs have at their disposal modern databases on real estate, as well as updated data, is the basic prerequisite for the real estate market value to be determined by those organs, in a more objective manner.

Real estate appraisal is being performed in the Republic of Serbia within real estate taxation procedure, which is under competence of the Ministry of Finance, i.e. Tax administration. Baseline for property tax imposed on agricultural and forest land (for which no accounting is kept) is *five-fold amount of annual cadastral revenue* from that land, according to data of the Republic Geodetic Authority, and *baseline for absolute rights transfer tax* is contracted price, i.e. market value determined by the competent tax organ (if said organ believes that contracted price is lower than market price).

Real estate appraisal approach should be in line with the economic theory and should generate appraisals which are reliable assumptions of transaction prices. Realization of this assumption in establishing system for registration of market/transaction data integrated with the Real Estate Cadastre a spatial database.

Based on research conducted and successfully implemented pilot projects, in 2009, the Republic Geodetic Authority includes a new chapter on real estate appraisal in the Law on state survey and cadastre, which was promulgated by the National Assembly of the Republic of Serbia in 2009 (“Official Gazette of the Republic of Serbia”, number 72/09).

Scope of work of the Republic Geodetic Authority, according to the Law, includes appraisal and keeping register of real estate values, with real estate appraisal being defined as determining market value for real estate registered in the Real Estate Cadastre.

Real estate market value, for the purposes of this law, is value determined through procedures and methods of mass appraisal.

### **3.1 INSTITUTIONAL COOPERATION**

Republic Geodetic Authority and Ministry of Finance – Tax administration had established successful and continuous cooperation in the first phase of real estate mass appraisal, which covers takeover of real estate transaction data from contracts on sale validated by the Tax administration. Within the process of establishing real estate market price register, which should, according to the Article 152 of the Law, contain data from real estate sales and lease contracts, validated by Tax administration, the Republic Geodetic Authority had implemented the first phase of real estate mass appraisal procedure. Said institutions had defined structure and model of necessary data, together with the takeover method. Institutional cooperation has the objective for the decision of tax administration on tax baselines for all types of real estate to be based on sales price data, guidelines for real estate mass appraisal and technical tools for real estate value calculation and graphical presentation. Reaching transparent, reliable and fair taxation will be provided through public available information on sales price and value of real estate for interested parties and stakeholders.

### **3.2 Housing Real Estate Market**

According to the analysis performed, it could be said that the real estate market in the Republic of Serbia is clearly subject to the laws of supply and demand and, in spite of numerous inherited and institutional problem, operates as theory envisions. The greatest influence on prices and transactions trend in real estate market during the period 2007 – 2009 was expressed by: autonomous supply and demand processes and effects of Government regulatory measures in that sector. Structure of supply to demand ration is a consequence of ownership and legislative transformation of housing real estate. By 1989, apartments were in 95 % of cases in social (state) ownership. After promulgating the Law on housing relationships that year, which provided for buy-off of those apartments, ratio between number and status of private and socially owned apartments had begun to change, thus establishing the first real estate market. After buy-off of the apartments, due to the unfavorable economic climate, decline of construction activity occurs, this would last for more than a decade. Construction works recovery starts after 2002, with emergence of private investors, with a new type of heterogeneous construction emerging: greater number of luxury apartments and houses, with greater area and higher average prices per square meter.

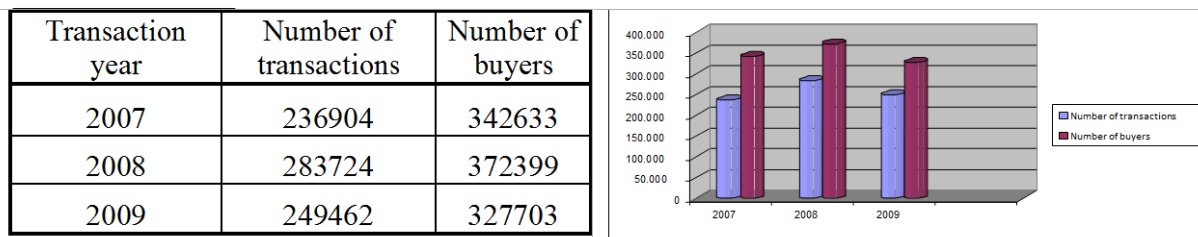
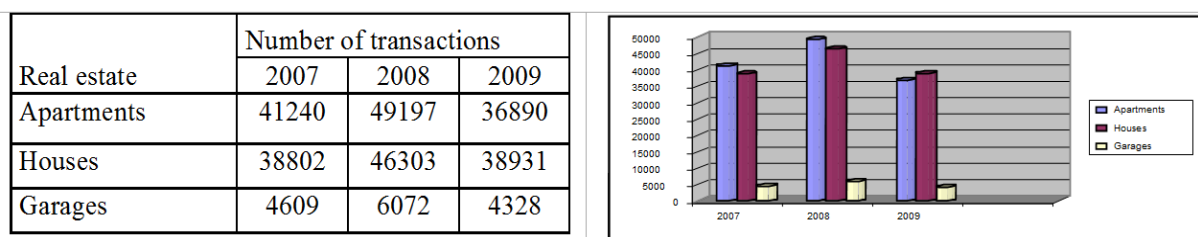


Figure 3.2-1 Number of transactions for the period 2007 – 2009

For the period 2007 – 2009, the number of transaction taken over from the Tax administration was 770,000, with number of buyers being approximately 1,000,000, being co-owners of real



estate. The fastest market was covering apartments and single family dwellings. The majority of transactions were made in Belgrade market, having in mind the number of citizens and significant investments. Analysis had been performed for 54,367 transactions for the City of Belgrade, covering 50 % of all apartment transactions in the Republic of Serbia.

Figure 3.2-2 Number of transactions per real estate type

Number of quality transactions after analysis was 17,901, i.e. 33 % of total number. Transaction data were integrated with Real Estate Cadastre data, for the purpose of real estate data reliability and quality control.

Criteria for establishing market zones were:

- Price per square meter of the apartment
- Number of transactions
- Distance from the city center
- Characteristics of the area

### **Reducing prices to date – 4<sup>th</sup> quarter 2009**

Establishing price trend index had been performed:

- Per market zones
- According to the principle of normal transactions distribution over the market

When determining mathematical model for the apartments, real estate mass appraisal procedures had defined: market zones, value levels, value zones, typical real estate, relational tables and diagrams.

The following Real Estate Cadastre databases had been used for transaction analysis: alphanumeric Real Estate Cadastre database, digital cadastral map database, address register

database and orthophoto of the City of Belgrade, to define geolocation of each transaction for chosen central urban municipality CM Zvezdara.

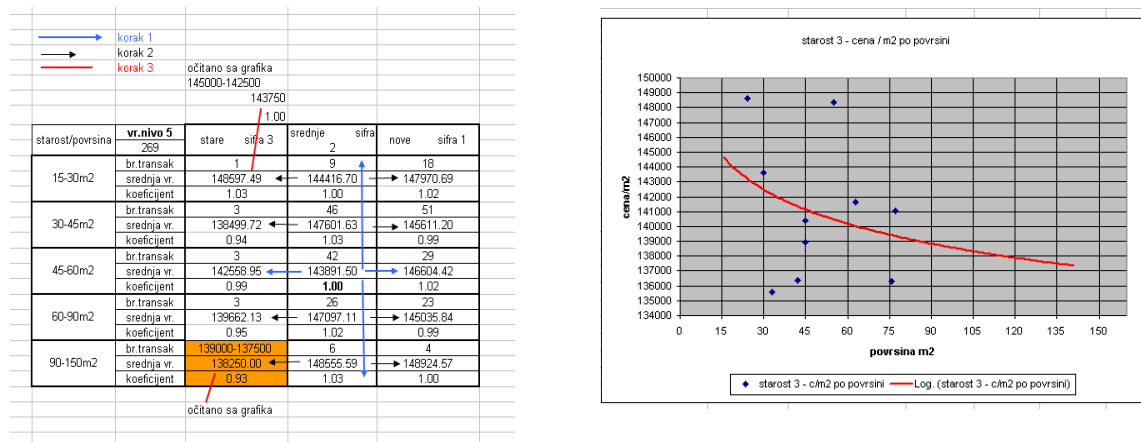


Figure 3.2-3 Relational table showing relations of construction year and area

#### 4. MATHEMATICAL MODEL FOR APARTMENTS

	<b>V = Vz x Frt x Fs</b>	
Model variables:		
<b>V</b>	-	Apartment value
<b>Vz</b>	-	Zone value = value level
<b>Frt</b>	-	Area and age factor from relational table
<b>Fs</b>	-	Apartment floor factor

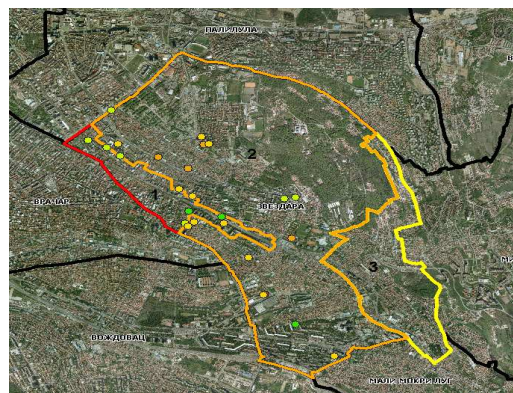
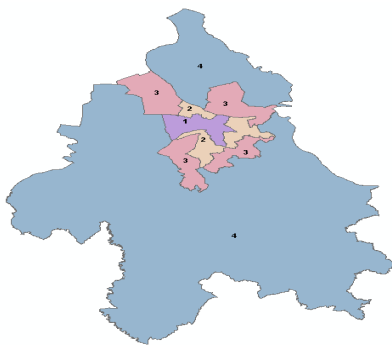


Figure 3.2-4 The City of Belgrade – market zones and value zones in CM Zvezdara

## 5. CONCLUSIONS

In the legal system of the Republic of Serbia, real estate appraisal is being regulated by legal and normative procedures and, depending on appraisal purpose; market value of real estate has different “rulebook” definitions. Development of real estate mass appraisal system should provide professional description of mass appraisal system on the national level and to additionally affirm appraisal as part of integrated system of Real Estate Cadastre, with application in the Republic of Serbia. Further research should provide for establishing national database of market values, development and reform of legal framework, supporting efficient real estate mass appraisal, based on the market information.

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## BIOGRAPHICAL NOTES

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2008-present: Director Assistant for Technical and Administrative Supervision

Previous positions at RGA: Head of organizational unit for Land Surveying Technical Supervision within Sector for Technical and Administrative Supervision, Supervision officer, Head of organizational unit for Land Consolidation within sector for Real Estate Surveying and other.

1986-1995 was working in the Photogrametric Authority of Serbia as leader of geodetic works in land consolidation and geodetic project engineer.

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Previous positions at RGA: Mart 2008 – July 2008: Assistant Director for Real Estate Cadastre

2003 – 2008: Assistant Director for Real Estate Survey

2002 – 2003: Advisor to the Director of the Republic Geodetic Authority  
1996 – 2002: was working at various jobs within different Cadastral Offices, 2000-2001 was working with private geodetic organisation in Libya as Chief Geodetic Engineer.

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