

ATTRACTIVENESS FOR INVESTMENTS IN REAL ESTATES AT THE TERRITORY OF NORTH BAČKA

Olivera Vasović¹
Jelena Gučević²

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Summary: *The real estate market in the Republic of Serbia is characterized by a pronounced regional unevenness both in terms of the volume of transactions and in terms of the most common types of real estate on the market, average prices, methods of payment, etc. Among the highest average prices paid for agricultural land in the Republic of Serbia are the purchases done on the territory of administrative district North Bačka. The reasons for this should be sought in soil quality, infrastructural connectivity, investment planning and other socio-economic factors that influence on increase of demand at the market of real estates. In this paper will be analyzed the attractiveness for investments in real estates at the territory of North Bačka and will be made comparison with the transaction on the markets of real estate that are geographically, economically and demographically similar to this one.*

Keywords: *real estate information, real estate market, register of property sales prices*

1. INTRODUCTION

The place where the real estate demand meets real estate offer is the real estate market. Property conveyance in the Republic of Serbia (RS) is regulated by the Law on Real Estate Transfer ("Official Gazette RS", No. 93/2014, 121/2014 and 6/2015), under competence of the Sector for Spatial Planning and Urbanism of the Ministry of Construction, Transport and Infrastructure. Professional and public administration affairs pertaining to the property survey and real estate cadastre are regulated by the Law on State Survey and Cadastre ("Official Gazette RS", No. 72/2009, 18/2010, 65/2013, 15/2015 - CC decision, 96/2015, 47/2017 - authentic interpretation, 113/2017 - other law, 27/2018 - other law, 41/2018 - other law and 9/2020 - other law). Content of these laws is different, yet both contain individual norms of importance for the RS real estate market establishment and monitoring.

The properties subject to conveyance are land, buildings and other constructions, as well as parts of constructions subject to property rights. The Law on Real Estate Transfer uses legal affairs to regulate transfer of property ownership and right to use. The real estate

¹ Mr Olivera Vasović, dipl.geod.inž., Academy of Technical and Art Applied Studies Belgrade, Department School of Civil Engineering and Geodesy of Applied Studies, Hajduk Stankova 2, Belgrade, Serbia, tel: +381 11 2422 178, e – mail: oliveravasovic@vggs.rs

² Dr Jelena Gučević, dipl. geod. inž., University of Novi Sad, Faculty of Civil Engineering Subotica, Kozaračka 2a, Subotica, Serbia, tel: ++381 24 554 300, e-mail: jgucovic@gf.uns.ac.rs

sales contract is composed by the notary in the form of solemnized notary document. The notary that had solemnized the real estate sales contract is obliged to submit certified transcript of such a contract to the organ competent for public revenues calculation and collection. Solemnizing the sales contracts may also be done by the basic courts, only in the settlements of the RS where no notaries exist. The basic court shall keep special record on the real estate sales contracts over their territory. The special record shall contain: data on contractual parties, real estate, and the notary record of real estate transfer. All notaries have the right to view this special record [1].

The real estate market analysis answers the questions, including: What sort of market does the real estate enter when being sold and is there a sufficient number of buyers interested in that real estate at the given moment?; What is the current offer and demand for properties?; What sort of offer and demand may be expected in the near future?; What was the offer and demand earlier?; etc. The starting parameter for the real estate market analysis is the credibility of data and information. The present paper shall use the official sources of data on the real estate market exclusively, which are available from the registries of governmental institutions. The paper shall not use data from other sources, including: real estate sales listings, realtors, etc.

2. OFFICIAL SOURCES OF DATA FROM THE REAL ESTATE MARKET

As a special organ of public administration, the Republic Geodetic Authority (RGA) keeps the Property Price Register (PPR) since 2012 and holds the greatest volume of information regarding the properties conveyance on the real estate market in the RS. The public access to the PPR is available since November 2014 and provides for selective overview of the data from the real estate sales contracts and real estate lease contracts. The contracts are submitted by the organs competent for solemnizing the contracts: notaries and basic courts. Thanks to the PPR, the interested users of the PPR data are able to make the decisions based on the real estate market data, previously verified by the competent persons from the RGA.

The National Corporation for Housing Loans Insurance (NCHLI) is the corporation that provides insurance for the loans granted by the banks to natural persons for buying, refurbishing or building properties. The loans are secured by a mortgage and the NCHLI keeps the database entitled DOMex. The DOMex is the database containing the data on sales prices for residential properties - apartments and houses over the entire territory of Serbia. This is a unique indicator of the price trends per m² of residential properties per regions, areas and municipalities [2]. The DOMex contains the data on real estate type, floor area, municipality where the real estate is located and the moment of real estate transfer. These are the data on actual sales prices, not the prices advertised by the realtors. The shortcoming of this database is that it does not contain the data on sales prices for the properties financed in cash or non-insured loans, which indicates a serious deficiency against the PPR.

The Serbian Statistics Office (SSO) is a special professional organization in the public administration system of the Republic of Serbia that performs statistical research. The SSO performs acquisition, methodology development, processing, statistical analysis and publishing of statistical data, including the data on real estate market situation. Regarding

the real estate market, data publishing covers the average prices of newly constructed apartments' sales (per average floor area) per municipalities, number of apartments completed at the RS level, building permits issued; unfortunately, this does not include the real estate price trend index. The SSO monitors the inflation rate in the RS at the annual level, and the retail price indexes are used as the official measure of inflation since January 2009 [3].

Data on the real estate transfer are available in the Republic of Serbia from the Valuation Database under competence of the National Bank of Serbia. Unfortunately, data from this database are available to the banks and licensed real estate appraisals only, that are the registered database users. Public access is not available, which indicates that this database cannot be used by the persons that are not the registered users for the purpose of real estate market analysis [4].

3. PROPERTY PRICE REGISTER

In 2011, pursuant to the Law on State Survey and Cadastre, the Republic Geodetic Authority had extended the list of competences by adding real estate valuation and value registration. In 2014, the RGA had passed the "Rulebook on Real Estate Valuation". The real estate value is being determined on the real estate market. The real estate market is the "place" where the interested buyers and sellers meet, and where the property rights are exchanged for moneys or other appropriate goods. The "real estate market price" is a monetary amount exchanged for the purpose of particular real estate transfer [5]. The main issues of the developing market are transparency and instability. One of the prerequisites for a market to be stable, open and competitive is: "the real estate market data need to be collected in a single register with national and full coverage that will be available to the public." [6] For the purpose of achieving the market transparency, the RGA had developed the "Conveyance Register" system, which keeps the record of real estate market prices. The Republic Geodetic Authority had provided for a direct submission of real estate sales contracts. This had provided for up to date and permanent recording of prices and other data on market conveyances completed [7]. The first public registry over the territory of the RS providing the foundation for obtaining a true picture of the real estate market and its trends is available at the RGA's official page. Data from the PPR for the entire territory of the RS are available since November 2014. The database contains the data from the real estate sales contracts and real estate lease contracts [8].

The data collected are used for performing spatial analyses of the real estate market. Spatial analyses define value zones. Value zones are the territories where properties have approximately the same unit prices. Unit price is price per floor area unit or another established unit of real estate. Value zones indicate the basic characteristics of the real estate market. The PPR database is available for public viewing and for viewing by the "professional users".

The public viewing provides for free viewing of the PPR data. All of the data are shown graphically with approximate geo-locations. Public viewing of the PPR data is for information purposes only; it does not cover all territories, data are updated monthly, locations are approximate per streets or cadastral municipalities, and one search provides results for a maximum of 250 conveyances from the time range defined, without guarantee that the search results would cover all conveyances made. The public viewing option

provides filters for selecting conveyance date, political municipality and cadastral municipality, as well as the conveyance type (Fig. 1).

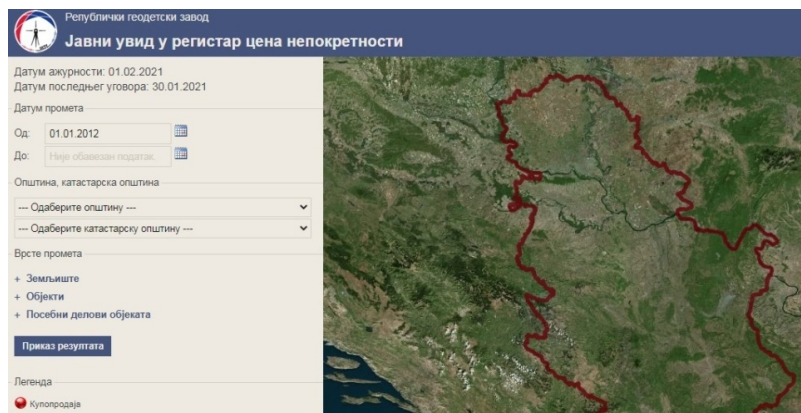


Figure 1: Public view of the PPR data

Selection of conveyance type includes: land, constructions and parts of constructions. For land, user may select: construction; agricultural; forest; other land and water land. For constructions, user may select: housing; business; industrial and warehouses; garages; agricultural constructions; special-purpose constructions; auxiliary constructions. Selection for parts of construction includes: apartment; office/shop; industrial premises; other premises and garage spot. After selecting the filters, the map pans to the location selected.

The conveyances completed indicate price and currency, conveyance date, floor area, real estate type and type of legal affair. For a given location, there are three options of presentation:

- Single contract and single real estate under conveyance;
- Single contract with a list of multiple properties under conveyance including description of each real estate;
- Multiple contracts (per location) showing the list of conveyances with individual descriptions.

The Property Price Register option "professional user" provides for the users to independently create the reports from the Register via web application. The request for data issuance has to stipulate parameters they wish to obtain, and the fee for data issuance is paid according to these parameters. The fee is stipulated in the Rulebook on RGA's Fees. Data issuance through the "professional user" option had started in April 2018. The applicants include banks, court expert witnesses, real estate appraisals, realtors, and other organizations that hold the appropriate legal interest for doing so.

4. AGRICULTURAL LAND CONVEYANCE

The real estate market in the Republic of Serbia has an exceptional regional non-uniformity both regarding the conveyance volume and the most common type of properties

under conveyance, average prices, payment methods, etc. Overview of the real estate market status reports that the RGA publishes on its website (quarterly, semi-annual and annual reports) [8] since 2014 indicates that some of the highest average prices of the agricultural land in the Republic of Serbia have in fact been achieved in the AP Vojvodina. The reasons for that should be sought for in the soil quality, infrastructure availability, investment planning and other socio-economic factors impacting the increase of market demand. The reports on real estate market status by the RGA are descriptive in nature. The reports include descriptive statistics on: volume of data from the real estate market (per regions, municipalities), type of legal affair and properties under conveyance, together with graphical overview of these data. Descriptive statistics cover: land market, construction market and part of construction market.



Figure 2: Administrative districts in AP Vojvodina with district centers

The descriptive statistics available in the Reports on Agricultural Land Conveyance provide for extracting the data for the AP Vojvodina region consisting of seven administrative districts (AD) with different areas (Fig. 2). The analysis shall cover the statistical parameters of the agricultural land price for cadastral culture: arable field. The average agricultural land area under conveyance over the territory of Vojvodina is 1.7 hectares. Statistical parameters in the reports are presented in thousand EUR per hectare, for dataset with areas under conveyance exceeding 10 ar. The number of conveyance contracts for each AD has been obtained from the annual reports available at the RGA's webpage as of February 2, 2021 and shown in Table 1.

Table 1: Overview of the total number of contracts with area under conveyance exceeding 1.7 hectares

Administrative District (AD)	AD area km ²	2014	2015	2016	2017	2018	2019	Sum of contracts	FC1	FC2
	0	1	2	3	4	5	6	7	8	9
WEST BAČKA	2420	2182	3393	3442	3912	3483	3162	19574	9	12
SOUTH BANAT	4245	5177	4129	2148	4361	5493	5117	26425	13	9
SOUTH BAČKA	4016	8650	6775	9553	13855	14304	13018	66155	31	24
NORTH BANAT	2329	2362	2534	1490	2953	3347	3039	15725	7	10
NORTH BAČKA	1784	3488	4171	4648	4689	4509	3918	25423	12	21
CENTRAL BANAT	3256	3673	4157	3846	4496	4196	4080	24448	12	11
SREM	3486	3996	5317	5407	6452	6475	5920	33567	16	14

Frequency coefficient (FC) for the market transactions is in the category of relative values. Calculating this coefficient is relevant, provided that the results obtained would be analyzed dynamically, and combined with other statistical values. Obtaining this coefficient at the end of each reporting period reveals *precondition for the new transaction on the market*. Statistical recommendation for calculation is in the 5 year period, using the formula:

$$FC1 = x_i \frac{n}{\sum x_i} \quad (1)$$

where: *FC1*- frequency coefficient; x_i - quantitative indicator during reporting interval; $n=100$ - reference level.

For the period of 2014 - 2019, the contracts per AD in Vojvodina are summarized in column (7), Table 1. Frequency coefficient *FC1* was calculated for each AD, at the level of $n=100$ contracts, column (8). Noting that AD's have different areas, the frequency coefficient *FC2* should be calculated with different weights accounting for the AD area, P_i , column (9)

$$FC2 = x_i \cdot \frac{1}{P_i} \cdot \frac{n}{\sum x_i \frac{1}{P_i}} \quad (2)$$

Frequency coefficient *FC2*, at the level of $n=100$ is shown in column (9).

First of all, the land is limited natural resource serving many purposes of importance for humans. By introducing the AD area in the frequency coefficient calculation, we had reached the conclusion is that North Bačka AD follows South Bačka AD with the greatest interest in the real estate market, despite the smallest area of 1784 km². North Bačka administrative district is situated in northern Vojvodina and consists of three municipalities: Subotica, Backa Topola and Mali Idjos. The district center is in Subotica. Agricultural land covers nearly 90 % of its territory.

Now we observe the prices achieved from the agricultural land sales contracts for cadastral culture ARABLE FIELD, AP Vojvodina region, obtained from the annual reports on the real estate market situation published on the RGA's website. Table 2 shows prices achieved in thousand EUR/ha, with the highest frequency in the contracts ("*MODUS*"). Outliers (minimum and maximum) of prices achieved in real estate transfer are not appropriate for the analysis and deducting general conclusions on price trends on the real estate market under the analyses shown in this paper.

Table 2: Overview of the prices in thousand EUR/ha for the agricultural land conveyance (taken from the Annual Reports: value "*MODUS*")

Administrative district (AD)	Area km ²	2014	2015	2016	2017	2018	2019
	0	1	2	3	4	5	6
WEST BAČKA	2420	5.2	6.9	8.7	5.2	10.5	10
SOUTH BANAT	4245	8.7	7	2.1	6.95	5.2	5.2
SOUTH BAČKA	4016	10.4	13.9	13.9	14	12.2	14
NORTH BANAT	2329	4.3	7	6.95	6.95	10.5	7
NORTH BAČKA	1784	6.1	10.4	8.7	10	10.5	10.5
CENTRAL BANAT	3256	4.3	6.9	6.9	6.95	6.95	10
SREM	3486	10.4	10.4	8.7	10.45	10.45	10.45

Table 2 shows that the greatest prices over the period of 2014 - 2019 were noted in South Bačka AD. However, since market transactions do not occur simultaneously, we need to consider the fact of the time dimension of the money, i.e. the fact that the amounts over different periods are incomparable, thus need to be reduced to the same moment in time. The concept of temporal valuation of money is one of the fundamental concepts in the modern financial management and analysis theory. The question arises:

- Has the value of money invested in purchase in 2014 changed and by how much, proportional to the time period considered, i.e. in 2019.
- or
- What interest rate would make the price from 2014 equal to the price in 2019 (interest rate in the table is shown as %).

Finding the answer starts from the expression for temporal value of money, known as Cash Flow in the economy. Temporal dimension assumes connection between future and present value of money. Analyzing the future value of money (investment) provides for the investors to make the decision on making or withholding the subject investment. Investing in real estate is certainly considered a long-term investment and each investor expects profit from such an investment. The future value (FV) of money is the value of the initial sum of money (capital) in a future moment in time. The key for understanding the future value of money (capitalization) is the simple interest term.

$$FV = PV \cdot (1+i)^n \quad (3)$$

where: INTEREST FACTOR = $(1+i)^n$; n – number of years.

The analysis to be performed uses the assumption that the interest rates are nominal and that the money has the same purchasing power over time as a starting point. To obtain the nominal interest rate that fits the prices shown in Table 2 for the period 2014 - 2019, the expression (3) is resolved per i:

$$i = \sqrt[n]{\frac{FV}{PV}} - 1 \quad (4)$$

Table 3 contains calculated values of interest rates where the present value of prices achieved in thousand EUR/ha ("MODUS") for each year over the period 2014 - 2018, equalizing it with the agricultural land price achieved in 2019 ("MODUS").

Table 3. Values of nominal interest rates (i %) equalizing the prices achieved over previous years (period 2014 -2018) with the price in 2019

Administrative district (AD)	AD no.	2014	2015	2016	2017	2018	2019
		1	2	3	4	5	6
WEST BAČKA	1	14.0	9.7	4.8	38.7	-4.8	
SOUTH BANAT	2	-9.8	-7.2	35.3	-13.5	0.0	
SOUTH BAČKA	3	6.1	0.2	0.2	0.0	14.8	
NORTH BANAT	4	10.2	0.0	0.2	0.4	-33.3	
NORTH BAČKA	5	11.5	0.2	6.5	2.5	0.0	
CENTRAL BANAT	6	18.4	9.7	13.2	20.0	43.9	
SREM	7	0.1	0.1	6.3	0.0	0.0	

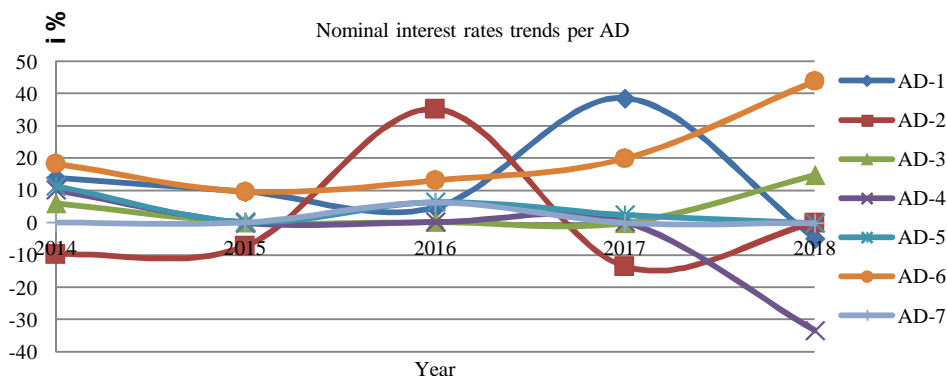


Figure 4: Diagram of interest rate trends per AD's of AP Vojvodina over the period of 2014 – 2018, reduced to 2019

Analysis of nominal interest rates shows that the values of prices achieved ("MODUS") for agricultural land with cadastral class arable field over the territory of North Bačka AD in thousand EUR/ha are stable over the period 2014 - 2019 and it is expected that this trend would continue in 2020. At the same time, it is notable that Central Banat AD is characterized by constant growth of agricultural land prices over the period from 2014 to 2019, along with the rapid and major decline in prices in North Banat AD starting in 2018 (Figure 4). It certainly would not be professional to draw conclusions on the agricultural land market situation solely based on the simple analysis of the nominal interest rates. This is the indicator that something happens on the very market, which may be an indicator for the investors to examine the reasons for such events to occur in the market prior to investing their money in the area of interest.

Unfortunately, valuation of real payments is done by adjusting nominal cash values by expected rate of inflation. Cash amounts need to be calculated by real interest rate. Starting point of the analysis above is that the interest rates are nominal and that the money has the same purchasing power over time (there is no inflation over the observed period from 2014 to 2019). However, under the inflation conditions, purchasing power of cash decreases over time proportional to the inflation rate and must not be neglected by any means when performing cash flow analysis. Consumers and investors are interested in real purchasing power or value of money due to the inflation. If money loses its real value over time and its purchasing power decreases, return on capital and investment becomes devalued, which poses a risk if the expectations from the investment could be realized. The question arises:

- How to check if previously calculated nominal interest rate is proportional to the inflation rate over the period in question, i.e. what is the real interest rate over the period observed?

For this interest rate to be real, it is adjusted by the inflation rate of subject period, i.e. the rate of increase of the purchasing power of investments, calculated according to the Fisher's formula [9].

$$\text{Real interest rate} = (1 + \text{nominal interest rate}) / (1 + \text{inflation rate}) \quad (5)$$

A simpler way to obtain the real interest rate is to determine difference between nominal interest rate and inflation rate.

$$\text{Real future value of investment is =} \\ \text{initial investment} \times (1 + \text{nominal interest rate}) / (1 + \text{inflation}) \quad (6)$$

The consumers price index is published by the Serbian Statistics Office calculating the rate of inflation in the RS. The indexes are published per main groups of products and services classified per consumption uses. The groups considered are: Housing, water, power supply, gas and other fuels; Food and non-alcoholic beverages; Alcoholic beverages and tobacco; Health care; Recreation and culture; Furniture, household items and current maintenance of dwelling; Clothing and footwear; Restaurants and hotels; Communication and transport. Overview of the database of the Serbian Statistics Office [4] indicates that the information about the change of agricultural land price cannot be obtained, since Land market, Constructions market and Parts of constructions market is not included in the statistical analyses in the SSO's database, and the annual inflation rate for the period from 2014 to 2019 are not available. Other formal sources of price trends in the real estate market (RGA, NCHLI, NBS) similarly do not provide the data on price trends for agricultural land in the RS.

5. CONCLUSIONS AND REMARKS

Immovable property is the most conservative type of capital that is always of interest for everyone, regardless of social status, cultural or economic field. Regardless of the social structural changes, the immovable property remains a significant and presently collectively considered most secure mode of investment and the most acceptable indicator of credibility and solvency [10]. The real estate market analysis may assist in pinpointing the market changes and making significant decisions regarding the investment in real estate. Data on past sales will show the picture of the market only if such sales have been agreed upon, instead of being subject to factors impacting such sale (sale between relatives, mortgage sale, bankruptcy sale, etc.).

Finding the data on properties and state on the real estate market is important; however, knowing how to analyze those data is of much greater importance. Simply having the data may not mean anything without showing how those data yield conclusions, for instance on real estate value, market trends, attractive locations, etc. For instance, the real estate appraisals may do an exceptional work when collecting the market information, yet do not know how to handle those data afterwards; while others are good in analysis, yet do a poor job in research and data acquisition. The introduction had noted that the authors had opted to base the conclusions on the data sources available from the governmental institutions; however, it is clear that the data from other sources also need to be considered - both formal and informal - with major caution regarding the credibility of the acquired information. Transformation from analog to digital world of information had majorly changed the present way of life. Covid 19 epidemics had certainly impacted all walks of life, including the real estate market trends. Its impact on the real estate market needs to be analyzed in the following years. A time distance needs to be established prior to making conclusions on the epidemic consequences.

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АТРАКТИВНОСТ УЛАГАЊА У НЕПОКРЕТНОСТИ НА ТЕРИТОРИЈИ СЕВЕРНОБАЧКОГ ОКРУГА

Резиме: *Тржиште непокретности у Републици Србији одликује изражена регионална неравномерност како у погледу обима промета, тако и у погледу најзаступљенијих врста непокретности у промету, просечних цена, начина плаћања и др. Међу највишим просечним ценама пољопривредног земљишта у Републици Србији су цене остварене у Севернобачком управном округу. Разлоге за то треба тражити у квалитету земљишта, инфраструктурној повезаности, планирању инвестиција и у другим социјално-економским факторима који утичу на повећану тражњу на тржишту. У раду ће бити анализирана атрактивност улагања у непокретности на територији Севернобачког округа и извршено поређење са тржиштима непокретности у географски, економски и демографски сличним окрузима.*

Кључне речи: *јавни приступ, тржиште непокретности, регистар цена непокретности*