

## ANALYSIS OF THE REAL ESTATE MARKET IN ROMANIA FROM THE POINT OF VIEW OF THE NUMBER OF TRANSACTIONS DURING 2009-2018

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**Abstract:** During the years 2009-2018, at the same time with the minimum interest rates, the increase of the gross disposable income and the GDP/inhabitant, the real estate investments became the safest. In the absence of an integrated database that raises the transparency of the real estate market in Romania, the main indicators are statistics on the dynamics of transactions and demographic indicators. This study involves a comprehensive analysis and correlation of statistical data to determine the links that contributed to the dynamics of the Romanian real estate market during 2009-2018. Without going through the extensive list of causes that have contributed to the dynamics of the market, a number of factors such as legislative, technological, demographic, micro and macroeconomic, attest that the level of real estate transactions can represent a good indicator of the economic situation. Once the Romanian economy showed signs of recovering from the last international economic crisis, and the purchasing power increased, the volume of real estate transactions began again. During the analyzed period, despite the fluctuation of the number of transactions, annually, the obtainable price of the properties increased fluctuating. However, the dynamics of transactions in 2018 fell below the values before the economic crisis.

**Keywords:** Romanian real estate market, Statistical data, Real estate indicators, Demand analysis, Supply analysis.

**JEL Classification Codes:** A13, B49, C13.

### 1. INTRODUCTION

During the years 2009-2018, minimum interest rates and lower yields on other asset classes encouraged the real estate market. Real estate investments have become the safest, and taxes and fees collected as a result of real estate transactions have been an important source of income for the budgets of the states of the European Union (EU). However, worldwide, the real estate market is receiving favorable tax treatment. Thus, the real estate market can be described as imperfect and inefficient compared to other financial markets. Some of these reasons are their own characteristics, which include variables such as the small number of participants and transactions compared to other markets. Other reasons are extrinsic and there is no doubt that tax treatment is one of them (Meliveo, 2014; Oprea et al., 2013; Hogan, 2017).

Before 2008, house prices were characterized by a long and unprecedented growth, manifested in most of the states of the European Union. This expansion was accompanied by



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large increases in the volume of construction and lending products. Since then, price correction in EU Member States has been uneven. In some Member States, especially in Ireland and Romania, real house prices fell by more than 50% in the first years after the international financial crisis. In Belgium, Luxembourg and Sweden, on the other hand, prices have barely adjusted or have continued to keep up. As the economic recovery gained ground, demand increased proportionately, and housing prices appreciated in most Member States in 2016 (European Commission, 2017).

The analysis carried out by Kiyilar and Hepşen (2010, pp. 416-425), entitled *Analyzing the housing market structure in Romania and Turkey under the global financial crisis effect*, shows that in 2009 the housing stock in Romania maintained its tendency ascending and reached 8.4 million dwellings. According to the type of property, in the existing stock at the end of 2009, the largest share is held by the dwellings that are privately owned (97.7%). On the other hand, in that year, 62,520 houses were completed, respectively by 4,735 less than the previous year, (INS, 2010). According to the register of public notaries in Romania, the number of transactions with properties in 2009 was approximately 352,518; that is, it fell by 27.28% compared to 2008 as a result of the global economic crisis.

Both the residential construction market and the housing market have suffered corrections as a result of the global economic crisis, and housing prices have decreased by 18.7% between 2010 and 2014. From 2014 to 2016 prices have increased by 9, 0%. At the same time, the number of residential constructions permits issued significantly decreased after 2009. Problems related to housing accessibility and improving living conditions were stimulated through programs such as the First House, thermal rehabilitation projects or the allocation of social housing for young people, for rent, respectively. acquisition through mortgage products. On the other hand, the real estate market has been under considerable pressure by reducing investments in infrastructure projects, poor absorption of European funds or interpretable public procurement programs (European Commission, 2018).

Moreover, at the end of 2013, there was a major discrepancy between the capital of Bucharest and the rest of the regions in Romania regarding the distribution of foreign direct investment flows (FDI). Compared to the other regions in Romania, the capital attracted the highest percentage of investors - 60.60%, while the South-West (Oltenia) and North-East (Moldova) regions were at the opposite pole, with 3.5% and 3% respectively. However, the development of the business infrastructure network may generate a change in this distribution. Last but not least, demographic factors influence the processes that affect the real estate market. Age influences the decision to make a real estate purchase. In most cases, a person or couple decides to buy a property at the age of 35-55, as this is considered the moment when they reach emotional and financial stability to make a long-term investment (Anghel and Poenaru, 2014).

The report published in 2018 by the Urban Land Institute (ULI) together with PricewaterhouseCoopers (PwC) shows that in the Romanian real estate market there has been a constant increase in the prices of real estate assets. However, the volume of transactions and prices in 2008-2018 are between 30% and 40% below the values before the economic crisis. The analysis based on the opinions of over 800 real estate professionals in Europe, including investors, developers, creditors and advisers, shows that there is still room for higher real estate asset prices in Romania. Residential stands out in this regard, seven of the top ten favorite sectors for investment and development, including a form of housing.

Real estate advisers Ernst & Young show that, starting in 2019, investors have focused on opportunities in top locations, but are also trying to target assets in secondary locations and in other European Union states such as Romania, Slovakia or Hungary. Although the effect of

government policies on the Romanian economy is a subject studied as a whole, there are few studies on the effect of political strategies on the real estate market. This study involves a comprehensive analysis and connection of statistical data to determine the factors that contributed to the dynamics of the Romanian real estate market. Without going through the extensive list of causes that have contributed to the dynamics of the market, we can highlight several influencing factors such as legislative, technological, demographic, micro or macroeconomic. Therefore, the housing market plays an important role in the Romanian economy, and the level of real estate transactions can represent a good indicator of the economic situation.

## 2. DATA SET AND METHODOLOGY

The analysis aimed at the evolution of the Romanian real estate market in terms of the number of transactions during 2009-2018. To this end, using the Pearson correlation and linear regression as a research instrument, the coefficient of association between the dynamics of the real estate market with the number of the population after home, the gross disposable income and the GDP / inhabitant was measured.

The examination of the information regarding the total number of authenticated transactions (main real rights tabulation) during the period 2009-2018 (table no. 1) reveals the dynamics of each county in Romania. Thus, in 2009, most transactions were completed in Timiș county (38,636), followed by the capital of the country, with a difference of only 332 buildings. From 2010 to 2018 the highest percentage of transactions was made in Bucharest. In 2016, 86,274 ownership documents were authenticated, representing the maximum number of transactions for this time gap analyzed. Other counties with a high number of real estate transactions are Ilfov and Cluj counties.

**Table 1. The total number of authenticated transactions in Romania (main real rights tabulation) during 2009-2018**

| County/<br>Municipality | Year   |        |        |        |        |        |        |        |        |        |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                         | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   |
| Alba                    | 10.617 | 10.582 | 10.895 | 12.017 | 12.424 | 13.949 | 14.133 | 12.860 | 9.548  | 5.767  |
| Arad                    | 19.589 | 19.135 | 28.879 | 35.055 | 43.333 | 36.422 | 37.027 | 30.347 | 16.716 | 15.292 |
| Argeș                   | 13.443 | 13.872 | 14.968 | 15.659 | 18.516 | 18.110 | 20.631 | 17.800 | 14.679 | 11.032 |
| Bacău                   | 12.621 | 12.731 | 13.853 | 13.735 | 15.823 | 16.051 | 16.731 | 15.817 | 12.470 | 10.115 |
| Bihor                   | 19.919 | 21.454 | 23.084 | 25.864 | 37.224 | 36.243 | 36.168 | 33.047 | 15.717 | 13.632 |
| Bistrița Năsăud         | 6.208  | 6.485  | 6.118  | 6.766  | 6.352  | 7.136  | 7.898  | 7.783  | 7.998  | 7.949  |
| Botoșani                | 7.026  | 8.134  | 10.635 | 13.589 | 17.023 | 16.695 | 19.413 | 18.728 | 11.053 | 9.255  |
| Brăila                  | 20.863 | 18.406 | 20.373 | 21.225 | 25.900 | 20.184 | 19.509 | 18.356 | 8.863  | 7.997  |
| Brașov                  | 22.335 | 22.485 | 24.815 | 24.669 | 25.354 | 25.132 | 26.806 | 26.918 | 28.406 | 26.995 |
| București               | 38.304 | 44.822 | 46.929 | 52.643 | 58.871 | 67.500 | 83.312 | 86.274 | 82.477 | 83.066 |
| Buzău                   | 7.388  | 7.534  | 7.382  | 7.490  | 8.959  | 9.913  | 12.970 | 14.824 | 11.679 | 9.385  |
| Călărași                | 9.927  | 9.302  | 11.506 | 12.926 | 17.281 | 16.797 | 17.092 | 13.998 | 7.734  | 6.887  |
| Caraș Severin           | 13.626 | 11.381 | 13.892 | 12.717 | 17.301 | 15.797 | 14.249 | 12.985 | 3.615  | 5.056  |
| Cluj                    | 21.776 | 25.404 | 24.972 | 26.879 | 31.225 | 32.821 | 38.644 | 42.111 | 43.774 | 31.558 |
| Constanța               | 25.537 | 26.551 | 29.710 | 33.374 | 34.537 | 33.810 | 36.229 | 33.858 | 27.843 | 22.191 |
| Covasna                 | 7.542  | 7.001  | 7.486  | 7.495  | 8.054  | 7.792  | 7.736  | 7.422  | 4.529  | 4.312  |
| Dâmbovița               | 12.240 | 10.133 | 9.829  | 9.817  | 12.396 | 11.160 | 12.452 | 12.170 | 12.529 | 13.258 |
| Dolj                    | 12.988 | 11.943 | 14.047 | 16.040 | 24.656 | 32.090 | 35.116 | 29.608 | 15.644 | 14.951 |
| Galați                  | 11.866 | 13.598 | 16.378 | 16.805 | 20.539 | 22.246 | 22.072 | 21.963 | 13.088 | 12303  |
| Giurgiu                 | 8.065  | 7.233  | 9.195  | 11.081 | 11.229 | 10.814 | 10.724 | 10.418 | 7.473  | 6.090  |
| Gorj                    | 6.567  | 7.589  | 7.938  | 8.375  | 7.791  | 9.016  | 9.109  | 7.210  | 4.698  | 3.081  |
| Harghita                | 8.962  | 9.124  | 9.211  | 9.142  | 9.804  | 9.923  | 9.405  | 9.825  | 7.413  | 7.692  |
| Hunedoara               | 13.771 | 14.336 | 14.671 | 15.977 | 17.143 | 17.124 | 17.248 | 14.635 | 8.770  | 7.342  |
| Ialomița                | 8.851  | 8.682  | 8.879  | 9.060  | 11.476 | 9.557  | 9.793  | 8.179  | 7.011  | 5.471  |

|              |               |               |               |               |               |               |               |               |               |               |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Iași         | 16.881        | 18.564        | 19.214        | 20.412        | 22.274        | 22.915        | 25.587        | 28.548        | 31.357        | 23.801        |
| Ilfov        | 21.875        | 26.685        | 34.733        | 36.385        | 42.697        | 50.841        | 57.169        | 47.082        | 41.687        | 42.203        |
| Maramureș    | 10.238        | 10.577        | 10.916        | 11.040        | 11.202        | 11.117        | 12.321        | 11.502        | 8.985         | 9.760         |
| Mehedinți    | 5.909         | 6.238         | 6.681         | 6.602         | 10.600        | 11.516        | 9.151         | 7.805         | 5.905         | 5.005         |
| Mureș        | 13.024        | 13.726        | 16.066        | 19.901        | 20.776        | 17.318        | 18.300        | 15.479        | 9.843         | 10.442        |
| Neamț        | 9.382         | 9.946         | 11.446        | 12.793        | 14.514        | 15.202        | 15.953        | 15.090        | 11.183        | 9820          |
| Olt          | 6.029         | 5.983         | 7.880         | 9.634         | 13.001        | 11.302        | 13.915        | 13.032        | 7.021         | 3.190         |
| Prahova      | 16.199        | 15.091        | 15.804        | 16.135        | 18.763        | 18.961        | 18.837        | 18.462        | 16.539        | 15.058        |
| Salaj        | 7.158         | 7.150         | 6.801         | 7.427         | 8.769         | 8.690         | 9.656         | 8.535         | 3.920         | 4.053         |
| Satu Mare    | 11.603        | 11.579        | 11.726        | 12.291        | 13.803        | 13.547        | 13.935        | 13.417        | 10.992        | 11.199        |
| Sibiu        | 16.838        | 16.763        | 17.692        | 18.140        | 21.141        | 22.059        | 23.570        | 21.627        | 10.057        | 9.398         |
| Suceava      | 16.418        | 15.862        | 18.939        | 21.464        | 25.482        | 25.333        | 28.255        | 26.827        | 18.112        | 16.284        |
| Teleorman    | 3.757         | 3.789         | 4.404         | 4.429         | 5.155         | 7.335         | 10.141        | 10.652        | 4.470         | 5.906         |
| Timiș        | 38.636        | 31.210        | 38.214        | 46.458        | 50.144        | 41.006        | 40.618        | 39.934        | 35.068        | 34.575        |
| Tulcea       | 9.274         | 8.988         | 10.877        | 12.489        | 17.083        | 15.858        | 16.634        | 13.164        | 5.689         | 3.992         |
| Vâlcea       | 6.840         | 7.260         | 7.730         | 7.912         | 9.829         | 9.714         | 9.300         | 9.117         | 6.223         | 5.994         |
| Vaslui       | 7.514         | 7.732         | 9.531         | 11.103        | 14.106        | 10.583        | 11.545        | 9.741         | 7.401         | 5.740         |
| Vrancea      | 10.448        | 10.085        | 11.223        | 11.347        | 13.030        | 14.738        | 15.174        | 14.094        | 9.623         | 6.404         |
| <b>Total</b> | <b>570063</b> | <b>577155</b> | <b>647533</b> | <b>706374</b> | <b>827593</b> | <b>826331</b> | <b>886543</b> | <b>833260</b> | <b>629819</b> | <b>565519</b> |

Source: National Agency for Cadastre and Real Estate Advertising

The fewest transactions during 2009-2013 were performed in Teleorman county, and after 2014 in Bistrița Năsăud, Covasna, Gorj and Caraș Severin counties. The lowest figures were registered in 2018 in Gorj County (3,081 transactions).

### 3. RESULTS AND DISCUSSIONS

Although these data highlight the life span of market areas in a general way, they cannot be used as a specific picture of market trends. Some real estate markets, such as those in Bucharest, Ilfov or Cluj, are continuing their upward trend, and the decline is not necessarily imminent.

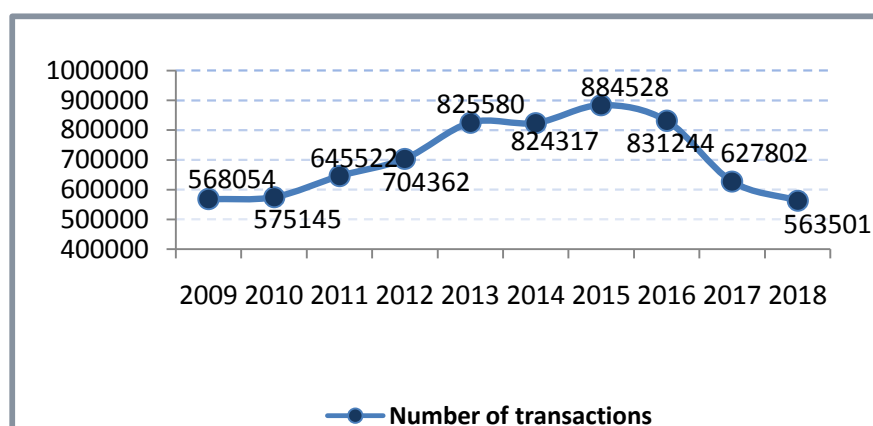


Figure 1. Dynamics of annual transactions during 2009-2018

The revival of the market started in 2009 was the consequence of one of the first anti-crisis measures adopted by the Government of Romania. It was implemented on May 20, 2009 and consisted of the launch of the First Home program. The main purpose of the government program was to relaunch a priority economic area of the country, namely the real estate sector, after it suffered a crash in 2008, a reaction to the global economic crisis. In this regard, the Romanian state has committed that through the First House Guarantee Fund to guarantee as a percentage the credits granted by the banks participating in the program.

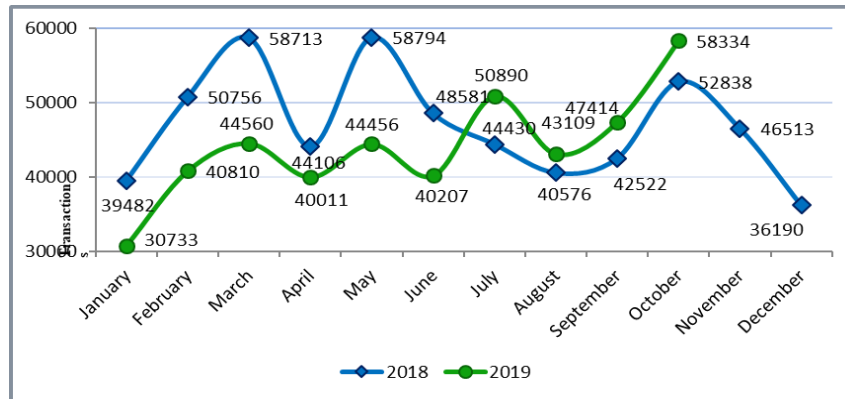
Thus, the persons who purchased a first home were the beneficiaries of accessible credit offers. For loans accessed to purchase old homes, the state has guaranteed 40% of the amount, and for loans taken for new buildings by 50%. The resulting amount was provided by the First Home Guarantee Fund. Regarding the amount perceived as an advance to the buyers, this was in principle set to a minimum 5% (compared to 15% - 25% in the case of ordinary real estate loans) of the total price. One of the lending conditions has been established so that the value does not exceed a certain ceiling amount, the threshold periodically modified over the life of the program. As a result, during 2009-2015, a number of 130,000 guarantee contracts were recorded, with a loan value of about 5 million euros.

After 2016, it was proposed that the funds allocated to the program be gradually reduced, being appreciated that the First House program has reached its initial purpose, that of revitalizing the real estate sector. In 2019, in order to reduce the risk of overheating of the real estate market, the government program had a ceiling reduced to two million lei. The budget for 2019 was thus reduced by half a million lei compared to 2018, which means that in 2019, a maximum of 20,000 housing units can be purchased by the end of the year, a number with a lower 5,000 compared to 2017.

As expected, from the data analysis, in the 42 areas, there was a major discrepancy between the capital of Bucharest and the rest of the counties. Of the 7,050,055 transactions concluded between 2009-2018, a percentage of 9.1% was realized in Bucharest, followed by Ilfov (5.7%) and Timiș (5.6%). The minimum number of contracts executed were in Bistrița-Năsăud, Covasna and Teleorman counties (0.9-1.0%). Comparatively, in Teleorman county 93% less main real rights were transferred than in Bucharest.

This dynamic can be individualized according to the distribution of the flows of foreign direct investments, demographic trends, business infrastructure, etc. In some situations, non-uniformity may simply be due to a change in people's preferences and lifestyle and not necessarily to a planned development program. Thus, in a relatively stable county, the rapid increase of prices in a certain locality or neighborhood, can affect the other areas in the opposite proportion. However, a city can grow until its center can no longer be easily accessible to more and more remote neighborhoods, and as a result the need for new business centers will be evident.

From figure 2, we observe the oscillating dynamics of the authenticated transactions between 2018 and 2019, depending on the period of the year. During the comparative period, the least transactions were made in January, April, August and December 2018. A large number of sales were recorded in March, May and October 2018, respectively March, May, July and October 2019. This dynamic of the transactions is due to the fact that the winter months and the April-May period include a large number of holidays, during which the consumption is found in a high percentage of the population's expenses. The expenses for August are for the purchase of tourist packages, compared to March, May, October, when we find the largest number of properties traded. This state shows that the value of real estate is created and mainly supported by the extrinsic factors of the real estate market.



**Figure 2.** *The monthly dynamics of transactions during 2018-2019*

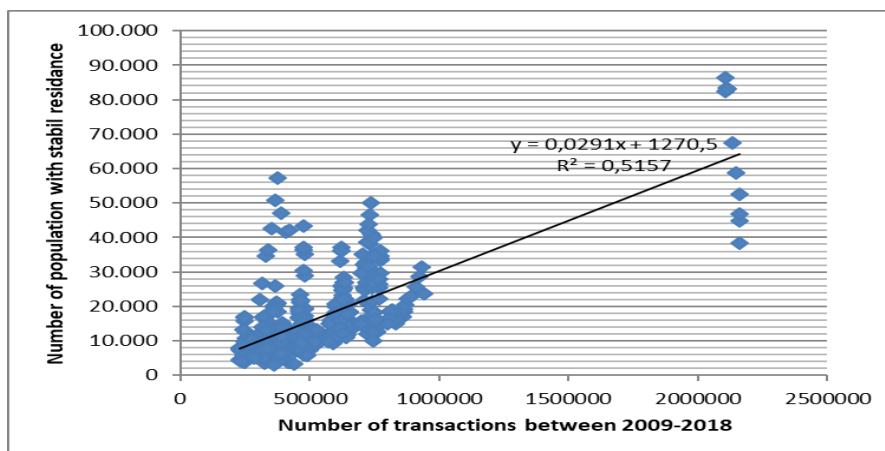
We consider a correlation and regression analysis useful to measure and describe the degree of linear association between the number of real estate transactions and the normally distributed continuous quantitative variables. The variables considered for the analysis are the number of persons residing in Romania, GDP/inhabitant and the gross income available for the period 2009-2018.

Thus, a database was set up with 420 records representing the dynamics of real estate transactions and the number of population by domicile for each county (market area) plus the Municipality of Bucharest. The database was established for each year of the analysis interval. We obtained a correlation coefficient (table 2) from which it follows that the number of real estate transactions is influenced to a large extent by the number of the population with the permanent residence in a county, respectively the Municipality of Bucharest.

**Table 2.** *Correlation between the number of transactions and the population with the residence in Romania during 2009-2018*

|  | Population living in Romania | Dynamics of real estate transactions 2009-2018 |
|--|------------------------------|--|
| Population living in Romania                   | 1                            | -  |
| Dynamics of real estate transactions 2009-2018 | 0,718133                     | 1  |

In the figure no. 3 is presented the regression equation that highlights the connection between the number of transactions and the population number with the permanent residence.



**Figure 3.** *The dynamics of transactions in relation to the number of the population with the permanent residence*

To deepen the analysis, the correlation between the number of real estate transactions and the gross disposable income, as well as the GDP / inhabitant during 2009-2018 was tested. A very low correlation was observed between the two variables and it resulted that the number of transactions was influenced by other variables.

**Table 3a. The result of the regression between the number of real estate transactions and the population residing in Romania**

| SUMMARY OUTPUT               |          |
|------------------------------|----------|
| <i>Regression Statistics</i> |          |
| Multiple R                   | 0,718133 |
| R Square                     | 0,515714 |
| Adjusted R Square            | 0,514556 |
| Standard Error               | 212247,6 |
| Observations                 | 420      |

**Table 3b. The result of the regression between the number of real estate transactions and the population residing in Romania**

| ANOVA               | <i>df</i> | <i>SS</i>             | <i>MS</i>     | <i>F</i>       | <i>Significance F</i> | -                | -                  | -                  |
|---------------------|-----------|-----------------------|---------------|----------------|-----------------------|------------------|--------------------|--------------------|
| Regression          | 1         | 2,01E+13              | 2,01E+13      | 445,127        | 8,32E-68              | -                | -                  | -                  |
| Residual            | 418       | 1,88E+13              | 4,5E+10       | -              | -                     | -                | -                  | -                  |
| Total               | 419       | 3,89E+13              | -             | -              | -                     | -                | -                  | -                  |
| <i>Coefficients</i> |           | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i>      | <i>Upper 95%</i> | <i>Lower 95,0%</i> | <i>Upper 95,0%</i> |
| Intercept           | 235494,2  | 17485,32              | 13,46811      | 1,36E-34       | 201124                | 269864,3         | 201124             | 269864,3           |
| X Variable 1        | 17,70735  | 0,839289              | 21,09803      | 8,32E-68       | 16,0576               | 19,3571          | 16,0576            | 19,3571            |

In the tables no. 3a and 3b presents the positive result of the regression between the number of real estate transactions from 2009-2018 and the population residing in Romania. At the same time, the connection between the variable GDP/inhabitant, the gross disposable income and the number of real estate transactions was tested. An R Square close to 0 was observed, indicating that there is no connection between the variables considered.

#### 4. CONCLUSIONS

Given that Romania is part of the emerging economies and is predisposed to experiencing extreme cycles of the real estate market and, as a result, being part of the countries vulnerable to severe crises, it has been determined that a market evaluation study will be carried out during 2019 real estate through the number of transactions between 2009-2018.

In the absence of an integrated database that raises the transparency of the real estate market in Romania, the examination of the evolution of the number of transactions reveals the life span of the market areas and their dynamics. Thus, after the growth periods of 2013, respectively 2015, the total number of authenticated transactions is lower by 4,553 units in 2018 compared to 2009. During the analyzed period, it was determined that the dynamics of real estate transactions was influenced to a certain extent large by the number of the population with a permanent residence in a county, respectively the Municipality of Bucharest. Alternatively, the dynamics of the real estate market during this period was not influenced by the gross disposable income, as well as the GDP / inhabitant.

There was also a successive increase in the number of transactions on the markets in Bucharest, Ilfov or Cluj. One of the hypotheses is determined by the major discrepancy between these markets and the rest of the regions in Romania regarding the distribution of foreign direct investment flows.

To a large extent, the business cycle is the credit cycle and, in an attempt to restore the optimal liquidity of the real estate market, in the future both the improvement of the macro-prudential policies and the elaboration of the banking assessments with accuracy are necessary. At the household level, prudent debt and the correct management of financial resources are recommended.

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