

## ИНВЕСТИЦИОННА ПРИВЛЕКАТЕЛНОСТ НА ЖИЛИЩНИТЕ НЕДВИЖИМИ ИМОТИ В ГРАД СОФИЯ

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**Резюме:** Настоящото изследване е посветено на пазара на жилищни недвижими имоти в град София. Обсъдени са някои възможности за оценка на възвръщаемостта на инвестициите в три от най-широко разпространените видове жилищни недвижими имоти – едностайни, двустайни и тристайни жилища по квартали на град София. Извършен е сравнителен анализ както в статика според локацията на жилищата, така и в динамика чрез съпоставка с минал период. За групите на най-атрактивните локации са разработени графики за динамиката на възвръщаемостта по месеци в рамките на едногодишен период, от които е възможно да се установи наличието на сезонност в изменението на изучавания показател. Използвани са масови данни с максимална актуалност, отговарящи на изискванията за изчисляване на надеждни сводни характеристики. Изведени са основни приоритети и закономерности с полезност за теорията и за практиката.

**Ключови думи:** жилищна недвижима собственост, инвестиции, възвръщаемост

**JEL:** C14, G11, R3

## INVESTMENT APPEAL OF RESIDENTIAL REAL ESTATE PROPERTY IN THE CITY OF SOFIA

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**Abstract:** The current study is focused on the residential real estate property market in the city of Sofia. It examines different options for assessment of investment return on three of the most widespread types of residential housing property – studios, one-bedroom and two-bedroom flats – by residential district in the city of Sofia. A

comparative static analysis has been performed according to housing location as well as a dynamic analysis in relation to a past period. For the groups of the most appealing locations, graphs have been plotted of investment return dynamics per month, for a one-year period, which reveal the seasonal character of the changes in the indicator examined. The most recent mass data are used, meeting the requirements for calculating reliable unifying characteristics. Major priorities and objective laws have been worked out, benefiting both theory and practice.

**Key words:** residential real estate property, investments, return

**JEL:** C14, G11, R3

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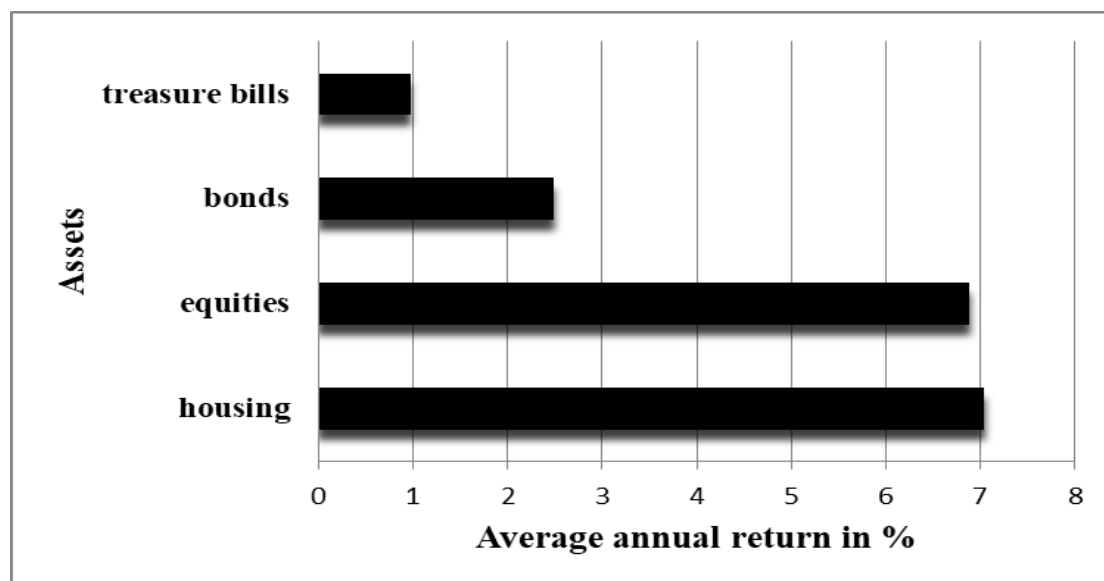
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### **Introduction**

The latest financial crisis after 2008 not only increased the alertness of investors but also considerably urged mass consumers to believe that economic crises are unavoidable and small-scale business is a risky activity, which is most susceptible to the temporary failures of the economy. The slump in the turnover and profits of small retail establishments in big cities also contributed to this belief, since they were one of the simplest and most accessible forms of private business during the period of transition, without the need of special skills and large investments. It was affected by the competition of the large shopping centers, offering shopping with bonuses and specials, a great variety of goods and services, convenient parking lots, pleasant atmosphere as well as food and entertainment for children and adults. Following the slump, considerable money resources of small investors remained deposited in banks without safe and accessible ways of providing additional income. The limited demand for money resources and the high degree of availability reduced the interests on deposit accounts almost to nothing in the year 2017. Credit interests also decreased considerably, which stimulated interest in buying real estate property for private use as well as for renting or just for investing loose money resources. Examining real estate property as investment, it wouldn't be an exaggeration to say that its investment grade stands out from the rest for its particular appeal. A similar point of view is also expressed in the report of economists from the University of California – Davis, the University of Bonn and the Central Bank of Germany, according to whom residential real estate property investments yield greater returns than equities, having at the same time the low volatility of bonds (Kopf, 2018)<sup>1</sup>. They arrive at this conclusion after a number of analyses of annual returns on residential housing, equities, bonds and treasury bills in 16 countries from 1870 to 2015. According to the analysts, in developed countries the annual return on housing during that period was about 7%, (adjusted for inflation), while the return on equities was a little below 7%.

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<sup>1</sup> The whole report is available at: Òscar Jordà, Katharina Knoll and etc. The rate of return on everything, 1870–2015. Available: <http://www.nber.org/papers/w24112.pdf>



Source: <https://qz.com/1170694/housing-was-the-worlds-best-investment-over-the-last-150-years/>

*Fig. 1 Average annual returns on investments in treasury bills, bonds, equities and residential housing in 16 now-wealthy economies from 1870 – 2015<sup>2</sup>*

There is no doubt that a study of this kind arouses considerable interest, not only because of the continuous period of data analysis (145 years) and the great range of countries included in the study but also because of the variety of assets examined and its voluminous database, which is allegedly the first of this kind. However, the data presented in the final report do not clearly show the degree of homogeneity of the studied assets, included in the groups, and their structure. For example, as far as residential housing is concerned, the average returns on studios, one-bedroom and two-bedroom flats will vary from type to type. They will also vary from one municipality in the country to another. For this reason, the concept for average annual return on residential housing in a given country becomes rather general and imprecise. The computation of the average value of a diverse general population yields a unifying characteristic with little cognitive power.

In the spirit of the above mentioned study, we are of the opinion that it is worth studying investment return on residential housing in a particular municipality, with a well-functioning residential property market, especially for specific types of housing, divided into close groups by a distinctive and marked characteristic. For these reasons, we decided to study the investment return on residential housing in the city of Sofia, according to the basic types by size – studios, one-bedroom and two-bedroom flats. Sofia is the largest and most prosperous city in the country, holding appeal for investors at the residential real estate market because of its career prospects for the population, the high level of remuneration, the inflow of local and international students, and the higher quality of living.

<sup>2</sup> The data have been obtained on the basis of average annual investment return in the following countries: France, Norway, Portugal, Belgium, Germany, Denmark, Japan, Sweden, the Netherlands, Spain, Finland, Switzerland, Australia, England, the USA, Italy

Hence, the study object of the current article is the residential housing property on the territory of the city of Sofia and the study subject is the investment return on the purchase of residential housing for renting purposes.

The purpose of the research is to explore the capacity of different methods of assessment of residential housing investment return and to rank Sofia residential districts according to their degree of investment return on studios, one-bedroom and two-bedroom flats, so as to encourage investment activities.

### **Methodology of the Study**

Like any other investment decision, the decision for real estate property investment is based on return assessment. Economic literature offers various definitions of returns. Y. Yovkova, for instance, defines profitability (returns, cost-effectiveness, the return on investments (ROI) as a relationship between the financial result of the investment and the capital invested (Yovkova, 2011, pp. 64-66). Other authors define real estate investment profitability as the income obtained together with unit costs for the property acquisition, incurred by the investor (Galabov, 2017, p. 20).

P. Mihailov associates the profitability of urban real estate property with the so called 'urban ground rent' (Kovachev, et al., 2013, pp. 531- 562). According to him: 'Urban real estate yields a rent, since it is a limited production factor. Urban ground rent is connected with the monopoly on natural resource management as an object of property. Other limited resources are also the uniqueness and nonrenewability of the objects of real estate property, which can be managed and can bring profits. Rent is generated not only by the various qualities of the natural resource – the land on which buildings are situated – and the shortage of attractive plots, but also by the capital investments in creating additional facilities, comfort and citizens' well-being. Market conditions turn the objects of real estate property into commodities and contribute to their more rational exploitation. This is achievable, provided that they have value (economic) assessment'. The author also points out that urban ground rent still hasn't found its way into economic theory, but he probably has in mind the term in its generalizing context, because as far as housing estate is concerned, in the formation of the statistical indicator for Gross Domestic Product Gateva (2012); Radilov (2013), according to the Method of final consumption expenditure<sup>3</sup>, the imputed rent on owner-occupied residential housing is included into households individual consumption.

There is a growing necessity and priority to study the degree of profitability of residential housing investment, which can be defined as the degree of return of funds invested in purchasing and putting into operation.

In our view, the concept of investment return can be considered as a financial relation, indicative of the profitability of a given investment. Discussing real estate investment return in view of our study object – residential housing – we consider it of importance to explain the concepts of gross rent and net rent. Gross rent should be interpreted as the size of the rent before deducting utility costs and net (pure) rent – as

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<sup>3</sup> For more details on this method, see: [http://www.nsi.bg/sites/default/files/files/metadata/GDP\\_1.1.3\\_Methodology.pdf](http://www.nsi.bg/sites/default/files/files/metadata/GDP_1.1.3_Methodology.pdf)

the size of the profit after utility costs deduction. Renting expenses are a matter of private business activity and, to a great extent, they depend on the clauses in the contract. In most cases, they include repair costs (replacement of unusable sanitary unit accessories, door handles, locks and furniture; renovation of overused kitchen cupboards; wall painting after tenant changeover; replacement of floor coverings, etc.), insurance costs, property tax costs and waste collection tax (if it is at the expense of the lessor), personal income tax on the profit received after the deduction of 10 % eligible expenses, fees and commissions for real estate brokers<sup>4</sup>, etc. When buying residential housing property with a debt, the expenses will also include costs for the capital repayment and interests on the credit. It is worth mentioning that it is practically impossible, and more of an exception, for a rented property to be occupied for all the calendar months and days of the year. So, it makes sense to take into account the lack of profitability during the process of tenant changeover.

To take a reasoned decision for capital investment into a given type of assets, such as residential housing property, it is necessary to have a good knowledge and experience of various assessment methods. In the literature there are different methods of assessment of real estate investment return, which are generally divided into two groups – static and dynamic methods. Yovkova (2011), Stefanov (2010), Kolev (2011), Gaddard & Marcum (2012). In substance, static methods are more accessible for practical application. They allow the assessment of real estate investments on the basis of non-comparable cash flows, going on at various time periods. Thus, they are not accurate enough, but they are widespread and easy to apply by investors. Here are some of the most popular of them, which can successfully be used for investment return assessment by average investors in residential real estate property (Stefanov 2016, pp. 235-237):

- ***Investment payback period*** (investment return period). – Its main purpose is to estimate the time period necessary for an investor to refund the capital invested in the premises. With this method, operative net cash flows are summed on a compound basis, and it is estimated when they will exceed investment expenses.

- A variety of the above mentioned method is ***the purchase price multiplier***, which represents the property purchase price as the multiplied sum of the annual rental net profits. In other words, it is the number of years it will take to pay back the given property. It is the quotient resulting from the division of the capital invested by the expected average annual net rental profit. This method is applicable to comparatively steady cash flows, which are most common when real estate property is rented.

- Another static method that can effectively be used by investors is the ***average annual rate of return on capital*** (AARRC), which shows what percentage of the invested funds will be returned on an average annual basis as a result of the exploitation of the object of real estate property.

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<sup>4</sup> It is common practice in our country for the renting commission to be a one-off payment of 50% of the monthly rent. It is usually paid both by the Lessor and the Tenant. The commission percentage can often be negotiated, depending on the company policy.

An opportunity to get a realistic index for real property investment return is offered by the following formula, including the capital invested, as well as the cash inflows and the number of years of property ownership (Йовкова, 2014, p. 25):

$$r = \frac{N + \frac{(P_t - P_0)}{n}}{P_0} \cdot 100, \dots \dots \dots (1)$$

where:

$r$  – the average annual return of investment in a given real property for a given investment period (period of property ownership, lifetime period, etc.);

$N$  – the average annual net rent;

$P_t$  – the property (market) price in the year ‘ $t$ ’ – the final year in the given period (the period of ownership of the property or a part of it or the final year of the property lifetime);

$P_0$  – the (market) price at which the property is purchased, inclusive of all commissions or investment costs (when building the property);

$n$  – the number of years of property ownership.

The advantage of the formula is that it takes into consideration property price variation in the course of time.

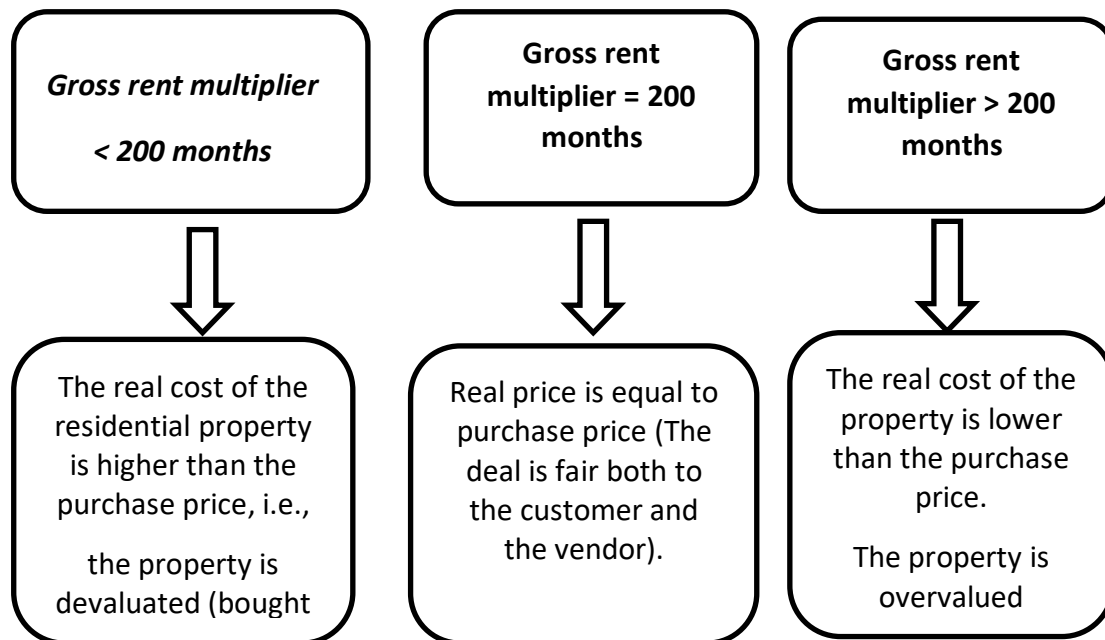
Experts in real estate agencies use the indicator ‘gross rent multiplier’ in their work. This indicator is applied to residential real estate and is calculated in the following way: (Galabov, 2017, pp. 23-24)

$$\text{gross rent multiplier} = \frac{\text{purchase price of the real estate}}{\text{gross monthly rent}} \quad (2)$$

The purchase price of the residential real estate, which is included in the formula, is the price at which the property is bought and it is the estimated price. It can be assumed that this purchase price is the property market price from the viewpoint of the agency making the real estate valuation. It is worth noticing that the income (rent) is in the denominator, whereas the purchase price is in the numerator, i.e. the value of the indicator reveals the sum invested in order to generate a monthly rent of one lev, including in the numerator only the sum invested in the property acquisition (without the additional expenses). The value of this indicator enables us to work out the number of gross monthly rents which can be used to ‘pay back for’ the residential property. The result is a payback period, expressed in months, which in our opinion, has been shortened, since the numerator doesn’t include the total sum of the expenses incurred, and in the denominator the current expenditure on repairs, maintenance, insurance and property taxes has not been deducted. It turns out that this indicator overemphasises/inflates the expected profitability of the property so as to make it more appealing to the customer. Experts professionally engaged with the investments

in real estate property, such as residential real estate, are using the so called rule of 200 gross monthly rents. That is to say, if the gross rent multiplier amounts to 200, this shows that the investor has bought the property at its real cost and the investment will be 'paid back' in 200 months, or about 16.7 years. In case the gross rent multiplier amounts to more than 200, this is indicative of a property overvaluation. i.e., the investor has paid a cost, higher than the real cost. When the gross rent multiplier amounts to less than 200, this shows property devaluation, i.e., the investor has paid a cost for the property, lower than the real cost.

What has already been said about the indicator (2), can graphically be represented in the following way:



*Flow chart 1. The rule of 200 gross monthly rents for assessment of the investment appeal of residential real estate property*

Considering the rule of 200 gross monthly rents, when the property is devaluated, the investor is in a favorable position, having bought a residential property at a price, lower than the real cost. And vice versa, when the property is overvalued, the investor is at a disadvantage, having bought residential housing at a price, higher than the real cost.

It is debatable whether exactly 200 gross monthly rents is the fair price of a residential property. It seems to be an empirical value of unverified origin, based on years of experience. It, however, can be used as a reference point, if no other concrete analyses are available for the investment return in a given place, at a given time and for particular types of property – studios, one-bedroom, two-bedroom flats and some others. Ignoring 200 as the number of the rents, the gross rent multiplier can be used to compare the profitability of various types of housing. Its chief advantage is the simplified calculation algorithm.



The rule 200 gross monthly rents has a variation – it refers to the belief that the real cost of a residential property is equal to the sum of the amounts of 180 to 220 gross monthly rents (and not exactly the sum of the amounts of 200 gross monthly rents).

The second basic group of methods of assessment of investment financial effectiveness includes dynamic methods. They take into account the changing value of money in the course of time. With them, first of all, the one-off (investment) costs are estimated, followed by the expected annual net cash flows. To this group belong the method of the Net Present Value (NPV), the method of the Net Future Value (NFV), the method of the Internal Rate of Return (IRR), the method of the Modified Internal Rate of Return (MIRR), etc. Priority will be given to the method of the Net Present Value because of its numerous advantages such as taking into account the changing value of money in time, incorporating the cash flows within the whole lifetime of the object of property, measuring the absolute value of the expected change in the capital invested in current cash, etc. With this method, the net cash flows are discounted at a given rate of discount and investment expenses are deducted from their sum. The method allows the expected future profits to be related to the present moment. An investment project whose net present value is negative is considered to be unprofitable and unappealing. It turns out that the net present value depends on the expected return, according to the period necessary for the investment return, commonly expressed in a number of years ( $n$ ).

$$NPV = \sum_{t=1}^T \frac{NCF_t}{(1+r)^t} \quad (3)$$

where:

$NCF_t$  - net cash flow (including investment cash flows) in the period  $t$ . NCF can be either positive or negative;

$r$  – rate of discount (minimum return required);

$T$  – number of time periods in the investment period.

On the basis of the methods discussed above, the current study, exploring residential property investment return, uses static methods such as the purchase price multiplier and the average annual rate of return on capital, on account of their easy applicability by various investors. The study also makes the following stipulations:

1. The data analysis is based on information available on the website [www.imot.bg](http://www.imot.bg), which at the time of conducting the study, offers advertisements for the greatest number of items of property and is one of the most widely used websites related to the real estate property market.<sup>5</sup>

2. Average prices are calculated on the basis of uniform populations according to properties like number of rooms and city residential districts, found in the sections

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<sup>5</sup> More details about the advantages and disadvantages of the website used can be found in the article: The Potential of Real Estate Websites for Increasing Users' Information Support. Stoencheva, Y., Collection of Reports: Business in XXI Century, Trends and Challenges, Sofia: Economy University publishing house, 2016. pp. 340-351.

‘For Sale’ and ‘For Rent’. It would be of particular interest to continue this analysis with the housing further classification according to construction type. However, at the time the study was conducted, the website used for the analysis didn’t have an option for selecting the advertisements in the two sectors according to this criterion.

3. In order to avoid the interference of specific extreme offers, the study uses populations including three or more offers. In our view, the data about the prices of real estate items of property, automatically generated by the website in the section ‘Statistics’, could not be sufficiently representative in themselves, since the number of offers included in the populations remains unclear.

4. Because of the ever-changing data population at the website used for the analysis, the search results for offer prices in the sections ‘For Sale’ and ‘For Rent’ are collected at the end of each month, eliminating extreme values which are likely due to unintended error or intentional manipulation

5. The study has excluded residential districts for which there are offers for sale but there are none for rent, or vice versa.

6. An important stipulation, aiming at collecting sufficiently reliable and detailed results, is that the analysis has been carried out by using average annual offer prices per one square meter for rent or for sale, which, to a great degree, prevents random fluctuations if any.

7. It can be logically assumed that real transactions are not concluded exactly at the prices announced. This hypothesis is equally valid for all residential districts and all housing size types, which allows successful comparison of datasets. According to some sources, offer price discounts are minimal – up to 1% (Properties, 2017). Their size, however, remains a secret between the customer and the vendor and it is possible that even unregulated payments are carried out, in addition to those entered in the documents.

The level of profitability has been calculated according to the indicator for number of years, necessary for investment return (the purchase price multiplier), which, in this case, is the ratio between the average offer price for one square meter of residential property in euros and the average rent price for one square meter of residential property. In order to find the number of years, the indicator is divided by 10, with the assumption that the net profit from one-year renting is almost equal to 10 monthly rents. The tax due after the deduction of 10% standard eligible costs is taken into account, as well as the time necessary for current repairs and finding new tenants. This seems to be a feasible option. Even if the finding of tenants requires a longer period or takes place more than once a year, it will be compensated by rental growth during the comparatively long payback period.

Investment payback period in years = $\frac{\text{average sale price for 1 sqm}}{\text{average rent price for 1 sqm}} / 10$	(4)
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The investment return indicator in percent (average annual rate of return on capital) is essentially reciprocal to the indicator of the number of years necessary to pay back for the property.

Average annual return = $\frac{\text{average rent price for 1 sqm}}{\text{average sale price for 1 sqm}} \cdot 1000$ [%]	(5)
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### Results of the Study:

In relation to the methodological stipulations made above, an analysis has been carried out with the purpose of looking into residential property investment return according to residential district and size type (studios, one-bedroom and two-bedroom flats) in the city of Sofia during the period from 1.10.2016 to 30.09.2017.

Table 1. presents the results from the analysis of investment return on studios, the residential districts being ranked in a descending order.

Table 1.

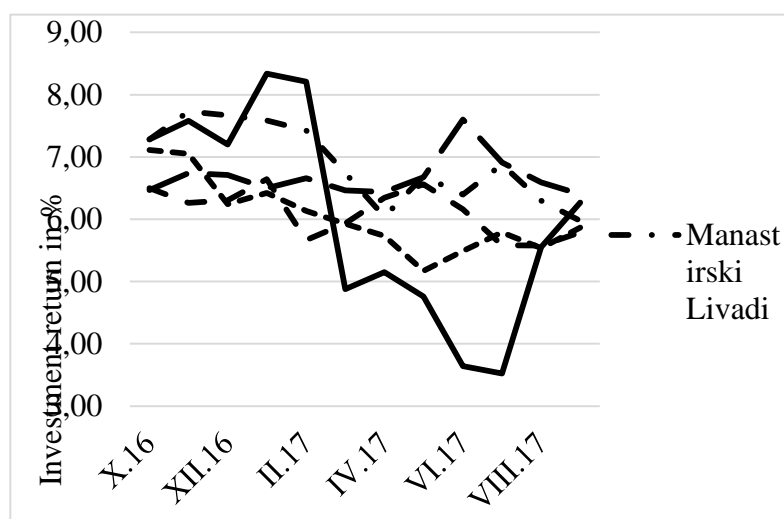
Investment return period when purchasing a studio and average annual return in Sofia residential districts.

Residential District	Investment Return Period in Number of Years	Investment Return (in per cent)	Residential District	Investment Return Period in Number of Years	Investment Return (in per cent)
Manastirski Livadi	14.52	6.89	Centre	18.55	5.39
Studentski Grad	14.96	6.68	Dianabad	18.69	5.35
Hadzhi Dimitar	16.36	6.11	Mladost 2	18.74	5.34
Boyana	16.52	6.05	Slatina	19.17	5.22
Mladost 4	16.55	6.04	Ovcha Kupel 1	19.28	5.19
Suhata Reka	16.70	5.99	Druzhiba 2	19.34	5.17
Darvenitsa	16.77	5.96	Lyulin 7	19.47	5.14
Vitosha	16.83	5.94	Mladost 1	19.98	5.01
Ovcha Kupel 2	17.34	5.77	Banishora	20.25	4.94
Ovcha Kupel	17.39	5.75	Borovo	20.41	4.90
Mladost 3	17.57	5.69	Sveta Troitsa	21.41	4.67
Druzhiba 1	17.76	5.63	Mladost 1A	21.44	4.67

It is obvious that when the purchase is for renting purposes, it will be most profitable in the residential districts of Manastirski Livadi, Studentski Grad, Hadzhi Dimitar and Boyana. The percentage investment return per residential district varies

for studios from 6.89% for Manastirski Livadi to 4.67% for Mladost 1A, which in all cases brings much greater profit than bank deposit interest rates at the moment.

As it was already mentioned in the methodological stipulations above, for achieving sufficiently reliable results, investment return has been calculated according to the average annual offer price used for one square metre of residential property for rent or for sale. Figure 2 represents the changes in investment return on studio flats by month, in the five residential districts having the highest return throughout the period of study.



*Fig. 2 Dynamics in investment return on studio flats in particular residential districts in the city of Sofia in the period between October 2016 and September 2017.*

The graphs, presented in Figure 2 clearly show that in some of the examined residential districts there is considerable variability in investment return by month, which points at a possible seasonal character of prices of residential housing offered for rent and for sale. It should also be kept in mind that offer prices in the two sections ('For Sale' and 'For Rent') are quite dynamic, with frequent occurrence of fake advertisements, which can artificially inflate the average price in the corresponding product segment.

The residential district showing the greatest variability in the reported investment return by month is Boyana, where the average monthly profitability ranges widely from 8.34% in January, 2017 to 3.52% in July the same year, with almost 137%. The most sustainable investment return in the given period is displayed in Studentski Grad residential district, where the highest value of 7.6% is reported for the month of June, 2017, and the lowest value of 6.40% is for December, the variability being 18.75%. In recent years this housing estate has become increasingly appealing at the real estate

property market in Sofia, not only for buying for investment purposes, but also for private use. The advantages it has in both cases are numerous. The district brings together a number of large universities<sup>6</sup>, thus creating a niche for letting residential properties and making additional profit. Moreover, in the neighbourhood there are plenty of retail establishments (shops, mass caterers and amusement centres), business centres, recreational and sports areas (the National Sports Academy, the Students' park, Vitosha nature park) and good transport connections (public transport stations, G. M. Dimitrov underground station).

Table 2 presents the ranking of residential districts according to the level of investment return on one-bedroom flats.

Table 2.

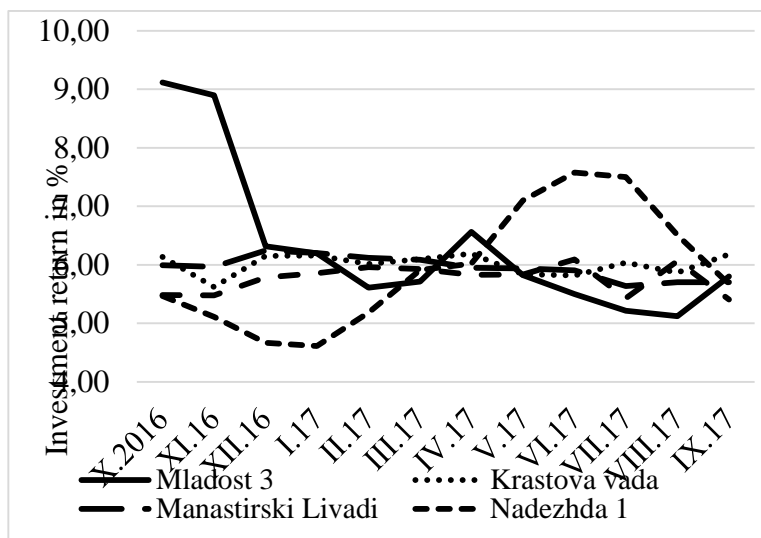
Period of investment return on purchasing a one-bedroom flat and average annual return per district in Sofia.

Residential District	Investment Return Period in Number of Years	Investment Return (in per cent)	Residential District	Investment Return Period in Number of Years	Investment Return (in per cent)
Mladost 3	15.82	6.32	Darvenitsa	19.97	5.01
Krastova vada	16.64	6.01	Slatina	20.13	4.97
Manastirski Livadi	16.80	5.95	Razsadnika	20.17	4.96
Nadezhda 1	16.84	5.94	Dianabad	20.30	4.93
Zona B-18	17.35	5.76	Centre	20.31	4.92
Lyulin 8	17.62	5.68	Krasna Polyana 2	20.32	4.92
Studentski Grad	17.69	5.65	Lyulin 5	20.33	4.92
Knyazhevo	17.71	5.65	Suhata Reka	20.43	4.89
Mladost 4	17.94	5.57	Gotse Delchev	20.49	4.88
Nadezhda 2	17.95	5.57	Ovcha Kupel 2	20.70	4.83
Banishora	18.04	5.54	Reduta	20.75	4.82
Simeonovo	18.05	5.54	Poduyane	20.79	4.81
Ovcha Kupel	18.06	5.54	Mladost 1A	20.82	4.80
Zona B-19	18.09	5.53	Lozenets	20.93	4.78
Zapaden park	18.19	5.50	Krasno Selo	20.96	4.77

<sup>6</sup> University of National and World Economy; Technical University of Sofia; University of Mining and Geology; University of Chemical Technology and Metallurgy; University of Forestry; National Sports Academy, etc.

Zona B-5	18.31	5.46	Hladilnika	20.99	4.76
Belite Brezhi	18.43	5.43	Geo Milev	21.00	4.76
Levski G	18.48	5.41	Druzhba 2	21.04	4.75
Dragalevtsi	18.54	5.39	Ovcha Kupel 1	21.12	4.73
Poligona	18.97	5.27	Lyulin 10	21.16	4.73
Lyulin 7	19.08	5.24	Bakston	21.32	4.69
H. Dimitar	19.21	5.21	Lagera	21.35	4.68
Mladost 1	19.32	5.18	Lyulin 6	21.51	4.65
Sveta Troitsa	19.47	5.14	Slaviya	21.90	4.57
Vitosha	19.50	5.13	Medical Academy	22.55	4.43
Pavlovo	19.59	5.10	Ilinden	22.60	4.43
Lyulin 2	19.64	5.09	Hipodruma	22.83	4.38
Lyulin 3	19.64	5.09	Musagenits a	23.29	4.29
Ivan Vazov	19.65	5.09	Oborishte	24.44	4.09
Druzhba 1	19.69	5.08	Strelbishte	26.06	3.84
Borovo	19.71	5.07	Yavorov	27.67	3.61
Mladost 2	19.74	5.07	Doctors' Monument	28.47	3.51
Iztok	19.94	5.02			

The most profitable residential districts in the category of one-bedroom flats seem to be Mladost 3, Krastova Vada, Manastirski Livadi, Nadezhda 1, Zona B-18, Lyulin 8 and Studentski Grad. Their average annual investment return ranges between 6.32 % and 5.65%, which is a little below the indicator maximum value per district, registered for one-bedroom flats. In the top seven of the two residential housing size types emerge the districts of Manastirski Livadi, and Studentski Grad. The lowest investment return on one-bedroom flats tends to be displayed by some of the most prestigious Sofia housing estates like Doctors' Monument, Yavorov, Strelbishte and Oborishte. In our view, this is due to the level of rents, which cannot make up for the increase in sale prices. None of the lowest-ranking in investment return estates is identical with any of the lowest-ranking estates in investment return on studios, which could be due to the lack of offers for studios in a large part of the residential districts. Figure 3 shows graphs for the investment return achieved by month, for the top five estates for one-bedroom flats.



*Fig. 3. Dynamics in investment return on one-bedroom residential property in the period between October 2016 and September 2017.*

What strikes the eye about the graphs in Fig. 3 is the high investment return, achieved in Mladost 3 district for the months of October, 2016 (9.12%) and November, 2016 (8.90%), as well as its decrease over the rest of the study period. In our view, this could be an accidental effect of temporary offers for sale, in the respective months, for comparatively cheap plattenbauten (prefabricated concrete flats) and offers for rent for mostly new, highly-rented luxury flats. Anomalies like these are corrected, to a great extent, when dealing with annual data. In spite of the unstable levels of investment return at the beginning of the period studied, the return in the remaining periods is comparatively steady and ranks the district among the top residential districts for one-bedroom flats. Some of the key factors influencing its degree of customer appeal are the well-developed transport infrastructure (public transport stations and Mladost 3 underground station), as well as the proximity to retail establishments (Sofia Ring Mall, Arena Mladost, IKEA) and Sofia Business Park. What also matters is the relatively low number of compact minority groups, the absence of industrial enterprises in the vicinity, the high level of sewerage system development, the availability and good maintenance of recreational areas and facilities, the closeness to Vitosha nature park, etc. Some fluctuations in investment return are also noticeable for Nadezhda 1 housing estate, which after the construction of its underground station gained particular appeal for investors owing to the lower level of purchase prices and relatively high level of rents. Table 3 ranks residential

districts according to their level of investment return on two-bedroom housing property.

Table 3.

Period of investment return on purchasing a two-bedroom flat and average annual return per district in Sofia.

Residential District	Investment Return Period in Number of Years	Investment Return (in per cent)	Residential District	Investment Return Period in Number of Years	Investment Return (in per cent)
Malinova Dolina	9,55	10,47	Krasno selo	21,70	4,61
Mladost 3	14,89	6,72	H. Dimitar	21,71	4,61
Poligona	17,12	5,84	Reduta	21,82	4,58
Manastirski Livadi	18,46	5,42	Pavlovo	21,84	4,58
Krastova Vada	18,76	5,33	Gorna Banya	21,94	4,56
Centre	19,12	5,23	Zona B-19	22,32	4,48
Simeonovo	19,18	5,21	Bakston	22,49	4,45
Karpuzitsa	19,37	5,16	Oborishte	22,74	4,40
Nadezhda 1	19,91	5,02	Ovcha Kupel	22,80	4,39
Studentski Grad	19,97	5,01	Musagenitsa	22,87	4,37
Mladost 4	19,99	5,00	Suhata Reka	22,94	4,36
Dragalevtsi	20,04	4,99	Ovcha Kupel 1	23,02	4,34
Iztok	20,28	4,93	Darvenitsa	23,12	4,32
Mladost 1	20,50	4,88	Lozenets	23,25	4,30
Knyazhevo	20,57	4,86	Strelbishte	23,33	4,29
Zona B-18	20,72	4,83	Sveta Troitsa	23,71	4,22
Mladost 2	20,81	4,81	Geo Milev	24,05	4,16
Druzhba 1	20,95	4,77	Ivan Vazov	24,31	4,11
Yavorov	20,96	4,77	Druzhba 2	24,44	4,09
Zona B-5	21,07	4,75	Belite Brezhi	25,10	3,98
Borovo	21,14	4,73	Lyulin 10	25,57	3,91
Izgreve	21,21	4,71	Lagera	26,16	3,82
Банишора	21,30	4,69	Medical Academy	27,15	3,68
Ovcha Kupel 2	21,42	4,67	Doctors' Monument	27,95	3,58
Gotse Delchev	21,51	4,65	Hipodruma	28,58	3,50
Dianabad	21,62	4,63			

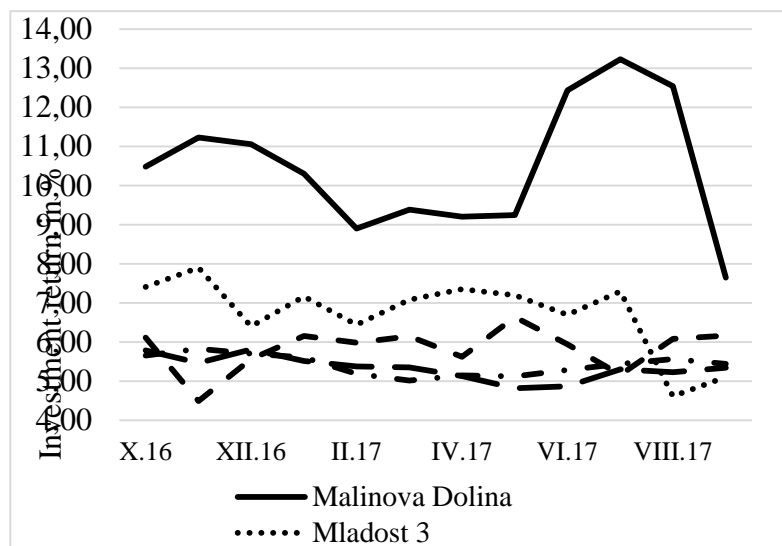


For the period studied, the most profitable investment in a two-bedroom flat turns out to be in Malinova Dolina district thanks to its moderate property acquisition prices and persistently high rents. In the top seven of the most profitable districts for two-bedroom as well as for one-bedroom and studio flats is Manasirski Livadi district. In the top seven estates for both two-bedroom and one-bedroom apartments are the districts of Mladost 3 and Krastova Vada. According to the maximum investment return achieved, two-bedroom flats are ahead of one-bedroom and studio flats. This, however, applies to only one district – Malinova Dolina. Average investment return of more than 6% is achieved for two-bedroom apartments in two housing estates, for one-bedroom apartments – also in two estates, and for studios – in five estates.

According to the minimum investment return achieved, two-bedroom flats are again ahead of studios and one-bedroom flats. Average annual values of this indicator lower than 4% are exhibited for two-bedroom apartments in six housing estates, for one-bedroom apartments – in two estates, and for studios – there is not a residential district with such a low-level of investment return.

The lowest profitability for two-bedroom flats is exhibited in the residential districts of Hipodruma, Doctors' Monument, Medical Academy, Lagera, Lyulin 10 and Belite Brezi, where the high property acquisition prices cannot be compensated by the level of rents.

Figure 4 presents the changes in investment return indicators by month for the top five districts in the ranking. This mode of presenting the data allows conclusions about the seasonal character of the indicator changes.



*Fig. 4. Dynamics in investment return on two-bedroom residential property in the period between October 2016 and September 2017.*

Investment return on two-bedroom flats remains comparatively stable, without major variations by month, in four of the examined residential districts. Greater variation can be observed in Malinova Dolina housing estate, where the growth rate for the stated period has a negative value of -27.02%. The greatest variation and decrease by almost -42.20% in investment return, in the given period, can be observed between the months of July 2017 and September 2017. It is also interesting to notice the changes in the average sale prices in the district that is emerging as one of the most appealing ones at the moment, in view of its location in the southern part of the capital. Its additional advantages are the proximity to Studentski Grad and the availability of many new and luxury gated communities. During the examined period – from October, 2016 to September, 2017 a 19.29% increase can be observed in the average purchase prices of two-bedroom flats in this estate, the average prices per square metre being up to 647.17 euros. Obviously, customers are feeling it intuitively, or by making comparisons, that offers for purchasing two-bedroom flats in this estate are particularly advantageous at the moment, and the increased demand will increase prices.

In our view, what deserves attention is the degree of stability of the investment return indicators obtained during the one-year period of the study. In this connection, a comparison was made with analogous indicators, by residential district and by size type, for a past period – the year 2013 (Ковачев, et al., 2013, pp. 564-566).

The results of the comparison of studios, one-bedroom and two-bedroom flats by residential district are presented in tables 4, 5 and 6.

Table 4.

Growth in investment return on studios, by residential district<sup>7</sup>, during the studied period in comparison with the year 2013 / in points/.

<b>Residential Districts</b>	<b>Growth in Investment Return during the Studied Period in Comparison with 2013 / in points /</b>	<b>Residential Districts</b>	<b>Growth in Investment Return during the Studied Period in Comparison with 2013 / in points /</b>
Borovo	1.54	Lyulin 7	0.02
Centre	1.05	Vitosha	-0.03
Slatina	1.03	Mladost 1	-0.07
Studentski Grad	0.99	Druzhba 2	-0.14
Dianabad	0.64	Sveta Troitsa	-0.15
Mladost 3	0.63	Druzhba 1	-0.24

<sup>7</sup> Excluded are the residential districts for which there are no available offers for sale or for rent either at the beginning or at the end of the period compared.

Suhata Reka	0.62	Hadzhi Dimitar	-0.30
Darvenitsa	0.62	Banishora	-0.31
Ovcha Kupel 2	0.54	Mladost 4	-0.51
Ovcha Kupel 1	0.30	Mladost 2	-0.95
Ovcha Kupel	0.22	Mladost 1A	-1.68

For studios, three of the top districts in the investment return ranking for 2017 have achieved a positive growth in comparison with 2013. These are Studentski Grad, Suhata Reka and Darvenitsa. These districts have a moderate increase in purchase prices and an anticipatory increase in rents. A decrease in this indicator can be noticed in some traditionally preferred housing estates where purchase prices have significantly risen and rents cannot compensate for the rise. Typical examples in this respect are Mladost 1 and Mladost 1A housing estates. Borovo, in spite of its highest growth according to the indicator investment return on studios, during 2017 is at the bottom of the ranking.

Table 5.

Growth in investment return on one-bedroom flats, by residential district<sup>8</sup>, during the studied period in comparison to the year 2013. / in points/.

<b>Residential Districts</b>	<b>Growth in Investment Return during the Studied Period in Comparison with 2013 / in points /</b>	<b>Residential Districts</b>	<b>Growth in Investment Return during the Studied Period in Comparison with 2013 / in points /</b>
Mladost 3	1.71	Poligona	0.34
Levski G	1.55	Geo Milev	0.33
Lyulin 8	1.45	Krastova Vada	0.32
Simeonovo	1.39	Lyulin 5	0.31
Banishora	1.33	Mladost 2	0.31
Nadezhda 1	1.30	Centre	0.30
Iztok	1.25	Suhata Reka	0.28
Ivan Vazov	1.18	Lyulin 7	0.26
Belite Brezi	1.10	Ovcha Kupel	0.23
Nadezhda 2	1.02	Razsadnika	0.23
Zona B-19	1.01	Reduta	0.12
Lyulin 10	0.94	Ilinden	0.02
Zona B-18	0.88	Krasno Selo	-0.06
Borovo	0.80	Druzhiba 2	-0.07
Pavlovo	0.79	Hadzhi Dimitar	-0.10

<sup>8</sup> Excluded are the residential districts for which there are no available offers for sale or for rent either at the beginning or at the end of the period compared.

Zona B-5	0.78	Dragalevtsi	-0.17
Lyulin 3	0.76	Vitosha	-0.21
Darvenitsa	0.74	Lagera	-0.29
Mladost 1A	0.70	Hladilnika	-0.29
Ovcha Kupel 2	0.69	Knyazhevo	-0.30
Studentski Grad	0.62	Oborishte	-0.32
Sveta Troitsa	0.59	Lyulin 6	-0.37
Zapaden Park	0.52	Gotse Delchev	-0.41
Lozenets	0.44	Bakston	-0.43
Slatina	0.43	Strelbishte	-0.56
Lyulin 2	0.43	Yavorov	-0.61
Druzhba 1	0.39	Hipodruma	-0.66
Musagenitsa	0.38	Ovcha Kupel 1	-1.35

For one-bedroom flats, all of the top districts in the investment return ranking for 2017 have achieved a positive growth in comparison to 2013. That is to say, the positive results are a consequence of four years of positive developments. Whether this is a permanent and irreversible pattern, it can be established only after examining a longer period, including indicators for all of the intermediate years. After the commissioning of new transport infrastructure facilities and the renovation of some streets and boulevards, the degree of the districts' customer appeal is changing fast and this will persist in the following couple of years with the construction of new underground stations and the emergence of vehicle overpasses and underpasses at the busiest road junctions. The expected changes are mostly positive. It stands to reason that real estate property will become more expensive, but rents will follow suit, since the better transport connections will attract more potential tenants. Particularly strong is the potential for positive changes in investment return of the districts of Mladost 3, Nadezhda 1, Zona B-18, Lyulin 8 and Studentski Grad.

A fall in the investment return indicator is registered in the residential districts of Hipodruma, Oborishte, Strelbishte and Yavorov, which are at the bottom of the ranking according to this indicator for 2017. Musagenitsa is also at the bottom of the ranking, in spite of the minimum positive growth achieved. For 45 out of 57 housing estates, for which this dynamics has been examined, a minimum variation in investment return is observed of less than one point, foreshadowing stable returns in the medium term. This is because of the relatively uniform, one-way movement in purchase and rental prices.

Table 6.

Growth in investment return on two-bedroom flats, by residential district<sup>9</sup>, during the studied period in comparison with the year 2013 / in points/.

<sup>9</sup> Excluded are the residential districts for which there are no available offers for sale or for rent either at the beginning or at the end of the period compared.

<b>Residential Districts</b>	<b>Growth in Investment Return during the Studied Period in Comparison with 2013 / in points /</b>	<b>Residential Districts</b>	<b>Growth in Investment Return during the Studied Period in Comparison with 2013 / in points /</b>
Mladost 3	2.35	Druzhba 1	0.48
Poligona	1.96	Krastova Vada	0.43
Yavorov	1.57	Lyulin 10	0.42
Ivan Vazov	1.38	Geo Milev	0.39
Knyazhevo	1.38	Strelbishte	0.27
Banishora	1.26	Musagenitsa	0.25
Izgrev	1.24	Mladost 2	0.23
Gorna Banya	1.19	Belite Brezi	0.18
Centre	1.12	Bakston	0.13
Simeonovo	1.08	Ovcha Kupel	0.08
Dianabad	1.08	Sveta Troitsa	0.02
Reduta	1.07	H. Dimitar	0.01
Borovo	1.07	Lozenets	-0.13
Iztok	0.98	Hipodruma	-0.14
Krasno Selo	0.87	Ovcha Kupel 1	-0.21
Nadezhda 1	0.80	Drizhba 2	-0.29
Ovcha Kupel 2	0.75	Oborishte	-0.49
Gotse Delchev	0.74	Zona B-5	-0.55
Zona B-18	0.72	Suhata Reka	-0.73
Darvenitsa	0.70	Dragalevtsi	-0.73
Studentski Grad	0.57	Lagera	-1.14
Mladost 1	0.57	Malinova Dolina	-1.19
Mladost 4	0.56	Zona B-19	-1.92
Pavlovo	0.49		

For two-bedroom flats, it can be observed that Malinova Dolina district maintains its leading position in the 2017 ranking in spite of the moderate decrease in its investment return indicator. Mladost 3 leads the ranking for highest positive growth in investment return achieved and places itself at the head of 2017 ranking. Quite obvious is the positive growth in returns achieved in the districts of Poligona, Krastova Vada, Centre and Simeonovo.

For the three size types of residential property, Mladost 3 housing estate shows considerable positive growth in returns. Ivan Vazov housing estate shows very good growth in returns on one-bedroom and two-bedroom flats.

The vast majority of the housing estates, thirteen in number, have achieved positive investment return growth for two-bedroom flats, eleven estates have positive growth for one-bedroom flats and only three estates have positive growth for studios. Two-bedroom flats also have the highest positive growth, followed by one-bedroom flats and studios. There is a marked increase in the long-term profitability from purchasing and letting larger residential property that has until recently been undervalued due to the relatively low income of potential tenants.

There is a negative investment return growth in eleven districts for two-bedroom flats, in sixteen districts for one-bedroom flats and in ten districts for studios. The decrease, however, is minimal. Negative growth of more than one point has been registered in one district for studios, in one district for one-bedroom flats, and in three districts for two-bedroom flats. The highest negative growth of  $-1.92$  points was registered for two-bedroom flats in Zona B-19, whereas the highest positive growth of  $+2.5$  points was achieved for two-bedroom flats in Mladost 3.

These results can be of benefit to both building contractors and the purchasers of residential real estate only for the purpose of offering it for rent. They can also benefit the update of urban development plans, preventing the overbuilding of some districts of excessive appeal to investors.

### **Conclusion**

The return of investment is the most accurate criterion for the choice of residential housing for renting purposes. On the basis of the study performed, it was found that studio flats definitely provide persistently high investment return in almost all districts. Investment in this type of housing property is also profitable because a great number of districts don't offer any studios for rent. In some districts, one-bedroom and two-bedroom flats can provide record levels of investment return, but this is more of an exception and may prove out to be a conjunctural phenomenon. Quite often, the districts considered to be the most prestigious and attractive for living are not the best option for purchasing for renting purposes, because of too high selling prices and long periods of investment return. And we should not neglect the increase in solvent demand for rental accommodation, when the tenant looks for a comfortable, spacious flat in a suitable residential district with no limit in price, which in its turn leads to the increasing appeal of one- and two-bedroom flats. Having this in mind, the investor should first select a suitable segment of potential tenants and then search for housing property of a given size type in the best district according to the maximum expected investment return in the long term.

The study completed refers to a past period and in the course of time it will, however slowly, become obsolete. In spite of this, it can be used as a basis for future dynamic comparative studies, as well as a methodology for similar analyses of other municipalities with a sufficiently developed residential property market.

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