

# The Applicability of the Maximum Global Utility Method in the Activity of the Real Estate Consulting Service

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## Abstract

The real estate sector is vital for ensuring human needs for living and activity. This fact conditioned the formation of a legal, normative and methodological framework specific to real estate, but also the investment attractiveness of the field. Thus, the real estate consultant often solves technical, economic, legal, organizational problems, but the biggest responsibility rests with investment consulting. The applied methodologies, focused on evaluating the efficiency of investments, are not sufficient to propose to the investor a reasoned conclusion regarding the investment priority. In this article, the authors propose a useful tool for real estate consultants in order to reason the decision regarding the investment of funds in commercial real estate for the purpose of renting it out—the Maximum Global Utility (MGU) method. It is proposed to include in the analysis and the way of calculating the indicator “importance level of the real estate” which reflects the criterion of the best use. This indicator ensures the flexibility of the decision depending on the quality characteristics of the real estate.

## Keywords

Real Estate Market, Efficiency, Commercial Real Estate, Best Use

## 1. Introduction

In the conditions of the market economy, real estate is one of the most important capital investment objectives. Compared to other investment objectives, the building is characterized by a series of particularities. The real estate market is inextricably linked to investment activity. The investment of capital in real estate can be carried out both on the primary market (the market of new construc-

tions) and on the secondary market (the market of the existing constructions). The main goals of investors in the real estate field are: obtaining periodic income (from the rental); capital increase as a result of changes in market prices, reconstruction or development of real estate objects; efficient further exploitation of the real estate; keeping the means accumulated as goods whose value does not change essentially over time.

In practice, we distinguish three main directions of capital investment in real estate: *housing, land and commercial real estate*.

Investments in residential real estate ensure capital growth by increasing house prices. The permanent demand for housing makes this direction of capital investment attractive.

Investments in land are influenced by a number of external factors: the decisions of the local public administration; ecological and economic factors; changes in land legislation.

The most profitable direction of capital investment is placing capital in commercial real estate. The attractiveness of investing in commercial real estate is high because obtaining some income is certain, but in this case, the risk caused by the reduced liquidity of the real estate increases and the investment recovery period is long.

In this regard, the role of the real estate consultant (real estate company) is defined and he/she must have a set of practical tools in order to provide appropriate recommendations to a potential investor.

## 2. Literature Review

Investing in real estate is much more advantageous than investing in securities [1] [2], because:

- Investing capital in real estate generates monthly cash flows (rent payment), compared to securities (shares), where dividends are paid quarterly or annually.
- The cash flow that comes from the possession of the real estate is less subject to changes compared to the cash flows generated by the securities: the cash flow generated by the securities depends on the volume of production, while the cash flow generated by the real estate goods is constantly a long period, because it is based on rental contracts; the income sources of securities are less predictable than the income sources of real estate (since the real estate is fixed both physically and legally).
- The profitability of real estate is higher than the profitability of securities' rate. The rate of profitability of real estate investments must cover both the risks incurred and the recovery of the capital investment.
- Investments in real estate are characterized by an increased level of safety and protection, but also by the possibility of the investor to control the investments.

The investment of capital in real estate is determined by the influence of inflation, which stimulates the investment of capital in real estate. Along with the in-

crease in the level of inflation, the investment attractiveness of real estate increases as an object that allows the preservation of the value of personal accumulations. The rapid devaluation of bank deposits and the frequent lack of correlation between bank interest and the level of inflation condition the redirection of investments from the financial sphere to the real one (real estate), which is safer. The investment in the commercial property can be secured by increasing the rent payment. At the same time, inflation diminishes the investment possibilities of economic agents: real incomes are decreasing, a fact which predicts the correlation between expenses and earnings to become more and more complicated, and obtaining a loan with an acceptable interest rate is becoming more and more difficult.

Specialists warn that real estate as a potential object of capital investment has a series of specific characteristics, which must be taken into account by the investor, in the process of making the decision to invest their capital in real estate [3] [4] [5].

In order to provide a reliable consultancy, the real estate company (consultant) must ensure the joint activity of several experienced specialists regarding the real estate and construction market. They will interact with various issues and problems encountered by the investors, real estate developers both in the country and abroad. Specialists must have a broad and deep vision of the evolution of the market and how to detect and eliminate the causes of problems that a real estate project may encounter.

The management of third-party properties also represents a direction of real estate consultancy and service provision, which primarily includes a clear analysis of the legal, fiscal and real estate situation of the property in question. The regularization of the legal and fiscal situation of real estate involves checking the property registers, their cadastral situation (in the Republic of Moldova, the existing database at the country level must be consulted [6]) and the fiscal situation with local administrations. Also, checking the real estate situation, according to the type of property, requires a series of examinations, including the analysis of the possibility of the property's profitability. The clients who do not have their own staff to manage their investments can enjoy the services of the "company" starting with the development of budgets and continuing with the management of payments. The real estate consulting department within a company, as a rule, provides consulting services on investment planning, management of real estate developments and solving problems related to real estate.

As a rule, in the consulting activity, with reference to the selection of real estate to invest, the specialists are guided by the methodologies for evaluating the efficiency of investment projects [7] [8] [9] [10]. In general, it is recommended to select the investment option based on the comparison of the following criteria: Net Present Value (NPV); Internal Rate of Return; Profitability index. However, if for medium-term investment projects (up to 5 years) these criteria are sufficient (for example, the object built and sold), then for long-term invest-

ments (for example, the purchase of commercial real estate for rent or exploitation) the information is insufficient.

### 3. Methodology and Data

Considering the specific characteristics and particularities of real estate, the issue of consulting in order to plan the investment becomes quite complicated. To simplify the process of selecting commercial real estate for the purpose of further profitable exploitation (speculative purposes will not be considered), the author proposes the application of the maximum global utility (MGU) method.

MGU involves the following calculation algorithm:

- 1) Identification of potential real estate for investment.
- 2) Assessing the effectiveness of each identified option by highlighting the basic criteria expressed by representative indicators.
- 3) Determination of the priority coefficient for each indicator.
- 4) Construction of the utility matrix and calculation of the overall utility for each identified asset.
- 5) Ordering the real estate according to the decrease in global utility and formulating recommendations for the investor.

This method will allow real estate to be ordered according to investment potential and subsequent efficient exploitation.

We propose the following ordering criteria:

The economic-financial criterion through the following indicators:

- Net Present Value (NPV);
- Risk level (R);
- Internal rate of return (IRR).

Liquidity criterion through the indicator:

- The recovery term (RT);
- Remaining Economic Life (REL).

The criterion of the best use through the indicator:

- The level of importance of the immovable asset (LI).

The initial data will be entered in **Table 1**. The priority coefficient of each criterion will be established by the consultant following the discussion with the investor according to his attitude towards risk and profitability. Please note that targets with increased risk also have a higher potential profitability, and vice versa.

For example, in the case of the investor's request for the fastest possible recovery of investments with maximum profitability, the highest priority will be given to the criterion of best use, NPV and the recovery term. In the case of a moderate attitude, priority will be given to the IRR and remaining economic life indicators.

In the next step, the utility matrix will be built with  $x_{ij}$  elements. Each element of the matrix is calculated for the maximum criterion by the Equation (1):

$$x_{ij} = \frac{x_i - x_{i \min}}{x_{i \max} - x_{i \min}}, \quad (1)$$

**Table 1.** Estimation of the risk level of real estate businesses.

Risk factors	Probability of occurrence		
	Low level 1 - 3	Medium level 4 - 6	High level 7 - 9
<b>Legal risks</b>			
Possibility of ownership loss	3		
The possibility of recovering losses due to legal errors at the conclusion of contracts		6	
The possibility of third-party claims		4	
Unidentified encumbrances of real estate	3		
Errors in the cadastral documents	2		
<b>Administrative risks</b>			
The probability of an increase in the real estate/wealth tax rate		4	
Emergence of new requirements by local public administration		4	
Adoption of limitations in functional use (e.g. prohibition of use for production purposes)	3		
Adoption of limitations in the access ways to the property (e.g. pedestrian access only)		4	
<b>Macroeconomic risks</b>			
Political decisions that condition the increased spending			8
The reduced pace of economic development		6	
Unfavorable economic and financial policy of the Government			8
Rising inflation			9
Unfavorable conditions for mortgage lending		6	
Total risk	11	34	25
Number of factors		14	
Risk level (weighted average method)		5.0	

but for each minimum criterion by the Equation (2):

$$x_{ij} = \frac{x_{i \max} - x_i}{x_{i \max} - x_{i \min}}, \quad (2)$$

where:  $x_i$ —the value of indicator  $i$  associated with project  $j$ ,  $x_{i \min}$ —the minimum value of indicator  $i$ ,  $x_{i \max}$ —the maximum value of indicator  $i$ .

Next is the calculation of the global utility for each real estate as the sum of the products of the elements of the utility matrix (the column vector corresponding to the project) and the priority coefficients assigned to each indicator.

The real estate will be ordered in decreasing value of the maximum global utility. Based on this, the potential investor will be able to select those real estates that best correspond to his interests.

In the process of determining the *Net Present Value* (NPV), we recommend

applying the discount rate estimated by the method of alternative investments [1] [11]. The method is based on the principle that investments with similar risks will have equal discount rates.

We recommend the level of risk to be determined by the expert method, evaluating the factors mentioned in **Table 1**. The factors are proposed by the author following the synthesis of specialized literature [12] [13].

*Remaining Economic Life* (REL). Economic life represents the period of time during which the real estate generates income. The remaining economic life is the difference between the economic life (EL) and the effective age (EA) of the property.

The criterion of the best use is expressed by the indicator of *the immovable asset's importance level* (IL). This indicator ensures the flexibility of the decision depending on the qualitative characteristics of the real estate. The correctness of determining this indicator largely depends on the experience and knowledge of the real estate manager. The indicators are determined by the author following the analysis of specialized literature and the comparison with the opinion of practitioners on the real estate market (realtors, project managers and real estate appraisers). The calculation of the real estate's level of importance is proposed in **Table 2**.

For the best solution the level of importance  $LI = 3.48$  and for the worst solution

**Table 2.** Determining the level of importance of the real estate.

Indicator	Possible solution	Appreciation of the solution	Importance, %	Appreciation of the solution	Level of importance
<b>Location</b>	The center of the locality	4	12	1	0.12
	The central area of the town	3			
	The central area of the administrative sector	2			
	The outskirt area of the town	1			
<b>Location in the building</b>	Separate building	5	10	5	0.5
	Ground floor	4			
	Floor	3			
	Semi-basement	2			
	The top floor	2			
<b>Access</b>	Two entrances	3	10	1	0.1
	An entrance from the central street	2			
	An entrance from the secondary street	1			
<b>Fluctuation</b>	Average	3	8	3	0.24
	High (near the elevator, escalator, main staircase)	2			
	Small (exit for exceptional cases, sanitary-technical area, at the corner)	1			

## Continued

<b>Surface</b>	Up to 500 m <sup>2</sup>	5			
	500 - 1000 m <sup>2</sup>	4			
	1000 - 5000 m <sup>2</sup>	3	8	3	0.24
	5000 - 10,000 m <sup>2</sup>	2			
	More than 10,000 m <sup>2</sup>	1			
<b>Parking</b>	Combined	3			
	Underground	2	10	1	0.1
	Overground	1			
	No parking	0			
<b>Partitioning</b>	Combined	3			
	Open (open space)	2	10	1	0.1
	With masonry walls	1			
<b>Competition</b>	No competitors	3			
	There are competitors in the area	2	10	1	0.1
	There are competitors in the district	1			
	There are competitors in the neighborhood	0			
<b>Functional diversification</b>	One function	1			
	Two functions	2	12	3	0.36
	Multifunctional	3			
<b>Ground</b>	Private property	3			
	Municipal property	1	10	3	0.3
	Combined	2			
	No property	0			
<b>Total per item</b>			<b>100</b>	<b>2.16</b>	

Source: developed by the author.

LI = 0.8. The indicator will allow the comparison of real estate according to the cumulative aspect of important qualitative parameters for commercial real estate.

#### 4. Results and Discussion

To demonstrate the applicability of the maximum global utility method, we propose a case study for Chişinău's market. Five properties were selected from the category of commercial properties exposed on the market for sale (Table 3). The primary indicators are assessed for each of them. The following calculation assumptions were accepted:

- All calculations are made in euros to exclude the influence of the devaluation of the national currency;

- The considered forecast period is 20 years;
- It is assumed that the market rent in euros will not undergo considerable changes during the forecast period;
- Operational expenses include maintenance expenses for the real estate (depreciation), real estate tax, expenses for the management company (6% of actual gross income);
- The net present value will not consider the residual value of the real estate, in order to highlight the economic potential conditioned by management efficiency.

The calculations are proposed in **Tables 4-6**.

**Table 3.** Commercial real estate displayed on Chişinău's municipal market in July 2022.

Real estate	Non-residential-commercial building (multifunctional), Botanica, Grenoble street	Restaurant, Rîşcani, Moscow avenue	Office building, Buiucani, Mihai Viteazul street	Production and storage building, Ciocana, Transnistria street	Production, trade and office building, Buiucani, Alba Iulia street
Useful surface, m <sup>2</sup>	1300	1300	1000	1070	973
Building age, years	12	19	8	8	12
Price, euro/m <sup>2</sup>	685	1923	2084	421	606

**Table 4.** Initial Data\*.

	<i>Projects</i>					<i>Criterion priority</i>
	<i>P1</i>	<i>P2</i>	<i>P3</i>	<i>P4</i>	<i>P5</i>	
NPV (thousand lei)	784,535	536,590	485,563	295,286	515,506	20
R (%)	4.86	5.00	4.93	5.14	4.79	20
IRR (%)	9.70	4.11	4.28	7.93	9.64	20
T, months	6.83	9.42	9.82	7.71	6.86	10
REL, years	48	41	52	52	48	10
Level of importance (%)	2.16	2.24	2.16	2.14	2.44	20

\*The projects with the best values according to the criterion are marked.

**Table 5.** Matrix of unit values.

	<i>Projects</i>					<i>Criterion priority</i>
	<i>P1</i>	<i>P2</i>	<i>P3</i>	<i>P4</i>	<i>P5</i>	
NPV (thousand lei)	1.00	0.49	0.39	0.00	0.45	20
R (%)	0.80	0.40	0.60	0.00	1.00	20
IRR (%)	1.00	0.00	0.03	0.68	0.99	20
T, months	1.00	0.13	0.00	0.71	0.99	10
REL, years	0.64	0.00	1.00	1.00	0.64	10
Level of importance (%)	0.07	0.33	0.07	0.00	1.00	20



**Table 6.** Calculation of maximum global utility.

	<i>Projects</i>				
	<i>P1</i>	<i>P2</i>	<i>P3</i>	<i>P4</i>	<i>P5</i>
NPV (thousand lei)	20.00	9.86	7.78	0.00	9.00
R (%)	16.00	8.00	12.00	0.00	20.00
IRR (%)	20.00	0.00	0.61	13.65	19.79
T, months	10.00	1.33	0.00	7.08	9.92
REL, years	6.36	0.00	10.00	10.00	6.36
Level of importance (%)	1.33	6.67	1.33	0.00	20.00
Global utility	73.7	25.9	31.7	30.7	85.1

As a result, we get the following ranking of the priority of the projects examined for the investor, according to the comparison criterion (efficiency indicator):

Maximum Global Utility	P5	P1	P3	P4	P2
NPV	P1	P2	P5	P3	P4
IRR	P1	P5	P4	P3	P2
The recovery period	P1	P5	P4	P2	P3

Therefore, in the “neutral” situation of the investor with respect to risk and profitability, it is recommended to invest in the real estate (P5) located in the Buiucani sector with the greatest variety of uses of spaces: production, trade, offices; followed by (P1) the multifunctional commercial property (for trade and offices) located in the Botanica sector.

If the investor wants maximum profits while also accepting higher risks, the ordering changes and will correspond to that provided by the “recovery term” criterion. In the opposite situation, when minimal risks are requested, the ordering of the projects corresponds to the “neutral” option.

The need to consider the criterion proposed by the authors “level of importance” could be combated by arguing that the factors indicated in **Table 2** are indirectly reflected by the NPV indicator. In this case, the ordering of the projects should correspond, but practice proves the opposite (**Table 4**).

In order to concretize the role of the “level of importance” criterion, the scenario analysis was applied, concretizing in various variations the investor’s attitude towards the risk and profitability.

If the “importance level” of the projects will not be considered, and the investor prioritizes profitability accepting a higher level of risk, the ordering of the projects according to the UGM will correspond to that offered by the IRR criterion. In the second extreme, where the investor requests a minimum level of risk accepting lower incomes, the ordering of projects according to UGM differs starting from the third position: P1, P5, P3, P4, P2.

Therefore, the exclusion of the “level of importance” indicator from the analysis will lead to the displacement of all possible variants (recommendations) to-

wards the “maximum risk acceptance” situation.

## 5. Conclusions

The analysis and calculations performed by the authors demonstrate the applicability of the maximum global utility method in real estate consulting. The advantage of the method consists in the ability to consider the investor’s preferences to the maximum, his attitude towards the risk-profitability correlation, as well as, the observance of the principle of best use.

The indicator of the immovable asset’s importance level ensures the flexibility of the decision depending on the qualitative characteristics of the real estate. The correctness of determining this indicator largely depends on the experience and knowledge of the real estate manager. For different markets the importance of the characteristics included in **Table 2** may differ. Also depending on the country’s legislation, the risk factors examined in **Table 1** may be completed.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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