



COMPARATIVE ANALYSIS OF RETURNS ON THE CAPITAL MARKET VERSUS THE REAL ESTATE MARKET IN ROMANIA

Ioan Bircea^{1*}
Dragoș Răzvan Popa²

¹George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Tg Mureș, 540088,
Romania

²Hirschmann Automotive TM SRL, comuna Sânpaul, 547550, Romania

Abstract:-Studiul realizat oferă o perspectivă asupra rentabilității-risc de pe piața de capital și piața imobiliară din România, relevantă pentru un anumit segment de persoane fizice și juridice din țară și străinătate, precum și decidenților care stabilesc strategia economică a acestei țări. Înțelegerea avantajelor și a dezavantajelor oferite de cele două piețe ajută pe de o parte pe cei interesați în luarea celor mai corecte decizii de investire a banilor de care dispun, pe de altă parte a e a celor care au nevoie de acești bani prin înțelegerea mecanismelor de finanțare. Protejarea celor care dispun de lichidității, prin investirea în obligațiuni, acțiuni, fonduri imobiliare, proprietăți rezidențiale sau comerciale devine tot mai interesantă în contextul economic actual din țară și străinătate.

Cuvinte cheie: piață imobiliară, bursa de valori, rata rentabilității, obligațiuni guvernamentale, fonduri indexate

Abstract: The study provides an overview of the profitability-risk relationship in Romania's capital market and real estate market. It is relevant for a specific segment of individuals and businesses, both domestic and foreign, as well as decision-makers shaping the country's economic strategy. Understanding the advantages and disadvantages of the two markets helps stakeholders make informed decisions about investing their available funds and comprehend the financing mechanisms. Protecting those with liquidity through investments in bonds, stocks, real estate funds, residential, or commercial properties is increasingly significant in the current economic context, both domestically and internationally.

Keywords: Real estate market, Stock market, rate of return, government bonds, Index funds

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* Corresponding author: Ioan Bircea
e-mail: ioan.bircea@umfst.ro

1. INTRODUCTION

An individual or legal entity, resident or non-resident, with available liquidity and unwilling to assume risks has the following options in Romania: deposit funds in bank accounts for safety and interest earnings, or invest in government securities with maturities ranging from one to ten years, ensuring a certain return and safety of the invested capital. Among financial instruments, government securities are currently considered the least risky. By the end of 2023, there were approximately 178,561 investors, 20% of whom were in government securities, compared to 132,963 investors in 2022, according to the Investor Compensation Fund.

Table no. 1 – Investor Numbers as Reported by the Investor Compensation Fund

Year	Dec.2017	Dec.2018	Dec.2019	Dec.2020	Dec.2021	Dec.2022	Dec.2023	Mar.2024
Investors no.	59.467	53.981	53.550	65.637	95.146	132.963	178.561	191.743

Source: Investor Compensation Fund

The coupon rate (interest rate) of government securities is guaranteed and paid at predetermined intervals by the Ministry of Finance. However, their market price fluctuates daily. Generally, the market price decreases when interest rates rise until the yield aligns with the market rate and increases when interest rates fall until equilibrium is reached.

The market price of bonds can be calculated as follows:

$$V_o = \sum_{i=1}^n \frac{C_i}{(1+r_a)^i} + \frac{VR}{(1+r_a)^n}$$

For semi-annual coupon payments:

$$V_o = \sum_{i=1}^{2n} \frac{C_i/2}{(1+r_a/2)^i} + \frac{VR}{(1+r_a/2)^n}$$

Where:

VR = Redemption Value, equal to or higher than the nominal value, with the difference constituting the redemption premium.

C = Annual Coupon, calculated as the nominal value multiplied by the coupon rate.

ra = Market interest rate, representing the discount rate.

n = Number of coupons payable.

According to the model, we can deduce that the yield changes inversely with the price. The yield of government bonds is equal to the coupon rate (this value remains constant throughout the bond's lifetime) at the time of issuance. As mentioned, changes in interest rates in the financial market also affect their yield. The yield to maturity is equal to the interest rate at which the present value of the remaining cash flows until maturity equals the current price.



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If the bondholder chooses to hold the bond until maturity, changes in market interest rates will not affect them, as the amount received at the end of the maturity period will equal the nominal value, and the coupon guaranteed by the state will be received annually (or semi-annually).

But even in the case of government bonds, there are some risks that cannot be ignored by potential investors:

The risk that the issuing country may no longer be able to pay its debts;

Changes in tax legislation (e.g., in Romania, income from government bonds is tax-exempt for individuals); Inflation; Interest rate fluctuations; Depreciation of the leu (Romanian currency).

In most countries, the risk of default on government-issued bonds is relatively low. To protect against currency depreciation risks, an investor can purchase government bonds issued in a more stable currency (e.g., the R2908AE bond in euros with a fixed interest rate of 5%). If the investor needs liquidity, they can trade the bond on the Bucharest Stock Exchange (secondary market), where financial instruments that have already been issued are traded.

In contrast to low-risk, low-return financial instruments on the capital market, there are also high-return instruments (e.g., stocks, futures contracts, options, or mutual fund units), which inherently carry higher risk (i.e., the probability of achieving anticipated returns). To mitigate risks, it is recommended that investors create a diversified portfolio. If an investor builds a stock portfolio similar to one that reflects a stock market index, they can achieve similar returns.

Stock market indices serve as a reference for potential investors, being considered a barometer of the capital market in Romania and, implicitly, of the economy. The Bucharest Stock Exchange's benchmark index is BET, which is calculated based on stock prices and weighted by the free-float market capitalization. In comparison to indices calculated only on the basis of prices (e.g., BET, BET-XT, BET-NG, BET-BK, BET Plus, BET AeRO, ROTX), there are indices that also take into account distributed dividends (e.g., BET-TR, BET-TRN, BET-XT-TR, BET-XT-TRN). These provide a more accurate reflection of performance for an investor.

A total return index tracks both capital gains (resulting from stock price movements) and any cash distributions, such as dividends, offered by the companies included in its calculation. It is well-known that in 1960, Warren Buffett purchased a newly created fund that tracked the performance of 500 stocks of American companies¹ The risk of investing in a stock portfolio can be assessed using standard deviation and the Sharpe ratio.

An alternative investment option for available funds, whether for individuals, legal entities, residents, or non-residents, is investing in real estate properties. In the case of medium- and long-term investment in a property, the monthly income generated after the invested amount is the rent. If the investor's intention is to renovate the property and resell it after a short period, the return is due to the price difference. Investment in real estate depends on the amount we wish to invest, the risk associated with this type of investment, the resulting return, and the acceptance of a longer period for conversion into liquidity. If the expenses related to taxes, repairs,

¹ Brett Garner, Buffett's Early Investment's: a new investigation into the decades when Warrent Buffett earned his best returns, Harrison House,2024 SUA

maintenance, and vacancy rate are deducted from the gross income, the resulting figure is the net income.

2. METHODOLOGY

To make more accurate decisions regarding the returns of low-risk financial instruments, we analyzed the interest rates of government securities with different maturities, comparing them to bank deposit rates and rental yields from real estate properties. To accurately reflect the changes in the returns of government securities over time, we calculated their real yield by adjusting the nominal yield for inflation.

For estimating the return and associated risk of a stock portfolio, as well as its correlation with the profitability of other individual securities and the future evolution of the capital market, we used a group of stock market indices (BET, BET-TR, BET-NG, BET Plus, ROTX). As previously mentioned, we assessed the average return of the capital market through a portfolio comprising the stocks included in the baskets of these indices.

The average annual return of the stock market is calculated using the formula:

$$\text{Annual Return} = (\text{End-of-Year Index Value} - \text{Start-of-Year Index Value}) / \text{Start-of-Year Index Value}$$

The representativeness of these indices for the Romanian capital market lies in their consideration of the prices of the most liquid companies listed on the stock exchange as well as the performance of the most representative sectors of the economy, such as energy and finance.

Description of Key Stock Market Indices - **BET Index:** Launched in 1997 as the first index of the Bucharest Stock Exchange (BVB), it is considered the benchmark index. It currently includes the stocks of 20 of the most liquid companies on the exchange. **BET-TR Index:** This index reflects the total return of a portfolio, weighted by the free-float capitalization of the most liquid Romanian companies on BVB's regulated market. It includes 20 companies meeting the highest quality standards. **BET Plus Index:** This index is based on companies from BVB's regulated market that meet minimum liquidity and free-float-adjusted capitalization criteria. Its advantage is the variable number of companies included, currently 48. **ROTX Index:** Jointly developed by BVB and the Vienna Stock Exchange (Wiener Börse AG), this index reflects real-time movements of "blue-chip" stocks traded on BVB. It includes 15 Romanian companies. **BET-NG Index:** A sectorial index that tracks the evolution of companies in the energy and utilities sectors listed on BVB. It currently includes 12 companies.

To determine the real annual return of investments in a portfolio represented by stock market indices, we used the Fisher Effect Equation: Real Rate = Nominal Rate - Inflation Rate

Apart from bonds and stocks, an alternative investment option would be in real estate. An optimal portfolio should include, in addition to bonds and stocks, investments in real estate.²

In addition to bonds and stocks, another investment alternative is real estate. The income generated from real estate investments typically comes from rent. For this study, we considered the rental income of an apartment used as an office. This choice was based on its legal, physical, and financial feasibility, as well as data available in the magazine "Revista Valoarea"³.

² Gunther Robin P., Wills Nadine; Piazzolo Daniel, Role of Real Estate in a Mixed-Asset Portofoliu and the Impact of Illiquidity, International Journal of Reale Estate Studies, 16(2),34-46, 2022, DOI 10.11113/intrest.v16n2.168

³ Quarterly magazine, edited by ANEVAR

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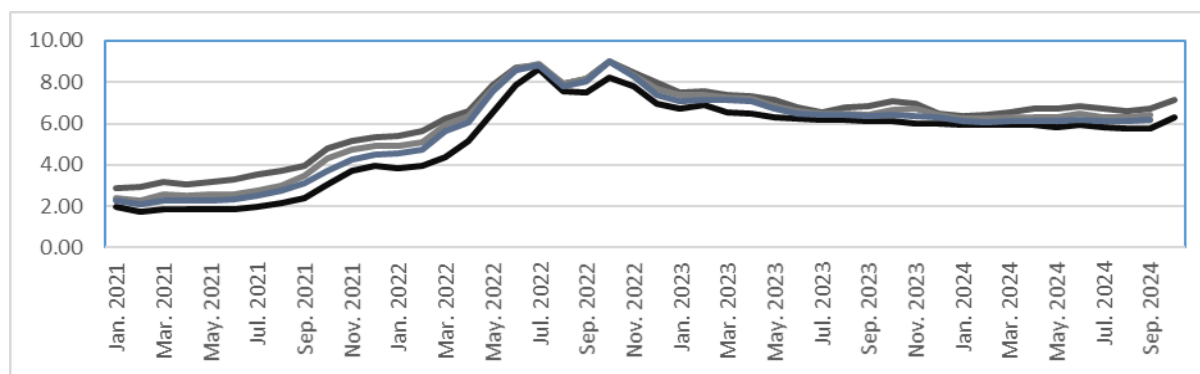
The rental income data in the magazine is sourced from contracts, excluding incentives provided by landlords (e.g., rent-free months or contributions to space renovations). Additionally, expenses such as taxes, utilities, and repairs are borne by the tenant. In the study, we calculated the annual return on real estate investments based on net rental income.

The price per square meter of the apartment, as well as its changes over time, were obtained from the website Imobiliare.ro

3. RESULTS / PRESENTING THE RESEARCH FINDINGS

The yield of government bonds with a 10-year maturity is higher than that of 1-year government bonds (treasury bills). However, the risks associated with 1-year bonds are significantly lower than those of 10-year bonds. Factors such as the probability of state default, inflation, and market interest rates are much less pronounced for shorter-maturity bonds. Additionally, the economic outlook of the issuing state and investor confidence are key factors influencing the yield level of 10-year government bonds compared to those with a 1-year maturity. Longer-term bonds are more exposed to economic fluctuations, inflationary pressures, and shifts in market interest rates, leading to higher yields as compensation for the added risk. Conversely, the lower risk and shorter exposure period of 1-year bonds typically result in lower yields.

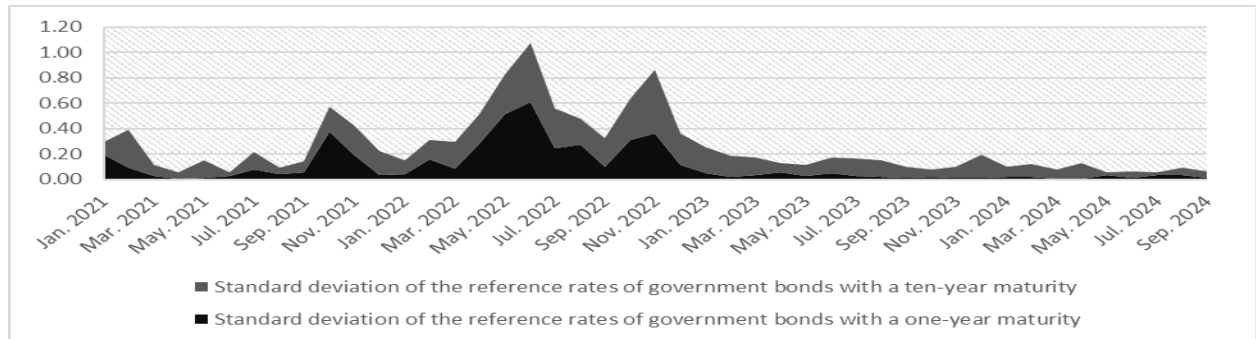
Figure no. 1 – Benchmark rates (coupon rates) on the secondary market for government securities with different maturities.



Source: National Bank of Romania, Investing.com

A similar trend can be observed for the average yields accepted during auctions on the primary market (a segment of the capital market where new issuances of financial instruments are made available to investors). According to the chart, we can observe that a high yield (interest rate) value was reached during the period from July to November 2022, followed by a decrease in values up until December 2024. Based on the data collected, during periods when benchmark rates for government securities are high, the risk, as measured by standard deviation, also reaches its highest level.

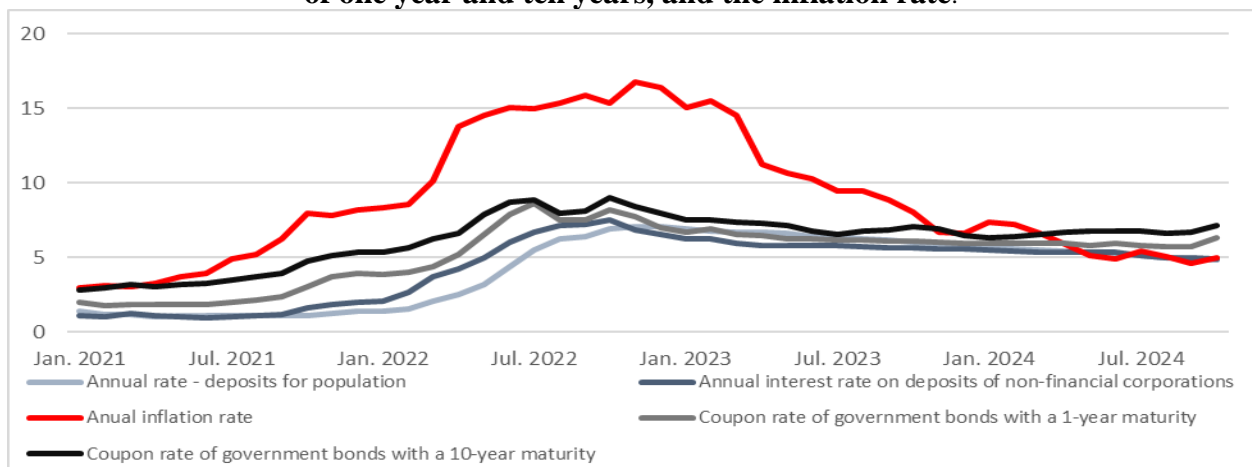
Figure no. 2 – The risk of government bonds measured by the standard deviation during the period 2021–2024



Source: own calculations BVB

However, as mentioned, their yield and trading price depend on the interest rate in the interbank money market.

Figure no. 3 – Comparison between the annual interest rate on deposits of individuals and non-financial corporations, the benchmark rate for government securities with a maturity of one year and ten years, and the inflation rate.



Source: BVB

According to the calculations, during the period from January 2021 to April 2024, the inflation rate was higher than both the interest rates on RON deposits and the yields on government securities with maturities of one year or ten years. It can also be observed that the interest rate on government securities is higher than that on bank deposits.⁴

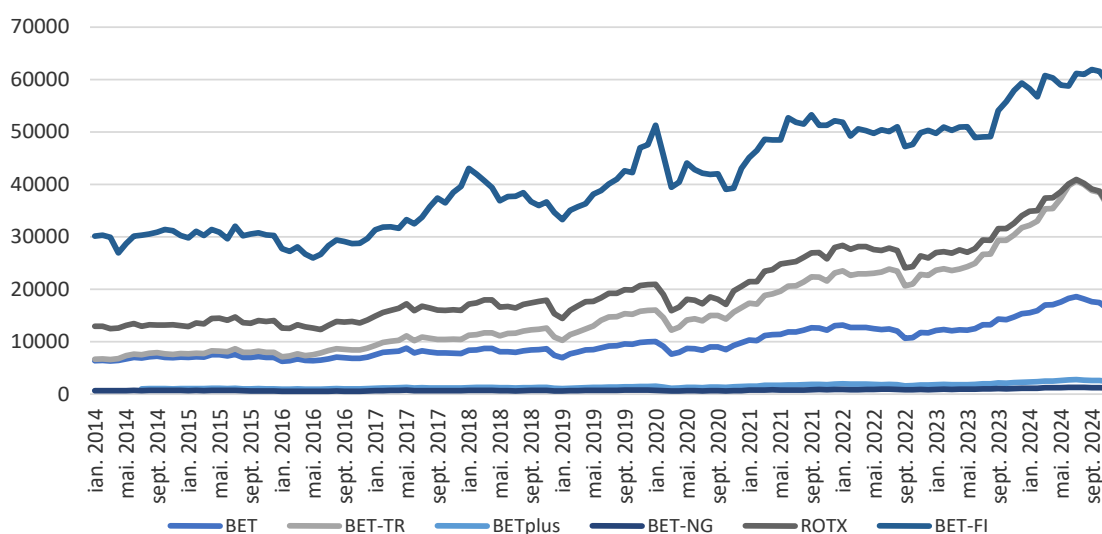
Therefore, those who relied on these types of investments or savings did not achieve a gain relative to the loss of purchasing power (with the amounts received, fewer goods could be purchased compared to before the investment). Only from April 2024 will we see a positive real yield in the case of government securities.

⁴ Yibing Zhou, Research on the Bond Market and its Contributions to Risk Management, Advances in Economics Management and Political Sciences 13(1) China, 2023, 92-9; DOI 10.54254/1169/13/02330667

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For investors, a benchmark regarding the risk associated with government securities is the credit rating assigned by various agencies.⁵ The ratings given by the three major agencies for Romania's sovereign bonds are as follows: Moody's Baa3, Standard & Poor's BBB-, and Fitch BBB-, indicating an adequate capacity to meet financial commitments.

Figure no. 4 – The evolution of stock market indices from December 2014 to December 2024



Source: Own calculations based on data published by BVB (Bucharest Stock Exchange) & investing.com

Based on the number of points recorded by each stock market index studied, a growth trend can be observed over the ten-year period (Dec. 2014 – Dec. 2024). The annual return rate of the stock portfolio included in the BET index calculation was determined using the formula $[(\text{BET at the end of the year} - \text{BET at the beginning of the year}) / \text{BET at the beginning of the year}]$.

The same model was applied to calculate the annual return rate of the other indices.

According to the evolution presented in the table, the BET, BET Plus, BET-NG, ROTX, and BET-FI indices recorded positive returns in the years 2016, 2017, 2019, 2021, 2023, and 2024, and negative returns in 2015, 2018, 2020, and 2022. The highest annual return was registered by the BET-TR index, as it reflects both capital gains (based on stock prices) and the dividends offered by the companies included in the index. The calculated returns with the highest values were achieved in 2019 across almost all stock market indices. Notably, in 2023, to recover the losses from 2021, the gains were significantly higher (45.2% in the case of the BET index). In 2023, the nominal return calculated based on the BET-TR index was 31.80%, while the real

⁵ Zhewei Xu, Risk Analysis and Suggestions on Bond Investment Transaction of Financial Institutions, Finance and Market 5(1), 2020, China, DOI10.18686/fm.v5i1.1601

return was 20%, as determined using the Fisher formula. To ensure a fair comparison both among indices and with other investment options, the compound annual growth rate (CAGR) was calculated. Due to fluctuations between annual gains and losses, these were smoothed using the CAGR.

Table no.2 – Comparison of the annual return of stocks with the yield of government securities with a one-year maturity and the inflation rate.

Annual return	BET	BET TR	BET Plus	BET NG	ROTX	BET-FI	Government bonds	Annual inflation rate
1 01.2024-1 10.2024	10,70%	18,20%	10,40%	8,50%	12,10%	6,30%	5,80%	5,11%
30/12/2023	31,80%	39,90%	30,40%	31,40%	31,20%	17,95%	6,60%	10,40%
30/12/2022	-10,70%	-1,90%	-10,30%	-5,00%	-7,30%	-3,59%	3,70%	13,80%
30/12/2021	33,20%	40,00%	33,00%	29,40%	36,20%	21,00%	1,60%	5,05%
30/12/2020	-1,70%	3,40%	-1,70%	-11,80%	-1,50%	-16,00%	2,70%	2,63%
30/12/2019	35,10%	46,90%	34,30%	30,30%	36,10%	37%	3,10%	3,83%
30/12/2018	-4,80%	4,30%	-4,80%	-7,40%	-3,90%	-13%	1,90%	4,63%
30/12/2017	9,40%	19,10%	10,70%	10,80%	12,80%	33%	0,90%	1,34%
30/12/2016	1,20%	9,70%	1,70%	-3,00%	1,00%	-1,87%	0,60%	-1,55%
30/12/2015	-1,10%	3,10%	-1,30%	-14,00%	7,10%	-0,02%	1,30%	-0,60%
Maxim	35,10%	46,90%	34,30%	31,40%	36,20%	37%	6,60%	13,80%
Minim	-10,70%	-1,90%	-10,30%	-14,00%	-7,30%	-16%	0,60%	-1,55%
Compounded annual growth return (CAGR)	9,16%	17,10%	9,14%	5,60%	11,31%	6,69%	3%	4%
Standard deviation	17,09%	17,91%	16,67%	17,96%	16,62%	18,41%	2%	4,70%

Note: Reflects the yield of government bonds with a one-year maturity, according to investing.com.

Source: Own calculations based on data published by BVB (Bucharest Stock Exchange), Investing.com, and BNR (National Bank of Romania).

Consequently, a stock portfolio structured similarly to the BET-TR index achieved a compound annual growth rate of 17.9%, demonstrating confidence in the Romanian stock market. In comparison, the 10-year compound annual growth rate of the S&P 500 index⁶ was 15.3%. The annual compound growth rate of the BET index increased by 9.16%, outperforming the annual growth rates of the BET-NG and BET-FI indices. To gain an accurate view of the returns for a portfolio similar to a stock market index, real returns were calculated by adjusting the annual nominal returns for the annual inflation rate⁷. The average annual real return for the BET-TR index was 12.52%, while for the BET index, it was 4.54%, calculated using the Fisher formula.

⁶ <https://curvo.eu/backtest/en/market-index/sp-500?currency=eur>

⁷ Doeswijk R., Lam T., Swinkels L., Historical Returns of the Market Portfolio, The Review of Asset Pricing Studies, 10(3), 521, 2020, DOI 10.1093/rapstu/raz010

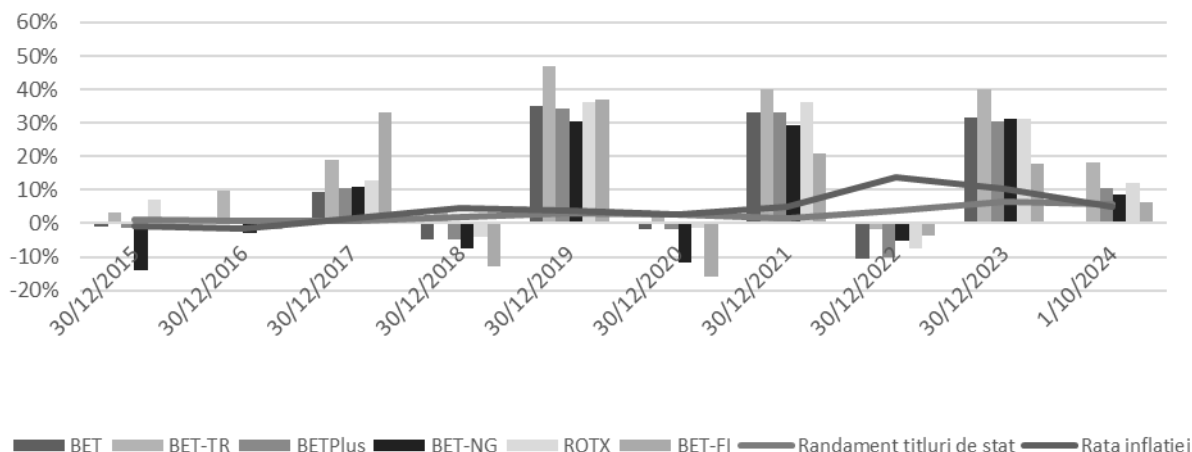
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Table no. 3 – Annual real return calculated based on stock market indices and the inflation rate

Real annual return	BET	BET TR	BET Plus	BET NG	ROTX	BET FI
1 01.2024-1.10.20204	5,59%	13,09%	5,29%	3,39%	6,99%	1,19%
30/12/2023	21,40%	29,50%	20,00%	21,00%	20,80%	7,55%
30/12/2022	-24,50%	-15,70%	-24,10%	-18,80%	-21,10%	-17,39%
30/12/2021	28,15%	34,95%	27,95%	24,35%	31,15%	15,95%
30/12/2020	-4,33%	0,77%	-4,33%	-14,43%	-4,13%	-18,63%
30/12/2019	31,27%	43,07%	30,47%	26,47%	32,27%	33,17%
30/12/2018	-9,43%	-0,33%	-9,43%	-12,03%	-8,53%	-17,63%
30/12/2017	8,06%	17,76%	9,36%	9,46%	11,46%	31,66%
30/12/2016	2,75%	11,25%	3,25%	-1,45%	2,55%	-0,32%
30/12/2015	-0,50%	3,70%	-0,70%	-13,40%	7,70%	0,58%
Maxim	31,27%	43,07%	30,47%	26,47%	32,27%	33,17%
Minim	-24,50%	-15,70%	-24,10%	-18,80%	-21,10%	-18,63%
Compounded annual growth return (CAGR)	4,54%	12,52%	4,52%	1,17%	6,68%	2,08%
Standard deviation	17,32%	18,00%	16,97%	17,20%	16,99%	18,99%

Source: Own calculations based on data published by BVB (Bucharest Stock Exchange), Investing.com, and BNR (National Bank of Romania).

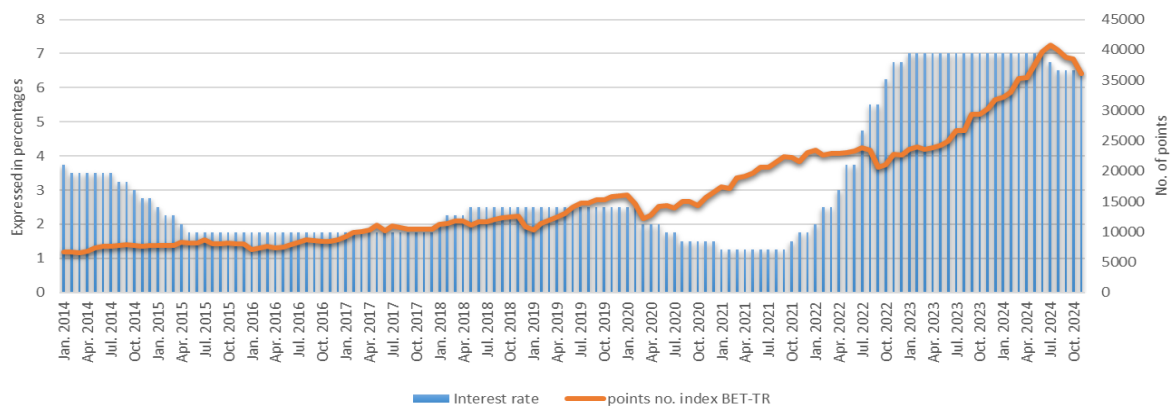
Figure no. 5 – Comparison Between the Average Annual Return of the Capital Market Based on Stock Market Indices and Government Bonds



Source: personal calculations based on stock market indices

Comparing the average nominal return⁸ on the capital market with the return on one-year government bonds, we observe that in certain periods when the investment return on the capital market is negative, the return on government bonds remains small but positive. In the years 2024, 2023, 2019, 2017, and 2016, real annual returns were higher than those of government bonds. The risk of investing in a portfolio similar to a stock market index was assessed based on the annual standard deviation, which, for the BET index over a 10-year period, was 17%. For the S&P 500 index, the standard deviation over the same 10-year period was 15.3%. A similar value for the standard deviation is obtained when measured based on monthly deviations as well $\sqrt{12} * \sigma_{\text{lunar a randamentu lui}}$. It can be concluded that the risk value for a stock portfolio, assessed based on the standard deviation (17%), is significantly higher than that for one-year government bonds (2%).

Figure no. 6 – The relationship between the BET-TR index and the monetary policy interest rate.



SSource: Own processing based on BNR data

Normally, when interest rates decrease, companies will have lower costs and will be tempted to borrow in order to make long-term investments, which leads to a higher value of their stocks. When this phenomenon occurs in a significant number of companies, it drives the increase of the stock market index. In the study conducted, we observe that the monetary policy interest rate has increased from 2021 to May 2024, and the BET-NG index also registered an increase, indicating that other factors are influencing the index. This is confirmed by the coefficient of determination of the BET-TR index in relation to the monetary policy interest rate, which is 0.56. In the case of an investment in real estate held for a long period, in addition to the rental yield, it will generate a return from the price difference.

⁸ Nagy Marek, Valaskova Katarina, Kovaloka Erika, Macura Marcel, 500 Deivers of S6P 500 s Profitability: Implications for Investement Strategz and Risk Management, Economii 12(4):77, Slovacia, 2024, DOI:103390/economies12040077

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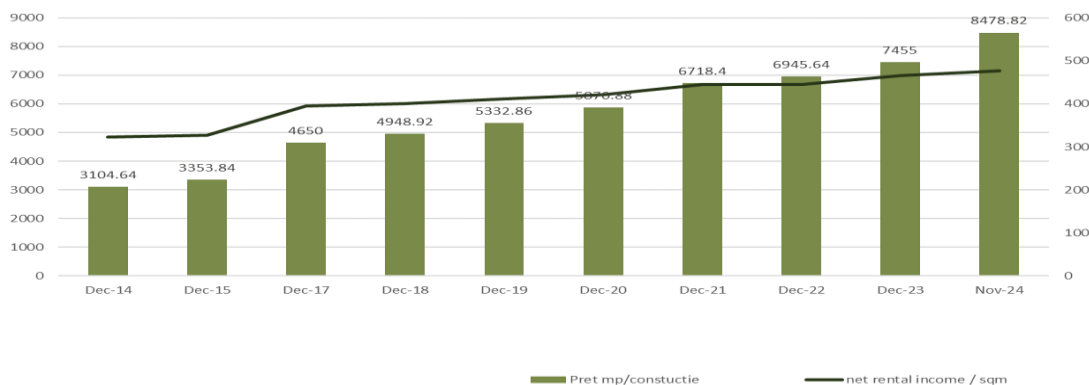
Table No. 4 – Evolution of construction prices and nominal and real yields

	Dec-14	Dec-15	Dec-16	Dec-17	Dec-18	Dec-19	Dec-20	Dec-21	Dec-22	Dec-23	Nov-24
Price/square meter construction	3105	3354	3718	4650	4949	5333	5871	6718	6946	7455	8479
Annual yield from the price difference in nominal prices	-3%	8%	11%	25%	6%	8%	10%	14%	3%	7%	14%
Annual yield from the price difference in real prices	-4%	9%	12%	24%	2%	4%	8%	9%	-10%	-3%	8,6%

Source: Magazine “Valoarea”, Own processing

The price per square meter increased by 14% during the period from November 2024 to December 2023, while from 2023 to 2022, the increase was only 7%. The growth in 2024 compared to 2023 is primarily attributed to the rise in material costs. The highest annual price increase per square meter occurred in 2021/2020, with 14%, while the smallest increase was observed in 2022.

Figure no. 7 – The evolution of price per sqm and net rent per sqm for apartments used as offices



Source: Own calculations, Imobiliare.ro

Since the end of 2015, we can observe an increase in the price per square meter for construction, from 3,353.84 RON in 2015 to 8,478.82 RON in November 2024, which represents a 2.5-fold increase (a 152% increase). This same price evolution per square meter for construction can also be seen at the European level, but at a different growth rate (a 53% increase from 2015 to 2025). Regarding apartment rent for office use, we also observe an increase, but at a much slower pace (a 48% increase from 2015 to 2024) compared to the price per square meter increase. According to data published by Eurostat, rents for residential properties in Europe increased by 18% from 2015 until the second quarter of 2024. Also, based on Eurostat data, rents for construction in Romania increased by 52.8% from 2010 to 2024.A

comparison between the rent values presented in the "Valoarea" magazine and those resulting from the study of the market in Târgu Mureş indicates the following values:

Table no. 5 – Gross rent in Târgu Mureş calculated and the one published in the "Valoarea" magazine.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
The value calculated as a weighted average with frequency	6,5	6,4	4,8	5,8	6,4	6,4	5,0	6,0	7,64	6,32	6,5
The minimum value published in the Revista Valoarea	7	7	8	7	7	7	7	7	7	7	8

Source: Magazine "Valoarea", Own processing

We can observe that the calculated rent value, as a weighted average with frequency in Târgu Mureş, is very close to the minimum rent value published in the "Valoarea" magazine. The differences can be attributed to the office class, their location, and the clauses in the rental contracts.

Table no. 6 – Nominal and real yield from rent of apartment used as office

	Dec -14	Dec -15	Dec -16	Dec -17	Dec -18	Dec -19	Dec -20	Dec -21	Dec -22	Dec -23	Nov -24
Net rent assuming use as office (euro/sqm)	6,0	6,0	6,4	7,1	7,2	7,2	7,2	7,5	7,5	7,8	8,0
Net rent assuming use as office (Lei/sqm)	26,9	27,2	29,1	32,9	33,3	34,3	35,1	37,1	37,1	38,8	39,8
Annual rent (lei)	322,6	326,5	349,7	394,4	399,8	412,1	421,7	445,5	445,5	465,2	477,1
Yield from net rental income	10,0%	10,4%	10,3%	10,3%	8,5%	8,2%	7,7%	7,5%	6,6%	6,7%	6,4%
Inflation rate	1,1%	-0,6%	-1,6%	1,3%	4,6%	3,8%	2,6%	5,1%	13,8%	10,4%	5,1%
Real yield from rent	9,0%	11,0%	12,0%	9,1%	4,0%	4,3%	5,1%	2,4%	-7,2%	-3,7%	1,3%

Source: Magazine "Valoarea", Own processing

The compound annual growth rate (CAGR) of the price per square meter for the period from November 2014 to November 2024 was 9.7%. In contrast, the CAGR for rent per square meter was 3.9%, significantly lower than the growth rate of the price per square meter. The net rental yield in 2024 was 6.40%, while the average annual yield was 8.4%. According to studies conducted by Global Property⁹, the residential rental yields in Romania at the end of 2024 are 6.46%.

If the investor does not have sufficient funds for a direct real estate investment, they have the opportunity to invest a smaller amount in the shares of a real estate company (where the majority of the income comes from rents or property sales) or in a real estate mutual fund (such as Vanguard Real Estate). Today, these real estate mutual funds are present in several countries

⁹ <https://www.globalpropertyguide.com/europe/romania/price-history>

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around the world. In Romania, the companies Start Residence Invest and Meta Estate Trust, which engage in the rental and subletting of their own or leased real estate, recorded a dividend yield in 2023 of 5.10% and 5.78%, respectively, which is lower than the average return of the capital market reflected by the BET index (21.40%).

Figure no. 8 – Evolution of stock prices for REIT, MET, and BET

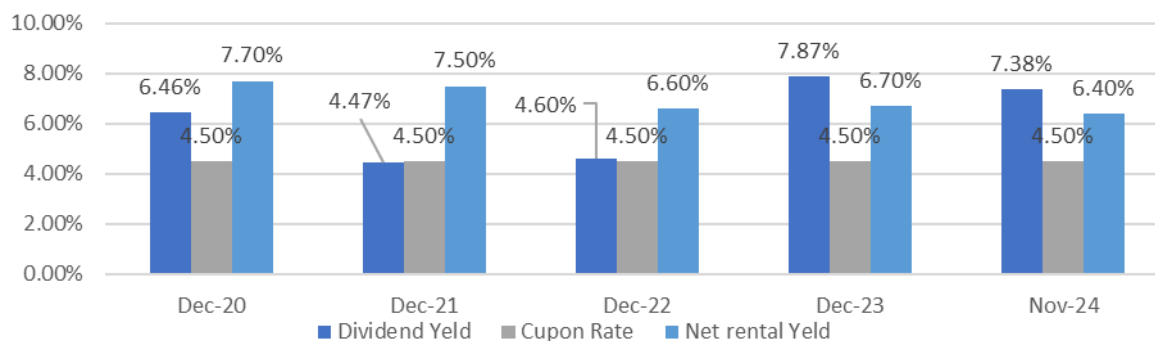


Source: tradingview, BVB

CONCLUSIONS

In the scenario where we would have invested 3105 lei per square meter in an apartment in December 2014 and sold it in November 2024 for 8479 lei per square meter, we would have had a total return of 273% from the price difference. The annual return, or the constant annual growth of the investment from 2014 to 2024, was 10%.

Figure no. 9 - Comparison between the annual dividend yield, the coupon rate of 4-year maturity government securities, and the annual net rental yield of office spaces.



Source: BVB, own calculations on the real estate market.

In the case of investing in a portfolio similar to the stock portfolio used for calculating the BET index, we would have had a total return of 135%, meaning that the investment would have

grown annually by 9% during this period. From the price differences related to the real estate investment, we would have had an annual return of 10% over the 10-year period, while from the investment in a portfolio similar to the BET index, we would have had an annual return of only 9%.

The annual return from an investment also includes a return generated from the annual income obtained from it. The annual returns from dividends, annual interest (coupon rates) on government bonds, and net rents from class B office buildings, starting from 2020 until November 2024:

According to the calculations, we can estimate that in the years 2020, 2021, and 2022, the return from net rents is higher than the return from dividends. Only starting in 2023 and 2024 is the return from dividends greater. It is worth mentioning that the net rent for residential apartment use is lower than in the case of office use.

However, the investor takes into account both the return from price appreciation and the one from cash flows generated by the investment. Thus, the investment in an apartment (in 2014), which will be rented for a period of 10 years and sold at the end of the period (in 2024), has the following return on this investment:

$$\text{Investment return} = \frac{\text{Chiria netă} + (\text{Pretul de vanzare} - \text{Pretul de achizitie})}{\text{Pretul de achizitie}} = 3,08$$

Expressed as a percentage, it is 308%. Thus, the amount invested in the apartment would have tripled, generating a gain of 308%. The internal rate of return (IRR) for this investment project is 19%. In the scenario where we invested in the capital market in a portfolio similar to the one based on the BET-TR index, we would have achieved a return of 443%, significantly higher than the return from investing in the real estate market. The average annual compound growth rate is 17.10%. If we had invested this amount in a bond with a 10-year maturity, which we held until maturity in 2024, we would have obtained an internal rate of return of 4.75%.

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