STUDY ON INVESTOR CERTAINTY IN CHOOSING A PORTFOLIO

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Abstract

In theory and in practice, investors are attracted to the capital market through which they want to capitalize on the resources at their disposal and, consequently, to obtain additional returns (profits).

The capital market is also subject to fluctuations in the national or international market so that the prices at which a number of assets or portfolios can be placed vary from time to time. Those who use the capital market to improve their profits are constantly studying the prospect of profitable investments.

In theory, an investor can consume all his income, but in practice, his income is higher and results in a surplus, a resource, from which he wants to obtain future income. Assets are sometimes risky to invest and, therefore, the person who wants to take this step first aims at a careful knowledge of the market perspective, especially in the segment in which he wants to place assets.

From the point of view of portfolio theory, all these alternatives are considered investment options. Consequently, the investor will perform a perfect, comprehensive study, using statistical-econometric models to ensure that he has certainty when choosing a portfolio that he places on the capital market. Of course, he can opt for one or more options, but all the options that determine the future prospects of an agent are usually materialized in a portfolio so that theorists in the field of portfolios are concerned with a type of decision thus making a selection. of investments that are certainly profitable in the next period.

The problem is to determine how the investor should select one of several alternative portfolios to place on the capital market. It is necessary to estimate with certainty the perspective of the respective portfolio. From this point of view, the performance of a portfolio can be predicted using two measures, namely the estimated rate of return, ie the extent to which the actual return is likely to differ from the forecasted value and, secondly, to estimate the best or average assumption of uncertainty measures.

We know that risks act in the market. Portfolios are also subject to market risks and therefore the probability of an outcome is usually indicated by the part where the chances of this portfolio are certain, ie it is a certainty in the placement of these assets in the portfolios. If there were only a few alternative distributions the investor could explicitly consider each but usually there are millions of monetary units that entering the portfolios can ensure one return or another.

In the models used in these studies there are sufficient statistical-econometric possibilities to highlight the certain perspective of each portfolio. Of course, the significance attached to the measures is the same in each case and, therefore, the uncertainties or standard deviations that measure the probability of the actual difference from the expected result are different. Some researchers believe that these alternatives are qualitatively different, but they say that the behaviour of a portfolio in the market is that which resulted from the detailed study.

Portfolio theory involves making decisions at risk. These can also be ignored, but in the end they are considered to have effects on the investor who will not obtain the anticipated profit. Therefore, as always, mathematics by abstraction can lead to error, but the chance of not having these errors is to build statistical-econometric models based on which to calculate the parameters of profitability and based on them to make the estimate, the future forecast of the value of the portfolio of shares he has chosen.

Certainty is the essential element in ensuring a profit, even a minimal one, in the conditions in which there are fluctuations, evolutions and sometimes contradictory relations on the capital market.

Portfolios can be placed as a result of this study and those who specialize in this field know the problems, especially the graphical models that, built on the data of the portfolios considered determine the perspective of each of them in achieving future revenues.

Keywords: *portfolios, capital market, investors, uncertainty, forecast.*

JEL classification: *C13, G17*

Introduction

In this article, *Study on investor certainty in choosing a portfolio*, the authors started from the fact that investments in the capital market must be made with great rigor. In this sense, the article presents the theoretical aspects that can be the basis for ensuring a certainty that the investor has done the right thing in choosing the portfolio. Examples in this article suggest that the investor needs certainty when placing his or her assets in portfolios on the financial market. Of course, here we are talking about large portfolios, which are built very carefully, and which provide a perspective to it.

The rate of return is taken into account depending on two aspects: the income placed in the form of investments and the course of the capital market that will take place in the next period. Therefore, in this study of identifying the degree of certainty involved in investing a portfolio of a portfolio is broad and complex. Of course, investors follow the evolution of portfolios of the same type that they want to place over time, to see what the value fluctuation of the price of these portfolios has been and, finally, to ensure that there is a high degree of certainty and try to place this portfolio.

We know that the portfolio is the means for future investments and therefore this act is closely related to the selection of the portfolio for which, traditionally, the term investor of the investor is used. Here a problem arises, namely that of determining how the investor should select one of the very large numbers of alternative portfolios that currently exist in the market. The alternative study helps the investor to obtain a certainty, to ensure a degree of certainty about the future evolution.

Of course, the article also presents in detail that an investor can be considered uncomfortable if it is based on a single value because the effective rate of return will become the anticipated value anyway. Therefore, it is necessary to estimate the uncertainty on the basis of which to make a prediction and, thus, a protection for the investor that at the end of the period for which he placed that portfolio he will obtain a considerable profit.

Concluding this scenario, we assume that the performance of a portfolio can be predicted given an estimated rate of return and an evolution that is fully in line with the assumed one. From this point of view, there is the problem of analysing the performance forecast of a portfolio over time. Series of data and graphs are presented that probably give, sometimes quite certain, the perspective of the profitability of a portfolio.

Of course, in the theoretical activity, but also the practical one, there is the problem that the total probabilities are equal to 1, ie each of the portfolios placed to fit on a segment that suggests a certain prediction, a certain certainty on the return that will be obtained. .

The statistical-econometric relations are valid, there is no reason to consider that the rate of return that the portfolio has is always normal. Therefore, we use a standard derivation function for each case, so that we can highlight in these conditions what the future evolution would be. There are two known methods for declaring predictions. The first directly provides two values for each portfolio, and the second performs certain calculations using the values that contain a probability distribution. The expected rate of return is an intermediate one and it helps to estimate the profit of the values that will be obtained through the respective investment.

At the end of this article, the authors summarize the fact that portfolio theory assumes that investors are undecided, but not ignorant. Therefore, the desirability of a portfolio should be considered only after analyses have been made on the basis of models that ensure a concrete desirability, ie a level of certainty for the investor who assumes that he places those portfolios on the capital market.

Literature review

Placing equity portfolios on the capital market is especially important for any investor. The investor wants to have a certain guarantee that consists in obtaining a high return. The capital market is an area that ensures the placement of assets that bring additional gross value added. This aspect is given special attention by specialists in the field, but also by investors of securities portfolios on the capital market. In this regard Altar, M. A (2002) published a comprehensive study on portfolio theory, which addresses all issues related to the formation and selection of portfolios that bring high returns. Anghelache, C. (2006) published a study on the quantitative methods used in financial-banking analyzes. Anghelache C, Anghel M.G., Marinescu A.I., Popovici M. (2019) address some issues related to the allocation of financial resources on the capital market, thus seeking to address some issues raised by the forecasts regarding the low frequency evolution of portfolios. Barndorff-Neilsen, O., Hansen, P., Lunde, A., & Shephard, N. (2008), are concerned with the measure of the variation of equity prices in the presence of noise. Black, F. (1972), is concerned with the balance of the capital market. Iacob Ș.V., Dumitru D., Popovici M. (2020) address in their paper some aspects regarding the choice of the portfolio and the testing of the model regarding the price of capital assets, starting from the idea that the market is the one that determines the evolution of market prices. Linton, O. (2016), addresses issues related to statistical and econometric modeling. Welch, I., Goyal, A. (2008) turned their attention to some aspects related to the capital premium forecast.

Methodology, data, results and discussions

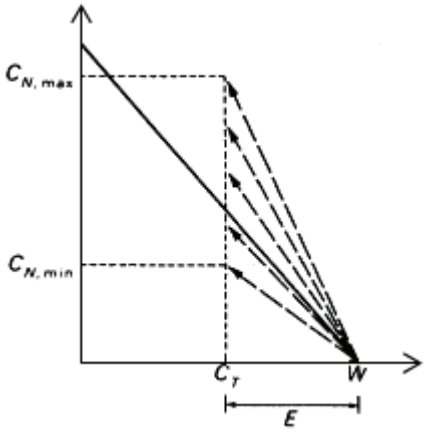
In theory, an agent can consume all his income at time t_0. In practice, it will not do so. An agent's income is the maximum amount of money he can have. He chooses to invest less than this amount to get future income. It can be invested in risky assets, borrowed or held in cash. From the point of view of portfolio theory, all these alternatives are considered investment options.

Figure 1 illustrates the situation faced by Agent T. The amount obtained is W. He can opt for a job, a house, an insurance policy or a package of shares. The result of all these decisions is presented in figure number 1. He

will invest in t_0, CT of the values held. It is possible that only CN can invest. The actual amount will depend on a multitude of risk factors.

Situation of agent T

Figure 1



Formally, the situation of Agent T is similar to that of an investor. Suppose you invested X euros in t_0. The rate of return will be obtained through the relationship:

$$R_r = \frac{v-i}{i} \quad (1)$$

Where: R_r represents the rate of return
v represents income
i represents investments

All of the options that determine an agent's future prospects are focused on one portfolio. Figure 1 shows the perspectives of the T agent, given a particular set of possibilities, ie a chosen portfolio.

Portfolio theorists are concerned with a type of decision, namely the selection of an appropriate set of liquid investments. Thus, it is estimated that a portfolio is composed of securities. All these decisions on the securities considered constitute a portfolio.

In fact, the performance of a portfolio is measured by the real rate of return (return) obtained in the future in relation to the investment.

The portfolio is the means for future investments. The act is closely linked to the selection of the portfolio, for which, traditionally, the term

investor is used. The problem is to determine how an investor should select one of a very large number of alternative portfolios.

Suppose the acquisition of a portfolio composed of 100 shares of economic agent X_1, 50 shares of economic agent X_2 and 50 shares of economic agent X_3. The aim is to hold the portfolio for a year and then sell it.

In any case, the relevant measure is the rate of return, appropriately dealing with dividends and capital gains. The investor wants to know what the rate of return of the portfolio will be.

The answer will indicate that the profitability (yield) will depend on several factors in industry X_1, X_2 and X_3, specific to each economic agent.

The investor will make a prediction. A profitability of 10% can be anticipated. The profit is probably expected to be below, above or equal to 10%. The figure is neither the highest value he thinks possible, nor the lowest. It is, in a sense, an intermediate estimate.

The investor may be considered uncomfortable if it is based on a single value, as the effective rate of return will differ from the expected value. Therefore, a certain estimation of the uncertainty on the basis of which a prediction is to be made is necessary.

To conclude this scenario, the performance of a portfolio can be predicted using two measures, namely, an estimated rate of return, ie an estimate of the best or average assumption or a measure of uncertainty, ie the extent to which the actual return is likely to differ from predicted value.

For example, using the data in table number 1 we get a prediction (forecast):

Portfolio performance forecast

Table 1

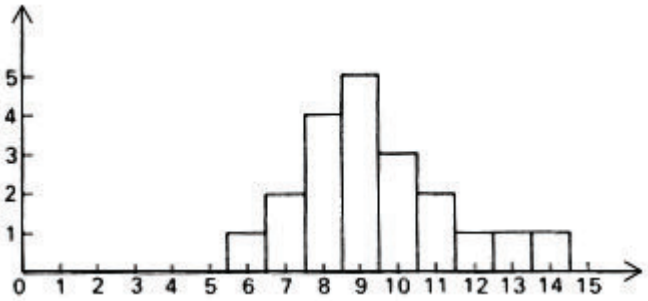
Profitability rate %	Likelihood
6%	1 chance of 20
7	2 chances of 20
8	4 chances of 20
9	5 chances of 20
10	3 chances of 20
11	2 chances of 20
12	1 chance of 20
13	1 chance of 20
14	1 chance of 20

Figure 2 graphically shows this set of predictions.

The probability of an outcome is usually indicated as a fraction of the possible odds chart in the existing odds table. Figure 2 shows the probability distribution of the predictions made

Forecast of a portfolio's performance

Figure 2



If some possible results have not been omitted, the sum of the probabilities should be equal to 1, indicating that at least one of the variants will be possible.

The notion of probability distribution can be generalized. We consider that the number of different possible results will be M. The first result is O_1; the second is O_2, etc. The probability that the actual result, for example for O_1 is P_1; the probability that it is O_2 is P_2 etc. In this case, we can summarize, the data being presented in table number 2:

Probability distribution

Table 2

0, = 6%	P, = 0,05
0_2= 7	P_2 = 0,10
0_3= 8	P_3 = 0,20
0_4= 9	P_t = 25
0_5 = 10	P_5 = 0,15
0_6 = 11	P_6 =10
0_7 = 12	P_7 = 0,05
0_a = 13	P_B = 0,05
0_9 = 14	P_9 = 0,05
	1.00

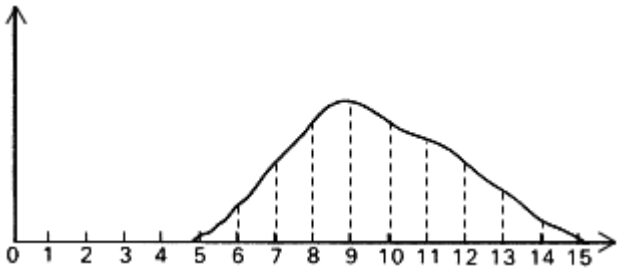
If we have $\sum_{i=1}^{m} P_i = 1, \quad means\ P_1 + P_2 + \cdots + P_M = 1$ (2)

The requirement that the total probabilities be equal to 1, respectively $\sum_{i=1}^{m} P_i = 1$.

Figure 3 illustrates a case involving many results. The number of different alternatives to consider is a matter of choice.

Probability distribution

Figure 3



If there were only two, five or twenty alternative distributions (portfolios), the investor could explicitly consider each, usually in millions of currency units. If comparisons are made, only the essential characteristics of each distribution need to be considered.

The question arises as to how many variants should be used to summarize information such as those in Figure 3. At least two are needed to describe both the location and the distribution (dispersion) of the distribution. So two is better than one, three is better than two, four is better than three, and so on. The problem is to determine when the benefit becomes less than the cost of purchase. It is sufficient to consider that at least two positions are necessary if the uncertainty is to be duly taken into account.

Portfolio theory uses two benchmarks to characterize the probability distribution of a portfolio's rate of return.

The central trend or the middle of the distribution is measured by the expected value. This is the weighted average of the possible results, each weighted result results according to its probability, respectively:

$$E = \sum_{i=1}^{m} P_i O_i \quad (3)$$

Where: E = the central trend of the rate of return.

The dispersion of the distribution is measured by its variation or the square root of the variation, ie by the standard deviation. The expected value is in the centre of the distribution. Most possible results are either larger or

smaller than the standard deviation. The deviation of a result from the expected value is in fact the difference O_i-E.

For the calculation of the variation, this deviation is square. The variance is the weighted average of the square deviations, each being weighted with its probability, respectively:

$$V = \sum_{i=1}^{m} P_i[(O_i - E)^2] \quad (4)$$

The standard deviation is the square root of the variation, calculated by the relation:

$$\sigma = \sqrt{V} \text{ sau } V = \sigma^2 \quad (5)$$

In the considered example, the expected value is 9.4%, the variance is about 4%, and the standard deviation is 2%.

The way in which the standard deviation measure the dispersion of a probability distribution is clear if the distribution is normal, ie, it follows the bell-shaped curve. In this case:

Chances are about 2 out of 3 for the actual result to be between (E - σ) and (E + σ).

The odds are about 95 out of 100 that the actual result will be between (E - 2 σ) and (E + 2 σ).

These relationships are not generally valid and there is no reason to expect that the distribution of the return rate of a portfolio will always be normal. However, the function of the standard deviation is the same in each case.

There are two known methods for declaring predictions. The first directly provides two values for each portfolio. The second performs certain calculations using the values that contain a probability distribution. The significance attached to the measures is the same in each case. The expected or expected rate of return is an intermediate estimate, as the best assumption or central trend. Uncertainty or standard deviation measures the probability of a real difference from the expected result.

Portfolio theory assumes that an investor is willing to choose portfolios only on the basis of two values. Formally, this assumes that each pair leads to a particular probability distribution. The theory can be just as useful if the predictions are provided directly and intuitively, being declared scientifically.

To clarify the formal meanings, when we refer to a portfolio, the two sizes will be:

E_p = expected (expected) rate of return for a portfolio

σ_p = standard deviation (uncertainty) of the rate of return for a portfolio

It is practically not specified how the predictions are obtained, but only how they are considered.

If we assume that a perfectly balanced roulette wheel with 20 positions is available, we will consider the number 6 in one position, the number 7 in two positions, the number 8 in four positions, and so on. Offer an investor two alternatives to hold the original portfolio or spin the wheel, considering the position in which the ball that determines the result lands. If the investor is indifferent to the choice, he is willing to act as if the distribution indicates the prospects of the portfolio.

Some researchers believe that these alternatives are qualitatively different. They state that the behaviour of a roulette wheel can be predicted objectively, while that of a portfolio can only be predicted on the basis of considerations resulting from the analysis. For the purpose of portfolio theory, such a distinction is not relevant. All predictions are subjective in the sense that an investor is willing to base his decisions on them. A distribution can be derived entirely from the frequency of the previous occurrence of each possible outcome. If so, accepting it presupposes that the future will not differ from the past in certain respects. In such a case, it can be said that the investor has adopted for an objectively determined subjective distribution.

The terms risk and uncertainty are sometimes given different meanings. It is said that there is a risk situation if an individual is willing to base his actions on probability distributions.

Portfolio theory involves making decisions at risk. It is used here in its generic sense, to refer to a situation in which the future cannot be predicted with certainty. Moreover, the term uncertainty is used as a synonym for risk.

Portfolio theory cannot directly help those for whom the probability distributions are unclear. The extent of such a situation has been called ignorance. A decision factor can be reduced to two variants, being able to act as if a distribution is relevant, and the portfolio theory can then be used directly or it can refuse to do so, and the theory then has no use.

To summarize, portfolio theory assumes that investors are undecided, but not ignorant. The desirability of a portfolio is expressed by the values E_p and σ_p. However, two portfolios with quite different probability distributions can have the same E_p and the same σ_p. The theory assumes that any investor would consider the equivalent of these portfolios. This cannot be true in any situation. As always, mathematics, through abstraction, can lead to error. But the chance of error may be small; and the error, if it occurs, may not be serious.

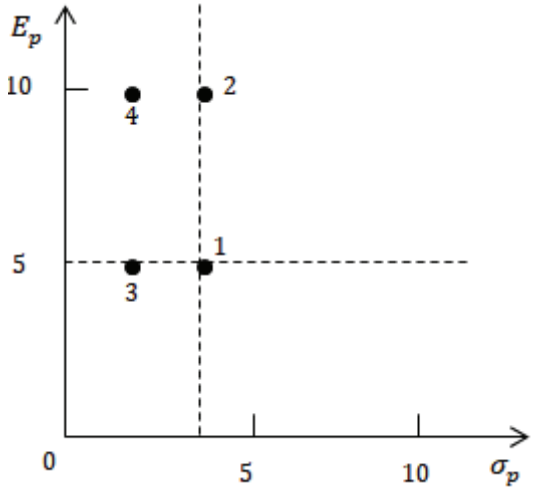
Any portfolio can be represented by a dot on a chart, such as the one shown in figure number 4. The standard deviation of the rate of return is

represented on the horizontal axis, and the expected rate of return is represented on the vertical axis.

Let's see how an investor can make a decision in the case of several alternative portfolios. Any investor will apply the following rules: if two portfolios have the same standard deviation of return and different expected returns, the one with the highest expected return is preferred; if two portfolios have the same expected return and different standard deviations of the return, the one with the lower standard deviation is preferred and if one portfolio has a lower standard deviation of return and a higher expected return than another, it is preferable.

Desirability of a portfolio

Figure 4



The above rules can be summarized as follows: E_p is good when other variables are equal.

The latter hypothesis is often called risk aversion. A large number of situations indicate that almost all investors think about risk when making important investment decisions.

Figure 5 shows the rate of return distributions for four portfolios. Their values E_p and σ_p are shown in Figure 4. Among other things, the investor preference assumptions assume that: portfolio 2 is preferred to portfolio 1, portfolio 3 is preferred to portfolio and portfolio 4 is preferred to portfolio 1.

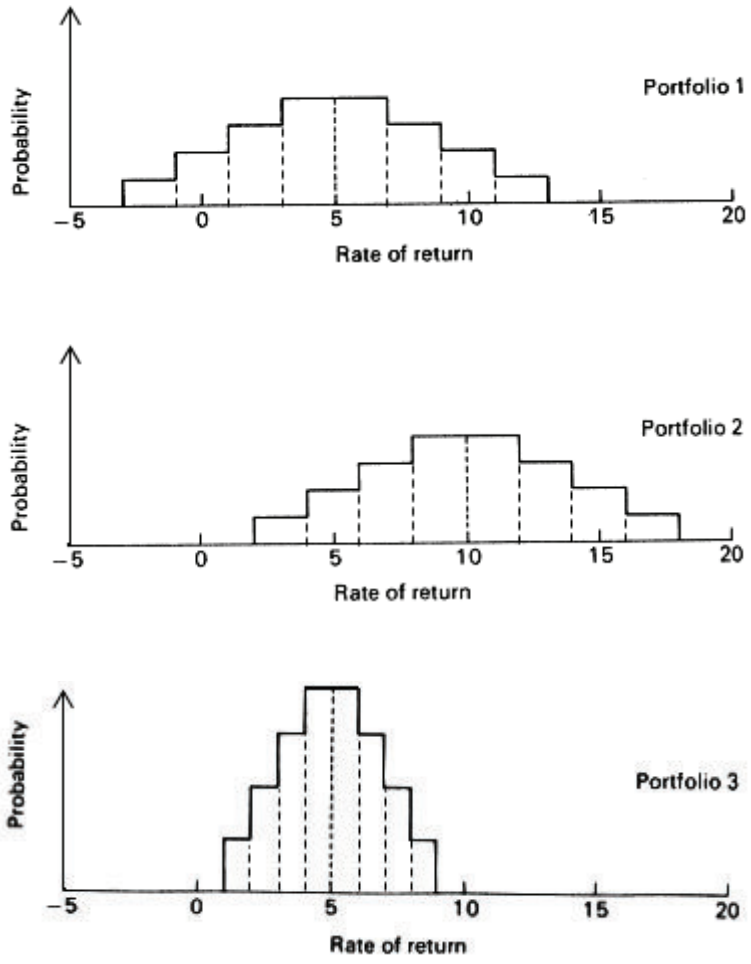
Graphically, it is highlighted that for any investor the portfolios represented by points located northwest of the point that represents a portfolio are better and are preferred.

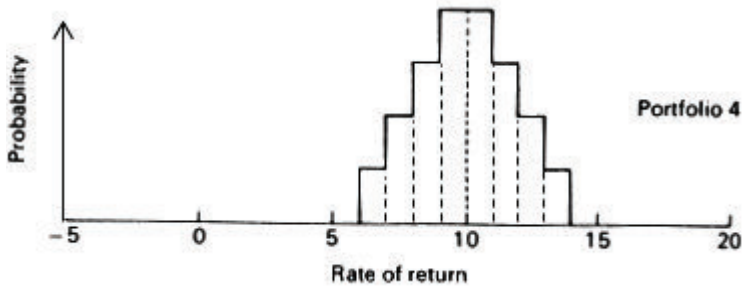
Portfolios represented by points located southeast of the point representing a portfolio are negative and the original portfolio is preferred.

The portfolios represented by points located in figure number 4 are preferred to portfolio 1, while portfolio 1 is preferred to all those portfolios of points located in the uncertainty zone.

Profitability rate distributions for four portfolios

Figure 5

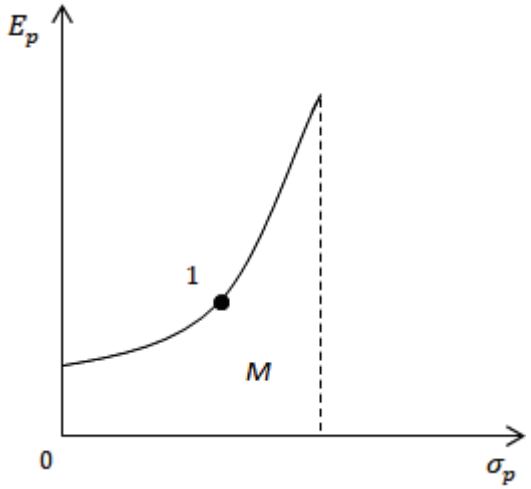




The major results of the portfolio theor' start from the assumption that investors are satisfied with E_p and not with σ_p. The variants of a certain investor can normally be represented by a family of curves, presented in figure number 6.

Variants of a certain investor

Figure 6



Zone *M* contains all the points representing the portfolios that the agent prefers. The curve dividing the area contains all the points representing portfolios that it considers equivalent to portfolio 1.

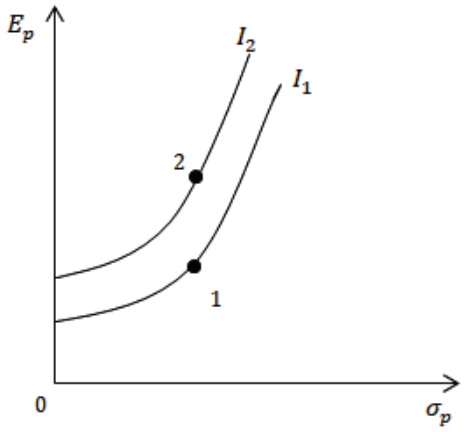
As long as E_p is desired and σ_p it is not, every curve will be tilted upwards. In general, each curve will become more pronounced than E_p even then σ_p growth.

The curve in Figure 6 captures some of Agent T's options. But to represent how he will make choices in a wide variety of circumstances, more curves are needed. Figure number 7 repeats the curve in figure number 6 as I_1.

In addition, it shows another derivative curve starting with portfolio 2. Since portfolio 2 is preferred to portfolio 1, each point on I_2 must be preferred for each point on I_1. This results from the concept considered and the minimum requirements for rational choice. The curves cannot be crossed either.

Specific investor options for two portfolios

Figure 7



The number of curves is somewhat unlimited. Only a few of the selected ones are shown in graphic examples. Considering those displayed in order of preference is conventional. Thus, the points on I_2 are preferred to those on I_1, and the points on I_3 are preferred to those on I_2 and so on.

Figure number 8 shows two extreme cases. Agent T ignores risk, and Agent P ignores anything except risk.

Extreme cases

Figure 8

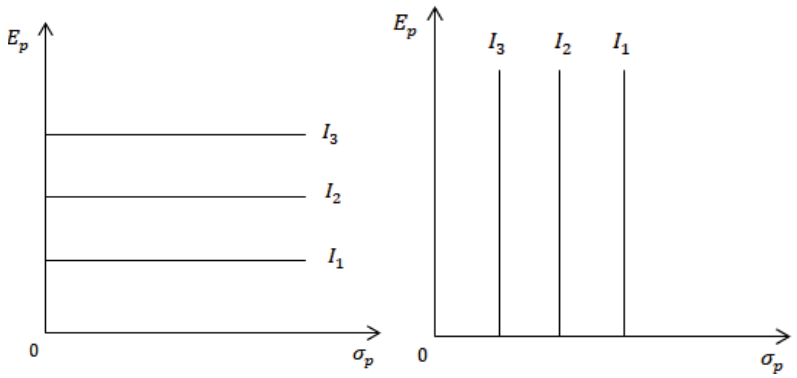
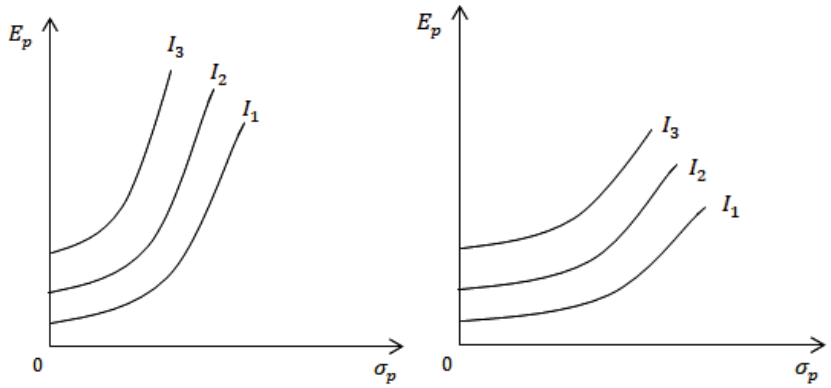


Figure 9 shows the most common cases. An investor is relatively conservative, requiring substantial increases in E_p and to consider him accepting greater uncertainty (σ_p).

Nobody likes uncertainty, but agent O doesn't like E_p.

Frequent cases

Figure 9

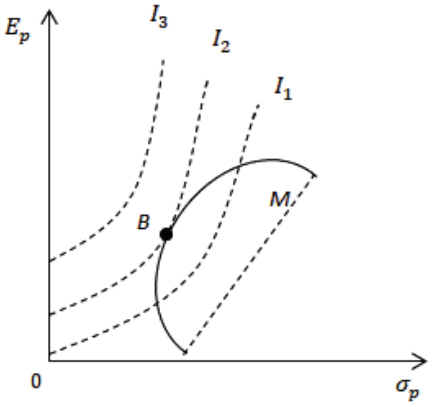


If we consider, this time, another Z agent, we will find that his preferences are shown by the curves in figure number 10. Many portfolios are available to him. E_p and σ_p can be presented as a group of points in the mentioned figure. Such points will completely fill the considered area.

The decision illustrated in Figure 10 can be divided into three distinct steps: securities analysis, portfolio analysis and portfolio selection.

Securities analysis, portfolio analysis and portfolio selection

Figure 10



Securities analysis is highly sensitive, requiring predictions about the future and prospects of securities, which must take into account both uncertainty and other factors.

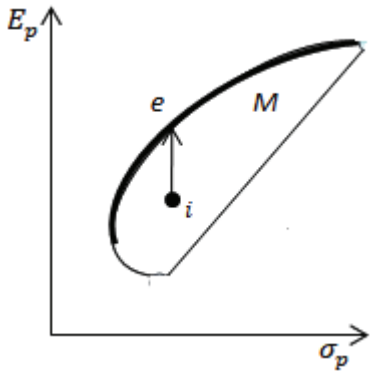
Portfolio analysis should lead to predictions about portfolios. Predictions, in the form of E_p and σ_p as estimates, they are derived entirely from securities predictions.

Portfolio selection is the final phase. Given the available combinations E_p, σ_p, the investor selects the safest option.

The first phase depends on the abilities of the seer who studies them at first sight. The last phase involves knowing the investor's preferences. Portfolio analysis requires only technical skills. In other words, portfolio theory presupposes, first of all, the task of portfolio analysis. Given the security predictions, E_p, σ_p, those in zone M of figure number 10 can be chosen. In general, as it results from figure number 11, the most convenient option can be chosen.

Choosing the most sensitive variant

Figure 11



Upper boundary of the area E_p, σ_p in the graph it is called the efficient boundary. Portfolios whose values E_p, σ_p are drawn at the border comprising the set of efficient portfolios.

The purpose of portfolio analysis is to find the set of efficient portfolios and the associated efficient frontier.

The existence of an optimal combination of risky securities greatly simplifies the task of portfolio selection. The investor only has to decide how much to borrow or invest. There is only one suitable combination of risky securities in which to invest the rest of its sources. The consideration of alternative combinations of risky securities can thus be separated from the

consideration of the investor's attitude towards uncertainty (risk) in relation to the expected return, a procedure called the separation theorem.

The relationship is most obvious when one of the securities in a basic combination is risk-free. The solution comes down to:

$$X_1 = K_1 + k_1\lambda; X_2 = K_2 + k_2\lambda; \ldots X_N = K_N + k_N\lambda \quad (6)$$

The efficient portfolio with the smallest possible variance is obtained when $\lambda = 0$, obtained from security 1 - risk-free securities. So, $K_1 = 1$ and K_2 up to K_N must be equal to 0, so:

$$X_1 = 1 + k_1\lambda; X_2 = k_2\lambda; \ldots X_N = k_N\lambda \quad (7)$$

Effective portfolios for a case involving three risky securities and one risk-free security

Figure 12

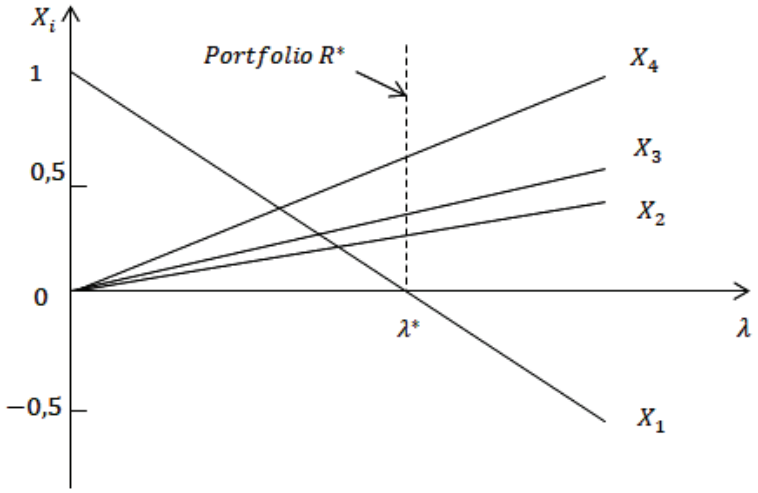


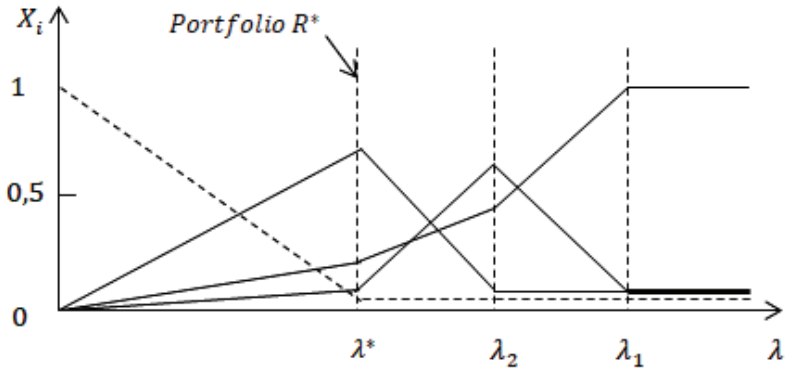
Figure 12 shows the composition of all effective portfolios for a case involving three risky securities and one risk-free security. Portfolio R^* is optimal at λ^*. His values λ under the λ^* lead to combinations of R^* and without loans, and values over λ^* lead to combinations of R^* and loans. The same λ changes, the amount invested in a certain risky security remains a constant proportion of the amount invested in all risky securities.

For the security *i*, the proportion will be given by the relation:

$\frac{X_i}{\sum_{i=2}^{N} X_i} = \frac{k_i \lambda}{\sum_{i=2}^{N} k_i \lambda} = \frac{k_i}{\sum_{i=2}^{N} k_i}$, which is independent of λ. (8)

The situation in which securities in a standard issue are risk-free

Figure 13



When one of the securities in a standard issue is risk-free, the result will be similar to that shown in Figure 13. To the left of point λ^* (representing the portfolio R^*), the chart has the characteristics in figure number 12, and on the right, it is similar to the chart for a standard situation without a risk-free security. Portfolios that represent only loans ($\lambda = 0$) and the portfolio R^* sbutter adjacent top portfolios, there are also two additional top portfolios at λ_1 and λ_2.

Conclusions

The article Study on the certainty of the investor in choosing the portfolio is based on an extensive research of the authors who considered different hypostases, which the investor can take into account in placing the portfolios on the capital market.

From this point of view, a series of theoretical conclusions can be drawn, but especially practical ones. From a theoretical point of view, certainty is an important element for the investor who wants to place their portfolios on the financial assets market. It must have, following the study carried out, accuracy in terms of obtaining a yield. Of course, the return obtained is different, but through this study he must ensure that even a minimum return will be obtained at the end of the period for which he placed the portfolio he chose on the market.

A second conclusion is that it is necessary to study the previous period in which similar portfolios have evolved over time under the influence of different destabilizing factors and, depending on this, to build models that lead to obtaining parameters on the basis of which it is possible estimate the

performance that one portfolio or another can achieve. Usually, there are a lot of portfolios from which the investor has to choose the one, or those, that he wants to place on the capital market, but under conditions of some certainty. Therefore, the key conclusion is that only on the basis of certainty should the investor choose the portfolios he wants to consider.

It must also be seen that in the field of portfolios there must be a type of decision, namely the selection of an appropriate set of liquid investments for the investor to study in many respects, as an evolution, as a perspective and to make predictions about a future evolution of those portfolios.

The rate of return is that in which dividends and capital market gains are adequately treated. Naturally, any investor wants to know in advance the rate of return (return) of the portfolio so as to reach again that level of certainty that we mentioned earlier. The investor must also take into account the risks that arise in the national, European or global economic complex in which the portfolio or portfolios that he has selected and from which he expects to obtain a high level of profitability will evolve in the future. The investor must make a probabilistic pine study to ensure that from the analysed portfolios investigated, he chose the one (those) that have (have) a higher probability of being completed with high returns. In other words, certainty is the basic element that every portfolio investor must consider.

Based on the statistical-econometric models, he uses, using the obtained parameters, the perspective of the value evolution of the portfolios in the next period and this can probably ensure a certain confidence, a certainty about the decision he took in placing these portfolios.

References

1. Altăr, M. (2002) *Teoria Portofoliului*. Editura ASE, București
2. Anghelache, C. (2006) *Metode cantitative utilizate în analizele financiar - bancare*, Editura Artifex, București
3. Anghelache C, Anghel M.G., Marinescu A.I., Popovici M. (2019), , Romanian Statistical Review, Supplement, no. 10/2019

4 *Forecasts regarding the low frequency evolution of portfolios*. Barndorff -Neilsen, O., Hansen, P., Lunde, A., & Shephard, N. (2008), *Designing Realised Kernels to Measure the Ex-Post Variation of Equity Prices in the Presence of Noise*, Econometrica 76, 1481-536

5. Black, F. (1972), *Capital Market Equilibrium with Restricted Borrowing*, The Journal of Business, 45.3, 444-55
6. Iacob Ș.V., Dumitru D., Popovici M. (2020), *The main issues regarding the choice of portfolio and the testing of the model regarding the price of capital assets*, Romanian Statistical Review, Supplement, no. 2/2020
7. Linton, O. (2016), *Probability, Statistic and Econometrics*, Academic Press
8. Welch, I., Goyal, A. (2008). *A comprehensive look at the empirical performance of equity premium prediction*. Review of Financial Studies, 21 (4), 1455-1508