

Theoretical and Experimental Elements of Investment Business in Romania

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Abstract: - This paper presents a financial - economic analysis of the investments efficiency, in a double approach, both theoretical and empirical. We present and analyze in this article the investment decision in general and the financial - economic investment decision in particular. Analysis and characterization of categories of investment projects, including from economic point of view is another important aspect presented in our article. Here we present and analyze comparative, including through empirical approach, different methods of economic analysis of investment projects, such as: the method of Profitability Index (PI), Net Present Value method (NPV), Return On Investment (ROI), yield Internal Rate of Return method (IRR).

Key-Words: - Business, Market, Investments, Economic analysis, Risk.

1 Introduction

An investment can be defined in general as the process by which it is buying or building something in order to obtain a profit, or of interest rate, [1,2].

In a financial sense, as [3], an investment means changing an amount of money available, existing in the hope to obtain future revenue may increase, but likely.

For accounting purposes, the amount of investment is a sums available for the procurement of the asset, which will cause in the future financial flows of revenue and expenditure.

Other definitions of investment concerns, as [4] are: "placement of capital on long-term (in agriculture, industry, trade, etc.); the state allowance granted to an undertaking for the creation of new fixed funds or for resetting existing ones".

Investments can be classified into two broad categories:

overseas investment - consist in capital investment in shares in other firms.

domestic investment - consist in capital allocation for the purchase of machinery, equipment, buildings, licenses, patents, etc.

The investment decision is the most important decision accounts to be taken a manager.

An investment usually involves the allocation of large sums of money in the long term, with a relatively high degree of risk. And there is also the question: why should we invest?

Here are a few arguments behind the decision to make an investment:

- Maintenance or increase of benefit held to competition
- Increase of production capacity in order to meet the needs for Supplies, Works or Services (SWS)
- Maintaining or increasing the market share
- Maintaining or improving the standard profit
- Demand for new Supplies, Works or Services (SWS)
- Exploitation of advantages of new technologies

2 Investment Risk Assessment

Last stage which must be carried out before the start of each investment is investment risk assessment.

An investment with a low risk has a low rate of profit, while an investment with a large degree of risk can lead to a high rate of profit.

Compliance with a certain degree of risk of the investment is made on the basis purpose intended. We present in table 1 relevant example in this respect.

Table 1. Correlations: purpose - product and market

The purpose	Product and market	Degree of hazard
Increased production	same product / same market	low
Expanding the distribution channel	same product / same market	low
Increasing the quality	same product / same market	low
Diversification of varieties	New product/ same market	low

Increased production	New product / new market	middle
Increasing the quality	New product / new market	middle
Diversification the quality	New product / new market	middle

Manufacture of the product whole new	New product / new market	high
Introducing completely new technology	New product / new market	high

In practice it shall draw up lists of control of the risk factors and should be assigned a certain number of points of each of these factors (the higher the risk, the greater the number of points awarded each factor).

Points obtained shall be added together and - as the subsidy risk - are added, in the form percentage to the total amount of the investment.

The main risk factors to be taken into account in an investment analysis of the project shall be the following:

1. Estimates of the market (there is no market or not)
2. Technology
3. Products of competition
4. The impact on current activity
5. Management team
6. Financial risks
7. The impact of legislation
8. The country credit risk
9. Political risk
10. Specific risk environment

3 Financial - Economic Analysis of Selection of Investment Projects

The selection steps of a project of investment are the following:

- potential formulation of investment projects.
- Application selection criteria.
- Financial tracking and control of an investment.

3.1 Potential Formulation of Investment Projects

For selection of proposals we strongly recommend that you lay down a procedure for the analysis of potential investment projects dismissed, on the following two levels:

- lower level (department, a division, a subsidiary), on replacement investment and modernization, as well as investments for the development of the work;
- top-level, of management firm, on strategic investments, human and social.

Every proposal for investment must be accompanied by a calculation (study) of feasibility, outlining in capacity main project to bring profit and, consequently, to allow initial investment recovery.

3.2 Applying the Financial - Economic Criteria for the Selection of Investments

Replacement and modernization investments for the development and, less frequently, we recommend applying for the strategic financial and accounting criteria for selection that highlight the extent to which the investment project is feasible in terms of accounting.

In this purpose, we recommend using one of the following methods:

- Capital recovery method (this method does not take into account the change in time value money);
- net present value method;
- internal rate method of return;
- profitability index method.

For investment and the strategic expansion is mandatory that the combine the selection criteria with an analysis of the economic and industry context in which the company operates.

3.3 Pursuit and Control of the Investment

This is the phase in which it is to be watched (investigated) when the investment shall be conducted in accordance with the forecasts of phase selection or if there are differences and how to explain them.

Additionally, this stage is also useful for the following terms: while we know that actions are monitored, people tend to improve their work. When it is found that deviations are important, we strongly recommend that you to intervene with a corrective action on:

- process of progress or
- on target- objective

4 Financial - Economic Criteria for Selection of the Investment Projects

For selection of a project of investment, we are proposing the use of the following criteria:

- The term ROI (Return On Investment)
- Net Present Value (NPV)
- Internal Rate of Return (IRR)
- Profitably index

4.1 Method of Internal Rate of Return (IRR)

Internal Rate of Return (IRR) is the maximum cost of funding sources available until the company's net present value (NPV) generated by that investment is not less than zero, is at least equal to zero.

The calculation formula for IRR is (relationship 1):

$$IRR = r_{NPV+} + \frac{NPV_+ \times (r_{NPV-} - r_{NPV+})}{(NPV_+ - NPV_-)} \quad (1)$$

Where:

r_{NPV+} - is a the discount rate for which NPV > 0

r_{NPV-} - is a the discount rate for which NPV < 0

NPV_+ - is a positive value of NPV

NPV_- - is a negative value of NPV

In other words, IRR is the maximum interest rate - that can be supported by the company - the potential bank loans that will attract the firm.

Consequently, we recommend selecting only those investment projects that generate an internal rate of return greater than the average market rate.

During the years of operation of the investment is necessary to check the actual internal rate of return.

This (internal rate of return) must be greater than the rate of interest the average market and than IRR calculated at the time of the project has been selected. Otherwise expense of investment does not recover and NPV becomes less than zero.

In figure 1 we present the NPV profile (allure):

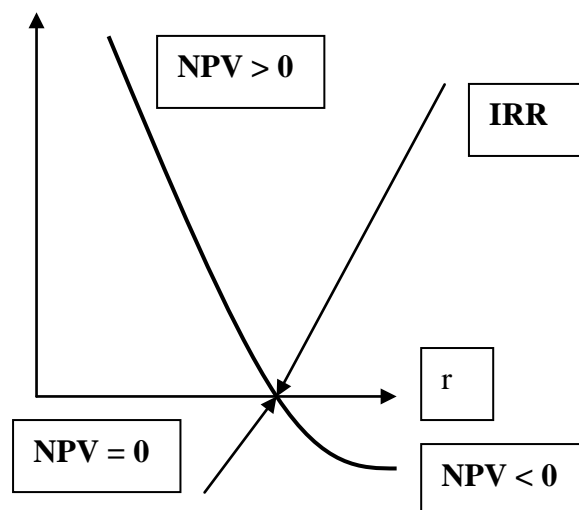


Fig. 1. NPV profile (allure)

r - the discount rate; IRR - internal rate of return. Next we present a practical approach (empirical) of the method Internal Rate of Return (IRR).

ABCD Company intends to make an investment in mechanical equipment 50,000,000 Lei. They have a useful life of three years.

In table 2 we present cash flows from the use of such equipment.

Table 2. Cash flows generated by the use of the equipment

Year	Cash flow [Lei]
0	- 50,000,000
1	18,700,000
2	18,700,000
3	18,700,000

To determine the internal rate of return IRR, we must determine two discount rates for the corresponding NPV values have different signs.

We determine this rates by successive attempts.

➤ For $r = 10\%$

$$NPV = \frac{18,700,000}{(1 + 0.1)} + \frac{18,700,000}{(1 + 0.1)^2} + \frac{18,700,000}{(1 + 0.1)^3} - 50,000,000 = - 3,496,868 \text{ Lei}$$

So, for $r_{NPV-} = 10\%$ the result is $NPV_- = - 3,495,868 \text{ Lei}$

➤ For $r = 5\%$

$$NPV = \frac{18,700,000}{(1 + 0.05)} + \frac{18,700,000}{(1 + 0.05)^2} + \frac{18,700,000}{(1 + 0.05)^3} - 50,000$$

So, for $r=5\%$ the result is $NPV_+ = 924,738 \text{ Lei}$

Replacing in relation 9:

$$IRR = 0.05 + \frac{924,738 \times (0.1 - 0.05)}{(924,738 + 3,495,868)} = 0.06$$

IRR = 6%

In figure 2, we present the allura of NPV:

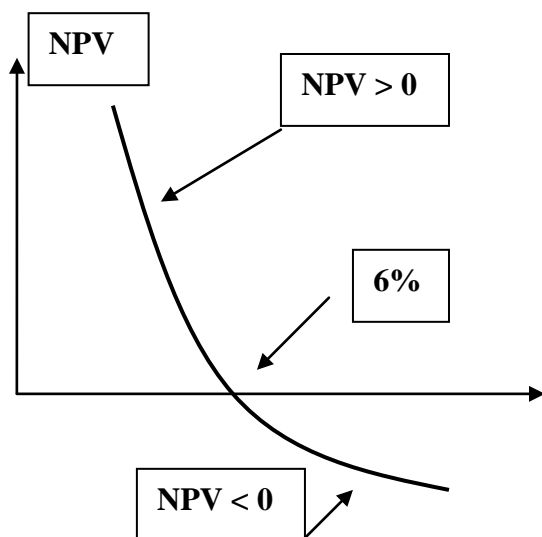


Fig.2. The allura of NPV

Consequently, the company ABCD afford the cost of capital (interest rate) of less than 6% to achieve a positive NPV.

For an interest rate of 6%, NPV = 0, and for a higher interest rate of 6%, NPV <0, which allows the recovery of funds initially allocated.

If the cost of capital for an investment project is greater than the IRR, we recommend that you not select this project.

In selecting the investment projects, we recommend using the combined NPV- IRR criterion, thus eliminating the shortcomings that accompany one criterion or another.

4.2. Profitability Index method (PI)

Profitability index method allows expression of relative profitability of investment in of it to lifetime.

Profitability index expresses the expected NPV for the initial investment expense of a monetary unit.

Formula for calculating the profitability index (PI) is as follows (relation 2):

$$PI = (NPV / I_0) + 1 \quad (2)$$

Where:

PI - is the profitability index

NPV - net present value

I₀- is the initial investment

Annual investment profitability index (PI_n),

we calculate this (relationship 3):

$$PI_n = \sqrt[n]{PI} - 1 \quad (3)$$

Where:

n - is the investment duration (years)

PI - is the profitability index,

We recommend selecting the investment projects with profitability index:

- General - supraunitar as high
- Annually - greater than the average market rate.

If ABCD Company for an interest rate of 5%, profitability index has the following value (relation 4):

$$PI = (924,738 / 50,000,000) + 1 = 1.018 \quad (4)$$

This means that for each leu originally invested, the investment will generate 0.018 lei (1.8% profit).

The new investment project selection criteria give priority to NPV, because the maximization NPV leads to maximize.

5 Conclusion

Initiation regime and especially the implementation of investments is a very important one. Consequently, this regime is commonly discussed and disputed.

Starting point for the analysis of investment project's viability should be. First technical viability (technical idea applies) and not least viability accounting. From this point of view, the financial – economic analysis has and can show the "right vetto" in the decision approving the implementation of an investment project.

Financial - economic analysis of an investment project is a "strengths" (strong point in a SWOT analysis) for possible approval of its implementation.

In the natural question "Why to invest?" our article brings answers scientifically, such as increasing the production capacity to satisfy demand for Supplies, Works and Services (SWS) maintaining or increasing advantage over the competition held, maintain or increase profits, exploiting the advantages of new technologies, maintain or increase market share, demand for new products and services.

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