

POSSIBILITIES OF MODERNIZATION OF AN INDUSTRIAL OBJECTIVE BY SPECIAL SOURCES FINANCING

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Abstract: Potential sources of funds for financing the activity are: own funds and fund loaned from family and friends; bank credits; shares issuing; bond issuing; financing from special programs; funds of risk capital; leasing; credits from suppliers and customers; credits on trade effects (factoring and discounting).

One of the financing sources, accesible after Romania's adherence to UE is special sources financing, as part of which companies have access to different non-refundable financing programs. Potential financing sources are the programs of the European Union, the ones of Romania's Government of USAID etc.

It is advisable a rigorous evaluation of the success opportunities of the financing request before initiating it: this way can be avoided inefficient consumptions of time and money.

Before employing this way, the undertaker has to estimate correctly the effects of such a strategic movement. Funds granted in theoretically advantageous conditions can be demonstrated as being a problem in case the company does not have the capacity to use them in conditions indicated by the investor.

That is why it is necessary that as part of programs and project financed from the European Fund should be prepared a cost –benefit analysis containing a risk analysis, as well as the predictable impact on the specific sector and on the social-economic situation of the member state and/or of the region and, if possible, depending on case, of other regions from the Community”.

Keywords: financing; project; cost-benefit analysis; cash flow; risk analysis; risk's management.

Abbreviation list: CBA - Cost-Benefit Analysis; FNA - Updated net flow ; RRF- Financial rate of return; RRE - Economic rate of return; VNAE - Updated net financial value; VNAF - Updated net economic value

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1. CONTENT OF THE PAPER

What is CBA and why it is realized?

The Cost–Benefit Analysis is an analytical instrument, used to forecast (from the point of view of benefits and costs) the socio-economic impact due to the implementation of certain actions and/or projects. The impact should be evaluated in comparison with pre-determined objectives, the analyze being realized by taking into consideration all individual affected by the action, directly or indirectly.

Generally, the Cost–Benefit Analysis should establish if the analyze is realized adopting a local, regional, national perspective, at the UE or global level. The proper level of analyze should be determined in relation with the size and purpose of the project, namely in relation with the group/zone where the project has a relevant impact.

The Cost–Benefit Analysis objective is to identify and quantify (namely giving a monetary value) all possible impacts of the action or of the project in discussion, to determine correspondent costs and benefits. Virtually, all impacts should be evaluated: financially, economic, social, environmental, etc.

Traditionally, costs and benefits are evaluated by the analyze of the difference between the scenery “with project” and the alternative of this scenery: the scenery “without project” (the so-called “incremental approach”). As follows, results are gathered to identify net benefits and establish either the project is opportune and deserves to be implemented. So, the CBA can be used as a decisional instrument for the evaluation of the investment utilities that will be financed from public resources.

Virtually, in the context of preparation and evaluation of the project financed from FC and FEDR, the European Commission requires the realization of the Cost–Benefit Analysis:

(1) To establish if the project deserves to be co-financed

The purpose is to answer the following questions: The project contributes to the fulfillment of the objectives of the regional politics of the European Union? Does it encourage the economic increase and stimulates the occupation of the work force? The rule is simple: if the net benefits for the company, as part of the project (benefits minus costs) are positive, then the company is advantaged by the project as its benefits exceed costs. As a result, the project should receive assistance from Funds and be co-financed. If nor, the project will be rejected. This decision should be taken using the economic analysis of the cost-benefit analysis.

(2) To establish if the project requires co-financing

Besides the fact of being opportune from economic point of view, a project can be from financial point of view profitable, case in which it should not be co-financed from European funds.

To verify if a project should be co-financed, it is used the financial analysis of the Cost–Benefit Analysis: if the financial value of the investment (incomes of the project minus costs of the project), without the contribution of the European funds, is negative, then the project can be co-financed. In this case, the UE contribution should

not exceed the amount of money making the project a profitable one, so no over-financing should appear.

The Cost–Benefit Analysis is necessary to justify that a project is integrated in the context of the objectives of regional politics of UE, is opportune from the economic point and view and requires the contribution of the Funds to become feasible from the financial point of view.

Phases in the realization of Cost–Benefit Analysis

Phases proposed for the realization of the cost–benefit analysis, in the context of preparation of the investment projects, are the following:

- The identification of the investment and definition of the objectives;
- Analyze of the options
- Financial analyze;
- Economic analyze;
- Sensitivity analyze;
- Risk's analyze;
- Results presentation.

Options analyze and electing the optimal alternative

For the transmission of a project proposal in order to obtain FC and FDER financing will be required the realization of a complete feasibility study, able to justify if the project contains the series of works, activities and services able to ensure the realization of the objectives indicated previously. The results of the feasibility studies will be presented as part of the financing¹ requests. Meanwhile indicated studies are not a part of the standard structure of CBA, the results if the feasibility studies represent the basis for the realization of the Cost–Benefit Analysis . Particularly, as mentioned in the Work Document no. 4 “Should be offered arguments according to which the selected project is the most appropriate alternative between the variants taken into consideration”. The identification of the options aims finding different alternatives to reach specific objectives (and of standards, after finalization) for the project, which have been established in the previous section. Commonly, this identification can be found in the technical part of the feasibility study. In case this identification is correctly realized, it is not necessary to retake it in the CBA.

In GD 28/2008² is forecast that at least three options can be taken into account:

- Zero variant (no investment variant), represents the continuation alternative of the activity, without investment;

Average variant (minimal investment variant), including necessary realist costs for maintenance/services plus a minimal value of the investment costs or of necessary improvements to avoid of delay damaging or reaching a minimal level in respecting the conformity with safety standards;

Maximum variant (variant with maximum investment), involves the integral implementation of the investment proposed to reach expected objectives.

There can be cases where the analyze should take into consideration several options, depending on the characteristics of the project. In order to select the optimal alternative, the analyze of the options would be realized as follows:

a) Strategic options identified, which will be analyzed depending on a series of compulsory criteria, established based on technical considerations and/or the national politics (the reason for electing these criteria will be well justified in the analyze of the options) and would be established a short list of optimal and feasible alternatives (through the elimination of improper alternatives);

b) The classification of the optimal alternatives will be used by using an economic analysis (with the purpose to identify the alternative ensuring reaching expected objectives at the lowest cost, on long term) or, depending on the characteristics of a specific sector or of the project, an analysis of the lowest cost (or the cost-efficiency analysis);

In case it will be used to select the optimal alternative, the simple method of the lowest cost, will be realized, as follows, the following steps:

c) Analyze of the fact that alternatives differ between them concerning possible external impacts on the society, impact which have not been taken into consideration in the analyze, through the method of the lowest cost (for example, traffic disturbance in the rehabilitation of the roads)

- in case the expected impact of each of the alternatives taken into account can be showed as being similar, then would be retained as preferred option the alternative with the lowest cost;

- in case can be observed differences of the external impact of the alternatives, would be adjusted the methodology of the lowest cost to incorporate the identified externalities. To establish a final classification of the alternatives, there will be necessary the monetization of the identified external impact. The analyze of the options realized this way will lead to the identification of the alternative ensuring reaching established objectives at a minimal total cost for the society. This is the alternative to be evaluated as part of the CBA.

Objectives and purpose of the analyze

The objective of the financial analyze is to calculate the financial performance of the project proposed during the reference period, with the purpose to establish the most appropriate system of financing for this. This analyze refers to the financial support to the long term sustainability, indicators of financial performance, as well as the justification for the volume of UE necessary assistance.

More specific, the financial should follow the future steps:

- estimation of incomes and costs of the projects and their implication from the cash flow point of view: Projects generate their own incomes from the sale of goods and services; for example, tariffs for water supply, tax for public works or access on the highway. These incomes will be determined from the forecast of the products quantity/ services supplied and of their prices (request analysis). Generally, transfers or subventions, VAT or other indirect taxes received from the consumer are included in the determination of the future incomes.

Operation costs contain all payments indicated for the supply of goods and services which are not of investment character, as these are realized in each financial exercise. These costs might include: production expenses (consumption of materials

and services, personnel, maintenance, general production costs), administrative and general expenses, sale and distribution expenses. In the calculus of the operation costs, will be excluded all elements not generating an effective monetary expense, even if these are elements included normally in accountancy (amortization, any reserves for future replacement costs, working capital).

- determination of the difference to be financed for the selected option and calculation as a consequence of the eligible expenses that can be co-financed by Funds;

- definition of the project financing system and its financial profitability: this can be obtained by taking into consideration the financing level which can be obtained by FC/FEDR, as well as from other financing sources (national sources, bonds, borrowings).

- verification of the forecast cash flow capacity to be ensured the proper functionality of the project and fulfilling the liabilities of the investment and of the duty service: a project is considered as being sustainable from the financial point of view, when it does not present the risk to remain without cash, in the future. An important element is represented by planning cash entrances and exits. The analyze should demonstrate the capacity to cover payments year by year through financing sources (including incomes, as well as any transfer of cash), for the entire period of reference of the project. Sustainability takes place when the net cash flow gathered is gathered positively for all years of analysis.

Calculation of the financial flows

The analyze formed of a series of charts illustrating financial flows of the project, detailed on total investment, operation costs and incomes, financing sources and the analyze of the cash flow for financial sustainability. The methodology to be used is the analysis of the updated cash flow (FNA), using an incremental method that compares the scenery "with project" with the alternative of the scenery "without project".

The incremental method will be applied as follows:

1. there would be prepared projections of the cash flow on operations (from the point of view of expected incomes and costs, as well as other planned or necessary investment, for each functioning year) in the absence of the proposed project (scenery "without project"). In case the project proposed is completely new, the scenery "without project" is a scenery "without operations".

2. similar projection of the cash flow are prepared taking into account the proposed project and its impact from the points of view of the operations (scenery "with project"). The beneficiary of the project should take into consideration the entire investment plan, take into account the modifications of the operation and maintenance costs and adjust tariffs (in case this is relevant), taking into consideration the availability to pay for services.

3. the cash flow for the investment represents the difference between the cash flow in the scenery "with project" and "the scenery without project". In case the proposed project is completely new, the scenery "without project" is the basis for the incremental cash flow.

The result of the process presented above represents the additional impact of the proposed project from the point of view of the financial cash flow for all operation years. The identified cash flow is used to calculate financial performance indicators of the project (namely the updated net financial value VFNA/C and the financial profitability rate of the investment RRF/C) in the absence of the co-financing from Funds. As mentioned, besides projects submitted to the norms of state aids, co-financing would be requested only if the proposed project is not financially profitable. So, such a project will be eligible for co-financing only if, before the UE interventions, VNAF/C is smaller than zero, and RRF/C is smaller than the elected updated rate.

Some of the most common risks are:

- Risk of wrong calculation of the project's total costs;
- Risk of not observing the initial graphic of the project;
- Risk of project period prolongation;
- Risk of not-realizing the internal rate of profitability (RIR) and of updated net value (VNA);
- Macro-economic instability;
- Ecological risk and unexpected damages.

The evaluation of the risks comprises the following stages:

- Sensitivity analysis

The sensitivity analysis allows the determination of the variables or of the „critical" parameters of the pattern. These variables are the ones whose variation, positive or negative, has the most powerful impact on the financial and/or economic performance of the project. The analyze will be realized by the modification (fluctuation) of an element and the determination of the effect of that change on RIR or VNA.

- Probability distribution of the critical variables. This stage supposes granting some probability distributions to each critical variable, defined in a precise scale of values around the best estimation, used as a basic scenery, to calculate expected value of the financial and economic performance indicators.

- Risk's analysis
- Evaluation of the accepted risk levels
- Risk's prevention

The risk's analysis includes any method used for studying and measurement of the immanent risks of a project and generally appears as part of CBA, after the sensitivity analysis.

The sensitivity analysis determined only the effect of modification of one of the risk variables on the entire project. This is important as it underlines more frequently the modality in which the effect of one change of the risk variables might produce a significant difference to establish variables with a major potential impact on the results of the project and which will be included in the quantitative analysis of the risks as entrance variables. A "risk analysis" will be included in the Cost Benefit Analysis³. The purpose is to determine the incertitude concerning the implementation of the investment projects, which will be realized through a risk and sensitivity

analysis. The objective of the risk analysis and the sensitivity is to evaluate the performance of the profitability indicators as part of the project. To this extent, the first part of the analysis (sensitivity analysis) aims the identification of the critical variables and their potential impact on the modification of the profitability indicators, the second part (risk's analysis) having as purpose the estimation of the possibilities of these modifications taking place, the results of this analysis being expressed as an estimated average and a standard deviation of the mentioned indicators.

The relevant performance indicators which will be considered for the risk analysis and sensitivity are RRF/C and VNAF for the financial analysis, RRE and VNAE for the economic analysis, which will be calculated in all cases after the UE contribution.

The sensitivity and risk analysis will be realized in three steps:

1. The identification of the critical variables: establishing those variables considered as being critical for the project's performance indicators. This will be realized by the percentage modification of +/- 1% of a set of variables in the project and afterwards the calculation of the value for the profitability indicators. Any variables of the project for which the variation with 1% will lead to a modification with more than 5% in the basic value of VNAF or VNAE will be considered as a critical variable;

2. Calculation of the commutation values for the critical variables: taking into consideration the results obtained at the first step, any variable of the project for which the variation with 1% will produce a modification with more than 5% in the basic value of VNAF or VNAE will be considered as a critical variable. For critical variables, will be requested the calculation of the so-called commutation value, representing the variation (in percentages) of the critical variable, making that the analyzed performance indicator (VNAF or VNAE) passes through zero.

3. The assessment of the profitability distribution for the profitability indicators: this step involves the qualitative evaluation of the relevant factors able to affect values of the critical variables, as well as measures already included into the project, to reduce the impact of these factors.

2. CONCLUSIONS

Except the fact that the Cost-Benefit Analysis represents the type of analysis requested through the regulation concerning structural funds, this is essential in the **risk's management**, in the phase of risks control. The decision to make investment in measures of risks reduction should be realized only by the method of cost-benefit analysis. The cost-benefit analysis supposes the realization of a financial analysis, realized from the point of view of the beneficiary, to prove the necessity of the intervention through non-refundable funds, and of an economic analysis, this aiming to reflect the benefits generated by the project for the society. From this reason, it can be stated that the economic analysis is the one justifying the implementation of a certain project. Also, in case the economic analysis represents a "colloquial" subject for the

ones issuing project, the economic component is the one requiring a more complex approach and a special attention.

The main difficulties and uncertainty supposed by the elaboration of an economic analysis are:

- formulation of a set of hypotheses necessary for the estimation of the economic, social and environmental impact of a project;
- the selection of the most appropriate rate of economic updating for the project's context;
- forecast and specific quantification of the social-economic implications.

A cost-benefit analysis can be included in the process of taking decisions. When risk is considered as being higher, the risk manager might ask the one that estimated the risk to search the possibilities for their reduction, obtained by the inclusion of different additional protection measures, in the estimation pattern. Depending on the results of re-estimation with included protection measures, the strategy might include, eventually, a request of risk's reduction. Ideal, it is necessary that the estimator and the manager be different persons and this is the general case for the quantitative estimation of the risk. Ideal, it is necessary that the valuator and the manager be different persons, the strategy might include, eventually, a request of risk's reduction. Ideal the communication of the risk means an open change of information between the risk "estimators", risk managers and all the others affected by the risk, or by taken decision, before being finalized the decisions of final strategies.

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¹ Regulation 1083/2006, article 40 (e) and GD 28/ 2008

² Official Gazette no. 48 from 22nd January 2008

³ Regulation 1083/2006, article 40 (e)