

# PUBLIC PROJECTS BETWEEN NECESSITY AND IMPACT

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## Abstract

*The main objective of public projects is to purchase one or more social benefits, targeting communities in which public authorities responsible for implementing these projects were elected. Unlike public projects, the main purpose of the projects undertaken in the private sector consists of maximizing the profit obtained by increasing the activity and / or minimize costs. Therefore, in order to analyze in economic and social terms the impact of development projects it is required, together with analysis of common issues, highlighting the differences between public and private projects. In this sense, we see greater difficulties in evaluating public projects, which should aim at minimizing the costs - as well as private projects - also achieving significant benefits and correctly targeted to the needs of the population, meantime taking into account economic and social present situation. Cost – effectiveness analysis is more difficultly to do, as it involves to estimate some indicators, expressed in monetary units, defined by a series of mostly social meanings, such as the cost of life, the improvement living conditions benefits, etc. The choice of discount rate and project operating life involves higher risks than in the private sector, at least for large investment projects, given that these designs achieve highly valuable public assets, which have to operate a long time for the community benefit. Public authorities responsible for public projects must choose the most suitable variant of proposed projects according to the respective communities present and future priorities set, based on a thorough socio-economic analysis, highlighting the increasing usefulness for society by implementing the project and also taking into account its specific activity.*

**Keywords:** *budgetary funds, grant, indicators, present value, public projects, ratio, social benefits*

## Introduction

### Classification of public projects

Public projects can be classified according to the nature of the domain where its will be implemented:

- social services development of any kind - health, public utilities etc. - designed to increase the quality of community life, without creating negative externalities;
- education and research and development that aimed increasing the level of education, training and professional skills, achievements in applied and / or fundamental scientific innovation etc.;
- protect and / or exploitation of the natural resources;
- security and civil protection by improving the activity of the army and police, judiciary system adaptation to cyclical demand and strategic imperatives, etc.;
- economic development of the geographic area to which it is addressed by creating conditions for implementation of leading industries in terms of value added (industrial engineering, quarrying and manufacturing, chemistry and petrochemistry, food, light, docks, etc.) or social utility (agriculture, forestry, fisheries, energy infrastructure, the IT etc.)

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## Content

### 2. Comparison of public projects versus private projects

As technical and economic approach, between public projects and the projects made by the private sector for its own purposes, there are, naturally, many common elements, but at the same time, exist many important aspects that distinguish them as follows:

- the main purpose of a private entrepreneur is to make a profit and for this it improves its endowment, creating new jobs, etc..

Public project mainly aims to provide essential public services to the community of the highest quality and in sufficient quantity;

- funding sources present significant differences. While private projects are financed from own resources (self-financing), the loans obtained from the financial sector and grants for the project which proves that is eligible for these grants, public projects are financed primarily from budgetary allocations, which are public funds established by the redistribution of taxes and administrative charges. Also, like private projects, the public projects can obtain loans (repayable) and / or grants, if the conditions of eligibility are fulfilled;

- the life of the projects in the private sector, the overall average, is much shorter than of the public projects. Thus, public projects in areas such as transport and communications infrastructure, civil engineering, energy, etc.. are designed to operate for long periods and therefore must meet much higher technical conditions;

- whether for a private project divergent objectives are infrequent, usually a public project must find a solution to balance the interests of the public institution and those of community, generally those adjacent to which development and / or operation of the project can be an externality negative.

For example, building a dam to control water flow can adversely affect some land and public authority which is responsible and the project beneficiary will have to compensate losses of the affected population;

- in the political impact of projects, those private is insignificant - perhaps only in creating new jobs and, for this, public authorities, both local and the national need to provide an appropriate environment, while respecting the law of competition. Public projects produce, however, important political effects and, consequently, public authorities have to account for, on the one hand, the interests expressed by pressure groups and, on the other hand, for the conditioning imposed by natural environment, and also political, economic etc. interests of national and / or community society, temporary or medium term, but also for the financial constraints of the project;

- private projects determined as measure of effectiveness, the rate of return on invested capital, which, technically speaking, is relatively easy to do, but, for public projects, the evaluation of efficacy is very difficult to perform because you have to be taken into account a number of social issues that can not be precisely described by measurable indicators in physical or / and in monetary units. In response to these goals, scientists have developed various models of cost-benefit analysis, which approximates the specific indicators of economic and social aspects of life.

#### Evaluation difficulties

Evaluation difficulties in assessing the community benefits produced by public investment projects are caused by many aspects that have to be considered, such as, for example, the following, not limited to:

- identify all the beneficiaries and all gains and losses that that project can generate and also its monetary evaluation;

- poor relationship that can be drawn between public projects and the communities in whose heritage get these projects;

- absence of both national and international standards to be used as a measure of effectiveness;

- public projects are subject to, in most cases, some legal and functional restrictions, for which, to overcome them, have to be undertaken costly actions (eg, expropriation, etc.);
- public funds that is necessary to be allocated to the project must be included in the beneficiary public authority budget and thus will be subject to political influence. In addition, the design and selection of investment projects are approved by the budget authorizing officers, who are leaders of public institutions dependent on government power applied policy;
- motivating the human resources that are involved in the achievement and implementation of development projects is ignored, in general;
- the discount rate used for the analysis and selection of public project, based on financial ratios, is difficult to calculate, given the uncertainties introduced by forecasting inflation, financial market interest rates and other macroeconomic indicators.

### **3. Eligibility analysis indicators of the public projects**

Toor analyze and select the investment projects are built based indicators - in physical and / or monetary units - and financial indicators, which are calculated using updated methods that take into account the time value of money.

In the first category of indicators are found based indicators for all investment projects, regardless whether its are determined by public or private sector, as follows:

- total amount of capital invested;
- the period of the implementation of the investments;
- the operation period of the respective investment objective;
- specific investment;
- payback period;
- the coefficient of economic efficiency of investments;
- the equivalent or converted values of the investment expences;
- economic efficiency of investments;
- etc.

Among the financial indicators, the most relevant are related to:

- the net present value (NPV), which presents the financial profitability of the project, using the updated nominal values;
- recovery period (TR) needed to cover total costs generated by the project, under the update method;
- internal rate of return (IRR), as a measure of financial risk posed by the project.

All financial indicators are calculated taking into account the trend in the currency in which other indicators are expressed, a trend that is determined depending on the chosen discount rate to determine the eligibility of the project, which in turn is dependent on cost of capital that funds the project.

Forecasted cost of capital for a public project or public / private investment must take account of some features related to public sector involvement, as follows:

- if the project financing is ensured only by the taxes and public charges, the cost of capital - equivalent to a social discount rate - will be zero;
- when public funding is ensured by budgetary allocations coming exclusively from loans contracted by public authority, the cost will reflect the effective interest rate which it pays;
- it must take into account the opportunity cost (the greatest gain that could be obtained by using another version than that objective) charged by the investment of the private sector that pays taxes and administrative charges required;
- also, it will be considered the opportunity cost of public investment, due to the budgetary constraints it faces.

In the economic and administrative literature states that in the public investment projects, capital cost must be greater, at least than the effective rate of return of the government securities issued as long-term public borrowing.

*The life of an investment project* in the public sector is generally tens of years, for example for a hydro dam comes to 50 years. This feature makes it obligatory to take into account the residual value that will target investment after a relatively brief period, to analyze its feasibility.

*The cost-benefit rate* is a crucial indicator in a public investment project. As economic and financial analysis, a public project is no different than a private one, but it is necessary to bear in mind that it never does not seek profit making but obtain benefits for the population, these benefits being rarely in a monetary form, at least in a first approach. Hence, one of the major challenges facing the public projects is evaluation of monetary social benefits for the local and / or collectivities, as a result of implementation of those projects.

In terms of this key indicator for selecting public investment projects, namely the cost-benefit, it can provide three objectives:

- maximize earnings due to a specific cost items;
- maximizing net benefits, when both costs and revenues vary;
- minimizing costs to achieve a given level of benefits. This latter method is known under the appellation of cost - effectiveness<sup>3</sup>.

The cost-benefit indicator is defined as the ratio between the net profit project created and costs, also net generated by the project. The net benefit is determined by deducting from the sum of all gains of the all losses incurred for the beneficiaries as a result of project implementation. Net costs, known as equivalent expenditure, covers all expenses implementation, and also operation of investment obiectivului.

Accordingly, to calculate this indicator, it is necessary to identify the benefits - of any kind: economic, financial, social, etc. - and to be assigned to each items a monetary value.

Also, it will be taken into account the wide variety of costs. They can be grouped into four categories:

- costs which is attributable to internal activity of the entity that implements the project;
- costs caused by the external environment, regarding both the technical and technological features, and production and consumption of goods and services registered by operation of the respective investment objective;
- the market development and of the monetary indicators which characterize primarily inflation and reference interest rate;
- the expected changes as a result of project implementation, about supply and demand of goods and services of the community concerned, together with the indicators that express those authorities resources and relevant inputs in the area analyzed.

A very important aspect is to determine if the proposed project is an independent one or a mutually exclusive projects. Thus, when an independent project, the eligibility methodology involves several basic steps:

- identification the net benefits and quantification its monetary values;
- determining the costs of implementation;

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<sup>3</sup> Efficiency = results / effort, where the result is the fruit of actions taken after consumption of various resources and effort are consumed resources (materials, people, time, money);

Effectiveness = the result / outcome of planned (desired).

Effectiveness without efficiency is beneficial because consume too many resources (especially time), even if eventually get the desired result. No effective only does not pay - remove nothing best result of the resources they have at hand if you get something closer to the desired result.

Sources: <http://scri.ro/eficient-sau-eficace-1001.html>

- calculating the present value of benefits and net costs using an appropriate discount rate. The acceptance of the project will be made according to the budget constraints, and if the report benefit / cost in terms of updating values, is higher, at least equal to unity.

If, to achieve an public investment objective - for example, implement a program of road infrastructure, a public authority may approve several independent projects, for the different sections of the road – it will be selected only those projects that presents a benefit / cost report greater than unity.

If, to achieve an public investment objective there are several projects that meet the eligibility requirements, but only one of these should be selected, the analyst must choose which among those predicts it will bring the greatest social benefits. This project is not necessarily one that presents the greatest benefit / cost, but the analyst must justify each marginal cost with a marginal benefit / cost report higher than unit. Also, the public authority responsible for the investment project may agree to pay an additional subsidy, under the condition to provide a benefit / cost ratio greater than 1, calculated on the basis of cost growth.

In case of the presentation of projects that exclude each other, after eliminating projects that would affect competition, it is calculated for all remaining competing projects the benefit / cost ratio, that must exceed the unit to be eligible. To select among the projects remaining, they are listed in order of increasing costs and it is calculated for each pair of projects – the project<sub>i</sub> to the project i-1 from the list, the report as follows:

$$\frac{Net\ Benefit_i - Net\ Benefit_{i-1}}{Net\ Cost_i - Net\ Cost_{i-1}} = \frac{\Delta B_{i/i-1}}{\Delta C_{i/i-1}}$$

selecting from each pair of projects the second, if the ratio is greater than unity or vice versa.

Incremental increased benefits and costs will always be the same ranking of the mutually exclusive projects, whether they are used to select the criteria such as net present value, internal rate of return or the recovery period to date.

Effectiveness analysis - cost pursues several aspects, taking into account both the benefits and costs can be accurately measured with difficulty and, consequently, their monetary expression is uncertain. For public investment projects to satisfy the conditionality on the effectiveness, benefits and costs must be considered net, i.e. the benefits will lower the nominal loss of benefits and investment costs will be deducted from any income that the operator may obtain from the project.

Difficulty in determining the correct ratio benefit / cost gains are to identify and / or additional costs. Thus, in some cases, an additional benefit may be added or dropped from the cost benefits, but this interpretation leads to a different value for the benefit / cost, although it produces no effect on the acceptance or refusal of a project.

#### Effectiveness - cost analysis

In some public projects, benefits and losses of benefits can be measured in monetary values with difficulty, directly or indirectly. Analysis must express the benefits and costs in terms of efficacy and the method benefit / cost is often identified with it.

In this respect, analysis of effectiveness - cost ratio must seek the fulfillment of conditions:

- analysis of benefits and costs must express in terms of effectiveness and benefit method - cost is often identified with it;
- effectiveness - cost analysis must meet several conditions:
- to identify targets, shown feasible by the studies presented;
- to provide more options that achieved the objectives specified by the contracting public authority requirements;
- to define the constraints related to the project, regarding the costs, the execution and operation project period, etc..

Effectiveness – cost analysis will be accomplished in several phases:

- defining objectives;
- diagnostic analysis which presents the strengths and weaknesses points of the area are going to implement the project;
- detailing possible options;
- establishing the scope of effectiveness and the discount rate for the monetary values;
- select one of the options, in accordance with:
- established efficacy, that project choice that best achieved the objectives at least cost;
- the determined cost, i.e. the present value or equivalent annual costs for a given level of effectiveness;
- determining the efficiency of each variant;
- graphical representation of yields;
- analysis of various options against the criteria established, which will eliminate the option / options that tend to dominate;
- perform a sensitivity analysis, which estimated outputs to inputs major changes;
- development of a synthesis of all previous analyzes and conclusions

#### 4. Conclusions

In the countries with democratic political system it is stipulated by the Constitution, as general government, under powers granted by the national constitution, are obliged to justify public investment decisions, including budgetary costs arising from these decisions.

Projects of a public nature are different from those performed solely for the private sector in that the entities responsible - whether central or local public institutions, financed wholly or partly of budget allocations, etc. - are forced to consider methods of funding; lack of obligation to pay corporate tax; political and social factors; etc.

Evaluation criteria and implicitly, by selecting public investment projects are currently affected in a decisive manner, by the results of the analysis of benefits - cost that used update information entry.

Also, responsible public authorities are considerably based on the benefit – cost method, because it takes into account, along with monetary benefits, also non-monetary ones - allowing a better understanding of the value added by labor, i.e. labor productivity.

It is important too to note that the benefit - cost report produces a relevant information relating to the importance of public investment priorities for the project, only if it is able to specify and to define in terms of budget impact of that project, given the budgetary constraints it is forced to cope. In this respect, if the submitted projects are independent, they will be subject, first of all, to a threshold of acceptability, only then will have to be within the limitations imposed by the responsible funding.

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