Corporate longevity and business innovative projects: the economic efficiency approach

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Abstract

This paper applies the concept of Cost-Benefit Analysis to Corporate Longevity and clarifies the fundamental parameters that determine the behaviour of the government and the private participants of innovative projects. It aims at extending the framework of financial (commercial) analysis on a microeconomic level in order to better fit the interdisciplinary and multilevel project results through the analysis of economic (public) efficiency. As a tool of an evaluation of efficiency the multi-period simulation model of investment project is used. It consists of financial and economic components. For the profound quantitative estimation of economic efficiency the simulation model is interconnected with the modified two-period input-output inter-regional model, which is expanded by inclusion of a technological vector of the investment project. These methods are applied to real projects (3 megaprojects and 19 micro innovative projects of the Siberian Branch of the Russian Academy of Science) and experimental projects (2 projects).

JEL classifications: C78; D82; J12; K12; L24; O30; O38

Keywords: Innovative Projects; Economic Efficiency; Corporate Longevity

1 Introduction

Priorities of the corporate investment policy change during transition to innovative growth. Now the success of innovative projects as a basis of corporate longevity ultimately depends on the application of multilevel and interdisciplinary approaches to investment decisions. Methods of evaluation of investment projects on a microeconomic level are not limited to narrow framework of a financial efficiency but include as an important component the analysis of economic (public) efficiency with quantitatively measured ecological, indirect, tax and other public effects.

The traditional approach in the project analysis is based on separation of private and public sectors, direct private participants of every investment project and government, hence, methods of financial efficiency analysis, on the one hand, and cost-benefit analysis, on the other hand. Cost-benefit analysis as a system of the methods has been developed for public evaluations of projects and programs and forms the whole direction in economy of public sector as a version of the applied economic analysis [1]. The modern approach assumes interaction of private and public sectors and essentially expands the analysis of investment projects in a corporation due to one more direction – the economic efficiency analysis. This approach was developed within the international organizations, first of all, the World Bank [5]. Situation in developing countries have demanded essential change of the traditional CBA methods used for public sector projects in the developed countries. As a result, a special economic approach to the project analysis was generated. It is usually called the modern cost-benefit analysis. Recently, the development of corresponding methods in the European Union became more active [3]. In Russia the economic aspect corresponds to the analysis of economic efficiency and forms one of two directions of the project analysis alongside with the analysis of a financial efficiency [6].

All these methods provide an integrated financial and economic analysis of projects and conform to a microeconomic level within the frames of separate projects. But for the estimation of economic efficiency of innovative projects it is necessary to predict public results of their realization on macroeconomic and regional levels. Wide opportunities of carrying out of such analysis arise on the basis of economico-mathematical models. In the Institute of economics and industrial engineering of the Siberian Branch of the Russian Academy of Science (IEOPP, Novosibirsk) the project approach is regularly applied to an evaluation of economic efficiency, including calculations on the basis of input-output inter-regional models [2].

In this paper the combination of multilevel approaches to the evaluation of the project efficiency is used. The influence of the investment project on macroeconomic and regional indicators is estimated by modification of the dynamically optimized inter-industry inter-regional model. At the same time, the multi-period simulation model of the investment project is applied to project evaluation on a microeconomic level. On the basis of this approach Methodical recommendations for appraisal of infrastructural projects influence on regional development were prepared and approved in experimental calculations.

2 Theory

Financial efficiency of the project considers costs and benefits from the point of view of private participants. Economic efficiency of the project means costs and benefits from the point of view of society as a whole. Efficiency of the project is closely interconnected with efficiency of participation in the project. The latter means comparison of benefits and costs that arise for every participant after realization of the project. The efficiency of participation in the project forms a basis of the mechanism of realization of the project. Mechanisms of the project realization are called to provide the mutually advantageous combination of interests of various participants of projects.

It is important to distinguish the project efficiency and the project participation efficiency. Both financial and economic efficiency correspond to the project efficiency. The project participation efficiency is connected with economic interests of different project's participants, first of all investors and government (and defined for each of them). Budget efficiency corresponds to the efficiency of government participation in the project and evaluates the revenues and expenditures of budgets of different level. But government is a special project participant, who can play different roles simultaneously. In every project it participates as a special institute that expresses local or regional economic interests as a whole and uses the compulsory right to collect taxes. As a result, the budget efficiency for the ordinary private projects is high. In public sector projects it may be investor, corresponding to the public property in emerging enterprise, or government loans for the whole project investment. In practice, an intermediate variant of financing of the high social importance projects that need a governmental support, is used.

The main problem for the economic efficiency analysis and cost-benefit analysis consists in revealing of the valid costs and benefits in conditions of market failure. The directions of the cost-benefit analysis and respective factors consist of revelation of costs and benefits, their measurement and co-measurement in time. Policy aspects of non-market value estimation, shadow pricing, time preference, and risk analysis are applied to systematic choice of public investment programs.

The major factors responsible for the difference of financial and economic efficiency of innovative projects are connected with revealing benefits and costs, including the prices, redistribution (tax), external (ecological) and indirect effects.

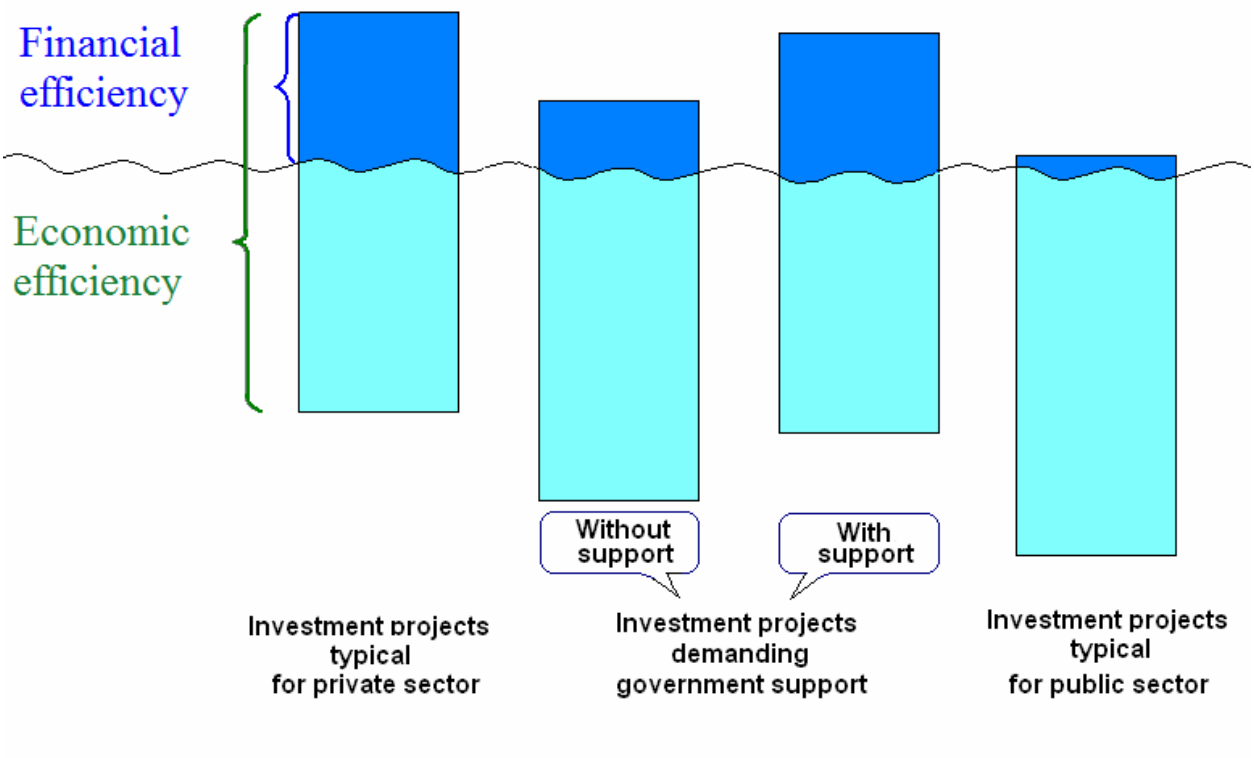

Figure 1. Distinction of commercial and public efficiency

as the informational problem

Distinction of financial and economic efficiency can be presented as an information problem by means of concept of "iceberg", in the form of visible on the surface and the invisible part disappearing under water (see figure 1). The visible part that can be observed by participants of the investment project on the market, forms a basis for calculation of a financial efficiency, and invisible - for the analysis of specificity of its economic efficiency.

All investment projects can be subdivided into three basic groups depending on a combination of financial and economic efficiency. The first group is formed by the typical projects of private sector and corresponds to a normal level of a financial efficiency. The projects of public sector are in the second group with a high level of economic efficiency in a combination with low or even negative level of the financial efficiency. Projects of the third, intermediate group are characterized by a combination of low financial and high economic efficiency, but, however they are carried out in a private sector. The majority of innovative

projects of the Siberian Branch of the Russian Academy of Science correspond to the latter group.

Without any special support, projects of the third group (with low level of the financial efficiency) are unable to attract the interest of the usual private investors. However, their level of economic efficiency is so high, that it forms the basis for different types of support, for example, in the form of financing of the most risky researches from the budget or the bank of development. Government uses the whole system of support instruments, including diverse tax advantages and exemptions, tax expenditures, subventions, government guarantees, budget credits with lower interest rates, investment in equity, infrastructure facilities construction. Due to this support, financial efficiency increases up to a level acceptable to private participants. Thus the government plays a role of the specific participant which can influence the financial efficiency and bring it into accord with economic efficiency of projects.

3 The simulation model

As a tool of an evaluation of the efficiency the *multi-period simulation model of investment project* (MSMIP) is used. It consists of financial and economic models which are based on appropriate financial and economic analysis [7], [8]. Each model includes an evaluation of efficiency of the project and efficiency of participation in the project. Indicators of efficiency of the investment project are calculated on the basis of cash flows from investment and operational activity. Indicators of efficiency of participation in the project are calculated on the basis of cash flows for various participants, including budgetary efficiency of the project and efficiency for all private participants.

Financial MSMIP has identical structure and includes following components:

1. Basic calculations: sales, volumes of production and liquidation value, investments, amortization and a fixed capital, current costs, working capital, taxation, financing;

2. The forecast of cash flows, including cash flow of the project (a cash flow from operational and investment activity), cash flow for financial planning (a cash flow from operational, investment and financial activity), cash flow for the governments, cash flow for investors;

3. Financial forecasts of the income statement and the balance sheet;

4. Indicators of efficiency of the project and efficiency of participation in the project on the basis of appropriating cash flows. The result is a working model of the business that accurately reflects interrelationships between variables, assumptions and business drivers in the process of project realization.

Our technique of the evaluation of economic efficiency is based on the transition from financial to economic efficiency by means of corresponding updating of cash flows, and also of their discount rate. Let's assume, that the financial efficiency of the project is defined on the basis of the corresponding cash flow for each moment of time t and the discount rate r. For calculations of the economic efficiency of the project these parameters are corrected by changes of difference between financial and economic efficiencies ($f, f=1, \ldots, F$).

The formula for the calculation of the net present value (NPV_E) within the framework of the economic efficiency of the project becomes the following:

$$NPV_E = \sum_{t=0}^{T} \frac{(B_t - C_t) + \sum_{f}^{F} (\Delta B_t^f - \Delta C_t^f)}{(1+r-\Delta r)^t} \qquad (1)$$

where B_t and C_t are benefits and costs, respectively, in the context of the financial efficiency for each moment of time t, r is the discount rate, and f is a factor of distinction of financial and economic efficiency, $f=1, \ldots, F$.

Mechanisms of project realization are based on the interrelation of cash flows. Cash flows of the project describe activity of its realization irrespective of sources of expenditures financing and redistribution of revenues between various participants. For the realization of the

project the problem of its financing and corresponding redistribution of results is very important, as well as the problem of the efficiency of participation in the project. The basis of its solution can be presented by the following equation that describes interrelation of cash flows:

$$CF_t = \sum_s CF_t^s \quad , \qquad (2)$$

where CF_t is the cash flow of the project, that is equal to $(B_t - C_t)$ within the framework of the financial efficiency and equal to $(B_t - C_t) + \sum_f^F (\Delta B_t{}^f - \Delta C_t{}^f)$ within the framework of economic efficiency, and CF_t^s are the corresponding cash flows of s -th participant of the project.

Equation (2) defines a basis of interaction of various participants of the project which is shown in the form of interaction of their cash flows. The information about efficiency of the project is presented in the left hand side of the equation, and the indicators for calculation of efficiency of participation in the project - in the right hand side. The composition of participants and corresponding cash flows differ within the framework of financial and economic efficiency analysis.

The interaction of cash flows determines the interrelation of efficiency indicators, first of all net present values,

$$NPV = \sum_s NPV^s \qquad (3)$$

where NPV is net present value of the project, which is equal to NPV_F within the framework of financial and NPV_E within the framework of economic efficiency analysis, NPV^s is net present value of s -th participant of the project (NPV_F^s and NPV_E^s, respectively).

Net present value of the project in the left hand side indicates the value of efficiency of the project. It is equal to the sum of net present values of s -th participants of the project. The latter is in the right hand side of the equation (2) and indicates the value of the efficiency of participation in the project. This equation is solved within the frameworks of financial or economic efficiency analysis.

The positive net present value that arises after realization of the efficient project can be considered as original "pie" which is divided in different ways between participants of the project by means of its financing. It provides corresponding efficiency of participation in the project. A significant size of the net present value for every participant of the project would show that this scheme of financing is interesting for participants and leads to successful realization of the project.

An important feature of the model is the presentation of all parameters and indicators for several years. It allows one to attract attention to a problem of the pay-back period of capital investments. Another important characteristic of financial MSMIP is the consideration of material inputs in current costs on the basis of the input-output approach. The indicators of efficiency in simulation model are traditional ones for project analysis on microeconomic level. They include, first of all, the net present value, pay-back period and internal rate of return. The combination of two indicators of efficiency provides a way through which project evaluation exerts its influence on corporate longevity.

These methods were applied to 3 megaprojects [8] and 18 innovative projects used for the evaluation of innovative potential of the Siberian Branch of the Russian Academy of Science [7]. Among practical measures of state investment policy in Russia the wide public resonance was received by the so-called megaprojects that use significant volumes of budgetary financing and provide high level of efficiency. The first Siberian megaproject that received significant support in the form of budgetary financing of 500 million rbl, was the innovative project of production of new catalysts. It is characterized by a combination of low financial and high economic efficiency

and concerns the group of socially significant projects demanding the government support (Table 1).

As a result of the state support of innovative activity, the mutually advantageous combination of interests of various participants is provided (Fig.1). Private investors are interested in granting financial resources for socially significant projects and their high budgetary efficiency is simultaneously reached.

TABLE 1

Efficiency of the project of new cracking and reforming catalysts:

system of indicators

	Financial efficiency	**Economic Efficiency**
NPV , million rubles **R= 10%**	**137,3**	**2768,3**
IRR, %	**30,7**	**95,0**
Payback period , years	**3,63**	**3,2**
BCR, times	**1,369**	**3,300**
Revenues/budget investment rate, times **R= 10%**	**2,141**	**11,664**
R= 0%	**2,503**	**13,993**

Among various innovative projects, two projects are of special interest. First is the project of installations for recycling the oil gases that gives significant ecological effects. Second is the project of ecological housing construction "Ecohouse". It is attractive from the point of view of harmonization of interaction with the environment, energy saving, low expenses, and earthquake-resistant opportunities.

Such projects are characterized by a combination of low financial and high economic efficiency and are related to a group of socially significant projects requiring the state support.

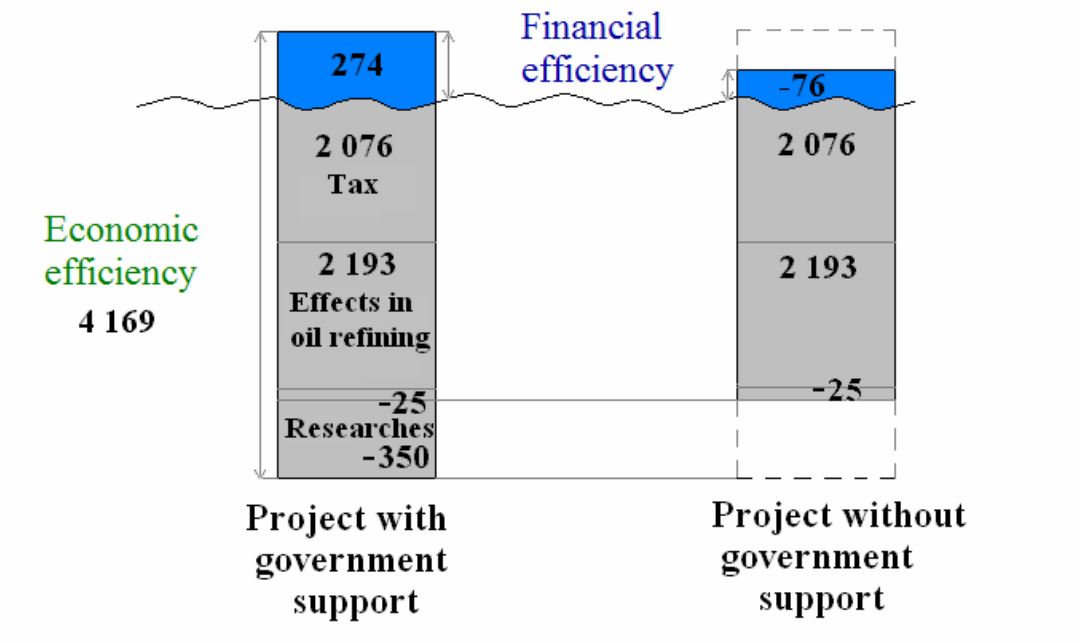

Figure 2. Government support and efficiency of the project of new cracking and reforming catalysts (mln rbl).

For the evaluation of the Siberian Branch of the Russian Academy of Science (SB RAS), parameters of financial and economic efficiency of a complex of 19 "standard" innovative projects were estimated. The list of "standard" projects includes 3 megaprojects. The analysis was based on the simulation models of investment projects with detailed presentation of economic efficiency.

Each effect is estimated in rubles and in percent to NPV within the framework of the analysis of economic efficiency. The most significant effects (53,2 %) arise in sphere of application of new products and technologies and are connected with indirect effects. The influence of tax effects also is essential (42,6 %). The tax effects in the innovation production are connected with the profit tax. Its part in the total amount of tax effects from the production of innovations is 62,7 %. From the use of innovative production the main part comes from the VAT and excises (71,0 %). On the basis of standard projects the multipliers were calculated. The parameters of the evaluation of innovative potential were found out by their implication to 13 megaprojects of the Siberian Branch of RAS. The analysis of projects efficiency reveals higher level of economic efficiency in comparison with rather low level of a financial efficiency.

TABLE 2

Efficiency of the complex of 19 «standard» innovative projects of the Siberian Branch of the Russian Academy of Sciences, 2006-2010 years, , r=10%

NPV	***million roubles***	**%**
Financial efficiency	2 305,4	3,8
Tax effects	25716,6	42,6
Indirect effects	32099,0	53,2
Economic efficiency	60326,2	100,0

The analysis of the intellectual property of participants of innovative projects was investigated for some projects (2 from 18) on the basis of modeling the conditions of license agreements. First of all, this concerns the separation of lump sum expenses into purchase of the license and current royalties, and also variants of distribution of license receipts between the state and scientific research institute-initiators of projects. The change of the specified parameters renders essential influence on the size of the financial efficiency of projects and the interest of private participants in their realization. Corresponding redistribution of the net value is investigated within the framework of the analysis of economic efficiency for various participants of innovative process. The level of economic efficiency of projects remains constant.

As a result of the state support of innovative activity, the mutually advantageous combination of interests of various participants is provided and their high budgetary efficiency is simultaneously reached. It is important that private investors in the situation with the support are interested in granting financial resources for socially significant projects.

4. The complex of models

For the quantitative estimation of the economic efficiency the simulation model is included to the complex of the input-output inter-regional models. This complex is used for the quantitative evaluation of the investment project and consists of the following components:

multi-period simulation model of the investment project (MSMIP), including financial model and economic models;

two-period optimization inter-industry inter-regional model (TOIIM) in two versions: initial model without taking into consideration the project and the modified model with taking into consideration of the project.

Influence of the project implementation on macroeconomic, regional and sectoral parameters is estimated on the basis of comparison of results of calculations on modified and initial TOIIM. At the same time the evaluation of the project on a microeconomic level is conducted from the point of view of various private participants within the financial MSMIP and taking into account specific public factors within the economic MSMIP.

The preparation of the information about the investment project assumes a coordination of information base and comparability of initial data in various components of a model complex. For this purpose calculations on the basis of auxiliary information blocks of the investment project, aggregation and spillovers are carried out. The information on the project is represented in two formats corresponding to the TOIIM approach (typical for the macroeconomic and spatial analysis) and to the MSMIP approach (traditional for the microeconomic design analysis). At first the assumptions that are necessary for transition from one model to another on allocation of types of production by a principle of pure industries are formed to appropriating nomenclature of production. The consideration of various types of investment and material inputs, transition to measurement of parameters of the project in basis production prices is carried out. Then standard procedure of aggregation of production and technologies is applied. The necessary initial information for construction of the block of the investment project on all periods of time (years) appropriating MSMIP is formed as a result. Finally, for two periods the technological column of the investment project is formed by means of summation on a matrix line. It is comparable with TOIIM and can be used for calculations in this model. Besides, for the consideration of the influence of positive spillovers as a result of realization of the investment project, the initial information on variation of material and labor inputs is used.

As the model environment into which the new investment project "plunges", *initial dynamic (two-period) optimization inter-industrial inter-regional model* is used [2]. In mathematical sense TOIIM is a problem of linear programming which solution defines a condition of regional economy for last years of every period. Each region is presented by input-output model. Regional blocks are connected by columns of transportation and conditions of alignment of consumption levels of the population. Each typical regional block includes balance restrictions on production and distribution, manpower, investments, interregional and foreign trade. In restrictions that connect investments for each period with investments of last year of the given period and last year of the previous period, the functional dependence is used that shows the exhibitors law of growth of total investments into a fixed capital inside of each period

In *modified TOIIM* the basic endogenous solutions are defined, allowing to evaluate the influence of the project on macroeconomic, regional and branch parameters, as well as on inter-regional and foreign economic relations. The modification of initial TOIIM is done by addition of the fixed technological vector that represents the result of summation on a line of parameters of the block of the investment project for the appropriating period of time. Besides technological coefficients of the interfaced industries (first of all, coefficients of material and labor inputs), the change due to positive spillovers results in realization of infrastructural and innovative projects in modified TOIIM.

The block of the investment project is similar to the regional block of inter-regional model and carries the information about the project, generated in terms TOIIM by modeling and measurement of parameters. For transition to MSMIP, the construction of similar blocks of the investment project for all years of simulation model is carried out. The information on two periods is used for transition to TOIIM. The technological column of the investment project, presented in the right part, reflects pure benefits and costs measured in terms TOIIM that arizes in two periods of time as a result of realization of the project.

An advantage of this approach is the possibility to receive not only qualitative, but also quantitative evaluations of "embedding" of the new project into system of existing and perspective inter-industrial and inter-regional balances of manufacture and distribution of production and services, restrictions on a manpower, local resources and infrastructure. The modified inter-industrial inter-regional model allows to consider direct and indirect, internal and external results of realization of the project in terms of the change of variables of products and costs, value added and net incomes of the activities presented in the model (in view of variation of technological coefficients due to the positive spillovers), the induced inter-industrial and inter-regional effects, as well as redistribution of a part of resources in favor of the new project.

Consequences of realization of the investment project, arising within the society as a whole are estimated by comparison of solutions of the initial and modified TOIIM. Indicators of economic efficiency are measured by variation of indicators of inter-industrial inter-regional model as a result of realization of the project (full effects), measured in the basic production prices. Besides, there is a possibility of division of full effects on direct and indirect, as well as internal and external. Direct effects are connected with benefits and costs within institutional frameworks of the project, as well as with variations of technological coefficients as a result of realization of the project. Indirect effects are connected with consequences of realization of the project outside the project and consider variations on a chain of inter-industrial and inter-regional interactions, as well as influence of limitation of resources. In turn, both direct and indirect effects are subdivided on internal and external, depending on transition through prices for appropriating benefits and costs.

The optimum dual evaluations received by solution of TOIIM (and considered as endogenous shadow prices) can be used as measuring instruments of the considered effects. Depending on evaluations of the initial or modified TOIIM, direct and full macroeconomic effects of the project differ. The direct macroeconomic effect of the investment project is determined by multiplying of a column of the project and dual evaluations of the initial TOIIM.

It shows how much the discounted final consumption of households and government increases in two years (for two-period model) if the given column is entered into the model. The optimum basis of model thus remains constant. The full macroeconomic effect of the project is determined in a similar way, but with application of dual evaluations from modified TOIIM.

Economic MSMIP includes the forecast of cash flows and appropriating indicators of economic efficiency of the project and participation in the project, constructed on the basis of financial MSMIP and decisions TOIIM. Transition to economic MSMIP is carried out by updating cash flows for each year, received from financial model, taking into account four groups of effects: prices, tax, indirect and external. The information on tax effects acts from financial MSMIP. The total sum of indirect and direct spillovers is defined as a result of calculations on TOIIM for two appropriating periods. The evaluation of these effects is based on the use of the increase of final consumption (the indicator of criterion function in TOIIM). Distribution of indirect and spillovers on years (according to time intervals of simulation model) is carried out proportionally to volumes of annual sales on the basis of solution in financial MSMIP.

The complex of the input-output inter-regional models was approved in experimental calculations. Variants of experimental calculations were formed for various projects and toolkits applied to their estimation. In addition, we considered different objective conditions of realization of projects. Two model investment projects (fuel and complex) have been constructed for calculations. The fuel project is devoted to the development of fuel minerals fields in the Central region. In the complex project it is supposed that creation of infrastructure in the same region leads to simultaneous development of related industries on the territory where the project is realized. Calculations on aggregated modified TOIIM have been conducted for a small-size model. The economy in this model is presented by three regions, seven industries and two periods – five and ten years.

For carrying out of experimental calculations on multiple-period simulation model, we separated two core variants from 18 possible ones. They are: the variant of a complex project that is realized in the conditions of balanced development, and a variant of a fuel project that is realized in the conditions of transport deficit. Financial and economic efficiency of the two considered infrastructural projects was calculated on the basis of similar indicators.

Calculations of the financial efficiency, which was carried out for an initial situation without budgetary financing, show that realization of the projects provides a considerable NPV at a rate of 895,4 million rbl in the fuel project at 15 % discount rate, and 1599,5 million rbl in the complex project. The results of an estimation of economic efficiency show much higher indicators. The NPV, which was calculated at 15 % discount rate within the frame of economic efficiency, reaches level of 19847,4 million rbl in the fuel project and 13186,3 in the complex project. Thereby economic efficiency indicators exceed indicators corresponding to the financial efficiency by 22,2 times in the fuel project and 8,2 times in the complex project.

The internal rate of return within the frame of economic efficiency is 60,7 % in the fuel project and 52,0 % in the complex project that considerably exceeds corresponding indicators of the financial efficiency (19,1 and 22,1 %, respectively) and the more so the standard 15 % level.

In Figs. 3 and 4 dynamics of accumulated NPV in cases of the financial and economic efficiency for fuel and complex projects is presented. Results of an estimation of main effects and distribution of the total effect from the project realization are presented in Table 5. Here we use NPV as an indicator. Each effect was estimated in money terms and in relation to NPV for economic efficiency at 15 % discount rate.

Two considered factors of economic efficiency are mutually supplemented for each other. As a whole, there is an essential difference between financial and economic efficiency. This is the basis for allocation of the state support to the given project in the form of budgetary financing.

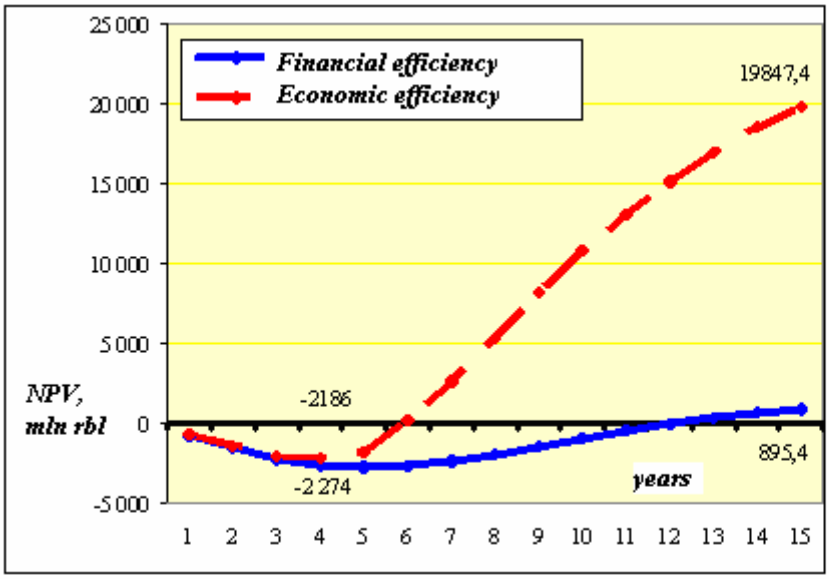

Fig. 3. Dynamics of accumulated NPV in the fuel project (r = 15 %), million rbl.

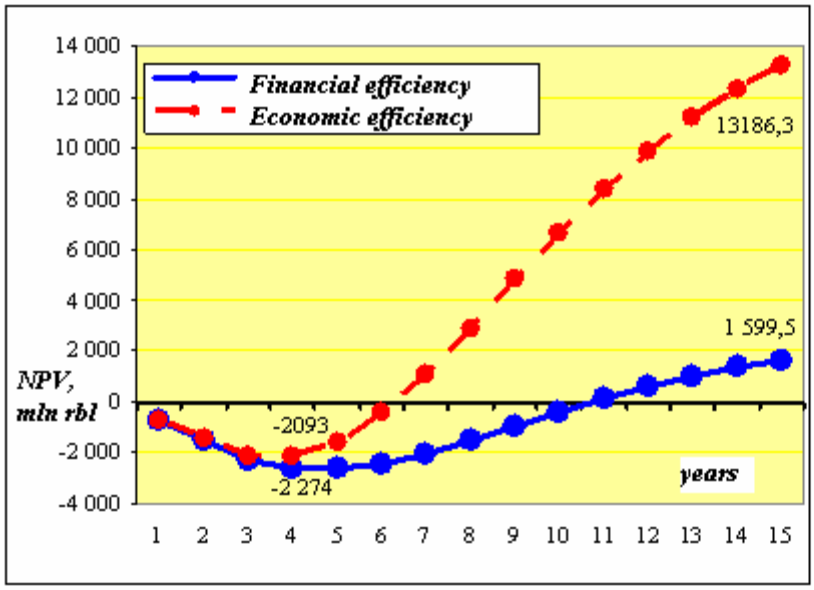

Fig. 4. Dynamics of accumulated NPV in the complex project (r = 15 %), million rbl.

TABLE 3. Difference between NPV within the frames of financial (commercial) and economic (public) efficiency of the project (r = 15 %)

Indicators	The fuel project		The complex project	
	volume, mln rbl.	structure, %	volume, mln rbl.	structure, %
Financial efficiency	895,4	4,5	1599,5	12,1
Indirect and external effects	4445,8	22,4	2517,2	19,1
Tax effects	14506,2	73,1	9069,0	68,8
Economic efficiency	19847,4	100,0	13186,3	100,0

Calculations using financial TOIIM were carried out with granting of budgetary financing. In both projects 40 % of investments are financed from the budget. It allows raising the financial efficiency of both projects essentially

Economic efficiency remains invariable when financing change. At the same time, NPV of the project within the frames of financial efficiency considerably increases with respect to variants without budgetary financing, both in absolute and relative values: in the fuel project by 2,7 times and in the complex project by 1,96 times. It allows concluding that budgetary financing creates sufficient stimulus for private participants in realization of both projects.

5. The project transparency

Mechanisms of project realization are needed to provide the mutually advantageous combination of interests of various participants of projects. They correspond to the degree of

development of a civil society, in particular, of a transparency of representation of the information on investment projects.

The project transparency for the investment policy is connected with the clear and convincing ground for the necessity and essential forms of government participation in every investment project, may be in the form of budget financing. Project transparency is a complex issue, which includes openness, availability, detailed presentation, trustworthiness, and revealing of the principal investment problems. Such basic problem which should be presented for citizens, is the difference between relatively high economic and relatively low financial efficiency in comparison with other projects.

For projects using special funding and government support project transparency is interconnected with budget transparency. The budget transparency reflects also the specific quality of presented information, which is determined from on the basis of consideration of the most important budget problems for citizens. The fiscal transparency is the important feature of budget system that includes the revelation of the most actual budget problems and corresponds to the results of decisions making and it's implementation.

Of special value is not only the evaluation of potential of investment projects, but also the analysis of mechanisms of their realization, first of all institutional problems and opportunities, which focus on understanding the role of human-made institutions in forming economic behavior. The increased need for the proved budget expenditure for support of the separate investment projects with the status of projects of the state importance, demands adequate development of democratic transformations and corresponding maintenance of a transparency of the state intervention into economic development, decrease in a level of corruption in society. In Russia important decisions were made by public bureaucrats, who possessed a high degree of technical expertise, have permanent links with special interest groups, but were not directly controlled by the citizens. The distinctive feature of the last period was the using of budget process to achieving interests of the political rent. It was possible in the conditions of week

public participation in the budget process and corresponding budget transparency absence. In the case of budget transparency, the state and local authorities and legislators can constantly interact with citizens, who receive possibilities for budget control just due to the transparency. The transparency provides the means of solving the information asymmetry problem. The transparency of the investment program is provided by the active public participation in the budget process as a result of the complex interaction of these various institutions (e.g. individuals, firms, state, social norms).

6. Conclusions

At evaluation of innovative projects on a microeconomic level it is necessary to consider and quantitatively to measure not only narrow financial, but also wider ecological, social and other public effects to include in calculations of results of realization of projects in order to better fit the interdisciplinary and multilevel project results through the analysis of economic efficiency.

The analysis of innovative projects of the Siberian Branch of the Russian Academy of Science was conducted on the basis of the special methods connected with the evaluation of the economic efficiency, supplemented by calculations of private contribution to the financial efficiency. Socially significant projects, revealed as a result of such evaluation, demand the special funding and granting the government support, otherwise they would not be realized by a private sector.

An integrated evaluation of financial and economic efficiency of the investment projects is important for success in business and enhancement of corporate longevity.

The governmental support of investment projects is based on the difference between relatively high economic and relatively low financial efficiency in comparison with other projects.

The public participation in budget investment programs corresponds to its fiscal transparency. The increased demand for the state support of separate investment projects requires adequate progress of democratic transformations and appropriating maintenance of a transparency of the state intervention in investment process.

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