

## THE EVALUATION OF THE EXPEDIENCY'S DEVELOPMENT AND SUPPORT OF SMALL INNOVATIVE ENTREPRENEURSHIP IN RUSSIA

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**Abstract:** This article analyzes the situation of innovative approaches to building business processes and interaction between universities, the government, and representatives of the business environment. A methodology is proposed by the authors for calculating the feasibility of government support for small innovative enterprises (SIEs) as independent small business entities organized at higher educational institutions of the Russian Federation, the activities of which are aimed at research, development, implementation, and commercialization.

The importance and role of small innovative entrepreneurship in the economy of the country and large cities is becoming the main world trend. Russia is trying to match its innovation strategy in small business, but the success is, unfortunately, still negligible. On the part of the government, millions of rubles are allocated to support small innovative entrepreneurship, as well as the construction of technology parks, the creation of business incubators, technological laboratories, and platforms being organized at universities in order to ensure the implementation of innovative projects. In accordance with the Federal Law of the Russian Federation No. 217-FL of August 2, 2009, universities were able to register small innovative enterprises on their territory as independent small businesses in the sphere of innovative development, whose activities are focused mainly on the commercialization of intellectual property objects and their active promotion in the market.

Nevertheless, the implementation of new technologies and know-how is associated with greater risks of SIEs and needs a methodical approach to assess the appropriateness of providing government support to such enterprises. We are going to consider and calculate the indicator of the feasibility of government support for a small innovative enterprise in the amount of 50 million rubles for a period of five years for its development and will prove the increase in the efficiency of the enterprise and the possibilities for its development through the government support mechanisms for innovations.

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### Introduction

It seems that the evaluation tool should take into account the convergence of all participants in the process that is: a small innovative enterprises (SIEs) as a small business entity, a state, and a large state university having a high scientific potential. Qualitative parameters of this kind for each of the listed participants in five areas: revenue growth, personnel security, import substitution of goods produced on the Russian market, implementation of technological innovations, and know-how. The first of the listed qualitative parameters can also be quantified. At the same time, a quantitative indicator designed to assess the appropriateness of providing government support to a small innovative enterprise should consider the cumulative effect that all three parties receive in terms of value, because the incentive mechanism itself is intended to enhance the capacity of both the state itself and the university, and of course of the created SIE. Thus, the activity of SIEs should be viewed from the position of three participants: the founders of the SIE, the university, and the state.

### The model of indicator

Let's consider the application of the proposed indicator on the example of assessing the feasibility of providing state support for the SIE in the amount of 50 million rubles for a period of five years. Also, the SIE was created at the university, which invested 20% in the authorized capital of the newly created small business entity as a result of intellectual activity (RIA).

The establishment of the SIE should be viewed as a business project in which the state is one of the co-investors and expects to receive a positive effect in the form of additional income. The creation of the SIE is appropriate for the state if the aggregate government revenues from the SIE activity are greater than the aggregate government subsidies for the creation and development of the SIEs.

The indicator model must therefore meet the following requirements:

- 1) Consider the price of the effect for each of the participants, which is reflected in the increase in income due to the organization of small innovative enterprises at the university;
- 2) Have an added form, i.e. summarize the effects obtained by each of the three participants;

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3) Consider the time value of money provided as government support.

Evaluation of the integrated effectiveness of a project and the private effects of its participants is carried out on the basis of the cost-benefit analysis (CBA) methodology (Guide to Cost-Benefit Analysis of Investment Projects, 2014). The following ratio can serve as an indicator of assessing the expediency of granting government support for the SIE being created at the university:

$$\frac{GSi}{(1+r)^n} \leq \frac{Egi+Eui+Esiei}{(1+r)^n}, \quad (1)$$

where  $i=1 \div n$  is the interval (the number of full years) for which the provision of government support is being considered;

**GSi** is the amount of government support provided to the SIE in the  $i$  financial year (if the entire amount of government support is provided immediately, then the need for a discounting denominator is eliminated, because it would equal to 1);

**Egi** is the effect of the state itself is expressed in the growth of tax revenues in connection with the growth of the taxable base of the university activity in educational and R&D activities, which is obtained through the interaction with the SIE and taxation of the SIE itself functioning at the university for each  $i$  year of the period under review

**Eui** is the effect of the university, which is expressed in the formation of additional revenues from the development of additional educational programs; programs and the expansion of the range of R&D activities in the interaction with the SIE, except for the taxes transferred in connection with this activity to the government, as well as the share from SIE's incomes transferred to the university for each  $i$  year of the period under review;

**Esiei** is the effect for the SIE, which represents the difference in its income received for each of the  $i$ -th years of the period under review and the costs incurred in each of these periods, including tax transfers to the government.

To calculate the presented indicator of the economic feasibility of providing government support for the SIE, a methodology for determining its elements, depending on the SIE creation option, is needed. Since the methodology is always created for specific conditions, let's consider it on the example of creating an innovative enterprise within a large state university in the Russian Federation. Private effects of each participant in the provision of government support to a small innovative enterprise focused on the development and implementation of innovative products created at the university:

$$Egi = \Delta TRui + \Delta TRsie_i, \quad (2)$$

where **Egi** is effect of the state in the  $i$ -th years, following the first year of granting government support, formed on the basis of the growth of tax revenues to all levels of the budgetary system of the Russian Federation from the university due to the expansion of its activities ( $\Delta TRui$ ) and tax revenues from the SIE activity created at the university for the same period ( $\Delta TRsie_i$ );

$\Delta TRui$  is the amount of additional tax revenue transfers for the  $i$ -th year, formed and paid by universities due to the fact that, due to cooperation with the SIE, it is expected that the incomes for educational activities is to increase (both in the framework of basic educational programs and additional vocational educational programs), as well as scientific R&D activities are to bring additional income.

**Eui** is the effect for the university for the  $i$ -th year, which is expressed by the amount of additional increments compared to the usual activity of the university, except for the taxes transferred in connection with this activity to the government:

$$Eui = \Delta Ibep_i + \Delta Iaep_i + \Delta Ir&d_i + \Delta SIsie_i, \quad (3)$$

where  $\Delta Ibep_i$  is an increase in the amount of income of the university in comparison with the previously received income from the development of basic educational programs in the  $i$ -th calendar year, which is associated with the increase in the number of applicants attracted by pre-university programs;

$\Delta Iaep_i$  is an increase in the amount of income of the university in comparison with the previously received one from the development of additional professional educational programs in the  $i$ -th calendar year;

$\Delta Ir&di$  is the increase in the amount of income of the university in comparison with earlier received one from the expansion of the range of R&D activities due to interaction with the SIE in the  $i$ -th calendar year;

$\Delta SI_{siei}$  is the share of the university being transferred annually to the university as a founder, with a share in the authorized capital of 20% of the difference in the amount of income and expenses of the SIE (including taxes) for the  $i$ -th financial year;

$\Delta RImipi$  is the amount of social transfers to the state target extra-budgetary funds for the  $i$ -th year at a preferential rate of 14% of the wage fund of SIE employees being accrued on all levels plus 6% of the single tax levied on the amount of SIE income (subject to the simplified taxation system under the regime of “income”), which is expressed in the growth of tax revenues due to the increase in the taxable base of the university;

$Esie_i$  is expressed by the difference in its income received for each  $i$ -th year of the period under consideration and the costs known to us related to the mutual settlements with the university being incurred in each of these periods, including tax transfers to the state. It is expressed in the growth of tax revenues from the SIE activities (in the form of deductions to social extra-budgetary funds in the amount of 14% of the wage fund at all levels);

$$Esip_i = I - E, \quad (4)$$

where  $I$  is the actual income of the SIE being received in the form of an alleged amount for the conduct of its activities;

$E$  is the expenses, including all mutual settlements with the university and tax transfers for the conduct of core activities and being calculated from the wage fund.

We will calculate the effect of each participant in order to determine the feasibility of creating a SIE in the construction of an organizational and economic mechanism.

The SIE receives income the composition of which is defined by Art. 249 of the Tax Code of the Russian Federation. In our case, this is revenue for the R&D activities and the implementation of additional educational programs. Let’s assume that the total income of the SIE in the first year is to be 10 million, and then it would grow by 25% annually. The salary fund of employees on average is 30% of the revenue. The tax on the wage fund for the SIE at the university is 14%. Our SIE works under the simplified system of taxation (SST) and pays taxes at a rate of 6% of its income. The calculation of the partial effect for the SIE is presented in Table 1.

Year	2018	2019	2020	2021	2022
<b>Income</b>	10.00	12.50	15.63	19.53	24.41
<b>Tax (SST, 6% of income)</b>	0.60	0.75	0.94	1.17	1.46
<b>Salaries</b>	3.00	3.75	4.69	5.86	7.32
<b>Tax on salaries (14%)</b>	0.42	0.53	0.66	0.82	1.03
<b>Total balance at the end of the period</b>	5.98	7.48	9.34	11.68	14.60

Source: calculated by authors

Based on the data in Table 1, it can be concluded that the effect for the university is in additional income from the implementation of additional R&D programs on the basis of the SIE and the implementation of additional educational programs. Let’s assume that the university could receive from the SIE an additional income of 3 million rubles for R&D programs and 5 million rubles for additional educational programs. These revenues will have an annual growth of 10% in accordance with the university development program. In addition, the university will receive 20% of SIE profits. In accordance with the legislation, the additional income of educational institutions from the main activity is not subject to profit tax (Item 1.1 of Art. 284 of the Tax Code of the Russian Federation). The effect for the university is shown in Table 2.

On the basis of the data obtained, we calculate the indicator for assessing the appropriateness of providing government support for the SIE being created at the university. Due to the instability of the economic situation in the Russian Federation and the difficulty in predicting the level of inflation for

the given period, all cash flows shown in Table 3 are indicated in the base prices for 2018, and a deflated discount rate is used to bring them to bear.

Year	2018	2019	2020	2021	2022
<b>The income of the university from the SIE share</b>	1.20	1.50	1.87	2.34	2.92
<b>Total additional income of the university</b>	1.20	10.30	11.55	12.98	14.63

Source: calculated by authors

Let's consider the development of SIEs as one of the forms of public-private partnership (PPP). It is known that the state also provides certain facilities to such enterprises; therefore, the requirements for the profitability of investments in SIEs could be considered by analogy with other projects with state participation. According to the current regulations for such projects, the discount rate is taken to be equal to the yield to maturity on federal loan bonds with a term close to the project implementation deadline being increased by 2.5% (Order No. 894 of the Ministry of Economic Development of the Russian Federation, 2015).

According to official data, the yield on 5-year bonds in 2018 will be about 7% (The Central Bank of Russia, 2013). Then, we get a nominal discount rate of  $7 + 2.5 = 9.5\%$ . Let's take the average annual inflation for the period of 2018-2022 being equal to 3% (Agency for Forecasting the Economy, 2018). Thus, the estimated deflated discount rate will be:

$$(1 + 0.095) / (1 + 0.03) - 1 = 0.063 (6,3\%).$$

We assume that the annual volume of the subsidies for the development of SIEs (GSi) is 10 million rubles per year. The data on private incomes of the university and SIE are taken from Tables 1 and 2. The revenue of the state budget is determined by the sum of SIE profit taxes and salary taxes (Table 3).

Year	2018	2019	2020	2021	2022	Total
<b>Subsidies (government)</b>	10	10	10	10	10	
<b>Income (university)</b>	1.20	10.30	11.55	12.98	14.63	
<b>Income (SIE)</b>	5.98	7.48	9.34	11.68	14.60	
<b>Additional taxes</b>	1.02	1.28	1.59	1.99	2.49	
<b>Total income of project participants</b>	16.20	19.05	22.49	26.66	31.72	
<b>Total discounted income of project participants</b>	15.24	16.85	18.72	20.88	23.37	95.06
<b>Discounted government subsidies</b>	9.41	8.85	8.33	7.83	7.37	41.78

Source: calculated by authors

In this example, the integral effect of all participants from the project exceeds the amount of the government subsidies invested. According to formula (1), this is a sign of the effectiveness of government support for SIEs. In terms of economic meaning, this difference corresponds to the NPV index. Consequently, the positive value of NPV indicates the effectiveness and feasibility of the project as a whole. Based on the foregoing, it is assumed that government support for the SIE is appropriate and, more than that, is one of the effective ways to develop small innovative entrepreneurship, which positively affects many economic indicators in the country through convergence with other participants.

### Conclusion

The model used in this study for assessing the need for government participation in the establishment of the SIEs is based solely on the projections of participants' cash flows. In reality, financial and economic analysis (financial metrics) is insufficient to assess the effectiveness of projects with their significant non-commercial component. The SIE at the university performs the role of a technology incubator, a center for training students and integrating scientists with business representatives.

Scientific results form not only profits and information infrastructure, generating synergistic and multiplier effects in the economy. The results of such activities cannot be adequately estimated in terms of money/income. If the possibility and requirements for assessing non-financial effects are fixed in the relevant regulatory documents in a number of developed countries, this practice is still extremely limited in the Russian Federation. The above methodology for calculating public-private partnership projects is also based on a budget approach to assessing the effect. This situation has some risks for the scientific and educational sphere in Russia and requires the adoption of appropriate decisions at the highest governmental level.

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