Evaluation of Strategies of Key Categories of Actors in the Functioning of the Free Port of Vladivostok and Other Development Programs of the Far East Based on the Determination of the Value of Expected Future Losses and Acquisitions

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Abstract. Internationalization of the world trade and severe competition for the position in global value chains stimulate countries all over the world to create special economic zones (SEZ). For the Russian Far East, the SEZ are the major element of fostering industrial growth and overall economic development. There are Free Port of Vladivostok, Territories of Advanced Economic Development and other development programs created to ensure inflow of investors into the economy of the macro-region. The state offers both tax deductions for up to 10 years and direct budget expenditures for creating infrastructure for the future project sites. Natural consequence of that is the problem of very different financial efficiency of potential projects and dire need to sort or filter those projects that will, probably, be mutually beneficial both for investor and for the state budget from those that, again probably, will benefit only one party or even fail for both. We started from applying standard mechanisms of project evaluation, based on sum of the discounted cash flows comparing to discounted investments, and then enrich it with instruments of working with probable events to make it more flexible. Then based on real-options approach, we show an anticipated cash flow as the representation of project’s efficiency and create strategy matrix for private and public parties of the cooperation.

1. Introduction to the problem

For almost two decades since collapse of Soviet Union the strategy of economic and social development of the Russian Far East was bound to huge industrial projects, or state sponsored projects, most of which remained on a draft stage, and those which has been implemented, like Space-port “Vostochny”, was not regarded economically successful. Even for a technologically ordinary project – construction of two hotels in Vladivostok for further partnership with Hyatt hotel franchise network – budget money was used in such a creative way that hotels have not been finished despite investment of 8,5 bln rubles (more than $300 mln) from federal and regional budgets [13]. Unfinished hotels were sold to private investor for approximately 3,5 bln rubles, also details of the deal has never been fully disclosed.
Gradually it becomes obvious that Russia should change the strategy for the development of the region if state wants to achieve any social, demographic, or financial goal of its Eastward pivot policy. Free Port of Vladivostok and Territories of Advanced Economic Development (further FPV and TAD) are the unique examples of laissez-faire economic policy initiative for modern Russia. TAD and FPV have been introduced by two consecutive laws (TAD [1] and FPV [2]) in 2014 and 2015 with quite an experimental mission – instead of “the state will create and control” the new deal for public-private cooperation was: “state will not hurt you or interfere with your project”. And, as it was expected, the “new deal” showed an overwhelming success, one may want to read comments of three of Far Eastern region governors to feel the satisfaction with new tax and administrative regime [12]. More than two thousand projects have started under umbrella of FPV and TAD, and they change the economic landscape of the macro-region not only in terms of quantity of production or revenue, but also in terms of quality. For example, Tymlatsky Fish Factory has created around 1300 permanent jobs in Kamchatka – the most demographically troubled territory of the macro-region. But what is more important, it switched local production from raw-frozen fish to consumer products like fillet and even Omega-3 capsules [3]. When the business leaves raw export toward high value-added consumer goods, it benefits all the stake-holders: shareholders collect higher profits, workers get higher salaries, and region joins global value chain as a partner not a colony.

Let us recollect what is so special about FPV and TAD. First of all, profit tax goes to 0% for 5 years and 13% for another 5 years consequently instead of 20%. Property tax is 0% for 5 years and 0.5% for the rest of 10-year period. Social taxes decreased from 30% of the payroll to 7.6%. Administrative and control procedures from all state and regional authorities are significantly limited for FPV or TAD residents due to state’s attempt to enforce best international practices of fostering the economic growth.

For TAD case, investors may also benefit from state-sponsored infrastructure expenditures, as budget pays for roads, railroads, bridges, electricity-lines, water supply and sewage for the TAD assigned territories.

So, the risk and reward scheme for both investor and state can be formalized. For the potential investor on the one side of a Profit and Loss equilibrium is the present value of initial investments (financial resources that should be used to start the project) and on the other side is the probable future cash flows of project’s retained earnings.

\[
\sum_{t=0}^{n} \frac{I_t}{(1+r)^t} \leq M(\sum_{k=1}^{m} \frac{CF_k}{(1+r)^k})
\]

(1)

Where
- \(t=0\) to \(n\) – years of investment stage of the project;
- \(k=1\) to \(m\) – years of operating stage of the project;
- \(I_t\) - investments for year “\(t\)”;
- \(r\) - discount rate (can be measured as Weighted Average Cost of Capital);
- \(M()\) – applying mathematical expectation;
- \(CF\) – free cash flow from operating activity.

Please, note that “\(t\)” starts from “\(0\)” to exclude initial investments from discounting, while obtaining present value of investments.

As the company may be created both for limited and unlimited time projects, we may also provide formula for never-ending stream of equal revenues:

\[
\sum_{t=0}^{n} \frac{I_1}{(1+r)^t} \leq M \left( CF \times \lim_{k \to \infty} \frac{1-(1+r)^{-k}}{r} \right) = M\left(\frac{CF}{r}\right)
\]

(2)

Any scenario, under which right side of equations is larger than the left one, is favorable for investor.

The tax deductions and administrative support can not change the probability of success vs failure for the new projects, but can increase each positive \(CF\) or make break-even \(CF\) profitable (profit deductions are useless for company without profit, while payroll and property taxation deductions can switch project from loss or “red” to break-even or “black”).
For the Government, both federal and regional, the situation is similar. The budget gives away current receipts for 5 years and partially for another 5 years, plus have to finance construction of roads and utilities in exchange for the chance to collect additional tax revenues for long or unlimited period of time.

\[ \sum_{t=0}^{10} TD_t \left( \frac{1}{1+r} \right)^t + \sum_{t=0}^{n} IR_t \left( \frac{1}{1+r} \right)^t \leq M \left( TR \times \lim_{k \to \infty} \frac{1-(1+r)^{-k}}{r} \right) = M \left( \frac{TR}{r} \right) \]  

Where

- \( t=0 \) to \( n \) – years of the project (0 for investment stage, 1-n for operational);
- \( TD_t \) - tax breaks (tax deductions) for year “t”;
- \( r \) - discount rate (can be measured as risk-free discount rate);
- \( M() \) – applying mathematical expectation;
- \( TR \) – tax revenues (tax receipts) from new business.

While left part of the equation is lower than right part, the State will be keen to participate in support FPV/TAD project.

Formalization of financial motives of State and Investor for FPV or TAD project, given above, will be used to solve a scientific problem – evaluate how incentives of parties to join Public-Private cooperation under TAD regime depends on different factors of the economic environment.

2. Literature review and explanation of popular approaches to public-private interaction in case of SEZ

According to World Investment Report 2020 “International Production Beyond the Pandemic” there are now more than 5,400 Special economic zones (further SEZs) across nearly 150 economies, up from 4,000 in 2015, and hundreds more are in the planning stage [14]. SEZ like FPV/TAD are the natural response to increasing competition for FDI between countries and regions.

In addition to FDI, many foreign corporations participated in the country’s infrastructure and development of SEZs through non-equity means, including engineering, procurement, and construction contracts. SEZs being an industrial policy tool that relies on the attraction of FDI, continue to proliferate and diversify around the world (Narula and Zhan, 2019) [9]. Narula and Zhan also emphasized role of SEZs for tackling spatial inequalities.

Usual approach to studying SEZ is applying a game theory to find optimal strategies for partners, based on Nash equilibrium ( Scharle P. 2002) [10]. This approach leads to analyzing public-private cooperation in terms of Prisoner’s Dilemma game, which for our view, is much more antagonistic and competitive game, than real interaction under TAD regime.

Formally, in our case each party wants to invest less money and to get more, but in real economic cooperation financial results of investor and state are interlinked. Actually, there is only one scenario when interests of participants are opposite, when project operates less than 5 years, pays a very little payroll (because personal income tax is not deductible), amortize capital expenditures within this period, collect huge profit, and completely disappear.

So, more cooperative approach (Asgari, S., et al. 2014) [4] can be used. Asgari and colleagues studied resource sharing and management among subcontractors and proposed a cooperative game theory framework. All mentioned scientists work with discrete models, while A. Kozlov and his colleagues tried a probability model based on Bayes rule for evaluating a state’s benefits from natural resource based SEZ (A. Kozvlov et al 2018) [7], which seems to be a better approach, because implied volatility of results is the key factor leads parties to accept or decline participation.

We would suggest going further into this direction and try to use chance-evaluating mechanism of real options for calculating perceived financial results. Two most popular ways for option evaluation are either Binomial option pricing model or a Black-Sholes formula (BSF), first introduced in 1973 [5] and now seemed to be standard procedure for financial institutions. Binomial calculation can be used when the financial result of the game at each iteration is definite as a pair of figures, showing “upward case” and “downward case” results with equal (or at least known) possibility [6]. It is definitely not
our case, because we do not have particular quarterly or yearly goals in formulas 1 and 3, only the cumulative results matter.

The BSF is well explained in Investments [11], so we will not spend time to explain it, instead just show the condensed formula for call options.

There are two additional arguments toward this approach. Today as world economy faced a sudden crisis in 2020 due to COVID-19, foreign direct investments (FDI) flows to transition economies are expected to fall by 30% to 45%, and export-oriented production for global value chain (GVCs) in special economic zones will also be heavily affected [14]. Crisis rise stakes in a game making investment in SEZ more painful and expected revenues more vogue, so it is time to use a chance-based model for evaluation of participants results. Plus, BSF had been earlier used for various purposes outside of the derivatives realm, for example by Robert Merton [8] for calculating the probability and consequences of credit defaults.

3. Model: assumptions, instruments, and propositions

We would assume that both State and Private partners within a SEZ project share the same knowledge of a few basic data. Risk free rate (“r”) was explained in formulas 1-3. The volatility (“σ”) can be defined as the standard deviation of financial results of companies of the same industry, operating in the same area. Parties know how long time the project supposed to operate from business plan attached by investor to his request for obtaining status of resident of TAD/FPV. Profitability of a project is neither guarantied nor artificially limited and can be considered to have a normal distribution.

As interest rate (r) in formula 1 was discrete we should convert it using standard procedure for recalculating interest rates based on parity of results

\[(1 + wacc)^t = e^{rt} \rightarrow (1 + wacc) = e^r \rightarrow r = \ln(1 + wacc)\]  \hspace{1cm} (4)

Based on these assumptions, we can calculate the financial value of a game for Investor (VI) as

\[VI = PV(CF_{1→n}) \times N(d_1) - PV(I_{0→n}) \times e^{-rt}N(d_2)\]  \hspace{1cm} (5)

Where:

- **VI** – project’s value for investor;
- **t** - time (in years);
- **r** - risk free interest rate;
- **PV(CF)** – present value of future positive cash flows from operating activity;
- **PV(I)** - present value of investments;
- **d1** - hedging coefficient for BSF

\[d_1 = \frac{\ln(PV(CF)/PV(I)) + (r + 0.5\times\sigma^2)\times t}{\sigma\times\sqrt{t}}\]  \hspace{1cm} (5.1)

\[d_2 = d_1 - \sigma \times t\]  \hspace{1cm} (5.2)

N – function of cumulative normal distribution.

We recommend use “Application.NormSDist” VBA command to calculate cumulative normal distribution in Excel, it can also be calculated with Norm.S.Dist (“НОРМ.СТ.РАСП” for Russian version of a program) Excel function.

The calculation of project’s value for State (VS) is similar

\[VS = PV(CF_{1→n}) \times N(d_1) - PV(I_{0→n}) \times e^{-rt}N(d_2)\]  \hspace{1cm} (6)

Where:

- **VS** – project’s value for state;
- **t** - time (in years);
- **r** - risk free interest rate - in this case treasure bonds’ yield for Russian securities with the time-to-maturity equal to term of a project;
- **PV(CF)** – present value of future tax receipts;
- **PV(I)** - present value of investments and tax deductions;
- **d1** - hedging coefficient for BSF and d2 – as in formulas 5.1, 5.2.
As we estimate VI and VS as real options their value can range only in positive numbers, which is useful for further analysis. Now it is time to think of efficiency of the projects for stakeholders. Obvious way to measure efficiency is to divide the result to the consumed resources. But in our case we should also take a few factors into attention.

First of all, the investor in addition to estimated amount of Net present value of project’s cash flows (VI) will retain a terminal value of a project – the value of assets both tangible (buildings, equipment and machinery, transport, etc.) and intangible (technology, trained personnel, brand, etc.), which will not be fully amortized to the horizon of calculation (further TV). We also should take into attention that investor is not doomed to invest in a real project and may prefer to make financial investments for example into stock index – it is called alternative expenses (further AE). For the state there is also an option in case one investor fails to fulfil its obligations to pass the infrastructure (land spot with roads and electricity) to another investor, we may call it residual infrastructure (RE). So, real value-at-risk for the state budget is tax deductions and alternative expenses of infrastructure expenditures (AE). All mentioned above give us a game matrix for SEZ.

### Table 1. Strategies for parties of the TAD investment project.

| On investor’s side | On State side | Mutually beneficial | Venture investments | Privatization of profits and nationalization of investments |
|--------------------|---------------|---------------------|----------------------|----------------------------------------------------------|
| $VI + PV(TV)$ | $A$ | $PV(I)$ | $PV(I)$ | Cooperate |
| $PV(I)$ | $PV(I)$ | $PV(I)$ | $PV(I)$ | Venture investments |
| $VS + RE$ | $A$ | $PV(I)$ | $PV(I)$ | Privatization of profits and nationalization of investments |
| $PV(I)$ | $PV(I)$ | $PV(I)$ | $PV(I)$ | No project |

It is obvious that win-win scenario (upper-left corner of a matrix) is the best case for the cooperation, but there are two additional scenarios when project can be started: when state due to political or other reasons (including potential corruption) initiates excessive support (lower-left corner of a matrix), or when company out of political motives or for the corporate social responsibility goes into financially inefficient project.

Given the limited land spots and infrastructure resources for FPV/TAD development, state have to solve a bit more complicated problem – not just whether to support particular project, but also which of projects deserve support in case of limited resources.

To illustrate the proposed model, we will investigate hypothetical example of labor intense vs capital intense projects in TAD with the same initial investments from state.

### 4. Hypothetical example

Let’s assume that State is ready to invest $50 mln in infrastructure of TAD, while investors ready to create a production facility with initial investments of: case “A” - labor intense facility - $100 mln, case “B” – high automation-plant - $200 mln. Profitability margin for “A” – 20%, for “B” – 40%, and expenditures are divided into material and labor expenses.

Cash flow of projects are summed up in a table below (revenue growth 20% year-on-year).

### Table 2.1. Project “A” expected cash-flow of the investor for years 0 to 7.

| ($) (mln) – years | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------------------|---|---|---|---|---|---|---|---|
| Investments      | 100 |
| Revenues         | 50 | 60 | 72 | 86 | 104 | 124 | 149 |
Discount rate of 10% is used to highlight that project’s proceeds are uncertain and the further the
date for each sum, the less valuable it will be in its present value. The table is divided into 2 parts for
easier reading.

**Table 2.2.** Project “A” expected cash-flow of the investor for years 8 to 15.

| ($ mln) – years | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Investments    |     |     |     |     |     |     |     |     |
| Revenues       | 179 | 215 | 258 | 310 | 372 | 446 | 535 | 642 |
| including      |     |     |     |     |     |     |     |     |
| Material       |     |     |     |     |     |     |     |     |
| expenditures   |     |     |     |     |     |     |     |     |
| (40%)          |     |     |     |     |     |     |     |     |
| Payroll and    |     |     |     |     |     |     |     |     |
| taxes (40%)    |     |     |     |     |     |     |     |     |
| Profit (20%)   | 36  | 43  | 52  | 62  | 74  | 89  | 107 | 128 |
| Discount rate  |     |     |     |     |     |     |     |     |
| Discounted     | 16,72| 18,24| 19,89| 21,70| 23,67| 25,83| 28,17| 30,74|
| cash flow      |     |     |     |     |     |     |     |     |
| Terminal value |     |     |     |     |     |     |     | 50  |
| PV(CF)         | 268,83 |     |     |     |     |     |     |     |
| PV(TV)         | 11.97  |     |     |     |     |     |     |     |

The same operation was done for the second project.

**Table 3.1.** Project “B” expected cash-flow of the investor for years 0 to 7.

| ($ mln) – years | 0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  |
|----------------|----|----|----|----|----|----|----|----|
| Investments    | 200|    |    |    |    |    |    |    |
| Revenues       | 50 | 60 | 72 | 86 | 104| 124| 149|    |
| including      |    |    |    |    |    |    |    |    |
| Material       |     |    |    |    |    |    |    |    |
| expenditures   |     |    |    |    |    |    |    |    |
| (40%)          |     |    |    |    |    |    |    |    |
| Payroll and    | 20 | 24 | 29 | 35 | 41 | 50 | 60 |    |
| taxes (40%)    | 10 | 12 | 14 | 17 | 21 | 25 | 30 |    |
Profit (20%)  

| Year | 20 | 24 | 29 | 35 | 41 | 50 | 60 |
|------|----|----|----|----|----|----|----|

Discount rate 10%

Discounted cash flow  

| Year | 18.18 | 19.83 | 21.64 | 23.60 | 25.75 | 28.09 | 30.65 |

Terminal value is equal to 50% of initial investments.

Table 3.2. Project “B” expected cash-flow of the investor for years 8 to 15.

| ($ mln) |  
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Year | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-----|---|---|---|---|---|---|---|---|
| Investments | | | | | | | | |
| Revenues including | 179 | 215 | 258 | 310 | 372 | 446 | 535 | 642 |
| Material expenditures (40%) | 72 | 86 | 103 | 124 | 149 | 178 | 214 | 257 |
| Payroll and taxes (40%) | 36 | 43 | 52 | 62 | 74 | 89 | 107 | 128 |
| Profit (20%) | 72 | 86 | 103 | 124 | 149 | 178 | 214 | 257 |
| Discount rate | | | | | | | | |
| Discounted cash flow | 33.43 | 36.47 | 39.79 | 43.40 | 47.35 | 51.65 | 56.35 | 61.47 |
| Terminal value | | | | | | | | 100 |
| PV(CF) | 537.66 |
| PV(TV) | 23.94 |

With data from tables 2.1-3.2 it is possible to make further calculations.

Table 4. Efficiency of the projects for investors according to model (see table 1).

| | A | B |
|---|---|---|
| d1 | 1,6600 | 1,6640 |
| d2 | 0.8854 | 0.8894 |
| N(d1) | 0.9515 | 0.9519 |
| N(d2) | 0.8120 | 0.8131 |
| VI | 174.00 | 349.20 |
| VI+PV(TV) | 185.97 | 373.14 |
| (VI+PV(TV))/(PV(I)) | 1,8597 | 1,8657 |
| Alternative investment (at 5%) | 107.89 | 215.79 |
| A/(PV(I)) | 1,0789 | 1,0789 |
| Result | 1,859>1,0789 | 1,866>1,0789 |

\[ \frac{VI + PV(TV)}{PV(I)} > \frac{A}{PV(I)} \]
Both projects are efficient for investors, because expected results are higher than 15 compounding at alternative investments rate. So, in the table 1 both projects would occupy the left column. Let us proceed to calculations for the State.

**Table 5.1. Efficiency of the project “A” for State according to model (see table 1) for years 0 to 7.**

| Discount rate | 4% |
|---------------|----|
| State         | 0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| Initial investments | 50 |
| Tax deductions (30%–7,6%) x payroll | 4,48 | 5,38 | 6,45 | 7,74 | 9,29 | 11,15 | 13,38 |
| Tax deductions (20%–0%) x profit | 2,00 | 2,40 | 2,88 | 3,46 | 4,15 |
| Tax deductions (20%–13%) x profit | 1,74 | 2,09 |
| Total investments | 50 | 6,48 | 7,78 | 9,33 | 11,20 | 13,44 | 12,89 | 15,47 |
| PV(I) | 50 | 6,23 | 7,19 | 8,30 | 9,57 | 11,04 | 10,19 | 11,75 |

The longer the project works, the higher the financial efficiency of the projects for the state budget, but we limited the project horizon at 15 years.

**Table 5.2. Efficiency of the project “A” for State according to model (see table 1) for years 8 to 15.**

| State | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|-------|---|---|----|----|----|----|----|----|-------|
| Initial investments | 16,0 | | | | | | | |
| Tax deductions (30%–7,6%) x payroll | 5 | 19,2 | 23,1 |
| Tax deductions (20%–0%) x profit | | 6 | 2 |
| Tax deductions (20%–13%) x profit | 2,51 | 3,01 | 3,61 |
| Total investments | 18,5 | | | 22,2 | | 26,7 | | |
| PV(I) | 18,6 | 22,2 | 26,7 | | | | | |
| Additional | 6 | 7 | 3 | | | | | 14 |
So, within 15 years project “A” requires $161.54 mln of state investments (in terms of discounted cash flow) and generates present positive value for the state of $218.6.

**Table 5.3. Efficiency of the project “B” for State according to model (see table 1) for years 0 to 7.**

| Discount rate | 4%  |
|---------------|-----|
| State         | 0   |
| Initial investments | 50 |
| Tax deductions (30%-7.6%) | 2.24 |
| Tax deductions (20%-0%) | 4.00 |
| Tax deductions (20%-13%) | 3.48 |
| Total investments | 50 |
| PV(I)         | 13.5|
| PV(CF)        | 32.1|

There are no additional revenues lines in a table above because full scale taxation starts from 11th year. In a table below one can see budget revenues (receipts) from both profit tax and payroll taxes.

**Table 5.4. Efficiency of the project “B” for State according to model (see table 1) for years 8 to 15.**

| State | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|-------|---|---|----|----|----|----|----|----|-------|
| Tax deductions (30%-7.6%) | 8.03 | 9.63 | 11.56 |
| Tax deductions (20%-0%) | 5.02 | 6.02 | 7.22 |
At a glance, project “B” is beneficial for the budget with required $139.4 mln of state investments (in terms of discounted cash flow) and probable $191.28 mln of future receipts. But we should look deeper into its efficiency comparing to alternative investments and taking probability into consideration in the next table.

|               | A        | B        |
|---------------|----------|----------|
| Total         | 163,8    | 139,40   |
| Additional revenues | 13,04  | 15,65    |
| Payroll *30%  | 22,29    | 26,75    |
| Profit *20%   | 42,80    | 51,36    |
| Total receipts| 43,34    | 52,01    |
| PV(I)         | 9,53     | 11,00    |
|               | 12,69    |          |
| PV(CF)        | 28,15    | 32,49    |
|               | 37,48    | 43,25    |
|               | 49,90    | 51,36    |
|               | 89,87    |          |

Table 6. Efficiency of the projects for State according to model (see table 1).

|               | A        | B        |
|---------------|----------|----------|
| d1            | 0,5405   | -        |
| d2            | 0,2341   | 0,7958   |
| N(d1)         | 0,7056   | 0,4916   |
| N(d2)         | 0,4075   | 0,2131   |
| VS            | 75,00    | 28,00    |
| PV(I)         | 161,54   | 139,40   |
| VS/PV(I)      | 0,4643   | 0,2009   |
| Alternative investment (at 2%) | 67,15 | 56,67 |
| A/(PV(I))     | 0,4157   | 0,4065   |
| Result        | 0,4643>0,4157 | 0,201<0,407 |

It appeared that project “A” is beneficial for the State, and project “B” is not. So, for the rational actor on the state side of the negotiation table it is efficient to accept the first application of the potential TAD resident and reject a second one. It is important to emphasize that project “B” can be, in real life, mutually beneficial for both Investor and State, while project “A” can fail, because higher chances doesn’t mandatory gives higher returns, but strategy, based on probability can be a helpful instrument when work for big collection of potential residents of FPV and TAD.

5. Conclusion
In this research we created a model for evaluation of strategies of key categories of actors in the functioning of the Free Port of Vladivostok, TAD and other development programs of the Russian Far East based on the determination of the value of expected future losses and acquisitions. SEZ are usually become political initiatives and only macroeconomic effects of this form of public-private cooperation is usually studied. We believe that microeconomic efficiency of this cooperation is what is, indeed, important. Proposed method was based on concept of present value of investments and cashflows in order to correctly work with long-term projects and using mathematical expectation for
working with scenarios. We applied financial methods – BSF to represent potential gains of parties of cooperation in form of real options. We suggest matrix of strategies for parties of the TAD investment project, which answers whether party should or should not enter the TAD/FPV cooperation, based on probable financial efficiency of the project. The hypothetical example of two projects has been included to illustrate the application of the method in step-by-step way.

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