International Journal of Academic Research and Development
ISSN: 2455-4197, Impact Factor: RJIF 5.22
www.newresearchjournal.com/academic
Volume 1; Issue 5; May 2016; Page No. 44-47

Economic efficiency - Usefulness of new investments in small and medium-sized enterprises

[1] Sreten Tesanovic, [2] Lazo Kukobat

[1] College of Applied and Legal Sciences Prometej, Department for the Study of Business Economics, Banja Luka, Bosnia and Herzegovina.
[2] College of Economics Dositej, Belgrade, Serbia.

Abstract
This paper presents research and we explain planning of the economic efficiency of new investments with usefulness of such investments. Efficiency as an effective system with its standards and it represents a guideline for policy of new investments. Technical - instrumental dimension of efficiency is stated by standards of that efficiency. Standards of efficiencyare expressed in value to test their appropriateness. The choice of scale, because everyone has to choose suitable standards of efficiency, depends on the methods that can be used to plan the economic success of new investments.
Those are standards of the real recent efficiency, standards of methods Prodi - Nodi, profit and earnings from investments. Not any profit, but suitable and maximum profit. Expedient efficiency is in maximum profit and earning and the same is determined by the standards of above methods, rather than the traditional methods that economic planning abandoned.

Keywords: economic efficience, investment, measured by standards of efficiency, testing method

1. Introduction
The objective of the investment policy is the profit or earnings which is expressed by a marginal profit. Behind the concept of profit and marginal profit hidessuitable and unsuitable profit and the standards of efficiency reveal that. The orientation towards such standards is in the basis of planning.

1.1 Investment and economic efficiency
The constituent elements of the system of economic planning are capital, labour and time, because the planning is done at certain periods. Materially organizational systems guided by their own interests for greater profit invest free capital due to its maturity and due to achieving of economic effects. The investments of their own and borrowed capital should be efficient to bring economic effects - profit.
Investment plan treats new investments and efficiency of that investments. Economic efficiency of new investments is usually expressed in ratio:

$$e = \frac{E}{U} \cdot 100$$

Where,
e - efficiency of investments
E- effect of investments
I- investment for realization of the planned effect.

If the effect of the investment is expressed by profit, and that is the rule of the economic planning, then the efficiency of the investment is the ratio of profit and capital invested. Such ratio is expressed by profitability ratio of capital, which represents the standard of investment efficiency.
Economic planning uses also other measures such as: capital productivity, capital coefficient and economic standard of efficiency and usefulness of the investment.
The productivity of capital is expressed and planned by the ratio of the product and invested capital which allows the product to be produced and implemented in the market. The reciprocal value of the productivity of capital is expressed by the capital coefficient:

$$k = \frac{C}{V}$$

Where,
k – capital coefficient
C - invested capital
W- gross domestic product, gross national product or income.

A specific variant of the capital coefficient is a marginal capital coefficient, which is expressed in the form:

$$km = \frac{C_1 - C_0}{W_1 - W_0} \quad or \quad km = \frac{\Delta C}{\Delta W}$$

This coefficient expresses the ratio of new investments and increase in gross national product which is generated from those investments. If akm = 5, it means that from 5 monetary units invested in some production we can realize one monetary unit of gross national product.
Capital - intensive production has, always, higher capital coefficients of labour in intensive production. This is understandable, because the latter engages more work from the first production. Launching the cellulose - paper industry needs significantly more capital than launching the footwear industry or haberdashery production.
The use of capital coefficients, in the system of economic planning, is multiple. Capital coefficients are used as passive standards of efficiency of new investments and as active elements in models of optimal planning parameters. There, their role is very important.

2. Method of Prodi (profit from investments)
For planning of success of new investments we can use Prodi - system of efficiency of investment (profit from investments). Profit from investments represents a form of direct economic effect and as a result of the investment is in the function of the

objective of economic planning and the goal itself.
Quantitative solution Prodi - system can be expressed by using the planned categories, such as:

$$(Cs + Co + V + Pf) = W$$

Where,

W - the value of production by selling prices for N-planned time in exploitation (years),
In - new investments (capitalized stake),
Cs- ongoing capital (depreciation)
Co- circulating capital (production cost) V- variable capital (deposited earnings)
Pf- profit from new production.

By using the formula:

$$e = \frac{W - N - T}{(C + V) \cdot N}$$

We plan the success of new investments.
The planning result can be: **e > l**; **e = l** or e<l. If e > l, new investment has profit efficiency. For e = l and e < l, the efficiency is fictitious. In the first case the profit corresponds to interests on new investments, and in the second case the efficiency is completely fictional and it is not the subject of economic planning.
To plan benefits from new investments some other methods can be used. Those are the methods of traditional economy and planning. From those methods we can extract.

3. Present Value Method (Discount method)
It is a classic method that is most used for determining the usefulness of new investments. Present value method assumes that the profit from the new investments discounts to present value. The method is based on the concept of capitalization of the present value so that:

$$W_n = W_0 \frac{p}{(1+100)^n} \quad or \quad W_n = W_0 \cdot r^n$$

$$for\ r = 1 + \frac{p}{100}$$

The elements we use are:

W_0- present value of the expected income from investments,
W_n - value of the expected income from new investments,
p - discountor the interest rate,
n - the time of capitalization.

According to this method, income and expenses are capitalized, that is, it is reduced to its present value.

$$W_0 = \frac{W_n}{r^n}$$

If Wp (present value of expected revenue) is greater than Wr (the present value of the expected expenditures), then it is considered that the new investments are effective.

4. Method Nodi (earnings from investments)
Method Nodi is nothing but a method by which we can reduce planned marginal profit on its present value to compare it with the amount of new investments. If the difference between the present value of the expected marginal profit and amount new investments is positive, efficiency exists.
Method uses a form of differences so it gives:

$$e = \sum_1^n \frac{Mfp}{\left(1 + \frac{p}{100}\right)^n} - I \quad or \quad e = \sum_1^n \frac{Mpf}{r^n} - I$$

Where:

e - absolutely expressed efficiency,
Mpf- marginal profit,
I- investments,
p - discount rate.

If the result (**e**) is positive number there is a difference between the planned or expected profit and the amount of new investments in favor of the profit. On the basis of that, the conclusion is drawn, that there is efficiency and profitability of the discount rate.

5. Testing of methods for planning of efficiency of new investments
Planning of efficiency of new investments is a very complex work that requires a good knowledge of these issues. The situation in practice of economic planning is such that one solution opposes to the second solution, in order to achieve a suitable or maximum profit.
Only by analyzing theresults and logic testing of methods we can come to the conclusion which new investment is profit efficient and which is fictitious efficient. The task of economic planning is to detect the fictitious efficiency of new investments. Fictitious efficiency is a serious obstacle for achieving the fundamental objective of economic planning.
It is true that some investments bring effects that are difficult to measure, and some are without such effects.
The economic reasons pros and cons, when such investments are in question, always, have primacy over all other reasons and they should be respected. Thus, the economic logic directs investments on the right track, and planning helps there a lot.
Economic planning expects from new investments profit efficiency, but not disastrous solutions, solutions without profit and fictitious efficiency of such investments. Testing of these methods can be performed in the case of new investments.

Year	Income (W)	Expenditures (R)	Marginal profit (Mpf)
0	—	28.000	-
1	60.000	52.000	8.000
2	70.000	60.000	10.000
3	80.000	68.000	12.000
Total	210.000	208.000	30.000

In our example, new investments in amount of 28.000 monetary units and they should be effected within the period of three years. According to plan new investments bring marginal profit of 30.000 monetary units and from that profit we can settle the investment expense of 28.000 monetary units and earn 2.000 such units. The interest rate corresponds to discount rate and it amounts 6% per year.
To set up a plan of investment efficiency we use the above methods and immediately test them according to the requirements of economic logic.

5.1. Testing of the efficiency by the method Prodi
First we calculate the nominal (capital) value of investments:

$$I_n = I_0 \cdot r^n$$
$$I_n = 28.000 \cdot 1{,}06^3$$
$$I_n = 28.000 \cdot 1{,}191016$$
$$I_n = 33.348{,}45$$

When we calculated the nominal value of the investment we use the formula:

$$e = \frac{\sum W - I_n}{\sum R}$$

That is

$$e = \frac{210.000 - 33.348}{208.000}$$
$$e = 0{,}85$$

So, e <**l**, and new investments are not profit - effective.

5.2. Testing of the efficiency of investment by discount method
By discount method we discount revenues and expenditures including new investments. When the amounts from our example are discounted on the initial year of the plan we receive and it gives:

$$e = \left(\frac{60.000}{1{,}06} + \frac{70.000}{1{,}062^2} + \frac{80.000}{1{,}063^3}\right)$$
$$- \left(28.000 + \frac{52.000}{1{,}06} + \frac{60.000}{1{,}06^2} + \frac{68.000}{1{,}06^3}\right)$$
$$e = 186.073{,}97 - 187.551{,}27$$
$$e = 1.477{,}30$$

The present value of planned incomes is less than the present value of the expenditures for 1.477,30 of monetary units and that difference shows that positive financial result is not achieved.
Is established financial result standard of the efficiency of new investments? This question can be answered if the standards of efficiency of new investments confirm that. The efficiency of new investments can be expressed through criteria: (a) recent real efficiency, (b) tolerant efficiency and (c) fictional efficiency.

1. The recent real effectiveness is expressedby the criteria of that efficiency by which the profit from new investments is bigger than the interest, which is obtained by compounding of new investments.
2. Tolerant efficiency is expressed with the interest scale by whom compounding and earning bring the same absolute amount of interest or profit.
3. Fictitious efficiency is economically unacceptable, because the profit achieved from new investments is not eligible in interest. What does it mean? To return to profit which is the objective of investments.

Profit can be: maximum, eligible, interestfit and unfit.
The maximum and eligible profitis expressed by the recent real effectiveness standards, and interest eligible profit by standards of tolerant efficiency by which profit corresponds to the amount of interest that can be achieved by capitalizing of new investments.
Profit less than the interest rate is expressed by standards of fictitious efficiency and it is the answer to the question. In fictional efficiency positive financial result is achieved. Only, that result is unsuitable, because it is not at the level of interest rate eligible profit. Why do we mention this? Just to point out the fact that the scale of efficiency of new investments are not always, reliablefor the system of economic planning.

5.3. Testing of efficiency of investments by the standards of the methods Nodi
Much better measure for expressing the efficiency of the new investments is the standard of the method Nodi. According to this standard efficiency is absolutely expressed with a real number with a positive or negative sign. By using the form for this test the measure of efficiency is:

$$e = \frac{30.000}{1{,}06^3} - 28.000$$
$$e = 25.189 - 28.000$$
$$e = -2.811{,}42$$

Criteria of efficiency is expressed with a negative number. Such efficiency is fictitious or non-existent, when we talk about the inefficiacy of the new investments. For „e“ negative, in the testing of standards of efficiency by this method, the efficiency is fictitious or non-existent and that is a sufficient indicator for evaluating the success of new investments. Marginal profit is not eligible or there isn't any.
For „e = 0“ efficiency is for giving because from the basis of new investments interest suitable profit is realized. In our example, for e = 0 the total marginal profit amounts 33.348,45 monetary units, because:

$Mpf = 28.000 \cdot 1{,}06^3$
$Mpf = 33.348{,}45.$

In other words, from the measurement results we also determine profit which is the ultimate goal of new investments and their efficiency in the process of profit earnings.

6. Conclusion - Comment of the testing
Economic efficiency of new investment is expressed by the amount of profit, and it is measured by standards of that efficiency. Standards of traditional methods for determining the economic efficiency of new investments are not reliable criteria. Those are fictitious standards of efficiency and

therefore are not acceptable for economic planning of efficiency of new investments.

From those standards, we extracted the standards of the discount method. Those standards are not, always, reliable for assessment of the effectiveness of investments. Positive financial result expressed by profit is not, always, the ultimately positive, because profit can also be unsuitable. That's why, we use the Prodi and Nody methods which are significantly acceptable and better for evaluating the economic efficiency of new investments. The first method by its standards indicates, directly, on profit efficiency, and the other treats financial efficiency by using marginal profit.

Mentioned methods: profit from investments and earnings from investments are very productive methods and useful in the system of economic planning and investment efficiency.

Based on this method it is not difficult to determine whether the profit from the investments is suitable or not. The criteria of efficiency according to the method Prodi is very effective for testing of profit seligibility.

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