Bases of Econometric Modeling and Assessment of Financial and Economic Stability of Small Businesses

Mirzakhalikov B. B, PhD

Candidate of Technical Sciences, Namangan Institute of Engineering and Technology

ABSTRACT

This article is devoted to the basics of econometric modeling and ensuring the financial and economic sustainability of small businesses, presents the methodological, scientific, theoretical and practical foundations for ensuring and improving the financial and economic sustainability of small businesses and private entrepreneurship. Analysis and assessment of financial and economic sustainability are shown on the example of a specific enterprise related to small business in the construction industry. The stages of the policy of ensuring the economic sustainability of the enterprise are given, proposals for ensuring financial and economic sustainability are presented.

The experience of the developed countries of the world shows that the creation of favorable conditions for small businesses is one of the important factors in ensuring sustainable socio-economic development. By increasing the financial and economic stability of small businesses, it is possible to expand the possibilities for ensuring high growth rates, employment and incomes in the country and its individual regions. Nearly 90 percent of all enterprises are micro, small and medium enterprises. They provide 70% of jobs, and their share in world GDP is 50%. Thus, micro, small and medium-sized enterprises are the main participants in the stabilization of the economy" [1]. As an important direction of the state economic policy, measures to improve the financial and economic stability of small businesses are becoming relevant.

It is known that the actual result (gross income, profit) is compared with the costs or resources used to assess the level of efficiency of the enterprise's production activities. Comparison of benefits and costs indicates profitability, more precisely , the rate of return. In practice, two options for measuring the rate of return are used. This is the ratio of profit to current expenses (cost) or advanced capital (fixed production assets and working capital) of the enterprise. Both measurement options are connected with each other by a leading indicator of capital turnover: [2].

$R_1 = R/Ka, R_2 = R/X;$

where R is profit;

R1, R2 - rate of return (options 1 and 2);

Ka - advanced capital and X - costs.

Since the number of revolutions is $p = X/Ka$, $R_2 = R_1 \times p$.

The rate of return of an enterprise can be calculated as follows:

R \u003d P (U - S) * 100 / (F $_o$ + F $_o$);

Here R is profit;

P - product size;

U is the price of a unit of production;

S is the cost of the product;

F $_o$ - the cost of Asian production assets ;

F $_{about}$ - the amount of working capital [3].

In the production of small businesses, a number of profitability as sectors of the national economy indicators are used.

It should be noted that the profitability of products is determined both by all products sold, and by its individual types. In the first case, the profit from the sale of goods is defined as the ratio of the costs of its production and sale. Profitability of sold products as the ratio of profit from the sale of products to income from the sale of products; the ratio of balance sheet profit to profit from sales of products; Net profit is calculated as the ratio of revenue from products sold. The profitability of production assets is calculated as the ratio of balance sheet profit to the average annual cost of fixed production assets and inventories. This indicator can also be calculated from net income.

The return on capital of small businesses and private entrepreneurship is determined by the value of the property at their disposal. The balance sheet and net profit indicators are used in the calculation. The value of the property is determined according to the balance sheet. This indicator represents the level of sale of the company's property per sum of investments.

on equity in a business is determined by the ratio of net profit to equity, determined by the balance sheet.

Innovative reforms implemented on the basis of innovative potential can be singled out as the leading factor in the development of enterprises . It should be noted that the level of innovative potential is the ability of an enterprise to develop, implement and absorb innovations , in addition, on the one hand, it determines the need and possibility of transition from the current state of the management system to a new one. on the one hand, and on the other hand, determines the condition for maintaining the stability and continuity of the innovation process.

to ensure economic stability, the following are the main steps in the development of an appropriate ink system (see Table 1).

Table 1. Stages of the policy of ensuring the economic sustainability of the enterprise[1]

№	Number of steps	Content
1	The first	Definition of goals and objectives for ensuring the economic sustainability of the enterprise
2	Second	Formation of a database of information about the company's activities
3	Thirdly	Formation of a system of indicators for assessing the economic sustainability of an enterprise
4	Fourth	Formation of a system of standard values that ensures the economic sustainability of the enterprise
5	Fifth	Analysis of the results of the economic sustainability assessment
6	sixth	Development of management decisions that ensure the economic growth of the enterprise based on ensuring its economic sustainability

[1]Table compiled by the author

The role of small business in the development of the construction industry can be assessed positively in all aspects. Especially in 2015-2020, the participation of the industry will play a leading role in large-scale construction and commissioning of residential complexes. In 2015-2020, the share of entrepreneurship in the construction sector was about 64 percent. In recent years, there are enough grounds for a positive assessment of the participation of entrepreneurship in providing employment for the population. In 2015-2020, this area of activity accounts for about 70% of the population employed in the sectors of the economy.

We strive to provide a number of proposals for the further development of a small business object, that is, an enterprise in the construction industry, and to increase its economic and financial stability. LLC " BINOKOR BUNYOD SERVICE" analysis of the profitability of products sold for 2015-2020 shows the following (see table 2).

Table 2. LLC "BINOKOR BUNYOD SERVICE" 2015-2020 analysis of the profitability of products sold

t/r	Show them	2016/2015		2017/2016		2018/2017		2019/2018		2020/2019	
		+;- thousand soums	%	+;- thousand soums	%	+;- thousand soums	%	+;- thousand soums	%	+;- thousand soums	%
1	Net income from product sales	2259200	25.1 times more	-1253000	46.7	650000	159	1156657	166	5017880.3	2.7 times more
2	Cost of goods sold	1811386	26.2 bar	-1029091	45.3	284317	133.2	1512532	2 , 3 bar	4979567.41	2.9 times more
3	Gross profit from products sold	447814	21.5 times more	-223909	52.3	365683	2.5 times more	-355875	41.7	38312.89	115
4	profit from products sold	171199	647 0 times more	-59102	65.5	242427	3 , 2 times more	-162711	54.1	3901.92	102
5	Sold max sulat profitability, in %	7.01	26 times more	2.91	139.9	10.1	199	-13.7	32.5	-4.13	37.4

As a result of the analysis of the indicators of fixed assets of BINOKOR BUNYOD SERVICE LLC for 2016-2020, it can be observed that the profitability of the fund decreased in 2019-2020 and will decrease by -81.4 percent in 2019 and -30.6 percent in 2020. And this indicates that fixed assets are used inefficiently . We can observe that the capacity of the fund increased by -5.4 times more in 2019 compared to 2018 and by -165.3 percent in 2020 compared to 2019 (see Table 3).

Table 3. "BINOKOR BUNED SERVICE" LLC 2016-2020 fixed assets analysis of indicators [2]

t/r	Show them	2016/2015		2017/2016		2018/2017		2019/2018		2020/2019	
		+;- thousand soums	%	+;- thousand soums	%	+;- thousand soums	%	+;- thousand soums	%	+;- thousand soums	%
1	Net income from product sales	2259200	25 times more	-1253000	46.7	650000	159	1156657	166	5017880.3	2.7 times more
2	Cost of fixed assets	-46143	55.8	-5559	90.4	12049	122.9	513253	893.9	2031319	4.5 times more
3	Fund return	3956	45 times	-1954.6	51.7	615.1	129.4	-2204	18.6	-199.3	60.4

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[2]Compiled by the author

			more							
4	Fund capacity	-108.7	2.2	2.31	193.5	-1.09	77.2	16.21	5.4 times more	13	165.3

The regression model *of econometrics can be used to develop economic and financial forecast indicators until 2026 based on various scenarios for the efficient use of investment resources involved in the activities of the Limited Liability Company "BINOKOR BUNYOD SERVICE"* . A regression model examines the relationship between one independent variable and another dependent variable. However, in most cases, the outcome under study depends on more than one factor. Therefore, regression analysis with multiple independent variables is an important analytical tool [4].

Let's build a non-linear regression model for indicators of net sales, cost of goods sold, gross profit from goods sold, net profit from goods sold and profitability of goods sold for 2015-2020. Based on these documents, we build statistical histograms of financial and economic indicators of BINOKOR BUNYOD SERVICE LLC for 2015-2020 [5].
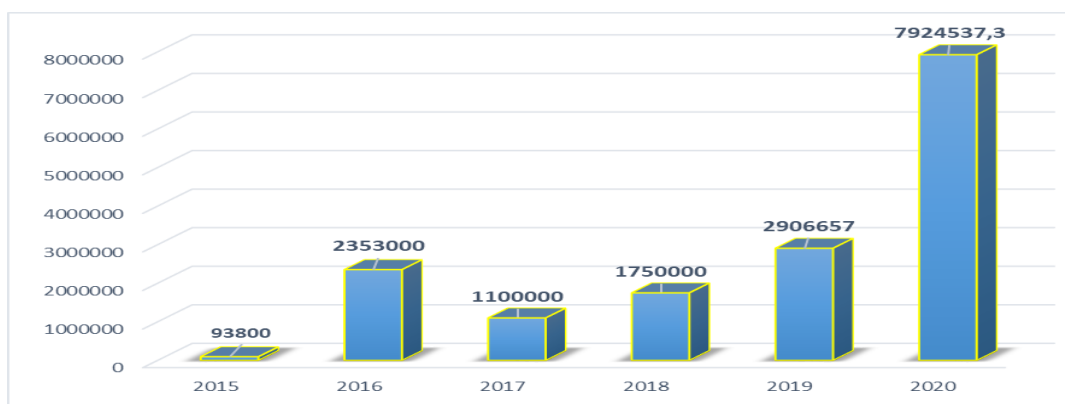

Figure 1. Statistical histogram of the indicator of net income from product sales[3]

Figure 1 shows the net profit from the sale of products in 2016 compared to 2015 - 2,259,200 thousand soums, or an increase of 25.1 bar, in 2017 - 1,253,000 thousand soums, a decrease compared to from 2016, in 2018 - 650,000 thousand soums, or an increase of -59%. , in 2019 - 1,156,657 thousand soums, or - an increase of 66%, and in 2020 - 5,017,880.3 thousand soums, or -2.7 bar increase We can observe.
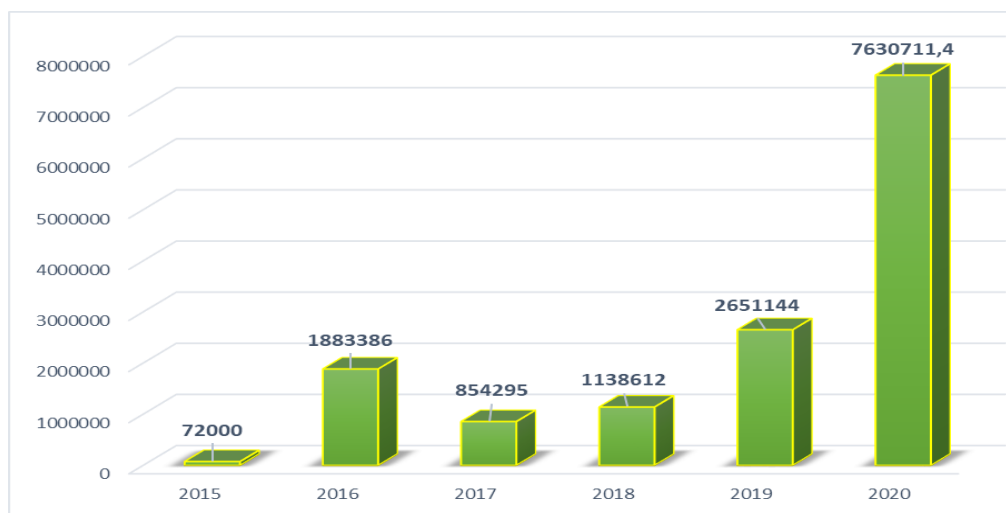

Figure 2. Statistical histogram [4]for cost of goods sold

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[3]Image composed by the author

shown in Figure 2 , we can observe the highest result compared to 2016/2015 - 26.2 bar, compared to 2019/2018 - 2.3 bar and compared to 2020/2019 - 2.9 bar.
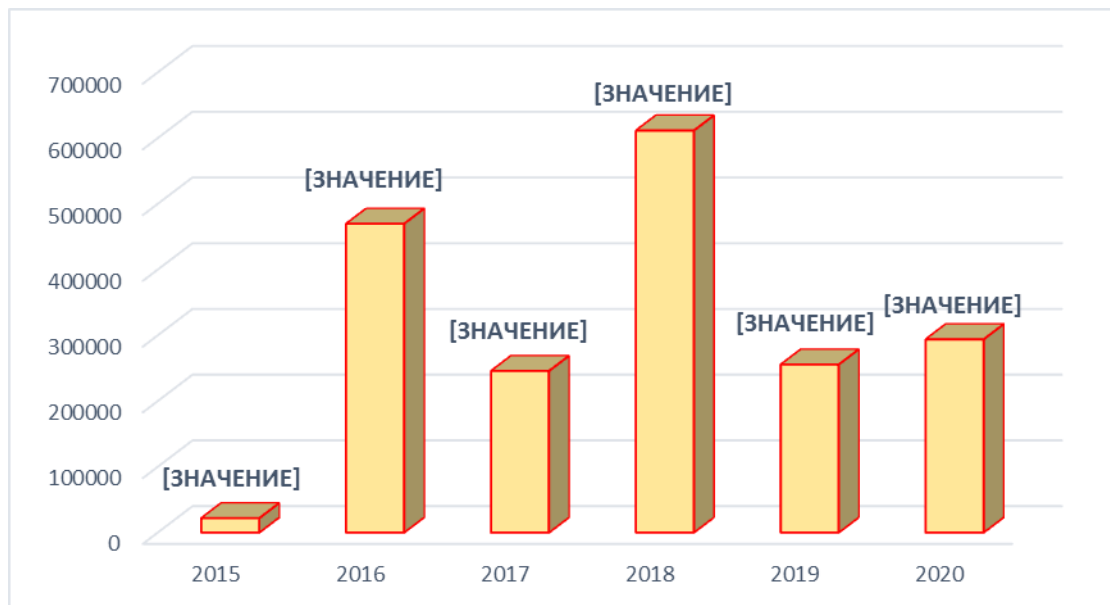

Figure 3. Statistical histogram of gross profit from product sold[5]

On fig. 3 shows the gross profit from sales. We can observe the highest growth rates -21.5 bar compared to 2016/2015 and -2.5 bar compared to 2018/2017.
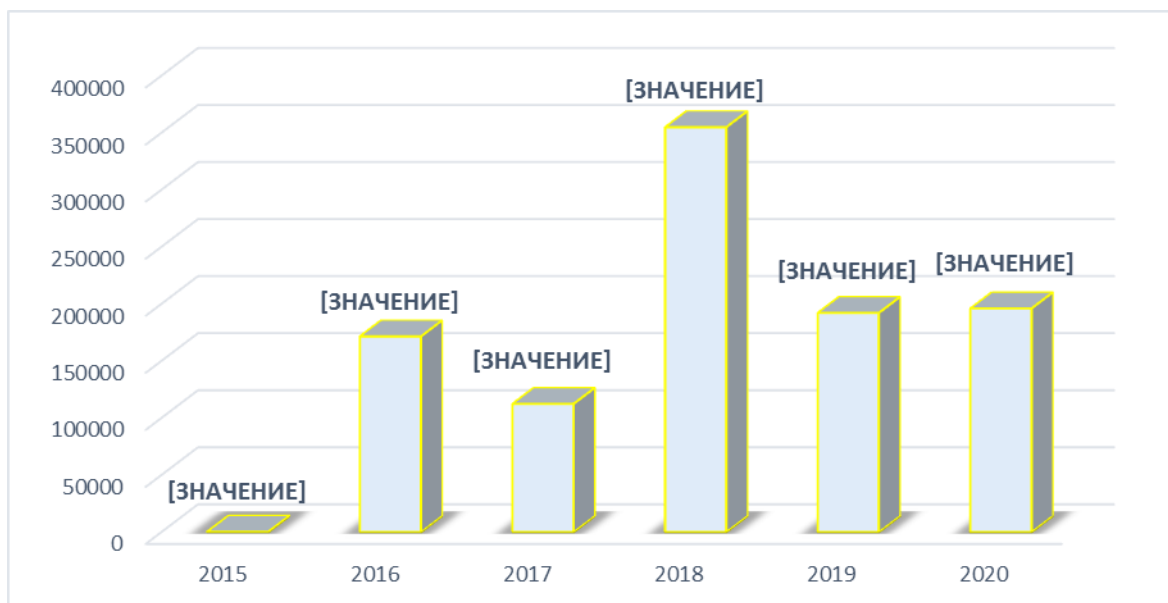

Figure 4. Statistical histogram [6]of the indicator of net profit from goods sold

In Figure 4, we can observe the highest net profit from sales in 2018. Compared to 2018/2017, the growth rate amounted to 242,427 thousand soums, or -3.2 bar.

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[4]Image composed by the author
[5]Image composed by the author
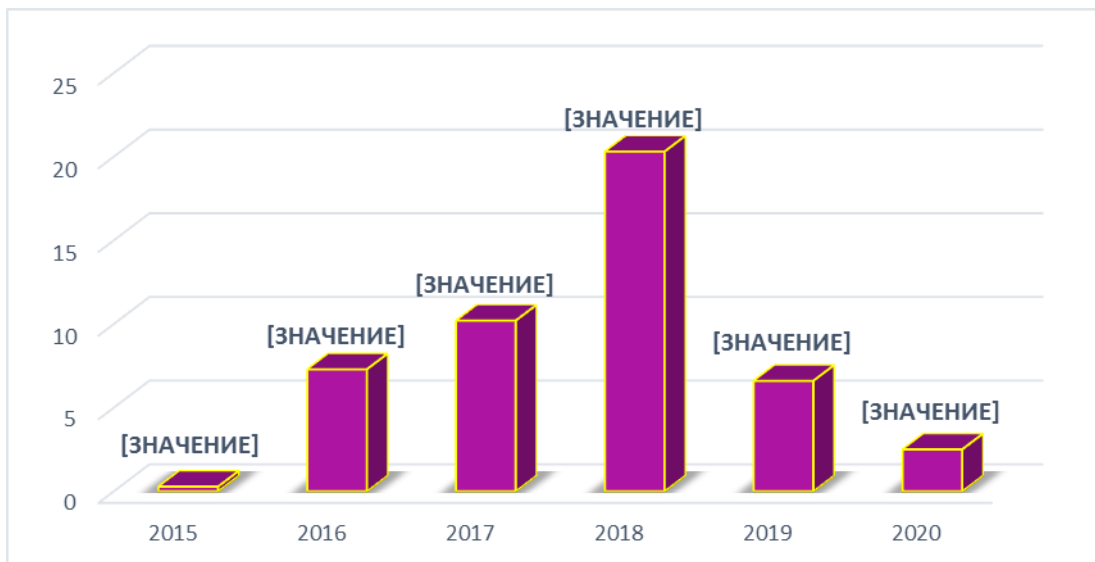[6]Image composed by the author

Figure 5. Statistical histogram of the profitability of products sold

An analysis of the profitability of sold products showed that the highest rate was 20.3 percent in 2018, and this result is that the net profit from sold products this year reached 354,789 thousand soums. In 2019-2020, the cost of goods sold increased by 2.3 and 2.9 bar, while the profitability of goods sold decreased to 6.6 and 2.5 percent.

Based on mathematical models, it becomes possible to predict the financial and economic indicators of BINOKOR BUNYOD SERVICE LLC for 2015-2020 up to the desired years (Table 3).

Table 4. Comparative table of the results of the econometric model of [7]LLC "BINOKOR BUNYOD SERVICE"

Indicators	The corresponding econometric model equation	Determination coefficient
Net income from product sales	$y = 302575x^3 - 201229x^2 + 423412x - 203315$	$R^2 = 0.9819$
Cost of goods sold	$y = 289648x^3 - 202789x^2 + 492342x - 204565$	$R^2 = 0.9919$
Gross profit from products sold	$y = 41661x^5 - 40248x^4 + 20512x^3 - 37315x^2 + +31018x - 10221$	$R^2 = 0.9899$
Net income from products sold	$y = 20974x^5 - 20788x^4 + 98011x^3 - 26015x^2 + +20218x - 74020$	$R^2 = 0.9989$
Profitability of sold products	$y = -2.1784 x^2 + 8790.4 x - 9840$	$R^2 = 0.7345$

indicators of net proceeds from product sales, cost of products sold, gross profit from products sold, net profit from products sold and profitability of products sold by BINOKOR BUNYOD SERVICE LLC for 2015-2020, forecast indicators for the following years 2022-2026 were determined (table . four).

[7] Table designed by the author

Table 5. Forecast indicators of BINOKOR BUNED SERVICE LLC until 2022-2026
[8]

(thousand soums)

years	Net income from product sales	Cost of goods sold	Gross profit from products sold	Net income from products sold	Profitability of sold products
2022	3649777	7563553.3	564484	336093.34	10.32
2023	4152048.4	8717300.4	625404	372746.01	10.87
2024	4654319.8	9871047.5	686324	409398.68	11.41
2025	5156591.2	11024795	747244	446051.35	11.96
2026	7924537, 4	12178542	293825, 10	482704.02	12.51

4, during the forecast years, during the next 5 years, an increase in the production volumes of BINOKOR BUNYOD SERVICE LLC and all the indicators analyzed above is expected. Such results can be achieved by applying the proposed measures.

We are a limited liability company "BINOKOR BUNYOD SERVICE" We propose to use the organizational and economic mechanism for managing a small business in the construction business, planning product and strategic technological innovations in the context of developing a growth strategy, reducing the impact of the crisis and achieving sustainable development.

The results of the study show that the survival of the crisis for small construction companies lies in the consistent growth of sales in the market and the increase in the availability of the corresponding market. In our opinion, it is important to study the organizational and economic mechanism for managing sustainable development based on innovation. Therefore, the implementation of innovative reforms appears as a leading factor in ensuring the strategic sustainable development of enterprises. To do this, strengthen cooperation relations at enterprises producing processed products using local raw materials, assist enterprises in attracting foreign investment in the production of new types of products, expand their participation in promoting innovative research in partnership with the state, and organize small enterprises in high-tech industries industry. All this serves to increase the competitiveness and stability of their activities.

References:

1. Source: micro, small and medium enterprises. June 27. - https://www.un.org/en/observances/micro-small-medium-businesses-day

2. Boltaboev M.B., Kasimova M.S. and others. Small business and entrepreneurship. T: -2012., 274 p., 199 p.

3. Sirozhidinov I.K., Kadyrova Kh.T., Rakhmanov D.A. "Financial management". Tashkent: "Economy-Finance", 2020. 120-6.

4. Cheng-Fyu Lee, Hong-Yi Chen, John Lee Financial Econometrics, Mathematics and Statistics. Theory, method and application. New York: Springer. 2019. S. 76-77.

5. Mirzakhalikov B.B. Factors and directions for ensuring the financial and economic sustainability of small businesses. // Engineering scientific and technical journal. - Andijan, 2021. - No. 1. - P. 119-128.

[8] Table designed by the author