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# Management of capital assets of construction organizations

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**Abstract.** The most significant part of the assets of the enterprise are fixed assets, which are on the balance sheet of the enterprise and are in operation, in reserve, on preservation, as well as leased to other enterprises.

The study of these issues is necessary for all firms and enterprises facing the problem of maintaining the accounting policy of fixed assets and their depreciation. Choosing the right and optimal accounting policies for fixed assets and depreciation greatly helps the enterprise to minimize taxes and speed up the process of updating the equipment fleet. This article focuses on accelerated depreciation methods. Any enterprise is interested in maintaining such accounting policy, in which during the first years of operations with the fixed assets are written off by a high depreciation rate. The implementation of such a policy reduces taxable profits and accelerates the renewal of fixed assets, which is especially important now, with rapid progress in science and technology.

The results of the analysis of the fixed assets of the construction organization showed the need to improve their accounting. The development of accounting policies of a modern construction organization can largely determine the improvement of management in a market economy.

## 1. Introduction

Fixed assets are tangible assets that an enterprise contains for the purpose of using them in the process of production or supply of goods, provision of services, leasing to other persons or for the performance of administrative and socio-cultural functions, the expected useful life (operation) of which is more than one year (or operational cycle if it lasts longer than a year) [8].

The value of the fixed assets minus accumulated depreciation is called net assets or residual value. Fixed assets are accepted for accounting at the original cost, but in the future, fixed assets are recorded at a residual value in the accounting balance sheet. The residual value of an asset is defined as the difference between the acquisition value and the depreciation charges [1].

The object of the study was the modern construction company of Uzbekistan LLC OLMOS QURILISH INVEST.

The subject of this article is the management of fixed assets in a market economy.

The purpose of the study, the development of proposals for the organization of accounting policies of a construction company, as a factor in improving the management of fixed assets.

## 2. Methods

The analysis of fixed assets (funds) can be carried out in several directions, the development of which together allows assessing the structure, dynamics, and efficiency of their use.



In table 1 we calculate the dynamics of the fixed assets of OLMOS QURILISH INVEST LLC.

**Table 1.** Analysis of the evolution of fixed assets in 2017 – 2019 years  
According to OLMOS QURILISH INVEST LLC (thousand rubles)

Name of fixed assets	years			2019 in% by 2017
	2017	2018	2019	
Buildings	654.03	702.42	796.97	122
Machines and equipment	2 690.98	4 940.03	3 286.11	122
Computer equipment and computing	2.75	2.68	2.13	77.6
Vehicles	15.49	26.04	30.92	199.6
Other fixed assets	8.19	8.30	8.53	104.1
In total fixed assets	3 371.43	5 676.80	4 124.66	122
from them:				
production	2 716.28	4 971.69	3 317.09	122
non-productive	655.16	705.10	799.04	122

Source: Financial reporting of the organization

The results of the analysis of the dynamics of fixed assets in 2017 – 2019 years for LLC "OLMOS QURILISH INVEST" showed that during this period there were significant changes in their amount. From our analysis of the dynamics of fixed assets of OLMOS QURILISH INVEST LLC, it is possible to recommend to the enterprise to pay attention to the dynamics of fixed production assets, to their modernization. Because the efficiency and increase of production volume mainly depend on the provision of the enterprise with the main production funds.

Their opportune updating, replacement of obsolete equipment with newer and more modern technologies, will allow increasing productivity of the enterprise, quality of products.

On the contrary, our enterprise has seen increases in fixed non-productive assets, which leads to increased costs and taxes on the property.

Production efficiency will be much higher if the enterprise invests in fixed production assets.

We also find it necessary to analyze the fixed assets of OLMOS QURILISH INVEST LLC according to the sources of their financing. From the data of Table 2, it can be seen that the main source of acquisition of fixed assets is own funds of OLMOS QURILISH INVEST LLC.

**Table 2.** Analysis of sources of funding for fixed assets  
OLMOS QURILISH INVEST LLC for 2017 - 2019 (thousand rubles)

Sources of funding for fixed assets	years		
	2017	2018	2019
In total fixed assets	3 371.43	5 676.80	4 124.66
Including:			
At the expense of own funds	3 371.43	5 148.85	3 778.18
Specific weight in% of total volume	100	90.7	91.6
At the expense of bank loans	-	32 682	21 449
Specific weight in% of total volume	-	9.3	8.4

Source: Financial reporting of the organization

The table shows that the organization finances its assets with its own funds. In 2017, 100% of the fixed assets were financed from its own funds. In 2018, 90.7% was funded by its own funds, and 9.3% by the bank's loans.

In 2019 this indicator changed for the better, the organization financed 91.6% of fixed assets from own funds, and 8.4% from loans of the bank. This suggests a good financial condition of the

enterprise. The composition and structure of the fixed assets are analyzed according to the balance sheet and profit and loss statements. For the valuation of the structure, the unit weights of the individual asset types in terms of their value are calculated.

At the same time, the growth of the share of the active part of fixed assets (machines and equipment, vehicles) is considered positive.

There have been significant changes in the composition and structure of the fixed assets of LLC "OLMOS QURILISH INVEST" in 2017 – 2019 years, which can be seen according to the data of Table 3.

**Table 3.** Analysis of the composition and structure of the fixed assets of OLMOS QURILISH INVEST LLC for 2017 – 2019

Name of fixed assets	2017		2018		2019	
	Cost of thousand rubles.	%	Cost of thousand rubles.	%	Cost of thousand rubles.	%
Buildings	654.03	19.3	702.42	12.4	796.97	19.4
Machines and equipment	2 690.98	79.8	4 940.03	87	3 286.11	79.8
Computer equipment and computing	2.75	0.08	2.68	0.05	2.13	0.05
Vehicles	15.49	0.5	26.04	0.46	30.92	0.75
Other fixed assets	8.19	0.24	8.30	0.15	8.53	0.2
In total fixed assets	3 371.43	100	5 676.80	100	4 124.66	100
	Including:					
Production	2 716.28	80.5	3 077.76	87.5	3 317.9	80.6
Non-productive	655.16	19.5	43 650	12.5	799.04	19.4

Studying the structure of fixed assets of OLMOS QURILISH INVEST LLC, we recommend paying special attention to the renewal of machines and equipment of the enterprise.

Improvement of investment policy in this direction, carrying out major repairs of equipment will help to use the main production facilities more effectively. Then we studied the movement of fixed assets in the enterprise. The movement of fixed assets to an enterprise means their receipt and disposal during the year.

**Table 4.** Analysis of the movement of fixed assets of OLMOS QURILISH INVEST LLC for 2019 (thousand rubles)

Indicators	Opening Balance	Incoming	Retirement	End Balance
Buildings	702.42	219.54	125.00	796.97
Machines and equipment	4 940.03	2 270.40	3 924.32	3 286.11
Computer equipment and computing	2.68	0.00	0.55	2.13
Vehicles	26.04	16.11	11.23	30.92
Other fixed assets	8.30	2.13	1.91	8.53
In total fixed assets	5 679.48	2 508.19	4 063.00	4 124.66

Source: Financial reporting of the organization

The analysis of the movement of fixed assets of LLC "OLMOS QURILISH INVEST" for 2019 showed that during the year the received fixed assets were less than the discharged ones.

Also obsolete at the enterprise computer equipment and computer equipment, for which there is no receipt during the year, and disposal amounted to 34 thousand rubles. The following key figures are used to characterize the movement (receipt and disposal) of fixed assets:

1. Update factor - determined by the ratio of the amount of assets received per year to the balance at the end of the year.

$$F_{up.} = \frac{\text{Assets received during the year}}{\text{Assets value at year end}}$$

$$F_{up.} = \frac{2\,508.19}{4\,124.66} = 0.61$$

2. The disposal factor is determined by the ratio of the amount of asset disposal per year to the balance at the beginning of the year.

$$F_{d.} = \frac{\text{Property, plant and equipment disposed of during the year}}{\text{Value of assets at the beginning of the year}}$$

$$F_{d.} = \frac{4\,063}{5\,679.48} = 0.72$$

It is considered positive to exceed the renewal factor over the disposal factor, which indicates the enterprise's policy of updating fixed asset objects. But unfortunately, the opposite is observed at our enterprise, i.e. the disposal rate is 0.11 more than the renewal rate. This indicates the need to develop measures aimed at modernizing fixed assets.

### 3. Results and Discussion

For the analysis of intensity and efficiency of use of fixed assets, we need to count on LLC OLMOS QURILISH INVEST such indicators as capital productivity, capital intensity, a work capital ratio, profitability of fixed assets (means). The main indicator of fixed assets utilization is the fund return indicator, calculated as the ratio of the value of commodity products to the average annual value of fixed assets:

$$\text{Capital intensity} = VG/AAV$$

$$\text{Return on assets for 2018} = 19\,061.25/1\,862.04 = 10.2 \text{ rub/rub}$$

$$\text{Return on assets for 2019} = 26\,685.75/4\,063 = 6.6 \text{ rub/rub}$$

Calculations have shown that the yield has decreased by 2 times in 2018 - 2019 years. If in 2018 it was 10.6, in 2019 it decreased to 6.6. The growth of funds production is one of the factors of intensive growth of output volume. Exceeding the increase in output due to funds production over the share of growth due to increased resources means that the growth rate of production output exceeds the growth rate of resource costs, which, all other things being equal (constant indicators of the use of other types of resources) leads to an increase in return on capital and sales. An important condition for the growth of profitability at an increase of funds yield is equality of volumes of output and sale of products, as fund yield is calculated according to the indicator of the output of products, and profitability reflects financial result from the sale. In this sense, fund efficiency reflects the technological efficiency of production, and profitability reflects economic efficiency. But the decline in funds production in our enterprise is due to the fact that the volume of fixed assets has significantly increased than the volume of output.

Another measure of the efficiency of the use of funds is the resource intensity, which is determined by the ratio of the average value of fixed assets to the volume of output.

$$C r = Frg/A/G$$

$$C r \text{ for 2018} = 115.271/1.180.000 = 0.1 \text{ rub/rub}$$

$$C r \text{ for 2019} = 251523/1\,652\,000 = 0.2 \text{ rub/rub}$$

Capital intensity on LLC OLMOS QURILISH INVEST decreased in 2019 in comparison with 2018 by 0.1 rub/rub because of changes towards an increase in the volume of products and volume of fixed assets.

The change in fund intensity shows an increase or decrease in the value of fixed assets per unit of value of finished goods and is applied in determining the amount of relative savings or overruns in fixed assets considered as resources.

In our example, the value of fixed assets per unit of value of finished goods has increased, which characterizes savings in fixed assets.

If the fund consumption limit is less than one, there is an increase in asset utilization and an increase in capacity utilization.

The next stage of the analysis is the determination of stock capacity (analysis of the enterprise's availability with fixed assets).

This indicator is defined as the ratio of the average annual value of all fixed assets to the average number of employees in the enterprise

$$Cr = Fr/P$$

$$2018 F = 155271/84 = 1848 \text{ thousand rubles}$$

$$Cr \text{ for } 2019 = 251523/92 = 2734 \text{ thousand rubles}$$

Where:  $R$  - number of employees in the enterprise (includes all workers, ITR, and administrative and management staff).

This indicator shows the value of fixed assets per worker. In 2018, one worker accounted for 1848 thousand rubles of fixed assets. By 2019 this amount had decreased by 2734 thousand rubles. Because the amount of fixed assets for the year increased by 96252 thousand rubles.

Besides, a key figure is calculated showing the value of fixed assets per worker (a person employed in the main production):

$$Cr = Fr./P$$

$$2018 F = 155271./76 = 2043 \text{ thousand rubles}$$

$$Cr \text{ for } 2019 = 251523/82 = 3062 \text{ thousand rubles}$$

Where:  $R_{rab}$  is the number of workers employed in the main production. It can be seen from the calculations that in 2018 the stock equipment of the main workers was lower by 1267 thousand rubles. By 2019 this indicator increased to 3062 thousand rubles. And so the analysis of labor equipment at LLC "OLMOS QURILISH INVEST" shows that the fixed assets of the enterprise need to be updated.

It is also possible to calculate other indicators of the profitability of fixed assets. The profitability of fixed assets is calculated as the ratio of profit to the average annual value of fixed assets:

$$P = (Ave. / Fsr) \times 100$$

$$P \text{ for } 2018 = (12342/155271) \times 100 = 8\%$$

$$P \text{ for } 2019 = (18755/251523) \times 100 = 7.5\%$$

Calculations showed that 2018 was much more cost-effective than 2019. In 2019, the profitability of fixed assets fell by 0.5%. Because of the growth of net profit of LLC "OLMOS QURILISH INVEST" the volume of fixed assets has also increased significantly.

In general, based on the results of the analysis, it can be concluded that the fixed assets of OLMOS QURILISH INVEST LLC are profitable, that is, all costs related to their content are paid off at the expense of the profit obtained.

The results of the analysis characterizing the efficiency of fixed assets use are combined in Table 5.

**Table 5.** Performance of indicators for fixed assets

No.	Unit of Measure	Indicators	Years		2019 In% by 2018
			2018	2019	
Basic data					
1.	Average annual value of fixed assets	Thousand	2 508.19	4 063.00	162
2.	The volume of the turned-out products	Thousand rub	19 061.25	26 685.75	140
3.	Average annual number of workers employed in the	persons.	1.23	1.32	108

	workplace				
4.	Average annual number of administrative and managerial staff	persons.	0.13	0.16	125
5.	Net profit	Thousand rub	199.37	302.96	152
		Design data			
6.	Capital productivity	pyб / pyб	10.2	6.6	65
7.	Capital intensity	Pyб / pyб	0.1	0.2	twice
8.	Capital ratio of workers of all	Thousand rub/ persons.	29.85	44.16	148
9.	Stock equipment of main production workers	Thousand rub/ persons.	33.00	49.46	150
10.	Profitability of fixed assets	%	8	7.5	-

Source: Financial reporting of the organization

The results of the analysis of efficiency of fixed assets use showed that in LLC "OLMOS QURILISH INVEST" as a whole they are used effectively. Due to the increase in the cost of fixed assets for 2018 and 2019, there is an increase in the stock capacity of workers as a whole and of the main production workers. This can contribute to increased productivity. The enterprise needs to pay attention to the modernization of fixed assets.

Next, we will carry out a factor analysis of the fixed assets of production. After analysis of generalizing indicators, the degree of utilization of production facilities of the enterprise, certain types of machines and equipment are studied in more detail. Capacity utilization is characterized by the following indicators [18]:

1) Extensive load calculated as the ratio of the actual equipment working time fund to the planned fund:

$$Cap = T_f / T_{pl}$$

2) Intensive loading, calculated as a ratio of actual and planned average hourly production:

$$Kinten. = VPF. / V_{ppl}$$

A generalizing indicator that comprehensively characterizes the use of equipment is the integral load factor:

$$J = Cakst. * Kinten$$

The influence of these factors is calculated by chain substitution methods, absolute and relative differences.

Table 6 shows the planned and actual values of the production program key figures in the analyzed year.

**Table 6.** Production program indicators in 2019

Key figure	Plan	Actual	Variance (+, -)
The number of installed equipment	32	32	0
Number of the working days	250	245	-5
Duration of the working day (hour)	8	7.6	-0.4
Working in shifts coefficient	2	1.87	-0.13
Production production per 1 machine-hour (SV), RUB	25.85	25.54	-19.1

Source: Financial reporting of the organization

Based on this data we calculate factors of extensive and intensive loading of equipment.

By formula (14) we find the coefficient of extensive loading:

$$K_{EKST.} = (32 * 245 * 7.6 * 1.87) / (32 * 250 * 8 * 2) = 112320 / 128000 = 0.87$$

Using the formula (15) we find the equipment-intensive loading factor:

$$Quintens = (1580.9 / 1600) = 0.9875$$

Hence, the integrated load factor of the enterprise equipment is equal to:

$$J. = 0.87 * 0.9875 = 0.86$$

The reserve to increase the integral load factor of the equipment is to increase the duration of the working shift. Downtime in the analyzed year was associated with an increase in equipment downtime in repair and an increase in installation time of new equipment, which affected the reduction of the average shift duration by 0.4 hours. The elimination of this disadvantage can be achieved by introducing progressive organizational and technological measures.

Studying the efficiency of using the fixed assets of OLMOS QURILISH INVEST LLC we have concluded that the efficiency of using the fixed assets is low. This can be seen in terms of stock and profitability. The reason is their aging. Our factor analysis showed that working hours, shift factors have a negative impact on the efficiency of fixed assets. In our opinion, the enterprise should increase the number of shifts.

#### 4. Conclusions

The analysis of the main production funds of OLMOS QURILISH INVEST LLC showed that they need to be upgraded. Opportune renewal of fixed assets to prevent excessive moral and physical wear and tear is necessary due to acute competition in the market. The purpose of such upgrades is to retain the name of the supplier of quality goods, ensure sales and total profitability [19].

The most important areas of increase in equipment operation time are:

reduction and elimination of intra replaceable equipment downtimes by the improvement of quality of corrective maintenance of the equipment, timely ensuring the main production by labor, raw materials, materials, fuel, semi-finished products; reduction of target-day downtime of equipment, an increase of replacement factor of its operation.

An important way to increase the efficiency of fixed assets is to reduce the number of surplus equipment and quickly involve unidentified equipment in the production. The death of a large number of labor means reduces the possibility of production growth, leads to direct losses due to their physical wear, as after long storage the equipment often becomes inoperable. Other equipment in good physical condition turns out to be morally obsolete and is written off together with physically worn out [20].

The possibility of an intensive journey is much wider. The intensive improvement in fixed asset utilization implies an increase in equipment utilization per unit of time. The increase of equipment loading intensity can be achieved by the modernization of existing machines and mechanisms, establishment of optimal mode of their operation. Operation at the optimal mode of the technological process provides an increase of output without change of composition of fixed assets, without an increase in the number of employees and at a reduction of consumption of material resources per unit of production. The intensity of use of fixed assets is also increased by a technical improvement of labor tools and production technology, by the elimination of "bottlenecks" in the production process, reduction of terms of achievement of project productivity of equipment, improvement of scientific organization of labor, production, and management, use of high-speed methods of work, improvement of skills and professional skills of employees. Improving the structure of fixed assets is essential. The increase in the fixed assets of auxiliary production leads to an increase in the stock intensity of the products, as there is no direct increase in the output. But without proportional development of auxiliary production, the main workshops cannot operate with full efficiency. Therefore, establishing the optimal production structure of fixed assets in the enterprise is the most important way to improve their use.



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