Sustainability of functioning of enterprises of the building materials industry of the Belgorod region in 2018-2019

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Abstract. Ensuring the sustainability of functioning under all changes in the economic situation in Russia and in the world continues to be one of the most important goals of managing an enterprise in any sector of the real sector of the economy. This article investigates the stability of the functioning of a sample of the most famous enterprises in the construction materials industry of the Belgorod region: OAO Belgorodasbestocement, ZAO Belgorodskij cement, OAO Belgorodstrojdetal’, OAO Zavod ZHBK-1 and AO Strojmaterialy, using the author's methods for assessing the stability of functioning. The study period is 2018-2019. The informational basis of the study is the public financial statements of enterprises for 2019. The assessment methodology is based on a system of 12 indicators-indicators of the stability of functioning. For a comparative intercompany assessment of enterprises, the author's method of calculating a comprehensive assessment was used – a modified method of scoring. Based on the obtained values of comprehensive assessments, stability ratings for the functioning of enterprises for 2018 and for 2019 are compiled.

1. Introduction
Ensuring the sustainability of functioning continues to be one of the most important management goals and one of the main problems for enterprises in the real sector of the economy of the Russian Federation. Various aspects of this issue are highlighted in the works of such Russian scientists as S M Bukhonova, Yu A Doroshenko, E N Chizhova [3-6, 8, 9]. The subject of this article is the intercompany comparative comprehensive assessment (CA) of the sustainability of enterprises. Objects of research – five enterprises of the building materials industry of the Belgorod region. This is one of the leading industries in the region. This is due to the fact that in the Belgorod region there is a serious scientific school in this direction [1, 7, 13, 15]. The objectives of the study are to assess the level of sustainability of enterprises in the period 2018-2019 and compiling sustainability ratings of enterprises over the years.

2. Methods and techniques
The main method of the study is a modified method of scoring, one of the methods for calculating a comprehensive assessment [10, 12]. The study is also based on a systems approach, methods of analysis and synthesis (generalization), it uses spatial multidimensional comparisons, the coefficient method, and statistical methods (calculation of average values and growth rates).
The methodology for assessing the sustainability of the functioning of enterprises is based on a system of twelve indicators—indicators of the stability of functioning [11]. Based on them, using the modified method of scoring, a comprehensive assessment is calculated that provides a quantitative assessment of the level of stability of the enterprise for a given period of time. CA focus – the more the better; the range of possible values is from 0 to 10 points. Values 0 and 10 are determined by the best and worst sample values of the indicators. The sustainability rating of enterprises is based on calculated CA values.

3. Results
As can be seen from table 1, in 2018, the share of stable sources of capital varied from 20 % to 94 % in the sample. The range of values of provision with stable sources of stocks of enterprises was also large – from complete insecurity to four times coverage. The degree of coverage of current liabilities with current assets ranged from 40 % to 1051 %. Four out of five enterprises were solvent and financially stable. The asset turnover rate ranged from 0.55 revolutions to 1.42 revolutions per year. All enterprises grew sales revenue; three of them showed growth in retained earnings and equity. The main activity was profitable at three out of five enterprises. OAO Belgorodstrojdetal’ was unprofitable in all profit indicators, and AO Strojmaterialy only in profit from sales [14].

Note that the best values of indicators in the tables are highlighted, and the worst are underlined.

| Indicators, units                              | OAO Belgorod-              | ZAO Belgorodskij            | OAO Belgorod-               | OAO Zavod ZHBK-1 | AO Strojmaterialy |
|------------------------------------------------|---------------------------|-----------------------------|-----------------------------|------------------|-------------------|
| The share of stable sources of capital         | 0.75                      | 0.88                        | 0.90                        | 0.94             | 0.20              |
| Stable sources share in stock financing        | 0.88                      | 4.03                        | 1.98                        | 2.53             | -3.04             |
| Coverage of current liabilities with current  | 3.08                      | 6.13                        | 6.76                        | 10.51            | 0.40              |
| assets for the year                            |                           |                             |                             |                  |                   |
| The cost of 1 rub. revenue, rub.               | 0.95                      | 0.82                        | 1.02                        | 0.94             | 1.13              |
| Revenue growth rate, %                         | 108.76                    | 112.84                      | 127.40                      | 115.35           | 108.88            |
| Retained earnings growth rate, %               | 99.51                     | 105.69                      | 96.01                       | 103.45           | 173.79            |
| The growth rate of equity, %                  | 99.54                     | 105.15                      | 96.37                       | 103.25           | 103.76            |
| Profitability of sales on profit from sales, %| 4.63                      | 17.87                       | -2.20                       | 5.83             | -12.87            |
| Return on sales in net profit, %              | 2.95                      | 4.34                        | -3.03                       | 4.77             | 0.70              |
| Return on total assets, %                     | 5.54                      | 1.58                        | -3.04                       | 3.89             | 0.28              |
| Return on equity, %                           | 5.74                      | 5.02                        | -3.49                       | 3.29             | 3.69              |
| Comparative CA                                | 5.72                      | 6.86                        | 3.74                        | 6.57             | 3.35              |
| Sustainability rating of enterprises           | 3                         | 1                           | 4                           | 2                | 5                 |
The most stable in 2018 was the ZAO Belgorodskij cement, as evidenced by the highest value of its CA. The plant met the standards with the values of all indicators, and in four indicators it was ahead of other enterprises. It can be concluded that its stability of functioning was absolute.

In second place in the rating is OAO Zavod ZHBK-1. He also had all the evaluation indicators in line with the standards, and the company was the leader in three indicators. The value of its CA was only 0.29 points lower than that of ZAO Belgorodskij cement. All this allows us to make a conclusion about the absolute stability of the functioning of OAO Zavod ZHBK-1.

OAO Belgorodasbesto were at the third place in the rating. It showed the best sample values of three indicators. But due to the fact that the plant did not meet the standards for two evaluation indicators, its CA was 0.85 points lower than that of OAO Zavod ZHBK-1. The above indicates that the stability of its functioning is normal.

OAO Belgorodstrojde and AO Strojmaterialy were at the bottom of the rating. They significantly lagged behind the rest of the enterprises in terms of CA. OAO Belgorodstrojdetal’ did not meet the standards for the values of seven evaluation indicators, and AO Strojmaterialy did not meet the standards for the values of five indicators. OAO Belgorodstrojdetal’ had a normal financial condition – it was solvent and even had signs of financial stability. But the enterprise was unprofitable. AO Strojmaterialy had an unsatisfactory financial condition and loss on core activities. Based on all of the above, we can conclude that both AO Strojmaterialy and OAO Belgorodstrojdetal’ functioned unstable.

To assess the dynamics of the stability of the functioning of enterprises, we calculated the corresponding indicators in table 2. Their values show how many of the 12 indicators of the stability of functioning for the estimated period have better values than for the other of the two studied periods. It is easy to see that the situation improved in 2019 compared to 2018 in most indicators (ten out of twelve) only at OAO Zavod ZHBK-1. Accordingly, only it increased the stability of functioning [2]. About OAO Belgorodstrojdetal’, we can say that its level of stability has not changed in dynamics (six out of twelve indicators have improved, and the other six have become worse). The stability level of other enterprises decreased in the dynamics.

### Table 2. Indicators of the dynamics of the sustainability of enterprises in 2019 compared to 2018.

| Enterprises          | OAO Belgorod-asbesto | ZAO Belgorodskij cement | OAO Belgorodstrojdetal’ | OAO Zavod ZHBK-1 | AO Strojmaterialy |
|----------------------|-----------------------|--------------------------|-------------------------|------------------|-------------------|
| Periods              | 2018                  | 2019                     | 2018                    | 2019             | 2018              | 2019              | 2018              | 2019              |
| Indicators           | 10                    | 2                        | 8                       | 4                | 6                 | 6                 | 2                 | 10                | 7                 | 5                 |

In 2019, the level and range of values of most assessment indicators did not change significantly (table 3). Four out of five enterprises remained solvent and financially stable. For two enterprises, revenue growth was replaced by its decrease; only two enterprises maintained the growth of retained earnings and equity. The main activity has become profitable for all enterprises. OAO Belgorodstrojdetal’ and AO Strojmaterialy lost losses, and ZAO Belgorodskij cement became unprofitable.
Table 3. Indicators, comparative CA and stability rating of the functioning of a sample of Belgorod enterprises of the building materials industry in 2019.

| Indicators, units                                      | OAO Belgorod-asbestocement | ZAO Belgorodskij cement | OAO Belgorodstrojdetal' | OAO Zavod ZHBK-1 | AO Strojmaterialy |
|--------------------------------------------------------|----------------------------|-------------------------|-------------------------|------------------|-------------------|
| The share of stable sources of capital (average annual value) | 0.73                       | 0.91                    | 0.87                    | 0.94             | 0.19              |
| Stable sources share in stock financing (average annual value) | 0.83                       | 4.40                    | 1.64                    | 2.71             | -3.44             |
| Coverage of current liabilities with current assets (average annual value) | 2.69                       | 7.54                    | 5.88                    | 11.09            | 0.40              |
| The number of turns of total assets for the year       | 1.51                       | 0.49                    | 0.96                    | 0.64             | 1.08              |
| The cost of 1 rub. revenue, rub.                       | 0.96                       | 0.86                    | 0.99                    | 0.91             | 0.99              |
| Revenue growth rate, %                                 | 106.46                     | 93.22                   | 93.44                   | 105.11           | 112.11            |
| Retained earnings growth rate, %                       | 97.18                      | 98.74                   | 98.35                   | 105.90           | 101.04            |
| The growth rate of equity, %                           | 97.43                      | 98.86                   | 98.51                   | 105.57           | 100.09            |
| Profitability of sales on profit from sales, %         | 3.58                       | 14.09                   | 1.41                    | 8.64             | 1.27              |
| Return on sales in net profit, %                       | 2.31                       | -1.09                   | 0.16                    | 7.95             | 0.02              |
| Return on total assets, %                              | 4.64                       | -0.78                   | 0.60                    | 6.60             | 0.29              |
| Return on equity, %                                    | 4.86                       | -1.15                   | 0.18                    | 5.51             | 0.09              |
| Comparative CA                                         | 4.63                       | 4.15                    | 2.80                    | 8.10             | 2.33              |
| Sustainability rating of enterprises                    | 2                          | 3                       | 4                       | 1                | 5                 |

In 2019, the range of CA values of enterprises increased. This suggests that the difference in the level of sustainability of their functioning has become more significant.

In 2019, the leader in the sustainability of operation was OAO Zavod ZHBK-1. As noted above, this happened as a result of an improvement in most of its indicators. Accordingly, the stability of the operation of the plant is absolute, as in 2018.

OAO Belgorodasbestocement moved from third place in the ranking to second, despite the fact that its stability in dynamics has decreased. This happened due to the weakening of stability of ZAO Belgorodskij cement. OAO Belgorodasbestocement, as in 2018, does not meet the standards for two assessment indicators, and its CA value is almost two times lower than that of the rating leader (and below the average level). So the stability of its functioning can only be considered normal with a tendency to weaken.

ZAO Belgorodskij cement rolled back to third place in the ranking due to the net loss in 2019. At the same time, the enterprise has the lowest level of production costs in the sample and, accordingly, the highest level of its profitability, as well as normal all indicators of financial condition. So we can say that the level of stability of functioning of ZAO Belgorodskij cement is quite satisfactory.

OAO Belgorodstrojdetal' and AO Strojmaterialy remained in the fourth and fifth places of the rating, respectively. In 2019, each of them does not comply with the standards for the values of three assessment indicators. This is better than in 2018. But the level of production costs of enterprises is critically high, and the level of profitability indicators is close to zero, which led to a very low level of...
their CA. So, the stability of functioning at AO Strojmateral' and OAO Belgorodstrojdetal’ in 2019 is still absent.

4. Summary
According to the results of a study of a sample of enterprises of the building materials industry of the Belgorod region for the period 2018-2019 revealed that most of them are functioning stably. At the same time, some enterprises lack stability, which puts them at risk in the event of a deterioration in the situation in the building materials market or in the event of a general deterioration in the economic situation that the world faced in 2020 due to the COVID-19 pandemic.

It should be noted that 2019 was less successful for the building materials industry than 2018: for the vast majority of enterprises in the studied sample, in 2019 there was a weakening in the functioning stability, that is, they came up to 2020 crisis with a “reduced immunity”.

If the sample studied were representative, based on the results obtained in this work, generalizations could be made about the state and dynamics of the development of the building materials industry in the Belgorod region as a whole. However, unfortunately, the lack of open access to the financial statements of many business entities does not allow constructing representative samples and conducting more accurate studies.

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