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**DEVELOPMENT OF A METHODOLOGY FOR ASSESSING
RAW MATERIAL SUPPLY**

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Abstract. *The article proposes a variant improvement a rather developed area of economic analysis, namely the methodology evaluation materials supply in relation to the industry specifics a timber enterprise. The need to develop this area, first of all, is due to the presence of the traditional problem providing the rhythmicity of raw material flow at the enterprises the industry under consideration. High interest rate and exhaustion accumulated growth factors, difficulties in*

international payments, limitation of state support, increased fiscal burden and other factors destabilize the industry and reduce the reliability a planning. We also take into account the shift of inventory management criteria to their constant availability. The authors justified the use of the indicator “the threshold of raw material security” to calculate the target final balance the raw material stocks. The feature the new indicator is the accounting of the break-even value adjusted by the coefficient reflecting the useful output the products from raw materials. The economic meaning the new indicator is that its value characterizes the cost of raw materials in order to ensure the level the break-even sales volume. Calculated in dynamics, the threshold of raw material security allows to estimate the so-called “raw material load” the enterprise: the higher the level of this indicator, the higher the load on the system planning and material support. Thus, in the uncertainty conditions it is urgent and necessary to improve the traditionally used methods analysis taking into account the peculiarities activity the enterprises of the real sector economy. The use improved analytical tools based on information and communication technologies will ensure not only the reliability the indicators of the plan materials supply, but also create the possibility managing the risks their non-achievement. But it will also create conditions and reasonable confidence of all economic entities united in cooperation clusters the timber processing complex.

Keywords: *wood processing enterprise, the threshold of raw material security, analysis, break-even volume, finished product yield factor, assessment.*

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РАЗВИТИЕ МЕТОДИКИ ОЦЕНКИ ОБЕСПЕЧЕННОСТИ ЗАПАСАМИ

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Аннотация. В статье рассмотрен вариант совершенствования достаточно развитой области экономического анализа, а именно, методики оценки обеспечения материалами с учетом отраслевой специфики лесопромышленного предприятия. Необходимость развития данного направления, прежде всего, обусловлена наличием традиционной проблемы данной отрасли, которая состоит в обеспечении ритмичности сырьевых потоков. Высокая процентная ставка и исчерпание накопленных факторов роста, трудности международных расчетов, ограничение государственной поддержки, увеличение фискальной нагрузки и другие факторы дестабилизируют отрасль и снижают надежность планирования. Также важным является смещение критериев управления запасами в сторону их постоянного наличия. Авторы обосновали использование показателя «порог сырьевой безопасности» для расчета целевой конечной величины запаса сырья. Особенностью нового показателя является учет размера безубыточности продаж, скорректированного на коэффициент, отражающий полезный выход продукции из сырья. Экономический смысл нового показателя заключается в том, что его значение характеризует затраты на сырье для обеспечения уровня безубыточного объема продаж. Рассчитанный в динамике, порог сырьевой безопасности позволяет оценить так называемую «сырьевую нагрузку» предприятия: чем выше уровень этого показателя, тем выше нагрузка на систему планирования и материального обеспечения. Таким образом, в условиях неопределенности актуальным и необходимым является совершенствование традиционно используемых методов анализа с учетом особенностей деятельности предприятий реального сектора экономики. Использование усовершенствованных аналитических инструментов, основанных на информационно-коммуникационных технологиях, обеспечит не только достоверность показателей плана материального обеспечения, но и создаст возможность управления рисками их недостижения, обеспечит условия роста и достаточный уровень уверенности всех хозяйствующих субъектов, объединенных в кооперационные кластеры лесопромышленного комплекса.

Ключевые слова: лесоперерабатывающее предприятие, порог сырьевой безопасности, анализ, безубыточный объем, коэффициент выхода готовой продукции, оценка.

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Introduction.

Woodworking is one of the traditional and oldest types of production in Altai. It successfully satisfies both internal and steadily growing external demand for sawn timber in the Republic of Kazakhstan and Central Asian countries. The influence of the timber processing economy on the development of Altai Krai is extremely significant and meaningful (Table 1).

Table 1

Share of the forestry complex in the gross regional product of Altai Krai for 2017-2022, %*

Indicators	2017	2018	2019	2020	2021	2022
1. Share of the forestry sector in GRP of Altai Krai, %	1,83	1,92	2,06	2	1,66	1,92

* compiled by the authors using data from the Department of the Federal State Statistics Service for Altai Krai and the Altai Republic.

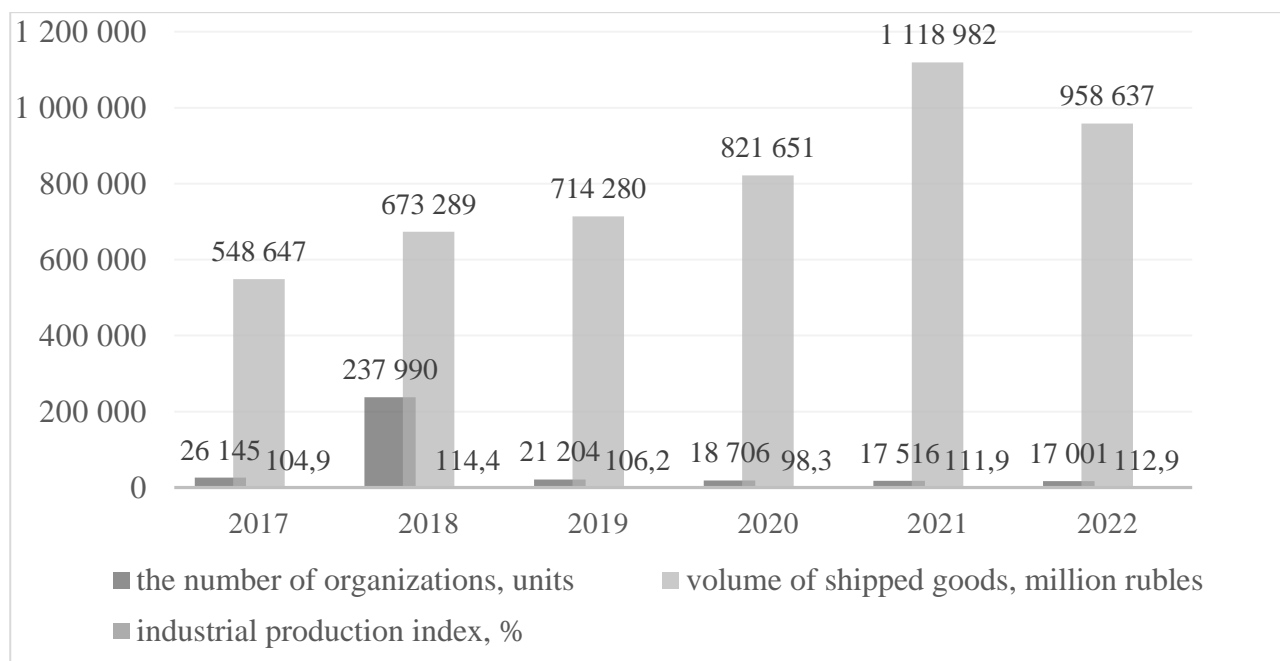


Fig. 1. - Dynamics of the number of organizations (units), volume of shipped goods (million rubles) and industrial production index (%) of timber processing in the Russian Federation for 2017-2022*

*compiled by the authors based on the materials of statistical compilations of the website <https://rosstat.gov.ru>.

Statistical data show that the share the forest industry in the total volume of industrial production is stably about 2%. However, in recent years a number negative trends in the development of this sector are noticeable (Figure 1, Table 2), which is explained by:

1. the impact of high interest rates and the exhaustion previously accumulated growth factors, with demand for timber products exceeding supply, leading to higher prices;
2. difficulties with international payments; cross-border settlements are difficult for all Russian companies interacting with partners abroad;
3. limitation of state support for timber processing companies, financing of business expansion has shifted towards the use own funds;
4. destruction established relations with suppliers and buyers, the effect of sanctions, the weakening or change which will have the greatest impact on the development the timber processing industry;
5. insufficient attention to planning activities, including material resources;
6. obsolescence and depreciation production assets;
7. increased fiscal burden due to the 2025 tax reform.
- 8.

Table 2

Performance results timber processing enterprises of the Russian Federation for 2017-2022*

Indicators	2017	2018	2019	2020	2021	2022
1. Balanced financial result, mln. rub.	2 338	10 742	27 101	10 369	206 811	90
2. Profitability of sold goods, %	6,7	13,2	6,9	11,5	33,6	8,5
3. Profitability of assets, %	0,4	1,7	3,9	-1,4	22,0	3,2
4. Average annual number of employees, thousand people	1 984	216,1	214,2	199,4	194,3	197
5. Average wages, rubles/person	25 657	26 177	29 399	30 864	36 314	40 464
6. Employees hired, persons	0	0	33,4	31,3	38,5	34,6
7. Dismissed employees, persons			40,9	36,8	37,7	47
8. Value of fixed assets, bln. rub.	410,6	439,5	509,1	541,7	617,9	640
9. Average annual production capacity utilization, %	57,1	57,2	56,6	56,1	54,8	48,3
10. Fixed assets renewal ratio, %	11,4	13,4	7,4	7,4	8,9	11,7
11. Fixed asset retirement ratio, %	0,3	0,5	0,5	0,4	0,6	0,8
12. Fixed assets depreciation ratio, %	41,5	41,6	43,3	46,9	47,6	47,3
13. Investments in fixed capital, bln. rub.	71,6	69,4	58,5	70,3	92,4	93
14. Average annual amount of current assets, bln. rub.	225 987	250 147	251 315	270 817	411 545	415 824
15. Current liquidity ratio, %	113,7	117,9	110,6	96,9	126,1	129,4
16. Coefficient of provision with own working capital, %	-101,5	-83,9	-110,2	-105,2	-45,5	22,7

*compiled by the authors based on the materials of statistical compilations of the website <https://rosstat.gov.ru>

Main part.

The above factors will undoubtedly lead to modernization of administration at timber processing enterprises and will be reflected in current management decisions. Optimistic forecasts for the development of timber processing in Altai Krai are supported by the data on the existing reserves of forest resources in Altai. With their effective use, it is possible not only to meet the current and future domestic needs of the region, but also to significantly expand exports to other regions of the country and abroad. Speaking about resource endowment, it should be noted that the methodology of its assessment is quite well-established and is carried out according to the indicators presented in Table 3.

Table 3

Indicators of material resource endowment assessment

Indicators	The calculation formula	Economic content of the indicator
1. Stock availability, day	$Z_{\text{day}} = \frac{Z_{\text{mi}}}{P_{\text{di}}},$ Z_{day} – raw materials stock, days; Z_{mi} – stock of the i-th type material, value or kind; P_{di} – average daily consumption of materials, value or kind.	Provision of the need in material resources for inventory formation, days.
2. Average daily materials consumption	$P_{\text{di}} = \frac{MP_i}{D},$ P_{di} – average daily consumption of materials, value or kind; MP_i – total consumption of the i-th material type; D – number of calendar periods.	Average consumption of resources in kind or value for the selected period.
3. Materials availability ratio	$R_{\text{av}} = \frac{\text{Supply}_{\text{fact}}}{\text{Demand}_{\text{plan}}},$ $\text{Supply}_{\text{fact}}$ – the value of material resources actually delivered; $\text{Demand}_{\text{plan}}$ – planned material demand.	Characterizes the execution of the material supply plan.

However, most researchers emphasize the need to clarify the methodology for assessing the provision of the enterprise with various types of materials, taking into account industry specifics (Table 4) [1, 4, 9, 13].

Table 4

Industry factors taken into account in the development of the improved methodology for materials supply assessment*

Factor	Contents
1. Degree and form integration of timber processing enterprises	The study has shown the positive impact vertical integration of procurement and processing enterprises on working capital. In particular, it increases the role internal sources of formation working capital, improves the efficiency planning and management of material stocks, interlinks the volumes of

	procurement, transportation and processing of raw materials, contributes to the leveling of the seasonal factor.
2. Dependence on transportation infrastructure	The significant influence of the method of raw material delivery on all stages of its management has been proved. Truck and railroad transportation in Altai Krai is in fact the only possible, but also the most expensive. The share of transportation costs in the cost of production is about 7%. Planning of material resources should take into account the state of the transportation infrastructure, the constant choice between cost growth and ensuring uniformity of procurement.
3. 3. Seasonal nature of production	A pronounced seasonal dependence, predominant harvesting of raw materials in summer.
4. 4. Structure of production costs	High share material costs in the cost of production (more than 56%), relatively short production cycle require supply of raw materials continuously or at short intervals.
5. 5. Structure of the financial cycle	Creation of raw material stocks is associated with a significant time finding funds in advances given to loggers. It is proposed to reduce the element "Accounts receivable" by the number of advances during the calculation turnover indicators.
6. Risks	Timber processing companies in Altai Krai are affected by currency, inflation and interest rate risks.

*compiled by the authors

Therefore, the enterprise can adopt one of two variants of such assessment: inertial (following the traditional variant) or innovative (application of improved methodology). This article presents one of the possible options for improving the methodology for assessing the provision production with material resources, based on the application the break-even theory. The chosen direction improvement of the analysis methodology is not accidental, it is justified by one of the traditional problems the industry, namely, the instability raw material supply to wood processing plants. It is obvious that the regular lack working capital necessary for production disrupts the already irregular processing process, interrupts the movement of material and financial flows. According to the statistics of Altai Krai the share unprofitable enterprises of timber processing in 2024 amounted to 50.0%, the amount loss exceeded 290 million rubles. It should also be noted that the application of typical inventory management models, such as the "optimal order size" (EOQ) model, at timber processing enterprises has a number of serious practical limitations [12]. That is, the equality of time between two adjacent orders is unattainable, it is not always possible to place and execute an order for sawmill raw materials within the given terms, to satisfy the demand completely and instantly, the costs of order fulfillment are differentiated depending on its size, method of transportation, distance, supplier and carrier conditions. The most serious problems with meeting the demand for raw materials arise in the off-season. Given the shift of inventory

management criteria to constant availability, the authors propose to use a “the threshold of raw material security” to calculate the target final balance of raw material stocks:

$$\text{TRMS} = \text{BEV}_{\text{mu}} : P_s : K_p * P_m, \quad (1)$$

BEV_{mu} - break-even point, monetary units;

P_s - average sales price, monetary units;

K_p - the coefficient reflecting the useful output the products from raw materials, coeff.;

P_m - average raw material price, monetary units.

The new indicator is the accounting of the break-even value adjusted by the coefficient reflecting the useful output the products from raw materials (Table 5).

Table 5

Analysis the dynamics the threshold of raw material security of a timber processing enterprise in Altai Krai for 2023-2025 years

Period	The threshold of raw material security, thousands rubles	Change	
		Absolute, thousand rubles	Change rate, %
2023	729 665,77	-	-
2024	901 243,74	171 577,97	23,51
2025	943 447,31	42 203,57	4,68

The economic meaning the new indicator is that its value characterizes the cost of raw materials in order to ensure the level the break-even sales volume. So, for the investigated enterprise at the level of fixed costs equal to 1 077 755,11 thousand rubles, the rate of marginal profit 33,73%, the planned 2025 price of raw materials 1,9839 thousand rubles/m³ and selling price 20,8035 thousand rubles/m³ the threshold of raw material security is equal to: $31,954.98/20,8035/0,323*1,9839 = 943,447.31$ thousand rubles. Calculated in dynamics, the threshold of raw material security allows to estimate the so-called “raw material load” the enterprise: the higher the level of this indicator, the higher the load on the system planning and material support.

Conclusion.

It is suggested that the break-even sales volume should be calculated on the basis of the sales plan formed on the basis of concluded sales contracts. This will ensure full and timely fulfillment of obligations to customers, move contracts into the category of long-term contracts and prevent customers from leaving the company for competitors. Next, it is necessary to distribute the threshold of raw material security over periods, taking into account the capacity of the transportation used. The next step is to determine the sources of financing of raw material acquisition costs. Calculation the threshold of raw material security, collection and monitoring initial data can be organized in the accounting computer program “1C: Enterprise Accounting” in the form of operational reports, analytical notes. Despite the fact that the implementation of the proposed methodology increases the burden on management, its application at enterprises with a large share of inventories in working capital is fully justified.

References:

1. Ataeva L.B. Analysis of current assets of the organization in the context of financial policy formation. *Vestnik of the Academy of Knowledge*, 2021, no. 43(2), pp. 339-345. (In Russian). DOI: [10.24412/2304-6139-2021-11092](https://doi.org/10.24412/2304-6139-2021-11092)
2. Vorozhbit E.G., Bakhireva A.A. Economic aspects of measuring technological processes. *Journal of Physics: Conference Series*, 2020, vol. 1515 (3). (In English).

3. Garafieva G.I. Estimation of profitability of current assets on the basis of factor dynamic analysis. *Management Accounting*, 2024, no.11, pp. 68-76. (In Russian). URL: <https://elibrary.ru/hxoczy>
4. Gerasimenko O.A. Analysis of the problems of managing current assets of the organization. *Actual issues of modern economics*, 2020, no. 3, pp. 224-231. (In Russian). DOI: [10.34755/IROK.2020.61.93.046](https://doi.org/10.34755/IROK.2020.61.93.046)
5. Gorbunova N.A. Analysis of the impact of the efficiency of material reserves utilization on the value of material costs. *Managerial Accounting*, 2021, no. 8-3, pp. 449-459. (In Russian). DOI: [10.25806/uu8-32021449-459](https://doi.org/10.25806/uu8-32021449-459)
6. Desyatnikova Y.V. Analysis and assessment of the efficiency of the use of current assets of the organization. *Scientific and educational potential of youth in solving urgent problems of the XXI century*, 2022, no. 18, pp. 17-21. (In Russian). URL: <https://elibrary.ru/amfwhe>
7. Murina E.V. Management accounting and control: material costs of industrial production. *Russian Journal of Management*, 2023, no. 4, pp. 186-203. (In Russian). DOI: [10.29039/2409-6024-2023-11-4-186-203](https://doi.org/10.29039/2409-6024-2023-11-4-186-203)
8. Nikulin R.Yu. Methods of analyzing the provision and efficiency of the use of material resources of the enterprise. *Business Strategies*, 2022, no. 1, pp. 22-26. (In Russian). DOI: [10.17747/2311-7184-2022-1-22-26](https://doi.org/10.17747/2311-7184-2022-1-22-26)
9. Pasichnyk N.V. Methodology of analysis of provision of commercial organization with material resources and its improvement on the basis of logistic approach. *Bulletin of Transnistrian University. Series: Physical, Mathematical and Technical Sciences. Economics and management*, 2021, no. 3(69), pp. 307-313. (In Russian). URL: <https://elibrary.ru/eqbplj>
10. Perelygin A.E. Analysis of current assets of the enterprise and their. *Student Bulletin*, 2024, no. 2-7(288), pp. 57-59. (In Russian). URL: <https://elibrary.ru/nvlahy>
11. Polyanskaya N.M. Analysis of current assets of the enterprise: organizational and methodological foundations and practice of application. *Digest-Finance*, 2020, no. 3(255), pp. 333-362. (In Russian). DOI: [10.24891/df.25.3.333](https://doi.org/10.24891/df.25.3.333)
12. Filin M.V. Analysis of the effectiveness of the management of current assets of the enterprise. *Matrix of scientific knowledge*, 2021, no. 9-1, pp. 135-137. (In Russian). URL: <https://elibrary.ru/dpnsjt>
13. Khalyapin A. A. Analysis of current assets in assessing the investment attractiveness of the organization. *Economics and Management: Problems, Solutions*, 2023, no. 6(138), pp. 129-139. (In Russian). DOI: [10.36871/ek.up.p.r.2023.06.02.015](https://doi.org/10.36871/ek.up.p.r.2023.06.02.015)
14. Haustova G.I. Role of the analysis of current assets in the analysis of the financial condition of a commercial organization. *Finansovyi vestnik*, 2024, no. 2(65), pp. 60-66. (In Russian). URL: <https://elibrary.ru/rxpxme>
15. Chikalova A.E. Evaluation of the state and analysis of the efficiency of current assets utilization. *Economics and Business: Theory and Practice*, 2023, no. 10-2(104), pp. 197-204. (In Russian). DOI: [10.24412/2411-0450-2023-10-2-197-204](https://doi.org/10.24412/2411-0450-2023-10-2-197-204)
16. Shol V.V. *Development of the methodology of analysis of tangible current assets in agricultural organizations*. Monograph. Kursk, University Book Publ., 2021. pp. 180. (In Russian). URL: <https://elibrary.ru/juynaa>

Список источников:

1. Атаева Л.Б. Анализ оборотных активов организации в контексте формирования финансовой политики // Вестник Академии знаний. 2021. № 43(2). С. 339-345. DOI: [10.24412/2304-6139-2021-11092](https://doi.org/10.24412/2304-6139-2021-11092)
2. Vorozhbit E.G., Bakhireva A.A. Economic aspects of measuring technological processes. // *Journal of Physics: Conference Series*. 2020. Vol. 1515 (3).

3. Гарафиева Г.И. Оценка рентабельности оборотных активов на основе факторного динамического анализа // Управленческий учет. 2024. № 11. С. 68-76. URL: <https://elibrary.ru/hxoczy>
4. Герасименко О.А. Анализ проблем управления оборотными активами организации // Актуальные вопросы современной экономики. 2020. № 3. С. 224-231. DOI: [10.34755/IROK.2020.61.93.046](https://doi.org/10.34755/IROK.2020.61.93.046)
5. Горбунова Н. А. Анализ влияния эффективности использования материальных запасов на величину материальных затрат // Управленческий учет. 2021. № 8-3. С. 449-459. DOI: [10.25806/uu8-32021449-459](https://doi.org/10.25806/uu8-32021449-459)
6. Десятникова Я.В. Анализ и оценка эффективности использования оборотных активов организации // Научно-образовательный потенциал молодежи в решении актуальных проблем XXI века. 2022. № 18. С. 17-21. URL: <https://elibrary.ru/amfwhe>
7. Мурина Э.В. Управленческий учет и контроль: материальные затраты на производство промышленной продукции // Russian Journal of Management. 2023. № 4. С. 186-203. DOI: [10.29039/2409-6024-2023-11-4-186-203](https://doi.org/10.29039/2409-6024-2023-11-4-186-203)
8. Никулин Р.Ю. Методики анализа обеспеченности и эффективности использования материальных ресурсов предприятия // Стратегии бизнеса. 2022. № 1. С. 22-26. DOI: [10.17747/2311-7184-2022-1-22-26](https://doi.org/10.17747/2311-7184-2022-1-22-26)
9. Пасичник Н.В. Методика анализа обеспеченности коммерческой организации материальными ресурсами и ее совершенствование на основе логистического подхода // Вестник Приднестровского университета. Серия: Физико-математические и технические науки. Экономика и управление. 2021. № 3(69). С. 307-313. URL: <https://elibrary.ru/eqbplj>
10. Перельгин А.Е. Анализ оборотных активов предприятия и их оптимизация// Студенческий вестник. 2024. № 2-7(288). С. 57-59. URL: <https://elibrary.ru/nvlahy>
11. Полянская Н.М. Анализ оборотных активов предприятия: организационно-методические основы и практика применения // Дайджест-финансы. 2020. № 3(255). С. 333-362. DOI: [10.24891/df.25.3.333](https://doi.org/10.24891/df.25.3.333)
12. Филин М.В. Анализ эффективности управления оборотными активами предприятия // Матрица научного познания. 2021. № 9-1. С. 135-137. URL: <https://elibrary.ru/dpnsjt>
13. Халяпин А.А. Анализ оборотных активов в оценке инвестиционной привлекательности организации // Экономика и управление: проблемы, решения. 2023. № 6(138). С. 129-139. DOI: [10.36871/ek.up.p.r.2023.06.02.015](https://doi.org/10.36871/ek.up.p.r.2023.06.02.015)
14. Хаустова Г.И. Роль анализа оборотных активов в анализе финансового состояния коммерческой организации // Финансовый вестник. 2024. № 2(65). С. 60-66. URL: <https://elibrary.ru/rxxpme>
15. Чикалова А.Е. Оценка состояния и анализ эффективности использования оборотных активов // Экономика и бизнес: теория и практика. 2023. № 10-2(104). С. 197-204. DOI: [10.24412/2411-0450-2023-10-2-197-204](https://doi.org/10.24412/2411-0450-2023-10-2-197-204)
16. Шоль В.В. Развитие методики анализа материальных оборотных активов в сельскохозяйственных организациях: монография. - Курск: Университетская книга. 2021. - С. 180. URL: <https://elibrary.ru/juynaa>

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