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INFORMATION SUPPORT OF THE MANAGEMENT SYSTEM FORMATION AS AN ELEMENT OF OIL PRODUCT SUPPLY QUALITY CONTROL

Abstract: *Uncertain dynamism in changing the internal and external needs of consumers of oil products inevitably entails the need to transform the structural correspondence between the capabilities of oil product supply enterprises and market demands in terms of the price factor and quality characteristics of oil products.*

The purpose of the study is to develop methodological approaches to the elemental structuring of quality management through information support for the activities of enterprises supplying petroleum products.

The authors of the article propose a step-by-step model that integrates the parameters of the oil product supply enterprises' management system and allows for a multifaceted analysis of the achieved effect of improving the oil product supply quality.

The proposed model reflects the interdependence of price and volume factors, including changes in sales prices, the cost of oil products surplus; railway tariffs of primary logistics, purchase prices of oil products, volume, sales structure, product basket.

Keywords: *quality of oil products supply, quality management, information support, management system, multifactor model, information support, factors, gross revenue, effect, analysis*

1. Introduction

In the presented scientific research, the oil products supply quality control is understood as the process of planning, analyzing, and controlling the parameters of the management system containing information on commodity, sales, and financial flows accompanying the process of selling commercial oil products, which, in current conditions, is influenced by constant and rapid changes in factors such as the external and internal environment.

Taking into account the peculiarities of the current stage of oil product supply enterprises' operation, for their rapid adaptation to changing conditions, it is advisable to single out a linking element of the oil products supply quality control process, infolding operational, complete, and reliable information on the quantitative and qualitative characteristics of oil products, balancing the needs of consumers and the production and economic interests of enterprises. The analysis of the essence of the system objects determines the logical necessity of choosing information support of

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the management system formation as such an element, within which information could be promptly collected and communicated to those whose competence includes making management decisions.

Analysis of literature sources devoted to information support of the management system formation as an integral element of business processes' quality control at enterprises, showed the presence of significant developments in the field of information support of internal management at enterprises.

In the context of improving production processes, the implementation of a quality control system is one of the most important issues in the management system of individual business processes and the organization as a whole. According to Antipov et al. (2020) in the conditions of intensive development of technologies allowing to move to a qualitatively new level of production, traditionally established approaches to business process management are losing their relevance and require amendments, including in terms of increasing the level of information support of the quality management system.

Process modeling is a central element of any approach to managing the quality of business processes. Reijers et al. (2015) state that a serious problem is the lack of information support for assessing the quality of processes. In their study, the group of authors distinguishes three different types of quality, and for each of these levels specific indicators, available tools and guidelines are presented.

According to a study carried out by Shtefan et al. (2017), the speed of making competent management decisions depends on the quality and efficiency of information support, therefore, one of the important requirements for a modern management system is the collection of information, both historical and predictive, that would be sufficient for the company management.

In the context of digitalization, the requirements for information support of the management system formation at oil product supply enterprises are increasing, which requires the need to transform both the principles of information support of the management system and the introduction of modern methods for collecting, processing and analyzing accounting data.

A group of economists (Rogulenko et al., 2021) has developed a methodology for the influence of accounting and analytical support on the effectiveness of the implementation of an enterprise development strategy, based on deterministic factor analysis and control of key business objectives. So, for example, today in logistics and supply chain management in companies, Big-data technology is widely used, which provides more opportunities for collecting, storing, and analyzing volumetric generated data from various sources. The use of this technology allows enterprises to receive an additional flow of information so that managers and leaders of enterprises can make informed strategic, operational, and management decisions (Addo-Tenkorang & Helo, 2016).

Digitalization also allows developing information support of the management system in such a way as to receive in real-time reliable, complete, and detailed information about the ongoing business processes at the enterprise in XBRL format and, on its basis, to conduct a multifactor analysis of changes in financial indicators (Astafeva et al., 2020).

The article by Bochulia (2014) presents the author's position on the means, methods, and procedures for organizing information support of the management system. The scheme of information and analytical support of business processes based on financial and management accounting data, proposed by the author, reveals the algorithm for the information movement from one user to another, which simultaneously can be both

sources and recipients of data from the information flow.

In the presented scientific study, the authors determine the role of information support of managerial actions aimed at improving the quality of oil product supply through the management system formation containing information on the price and volume factors' situation with a view to its subsequent use in the process of multifaceted analysis of the achieved effect from the oil products sale.

2. Main heading

The main object of information support of the management system at oil products supply enterprises is the process of oil products sales. The analysis of operations is carried out based on continuous daily monitoring of the oil products distribution to end consumers within each division (gas station or delivery terminal). Information support of the implementation of the sales plan for a certain period is sent to the enterprise management, after that an action plan is drawn up aimed at stimulating sales if the plan is not fulfilled or keeping the current implementation when fulfilling (over-fulfilling) the planned volumes. In general, depending on the needs of management, the format and frequency of management reporting can change, which is fixed by the internal administrative documents of the enterprise.

Besides taking into account natural indicators, the economic indicators of sales are also analyzed. As part of information support of the management system formation at oil products supply enterprises, information on the current margin of oil products sales, average purchase price, revenue for each gas station, and return on sales are generated, both for individual types of products and generally for branches.

In the case of oil products supply enterprises, it should be noted that in terms of information coverage, the management system combines all types of accounting. The need for the segregation of commodity transactions is one of the key features of the formation of management data when selling oil products.

The main tasks of the information support in the oil products sales to improve the quality of the oil products supply are:

- promptly informing the company's management about the availability of oil products stocks and related products in the warehouses, their earliest arrival, and the cost of purchasing these goods;
- daily data updating on the sales volume of products in the context of regions, branches, nomenclature items, and distribution channels;
- oil products and goods' safety control depending on their location (gas station tanks or delivery terminals, products in transit, products in the gas station trading floor).

To solve these problems, it is necessary to control the correctness of commodity transactions accounting in the management system, the completeness, and timeliness of their reflection.

The general scheme for the data collection on the movement of oil products in the management system is shown in Figure 1.

Information support of the management system formation at oil products supply enterprises is determined by the specifics of their activities:

a) a large number of geographically scattered branches. The location of gas stations of the same network in different regions necessitates taking into account a large volume of material, commodity, and financial flows, which is ensured by the presence of a large computing capacity and specialized software for automating accounting.

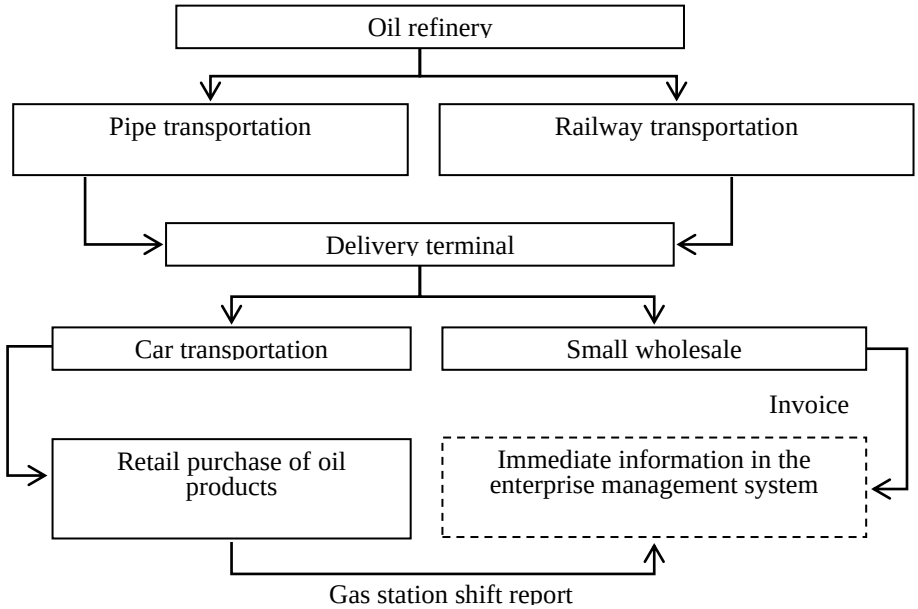

Figure 1. General movement scheme of oil products and information support of the management system at an oil product supply enterprise (compiled by the authors)

The following operations are performed at the system's server:

- ordering products from the supplier;
- execution of external receipts notes for goods and fuel;
- execution of documents for the write-off of goods and fuel;
- execution of documents for return of goods and fuel to the supplier;
- inventory of goods;
- internal consumption of goods from a gas station to other gas stations;
- revaluation of goods and fuel;
- performing a procedure of closure of business day with closing a balance sheet;
- keeping a user directory;
- viewing gas station's digital journal;
- obtaining reports for the whole inventory accounting at gas station;
- receiving updates from the regional office;
- uploading updates to the regional office of a company.

After the processing of the above operations, the data from the automatized system of the gas station/delivery terminal are uploaded to the corporate financial accounting system, in which the data are compared and corrected.

Based on the information of oil products' surplus in gas station/delivery terminal's reservoirs and daily average realization, supplementary demands
for products from oil refineries are sent.

The normative level of the store for each type of oil product is determined by the following formula:

$$I = (S_{gs} + S_{ssw}) * \left(\frac{\sum(T_i + T_{des}) * V_i}{\sum V_i} + T_{abs}\right)$$

I – normative level of stock of oil products;
S_{gs} – daily average volume of sales;
S_{ssw} – daily average volume of small-scale wholesale realization;
T_i –normative time of delivery to the delivery terminal from *i*-th oil refinery, days;

T_{des} – "decision time" in days between indication of the need for an additional supply and the beginning of the of additional volumes' shipment from the oil refinery;
T_{abs} – planned number of days of the absence of shipping from the oil refinery since the beginning of a month, which follows the planned one (due to technical or logistics limitations).
V_i – the volume of delivery from *i*-th oil refinery, tons;
b) requirements for details of the accounting information.
In general, it can be noted that the main features of information support of the management system formation to improve the quality of oil products supply during realization oil products come from the specifics of this activity: a large number of similar geographically scattered branches, and, therefore, centers of profit and expenditures, which have to be correctly distributed during consolidated accounts preparation; detailed specification of the product line by the geographic segments; the necessity for monitoring of the measures' effectiveness aimed at increase of sales volumes (loyalty programs, price and image promotions), as well as the specificity of work with oil products, which is expressed in losses of oil products at various stages of their transportation and storing.

The main object of the information support of the management system to improve the quality of oil products supply is the gross revenues from oil products realization, concerning which the management system should analyze the deviations of the achieved indicators from the planned values and the indicators of the previous periods.

To this end, the authors of the article propose to use a step-by-step model that integrates the parameters of the management system of an oil products supply company and allows for a multifaceted analysis of the achieved effect of improving the oil products supply quality.

The proposed model is reflecting the interdependence of price and volume factors, which allows, when determining the result, to obtain information about the influence of the analyzed parameters on the qualitative change of the modeled object of the management system - gross income from the oil products sale.

At the first stage, the factors that influence the change of revenues from oil products realization are determined. They include the following:

- change of oil products sale prices;
- change of oil products surplus cost;
- change of railway tariffs of initial logistics (transportation of oil products by railroad), which is a part of oil products cost;
- change of purchase prices for oil products;
- change of the share of oil products surplus in total sales for the period;
- change of the sale volume;
- change of the sale structure by regions;
- change of the sale basket between the types of oil products.

In the second stage, all the above-mentioned factors are classified into two groups. In general, all factors influencing the change of gross revenue of oil products can be divided into two large groups.
The first group includes factors which influence is predetermined by the change of the price parameters of oil products sale; the second group – change of volume indicators. The division of these factors into two groups is shown in Figure 2.
The third stage is devoted to modeling the relationship between the selected factors and the resulting indicators. For modeling the dependence of change of gross revenue from the mentioned factors, an additive model is chosen – which can be shown as follows:

$$GR = Fsp + Fpp + Frt + Fcsur + Fssur + Fsv + Fss + Fsb$$

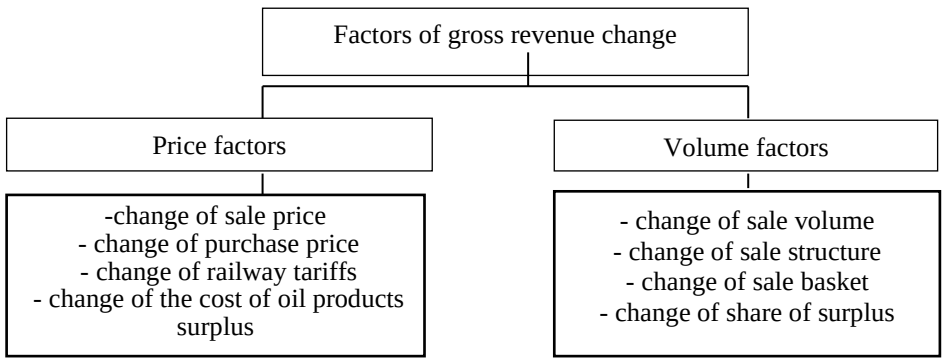

Figure 2. Classification of the model factors (compiled by the authors)

The final fourth stage forms a set of model dependences of the result – gross revenue, on the selected factors.

a) Factor - change of sales prices of oil products. The sale price directly influences the total amount of revenue and, accordingly, the gross revenue of the company received from the sale of a specific type of oil product. This factor reflects the influence of the change of actual sales prices from the planned ones at the planned level of realization and is expressed in the following form:

$$F_{sp} = \sum V_{i0} * (P_{i1} - P_{i0}),$$

$V_{i\,0}$ – the planned volume of realization of i-th oil product (tons);

$P_{i\,1}$ – actual sale price of 1 ton of i-th oil product;

$P_{i\,0}$ – planned sale price of 1 ton of i-th oil product.

b) Factor - change of purchasing prices for oil products. The second important component of gross revenue is the cost (purchase cost) of oil products. This factor characterizes the change of purchasing prices for oil products as compared to the planned level without taking into account the influence of change in oil products' surplus cost at the beginning of the period.

$$F_{pp} = \sum V_{i0} * \left(P_{i0} + \frac{V_{i0sur}}{V_{i0}+V_{i0POL}} * \left(P_{i1sur} - P_{i0pp}\right) - P_{i1pp} - \frac{V_{i0sur}}{V_{i0}+V_{i0POL}}\right) * \left(P_{i1sur} - P_{i0pp}\right),$$

$V_{i\,0}$ – the planned volume of realization of i-th oil product (tons);

$P_{i1\,pp}$ – actual price of purchase for 1 ton of i-th oil product;

$P_{i0\,pp}$ – planned price of purchase for 1 ton of i-th oil product;

$P_{i0\,sur}$ – planned price of surplus for 1 ton of i-th oil product;

$P_{i1\,sur}$ – actual price for a surplus of 1 ton of i-th oil product;

$V_{i0\,sur}$ – planned volume of a surplus of i-th oil product (tons);

V_{i0POL} – planned consumption of oil products for own needs and normative losses.

c) Factor - change of railway tariffs. In most cases, the internal policy of oil products supply companies envisages including into the cost the expenditures for purchase, storing, and transportation of oil products to the final storage (terminal delivery). These expenditures include the cost for transportation of oil products from the oil refinery to the delivery terminal by rail. In this regard, the change in planned tariffs for transportation is also reflected in the gross revenue.

$$F_{rt} = \sum V_{i0} * (T_{i0} - T_{i1})$$

$T_{i\,0}$ – planned tariff, railway transportation of 1 ton of i-th oil product;

$T_{i\,1}$ – actual tariff, railway transportation of 1 ton of i-th oil product.

d) Factor - change of the cost of oil products surplus. The total cost of oil products is formed from the purchase price in the current period and the surplus cost at the beginning of the period. In this regard, the change in the surplus cost also affects the company's total gross revenue.

$$F_{csur} = \sum V_{i\,0} * (P_{i0csur} - P_{i0pp}) - \frac{V_{i0sur}}{V_{i0} + V_{i0POL}} * (P_{i1sur} - P_{i0pp})$$

P_{i0csur} – planned price of 1 ton of i-th oil product taking into account the cost of surplus;

P_{i1sur} – actual price of surplus for 1 ton of i-th oil product.

e) Factor - change of the share of surplus in the total sales volume for the period. The essence of this factor is similar to the previous one, but it is expressed not in a change in the price of surplus, but a change of its share in the total volume of sales.

$$F_{ssur} = \sum V_{i0} * \left(P_{i1pp} - \frac{V_{i0sur}}{V_{i0}+V_{i0POL}} * (P_{i1sur} - P_{i0pp}) - P_{i1csur}\right)$$

$P_{i1\ csur}$ – actual price if 1 ton of i-th oil product taking into account the cost of surplus;

f) Factor - change of sale volume. The most important volume factor that influences the change of gross revenue is the sales volume of oil products. Within the framework of the proposed management system, a hierarchical approach is used to compile a deterministic factor model of gross revenue from the oil product sale highlighting individual subfactors, the value of which can be determined both based on economic and mathematical methods and by expert means. The subfactors include increased competition in the market, favorable weather, the unfavorable economic situation in a region, operational downtime of a gas station during planned repairs, an effect from marketing events, etc. The mathematical dependence of the influence of changes in sales volumes compared to the plan can be shown as follows:

$$F_{sv} = \sum \left(\frac{V_1}{V_0} - 1\right) * V_{i0} * R_{i1}$$

V_0 – total planned sales volume for all types of oil products;

V_1 – total actual sales volume for all types of oil products;

R_{i1} – actual gross revenue per unit for 1 ton of i-th oil product.

g) Factor - change of sale structure. This factor is applicable only for oil products supply companies that conduct their activities in several geographic regions and characterizes the change of the sale structure by regions as compared to the planned values. This indicator is caused by the fact that gas stations of different regions have different profitability - due to their logistics and competitive features, which affects the total gross revenue of the company when redistributing the logistics flows of oil products between regions.

$$F_{ss} = \sum \left(V_{j1} * \frac{V_{i0}}{V_{j0}} - V_{i0} * \frac{V_1}{V_0}\right) * R_{i1}$$

V_{j1} – the actual total volume of oil products sales for j-th region;

V_{j0} – planned total volume of oil products sales for j-th region.

h) Factor - change of sale basket. The sale basket of oil products can be adjusted depending on consumer preferences. A change in the factor under consideration

directly influences gross revenue, since different quality characteristics of oil product goods determine different levels of sales profitability.

The data obtained characterize the cost change in gross revenue under the influence of the plan-factor deviation of the sales basket of oil products goods:

$$F_{sb} = \sum \left(V_{i1} - V_{j1} * \frac{V_{i0}}{V_{j0}} \right) * R_{i1}$$

Thus, the mathematical relationships developed in the scientific research formed the basis for constructing analytical information used in the management system formation to improve the quality control process of oil products supply.

3. Body of the paper

The approbation of the proposed mathematical model for the analysis of gross revenue from the sale of oil products goods was carried out on the example of one of the leading Russian oil products supply companies. Each factor was analyzed in detail for the type of oil product and the region of sale. For factor analysis in a scientific study, it is proposed to form an analytical report based on the disclosure of information about the planned and actual values of the analyzed parameters (Tables 1-2, see Appendix).

Planned values are formed based on internal management reporting data (business plan, sales budget, purchase budget), while actual values are consolidated based on accounting data. Often, there are already modules in the accounting system of an enterprise that automate the process of collecting and processing a large amount of data, which allows an analyst to spend less time preparing information for the analysis.

As Table 3 (see Appendix) shows, the main reasons for not reaching the planned gross revenue were the failure to meet the planned retail prices (-348,484 thousand rubles) and the increase in tariffs for the railway transportation (-16,102 thousand rubles). The compensating factors were mainly the decrease in the cost of oil products surplus at the beginning of the period compared to the plan (+54,977 thousand rubles), as well as the decrease in purchase prices (+205,007 thousand rubles)

For greater clarity, the results obtained are summarized in the form of a table, which shows the change in the overall result due to each factor (Table 4).

Table 4. Influence of the factor on gross revenue, thousands RUB

Indicator-factor	Influence of the factor on gross revenue, thousands of rubles
Change of oil products sale price	-348,484
Change of railway tariffs of initial logistics (transportation of oil products by railroad), which is a part of oil products' cost	-16,102
Change of oil products surplus cost	54,977
Change of purchase prices for oil products	205,007
Change of the share of oil products surplus in total sales for the period	9,490
Change of the sale volume	23,815
Change of the sale structure by regions	691
Change of the sale basket between the types of oil products	4,604
TOTAL	-66,002

As the data shown in Table 4 show, the change in gross revenue from the sale of oil products compared to the planned period amounted to -66,002 thousand rubles (the planned value of the gross revenue from the sale of oil products is 897,043 thousand rubles, the actual value of the same indicator is 831,041 thousand rubles).

In this case, the main drivers of deviations are price factors - purchase and retail prices. It should be noted that the positive effect of a lower level compared to the purchase price plan does not compensate for the negative effect of a lower actual level of sale prices, which suggests that the growth rate of purchase prices is higher than that of sale prices, which forces the company to either change prices in certain regions, or, if impossible, adjust the plan for subsequent periods. The obtained results of factor analysis allow the management to understand the reasons for deviations and non-achievement of the planned income indicators from the oil products sale.

4. Paper submission

Despite a large number of scientific works devoted to the study of theoretical and methodological approaches to the formation of a system of information support of the management decisions at enterprises, not enough attention is paid to the issues of information support for the quality control of various processes at an enterprise. In this regard, consideration of informative models of the information support of a management system formation that synthesizes an analytical representation of the phenomena and processes of operational, marketing, and financial activities of companies is the most discussed topic.

Many Russian and foreign scientists are engaged in research of various approaches to defining the content of information support and a management system formation, the possibilities of using analytical tools for the quality control of various processes at enterprises. In their works, certain theoretical and methodological foundations of the problem posed in scientific research are laid.

Some authors in their studies identify information support for a management system formation with management accounting. As Kerimov (2013) notes, management accounting is historically a consequence of production accounting, which mainly includes accounting and clearing procedures, the purpose of which is to determine costs and revenues, as well as the formation of their level per unit of goods sale of.

Regarding the second approach, the author of which is Ivashkevich (2019), management accounting is considered as a subsystem and a logical continuation of the accounting development, in which information is generated to manage and control the activities of an enterprise.

Vakhrushina (2017) considers management accounting as a separate area of accounting, providing the managing apparatus with the information necessary for planning and organizing the activities of an enterprise generally and its structural units.

According to the adherent of the third approach, Kaverina (2015), management accounting is a kind of information system. In her opinion, management accounting is an information system that ensures the collection, measurement, systematization, analysis, and transmission of data necessary for the management of enterprise branches and systematic or problematic, operational, tactical, and strategic management decisions.

In the development of the proposed approaches to the organization of management accounting as the main foundation for the formation and disclosure of information used in the process of the management system functioning, Popkova E.G. notes that to provide reliable information, it is necessary to use a risk-oriented approach to management accounting, since finding the value of risks makes it possible to judge the complexity of using the indicators reflected in the accounting (financial) statements for many enterprises (Popkova et al., 2019).

Li & Zhou (2020), noting the rapid pace of science and technology development, argue for the increasing role of informatization of accounting procedures to improve the level

of financial management in modern enterprises.

As you can see, the opinions of the authors differ in the range from understanding management accounting in a narrow sense as a subsystem of accounting, to its interpretation in a broad sense as an enterprise management system covering all management functions: planning, organization, accounting, control, analysis, regulation, and decision-making. But management accounting is not identified as an element of quality control of heterogeneous and intra-level processes at enterprises, which does not allow using this information aggregation system to obtain descriptive characteristics of the parameters of the projected management system and for the subsequent multifaceted analysis of the achieved effect of improving the quality of these processes.

5. Conclusion

Thus, the proposed methodological approach to information support of the management system formation will allow oil products supply enterprises to reduce the variety of management functions to a single goal of improving the quality of operational management through a flexible pricing policy in individual sales regions, optimization of logistics, commodity, and financial flows.

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Appendix

Table 1. Analytics of planned indicators for the oil products sale (according to the management accounting data of one of the largest Russian oil product supply companies)

Product	Sales, ton	Sales price, RUB/ton	Surplus at the beginning of the month, ton	Surplus price, RUB/ton	Planned supply volume from oil refinery, ton	The purchase price, RUB/ton	The purchase price including surplus, RUB/ton	Transportation tariffs, RUB/ton	Gross revenue thous RUB	Gross profit margin RUB/ton
Total	127,088		41,760		132,354				897,043	7,058
AI-80	1,755	42,431	3,299	36,344	1,778	36,436	36,355	616	9,579	5,459
AI -92	70,350	43,299	17,317	36,436	82,332	36,436	36,436	683	434,783	6,180
AI -92 brand	9,152	43,950	1,587	36,545	0	0	36,547	708	61,273	6,695
AI -95	788	47,540	7,709	37,436	19,278	37,436	37,436	378	7,666	9,726
AI -95 brand	17,699	48,021	2,639	37,571	0	0	37,578	663	173,086	9,780
AI -98	238	49,691	595	40,253	263	40,436	40,255	577	2,108	8,859
Diesel fuel	27,107	41,101	2,668	32,676	28,646	32,647	32,649	758	208,547	7,693
Republic of Bashkortostan	84,888		19,261		89,408				625,633	7,370
AI -80	1,259	42,315	2,164	36,409	1,296	36,436	36,409	369	6,974	5,538
AI -92	47,811	43,217	5,734	36,436	55,599	36,436	36,436	369	306,589	6,413
AI -92 brand	5,823	43,841	1,124	36,546	0	36,436	36,546	369	40,334	6,926
AI -95	782	47,541	4,006	37,436	13,448	37,436	37,436	369	7,613	9,737
AI -95 brand	12,367	47,914	1,543	37,590	0	37,436	37,590	369	123,113	9,955
AI -98	181	49,694	462	40,277	207	40,436	40,280	369	1,642	9,045
Diesel fuel	16,664	41,379	947	32,647	18,858	32,647	32,647	369	139,370	8,363
Orenburg Region	27,302		15,316		27,926				182,024	6,667
AI -80	495	42,724	1,105	36,219	481	36,436	36,219	1,244	2,606	5,261
AI -92	14,717	43,394	7,450	36,436	18,263	36,436	36,436	1,244	84,087	5,714
AI -92 brand	2,686	44,090	342	36,535	0	36,436	36,545	1,244	16,926	6,301
AI -95 brand	3,565	48,604	727	37,536	0	37,436	37,546	1,244	34,986	9,814
AI -98	57	49,681	134	40,171	57	40,436	40,176	1,244	467	8,260
Diesel fuel	5,782	41,331	583	32,783	5,070	32,647	32,658	1,244	42,952	7,428
Udmurian Republic	14,898		7,183		15,020				89,386	6,000
AI -92	7,822	43,622	4,133	36,436	8,470	36,436	36,436	1,547	44,106	5,639
AI -92 brand	642	44,360	121	36,561	0	36,436	36,561	1,547	4,013	6,251
AI -95	6	47,376	1,387	37,436	1,774	37,436	37,436	1,547	54	8,393
AI -95 brand	1,767	47,592	369	37,564	0	37,436	37,564	1,547	14,987	8,481
Diesel fuel	4,661	39,821	1,137	32,647	4,719	32,647	32,647	1,547	26,226	5,627

Table 2. Analytics of actual indicators for the oil products sale (according to the management accounting data of one of the largest Russian oil product supply companies)

Product	Sales, ton	Sales price, RUB/ton	Surplus at the beginning of the month, ton	Surplus price, RUB/ton	Planned supply volume from oil refinery, t	The purchase price, RUB/ton	The purchase price including surplus, RUB/ton	Transportation tariffs, RUB/ton	Gross revenue thous RUB	Gross profit margin RUB/ton
Total	130,862		75,496		216,239				831,041	6,351
AI-80	1,537	38,902	2,746	33,153	2,060	33,315	33,148	679	7,800	5,074
AI -92	69,265	41,098	29,044	34,408	114,032	34,631	34,496	794	402,248	5,807
AI -92 brand	7,868	41,684	1,766	34,756	0	0	34,679	817	48,685	6,188
AI -95	1,100	43,623	5,499	35,748	25,766	35,863	35,712	558	8,090	7,353
AI -95 brand	20,272	44,059	3,256	35,938	0	0	35,879	782	149,968	7,398
AI -98	278	47,109	571	38,649	230	41,623	38,601	703	2,173	7,805
Diesel fuel	30,542	37,614	32,593	29,378	74,079	29,981	29,784	885	212,077	6,944
Republic of Bashkortostan	89,354		45,915		155,281				591,539	6,620
AI -80	1,263	38,710	1,820	33,287	1,779	33,317	33,280	551	6,161	4,878
AI -92	48,524	41,009	18,020	34,300	84,494	34,632	34,483	551	289,927	5,975
AI -92 brand	5,195	41,551	1,028	34,516	0	34,638	34,638	551	33,046	6,362
AI -95	1,093	43,610	3,693	35,709	19,005	35,880	35,701	551	8,043	7,357
AI -95 brand	14,463	43,958	2,075	35,890	0	35,903	35,903	551	108,526	7,504
AI -98	220	47,031	322	39,058	230	41,623	38,774	551	1,693	7,706
Diesel fuel	18,596	37,825	18,954	29,241	49,774	29,832	29,523	551	144,144	7,751
Orenburg Region	25,917		21,577		41,472				159,597	6,158
AI -80	274	39,786	926	32,891	281	33,306	32,542	1,270	1,639	5,974
AI -92	13,628	41,318	7,875	34,703	19,193	34,653	34,593	1,270	74,346	5,455
AI -92 brand	2,051	41,960	472	35,119	0	34,775	34,775	1,270	12,133	5,916
AI -95 brand	3,925	44,435	747	36,056	0	35,844	35,844	1,270	28,735	7,321
AI -98	59	47,399	249	38,119	0	38,119	37,957	1,270	480	8,173
Diesel fuel	5,980	37,967	10,033	29,515	17,364	30,071	29,629	1,270	42,264	7,068
Udmurian Republic	15,592		8,005		19,486				79,905	5,125
AI -92	7,112	41,282	3,149	34,287	10,345	34,587	34,401	1,542	37,976	5,339
AI -92 brand	622	41,889	266	35,039	0	34,713	34,713	1,542	3,505	5,634
AI -95	7	45,582	532	35,837	2,126	35,789	37,373	1,542	47	6,667
AI -95 brand	1,884	44,054	435	35,961	0	35,767	35,767	1,542	12,707	6,745
Diesel fuel	5,966	36,601	3,605	29,717	6,942	29,717	30,756	1,542	25,670	4,303

Table 3. Final result of the gross revenue factor analysis, thousand rubles (according to management reports of one of the largest Russian oil products supply companies)

Product	Factor – change of oil products sales price	Factor – change in railway tariffs of primary logistics	Factor – change of cost of oil products surplus	Factor – change of oil products purchase price	Factor – change in share of oil products surplus in total sales for the period	Factor – change of sale volume	Factor – change of sale structure by region	Factor – change of sales product basket
Total	-348,484	-16,102	54,977	205,007	9,490	23,815	691	4,604
AI-80	-5,996	-242	5,580	0	182	270	-97	-1,476
AI -92	-154,433	-9,055	30,068	99,421	6,928	12,108	792	-18,363
AI -92 brand	-20,645	-1,127	3,789	13,245	21	1,680	-368	-9,182
AI -95	-3,085	-143	419	848	89	172	133	1,990
AI -95 brand	-70,035	-2,337	6,453	23,445	206	3,885	228	15,038
AI -98	-612	-35	338	0	61	55	-5	263
Diesel fuel	-93,677	-3,162	8,330	68,048	2,003	5,645	10	16,334
Republic of Bashkortostan	-235,149	-15,491	25,689	147,255	10,032	16,570	12,785	4,215
AI -80	-4,541	-230	3,931	0	9	182	141	-305
AI -92	-105,572	-8,725	10,872	77,080	5,420	8,483	6,546	-10,766
AI -92 brand	-13,337	-1,063	2,797	8,452	-136	1,100	849	-5,950
AI -95	-3,074	-143	411	846	99	171	132	1,988
AI -95 brand	-48,921	-2,257	4,290	16,594	-20	2,756	2,126	10,845
AI -98	-483	-33	222	0	52	42	32	221
Diesel fuel	-59,220	-3,041	3,167	44,283	4,609	3,836	2,960	8,182
Orenburg Region	-72,176	-688	16,768	36,749	3,887	4,946	-13,396	1,483
AI -80	-1,455	-12	1,649	0	173	88	-238	-1,170
AI -92	-30,557	-371	10,994	14,933	1,196	2,384	-6,457	-1,864
AI -92 brand	-5,721	-68	742	3,895	117	472	-1,278	-2,953
AI -95 brand	-14,862	-90	1,394	4,518	154	775	-2,099	3,959
AI -98	-129	-1	116	0	9	14	-37	42
Diesel fuel	-19,452	-146	1,873	13,404	2,237	1,214	-3,287	3,468
Udmurian Republic	-41,159	78	12,521	21,003	-4,430	2,298	1,302	-1,094
AI -92	-18,303	41	8,203	7,408	312	1,240	703	-5,734
AI -92 brand	-1,587	3	250	897	40	107	61	-280
AI -95	-11	0	8	2	-10	1	1	3
AI -95 brand	-6,252	9	770	2,333	72	354	201	234
Diesel fuel	-15,005	24	3,290	10,362	-4,843	596	337	4,683