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# Financial and Economic Performance of the Russian Railways in the Context of Reform

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## ABSTRACT

The performance of companies in the real sector of the economy is highly relevant for the economic development of the country. The Joint Stock Company "Russian Railways" (the JSCo "RZD") occupies a special place in the Russian economy, since it does 45% of the total cargo turnover and more than 25% of passenger traffic in the country. The aim of the article is to identify trends in key financial and economic indicators of the Russian railways in the context of the structural reform of the industry. The objective of the study is to develop a methodology for the long-term management of the financial and economic performance of the railways, as well as recommendations for its sustainable growth. The authors analyzed the financial and economic performance of the JSCo "RZD" for 15 years. They used the analysis of time series, logical and analytical method, as well as benchmarking — comparative analysis based on reference indicators. It is shown that with a low but positive profitability, the company's financial and economic situation can be improved. The authors reviewed the dynamics of the operating costs ratio, whose value has an excessively high level in the JSCo "RZD". To identify ways to achieve the optimum level of operating costs ratio, an analysis of financial and economic indicators of the US railway companies was conducted. The factors contributing to the systematic improvement of the operating costs ratio were revealed. Among them are: increase in the JSCo "RZD" market opportunities and their competent use based on flexible adaptation to market conditions and changing customer needs; attraction of private and private-state investments. On this basis, the following actions are proposed for improving the financial and economic indicators of the JSCo "RZD": monitoring of the operating costs ratio; developing a scenario program to improve the long-term competitiveness and effectiveness of the Russian Railways for the period of 2025–2035. The materials of the article are of practical importance and can be used by public authorities, transport companies, as well as for the educational purposes.

***Keywords:*** railway transport; economic and social development; financial and economic sustainability; long-term dynamics of profitability; investment in transport infrastructure; macroeconomic trends; operating costs ratio; state economic policy; structural reform in railway

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## INTRODUCTION

Railway transport, which performs more than 45% of freight turnover and over 25% of passenger turnover of the transport system of the Russian Federation, is of key importance for its economic and social development. It is noteworthy that the correlation coefficient "between the volumes and the dynamics of loading in the railway transport of the Russian Federation and the industrial production indicators in the country" for a long-term period is close to one [1, p. 66]. As shown in study [2, p. 133], "loading growth rates in the railway transport are not only adequately, but often more ... accurately reflect changes in the economic situation in the country than the traditional macroeconomic indicators".

Considering such a significant socio-economic role of railways in Russia, the importance of financial and economic sustainability and the effectiveness of their activities go beyond the framework of the transport industry, acquiring a macroeconomic character. Thus, according to the Comprehensive plan for the modernization and expansion of the trunk infrastructure approved by the Government for the period up to 2024[1], the implementation of a number of significant projects for the country's economy is directly linked to the financial capabilities of the JSCo "RZD". After all, investments in the development of transport infrastructure are rightly seen as "investments in long-term economic growth" [3, p. 14]. They are extremely important in order to reverse the emerging negative macroeconomic trends [4]. Investments in transport infrastructure, based not only on the use of budgetary sources, but also on the financial capabilities of the industry itself, are an important tool for implementing the objectives of state economic policy to accelerate growth and improve the efficiency of the Russian economy [5]. At the same time, "the crucial role ... will play ... *infrastructure projects* that increase the coherence of the economic space of the country, reduce producer costs and shorten the economic distance, especially in the eastern and northern parts of the country" [6, p. 9]. The most important projects for the development of the railway network, such as the modernization of the Baikal-Amur Mainline (BAM) and the Trans-Siberian railway (Transsib), are funded with the participation of the JSCo "RZD"[2]. Therefore, the financial and economic results of the Russian railways are of interest not only from the point of view of corporate or industry analysis, but also from macroeconomic, public, and state positions. A long-term analysis of these results should consider the context of the structural reform carried out in the railway transport.

The aim of the study is to identify trends in key financial and economic indicators of the Russian railways in the context of structural reform of the industry, comparing them with the financial and economic results of the US railways achieved under the reform, and developing a methodology for the long-term management of the financial and economic efficiency of railways with specific recommendations to ensure sustainable growth of efficiency of the JSCo "RZD".

## ANALYSIS OF DYNAMICS OF JSCO "RZD" PROFITABILITY

According to the Structural reform programme of the railway transport, one of the tasks of the reform was to reduce the "total national economic expenses for the carriage of goods by rail" [7, p. 9]. This implies the implementation of measures to save the operating costs of the industry. Moreover, "increasing the investment attractiveness of the railway transport system" [7, p. 10] was highlighted among

[1] Order of the Government of the Russian Federation of 30.09.2018 No. 2101-r. "On approval of the Comprehensive Plan for the modernization and expansion of the trunk infrastructure for the period up to 2024". URL: http://government.ru/docs/34297/ (accessed on 13.05.2019).

[2] Long-term development program of JSCo "RZD"until 2025. (Approved by the order of the Government of the Russian Federation dated 03.19.2019 No. 466-R). URL: http://government.ru/ docs/36094/ (accessed on 13.05.2019).

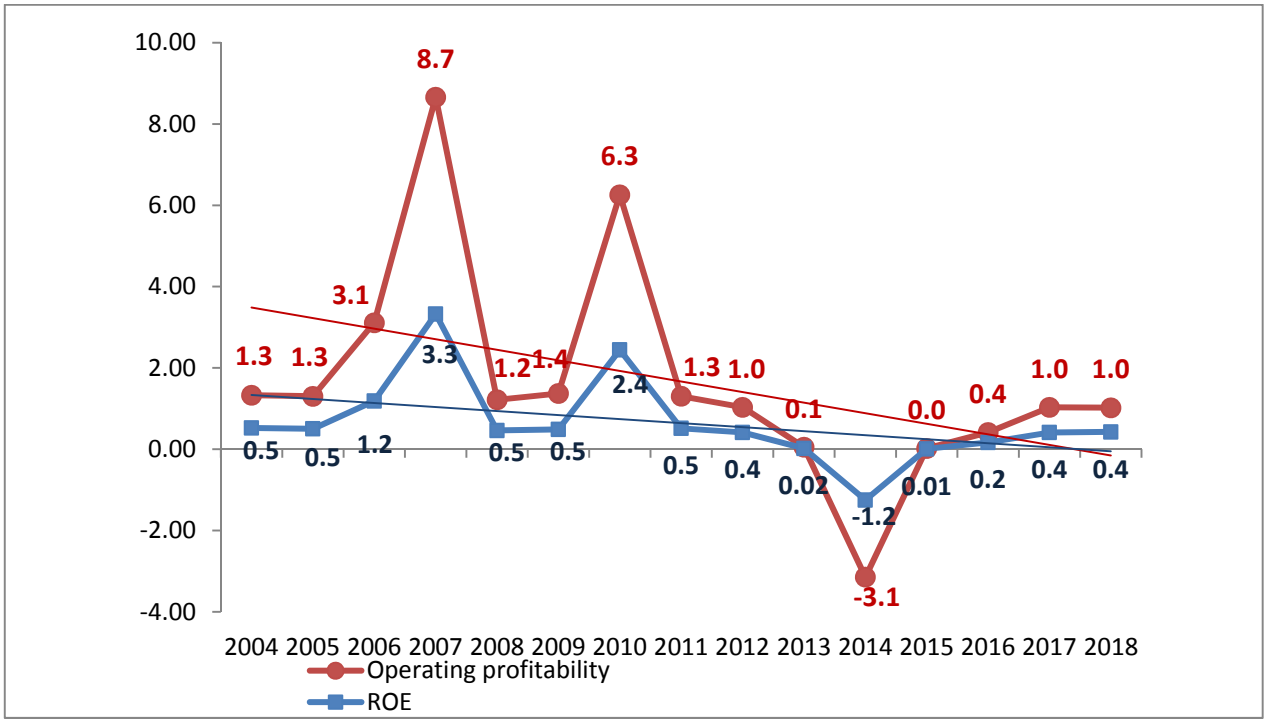


*Fig. 1.* **Long-term dynamics of profitability of the JSCo "RZD", %**

*Source:* calculated by the authors based on the data from the JSCo "RZD". URL: http://www.rzd.ru (accessed on 25.03.2019).

the tasks of the reform. This requires increasing returns and profitability of the industry.

The initial moment of the study was the analysis of the long-term changes in the profitability of capital and the main activity of the systemic railway transport company, the JSCo "RZD", during the industry reform and in the post reform period (*Fig. 1*).

As it is seen from the graphs, the level of the JSCo "RZD" profitability is low. Individual "bursts" are explained, to a large extent, by purely financial factors that occurred at a particular period of time. Thus, in 2007, a sharp increase in the profitability was associated primarily with the excess of the monetary value of the contribution to the authorized capital agreed by the founders over the book value of the transferred property (financial result: + 66.8 billion rubles), as well as with financing received from the budget (financial result: + 12.8 billion rubles).

A significant increase in the profitability in 2010 is explained not only by a more rapid growth in transportation revenues (+12.8%) compared with operating costs (+7.9%) in the context of the post-crisis revival of demand for transportation, but also by selling fixed assets and other assets (financial result: +14.7 billion rubles.). It is worth noting that although in 2010 compared to 2009, targeted financing received from the budget and extrabudgetary funds decreased by 24.6 billion rubles, in general, the profit in terms of the difference between other income and expenses increased by 5.7 billion rubles to the level of 2009.

On the other hand, the negative profitability in 2014 is also largely due to purely financial factors that were simultaneous with an accelerated increase in operating costs compared to revenues. Gross profit from transportation decreased slightly in that year by 4.3 billion rubles, and the main negative result was obtained due to exchange differences from the changed value of assets and liabilities payable in foreign currency (financial result: –142.5 billion rubles).

Thus, under the conditions of the generally low profitability of the JSCo "RZD", the effect of the short-term financial factors on its level turns out to be very significant. The level of

the profit and profitability is significantly affected by the assessment of the value of fixed assets, whose share in the property of transport companies is about 80% [8] and the applied accounting standards [9]. Based on the undoubtedly key performance indicator of the current activities of any company, this does not allow to fully reliably assess the financial and economic results and the stability of the Russian railways. Therefore, downward long-term profitability trends due to the "bursts" in 2007 and 2010 and the equally local "failure" in 2014, also cannot be considered a priori sufficient for meaningful, objective conclusions.

## RATIO ANALYSIS OF JSCO "RZD" OPERATING COSTS

Amid the improvement of financial statements indicators of companies [10] is recognized, it is advisable to consider other indicators, such as the ratio of operating costs. This indicator is defined as the ratio of the operating costs of the railway (a railway company) to the amount of revenue from traffic, i.e. it characterizes the share of revenue from traffic used to ensure the operational (current) activity. The advantage of this indicator is that it allows to evaluate the economic efficiency of the current activities of railways, eliminating the influence of purely financial factors, such as exchange differences, the difference between the monetary value of the contribution and the value of the transferred property, the creation and restoration of reserves.

Obviously, the target result of any joint-stock company is an increase in net profit. This also applies to the JSCo "RZD" (with its specifics related to 100% state ownership of shares, a systematic role in the economy and high corporate social responsibility), and, moreover, to private railway companies. Therefore, profitability is an indicator of the effectiveness of activities aimed at making a net profit. After all, it is not the profit itself that is important, but its ratio to the capital and the current costs (or income). However, the growth of profit and profitability of the railway in the long term, given the high capital intensity, labor intensity and repair capacity of the industry, can be sustained only if it relies on optimizing operating costs and increasing revenue from traffic. It should be noted that the expenses optimization in the economy of railway transport is not the achievement of their mathematical minimum, but bringing the costs "into line:

- with traffic volumes and the income received from them;
- with the requirements of traffic safety;
- with the creation of technical conditions for future work " [11, p. 87].

Therefore, the assessment and the analysis of profitability are advisable to supplement with an assessment and ratio analysis of operating costs. The long-term dynamics of ratio analysis show whether basic economic conditions are created to ensure a stable and high level of financial efficiency (profitability) or, instead, there is a threat of financial instability or even loss in the future.

It's not a coincidence that the ratio of operating costs, previously called the "operating factor", was considered among the key indicators characterizing the "value of railways in the financial part of the national economy" in the first century of railway [12, p. 249].

In the second half of the last century, one of the most prominent domestic economists dealing with the problems of railway transport, academician T. S. Khachaturov, used this ratio to compare long-term changes in the efficiency of the railways of the most developed countries in the world [13, p. 52].

Operating costs ratio is used in management and analytical activities in the North American rail industry. At present, attention to this indicator is being revived in our country, and its long-term dynamics are of undoubted interest in assessing the effectiveness of the activities of the Russian railways in the context of reform (*Fig. 2*).

It should be noted that similar indicators are used in the non-transport sphere: cost income ratio [14] and share of expenses in revenue [15].

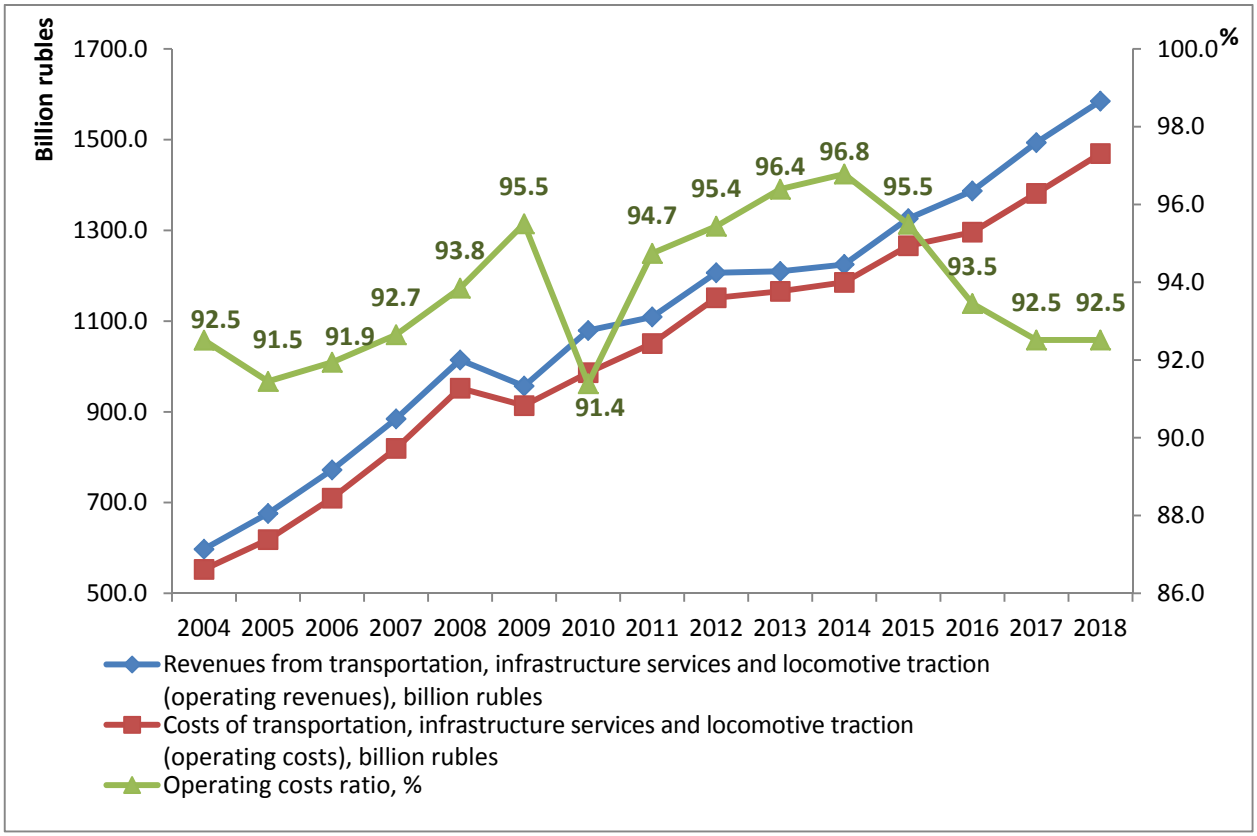


*Fig. 2.* **Long-term dynamics of the JSCo "RZD" operating costs ratio and the indicators affecting it, %**

*Source:* calculated by the authors based on the data from the JSCo "RZD". URL: http://www.rzd.ru (accessed on 25.03.2019).

To increase the value of this indicator in the management of railway transport, it is advisable to use a scale of its zonal values based on the results of the analysis of the work of large railway companies [16] and containing qualitative characteristics for each range of values of the operating costs ratio (see *table*). At the same time, the current level of operating costs ratio is the basis of recommendations for management decisions, the result of which should be the achievement of its target level. Thus, due to the classification of the zonal values of the operating costs ratio, it becomes not just one of the estimated indicators [14, 15], but a key management criterion, an indicator, on the one hand, the kind of software solutions to be developed, and on the other, the system result their implementation. Using the methodology of production and economic management based on such an indicator allows to realize a long-term phased increase in the effectiveness of the activities of railways ensuring their technological, financial and economic sustainability. This is especially important for our country where railway transport is the basis of the transport system and a key sector of the economy.

Considering the above, it is of interest to analyze the dynamics of the operating costs ratio of the JSCo "RZD" in the long-term retrospective, covering the establishment and development of the company in the context of the structural reform of the industry.

In the first operation years of the JSCo "RZD", the operating cost ratio decreased. One of the key factors that made this possible was a consciously significant increase in the operating costs of railway transport in 2002, in anticipation of the JSCo "RZD" foundation. That year, the operating costs of the industry were increased by more than 42%, while the reduced work of railways increased by less than 4%. The main factors behind the increase in operating costs were a wage increase

*Table*

**Scale of the zonal values of the operating costs ratio and recommended management decisions**

| Range of values of operating costs,% | Qualitative characteristic | Recommended management decisions |
|---|---|---|
| Over 100 | Unacceptable level | Development and implementation of the operational program of anti-crisis measures, ensuring a reduction in operating costs to less than 100% |
| 90 to 100 | Excessively high level | Development and implementation of a medium-term program for increasing efficiency, ensuring a reduction of the operating costs ratio to an acceptable level based on improving the efficiency of all technological processes, productivity growth and marketing measures aimed at increasing profitability |
| 80 to 90 | Acceptable level | Development and implementation of a long-term program to improve strategic competitiveness and efficiency, ensuring a reduction of the operating costs ratio to an optimal level based on investments in innovative projects |
| 70 to 80 | Optimal level | Development and implementation of a long-term program of sustainable balanced development, ensuring the preservation and strengthening of market positions and faster growth of revenues compared to operating costs, with a gradual decrease of the operating costs ratio |
| Less than 70 | Extra-optimal level | Assessment of compliance of the operational costs level with the requirements of sustainable, technologically and economically safe activities and the development of measures to ensure sustainable market positioning with access to new segments and maintaining a high level of efficiency |

*Source:* compiled by the authors on the basis of the study by N.A. Valeev [16].

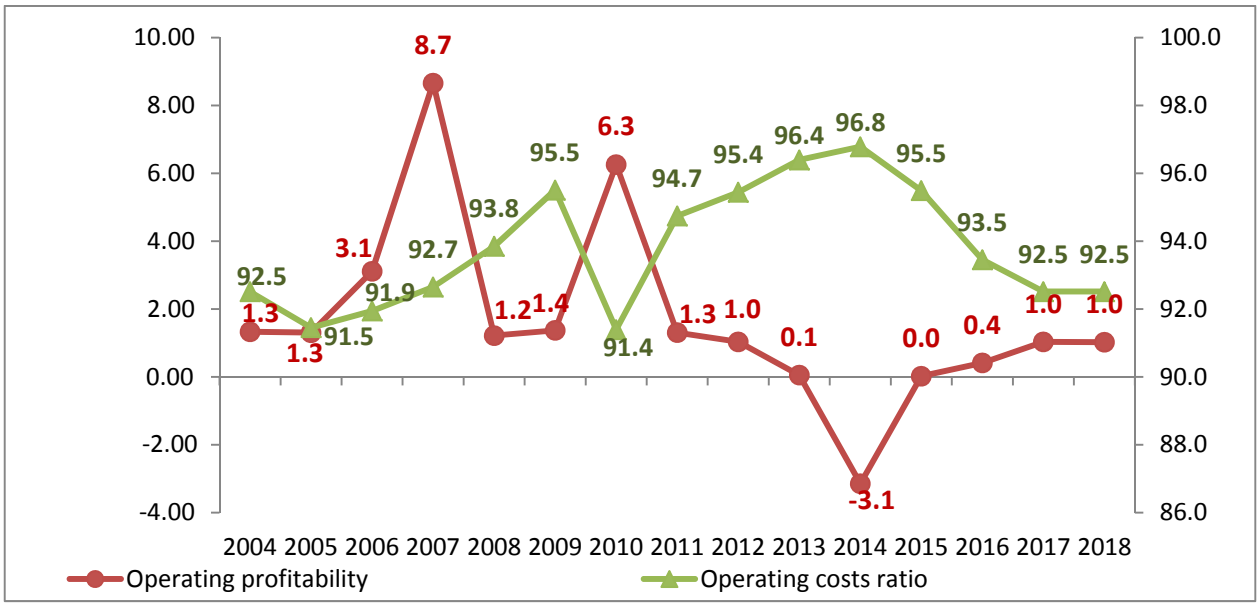


*Fig. 3.* **Long-term dynamics of the profitability of the JSCo "RZD" main activity and its operating costs ratio, %**

*Source:* calculated by the authors based on the data from the JSCo "RZD". URL: http://www.rzd.ru (accessed on 25.03.2019).

of more than 43%, an increase in the volume of capital repairs of fixed assets, as well as their revaluation and adjustment of depreciation rates, which led to a 42% increase in the total amount of these deductions [17].

There was a formed "expenditure base" considered in the tariff regulation. That is why, before the main event of the first stage of the structural reform — the creation of the JSCo "RZD" on October 1, 2003 — a certain "safety margin" was formed in financial and economic terms. This was justified not only by the need to ensure social stability and technological sustainability in the industry during the period of fundamental structural transformations, but also in the context of the macroeconomic conditions for a dynamic recovery of the economy and an increase in the standard of living in the country.

In the first years of the JSCo "RZD", the established "expenditure base" not only allowed avoid increase, but even reduced the cost-effectiveness ratio due to the slowed growth in operating costs compared to transportation revenues.

However, starting from the pre-crisis year of 2007, there appeared a tendency of the JSCo "RZD" cost ratio growth. This indicated a decrease in the economic efficiency of the company. Naturally, the global crisis of 2008–2009 (reflected in the activities of the Russian railways, mainly in 2009) aggravated this tendency. It should be noted that in 2009 in the JSCo "RZD" large-scale system measures were taken to reduce the operating costs. They were reduced by more than 38 billion rubles, thereby compensating for a larger part of the decline in transportation revenue, exceeding 57 billion rubles [16]. Due to this, it became possible to limit the growth of the operating costs ratio and to maintain the profitability of the "RZD" company.

The following year of 2010, in terms of the revival of demand for transportation, the revenues of the JSCo "RZD" increased more than the operating costs. As a result, the operating costs ratio decreased to a minimum for the entire period under study. At the same time profitability reached a local maximum. However, in subsequent years, the trend of growth in the operating costs ratio, that established before the crisis, recovered and profitability returned to an extremely low (about 1%) level and continued to decline, until it left negative values in 2014 (*Fig. 3*).

Among the long-term factors that increased the share of the JSCo "RZD" revenues allocated for operational needs, two should be highlighted.

The first factor is the **price disparity**. It is the backlog of indexation of state-regulated railway tariffs from the growth of market prices for resources consumed by rail. "Only for a decade of the JSCo "RZD" activity, the backlog of the freight tariffs indexation lagging behind price increases in industry was about 16%, and ... in relation to industries that are major customers or suppliers of railway transport resources, these differences ... are even higher" [18, p. 4]. As a result of the price disparity, the growth in railroad profitability lags behind the "price pressure" on the company's operating costs from resource suppliers, including employees, whose wages are regularly indexed based on consumer price increases. The price disparity became particularly acute in 2014, when railway tariffs for freight traffic were "frozen" (no indexation was carried out), while price increases in industry and in the consumer market (to which the railway transport, as a labor-intensive industry, is very sensitive), naturally, continued. Not surprisingly, the operating costs ratio in 2014 peaked. This, supplemented by purely financial factors, has led to the unprofitability of the JSCo "RZD".

The second factor complementing the first one is the **change in the structure of freight traffic** of the Russian railways. The share of low-income goods belonging to the first tariff class increased, and the share of high-income goods belonging to the third tariff class decreased [19]. As a result, the growth of the average income rate per 1 ton-kilometer turned out to be significantly lower than the level of tariff indexation, which lags significantly behind the rise in prices for industrial products, including those consumed by rail.

From 2015 regular indexation of tariffs was resumed. At the same time, it is important for long-term financial and economic sustainability that the principles of long-term indexation of freight tariffs are developed, and the tariff level considers the specific development needs of the railway network associated with the "bottlenecks" in carriage and traffic capacity [20].

Together with the operating costs saving measures, this allowed to "reverse" the trend of the operating costs ratio growth, ensuring its progressive reduction, which became the basis for overcoming unprofitability and gradual growth of the profitability of the JSCo "RZD".

In general, for the period under study, as can be seen from *fig. 3*, the dynamics of the operating costs ratio, in contrast to profitability, did not have a clearly pronounced tendency to decrease or increase. This ratio ranged from 90 to 100%. According to the presented in *table* classification of the zonal levels of the operating costs ratio, this is characterized as an excessively high level where the development of the railway company is limited. An excessively high level of the operating costs ratio causes a low amount of profit and profitability, which in the conditions of negative influence of financial factors approaches zero as in 2013 and 2015, or even negative, as in 2014. At the same time, local "bursts" of profitability as in 2007 do not solve the problems of its low level in the long run.

Thus, a fundamentally important task is to move to acceptable level of the operating costs ratio where the sustainable positioning allows to combine current financial and economic sustainability with the generation of certain investment resources for long-term development.

## ANALYSIS OF FINANCIAL AND ECONOMIC INDICATORS OF US RAILWAYS

To determine the approaches to the solution of this problem, the experience of one of the most developed and efficient railway systems in the world — the US class I railways — seems important. Class I railroads are determined in the United States by the criterion of operating

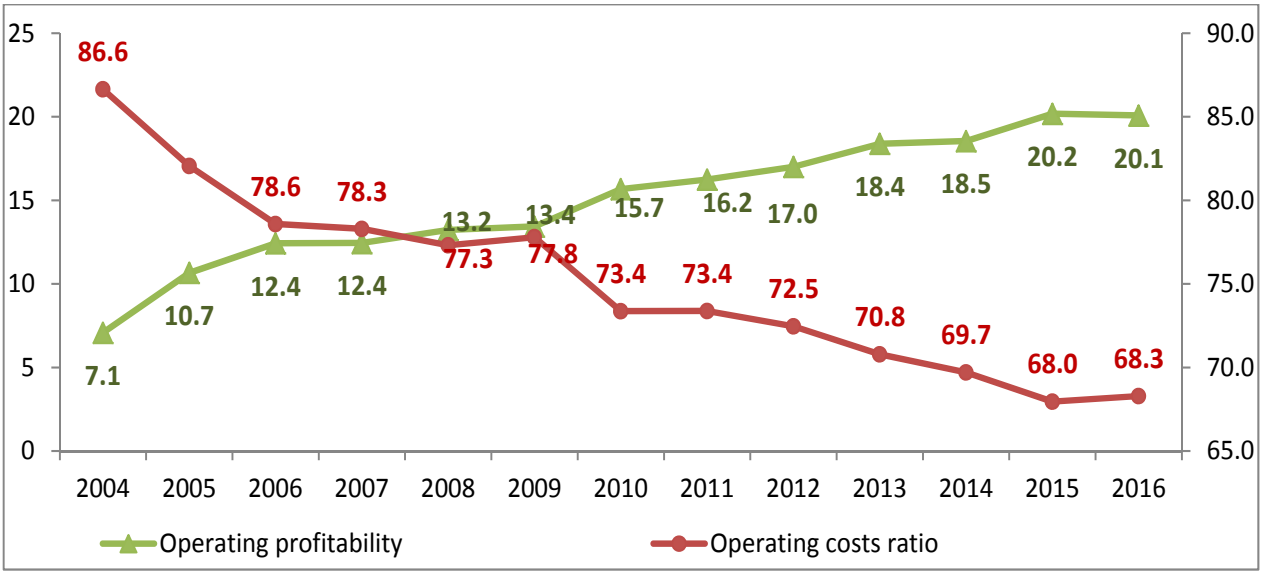


*Fig. 4.* **Long-term dynamics of the profitability of the U.S. Class I railroads main activity and its operating costs ratio, %**

*Source:* calculated by the authors based on the Railroad Facts 2016 Edition. Washington, DC: Policy and Economics Department, Association of American Railroads; 2016. 80 p. URL: https://my.aar.org/Pages/Product-Details.aspx? ProductCode=RFB 2016Web.

income, the threshold value of which varies by year. For example, in 2011, Class I railroads belonged to roads with an annual income of $ 433.2 million and more3, and in 2016, railways with an annual income of $ 447.62 million and above4. Despite the changes in both the values of this criterion and the situation on the rail transportation market, the composition of Class I railways in the USA is stable with the same seven railway companies for many years [21].

The long-term dynamics of profitability and the operating costs ratio on the US Class I railways are fundamentally different from those of the Russian railways over the same period of time (*Fig. 4, 5*). The major difference is not even in the level of indicators — there are objective factors that determine the higher efficiency of the North American railways. These are extremely low volumes of passenger traffic (in most countries, low-margin or unprofitable), or a higher level of technical development. The major difference is in the *dynamics* of indicators.

The operating costs ratio has a pronounced tendency to decrease (*Fig. 4*). At the same time, this ratio went through *qualitative* changes: in 2004–2005 it was in the acceptable values zone (according to the proposed classification); in 2006–2013, it was in the optimal values zone allowing to ensure sustainable current activities, high competitiveness and the ability to allocate significant funds for development; and in 2014 it moved to the extra-optimal values zone.

It should be noted that such qualitative changes *were deliberately planned* by the North American railway companies. For example, the Norfolk Southern company, with an operating cost ratio of more than 82% in 2003, set the task to reduce it to 70–79%5. According to the developed classification, this means a transition from the acceptable values zone to the optimal values zone. The task was completed. In 2011, the operating costs

[3] Railroad Facts 2016 Edition. Washington, DC: Policy and Economics Department, Association of American Railroads; 2016. 80 p. URL: https://my.aar.org/Pages/Product-Details. aspx? ProductCode=RFB 2016Web (accessed on 15.05.2019).

[4] Railroad Facts 2017 Edition. Washington, DC: Policy and Economics Department, Association of American Railroads; 2017. 80 p. URL: https://my.aar.org/Pages/Product-Details. aspx? ProductCode=RFB 2017Web (accessed on 15.05.2019).

[5] Progressive Railroading. 2003(12):22–24.

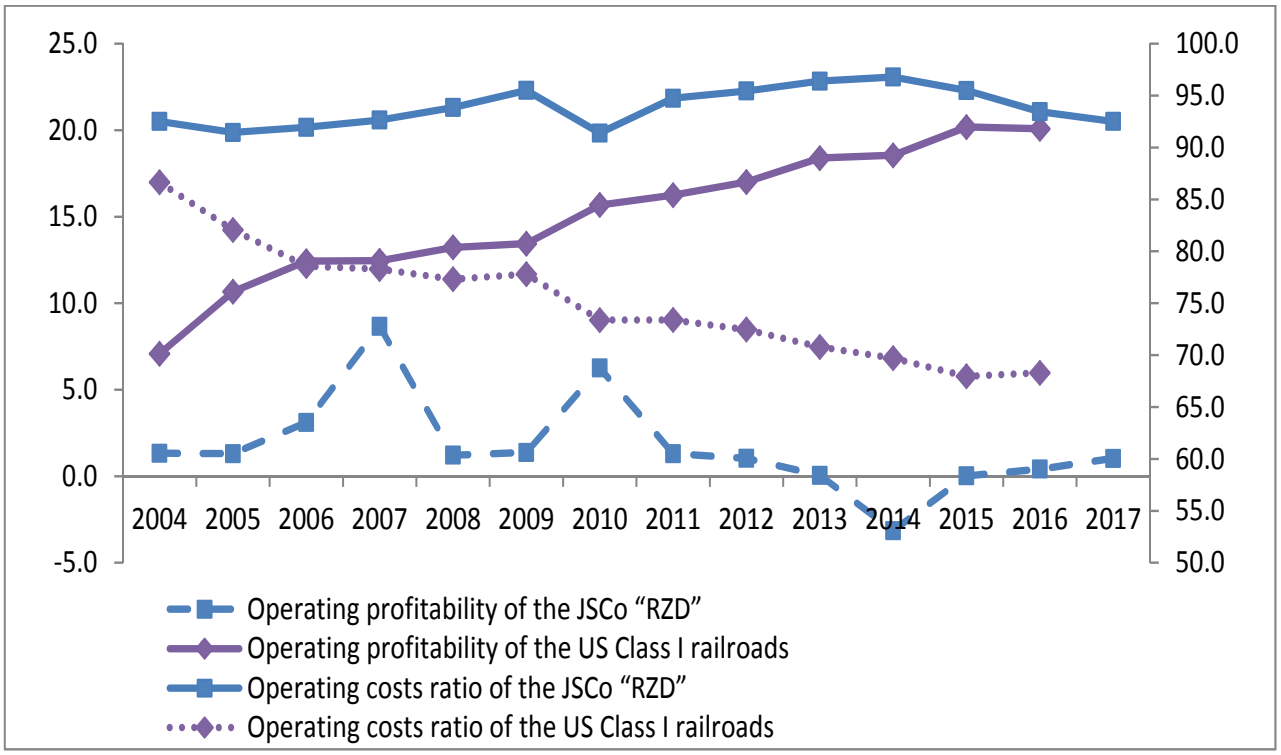


*Fig. 5.* **Comparative analysis of the financial and economic efficiency of the JSCo "RZD" and the U.S. Class I railroads**

*Source:* calculated by the authors based on the data from the JSCo "RZD". URL: http://www.rzd.ru (accessed on 25.03.2019), RAILROAD FACTS 2017.

ratio of the Norfolk Southern Company was 73.3%, and in 2016 it was 72.1%6. Thus, it has reached the optimal zone and continues to decline gradually.

A radical reduction in the operating costs ratio became the basis of a nearly threefold increase in profitability over a 12-year period (*Fig. 4*).

It is important to note that in the crisis year of 2009 there was practically no decrease in the efficiency of the North American railways. There was only a pause after which the progressive increase in efficiency resumed.

On the example of the US Class I railways, the differences in the profitability dynamics from those of the operating costs ratio are also visible. In 2007, with a certain decrease in the operating costs ratio, the profitability did not change; and in 2011, on the contrary, the profitability increased at a constant operating costs ratio. In 2009, with an increase in the operating costs ratio, the profitability also slightly increased. Despite these minor deviations, the graphs of the cost-effectiveness and profitability for the US Class I railways are almost "mirrored". This is due to the fact that with a fairly low operating costs ratio and high profits, specific financial factors do not have a significant impact on the level and dynamics of the profitability. It is mainly determined by the operating costs ratio, and these figures are practically interchangeable.

In conditions of a high level of operating costs ratio and low profits typical for the Russian railways, financial "fluctuations" can lead to serious differences in the profitability dynamics from the dynamics of its funda-

[6] Railroad Facts 2016 Edition. Washington, DC: Policy and Eco-nomics Department, Association of American Railroads; 2016. 80 p. URL: https://my.aar.org/Pages/Product-Details.aspx? ProductCode=RFB 2016Web (accessed on 15.05.2019); Railroad Facts 2017 Edition. Washington, DC: Policy and Economics Department, Association of American Railroads; 2017. 80 p. URL: https://my.aar.org/Pages/Product-Details.aspx? ProductCode=RFB 2017Web (accessed on 15.05.2019).

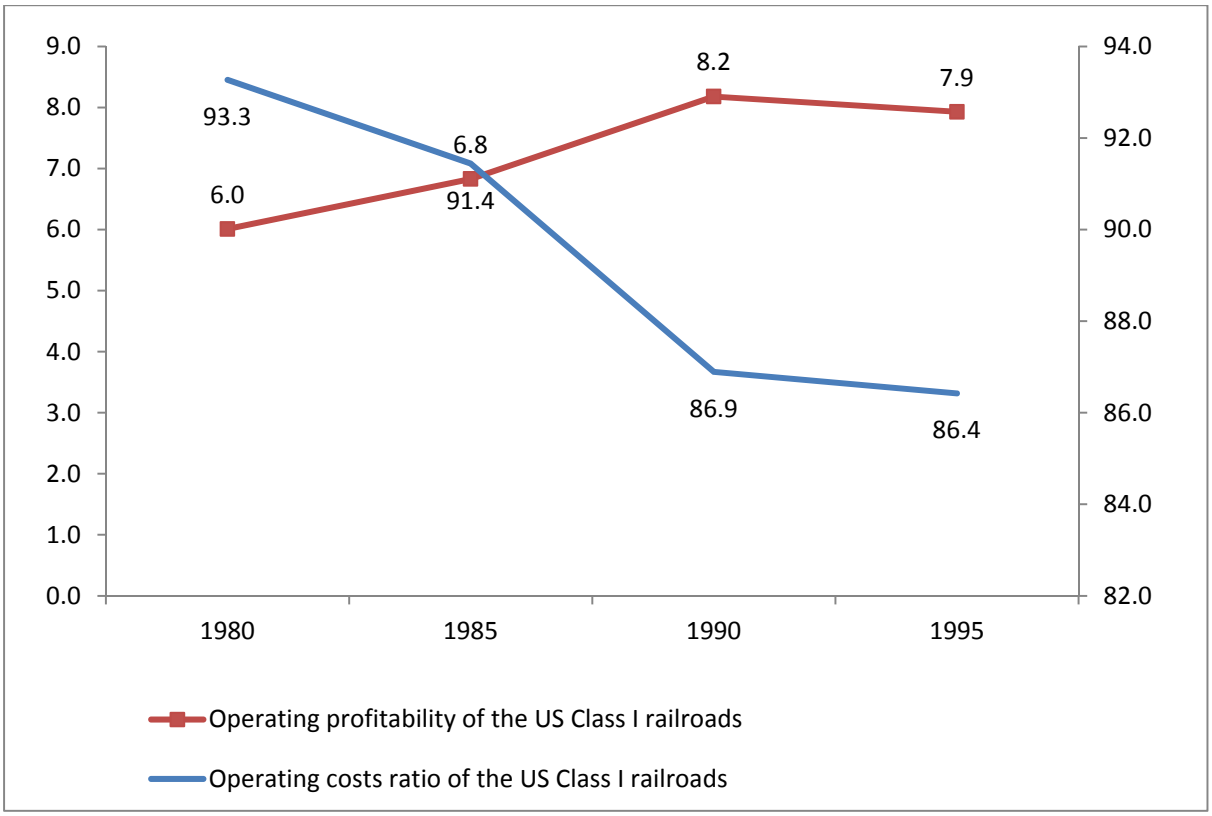


*Fig. 6.* **Dynamics of the profitability of the U.S. Class I railroads main activity and its operating costs ratio (1980–1995), %**

*Source:* calculated by the authors based on the data from the RAILROAD FACTS 2017 [16].

mental factor — operating costs ratio (*Fig. 2*). Therefore, in such circumstances, it is especially important to monitor and analyze the operating costs ratio.

The comparison of the performance indicators of the Russian railways under reforms (*Fig. 1, 2*) with the performance indicators of the US Class I railways at the same period is of indisputable interest — the first decade and a half after the reform began (*Fig. 6*).

On the US railways, after the tariffs deregulation and in the competitive environment, in most regions of various vertically integrated railway companies [22], the railways were seeking to attract additional traffic volumes due to lower tariffs than competitors, and therefore, they began to reduce operating costs. This reduction occurred at a faster pace than the reduction in tariffs. As a result, the cost-effectiveness ratio decreased, while the profitability increased. It is important that the cost reduction of the North American railways was achieved through a dynamic increase in the efficiency of the use of basic production resources (infrastructure, rolling stock, labor, fuel) through improved technology and increased investment [23]. Due to this fact, the reduction in the operating cost ratio became sustainable and has been continuing for the fourth decade.

The Russian railways operate in fundamentally different institutional conditions. Infrastructure activities are naturally monopolistic [7], infrastructure facilities are limited in economic turnover, and tariffs are regulated by the state. The resulting lack of investment limits the possibilities for innovative technical and technological development [24].

Obviously, the non-critical, "mechanical" use of the North American railways experience is not possible due to these circumstances. However, it is advisable to study it carefully for possible adaptation to Russian conditions.

The key areas to create conditions for sustainable improvement of the financial and economic indicators of the railway industry in our country are, on the one hand, expanding the market opportunities of the JSCo "RZD" and their competent utilization based on flexible adaptation to market conditions and changing customer needs, and on the other hand, attracting private and public-private investments, including for the implementation of infrastructure projects.

***The growth of profit and profitability of the railway in the long term, given the high capital intensity, labor intensity and repair capacity of the industry, can be sustained only if it relies on optimizing operating costs and increasing revenue from traffic.***

The analysis of the indicators of the JSCo "RZD" long-term development program until 2025 suggests that its implementation should result in the significant improvement of the company's financial and economic indicators. Thus, the net profit margin in the baseline scenario will be 5.2%, in the optimistic scenario –8.7%. The costs ratio (if calculated as the ratio of current costs to total revenue) will be 84.4% and 79.3% respectively. That is, with the implementation of the baseline scenario, it will be at an acceptable level, and with an optimistic scenario, it will achieve the optimal zone. In any case, the efficiency of the company's activity will roughly correspond to the efficiency level of the US Class I railways of 2004–2005, which has increased significantly since then (*Fig. 4*). Therefore, the JSCo "RZD" will face the task of further significant efficiency growth after 2025. Based on the presented methodology for the long-term management of the financial and economic efficiency of railway transport, the following recommendations can be suggested to solve this task.

First, to organize monitoring of the operating costs ratio annually, quarterly and monthly, both for the company's overall transportation and logistics activities, and for its individual segments, including the transportation of various types of cargo and categories of passengers in specific directions. On this basis, to develop measures to optimize the company's presence in various segments of the transport market and the range of provided services.

Second, to organize a similar monitoring of the operating costs ratio for the the JSCo "RZD" subsidiaries and affiliates which will help to develop recommendations both on corporate governance measures aimed at improving the efficiency of their activities and on improving the "Russian Railways" holding structure. These measures will contribute to the achievement of the JSCo "RZD" Long-Term Development Program parameters, with access to the optimistic scenario (or approaching it).

Third, it is advisable to start developing a scenario program for enhancing the long-term competitiveness and efficiency of the holding "Russian Railways" for 2025–2035. Under the baseline scenario, this program should include the achievement of the optimal level of the cost-effectiveness ratio; under the optimistic one, its further reduction within the optimal values zone to its lower boundary. Early development and approval of such a program will ensure a smooth transition to its implementation after the completion of the Long-Term Development Program until 2025. This will make the long-term growth of the effectiveness of the systematic railway company continuous. This will also prevent the replication of the first 15 years of its work when the level of financial and economic efficiency fluctuated without a pronounced upward trend.

## SUMMARY

The dynamics analysis of the JSCo "RZD" financial results shows that, in general, at a low level of profit and profitability of the company, it is significantly influenced by short-term financial factors, such as exchange differences, revenue from the sale of assets, etc. In these conditions, along with the operating profitability, it is advisable to use such an indicator as the operating costs ratio. It characterizes the share of revenues from traffic, aimed at ensuring operational activities. This indicator allows assessing the economic efficiency of the current activities of railway companies, eliminating the influence of purely financial factors. On the other hand, the reduction of this ratio is a fundamental basis for increasing profits and profitability, ensuring the financial and economic sustainability of the railway companies. On the Russian railways, due to the structural reforming and in the post-reform period, the operating costs ratio ranged from 92% to 97%. This is an excessively high level, which allows to ensure profitable work (with a low level of profitability), but it does not allow generating substantial investment resources for technical and technological development.

In general, over the working period of the JSCo "RZD", the operating costs ratio did not have a clearly expressed tendency to change. In recent years, however, its downward trend has been formed, whose development can lead to the transition to the acceptable values zone. A similar transition was achieved by reforming the US railways activities in 1970s — 1980s. The cost-effectiveness ratio was also in the zone of excessively high values, but, as a result of economic efficiency steady growth for many years, it first moved to the acceptable values zone, then to the optimal values zone, and finally to the extra-optimal values zone, which became the basis for a dramatic increase in the profitability and expansion of investment opportunities in the North American railways.

In our country, the possibility to reduce the operating cost ratio of railways is limited to the state regulation of tariffs and deterioration of the freight rail traffic structure in terms of profitability. The key areas to overcome these restrictions are expanding the market opportunities of the JSCo "RZD" and their flexible use, which will increase the profitability of the systematic company in the industry. The basis for optimizing the operating costs should be an innovative technical and technological development of the Russian railways, which requires additional private investment, including via public-private partnerships.

The proposed methodology for the long-term management of the railways financial and economic efficiency is based on the zonal classification of the operating costs ratio. The recommendations were made to achieve the target parameters of the JSCo "RZD" Long-term Development Program until 2025 and to develop a program to improve the long-term competitiveness and efficiency of the JSCo "RZD" for 2025–2035. This should contribute to the formation of a trend towards a sustainable long-term efficiency growth of the Russian railway. Considering their key importance for the economic and social development of our country noted above, this is extremely important for accelerating growth and improving performance of the Russian economy.


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