## PROBLEMS OF DEVELOPMENT STRATEGY AND FINANCIAL-ECONOMIC REGULATION OF INDUSTRY

UDC 336.279:338.47:656.2(477)

**Olga Oleksiivna Kravchenko,**
*PhD in Economics*
State Economic and Technological
University of Transport, Kiev

# ENSURING OF FINANCIAL SUSTAINABILITY OF RAILWAY TRANSPORT IN UKRAINE

*Railroads are as important to a well-functioning, modern society as clean water and electricity*
*M. Sussman, President, «Strategic Rail Finance»*

Transport is a specific sector of the national economy of Ukraine, providing its internal and external transport and economic relations and satisfying the manufacturing and non-manufacturing needs in freight and passenger transport, promoting more rapid development of the productive forces of society, regional relations and involvement in the process of social reproduction of resources all over the country. Transport, linking production factors in a complex network of relationships between producers and consumers, it is not itself a sufficient condition for economic development, but the lack of a developed transport infrastructure can be seen as a deterrent factor in the development of the national industry. Its optimal structure and efficient operation is a prerequisite functioning of the economy as a whole, its stabilization and growth, development of foreign economic relations, improvement of living standards.

A special place in the transport infrastructure of Ukraine remains for the railway, which is manufacturing and technological complex of organizations and enterprises of the railway transport, designed to meet the needs of social production and population in transportation on domestic and international communications and provision of other transport services to all consumers without restrictions featured with ownership and activities [1]. System advantages of railway transport allow it to retain the priority position as the main mode of transport backbone, not only now but also in the long term.[1]

The railway transport plays an important role in the economy of Ukraine. So, the industry in 2013 provided over 83% of freight (excluding pipelines) and 38% of passenger (including city train) transportation, implementation of all modes of transport.[2]

Meaning of industry in the national economy shows TU-indicator as well.[3] As can be

[1] System advantages of railway transport is the ability to handle large passengers and cargo; higher speed compared with other modes of transport; higher energy efficiency, including electric, a limited adverse effect on the environment, including visual, minimum area land, no delays and traffic impediments related to road congestion, lack of time spent on registration; possibilities by railway stations in cities, including in the central portion thereof, a higher degree of security compared to other modes of transport [2, p. 269].

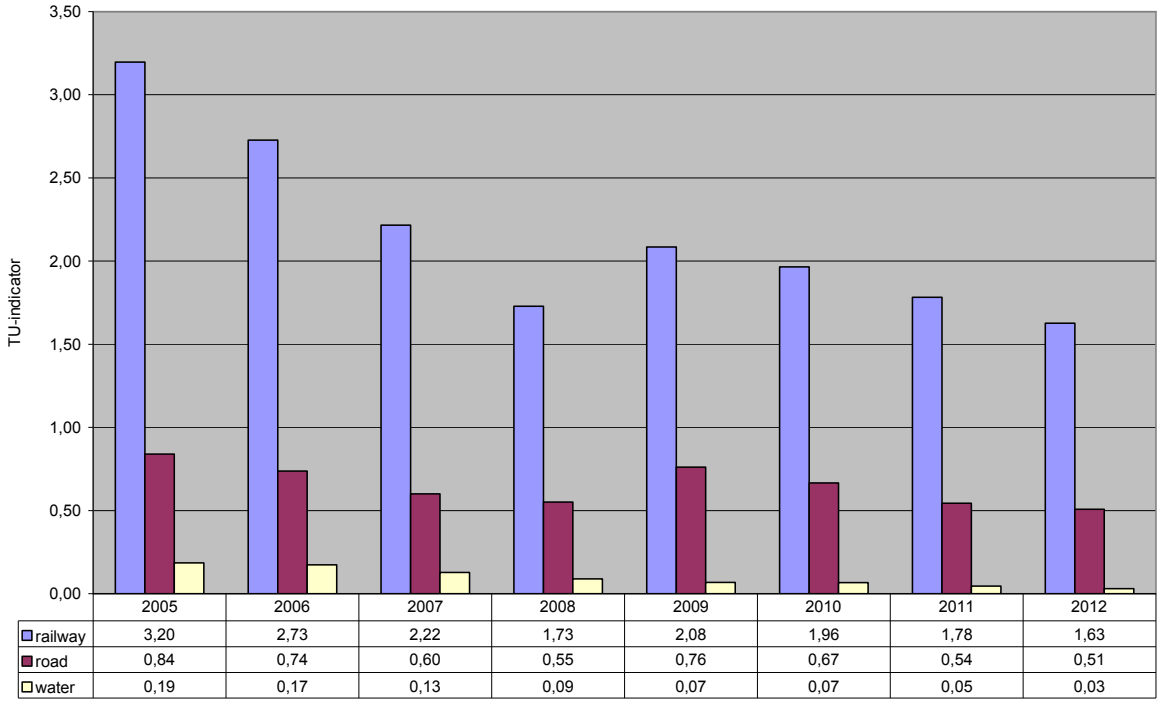
[2] In terms of turnover of railway transport of Ukraine takes 1st place in Europe and 2nd in the CIS, in terms of passenger traffic – 2nd in the CIS and 4th in Europe. In terms of freight railways of Ukraine take the 4th place on the Eurasian continent, second only to the railways of China, Russia and India. Traffic density Ukrainian Railways (annual traffic for 1 km) is 3–5 times higher than that of developed European countries [3].

[3] TU (Transportation Unit) – specific transport unit representing a particular ratio of turnover (in tonne-kilometers) and passenger (passenger-kilometers) to the country's GDP in U.S. $ and characterize the contribution of individual modes of transport in GDP.




ISSN 1562-109X
2014, № 1 (65)

seen from Fig. 1, the railway transport contribution to GDP of Ukraine exceeds more than three times the contribution of road transport, which is a major competitor in the market for freight and passenger traffic. The contribution of the sector in the period from 2005 to 2012, not only did not decrease, but increased from 48,2% to 54.4% (Table 1).




| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|
| railway | 3,20 | 2,73 | 2,22 | 1,73 | 2,08 | 1,96 | 1,78 | 1,63 |
| road | 0,84 | 0,74 | 0,60 | 0,55 | 0,76 | 0,67 | 0,54 | 0,51 |
| water | 0,19 | 0,17 | 0,13 | 0,09 | 0,07 | 0,07 | 0,05 | 0,03 |

*Fig. 1. The changes of the TU-indicator for certain types of transport of Ukraine (calculation based on the data [4])*

*Table 1*

*Structure of the contribution of individual modes of transport in Ukraine's GDP, % (according to [4])*

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|
| All modes of transport, including | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 |
| railway | 48,2 | 49,5 | 49,3 | 54,7 | 47,9 | 50,1 | 52,5 | 54,4 |
| road | 12,7 | 13,4 | 13,4 | 17,4 | 17,5 | 17,0 | 16,0 | 17,0 |
| water | 2,8 | 3,2 | 2,8 | 2,8 | 1,6 | 1,7 | 1,3 | 1,0 |
| other modes of transport | 36,3 | 33,9 | 34,5 | 25,1 | 33,1 | 31,2 | 30,1 | 27,6 |

As «Ukrzaliznytsya» is one of the largest employers and budgeting enterprise in many regions of Ukraine (over 352 thousand employees) [3].

Now in Ukraine railway transport is experiencing quite a difficult period, involving both the «stalling» of the process of its reform,[1] and the economic crisis in Ukraine, one manifestation of which is to reduce the volume of production, the basis of the nomenclature of rail

[1] Researchers transport sector reform process railway transport of Ukraine is seen as a key factor in the future development of the industry, its effective adaptation to the market environment. However, as noted by Yu.M. Tsvetov, M.V. Makarenko et al, «Ukraine as of 01.01.2012 actually no started to reform rail industry...» [5, p. 7], as there is no specific (developed) reform program. By the end of 2013 the situation has not changed.

freight.[1] The result was the deterioration in the financial condition of the industry (Table 2), which adversely affects its capacity to transport cargo and passengers with the necessary quality and speed.[2]

Railway transport is a strategically important sector of the national economy, the condition and quality of which depends not only on the prospects for economic and social development, but also the ability of the state to effectively carry out its functions relating to the protection of national sovereignty and national security, to ensure the needs of citizens in carriages, creating conditions to align the socio-economic development of regions and other. Deterioration in the financial condition of the industry, reducing its financial sustainability negative impact on funding opportunities and investment activity and, thereby, conveyances[3] and opportunities of railway infrastructure capacity. Therefore, the problem of improving the financial condition and improve the financial sustainability of railway transport is very relevant in the circumstances.

Theoretical background and practical approaches to ensuring financial sustainability is widely reflected in the works of Russian and foreign scientists. Change issues of financial condition and financial sustainability are devoted to the works of Blanc I.A., Bocharov V.V., Braley R., Brigham Yu., Grachev A.V., Eletskikh S.Ya., Zabrodskiy V.A., Kizim N.A., Kostyrko L.A., S. Myers et al [8–15]. Significant contribution to the development of methodology for assessing the financial sustainability was introduced by E. Altman, R. Taffler, Tishow G., Bakanov M.I., Melnik M.V., Sheremet A.D. et al [16–19].

However, it should be noted that, with regard to railway transport special studies have been conducted. This can be explained as follows. First, railway transport considered and continues to be regarded as a kind of «perpetuum mobile», which will operate at all times and under all conditions, that allows to «ignore» on the severity of existing problems in the industry.[4] Secondly, the attention of the leading researchers focused on railway transport to identify key areas of industry reform, resolving complex issues to improve the efficiency of its industrial and financial-economic activity. In this case the financial administration of railway transport, including its financial condition and financial sustainability are not considered that in the context of non-stationary institutional environment can lead to disastrous results not only for the industry, but also the national economy of Ukraine as a whole [20].

Hence the purpose of this article is a study of the peculiarities of the financial condition of railway transport of Ukraine and the formation of the system of constraints to maintain its financial sustainability in unsteady conditions of the institutional environment.

[1] The basis of the nomenclature of rail transportation in Ukraine is made by coal and coke, petroleum and petroleum products, ore, ferrous metals, chemicals and fertilizers, the weight of which is more than 67 % of the transported cargo (calculation based on the data [4]). Thus in 2013 the carriage of coal and coke amounted to 99.6%, petroleum and petroleum products – 95.5%, ore – 194.7 %, ferrous metals – 105.6 %, chemical and mineral fertilizers – 77.3 % of level in 2012, overall freight volumes fell by 3.4%. [4] The decrease in traffic was observed in 2012 by 2.5%.

[2] Depreciation of railway transport in the period from 2005 to 2012 increased from 56.7% to 98.4% (calculated on the basis of the financial statements of «Ukrzaliznytsya»), which is accompanied by a significant technological gap: in Ukraine is used rolling stock (locomotives and wagons) of the second generation, while in developed countries is used rolling stock of fifth generation. Obsolescence and depreciation affects the quality of freight and passenger.

[3] According to experts on current trends in financing and investment activity of railway transport will be reduced of potential traffic volumes at the far post: in 2014 – to 48.9 million people, in 2015 – to 45.8 million people, 2016 – up to 41.5 million people [6]. In 2014, the deficit of the rolling stock will be 580 cars and 102 electric locomotive in 2015 – 1465 cars and 143 electric locomotive in 2016 – 1869 cars and 175 locomotives in 2017 – 2364 cars and 213 locomotives [7].

[4] Modern history provides examples of virtual elimination of railway transport (Colombia, Latvia, etc.) or a significant deterioration in its parameters (UK) due to lack of proper attention to its problems and needs.

*Table 2*

*Ratio analysis of the financial condition of railway transport of Ukraine (according to financial statements «Ukrzaliznytsya»)*

| Indicator | on 01.01.09 | on 01.01.10 | on 01.01.11 | on 01.01.12 | on 01.01.13 |
|---|---|---|---|---|---|
| Return on investment ratio | 0,003 | 0,001 | 0,004 | 0,008 | 0,005 |
| Net profit ratio of operating activities | 0,005 | 0,003 | 0,010 | 0,013 | 0,008 |
| Absolute liquidity ratio | 0,049 | 0,008 | 0,009 | 0,138 | 0,015 |
| Current ratio (cover) | 0,526 | 0,523 | 0,508 | 0,711 | 0,534 |
| Financial stability ratio | 1,830 | 1,770 | 1,992 | 2,493 | 2,190 |
| Financial independence (autonomy) ratio | 0,646 | 0,639 | 0,666 | 0,713 | 0,684 |
| Decrease / increase in liabilities | 153,5 | 148,3 | 107,0 | 98,5 | 115,5 |

In world practice, financial management adopted the financial condition of any entity (corporation, industry) to characterize using liquidity ratios, financial sustainability and economic activity, for which fairly strict limits are set «allowing» uniquely diagnose the financial condition of the object. However, current approaches to the assessment of the financial condition and financial sustainability in modern conditions cause major issues.

So, Grachev A.V. notes that a) the formula for calculating of the coefficients used and recommended boundary of changes are not certain, and b) the accounting policies have a significant impact on the value of the calculated coefficients c) these ratios are not linked to a very important indicator for the enterprise – value added, d) calculation of coefficients at the beginning and end of the reporting period and the identification of their deviations from the standard values still does not disclose the mechanism of achieving themselves normative values; and e) evaluation of financial and economic condition of the company only at the beginning and only at the end of the reporting period does not provide information on the work of the enterprise for the entire reporting period [21].

Also it should be noted that methods of calculating financial performance indicators are considered universal and, therefore, suitable for the analysis of any production and economic system. However, they do not address specific industrial and financial-economic activity of a specific object, which can lead to incorrect results. This is true for the railway transport of Ukraine. As seen from Table 2 level of financial stability and financial independence of railway transport increases from 2009 to 2012. At the same time the established standards are maintained: values of financial sustainability ratio exceeds 1, and financial independence ratio - 0.5. This testifies to the strengthening of the financial condition of the railway transport. However, analysis of the formation of financial resources of «Ukrzaliznytsya» (Table 3), on the contrary, show an increase in the industry depending on external sources of credit. In addition, the net increase in cash of «Ukrzaliznytsya» in 2012 was –2115 million UAH (compared to 2011 +1317 million UAH), the ratio between the amount of the repayment of loans and the amount of interest income from interest-bearing loans amounted to 0,931 (in 2011 year – 0,821).[1]

Thus, the coefficients describing the financial condition of railway transport of Ukraine do not reflect the real state of the finance industry. In addition, the current trend for railway transport is very dangerous because it affects not only the current financial condition, but also has long-term negative effects (decrease in investments, primarily in the rolling stock and modernization of railway infrastructure). Thus, already in 2013 attracting of loans was carried out at a price above the market average. This indicates an increase in the riskiness of investing in the industry and is recognized as an

[1] Calculations based on official data of «Ukrzaliznytsya» [3].

*Table 3*

*Dynamics of formation of financial resources of railway transport, % of the previous year (according to the financial statements of «Ukrzaliznytsya»)*

| Indicator | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| Net profit | – | 193,1 | 129,9 | 56,3 |
| Long-term bank loans | 132,2 | 55,7 | 144,6 | 99,7 |
| Short-term bank loans | 148,0 | 168,9 | 117,8 | 97,8 |
| Return borrowed funds | 58,5 | 129,8 | 181,9 | 82,9 |
| Decrease / increase in liabilities | 153,5 | 148,3 | 107,0 | 98,5 |

opportunity to attract loans,[1] and their price,[2] that in the I half of 2013 it resulted in a reduction of financial income by 62.9%, while financial expenses by 7.5% compared with the same period in 2012.

During the first half of 2013 the growth rate of long-term liabilities amounted to railway transport 134.3%, while the short-term – 70,6%.[3] При In this case for the purchase of fixed assets was spent only 53.2% of the amount borrowed long-term interest-bearing borrowings. In general, the cost of updating the fixed assets industry decreased by 57.1%. Decline in investment activity in the sector is not surprising and expected after significant investments undertaken «Ukrzaliznytsya» in preparation for Euro-2012.[4] However, failure to use borrowed funds for the purchase of fixed assets (46.8%) indicates the problems of financing operations branch,[5] which is a very alarming signal.

Existing negative trends are reflected in the processes of generating cash flows of railway transport. So, for the I half 2013 compared with the same period in 2012 net cash generated from operating activities decreased by 54.8%, net cash flows used in investing activities decreased by 56.7%, and net cash flows received/used in financing activities increased by 2.2 times from the proceeds of loans, bond placement and reduction of the cost of repayment obligations.

Analysis of the factors that could determine the future of railway transport in Ukraine (the state and prospects of development of the infrastructure sector, maintaining demand and efficiency of freight transport demand satisfaction and efficiency of passenger traffic, the implementation of the reform process of railway transport of Ukraine) [20, 24] showed that under the conditions of non-stationary institutional environment as a result of mismanagement of finances and, as a consequence, reduce the financial sustainability of the industry, there is a real danger of phasing freight and passenger

[1] In 2013 it was planned to raise funds through the placement of Eurobonds in the amount of 1 billion EUR, were actually placed bonds worth 500 million EUR. At the same time the industry is highly dependent on foreign loans: own funds industry can not finance more than 33% of the required investment [22], and a sharp decline in net profit (in 2012 – 43.7%) further reduces its investment opportunities.

In 2012 there was a reduction of credit ratings «Ukrzaliznytsya» to the level of «B- (negative)» (from S&P) and «B- (stable)» (from Fitch) [3].

[2] According to financial statements of «Ukrzaliznytsya» growth in 2008 financial costs amounted to railway transport 220.0%, in 2009 – 163.6%, in 2010 – 122.2%, in 2011 – 104.5 %, in 2012 – 108.7% of the previous year.

[3] Calculation based on data from the report of Ernst & Young Audit Services LLC «State Administration of Railway Transport of Ukraine «Ukrzaliznytsya»: interim condensed consolidated financial statements as of June 30, 2013» [3].

[4] «Ukrzaliznytsya» to prepare for Euro 2012 spent 18.9 billion UAH equity in the absence of budgetary funding. From January to September 2012, due to distortions in capital investment cash gap between revenues and expenditures for transportation operating activities amounted to 2.2 billion UAH. Also provided at the beginning of the year indexation of tariffs did not take place – «Ukrzaliznytsya» sustained a loss of about 2 billion UAH. [23].

[5] The report of Ernst&Young Audit Services LLC «State Administration of Railway Transport of Ukraine –: consolidated financial statements as of December 31, 2012, 2011, 2010 years» notes that as one of the sources of additional funds to finance working capital deficit industry guidance of «Ukrzaliznytsya» is considered a reduction of capital investments «if necessary, without creating unfavorable conditions for operations…» [3].


ISSN 1562-109X
2014, № 1 (65)

traffic, which would be disastrous not only for railway transport, but also for the national economy as a whole. Therefore, to prevent the further accumulation of negative trends in the industrial, financial and economic activity of the industry seem to be necessary to develop and implement a system of severe constraints governing the processes of generating cash flows of the railway transport of Ukraine.

Development of a system of constraints to ensure financial sustainability in the planning and the current period should be based on two conditions [25]: 1) the current (available) working capital needs exceed it for each time period, 2) own working capital should not be below zero.

Then, taking into account these two conditions, such a system would include restrictions five basic requirements.

**1. Priority to financing of the continuously operation.** Financial highlights of railway transport are formed as a result of ordinary operations for freight and passengers, so to save the source of receipt of funds is a necessary priority to ensure sufficient financial resources of continuous operations industry, and its gradual development through the implementation of the necessary investment and innovation.

The need to introduce this restriction follows from the peculiarities generating of the financial flows in railway transport of Ukraine: the possibility of implementation of operational activity in the future depends directly on financial results received in the current period. In addition, the potential development of the industry (the possibility of capital investments in rolling stock and infrastructure improvements) as defined by the financial result. Then, this restriction can be represented by the following relationship:

$$R_i(t) + R_f(t) \le FR_d(t) - R_o(t), \text{ for } \forall t, \quad (1)$$

where $R_o(t), R_i(t), R_f(t)$ – the total cost of the industry in the period $t$ $\left(t \in [1,T]\right)$, associated with the operating, investing and financing activities, respectively; $FR_d(t) = f\left(R_o(t-1), R_i(t-1), t\right)$ – the available financial resources of the industry.

**2. Balanced amounts of positive and negative cash flows of the railway transport.** The implementation of this restriction involves the generation of negative cash flows, depending on the amount of positives ones for each period $t$. The deficit and surplus of the total cash flow will have a negative financial impact on the industry [26, 27]. Thus, the generation of the total cash flow deficit will reduce the level of liquidity and solvency of the industry, resulting in increase in accounts receivable and payable, increase in the share of overdue financial credits received, increase in the duration of the financial cycle and, consequently, reduction of the profitability of equity capital, and assets of the railway transport.

Total surplus of the cash flow will also have negative consequences associated with a decrease in the real value of temporarily not used funds, as well as the loss of the potential revenue from the unused portion of cash assets, which also affect the efficiency of their use, as well as equity industry.

Then to balance the positive and negative cash flows of railway transport and prevent the appearance of deficit or surplus in each period $t$ it is necessary to adhere to the following relationship:

$$\frac{DP_p^o(t) + DP_p^i(t) + DP_p^f(t)}{DP_o^o(t) + DP_o^i(t) + DP_o^f(t)} \cong 1, \quad (2)$$

where $DP_p^o(t), DP_p^i(t), DP_p^f(t)$ – a positive cash flow from operating, investing and financing activities for the period $t$, respectively; $DP_o^o(t), DP_o^i(t), DP_o^f(t)$ – a negative cash flow from operating, investing and financing activities in the period $t$.

**3. Synchronization of the generation of operational, financial and investment cash flows.** Implementation of this restriction involves setting a rigid relationship between cash inflow (positive cash flow) and their expenditure (negative cash flow) over time. Total cash flow timing circuit can be described by the following equation:

$$ODC_k(t) = ODC_p(t) + S^{DC}(t) = ODC_p(t) + \\ + \left[P_d^{DC}(t) - P_p^{DC}(t)\right] \ge ODC_{opt}(t), \quad (3)$$

where $ODC_p(t), ODC_k(t)$ – the cash balance at the beginning and end of the period $t$, respec-

tively; $S^{DC}(t)$ – cash balances in the period $t$; $P_d^{DC}(t), P_p^{DC}(t)$ – forecast of the revenue and expenditure of funds in the period $t$; $ODC_{opt}(t)$ – the optimal balance of funds in the period $t$.

Since timing of cash flow of the railway transport should provide reciprocal linking flows related to operating, investing and financing activities, the restriction (3) can be represented as follows:

$$ODC_k(t) = ODC_p(t) + [P^{ODC}(t) + P^{IDC}(t) + P^{FDC}(t)] = ODC_p(t) + [\left(P_d{}^{ODC}(t) - P_p{}^{ODC}(t)\right) + \left(P_d{}^{IDC}(t) - P_p{}^{IDC}(t)\right) + \left(P_d{}^{FDC}(t) - P_p{}^{FDC}(t)\right)] \geq ODC_{opt}(t), \quad (4)$$

where $P^{ODC}(t), P^{IDC}(t), P^{FDC}(t)$ – the forecast cash flows from operating, investing and financing activities in the period $t$, respectively; $P_d{}^{ODC}(t), P_p{}^{ODC}(t), P_d{}^{IDC}(t), P_p{}^{IDC}(t), P_d{}^{FDC}(t), P_p{}^{FDC}(t)$ – the forecast income and expenditure of funds related to the operating, investing and financing activities in the period $t$.

The use of the expression (4) as the restriction will provide the necessary and sufficient level of solvency of the railway transport in each period $t$ $\left(t \in \overline{1,T}\right)$ and, thus, reduce the severity of the two issues specific to its financial and economic activities:

1) the necessity of withholding of the funds from the market to maintain the optimal balance of funds to compensate for arrhythmia of cash flows in the industry over the period $t$, arising as a result of pronounced seasonality of its activities. The positive effect of this is the ability to reorient the released resources to finance investment;

2) increase in the investment attractiveness of investment in the railway transport, as well as the level of confidence of financial institutions, which results could increase the flow of external financial resources to the development of the industry.

**4. Maintenance of the optimal cash balance as a reserve for sustainable financial position of railway transport.**

Cash as a type of the working capital is characterized by three main features, determining the need to maintain an optimal (necessary and sufficient) its balance as the reserve of ensuring of as a stable financial state of the industry [14]:

1) routine: they can be used to pay off current liabilities, resulting in a gap in time between the incoming and outgoing cash flows and, consequently, the need for constant accumulation of surplus funds in the current account;

2) caution: railway transport is characterized by a pronounced seasonality, as reflected in the intensity of the generation of operating, investing and financing cash flows. In this seasonal peaks of various cash flow of the industry is not the same: the operating cash flow has its generation peak in June-August and January (increase in freight and passenger turnover), investment – in April-May and September-October (holding of planning and renewal repairs of the infrastructure of the sector, as well as its investing in development), financial – in June and December (settlements on external financial liabilities). Consequently, there is a need for creating a safety stock of cash to cover the gap between expected income and possible costs in the each period $t$, as well as for contingency fees, which will aim to prevent the reduction of financial stability and solvency of the industry;

3) speculation: the cash reserve is needed because there is always a chance of causing unexpected investment to generate an additional revenue (increase in operating cash flow), and for the elimination of emergency situations that require certain costs (increase in negative operating or investment cash flow).

In the literature on financial management in order to determine the optimal cash balance is proposed to use of models of Baumol-Tobin, Miller-Orr, Stone et al. [10, 28-31, etc.]. However, the assumptions of these models do not meet the characteristics of the operation of the railway transport in Ukraine and do not allow displaying a specific of generation of operating, investing and financing of cash flows, so their use is inefficient.

In addition, the professionals involved in financial management, note that the decrease in cash below by 10% of the amount of working capital is a "wake-up call" for the corporation [32, p. 28, etc.], as it shows a decrease in its

ability to pay and, as a consequence, financial sustainability, and therefore should not be allowed to reduce the balance of funds to this level. At the corporation «Amtrak»[1] minimum cash balance is maintained in the amount of about $ 200 million to meet the operational requirements [33]. However, a rigid fixation of the fund balance for the railway transport of Ukraine also appears to be ineffective, because at different times different financing needs that should be taken into account in determining it.

Then taking into account the comments the optimal cash balance as a reserve for sustainable financial position of the railway transport should be planned according to the following equation:

$$DC_{\max}(t) - DC_{\min}(t) \geq ODC_{opt}(t) > \\ > 0{,}1 \cdot OA(t), \quad (5)$$

where $DC_{\max}(t), DC_{\min}(t)$ – the forecast of maximum and minimum need in cash in the period $t$, respectively; $OA(t)$ – the value of working capital in the period $t$.

The performance of the restriction (5) will not allow on the one hand, cash shortages as a result of arrhythmia of generating cash flow of railway transport and maintain the solvency and creditworthiness at a high level, and, on the other hand, the excessive costs of lost opportunities due to subsidence of money on the account.

**5. Providing the liquidity of cash flow (liquidity cash flow, LCF).**

Liquidity cash flow is one of the characteristics of the financial sustainability of the enterprise, showing the changes in net credit position of the company within a certain period (month, quarter). Liquid cash flow is closely linked to the concept of financial leverage, which characterizes the extent to which the activities of the company can be improved through bank loans.

Cash flow liquidity test for each period $t$ $\left(t \in [t_0; t_1]\right)$ can be represented as expressions

$$LCF(t) = LCF(t_1) - LCF(t_0) = \\ = \left(K_{\partial}(t_1) + CL(t_1) + CASH(t_1)\right) - \\ - \left(K_{\partial}(t_0) + CL(t_0) + CASH(t_0)\right) \geq 0, \quad (6)$$

where $K_{\partial}(t_0), K_{\partial}(t_1)$ – the long-term credits and loans at the beginning and end of the period $t$, respectively; $CL(t_0), CL(t_1)$ – short-term borrowings; $CASH(t_0), CASH(t_1)$ – cash funds on the settlement and currency accounts.

Limitation (6) characterizes the possibility of timely payment of obligations to foreign creditors, so adding it to the model of financial planning in railway transport will allow:

1) to prevent the generation of a negative total cash flow in the industry, which will have a positive impact on the attractiveness of investments in its development and, consequently, the intensity of investment in infrastructure renewal and rolling stock;

2) timely detection of symptoms of the crisis in the financial activities sector, which is extremely important in a non-stationary and dynamic environment, and the increased uncertainty associated with the process of reforming of the railway transport in Ukraine.

**Conclusions.** Thus, due to the difficult financial situation of railway transport of Ukraine, there is an objective need for the formation of severe restrictions managing its financial assets to improve their effectiveness in the short and long term. Implementation of the proposed system of constraints will contribute to a) improve the operational management of cash flows from a position of balance income and expenditure of funds, and b) increase the liquidity of the balance of the industry, and c) increase the investment attractiveness of the railway transport of Ukraine for financial institutions that will not only accelerate the renewal of a non-negotiable assets, but lower financial costs, and d) the release of funds from the operational turnover for capital investment in the development of the industry.

Maintaining the financial sustainability of railway transport will not only contribute to its effective development, but also to overcome the negative trends and accelerated development of leading industries of the national economy, the implementation of neo-industrial variants of the

[1] National railway passenger transport corporation «Amtrak» (The National Railroad Passenger Corporation «Amtrak») is the largest company engaged in passenger traffic in the United States focused on the implementation of intercity passenger rail.

national industry, «as the best at the present stage... » [34, p. 104], the creation of infrastructural conditions for the development of trade and economic relations of Ukraine with the countries of the Customs Union and the EU, restore and strengthen the cooperative ties between the industry-leading domestic and foreign enterprises, etc.

To improve the management of the financial condition and financial sustainability of railway transport it is necessary to bring regulatory framework governing the financial management of railway transport into line with modern requirements;

develop a methodology for assessing the financial position and financial stability of the state for structural units, and the industry as a whole taking into account their operational and financial performance;

implement the necessary changes in the organization of the financial work as in subdivisions and «Ukrzaliznytsya» in general;

introduce a system of financial planning, including short-term, long-term and strategic planning to ensure sufficient financial resources targeted progressive development of industry in the context of non-stationary institutional environment;

develop a system for monitoring production, financial and economic activities through the application of modern information technology.

**References**


1. Закон України «Про залізничний транспорт» від 04.07.1996 № 273/96–ВР зі змін. та доп. [Електронний ресурс]. – Режим доступу: http://zakon2.rada.gov.ua/laws/show/273/96-%D0%B2%D1%80.

2. Хахлюк А.М. Залізничний комплекс України: генезис, функціонування, перспективи: моногр. / А.М. Хахлюк. – К.: Кондор, 2009. – 300 с.

3. Державна адміністрація залізничного транспорту України «Укрзалізниця». [Електронний ресурс]. – Режим доступу: http://uz.gov.ua/.

4. Державний комітет статистики України [Електронний ресурс]. – Режим доступу: http://www.ukrstat.gov.ua.

5. Трансформація економіки та транспорт України / Ю.М. Цвєтов, М.В. Макаренко, М.Ю. Цвєтов, О.В. Левченко та ін. – К.: ДЕТУТ, 2012. – 180 с.

6. Укрзалізниця через недофінансування скоротить пасажиропотік [Електронний ресурс]. – Режим доступу: http://www.epravda.com.ua/news/2012/11/14/343945/.

7. Пасажирські перевезення можуть скоротитися у 1,5 раза через недофінансування [Електронний ресурс]. – Режим доступу: http://economics.unian.net/ukr/news/146828-pasajirski-perevezennya-mojut-skorotitisya-u-15-raza-cherez-nedofinansuvannya.html.

8. Бланк И.А. Управление финансовой безопасностью предприятия / И.А. Бланк. – К.: Эльга, 2009. – 778 с.

9. Бочаров В.В. Финансовое моделирование / В.В. Бочаров. – СПб.: Питер, 2000. – 208 с.

10. Brealey R.A. Principles of corporate finance. / R.A. Brealey, S.C. Myers, F. – [10th ed.]. – New York: McGraw-Hill, 2011. – 976 p.

11. Brigham E.F. Fundamentals of Financial Management / E.F. Brigham, J.F. Houston. – Mason: Cengage Learning, 2009. – 752 p.

12. Грачев А.В. Финансовая устойчивость предприятия: критерии и методы оценки в рыночной экономике / А.В. Грачев. – М.: Дело и Сервис, 2010. – 396 с.

13. Елецких С.Я. Усовершенствование процесса управления финансово устойчивым развитием промышленного предприятия / С.Я. Елецких // Економіка промисловості. – 2012. – № 3–4. – С. 74-80.

14. Забродский В.А. Диагностика финансовой устойчивости функционирования производственно-экономических систем / В.А. Забродский, Н.А. Кизим. – Х.: Бизнес Информ, 2000. – 108 с.

15. Костырко Л.А. Диагностика потенциала финансово-экономической устойчивости предприятия: моногр. / Л.А. Костырко. – 2-е изд., перераб. і доп. – Х.; Фактор, 2008. – 336с.

16. Altman E. Corporate Financial Distress and Bankruptcy / E. Altman, 3rd edition. – John Wiley and Sons, 2005. – 384 p.

17. Taffler, R. and H. Tisshaw Going, Going Gone - four factors which predict // Accountancy. – 1977. – March. – P. 50-54.

18. Шеремет А.Д. Методика финансового анализа деятельности коммерческих организаций / А.Д. Шеремет, Е.В. Негашев. – М.: Инфра-М, 2008. – 208 с

19. Баканов М.И. Теория экономического анализа / М.И. Баканов, М.В. Мельник, А.Д. Шеремет. – М.: Финансы и статистика, 2007. – 536 с.

20. Кравченко О.А. Будущее железнодорожного транспорта Украины как отражение тенденций его развития / О.А. Кравченко // Экономика промышленности. – 2013. – № 3 (63). – С. 77–92.

21. Грачев А.В. Моделирование финансовой устойчивости предприятия / А.В. Грачев // Финансовый менеджмент. – 2003. – № 5. – С. 32–39.

22. Железнодорожный транспорт. Стратегическая диагностика. Предпосылки реформирования. – К., 2011. – 43 с.

23. Бондарь В.В 2013 г. инфраструктура отдохнет от финансирования / В. Бондарь, Информационный портал «Транспортный бизнес» [Электронный ресурс]. – Режим доступа: http://tbu.com.ua/articles/v_2013_g__infrastruktura_otdohnet_ot_finansirovaniia.html.

24. Кравченко О.А. Проблемы создания инфраструктурных условий для развития торгово-экономических отношений Украины с ЕС и ТС: Железнодорожный транспорт / О.А. Кравченко // Економіка промисловості. – 2013. – № 1–2 (61–62). – С. 262–273.

25. Ермолаев С. Как обеспечить финансовую устойчивость / С. Ермолаев // Финансовый Директор. – 2008. – №10. – С. 26-32.

26. Кучинский А.В. Внешний анализ сбалансированности денежных потоков инновационно-ориентированного предприятия / А.В. Кучинский // Экономические науки. – 2010. – № 11 (72). – С. 243–246.

27. Моисеева Е.Г. Управление денежными потоками: планирование, балансировка, синхронизация [Электронный ресурс] / Е.Г. Моисеева // Справочник экономиста. – 2010. – № 5. – Режим доступа: http://www.profiz.ru/se/5_2010/upravlenie_deneznymi_poto/.

28. Бланк И.А. Финансовый менеджмент / И.А. Бланк. – К.: Ника–Центр, Эльга, 2002. – 656 с.

29. Бочаров В.В. Корпоративные финансы / В.В. Бочаров, В.Е. Леонтьев. – СПб.: Питер, 2004. – 592 с.

30. Бригхем Ю. Финансовый менеджмент. Полный курс. В 2-х т. / пер. с англ. под. ред. В.В. Ковалева / Ю. Бригхем, Л. Гапенски. – СПб.: Экон. школа, 1997. Т. 2. – 669 с.

31. Ковалев В.В. Введение в финансовый менеджмент / В.В. Ковалев. – М.: Финансы и статистика, 2001. – 768 с.

32. Глухих Н. Управляйте финансами с умом! / Н. Глухих // Консультант. – 2008. – № 1. – С. 27–30.

33. Railroad Rehabilitation & Improvement Financing [Electronic resource]. – Mode of access: http://www.fra.dot.gov/Pages/177.shtml.

34. Вишневский В.П. К вопросу о Концепции общегосударственной целевой программы развития промышленности Украины / В.П. Вишневский, Л.А. Збаразкая // Економіка промисловості. – 2013. – № 1-2 (61-62). – С. 101-116.

*Received on 14.01.2014*