

РЕГІОНАЛЬНА ЕКОНОМІКА

UDC 336.02:625.7/8

УДК 336.02:625.7/8

I. O. Khomenko, Doctor of Economic Sciences, Associate Professor,
V. V. Kontseva, Candidate of Economic Sciences, Associate Professor,
A. O. Bezuglyi, Candidate of Economic Sciences

I. O. Хоменко, д. е. н., доцент,
В. В. Концева, к. е. н., доцент,
А. О. Безуглий, к. е. н.

CURRENT STATE AND FEATURES OF FINANCING OF THE ROAD SECTOR

СУЧАСНИЙ СТАН ТА ОСОБЛИВОСТІ ФІНАНСУВАННЯ ДОРОЖНЬОЇ ГАЛУЗІ

Urgency of the research. The main problem of the road economy remains its lack of financing.

Target setting. The allocation of funds for new construction, reconstruction, repair and maintenance of public roads at the present stage carried out to ensure the sustainable functioning and balanced development of the network of public roads in the regions in accordance with the directions determined by the state strategy and state programs, according to the actual state of roads.

Actual scientific researches and issues analysis. The theoretical and methodological foundations of the formation and usage of financial resources of the road sector are covered in the works of S. M. Shkarlet, A. V. Bazilyuk, N. P. Teslyuk, V. P. Ilchuk, Yu. S. Vdovenko, V. F. Skorchenko and others.

Uninvestigated parts of general matters defining. Reforming the road sector in Ukraine is impossible without improving the mechanism of financing the road economy and adapting it to market conditions of management.

The research objective. Current condition of the road network does not meet the needs of the economy by 97% and requires repair and maintenance.

The statement of basic materials. The processes of degradation of the road network without taking appropriate measures in a few years may become catastrophic. Due to growth deficit of repairs restoration of technical characteristics of the road network requires more significant means.

Conclusions. The main task of the development of the road sector is the definition and development of a strategy for effective financing of new construction, reconstruction and repair of roads of general use. The PPP allows the public sector to implement expertise from private companies, attracting their resources.

Keywords road industry; road financing; road repairs; roads for public use.

DOI: 10.25140/2410-9576-2017-1-4(12)-201-205

Актуальність теми дослідження. Основною проблемою дорожнього господарства залишається його недостатнє фінансування.

Постановка проблеми. Розподіл коштів на нове будівництво, реконструкцію, ремонт та утримання автомобільних доріг загального користування на сучасному етапі здійснюється відповідно до пріоритетів, визначених державною стратегією та державними програмами, з урахуванням фактичного стану автомобільних доріг.

Аналіз останніх досліджень і публікацій. Теоретичні та методологічні основи формування та використання фінансових ресурсів дорожньої галузі висвітлюються у працях С. М. Шкарлета, А. В. Базиліук, Н. П. Теслиук, В. П. Ільчука, Н. А. Боровик, Ю. С. Вдовенка, В. Ф. Скорченка та інших вчених.

Виділення недосліджених частин загальної проблеми. Реформування дорожньої галузі України не можливе без удосконалення механізму фінансування дорожнього господарства та адаптації його до ринкових умов господарювання.

Постановка завдання. Сучасний стан дорожньої мережі на 97% не відповідає потребам економіки та потребує капітального та поточного ремонту.

Виклад основного матеріалу. Процеси змін дорожньої мережі без прийняття відповідних дієвих заходів вже через кілька років можуть прийняти катастрофічний характер. Відновлення ж технічних характеристик дорожньої мережі в результаті зростання дефіциту ремонтів потребує більш значних коштів.

Висновки. Головним завданням розвитку дорожньої галузі є визначення та розробка стратегії ефективного фінансування нового будівництва, реконструкції та ремонту автомобільних доріг загального користування.

Ключові слова: дорожня галузь; фінансування доріг; витрати на ремонт доріг; автомобільні дороги загального користування.

Urgency of the research. The main problem of the road economy remains its lack of financing. In the light of world experience, it is clear that even in developed countries, there is a lack of budget funds for the construction and maintenance of highways and road objects, and what can be said about Ukraine, where the state budget is constantly deficient, and the funds allocated to one of the most expensive sectors of the economy are scanty.

Target setting. The allocation of funds for new construction, reconstruction, repair and maintenance of public roads at the present stage carried out to ensure the sustainable functioning and bal-

РЕГІОНАЛЬНА ЕКОНОМІКА

anced development of the network of public roads in the regions in accordance with the directions determined by the state strategy and state programs, according to the actual state of roads.

Actual scientific researches and issues analysis. The theoretical and methodological foundations of the formation and usage of financial resources of the road sector are covered in the works of S. M. Shkarlet, A. V. Bazilyuk, N. P. Teslyuk, V. P. Ilchuk, N. A. Borovik, Yu. S. Vdovenko, F. P. Goncharenko, V. I. Kotell'inets, O. T. Lanovoy, A. M. Novikova, Ye. D. Prusenko, V. F. Skorchenko and others.

Uninvestigated parts of general matters defining. Considering the fact that construction and maintenance of highways are very expensive and the state cannot fulfill its obligations in this sector, because of lack of budget funds, reforming the road sector in Ukraine is impossible without improving the mechanism of financing the road economy and adapting it to market conditions of management.

The research objective. Current condition of the road network does not meet the needs of the economy by 97% and requires repair and maintenance [6]. There are only 1% of public roads in the first category, in the second - 8%, in the third - 17%, the fourth category - 63% out of 169.6 thousand km of the total length of highway in Ukraine. Average speed on the roads of Ukraine 2-3 is times lower than in Western European countries [6].

The production and staff capacity of domestic road enterprises, both state and private, have almost been lost. Poor condition of roads leads to annual losses of up to 5% of GDP [6] and indirect losses due to high transportation costs, low speeds and indirect losses due to reduced competitiveness.

The statement of basic materials. Generally, the legal framework for financing the costs of new construction, reconstruction, repair and maintenance of public roads is determined by the Law of Ukraine of 15.09.91 No. 1562 "On the sources of financing of the road economy of Ukraine". Such expenses are carried out at the expense of budgetary and other funds for realization of programs of development of road economy in Ukraine.

Due to non-compliance with inter-repair terms in recent years and at the end of the winter period of 2017, the spillage and other deformations affect almost the entire network of public roads, except the road sections that were repaired during the preparation for EURO 2012 and subsequent years after it. So today, the network of roads does not meet the normative operational requirements, and the process of destruction of roads quickly goes on [1; 2].

According to preliminary calculations, the need for funds to restore and ensure the sustainable functioning of a network of public roads of state importance is 600 billion hrns, requiring repair and construction work more than 40 thousand km of state roads (almost 90% of their extent) [3].

In 2016 6 bln. hrns were directed at the capital repair and maintenance: 3.2 bln. hrns funds of the state budget; 1 bln. hrns - credit funds attracted by Ukravtodor in previous years; 384 mln. hrns - local budgets of different levels; 253.7 mln. hrns - State Fund for Regional Development; 1.179 bln. hrns - "Customs Experiment". The maintenance of roads of general usage envisaged financing in the amount of 4.57 billion hrns, out of which 499 million hrns. - funds from local budgets [6]. Almost 950 km of highways of state and local importance was succeeded to repair and put into operation in 2016, part of the objects will be completed in 2017 (Fig. 1). The processes of degradation of the road network without taking appropriate measures may become catastrophic in a few years that may reduce the volume of transport work for many regions. Due to the growth of the deficit of repairs, restoration of technical characteristics of the road network requires more significant means (Tabl. 1). The main reason for this situation is an acute shortage of financial resources in the budget [7; 8].

In 2016, due to unfavorable weather conditions, the current state of roads significantly deteriorated to the estimated time of road degradation. 2016 is the peak period of the last 5 years by the amount of deformation on the cover. The spillage already damaged 12.2 million m², including 4.6 million m² on roads of state importance. Intensive processes of spillage formation continued at least until the middle of April 2017, and according to the calculations the area of destruction of the road cover increased by 30% [2; 5; 6].

Local roads are in a worse condition and the area of deformations on its cover has already reached 7.6 million m² and the processes of destruction also goes on [4]. In the framework of budget financing in 2017, the list of construction, reconstruction, capital repairs and maintenance for the amount of 2.8

РЕГІОНАЛЬНА ЕКОНОМІКА

billion hrs, has been approved for 434 km of highways. The budget also includes costs for the development of project documentation for timely start of work in case of increased funding.

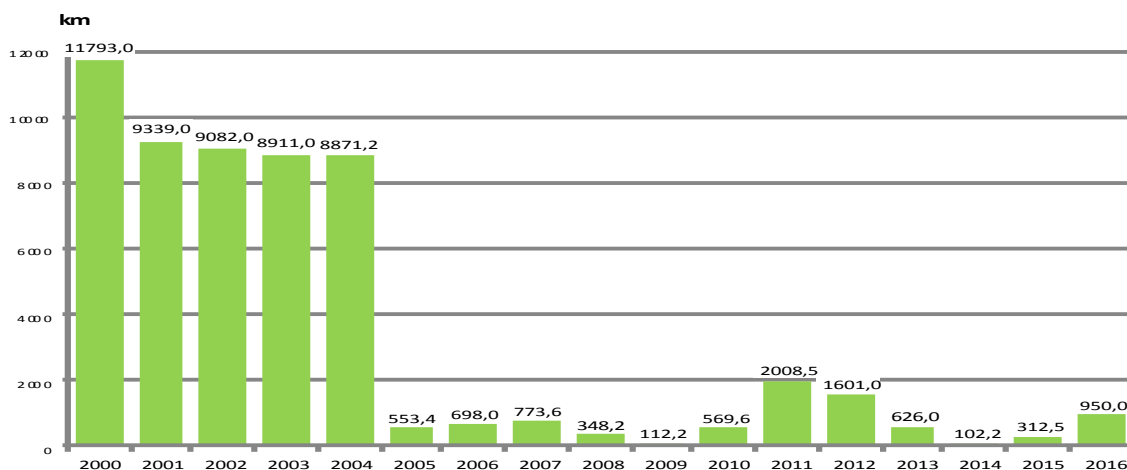


Fig 1. The length of repaired roads of general usage in 2000 - 2016 [6]

Table 1

Construction, reconstruction and repair of public roads [6]

Indicator	Years							
	2000	2005	2010	2011	2012	2013	2014	2015
Construction and reconstruction								
financing, hrs million	328,3	1 042,9	1 205,7	3 035,5	2 001,0	1 461,2	260,6	229,7
open motion, km	193,0	304,5	67,7	97,8	13,0	5,0	0,0	0,0
Repairs								
financing, hrs million	662,1	1 441,5	1 922,1	4 653,0	3 555,2	2 516,7	757,6	2 088,9
open motion, km	11 600,0	248,9	501,9	1 910,7	1 588,0	621,0	102,2	312,5
Hold, hrs million	303,4	809,8	2 310,4	2 328,2	2 538,3	3 514,6	2 287,2	3 068,6
Total								
financing, hrs million	1 293,8	3 294,2	5 438,2	10 016,7	8 094,5	7 492,5	3 305,4	5 387,2
open motion, km	11 793,0	553,4	569,6	2 008,5	1 601,0	626,0	102,2	312,5

Owing to work on the fading spillage, operational indicators for 61 thousand km were restored, which allowed to improve the transport links between settlements (Fig. 2).

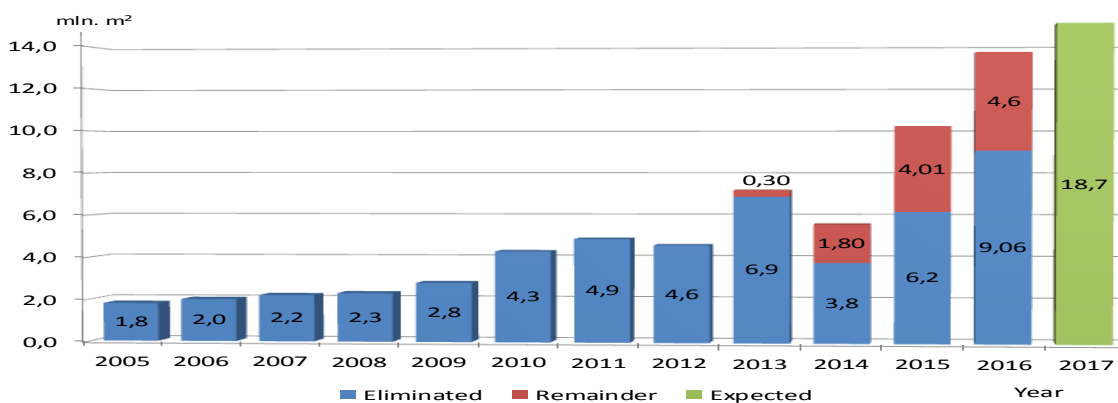


Fig. 2. Volumes of elimination of spillage on public roads [6]

РЕГІОНАЛЬНА ЕКОНОМІКА

Also, at the expense of unused balance of credit funds attracted by Ukravtodor in previous years, under the Government's guarantees, Government is preparing a draft resolution, which will also approve the list of construction, reconstruction, capital repairs and maintenance for the amount of hrsn 2.5 billion. (293 km) [6].

For the maintenance of roads in 2017 from the state budget were allocated 3.5 billion hrsn, including up to 2 billion hrn that will be aimed at eliminating spillage. Taking into account the limited funding, the focus is aimed on international, national and regional roads of state importance. Ukravotodor plans to complete their work on the elimination of spillage by June 1 by organizing daily work of more than 600 repair teams in case of favorable weather conditions.

The main reasons of increasing the extent of damage to the road cover are:

1. Non-compliance with the inter-repair terms. The problem, which only increases annually, is non-compliance with the rules of inter-repair terms. Over the past years, Ukraine has already accumulated a significant need for road repair in comparison with normative scientifically substantiated volumes. According to this, it is necessary to repair about 28 thousand kilometers of roads annually, but in fact it is repaired twenty times less. The main reason for non-compliance of the inter-repair terms is the constant underfunding of the industry since 2004, which does not exceed 4-5% of the required. A similar situation is with proper maintenance, where annual expenditures make no more than 25-36% of the scientifically justified need.

2. Fluctuations of air temperature through 0 ° C, which in the current winter period of 2017 amounted to about 53 cycles. The process of the appearance of potholes is especially active in the winter-spring period, which is facilitated by the alternation of "+" and "-" of the temperatures of air and cover, the presence of water in the pores of the cover from rain falls, snow melting, and mist staining. When freezing water expands in small cracks, it carries out a disconnecting action, and the connections between the parts of the material become weak and under the influence of the weight of the car a pothole formed there can quickly increase.

3. Excessive moisture of roads as a result of temporary stagnation of water after intense precipitation. Today, the vast majority of covering is water permeable due to aging of materials, the presence of cracks and microcracks. Accumulation of moisture in the lower layers of the road surface and the upper part of the earth covering, as a result of a significant amount of winter precipitation and positive temperatures, results in loss of the bearing capacity of the road structure.

4. Effect of chemical reagents used in anti-icing materials while eliminating winter slipperiness. The additional destruction of the coating is facilitated by using melting anti-corrosive materials: each using of melting or combined anti-icing material equates to a transition through 0 ° C.

5. Low load bearing capacity of the road surface. During the formation of the network of roads in the postwar years before 2000, the estimated load was: 10 tons per axle for roads of state importance; 6 tons per axle for local roads. Modern calculating loads are respectively 11.5 and 10 tons per axle, while the actual ones significantly exceed them.

Conclusions. The main task of the development of the road sector is the definition and development of a strategy for effective financing of new construction, reconstruction and repair of roads of general use. Therefore, special attention should be paid to the state of the road sphere, and funds should be allocated for its more effective development. In today's context, the role of public-private partnership (PPP) needs to be strengthened to achieve effective financing of the road sector through attracting investors' funds for the construction of new highways and reconstruction of existing ones. The PPP allows the state sector to implement experience from private companies, attract their resources, use their risk management system, and reduce the cost of financial resources for infrastructure projects.

References

1. Shkarlet, S. M., Ilchuk, V. P., Khomenko, I. A. (2014). Derzhavno-pryvatne partnerstvo yak odyn z mekhanizmv efektyvnoho finansuvannya priorytetnykh proektiv dorozhnoi haluzi [Public-private partnership as one of the mechanisms for effective financing of priority projects of road sector]. *Ekonomichnyi prostir – Economic Space*, 89, 93-103 [in

Література

1. Шкарлет, С. М. Державно-приватне партнерство як один з механізмів ефективного фінансування пріоритетних проєктів дорожньої галузі / С. М. Шкарлет, В. П. Ільчук, І. О. Хоменко // *Економічний простір*. - 2014. - № 89. - С. 93-103.
2. Shkarlet, S. M. Actual problems of formation and funding of the state road funds / S. M. Shkarlet, I. O.

РЕГІОНАЛЬНА ЕКОНОМІКА

Ukrainian].

2. Shkarlet, S. M., Khomenko, I. O., Kontseva, V. V. (2017). Actual problems of formation and funding of the state road funds. *Naukovyi visnyk Polissia – Scientific bulletin of Polissya*, 3(11), 1, 16-20 [in English].

3. Bazyluk, A. V., Teslyuk, N. P. (2012). Stratehiia realizatsii rozshyrenoho finansuvannia pidpriemstv avtotransportnoho kompleksu [EFF implementation strategy business complex motor]. *Visnyk Natsionalnoho transportnoho universytetu – Bulletin of the National Transport University*, 26(1), 231-236 [in Ukrainian].

4. Khomenko, I. A., Babachenko, L. V. (2015). Harmonizatsiino-strukturna model do upravlinnia finansovymy resursamy pidpriemstv dorozhnoi haluzi na osnovi derzhavno-pryvatnoho partnerstva [Structural model of harmonization in the management of financial resources road sector through public-private partnership]. *Molodyi vchenyi – The young scientist*, 5(20), 109-112 [in Ukrainian].

5. Shkarlet, S. M., Khomenko, I. A. (2017). Current state and prospects of development of international electronic commerce. *Naukovyi visnyk Polissia – Scientific bulletin of Polissya*, 2(10), 2, 133-138 [in Ukrainian].

6. Dorozhnie hospodarstvo [Road maintenance]. (n.d.). In *Website of the Ministry of Infrastructure of Ukraine*. <http://www.mtu.gov.ua/timeline/Dorozhne-gospodarstvo.html> [in Ukrainian].

7. Khomenko, I. A. (2015) Svitovyi dosvid formuvannia merezhevykh struktur u realnomu sektori ekonomiky [World experience of forming network structures in the real sector of economy]. *Zbirnyk naukovykh prats Derzhavnoho ekonomiko-tehnolohichnoho universytetu transportu: Seriya «Ekonomika i upravlinnia» – Collection of scientific works of the State Economic-Technological University of Transport: Series "Economics and Management"*, 34, 439-453 [in Ukrainian].

8. Khomenko, I. A., Sich, Ye. M. (2007). Systemoutvoriuiuchi faktory rehionalnoho rozvytku [System-forming factors of regional development]. *Visnyk Chernihivskoho derzhavnoho tekhnolohichnoho universytetu – Bulletin of the Chernihiv State Technological University*, 31, 79-83 [in Ukrainian].

Khomenko, V. V., Kontseva // Науковий вісник Полісся. – 2017. – № 3 (11). Ч. 1. – С. 16-20.

3. Базилюк, А. В. Стратегія реалізації розширеного фінансування підприємств автотранспортного комплексу / А. В. Базилюк, Н. П. Теслюк // Вісник Національного транспортного університету. – 2012. – № 26(1). – С. 231-236. 5.

4. Хоменко, І. О. Гармонізаційно-структурна модель до управління фінансовими ресурсами підприємств дорожньої галузі на основі державно-приватного партнерства / І. О. Хоменко, Л. В. Бабаченко // Молодий вчений. — 2015. — №5 (20). — С.109-112.

5. Shkarlet, S. M. The current state and prospects of development of international electronic commerce / S. M. Shkarlet, I. O. Khomenko / Науковий вісник Полісся. – 2017. – № 2 (10). Ч. 2. – С. 133-138.

6. Дорожнє господарство [Електронний ресурс] / Сайт міністерства інфраструктури України. – Режим доступу: <http://www.mtu.gov.ua/timeline/Dorozhne-gospodarstvo.html>

7. Хоменко, І. О. Світовий досвід формування мережових структур у реальному секторі економіки / І. О. Хоменко // Збірник наукових праць Державного економіко-технологічного університету транспорту: Серія «Економіка і управління». – Вип. 34. – К.: ДЕТУТ, 2015. – С.439-453.

8. Хоменко, І. О. Системоутворюючі фактори регіонального розвитку / І. О. Хоменко, Є. М. Сич // Вісник Чернігівського державного технологічного університету. – 2007. – № 31. – С. 79-83.

Received for publication 14.09.2017

Бібліографічний опис для цитування:

Khomenko, I. O. Current state and features of financing of the road sector/ I. O. Khomenko, V. V. Kontseva, A. O. Bezuglyi // Науковий вісник Полісся. – 2017. – № 4 (12). Ч. 1. – С. 201-205.