

STRUCTURE OF NATIONAL SOURCES OF FINANCING OF ROAD INFRASTRUCTURE IN LITHUANIA

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Abstract

The functioning of road transport in Lithuania is largely based on internal financing which results from the economic and social function of transport infrastructure. Since 2002, the Road Maintenance and Development Program has been the financing instrument of road infrastructure in Lithuania which finances roads of state importance and partly supports the maintenance and development of roads of local importance. In spite of the many sources of income generated by the Road Maintenance and Development Program, excise tax revenues account for about 90% of the total budget. However, it should be noted that some of these funds are used to “patch the national budget hole”. And there is also the problem of budget losses from excise duty on fuels resulting from the existence of the grey market. Therefore, the reform of road transport financing in Lithuania concerns primarily the improvement of the excise tax system and the increase of its contribution to the Road Maintenance and Development Program.

Keywords

Public expenditure; transport infrastructure financing; road transport toll system; excise tax

JEL Classification: H54, H60, H83

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1 Introduction

It is difficult to question the function and role of transport infrastructure as an engine or even a prime mover for socio-economic development. Infrastructure is a condition for “(...) growth and development processes to take place at all” (Ratajczak, 1999: 76). Therefore, its expansion is essential for the economies of the underdeveloped countries for which one of the main objectives is to rise to the next level of economic development (Kupiec, 2005: 45).

Transport functioning, largely based on the state of the infrastructure, depends primarily on the size of the funding. The economic and social functions of transport are decisive for the financing of infrastructure with the majority of funds from public sources. It is worth pointing out that any attempt to raise private capital is faced with the difficulties of the low propensity of private entities to engage in such investment projects which are characterized by inter alia high capital intensity, long implementation period, and postponement of the effects of expenditures incurred (Bronik, 2009: 19).

This article, by identifying the importance of transport and, in particular, road transport, for the development of the Lithuanian economy, is an attempt to verify the research hypothesis that the Lithuanian State, in order to maintain the pace of socio-economic development towards the leading European Union countries, should provide greater (than before) support for the car transport industry from own funds. Therefore, it is worthwhile to look at the structure of financing of the road transport from internal sources without neglecting the support from EU funds at the same time. This is to identify its strengths and weaknesses and to formulate recommendations to adjust the amount of funding to the growing needs of the modern economy in line with the principle of anticipating transport development in relation to the needs of the economy (Wojewódzka-Król, 2011: 33). The paper will use descriptive research methods based on the analysis of documents regulating the financing of road transport in Lithuania and the statistical tools used to perform quantitative analysis and to formulate conclusions by verifying the hypothesis.

2 Role and Condition of Road Infrastructure in Lithuania

The geopolitical position of Lithuania determines the significant role of transit for the socio-economic development of the country. For years the transport and storage sector has been on the third place in terms of contributing to the creation of national added value, second only to the manufacturing and trade sectors. Nevertheless, it is important to underline that its importance is growing which is reflected in a nearly double increase in the share of national added value from 6.3% in 1995 to 11.7%

in 2015. This sector employs nearly 9% of all people working in Lithuania, with a noticeable growing trend (Gross value added by economic activity). In the branch structure, however, the biggest role is attributable to road transport, where over 60% of all transport and storage workers are employed (Road Statistics Yearbook, 2016: 14). Passenger transport is clearly dominated by road transport (over 98% of passenger traffic), while freight transport, although mostly carried out by road transport (46% of total freight by tonnage in 2015), is similar to freight by rail (38% of total traffic calculated on the basis of the mass of freight by tonnage in 2015). Nonetheless, long-distance transport of goods is carried out mainly by road transport (65% of total traffic calculated according to the tonne-kilometer transport work performed) (Transportation of goods and passenger by all types of transport).

The road infrastructure in Lithuania can be considered as sufficiently developed. Taking into account the length of roads per thousand inhabitants, Lithuania is on the third place across the European Union (24.4 km per 1000 inhabitants²), second only to Estonia and Latvia. The situation is different in the case of the road density index with 1112 km of paved roads per 1 thousand square km³, which places Lithuania on 17th place in the Community ranking and coincides with the EU average value of this indicator (Statistical pocketbook, 2016: 79; Population on 1 January by age and sex; Land cover statistics). However, it is not sufficient to measure the linear state of the road infrastructure since it is necessary to compare the roadmap broken down into pavement types (see: Table 1 and Graph 1).

In the period from the accession of Lithuania to the European Union until the end of 2014⁴, the total number of roads increased by 5703 km or about 570 km per year. A large jump was recorded in 2010-2012 because in three years the total number of roads increased by nearly 3 thousand. The greatest influence on this was the growth of dirt roads, which increased by 2485 km in 2012, resulting in a growth in their share in the total number of roads from 11.5% in 2009 to 14.1% in 2012. The general tendency of dirt roads' growth is the result of the intensive expansion of suburban areas where the process of building paved roads does not follow the

2 Roads with paved surfaces are considered, i.e. in addition to the dirt roads.

3 It should be noted that gravel roads in Lithuania are classified as paved roads.

4 The analysis takes into consideration the period until 2014 since the rules on the quantitative state of roads (in km) for roads owned by municipalities have been tightened since 2015. According to the introduced change, the quantitative state of the roads is to be recorded only on the basis of their thorough inventory, which was not obligatory up to now, and some municipalities deliberately overstated their quantity in order to obtain more funding (Law on the methodology of determination of municipal budgetary revenues of the Republic of Lithuania). This was inter alia due to an audit carried out by the State Control Institution regarding the effectiveness of public funds allocated for the repair and modernization of municipal roads, during which a number of system deficiencies were detected, including: inter alia no reliable information on the actual number and types of municipal roads (Are there any conditions for efficient use of funds for the maintenance and modernization of local roads and streets?). However, on the basis of the data presented in the graph and table, the general tendency for changes in the structure of roads in Lithuania due to the type of pavement can be detected.

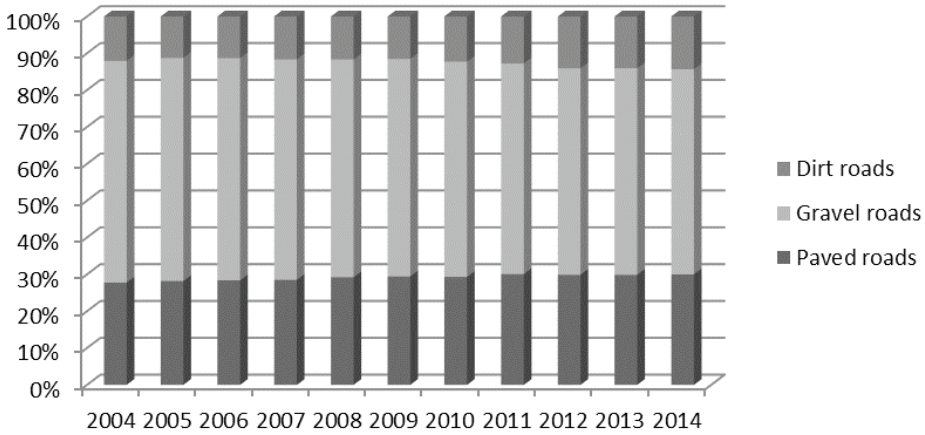
scale of urbanization directly adjacent to cities. It can also be noted that during the period under review, the number of gravel roads continued to fluctuate but remained almost unchanged, thus contributing to their share in the overall structure of roadways decreased from 60.2% to 55.7%. This is because a relatively small number of dirt roads have been upgraded to gravel roads while the vast majority of gravel roads have been asphalted. The phenomenon of road modernization, including gravel road asphaltting, has thus emerged. By evaluating this process, it can be seen that its positive effects are in the form of increasing share of paved roads with improved pavements in the overall structure of the number of roads. It should be noted, however, that this indicator (around 30%) is far below the average of the EU (87%), were in as many as 22 EU countries paved roads exceed 60% of the total number of roads and in 10 countries – 100% (Roads, paved).

Table 1 Condition of road infrastructure in Lithuania according to the type of road surface in 2004-2014 (in km)

Years	Paved roads	Gravel roads	Dirt roads	Total
2004	22031	47741	9559	79331
2005	22412	48137	8948	79497
2006	22707	48228	9049	79984
2007	23008	48293	9414	80715
2008	23676	47887	9467	81030
2009	23935	48013	9383	81331
2010	24063	47985	10083	82131
2011	24938	47384	10589	82911
2012	25150	47147	11868	84165
2013	25249	47342	11877	84468
2014	25518	47331	12185	85034

Source: Own data processing based on Road length at the end of the year.

Graph 1 Structure of roads in Lithuania according to the type of pavement in 2004-2014 (%)



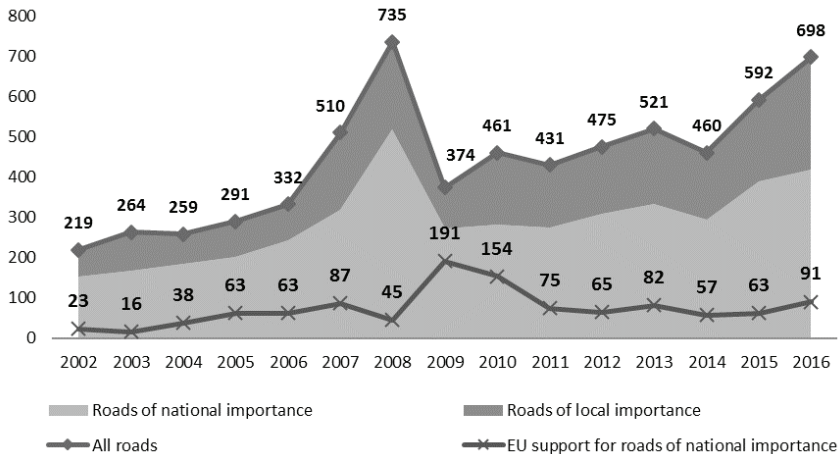
Source: Own data processing based on Road length at the end of the year.

3 Financing of Road Infrastructure in Lithuania

Due to capacity and importance for society and the economy, roads in Lithuania are divided into two basic categories: roads of national importance and roads of local importance. This is due to the division of responsibility for their maintenance and development between the Lithuanian Ministry of Transport and Communications and individual local governments (Act no. I-891 on Roads). Since 2002, the Road Maintenance and Improvement Program (Lithuanian: Kelių Priežiūros ir Plėtros Programa – KPPP) has been the main financing instrument of the road infrastructure which fully finances roads of national importance and partly supports the maintenance and development of roads of local importance (*Law on the Financing of the Road Maintenance and Development Programme* of the Republic of Lithuania). It should also be added that roads of national importance are subsidized by EU funds and roads of local importance by municipal budgets as well as a special mechanism of private co-financing⁵. The dynamics of financing road infrastructure in Lithuania in years 2002-2015 is presented in Graph 2.

5 The purpose of the co-financing instrument for the development of road infrastructure from private means is to accelerate the modernization of roads, which usually consists of graveling dirt roads or asphaltting gravel roads. Natural and legal persons can benefit from municipal budgets which, depending on the type of investment, can be up to 50-60%, as determined by the documents of local governments.

Graph 2 Financing of road infrastructure in Lithuania in years 2002-2015
(in million EURO)



Source: Own data processing based on *Expenses of the roads; Financing of national roads*.

The cumulative amount of financial resources allocated for the development of road infrastructure in Lithuania in 2002-2015 amounted to nearly EUR 6 billion, of which approx. EUR 1 billion came from EU funds, approximately EUR 1 billion was classified as an expenditure of local governments and the remainder (about 4 billion euro), as a means of the Road Maintenance and Development Program, came from the budget of the State Treasury⁶. The analysis of the dynamics of expenditure on road infrastructure can be divided into two sub-periods, set by the financial and economic crisis, namely the years 2002-2008 and 2009-2015. In 2008, there was more than a threefold increase in expenditure: from EUR 219 million in 2002 to EUR 735 million in 2008. In 2009, a sharp decline in funding was recorded and without EU support, which was at the record level in 2009 with nearly EUR 200 million or around 50% of total expenditure, the collapse of financing would be acuter. In 2010, thanks to significant EU subsidies, although slightly lower than in the previous year, the overall trend of general pre-crisis transport support was restored. However, it should be emphasized that the increase in domestic finance was accompanied by the decline in the EU aid, with the largest drop seen in 2011, as compared to 2010 with (as much as) 79 million, which was reflected in a decrease in overall transport expenditure in 2011 compared with the year preceding by EUR 30 million. In the highlighted sub-period 2009-2015, the year 2014 can be distinguished, with both EU and domestic support decreasing by EUR 60 million.

⁶ Calculations based on data of the National Roads Directorate of the Ministry of Transport and Communications of the Republic. www.lakd.lrv.lt, access: 30 June 2017.

Despite this, the substantial increase in road transport subsidies in 2015 (by EUR 132 million, or nearly 30% compared to the previous year) brings hope for a further increase in the importance of motor transport for the Lithuanian economy.

In the financing structure of road infrastructure, the majority of funds are allocated to roads of national importance (the average share is about 67% of total expenditure). Support from the EU funds is of great importance here (the average share is about 18% of the total expenditure) which is allocated entirely to the development of state roads. Roads of local importance will be supported by an average of 33% of total road transport subsidies. Talking about the structure of expenditure of the development of road transport, it is worth to once again discuss the breakthrough period of 2008/2009. Namely, in 2009, the financing of state roads from the Treasury budget decreased by (as much as) 82% (from EUR 473 million in 2009 to EUR 83 million in 2009) but thanks to EU subsidies share in expenditures on state roads which have reached (colossal) 70%, this decrease was mitigated to 47%. Thus, for the first time in 2009, domestic spending on national roads was lower than for local roads which continued throughout another year. Taking into account the importance of transport for the development of the Lithuanian economy, the priority of financing roads of national importance does not raise any objections, however, the deterioration of the state of local roads provokes a difficult discussion on the allocation of budget funds. There is only one answer: “Stretching the quilt will not bring results; the bigger one is needed (Rimkute, 2013: 10-13)”. Therefore, it is worthwhile to analyze the existing internal sources of funding of road infrastructure and to consider the possibility of supplementing them.

4 Internal Sources of Financing of Road Infrastructure in Lithuania

The financing system of road infrastructure in Lithuania, as noted above, is primarily based on means of the Road Maintenance and Development Program⁷. The source directory of the PURD budget includes (*Law on the Financing of the Road Maintenance and Development Programme* of the Republic of Lithuania):

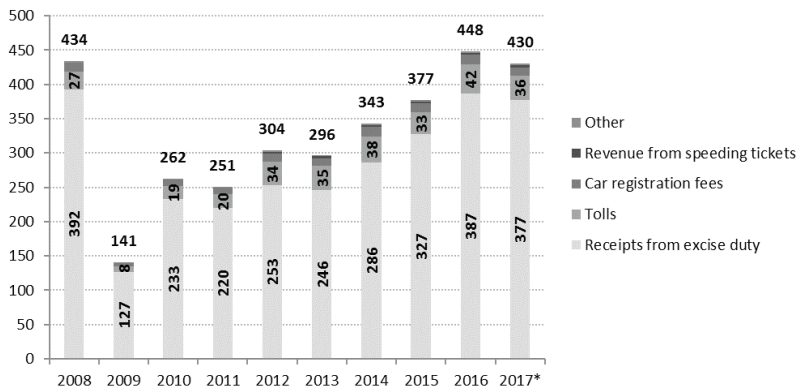
- 1) part of the proceeds from the excise tax on the sale of gasoline, diesel, and biofuels,
- 2) part of the proceeds from the excise tax on the sale of LPG used by cars,
- 3) charges for registration of lorries in Lithuania of the total weight equal or exceeding 12 tonnes,

⁷ Later in work, as an abbreviation for Road Maintenance and Development Program PURD will be used.

- 4) road tolls (vignettes),
- 5) road user fees for non-standard vehicles (i.e. vehicles or combinations of vehicles whose axle loads and/or unloaded or loaded dimensions are greater than road limits),
- 6) charges for the temporary limitation of traffic on a given road or its part,
- 7) purpose funds of natural and legal entities, other organizations or their branches, or foreign states,
- 8) income from paid or recovered speeding tickets recorded by traffic enforcement cameras on the roads of national importance⁸.

The most significant source of income for the Road Maintenance and Development Program are the excise receipts which account for about 90% of the total budget (see Graph 3). Another significant source of financial resources is the road toll (the so-called “vignette”), whereby the budget for 2008-2016 was supplemented on average by approximately EUR 28 million with a growing tendency for their volume, although their overall structure is close to 1/10 of revenue. Nearly three times less income supports the PURD budget for the registration of lorries in Lithuania whose total weight is equal to or exceeds 12 tonnes. Since 2012, additional revenue has been generated from paid or recovered speeding tickets but their size, amounting to around EUR 3 million, is of marginal importance for the PURD budget. Other sources constitute only about 0.5% of income.

Graph 3 Income of the Road Maintenance and Development Program for 2008-2016 (in millions of EURO)

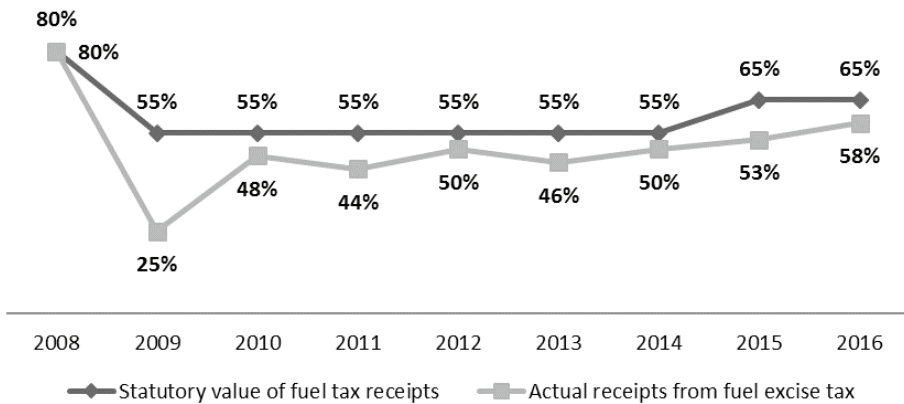


Source: Own data processing based on *The funding sources of the road maintenance and development program*.

⁸ Revenue from speeding tickets has been credited to the 2012 Road Maintenance and Development Program budget.

Taking into account the dynamics of the size of the PURD budget, it can be seen that it was only possible in 2016 to reach the pre-crisis level. Looking for reasons for such a drastic decrease in income in 2009, it is appropriate to note that in 2008 (as much as) 80% of the total excise revenue to the State Treasury's budget on the sale of automotive fuels fed the PURD budget, while the collapse of the economy caused by the crisis resulted in the redirection of a significant portion of those funds to patch the state budget hole (see Graph 4). Despite the reduction in the statutory amount of nationwide excise tax receipts onto the PURD account, some money was missing. A particularly elusive distinction between declared and actual value was observed in 2009, which can be explained by the precarious situation of the Lithuanian economy. In the following years, this divergence has subsided, although its continued existence is causing a lack of confidence in national budgetary policy.

Graph 4 The volume of fuel tax receipts to the budget of the Road Maintenance and Development Program for years 2008-2016 (as% of total revenues from the fuel excise tax to the National Treasury budget)



Source: Own data processing based on *The funding sources of the road maintenance and development program*.

Such radical policy has undoubtedly hampered the development of road infrastructure, which has deteriorated significantly over the last ten years. At present, about 1/3 of the roads of national importance are in poor condition, i.e. they do not meet the minimum quality requirements. There are three main scenarios for financing road investments for the coming years, where it is noted that maintaining the current trend of increasing financial support from national funds will only lead to a deterioration of the situation, while favourable changes in road infrastructure can only be expected with a doubling or tripling of capital expenditures (Lithuanian

Road Administration under the Ministry of Transport and Communications Director's Order).

6 Conclusions

Creating a financing model for transport infrastructure free from defects is in fact impossible. It is worth noting that throughout the European Union there is no way to distinguish the national transport financing system which would perfectly meet the requirements of optimality, productivity and efficiency which is grounded in “the extraordinary complexity of the process of creating and maintaining transport infrastructure, differentiated conditions of its functioning in particular countries, a chronic imbalance between the demand for its potential and its opportunities for growth” (Burniewicz, 2009: 49-50). The approach to the issue of transport charges requires taking into account the complexity of this phenomenon where a proper calculation of the charges which should take into account the marginal cost is crucial (Pawłowska, 2013: 330). It is important, however, to realize that the transport infrastructure will only be used by those users who, after costs, will find that the value of the journey exceeds them (Liberadzki, 2014: 31).

Speaking of recommendations on the reform of the Lithuanian motor vehicle charging system, we should mention the recommendation of the Director of the National Roads Directorate of the Ministry of Transport and Communications of the Republic of Lithuania on the financing of the Road Maintenance and Development Program for the period 2015-2020, which reads as follows (Lithuanian Road Administration under the Ministry of Transport and Communications Director's Order): “Larger State Treasury funding can only be expected to reinforce the Road Maintenance and Development Program from the excise tax on motor fuels up to 80% of overall excise duty (as was the case in 2008). In addition, in order to achieve the rule of *user pays* and *polluter pays* stated in the White Paper, tolls should be introduced not only for lorries but also for passenger cars.” An additional remark, presented in the study entitled “Excise tax in Lithuania” is an opinion that the growth of financing of road infrastructure can be expected in the case of reducing the losses of excise tax budget on fuels resulting from the existence of a grey market which is estimated at 15-20% of the automotive fuel market, and limiting the phenomenon of “patching the budget hole” from the sources of the declared amount of excise tax to the budget of the PURD. As a result, the question remains whether the further decisions and actions of the government will favor the development of road transport in Lithuania.

References

- Ar sudarytos sąlygos efektyviai naudoti lėšas, skiriamas vietinės reikšmės keliams ir gatvėms prižiūrėti ir modernizuoti? (Are there any conditions for efficient use of funds for the maintenance and modernization of local roads and streets?), Lietuvos Respublikos Valstybės Kontrolė (State Control of the Lithuanian Republic) no. VA-P-20-11-15, 2013.
- Bronik, H.: Modele finansowania infrastruktury transportowej (Transport infrastructure financing models), *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Seria Ekonomiczne Problemy (Scientific Papers of the University of Szczecin. Series of Economic Problems of Services)* no. 32 (2009).
- Burniewicz, J.: Wymiana dobrej praktyki europejskiej w zakresie rozwoju infrastruktury transportowej (Exchange of European good practice in the field of transport infrastructure development), *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Seria Ekonomiczne Problemy (Scientific Papers of the University of Szczecin. Series of Economic Problems of Services)* no. 32 (2009).
- Kupiec, L., Truskolaski, T., Gołębiowska, A.: *Gospodarka przestrzenna (Spatial economy), Infrastruktura techniczna (Technical infrastructure)*, Białystok: Białystok University Press, 2005.
- Liberadzki, M.: *Finansowanie infrastruktury transportowej w Polsce. Innowacyjne instrumenty finansowe. Publiczno-prywatne partnerstwo (Financing transport infrastructure in Poland. Innovative financial instruments. Public-private partnership)*, Warszawa: The Warsaw School of Economics Press, 2014.
- Pawłowska, B.: *Zrównoważony rozwój transportu na tle współczesnych procesów społeczno-gospodarczych (Sustainable transport development on the background of contemporary socio-economic processes)*, Gdańsk: The University of Gdansk Press, 2013.
- Ratajczak, M.: *Infrastruktura w gospodarce rynkowej (Infrastructure in a market economy)*, Poznań: The Poznan University of Economics Press, 1999.
- Rimkutė, B.: *Painūs finansavimo heliai (Bumpy funding paths)*, *Statyba ir Architektūra (Construction and Architecture)* no. 6 (2013).
- Road Statistics Yearbook 2016, Brussels: European Union Road Federation, 2016.
- Statistical pocketbook 2016: EU transport in figures, Luxembourg: Office of the European Union, 2016.
- Wojewódzka-Król, K., Rolbiecki, R.: *Infrastruktura transportu (Transport infrastructure)*, Gdańsk: The University of Gdansk Press, 2011.
- Automobilių kelių ilgis metų pabaigoje (Road length at the end of the year), Lithuanian Department of Statistics. www.osp.stat.gov.lt.
- Bendroji pridėtinė vertė pagal ekonomines veiklos rūšis (Gross value added by economic activity), Lithuanian Department of Statistics. www.osp.stat.gov.lt.
- Išlaidos keliams (Expenses of the roads), Lithuanian Department of Statistics. www.osp.stat.gov.lt.

Kelių priežiūros ir plėtros programos finansavimo įstatyme nustatyti programos finansavimo šaltiniai (The funding sources of the road maintenance and development program), Lithuanian Road Administration under the Ministry of Transport and Communications). www.lakd.lrv.lt.

Krovinių ir keleivių vežimas visų rūšių transportu (Transportation of goods and passenger by all types of transport), Lithuanian Department of Statistics. www.osp.stat.gov.lt.

Land cover statistics, in: Eurostat. www.ec.europa.eu.

Roads, paved (% of total roads). www.tradingeconomics.com/country-list/roads-paved-percent-of-total-roads-wb-data.html.

Valstybinės reikšmės kelių finansavimas (Financing of national roads), Lithuanian Road Administration under the Ministry of Transport and Communications. www.lakd.lrv.lt.

LT: Act no. I-891 on Roads.

LT: Act. no. VIII-2032, on the Financing of the Road Maintenance and Development Programme of the Republic of Lithuania, as amended.

LT: Act no. XII-2144 on the methodology of determination of municipal budgetary revenues.

LT: Ministry of Transport and Communications Director's Order on 2015-2020 road maintenance and development program of the Lithuanian Republic), no. V(E)-19.