

FINANCING OF THE CATEGORY I AND II STATE ROAD MAINTENANCE IN THE REPUBLIC OF SERBIA

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Abstract. *Investment in roads, apart from traffic benefits, has significant effect on development due to influence on overall commercial flows. Road maintenance works serve the purposes of built roads which are primarily to ensure safety of traffic flow, transport of population and goods, to connect people and to improve their living and working conditions. Maintenance works are required for protection of roads, as civil engineering structure, against damaging influences, or in other words real value and usability of road shall be kept (protection of previously invested capital). Therefore, roads have to be maintained continuously in order to be achieved undisturbed and safe traffic flow. Current traffic-economic development needs have surpassed available funds in great extent. Financing system of state roads of category I and II has not ensured sufficient and stable funds for the required level of investment.*

Key words: *state roads of category I and II, road maintenance, financing system, excise, subvention.*

1. INTRODUCTION

The aim of maintenance of state roads in the Republic of Serbia is to ensure safe and efficient transport of passengers and goods on the existing roads. The aim is to ensure optimum service level with assurance of acceptable level of safety of participants in traffic with minimum negative influence of works on environment.

State roads of category I, previously called major roads, are the most important roads in Serbia. All roads with characteristics of a motorway and semi-motorway are classified as state roads of category I.

Nowadays, there are 41 routes of this category, having approximately 5,525 km in length.

State roads of category II, previously called district roads have approximately 11,540 km in length. There are 328 roads in this category.

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State roads of category I and II on the Republic Serbia territory, are classified according to the Decree on criteria for state road categorization (*Official Gazette of the Republic of Serbia No 105/13 i 119/13*).

2. FINANCING

Financing system for state roads of category I and II has not ensured sufficient and stable funds for the required level of investment. Current traffic-economic-developing needs have surpassed available funds, to a great extent.

The legal basis is provided under the Law on public roads (*Official Gazette of the Republic of Serbia No 101/05, 123/07, 101/11, 93/12 and 104/13*), Chapter III Financing of public roads, articles 16 and 17.

The article 16 determines that financing of construction, reconstruction, maintenance and protection of public roads shall be supplied from:

- 1) fees for use of public roads
- 2) budget of the Republic of Serbia
- 3) financial credits
- 4) private investment of domestic and foreign persons

The article 17, afterwards defines fees for the use of public roads:

- 1) fees for exceptional transport
- 2) compensation for erecting of advertising tables, panels, appliances for visual and sound informing and announcing on state road or other land used by the public road managing authority according to the regulations
- 3) special fees for usage of public road, or its part or road structure (toll)
- 4) compensation for renting of parts of land servitude of public road
- 5) fee for rent of any other land used by the public road managing authority
- 6) fee for placing of water pipes and sewerage, electrical, telephone and telegraph installations and similar on public road
- 7) annual fee for usage of commercial structures with access from the public road, and
- 8) fee for use of public roads by vehicles registered abroad.

Level of fees and compensations shall be determined by the Roads Management Authority with consent obtained by Municipal Assembly, i.e. City Assembly.

2.1. Chronology

Excise tax as source of financing in previous period of time, is introduced in the Law on public roads (*Official Gazette of the Republic of Serbia No 101/05*) existing from the year 2006 as compensation for state road maintenance in value of 10% of excise tax on petroleum products.

In the Law on Amendments and Changes to Excise Tax Law (*Official Gazette of the Republic of Serbia No 123/07.*), compensation for state road maintenance is determined in value of:

- 15% of excise tax on petroleum products and liquid petroleum gas from 1 January to 31 December 2008,
- and 20% from 1 January 2009.

Excise tax on petroleum products and liquid petroleum gas (LPG), as a whole, became income of the Budget of the Republic of Serbia (subvention from the Budget) according to the Law on Amendments and Changes to Public Roads Law (*Official Gazette of the Republic of Serbia No 101/11*).

According to the Law on Amendments and Changes to Public Roads Law (*Official Gazette of the Republic of Serbia No 93/12. of 25 September 2012*) the following compensation, which had previously been income of PE Roads, were cancelled:

- Compensation for excessive usage of public road, its part or road structure.
- Compensation for connection of access road on public road
- Compensation for construction of commercial structures with access from public road

Funds ensured in the Budget of the Republic of Serbia for PE Roads of Serbia have been constantly reduced, as follows:

- In the year 2011, prior to applying of subvention, 18.5 milliard dinars are paid in from excise tax.
- In the year 2012, 8.8 milliard dinars were planned in the Budget of the Republic of Serbia, but 8.3 milliard dinars were paid in.
- In the year 2013, 5.4 milliard dinars were planned (Budget of the Republic of Serbia), but in the rebalance of the budget plan was cut to 5.3 milliard dinars.

Planned funds for subvention for PE Roads of Serbia in 2014 (Law on Budget for the year 2014) amounts 7.7 milliard dinars and they are less for 10.8 milliard dinars then paid excise tax in 2014. (Table 1)

Table 1 Comparative review of income from excise tax on petroleum products and subvention for PE Roads of Serbia during 2006 - 2014

	Year	Amount (in million dinars)	Description
Paid in	2006	4,950.7	10% excise tax on petroleum products
	2007	5,388.8	
	2008	9,510.3	15% excise tax on petroleum products
	2009	14,961.0	20% excise tax on petroleum products
	2010	16,577.7	
	2011	18,523.8	
	2012	8,300.0	Subvention for PE Roads of Serbia
	2013	5,300.0	
Planned			
	2014	7,700.0	Subvention for PE RS (Law on budget of RS for 2014.)

Planned subvention in amount of 7.7 milliard dinars for the year 2014, presents only 8.7% of excise tax on petroleum products or 2.66% of retail price of petroleum products.

Calculation is based on retail prices of petroleum products (of 30 January 2014), values of excise taxes on petroleum products (of 1 January 2014) and annual consumption of: 465.5 million litres of petroleum, 1.29 milliard litres of diesel and 180 million litres of LPG. Review is given in the Table 2.

Table 2 Calculation for excise tax

Fuel	Mark	Retail price of fuel (of 30 Jan 2014) (in dinars)	Excise tax for fuel (of 30 Jan 2014) (in dinars)	Excise tax/ retail price of fuel (in %)	20% of excise tax should value for roads (din/lit)	% of retail price
Euro Premium BMB 95	<i>EP BMB 95</i>	151.90	50.00	33%	10.00	6.6%
Euro Premium BMB 95 Plus	<i>EP BMB 95</i> +	155.90	50.00	32%	10.00	6.4%
Euro Diesel	<i>EUD</i>	154.40	46.00	30%	9.20	6.0%
Euro Diesel Plus	<i>EUD</i> +	157.90	46.00	29%	9.20	5.8%
Gas	<i>TNG /LPG/</i>	89.90	35.00	39%	7.00	7.8%
Average						6.19%

Table 3 Possible variants of income for road maintenance

Variant (income for roads)	% of retail price	% of excise tax	Annual income (in milliard dinars)
I	10%	33%	28.9
II	6.15%	20%	17.8
III	4.61%	15%	13.3
IV	3.07%	10%	8.9
V	2.66%	8.7%	7.7

2.2. Suggestion of possible options

- Return on financing system based on excise tax on petroleum products,
- Return on financing system by use of compensation for roads contained in retail price of motor petroleum and diesel fuel.

Required and sufficient condition:

Amendment of the Law on public roads, chapter III - Public road financing.

Suggestion (Table 3):

20% of excise tax on petroleum products shall give annual income of 17.8 milliard dinars,

or

10% of retail price of petroleum products shall give annual income of 28.9 milliard dinars.

3. BACKGROUND

Table 4 Comparative review of total investment in PE Roads of Serbia and investment for road maintenance during 2001 - 2014

Total investment								
Year	Investment (in million dinars)	Rate (EUR)	Investment (in million EUR)	Index (base year: 2005)		Index (base previous year)		
				dinar expression	Foreign currency expression	dinar expression	Foreign currency expression	
2004	26,233.8	72.1759	363.5					
2005	39,961.9	82.7750	482.8	100	100	152	133	
2006	49,443.7	86.0000	574.9	124	119	124	119	
2007	53,844.8	79.0254	681.4	135	141	109	119	
2008	60,413.9	78.9784	764.9	151	158	112	112	
2009	57,052.6	93.4415	610.6	143	126	94	80	
2010	48,780.6	104.3704	467.4	122	97	86	77	
2011	50,102.8	102.4631	489.0	125	101	103	105	
2012	43,580.9	115.8203	376.3	109	78	87	77	
2013	29,646.6	114.1715	259.7	74	54	68	69	
<i>Planned in Business Programme for year 2014 by PE Roads of Serbia</i>								
2014	33,610.9	118.8	282.9	84	59	113	109	

Investment for road maintenance								
Year	Description	Investment (in million dinars)	Rate (EUR)	Investment (in million EUR)	Index (base year: 2005)		Index (base previous year)	
					dinar expression	Foreign currency expression	dinar expression	Foreign currency expression
Realization								
2004	Total investment in road maintenance	13,006.7		180.2				
	Payment for previous year obligation	3,185.7	72.1759	44.1				
	Investment in current year	9,821.0		136.1				
2005	Total investment in road maintenance	17,403.1		210.2	100	100	134	117
	Payment for previous year obligation	1,239.8	82.7750	15.0	100	237	39	34
	Investment in current year	16,163.3		195.3	100	153	165	144
2006	Total investment in road maintenance	32,319.9		375.8	186	281	186	179
	Payment for previous year obligation	8,166.0	86.0000	95.0	659	1501	659	634
	Investment in current year	24,153.9		280.9	149	221	149	144

	Total investment in road maintenance	39,615.0		501.3	228	375	123	133
2007	Payment for previous year obligation	16,140.0	79.0254	204.2	1302	3228	198	215
	Investment in current year	23,475.0		297.1	145	233	97	106
	Total investment in road maintenance	42,930.4		543.6	247	407	108	108
2008	Payment for previous year obligation	20,549.9	78.9784	260.2	1658	4112	127	127
	Investment in current year	22,380.5		283.4	138	223	95	95
	Total investment in road maintenance	41,073.9		439.6	236	329	96	81
2009	Payment for previous year obligation	20,149.3	93.4415	215.6	1625	3408	98	83
	Investment in current year	20,924.6		223.9	129	176	93	79
	Total investment in road maintenance	19,942.8		191.1	115	143	49	43
2010	Payment for previous year obligation	656.7	104.3704	6.3	53	99	3	3
	Investment in current year	19,286.1		184.8	119	145	92	83
	Total investment in road maintenance	19,502.0		190.3	112	142	98	100
2011	Payment for previous year obligation	1,091.7	102.4631	10.7	88	168	166	169
	Investment in current year	18,410.3		179.7	114	141	95	97
	Total investment in road maintenance	18,422.0		159.1	106	119	94	84
2012	Payment for previous year obligation	1,670.1	115.8203	14.4	135	228	153	135
	Investment in current year	16,751.9		144.6	104	114	91	80
	Total investment in road maintenance	15,735.3		137.8	90	103	85	87
2013	Payment for previous year obligation	2,379.9	114.1715	20.8	192	329	143	145
	Investment in current year	13,355.4		117.0	83	92	80	81

<i>Planned according to Amendments and Additions to the Business Programme for year 2014 by PE Roads of Serbia</i>								
	Total investment in road maintenance	15,873.8		133.6	91	64	101	97
2014	Payment for previous year obligation	751.7	118.8000	6.3	61	42	32	30
	Investment in current year	15,122.1		127.3	94	65	113	109

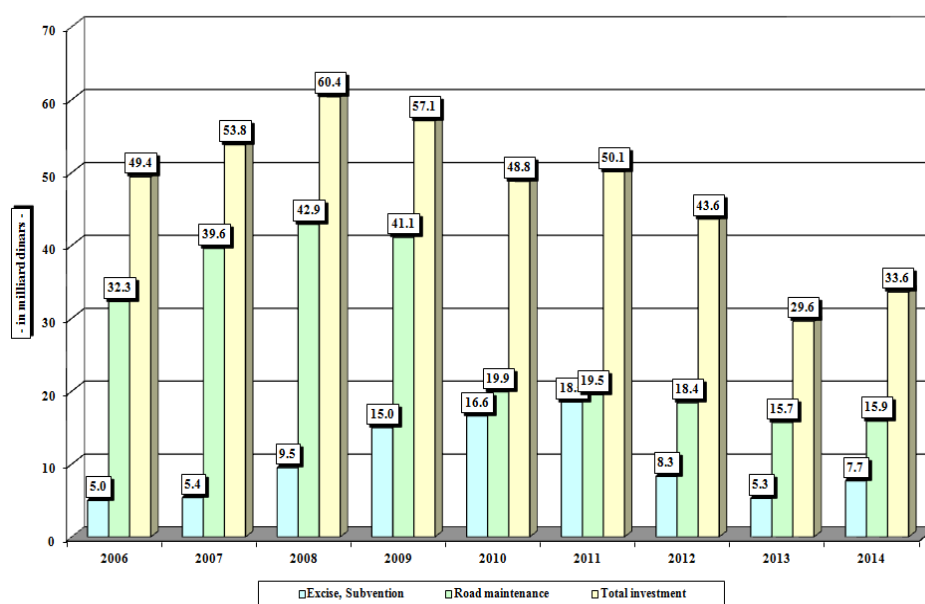


Fig. 1 Graphical representation of excise tax, subvention, investment in maintenance and total investment during 2006 – 2014

Percentage of road maintenance covered from funds of excise tax and subvention was: 83% in the year 2010, 95% in the year 2011, afterwards with cancelation of excise and introduction of subvention that percentage was extremely reduced and amounted: 45% in the year 2012, 34% in the year 2013, whilst it is envisaged 48% for the year 2014 (Table 4 and Fig 1).

According to the article 57 of the Law on public roads (*Official Gazette of the Republic of Serbia No 101/05, 123/07, 101/11, 93/12 and 104/13*) road maintenance includes: regular, periodical and urgent maintenance.

According to the article 58 of the Law on public roads, works on regular maintenance especially includes the following:

- determination and assessment of state of road and road structure
- repair of pavement structure and other parts of road formation on limited locations
- cleaning of pavement and other road parts of road areas within road reserve
- shoulder development

- development and protection of slopes of fill, cut and side-cut
- cleaning and development of ditches, gutters and culverts and other parts of system for road dewatering
- repair of road structures
- erecting, replacing, adding and renewal of traffic signs
- cleaning of traffic signs
- erecting, replacing, adding and renewal of road furniture and structures and facilities for road protection, traffic protection and environmental protection, as well as cleaning of road furniture and facilities
- grass mowing and land development of road and road reserve
- removing of snow and ice from road surface

According to the article 59 of the Law on public roads, works on periodical maintenance includes the following: improvement of pavement structure, rehabilitation and extraordinary maintenance.

According to the article 60 of the Law on public roads, works on urgent maintenance especially include the following: works due to due to natural disaster and extraordinary circumstances.

3.1. Historical retrospect and our experience

Compensation for roads contained in retail price, was introduced in Yugoslavia on 1 January 1962 on the models of examples from other countries (compensation was introduced in Great Britain in 1909).

This compensation existed in our country for 30 years from 1962 to 1992) and it was the basic source of road financing as all over the world.

Average participation of compensation for road in retail price of motor petrol and diesel fuel in period of time from 1962 to 1992 is shown in the following chart (Fig. 2).

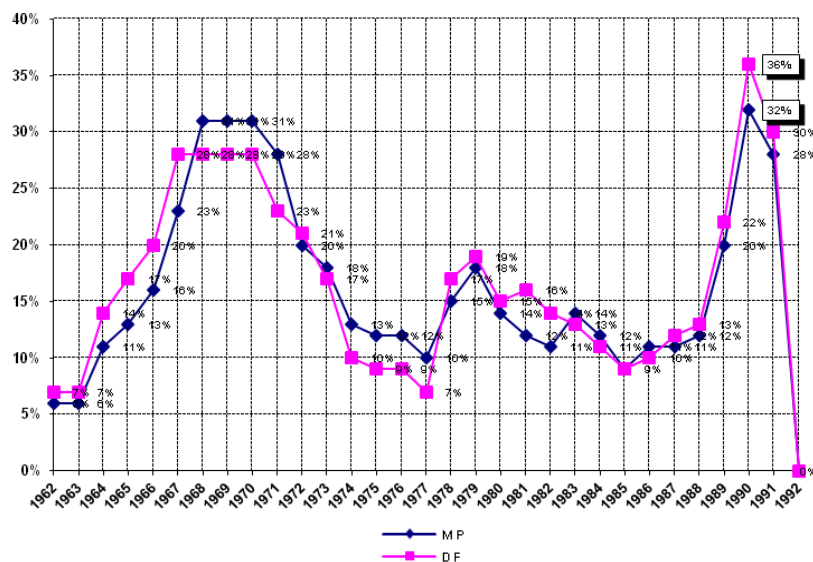


Fig. 2 Graphical representation of compensation for road in retail price of motor petrol and diesel fuel from 1962 to 1992

In this period of time participation in retail price of motor petrol was in range from 6% to 32%, and of diesel fuel from 7% to 36% (as average annual percentage). During the year 1990, participation of motor petrol was 39% and of diesel fuel 43% in some period of time (from 28 September to 27 October and from 3 November to 24 November of the year 1990).

Review of participation of compensation for road is given in the following table 5 and it is arranged according to dates of change of retail price of motor petrol and diesel fuel from 1989 to 1991.

Table 5 Participation of compensation for road in retail price of mp-98 and df-2 (1989 -1991)

Date of retail price change	Motor petrol MP-98	Diesel fuel DF-2
1989		
3 July	21,8%	23,6%
7 July	22,2%	23,9%
22 August	22,2%	23,9%
1 October	23,8%	25,6%
6 October	24,0%	25,8%
26 October	24,0%	25,8%
11 November	24,0%	25,8%
28 November	23,7%	25,8%
18 December	23,7%	25,5%
1990		
22 July	31,8%	34,0%
5 September	28,8%	30,1%
28 September	39,4%	42,8%
27 October	32,9%	36,2%
3 November	39,4%	42,9%
24 November	25,7%	27,7%
1991		
1 January	25,6%	27,6%
16 March	32,3%	36,3%
20 April	28,1%	30,5%
29 May	28,3%	30,5%
2 July	25,6%	27,8%
3 August	19,7%	20,8%
7 September	20,6%	22,8%
22 October	14,4%	16,6%
19 December	12,7%	14,8%

4. ROAD FINANCING FROM BUDGET

In the year 1992, compensation for road contained in retail price of motor petrol and diesel fuel were transformed into sales tax, which means introducing of road financing from budget. This financing from budget showed great failures due to problems of allocations of funds from budget, funds for roads were inadmissibly low.

4.1. Decrees

Taking into account great effects of investment in roads, the Government of the Republic of Serbia directed part of funds from retail prices of petroleum products into roads:

- on 23 December 1996 compensation for motorway was introduced in rate of 0.50 din/lit for MB and D (*Official Gazette of the Republic of Serbia No 53/96*)
- on 1 November 1997 compensation for motorway was reduced for MB and rate was 0.38 din/lit, and for D rate was 0.09 din/lit (*Official Gazette of the Republic of Serbia No 50/97*)
- on 16 May 1998 special compensation for major, district and local roads was introduced in rate of 0.25 din/lit for MB (*Official Gazette of the Republic of Serbia No 17/98*)
- on 11 May 2000 special compensation for roads was introduced in rate of 1.5 din/lit MB (*Official Gazette of the Republic of Serbia No 16/2000*).

Table 6 Comparative review of compensation for roads introduced by special decrees of the government and retail prices of petrol and diesel

Date	Petroleum products	Compensation for motorways	Compensation for major, district and local roads	Total compensation for roads	Retail price (din/lit)	Participation of compensation for roads in retail price
23 Dec 1996	MB-95	0.50		0.50	3.73	13.4%
	D-2	0.50		0.50	3.06	16.3%
1 Nov 1997	MB-95	0.38		0.38	5.00	7.6%
	D-2	0.09		0.09	3.90	2.3%
16 May 1998	MB-95	0.38	0.25	0.63	7.09	8.9%
	D-2	0.09		0.09	4.47	2.0%
11 May 2000	MB-95	0.38	1.75	2.13	18.50	11.5%
	D-2	0.09		0.09	15.00	0.6%

According to change of tax laws and regulations of 1 April 2001, those decrees were cancelled, and compensation were transformed into *single sales tax*.

During period of time from 2001 to 2005, according to the Law on budget, funds for roads were determined on annual level. As a rule, during a year, rebalance of the budget were done with reducing of funds for roads, as illustrated in the following table 7.

Table 7

(in million dinars)

Year	In the Law on budget	In the rebalance of budget	Difference
2002	6,500.0 (Off. Gaz. No 74/01)	5,033.0 (Off. Gaz. No 86/02)	-1,467.0
2004	6,435.3 (Off. Gaz. No 33/04)	3,661.7 (Off. Gaz. No 115/04)	-2,773.6
2005	5,568.0 (Off. Gaz. No 127/04)	3,161.2 (Off. Gaz. No 66/05)	-2,406.8
Total:	18,503.3	11,855.9	-6,647.4

In the year 2001 and 2003 there was no rebalance of budget, but funds paid in from budget were lower than approved ones according to the Law on budget (Table 8):

Table 8

(in million dinars)			
Year	In the Law on budget	Paid in	Difference
2001	2,470.0	2,095.7	-374.3
2003	8,000.0	7,329.2	-670.8
Total:	10,470.0	9,424.9	-1,045.1

Total funds that were less paid for maintenance of state roads from the year 2001 to 2005 amount in total 7,692,500,000.00 dinars.

From the year 2006 excise tax were introduced as a form of road financing, but from the year 2012 financing was from subvention from budget.

5. INSTEAD OF CONCLUSION

Suggestion:

Starting from: (1) state of roads, (2) insufficient funds for investment in roads, (3) practice of majority of countries, (4) 30-years of positive experience in existing of these compensation in our country, **it is suggested to introduce the compensation for roads through retail price of motor petrol and diesel fuel in amount of 10% of the price. Purpose: financing of state roads of I and II category. This suggestion has significant quantitative and qualitative dimension, as well:**

Financial effect of introducing of compensation for roads in amount of 10% of retail price of petroleum products amounts 28.9 milliard dinars. In comparison with planned funds from subvention for the year 2014 (7.7 milliard dinars), additional 21.2 milliard dinars shall be achieved.

Qualitative dimension shall be visible in the following:

- **Stability:** Problem of financing of road maintenance and development shall be permanently solved, and base for long lasting planning shall be found.
- **Road self-financing:** Correlation between exploitation of roads (consumption of motor oil and diesel fuel) and road financing shall be established. Bigger and of heavier vehicles that damage roads to a greater extent, shall also cover the costs of maintenance and development of roads to a greater extent through greater consumption of fuel. Funds inflow should be in accordance with traffic flow, i.e. with intensity of road usage.
- **Revitalizing economy as a whole:** Investments in roads, besides traffic effects, have significant effects in economic development due to stimulation of economic growth. Numbers of economic activities depend on construction industry. Demand in the field of energetics, car industry and other associated activities shall be revitalized, as well. Additionally, significant capacity in view of resources (people and equipment) shall be engaged in civil engineering (road construction), which presents existential and social significance of investments in roads.

REFERENCES

1. Law on public roads (*Official Gazette of the Republic of Serbia No 101/05, 123/07, 101/11, 93/12 and 104/13*)
2. Decree on criteria for the state road categorization (*Official Gazette of the Republic of Serbia No 105/13 and 119/13*)
3. Amendments and additions to the Business Plan of the PE Roads of Serbia for the year 2014 (Government Consent - *Official Gazette of the Republic of Serbia No 94/14*)
4. Annual Report on realization of the Business Plan of the PE Roads of Serbia (for period of time for the years from 2006 to 2013)
5. Annual Reports on realization of Plans of works on maintenance, construction and reconstruction of major and district roads on the territory of the Republic of Serbia (for years before the year 2006, the Republic Directorate for Roads)

FINANSIRANJE ODRŽAVANJA DRŽAVNIH PUTEVA I I II REDA U REPUBLICI SRBIJI

Ulaganje u puteve, pored saobraćajnog, ima i značajan razvojni efekat, jer podstiče ukupne privredne tokove. Radovi na održavanju proističu iz potrebe da put odgovara nameni zbog koje je građen, a pre svega da omogući bezbedno odvijanje saobraćaja, transport ljudi i materijalnih dobara, da poveže ljude i poboljša im uslove života i rada. Radovi na održavanju proističu i iz potrebe da se put, kao građevinski objekat, zaštiti od svih štetnih uticaja, odnosno da se očuva njegova realna i upotrebna vrednost (očuva ranije uloženi kapital). Zbog toga se putevi moraju održavati kontinuirano, radi nesmetanog i bezbednog odvijanja saobraćaja. Dospele saobraćajno-ekonomsko-razvojne potrebe u velikoj meri prevazilaze raspoloživa sredstva. Sistem finansiranja državnih puteva I i II reda u Republici Srbiji ne obezbeđuje dovoljna i stabilna sredstva za potreban nivo ulaganja.

Ključne reči: državni putevi I i II reda, održavanje, sistem finansiranja, akciza, subvencije.