

MODEL OF DEVELOPMENT AND FINANCING MOTORWAYS IN THE REPUBLIC OF CROATIA

J. Sapunar
Hrvatske autoceste d.o.o
josip.sapunar@hac.hr
I. Jurišić
Hrvatske autoceste d.o.o
ivana.jurismic@hac.hr

SUMMARY

The author presents some basic information about motorway financing in Croatia, which is realized through Hrvatske autoceste (Croatian Motorway Authority) owned by the Republic of Croatia, and three concession companies. The financing through Hrvatske autoceste is presented in full detail, including data about costs and revenues, and debt-honoring obligations. It is emphasized that this information is related to the Motorway Construction, Maintenance and Operation Program for the 2001 – 2004 Period and Motorway Construction, Maintenance and Operation Program for the 2005 – 2008 Period. An outline of the motorway construction in the Republic of Croatia prior to 2001 is also provided.

Key words: motorway, financing model, Hrvatske autoceste d.o.o., concession companies, revenues, costs, loan

MODEL RAZVOJA I FINANCIRANJA AUTOCESTA U REPUBLICI HRVATSKOJ

Sažetak

Dani su osnovni podaci o počecima financiranja autocesta u Republici Hrvatskoj, kao i o financiranju autocesta u Hrvatskoj koje se odvija preko Hrvatskih autocesta koje su u vlasništvu Republike Hrvatske i tri koncesijske tvrtke. Podrobno je obrađen način financiranja u okviru Hrvatskih autocesta pri čemu je opisan model financiranja s podacima o prihodima i rashodima te kreditima. Istaknuto je da se radi o Programu građenja, održavanja i upravljanja autocestama u razdoblju od 2001. do 2004. godine i o Programu građenja održavanja i upravljanja autocestama u razdoblju od 2005. do 2008. godine. Također je prezentirana izgradnja autocesta u Republici Hrvatskoj prije 2001. godine.

Ključne riječi: autocesta, model financiranja, Hrvatske autoceste d.o.o., koncesijske tvrtke, prihodi, rashodi, kredit

INTRODUCTION

In March 2001 the Croatian Parliament brought the Law on amendments to the Public Roads Act (Official Journal no. 27/01), establishing the new organization and authority of participants in investments and maintenance of public roads, as well as the new financing model for public roads construction and maintenance.

In April 2001 the Croatian Motorway Administration was reorganized and divided into two trading companies: Hrvatske autoceste d.o.o., a company for motorway construction, maintenance and management, and Hrvatske ceste d.o.o., a company for construction, maintenance and management of other state roads.

Hrvatske autoceste, a limited liability company for motorway management, construction and maintenance, was registered and put into operation on 11 April 2001. The Company is wholly owned by the Republic of Croatia.

Apart from Hrvatske autoceste d.o.o., there are other concession companies operating in Croatia: Bina Istra d.d., Autocesta Rijeka – Zagreb d.d. and Autocesta Zagreb – Macelj d.d. Bina Istra d.d. and Autocesta Zagreb – Macelj d.d. are the PPP/BOT projects (Public Private Partnership/Build Operate Transfer), with 51 percent private share and 49 percent share owned by the Republic of Croatia. Autocesta Rijeka – Zagreb d.d. is a concession company, wholly owned by the Republic of Croatia.

This article deals with the financing model of Hrvatske autoceste d.o.o.

2. IMPORTANCE AND DEVELOPMENT OF MOTORWAYS IN THE REPUBLIC OF CROATIA

Motorway construction in the Republic of Croatia started in 1970 with the construction of Zagreb – Rijeka motorway. Oštrovica – Kikovica section, 10 kilometers long, was opened for traffic operation in 1971; in 1972 Lučko– Karlovac junction section, 39 kilometers long, was opened for traffic; in 1980 Jankomir – Zaprešić section, 7.40 kilometers long, was opened for traffic, as well as Ivanja Reka – Lipovljani section, 77 kilometers long, as a part of Zagreb – Lipovac motorway.

Table 1. The total motorway requirements in terms of traffic routes and in accordance with the strategy of traffic development of the Republic of Croatia

| No. | ROUTE | LENGTH (km) | CONSTRUCTED UNTIL 2000. | | TO BE CONSTRUCTED | |
|--------------|---|-----------------|----------------------------|-------------------|----------------------|-------------------|
| | | | Motorway | Semi- Motorway | Motorway | Semi- Motorway |
| 1. | Istrian Ipsilon | 144 | | 88 | | 56 |
| 2. | Zagreb – Goričan | 97 | 72 | | 25 | |
| 3. | Zagreb – Macelj | 60 | 33 | 7 | 20 | |
| 4. | Zagreb – Bregana | 13 | | | 13 | |
| 5. | Zagreb – Lipovac | 265 | 208 | | 57 | |
| 6. | Zagreb – Karlovac - Rijeka | 146 | 50 | 36 | 41 | 19 |
| 7. | Bosiljevo – Split | 312 | | | 312 | |
| 8. | Split – Ploče | 97 | | | 97 | |
| 9. | Ploče – Dubrovnik | 72 | | | 72 | |
| 10. | Rupa – Rijeka – Žuta Lokva | 106 | | | 106 | |
| 11. | Beli Manastir – Osijek – BiH frontier – Ploče | 107 | | | 107 | |
| 12. | Zagreb – Sisak | 45 | | | 45 | |
| 13. | Zagreb Bypass Road | 28 | 28 | | | |
| TOTAL | | 1,492 | 391 | 131 | 895 | 75 |

In the period from 1971 to 1990, the total of 246 kilometers of motorways was opened for traffic, as well as 50 kilometers of semi-motorways, specifically:

| | | |
|--------------------|-----------|-----------|
| Zagreb – Rijeka | 49 km AC | 8 km PAC |
| Istrian ipsilon | | 35 km PAC |
| Zagreb – Macelj | | 7 km PAC |
| Obilaznica Zagreba | 28 km AC | |
| Zagreb – Lipovac | 169 km AC | |

TOTAL: 246 km AC 50 km PAC

In the period from 1991 to 2000, the total of 145 kilometers of motorways was opened for traffic, as well as 82 kilometer of semi-motorways, specifically:

| | | |
|------------------|----------|-----------|
| Zagreb – Rijeka | | 29 km PAC |
| Istrian Ipsilon | | 53 km PAC |
| Zagreb – Macelj | 33 km AC | |
| Zagreb – Lipovac | 40 km AC | |
| Zagreb – Goričan | 72 km AC | |

TOTAL: 145 km AC 82 km PAC

Public Roads Construction and Maintenance Program for the period 2001 – 2004

In accordance with the Traffic Development Strategy of the Republic of Croatia, the Government of the Republic of Croatia delivered at the beginning of 2001 the Public Roads Construction and Maintenance Program for the period 2001 – 2004. The basic Program relating to the motorway construction was amended on several occasions, first by including the accelerated construction of Zagreb – Bosiljevo – Sveti Rok – Zadar – Šibenik – Split motorway, with the completion deadline set for 30 June 2005, and later by including the preparation and partly the construction of Split – Ploče motorway, preparation for the construction on Vc corridor (Beli Manastir – Osijek – Svilaj),

construction of the last section of Županja – Lipovac on X corridor with the completion date set for 2006, preparation for the construction of Zagreb – Sisak motorway with the construction starting in 2005 and opening for traffic in 2007 (hereinafter – the Program).

Table 2. Program realization for the period 2001 – 2004 under the authority of Hrvatske autoceste d.o.o.

| Description | PROGRAM 2001– 2004 | Program realization in millions HRK | | | | | Index (6/1) |
|--|-----------------------|-------------------------------------|-----------------|-----------------|-----------------|------------------|------------------|
| | | 2001 | 2002 | 2003 | 2004 | Total | |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 (2+3+4+5) | 7 |
| CONSTRUCTION | 15,710.73 | 1,372.11 | 3,414.55 | 5,865.15 | 4,476.16 | 15,127.97 | 96.29 |
| REHABILITATION | 877.20 | 0.00 | 107.51 | 61.09 | 262.06 | 430.66 | 49.10 |
| MANAGEMENT AND REGULAR MAINTENANCE | 1,248.69 | 182.71 | 272.80 | 297.54 | 494.07 | 1,247.12 | 99.87 |
| T O T A L | 17,836.62 | 1,554.82 | 3,794.86 | 6,223.78 | 5,232.29 | 16,805.75 | 94.22 |

Table 3. Opening for traffic the sections planned by the Program for the period 2001 – 2004

| Name | Km/ per year | Realized (km) | | | |
|---|-----------------|---------------|-----------|------------|------------|
| | | 01 | 02 | 03 | 04 |
| 1. Zagreb – Bregana | 14 | 14 | | | |
| 2. Zagreb – Lipovac | | | | | |
| 2.1. Velika Kopanica – Županja | 26 | | 26 | | |
| 3. Zagreb – Goričan (B. Hum – Varaždin) | 23 | | | 23 | |
| 4. Rijeka – Rupa (Jušići – Rupa) | 4 | | | | 4 |
| Total 1 – 4 | 67 | 14 | 26 | 23 | 4 |
| 5. Bosiljevo – Split | | | | | |
| 5.1. Bosiljevo –Mala Kapela Tunnel | 36 | | | 36 | |
| 5.2. Mala Kapela – Gornja Ploča Tunnel | 96 | | | | 96 |
| 5.3. Gornja Ploča – Zadar2 | 61 | | | 61 | |
| 5.4. Zadar2 – Pirovac | 36 | | | | 36 |
| 5.5. Vrpolje – Split (Dugopolje) | 45 | | | | 45 |
| Total 5 | 274 | | | 97 | 177 |
| T O T A L 1 – 5 | 341 | 14 | 26 | 120 | 181 |

Public Roads Construction and Maintenance Program for the period 2005 – 2008

Motorway construction has a strategic importance for the Republic of Croatia because it envisages the realization of the following:

- influence on general development of the country and its particular regions, development of priority industrial branches (tourism, agriculture, traffic industry)
- steady local development, with special influence on underdeveloped parts of Croatia (mountain areas, sparsely populated areas)
- increase of employment and positive influence on demographic development
- integration of Croatia into the European traffic system and transit role of Croatia (connection of Adriatic ports and large traffic junctions in Croatia and Europe)

- removal of bottle-necks in road infrastructure, improved circulation of people and goods
- traffic safety, comfort and reduction of traveling time, increase of population mobility
- further transport connection between Croatian regions (Rijeka – Žuta Lokva, Split – Ploče – Dubrovnik, Zagreb – Sisak, Zagreb – Goričan, Beli Manastir – Osijek – Svilaj), and their connection to Europe
- revitalization of sea ports and river ports

Hrvatske autoceste, after opening 50 kilometers of motorway for traffic on 30 June 2005 on Bosiljevo – Split and Rupa – Rijeka route, are starting with preliminary activities and motorway construction on the following routes:

- Županja – Lipovac length 29 km
- Split – Ploče length 96 km
- Rijeka – Žuta Lokva length 56 km
- Beli Manastir – Osijek – Svilaj length 92 km
- Zagreb – Sisak length 45 km

Table 4. Program for the period 2005 – 2008 under the authority of Hrvatske autoceste d.o.o.

| No. | Type of works | PROGRAM 2005 – 2008 | Planned in millions HRK | | | |
|--------------------|---------------------------------------|------------------------|-------------------------|-----------------|-----------------|-----------------|
| | | | 2005 | 2006 | 2007 | 2008 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 1. | PROGRAM OF CONSTRUCTION | 11,228.82 | 3,365.59 | 3,112.59 | 2,448.53 | 2,302.11 |
| 2. | PROGRAM OF EXTRAORDINARY MAINTENANCE | 795.01 | 445.26 | 156.00 | 96.40 | 97.35 |
| 3. | PROGRAM OF MAINTENANCE AND MANAGEMENT | 1,991.22 | 487.86 | 490.70 | 507.88 | 504.78 |
| TOTAL 1 – 3 | | 14,015.05 | 4,298.71 | 3,759.29 | 3,052.81 | 2,904.24 |

Table 5. Opening for traffic of sections planned by the Program for the period 2005 – 2008

| Name | km/ per year | Opening for traffic | | | |
|-------------------------------------|-----------------|---------------------|-----------|-----------|------------|
| | | 05 | 06 | 07 | 08 |
| 1. Goričan –Hungary State Border | 1 | | | 1 | |
| 2. Mala Kapela Tunnel | 6 | 6 | | | |
| 3. Pirovac – Vrpolje | 33 | 33 | | | |
| 4. Dugopolje – Ploče | 96 | | | 37 | 59 |
| 5. Županja – Lipovac | 29 | | 29 | | |
| 6. Jurdani – Permani – Rupa | 11 | 11 | | | |
| 7. Sredanci – Đakovo – Osijek | 55 | | | 23 | 32 |
| 8. Zagreb – Velika Gorica – Lekenik | 28 | | | 8 | 20 |
| TOTAL 1 – 8 | 257 | 50 | 29 | 69 | 111 |

Rehabilitation Project on Zagreb – Lipovac motorway, which started at the end of 2003, includes the following sections: Ivanić Grad – Lipovljani (51 km), Lipovljani – Dragalić (38 km) and Dragalić

– Brodski Stupnik (39 km) was completed in 2005. In 2006 was completed the entire rehabilitation project in 2006 with the completion of works on the "Sava" bridge, near Ivanja Reka. The total value of the rehabilitation project on the mentioned sections amounts to 96.5 million EUR. In addition to the above stated, the Program for the period 2005 – 2008 predicts the continuation of Krk bridge rehabilitation, the completion of which is planned for 2007.

After the completion of motorway rehabilitation works, all the existing motorways shall be brought to the optimal condition, so that the total motorway network shall be maintained according to the European standards.

3. NEW FINANCING METHOD FOR MOTORWAY CONSTRUCTION AND MAINTENANCE

Since entering into force of the amendments on Public Roads Act in March 2001 there is a new financing model for motorway construction and maintenance from toll collections, compensations from petroleum products in the amount of 0.60 HRK/liter, compensations for the use of road land and performance of auxiliary works near the motorways, as well as from loans obtained on domestic and foreign financial market. In the past, the tolls charged on motorways represented the revenue of the state budget, and motorway and other state roads construction and maintenance was financed from the state budget.

In relation to the earlier budget financing, the appropriated funding sources ensure the continuity of implementation of all the necessary preliminary activities for the motorways construction – producing project documentation, exploratory works, procurement of location and other permits, preparation of parceling studies, mine clearance, land acquisition, execution of public tenders for the selection of the most competitive contractor, arranging contracts, as well as the continuity of the works execution. The continuity helps to achieve the maximum effects in dynamics and quality design preparation and construction.

The new approach has enabled a long-term investment planning for public road construction and maintenance, realistic definition of the four-year (medium-term) Government programs for the public roads construction and maintenance according to the Law, independent financing from tolls and compensations from petroleum products, as well as provision of the necessary additional financial resources on domestic and international financial market, efficient organization for the implementation of Government programs for public roads construction and maintenance, as well as efficient control of programs realization and use of resources.

Ministry of Public Works, Reconstruction and Construction proposed to the Government and the Parliament a model which they accepted. The company Hrvatske autoceste d.o.o. was established to professionally manage and realize the motorway project and to take over all financial commitments. The financial model was designed, proposed and accepted, and it completely eliminated the state from the financing and payment of loans, and the model is realized with the financing of motorway construction with 40 % from own resources and 60 % from loans. Depending on forthcoming years, own resources usually consist 30-40 % of tolls, and 60-70 % of compensations on petroleum products in the amount of 0.60 HRK per liter.

Such financial model is the first in transition countries, i.e. in the countries which do not have a constructed motorway network.

With the foundation of Hrvatske autoceste in April 2001 all the financial liabilities of the Croatian Motorway Administration were written off, so that Hrvatske autoceste started with their work without any financial burdens. The Ministry of Finance, on account of cheaper loans on domestic and international financial market, enabled Hrvatske autoceste to realize loans with the financial guarantee of the Republic of Croatia.

4. FINANCIAL MODEL OF HRVATSKE AUTOCESTE

The financial model of Hrvatske autoceste was designed for the purpose of better management of motorway financing and construction process in the Republic of Croatia. The program of the Government of the Republic of Croatia presents goals which need to be achieved, and the financial model shows whether it is possible to achieve them, and if it is, which preconditions have to be fulfilled in order to achieve those goals.

The financial model must answer the following questions: until 2005 – how large shall be the yearly costs, what is the dynamics of own revenues and which amounts have to be provided through loans in order to the implement the program – and after 2005: what are the yearly payments of loans spent by 2005, what is the annual income (revenues) and what are the motorway maintenance and management costs.

The model is good if it ensures reliable financing investments and other costs in the period from 2001 to 2005 and if own inflow after 2005 ensures regular loan repayment with the settlement of maintenance and management expenses. Indeed, the model is good if beside all this in years after 2005 the inflow ensures also the surplus of cash which would enable the preparation of the new four-year construction program.

The financial model provides answers to all these questions and the analysis up to 2030, because the last installment is due in 2030. Since the model includes many variable data, the changes of input data, as well as the results of the financial model, must constantly be observed.

During planning of the financial model all the input data were simulated, i.e. they were based on valid expert evaluations. Evaluations of loans were also based on evaluations and contemporary financial rating of the Republic of Croatia. Since the stability of the financial model was desired, which was impossible in the very beginning, the model was made very conservatively, i.e. the revenues were presented as larger than planned, while are expenditures were presented as smaller.

When the realization of construction plan started, the simulated values in the financial model started to be replaced with the real ones. Based on the signed constructions agreements the building costs were known, and based on the signed loan agreements the credit terms were known, so that the financial model was becoming more stable and realistic. The more construction and loan contracts were signed, the more stable the model became. However, the financial model can never be completely stable because of the possibility of change in final amounts of construction (more or less work and unforeseen works) and in loans because of EURIBOR and US LIBOR, exchange rate differentials, annual growth of traffic and of petroleum products. A large number of input data with built-in reserve is already at disposal, so that, for now, we can say that the financial model is relatively stable and realistic.

Table 6. Review of financial sources realization for the Program 2001 – 2004

| Description | Realized in millions HRK | | | | | % Share |
|--------------------------|--------------------------|-----------------|-----------------|-----------------|------------------|---------------|
| | 2001 | 2002 | 2003 | 2004 | Total | |
| 0 | 1 | 2 | 3 | 4 | 5 (1+2+3+4)) | 6 |
| Receipt from tolls | 0 | 428.33 | 539.93 | 774.93 | 1,743.19 | 9.28 |
| Tariff in the fuel price | 623.26 | 1,242.86 | 1,322.12 | 1,338.48 | 4,526.72 | 24.11 |
| Other business receipts | 137.34 | 404.27 | 261.45 | 139.99 | 943.05 | 5.03 |
| Loans | 1,006.29 | 2,560.07 | 3,716.14 | 4,280.39 | 11,562.89 | 61.58 |
| TOTAL | 1,766.89 | 4,635.53 | 5,839.64 | 6,533.79 | 18,775.85 | 100.00 |

The financing model, presented in table 6, has enabled for a long-term investment planning of motorway construction and maintenance, independent financing from tolls and compensations from petroleum products, efficient control of Program realization and spending of resources, as

well as provision of necessary additional financial resources on domestic and international financial market.

Table 7. Planned amounts of financial sources for the Program 2005 – 2008

| Description | Realized in millions HRK | | | | | % Share |
|--------------------------|--------------------------|-----------------|-----------------|-----------------|------------------|---------------|
| | 2005 | 2006 | 2007 | 2008 | Total | |
| 0 | 1 | 2 | 3 | 4 | 5 (1+2+3+4)) | 6 |
| Receipt from tolls | 945.00 | 1,010.00 | 1,100.00 | 1,155.00 | 4,210.00 | 22.07 |
| Tariff in the fuel price | 1,375.00 | 1,417.00 | 1,460.00 | 1,504.00 | 5,756.00 | 30.18 |
| Other business receipts | 90.00 | 93.00 | 96.00 | 99.00 | 378.00 | 1.99 |
| Loans | 2,600.00 | 2,073.03 | 2,003.91 | 2,051.12 | 8,728.06 | 45.76 |
| TOTAL | 5,010.00 | 4,593.03 | 4,659.91 | 4,809.10 | 19,072.06 | 100.00 |

5. REVENUES AND COSTS OF HRVATSKE AUTOCESTE

The basic revenues (receipts) of HAC come from: toll collection, petroleum products fee in the amount of 0.60 HRK per liter, compensation for the use of the road land and performance of auxiliary industries alongside the motorways and also from loans obtained in domestic and international financial market. The table 8 shows the realization and the projection of revenues (receipts) from toll collection and petroleum products fee in million HRK.

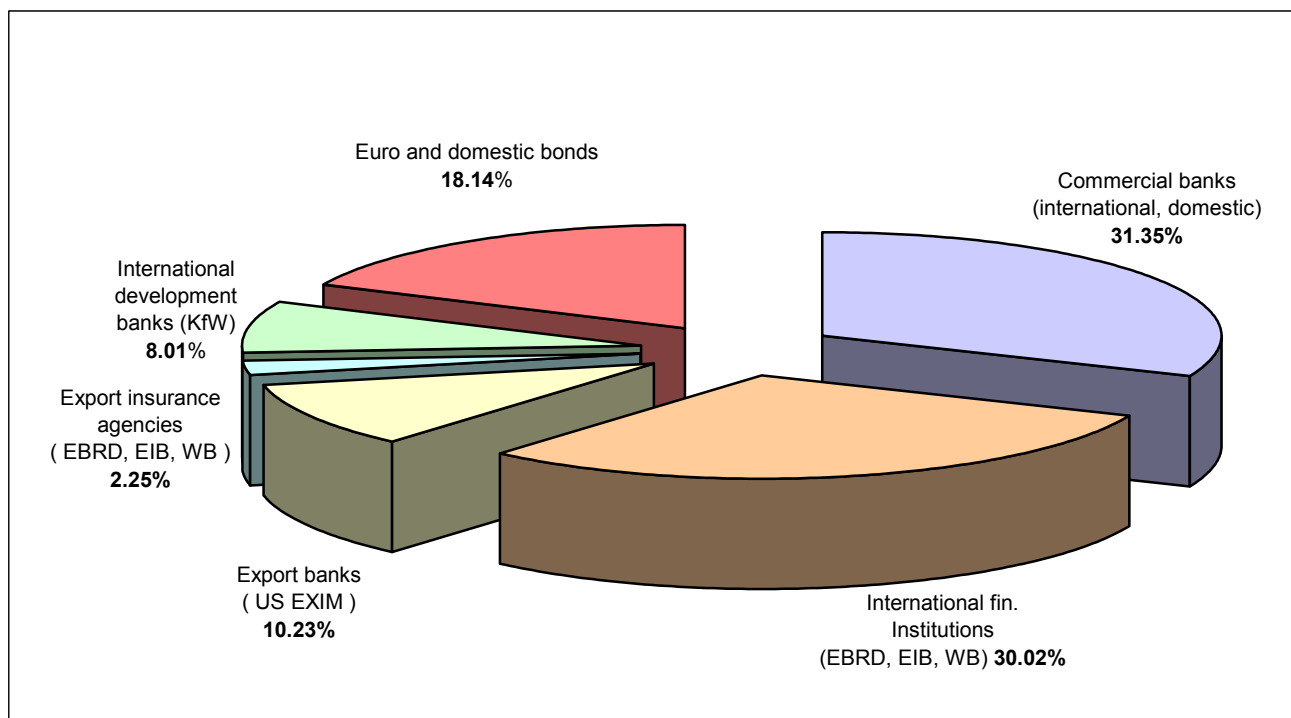
Table 8 – Realization and income plan from toll collection and petroleum products fee

| No. | Description | Realization in millions HRK | | | | Projection in millions HRK | | | | | | |
|-----|-----------------------------|-----------------------------|--------------|--------------|--------------|----------------------------|--------------|--------------|--------------|---|--------------|--------------|
| | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| 1. | Toll collection receipts | 0 | 428 | 540 | 775 | 945 | 1,010 | 1,100 | 1,155 | 1,201 | 1,249 | 1,286 |
| 2. | Petroleum products receipts | 623 | 1,243 | 1,312 | 1,338 | 1,417 | 1,460 | 1,504 | 1,549 | 1,596 | 1,644 | 1,677 |
| | Total | 623 | 1,671 | 1,852 | 2,113 | 2,362 | 2,470 | 2,604 | 2,704 | 2,797 | 2,893 | 2,963 |
| No. | Description | Projection in millions HRK | | | | | | | | | | |
| | | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| 1. | Toll collection receipts | 1,325 | 1,365 | 1,406 | 1,448 | 1,448 | 1,448 | 1,448 | 1,448 | 1,448 | 1,448 | 1,448 |
| 2. | Petroleum products receipts | 1,711 | 1,745 | 1,780 | 1,816 | 1,816 | 1,816 | 1,816 | 1,816 | 1,816 | 1,816 | 1,816 |
| | Total | 3,036 | 3,110 | 3,186 | 3,264 | 3,264 | 3,264 | 3,264 | 3,264 | 3,264 | 3,264 | 3,264 |
| No. | Description | Projection in millions HRK | | | | | | | | Total receipts for the period 2001 – 2030 | | |
| | | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | | | |
| 1. | Toll collection receipts | 1,325 | 1,365 | 1,406 | 1,448 | 1,448 | 1,448 | 1,448 | 1,448 | 36,706 | | |
| 2. | Petroleum products receipts | 1,711 | 1,745 | 1,780 | 1,816 | 1,816 | 1,816 | 1,816 | 1,816 | 49,443 | | |
| | Total | 3,036 | 3,110 | 3,186 | 3,264 | 3,264 | 3,264 | 3,264 | 3,264 | 86,149 | | |

6. LOANS

Hrvatske autoceste obtained their loans for the 2001 - 2004 period, in the amount of 11.56 billion HRK (1.54 billion EUR) from commercial banks (international and domestic 31.35%), export insurance agencies (NEXI; OPIC 30.02%), export banks (US EXIM 10.23%), international financial institutions (ERBD; EIB; WB 2,25%), international development banks (KfW 8.01%), and in the euro and the domestic bonds market (18.14%). Figure 1 displays HAC loans according to the loan structure. The average loan maturity is 13 years (ranging from 10 to 18 years), with a 4 % average yearly cost of loan.

Figure 1 - Overview of the Hrvatske autoceste d.o.o. loans (1.54 million EUR)



In the 2005 – 2008 period, it is planned to use loans in the amount of 8.7 billion HRK, of which 1.3 billion HRK are already contracted loans, and for the remaining 7.4 billion HRK it is necessary to contract new loans. The structure of the planned loans is shown in Figure 2.

Figure 2 – Overview of the Hrvatske autoceste d.o.o. loans for the Program for the 2005 – 2008 Period (1.16 million EUR)

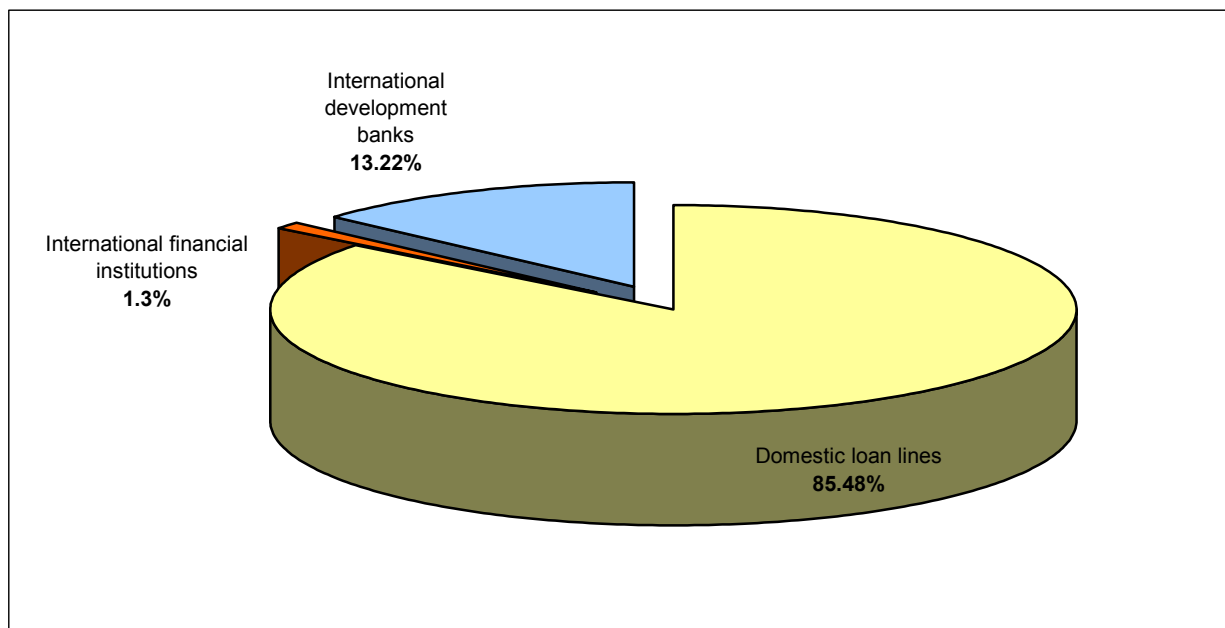


Table 9 gives an overview of the costs of loans and principal repayments which were required for the realization of the Program for the 2001 – 2004 Period, as well as the costs of loans and principal repayments which are required for the realization of the Program for the 2005 – 2008 Period.

Table 9 - Overview of the repayment of all loans for the Program for the 2001 – 2004 Period and the Program for the 2005 – 2008 Period

| No. | Description | Realization in millions HRK | | | | Liabilities in millions HRK | | | | | | |
|-----|---------------------------|-----------------------------|--------------|--------------|--------------|-----------------------------|--------------|--------------|--------------|---|--------------|--------------|
| | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| | Loan liabilities | 6 | 115 | 698 | 818 | 643 | 1,041 | 1,490 | 1,693 | 2,146 | 2,399 | 2,611 |
| 1. | Interest expenses and fee | 6 | 115 | 448 | 338 | 643 | 768 | 886 | 948 | 979 | 932 | 857 |
| 2. | Principal repayments | 0 | 0 | 250 | 480 | 0 | 273 | 604 | 745 | 1,167 | 1,467 | 1,754 |
| No. | Description | Liabilities in millions HRK | | | | | | | | | | |
| | | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| | Loan liabilities | 2,573 | 2,291 | 2,195 | 2,098 | 1,919 | 1,497 | 1,292 | 832 | 539 | 290 | 199 |
| 1. | Interest expenses and fee | 742 | 638 | 541 | 445 | 350 | 263 | 195 | 112 | 83 | 41 | 28 |
| 2. | Principal repayments | 1,831 | 1,653 | 1,654 | 1,653 | 1,569 | 1,234 | 1,097 | 720 | 456 | 249 | 171 |
| No. | Description | Liabilities in millions HRK | | | | | | | | Total loan liabilities for the period 2001 – 2030 | | |
| | | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | | | |
| | Loan liabilities | 189 | 97 | 21 | 20 | 20 | 19 | 18 | 9 | 29,778 | | |
| 1. | Interest expenses and fee | 18 | 9 | 4 | 3 | 3 | 2 | 1 | 0 | 10,398 | | |
| 2. | Principal repayments | 171 | 88 | 17 | 17 | 17 | 17 | 17 | 9 | 19,380 | | |

Contracted loans:

- Chase Manhattan Bank, 228,713,000 USD, signed by the Ministry of Finance in March 1999, for the financing of the Zagreb – Split motorway construction, Bregana – Zagreb section and Bosiljevo – St. Rok junction (works by Bechtel), the loan repayment has been taken over by the Ministry of Finance.
- Deutsche Bank, 150,000,000 USD, signed in November 2001, for the financing of the Zagreb – Split motorway construction, Bregana – Zagreb section and Bosiljevo – St. Rok junction (works by Bechtel). The loan has a bullet repayment due in 2011.
- Kreditanstalt für Wiederaufbau, 110,000,000 EUR, signed in May 2002, for the financing of the Zagreb – Split motorway construction, Maslenica – Zadar1 and Prgomet – Dugopolje sections. It is repaid in 20 half-yearly instalments from 2006 to 2015.
- Bank Austria, Bayerische Landesbank, Privredna banka d.d., 150,000,000 EUR, signed in July 2002, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. It is repaid in 13 half-yearly installments from 2006 to 2012.
- Depfa Investment Bank Limited, Zagrebačka banka d.d., 150,000,000 EUR, signed in December 2002, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. It is repaid in 21 half-yearly installments from 2006 to 2016.
- Euro bonds, 150,000,000 EUR, signed in March 2003, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. The loan has a bullet repayment due in 2010.
- Domestic bonds, 100,000,000 EUR, signed in October 2003, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. The loan has a bullet repayment due in 2012.
- Deutsche Bank AG, Singapur branch, The Bank of Tokyo – Mitsubishi, Ltd. and Mizuho Corporate Bank Ltd. (NEXI insurance), 250,000,000 EUR, signed in October 2003, for the financing of the Zagreb – Split motorway construction, Zadar2 – Prgomet section. It is repaid in 20 half-yearly installments from 2007 to 2016.
- The European Bank for Reconstruction and Development (EBRD), 45,000,000 EUR, signed in November 2003, for the financing of the Zagreb – Lipovac motorway construction, Županja – Lipovac section. It is repaid in 30 half-yearly installments from 2007 to 2021.
- The European Bank for Reconstruction and Development (EBRD), 46,500,000 EUR, signed in December 2002, for the financing of the Zagreb – Lipovac motorway rehabilitation, Zabok – Ivanić Grad section, including the Save bridge, and Ivanić Grad – Brodski Stupnik section, including the bridge in Novska. It is repaid in 24 half-yearly installments from 2006 to 2017.
- European Investment Bank (EIB), 50,000,000 EUR, signed in December 2002, for the financing of the Zagreb – Lipovac motorway rehabilitation, the Zagreb by-pass road. It is repaid 4.5 years after every tranche disbursement, and the final deadline for repayment is 15 years. The first repayment is in 2008.
- The International Bank for Reconstruction and Development (IBRD), 15,700,000 EUR, signed in May 2003, for the financing of the Krk bridge rehabilitation. It is repaid in 20 half-yearly installments from 2008 to 2018.

- European Investment Bank (EIB), 45,000,000 EUR, for the financing of the Zagreb – Lipovac motorway construction, the 29.43 km long Županja – Lipovac section. It is repaid 5.5 years after every tranche disbursement, and the final deadline for repayment is 25 years. The first repayment is in 2008.
- Overseas Private Investment Corporation (OPIC), 250,000,000 USD, for the financing of the Zagreb – Split motorway construction, Mala Kapela Tunnel – Sveti Rok junction section, works by Bechtel. It is repaid in 20 half-yearly installments from 2008 to 2018
- Privredna banka Zagreb d.d., Zagrebačka banka d.d., 150,000,000 EUR, signed in 2005, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. It is repaid in 21 half-yearly installments from 2009 to 2019.
- Privredna banka Zagreb d.d., Zagrebačka banka d.d., 100,000,000 EUR, signed in May 2005, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. It is repaid in 23 half-yearly installments from 2009 to 2020.
- Privredna banka Zagreb d.d., Zagrebačka banka d.d., 70,000,000 EUR, signed in 2006, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. It is repaid in 23 half-yearly installments from 2010 to 2021.
- Privredna banka Zagreb d.d., Zagrebačka banka d.d., 80,000,000 EUR, signed in 2006, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. It is repaid in 23 half-yearly installments from 2010 to 2021.
- Privredna banka Zagreb d.d., Zagrebačka banka d.d., 50,000,000 EUR, signed in 2006, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. It is repaid in 23 half-yearly installments from 2010 to 2021.
- Privredna banka Zagreb d.d., Zagrebačka banka d.d., 100,000,000 EUR, signed in 2006, for the financing of the motorway construction according to the Construction Program of the Government of the Republic of Croatia. It is repaid in 23 half-yearly installments from 2010 to 2021.

7. CONCLUSION

The financing model for the construction and maintenance of motorways in the Republic of Croatia is a new approach, which enables the investment planning of the construction and maintenance of public roads, realistic formulation of the four-year Government programs for the construction and maintenance of public roads (Program for the 2001 – 2004 Period and Program for the 2005 – 2008 Period) in accordance with the Law, independent financing from toll collection and petroleum products fee, as well as ensuring the necessary additional funds on domestic and international financial market, the efficient organization for carrying out of the Government construction programs and maintenance of public roads, and also the efficient control of the program realization and the application of funds.

The current results of the realization of the Program for the 2001 – 2004 Period indicate that the new approach to the organization and financing of motorways, established by the Act on Amendments to the Public Roads Act from 2001, is efficient:

- because it produces the expected results by executing the program tasks in timely manner

- because it enables the management of complex processes and a high level of control of all crucial activities
- because it enables long term public planning, which makes it possible for the business entities from the area of construction and auxiliary industries to produce realistic multi-annual business plans

Likewise, the financial model demonstrates that the repayment of loans spent for the Construction and Maintenance Program for the 2001 – 2005 Period, will be possible from Hrvatske autoceste's own revenue. Also, based on its own revenue, Hrvatske autoceste will, along with the repayment of current loans, finance the succeeding following four-year construction and maintenance program for the 2005 – 2008 period.

The financing model has been dimensioned in a way that the realization of the program for the 2001 – 2004 period leaves open the possibility of financing the new four-year motorway construction and maintenance program for the 2005 – 2008 period and, what is most important, it provides the possibility of repayment of all these loans through the future revenue.

REFERENCES

Brojenje prometa na cestama Republike Hrvatske 2002. Zagreb: Hrvatske ceste, 2003.

Hrvatske autoceste d.o.o. (2003) *Izvešće o poslovanju Hrvatskih autocesta d.o.o. u razdoblju 2001. – 2004. godine.* Zagreb, prosinac 2003.

Hrvatske autoceste d.o.o. (2004) *Financijski model 2001. – 2020. godine.* Zagreb, siječanj 2004.

Hrvatske autoceste d.o.o. (2004) *Izvešće o poslovanju Hrvatskih autocesta d.o.o. za 2003. godinu.* Zagreb, siječanj 2004.

Kovač, S. (2003) Perpetuum mobile. Intervju u časopisu Banka. Zagreb, listopad 2003.

Preliminarna studija za procjenu indirektnih koristi izgradnje autocesta u Hrvatskoj. Zagreb, IGH, siječanj 2001.

Program građenja i održavanja javnih cesta za razdoblje od 2001. do 2004. godine. Vlada Republike Hrvatske, veljača 2001. godine.

Sapunar, J. (2004) *Model financiranja autocesta u Republici Hrvatskoj.* Sabor hrvatskih graditelja 2004. Cavtat, travanj 2004.

Sapunar, J. (2003) *Prezentacija.* OPIC (Overseas Private Investment Cooperation) konferencija. Bled, studeni 2003.

Sapunar, J. (2003) *Studija opravdanosti sanacije posavske autoceste, sektor: Ivanja Reka – Brodski Stupnik.* Zbornik priopćenja. Treći hrvatski kongres o cestama.

Strategija prometnog razvitka Republike Hrvatske. Ministarstvo pomorstva, prometa i veza Republike Hrvatske, Zagreb 1999.

Svodna studija financijsko-tržišne opravdanosti autocesta u Republici Hrvatskoj. Zagreb, IGH, studeni 2000.