

The Financial Model of Public Railway Infrastructure Development in the Republic of Slovenia: An Example of 'Build, Operate, Transfer' (BOT) Form of Project Financing

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Abstract

The development of the railway infrastructure is of essential importance for Slovenia, which lies at the crossing of V. and X. Trans-european transport corridors. It is important for the sustainable development and rising of domestic economy effectiveness, which is recently confronting increasing road traffic and severe environmental conditions, that represent new requirements and opportunities by forming the Resolution on the National program of public railway infrastructure development. According to the proposal of the Resolution, we divided the investment program, of which the realization was planned for the period between 2005 and 2020, to two parts, as follows: (i) the development part, which includes investment into upgrading and enlarging of public railway infrastructure, and (ii) regular part, referring to implementation of public service and maintenance of existing infrastructure. Since the regular part is going to be financed from the state budget, we will be focusing only on the financing of those infrastructure projects, that belong in the so called development part and promise considerable quality improvement of railway network and transport services. The financial model was developed as 'Build, Operate, Transfer' (BOT) form of project financing, where the core part take: (i) special investment vehicle, of which the private founders would compete at the international request to gain concession service, and (ii) special financial purpose vehicle, which would manage the fund's money flows and transactions of annual availability payments to the concessionar.

Key words: *Public-private partnership, project finance, infrastructure, railway, Slovenia.*

JEL Classification: *E62, H4, H54, R42, G3*

1 Introduction

Development of railway infrastructure has been closely connected with classical capital intensive investment financing for decades. Development of public-private partnership, including different forms of co-operation between the state or local communities and legal entities and natural persons of private sector, has not emerged until an economic and socio-political environment that enabled private companies to participate in the implementation of public services and ensured access to public infrastructure had been set up. As quoted by Lorrain (1999), this refers primarily to the period marked by the transition from delegated to managed economy, by deregulation and by processes of enterprise ownership transformation, which renders possible the creation of an institutional framework that allows the implementation of public services to the private sector, ensures public infrastructure and gives the state the role of a regulator.

In professional literature we find different forms of public-private partnership that can be divided in two groups according to the level of private sector incorporation into the implementation of public services and the provision of public infrastructure: (i) various forms of private sector co-operation with the right of ownership to a civil or construction engineering object remaining in hands of public sector and only the implementation of activity being privatised and (ii) forms of privately managed operations where the right of ownership to the object is temporarily or permanently passed over to the private sector. As quoted by Haarmayer and Mody (1997), service performance contracts, public infrastructure management contracts, lease contracts and classical concession contracts can be placed into the first group, while different forms of partial or total divestiture and different approaches to project financing belong to the second group.

2 Project financing

Project financing represents an off-balance mode of providing medium and long-term capital for capital intensive project financing, which requires a formation of a capital structure, where project assets and cash flow will cover all obligations resulting from liabilities (Nevitt 1989; Finnerty 1996; Tiong and Alum 1997a, b; Mrak et al. 2005). Because of the limited rights of ownership to a civil or construction engineering object (that is the outcome of concession relationship), cash flow represents the most important guarantee for repayment of obligations resulting from liabilities. That's why the creditors, when establishing the concessionary's debt capacity, favour infrastructural projects that provide a higher level of certainty in the anticipation of future cash flows, while at the same time they are not interested in the debt capacity of the sponsors (except if they would guarantee for concessionary's obligations with all their property). As quoted by Schmidt (1993) and Merna and Oven (1998), there is a considerable difference between project and enterprise financing. While with project financing the servicing of obligations resulting from liabilities is ensured by project assets and cash flow, in case of enterprise and on-balance sheet financing these obligations are covered by the assets and cash flow of the enterprise and not only by a single investment project. However, this is not true, if for the purpose of an investment project implementation a new enterprise would be set up. In such a case the value of recognized assets and liabilities would be equivalent for the enterprise as well as for the contractually segregated infrastructural project (Trujillo et al. 1998; Merna and Oven 2002). When evaluating the economic acceptability of the infrastructural project feasibility, the key decision making factor for potential investors will be the calculation of the project long-term positive net cash flow (Wynant 1980; Brealey et al. 1996; Backhaus, Sandrock and Schill 1990). If a positive cash flow would not be ensured, the profitability of implementation or the project implementation should be guaranteed by the state or local community; if not, the implementation of the project would be abandoned.

Since the off-balance recognition of assets and liabilities and the resulting segregation of investment project from the guarantee scheme of potential investors is typical for project financing, this financing

technique can be used only when it is possible to structure single infrastructural projects in separate units and transfer them to a private concessionary by granting him a concession for operation (Esty and Christov 2002). As stated by Kensington and Martin (1988), Hoffman (1989) and Buckey (1996), we distinguish three basic techniques of project financing: (i) non-recourse project financing; (ii) limited-recourse project financing and (iii) full-recourse project financing, which at the same time represents a variety of enterprise financing - a recourse mode where project sponsors guarantee for the repayment of obligations resulting from liabilities with all their property. With this mode of financing there is no off-balance sheet effect to the recognition of assets and obligations to liabilities (Estache and Strong 2000; Pollio 1999).

Non-recourse project financing is a financing technique, where creditors and other investors have no direct or indirect access to project sponsors property *ex voto*, as they do not guarantee for the repayment of obligations with all their property, but only to the amount of paid-in capital or to the amount defined by contract. Therefore a future cash flow with a higher risk level requires a higher amount of guarantee or a bigger volume of equity capital, which represents the basic guarantee for repayment of obligations resulting from liabilities and a base for attaining a positive financial leverage (Shah and Thakor 1987; Scheinkestel 1997; Worenklein 2003). Financial construction of an investment project should be let known to potential investors in advance or they will not be able to come to a decision whether they find a project economically acceptable and whether the return on investment is proportional to the risk taken, while at the same time in unstable circumstances they would be exposed to a too big risk of bankruptcy. Things are utterly different in case of limited-recourse project financing where risks are allocated among individual contractors in such a way that a limited guarantee of project sponsors exists for the repayment of obligations resulting from liabilities, usually in form of guarantees or by setting aside a fixed amount of sponsor assets to a tutorship account (Benoit 1005; Turró 1999; Haarmeyer and Mody 1999; Farrell 1999). With this guarantee project sponsors or third parties acting upon their instructions bind themselves to pay a fixed amount to another party should their co-contractor fail to meet his obligations in due time. When the instrument of tutorship account is used as a form of guarantee, a sufficient amount of money must be

remitted to the account for an eventual repayment of unsettled obligations resulting from the investment project.

In practice we distinguish another two techniques of project financing: (i) project financing with the segregation of investment project into an *ad hoc* founded project enterprise (Single Purpose Stock Company or Special Purpose Vehicle) and (ii) project financing with a contractual segregation of the investment project, which organisationally remains part of the sponsor as an legal entity, while in contracts (above all in credit contracts) limitations regarding the investor's access to sponsor assets are defined and all other legal relations are regulated (Nevitt 1980; Terry 2002). In project financing an entity of private law enters (regulated by law or other legal act) a concession relation with an entity of public law (state or local community). To protect public interest this entity can limit the legal capacity of a private co-contractor to make new concession contracts and in this manner prevents the encumbrance of net cash flow with obligations resulting from other concession relations (Rave and Myers 2005). Nevertheless, both project financing techniques have their advantages and weaknesses. Limitation of project enterprise activity can usually lower the risk of contractual opportunism, but can not exclude it completely. Such limitations can give creditors and other investors a bigger influence on project enterprise decision making, since they may request the change of management (step-in clauses) if the project is ill managed or if the administration board objects to close the project prior to the planned termination (Vinter 1995). However, herewith they run the risk of the new administration taking over an unfinished project of a low residual value (Hoffman 1989; Merna and Njiru 2002).

As quoted by Mrak et al. (2005), the main advantage of project financing is an easy access to financial resources and reduction of project risk to a level susceptible for investors.¹ That is why project

¹ *At this the potential investors are exposed not only to external but also to internal project risks, originating in different contractual relations (Dewatripont and Legros 2005). Contractors may have different expectations on quality and cost of an investment project implementation and may at the same time possess inside information about contractual variables whose modifications could jeopardize the investment project implementation or at least extend its period of activation, i.e., the time which separates the demand and supply effect of investments. Therefore the management of project and other risks is of crucial importance for reducing the exposure of potential investors to the risk of information asymmetry and contractual opportunism (Grossmann and Hart 1986; Hart and Moore 1990; Hart 1995).*

financing enables the implementation of those infrastructural projects, which could otherwise expose investors to too big risk and would therefore not be brought to a close. Since the implementation efficiency of capital intensive investment projects is the most important guarantee for the repayment of obligations resulting from liabilities, the potential private investors will decide to implement those projects, where a minimal volume of annual revenues will be guaranteed by the state or local community, while they will find projects with a bigger demand risk less interesting (Grimsey and Lewis 2002; Rhodes and Loschacoff 2005). A minor interest will be demonstrated also by creditors, who will request additional guarantees for the repayment of obligations resulting from liabilities from the concession grantor or from project sponsors. When this is not possible, the project enterprise can insure their repayment in financial market; in this case a free access to a developed financial market must exist (Buljevich and Park 1999; Merna and Njiru 2002).

3 Build, Operate, Transfer (BOT) Technique of Project Financing

A modern Build, Operate and Transfer technique of project financing was developed in Turkey in the 1980s. Then, the Turkish government under the president Turgot Özal transferred the burden of construction and renewal of public energy network to private enterprises, which were in exchange granted a time limited right to operate these infrastructural objects and to refinance the obligations resulting from liabilities (including the return on invested equity capital) with cash flow from the new or reconstructed energy infrastructure marketing (Augenblick and Custer Jr. 1990; Huse 1997; Oktal 1998).

The BOT technique of project financing is most frequently employed in financing of capital-intensive cross-border projects. The main feature of this mode of financing is a concession for the construction and maintenance of public infrastructure or other public service operations granted by the host state, with the concessionary taking on the responsibility to provide all the missing financial resources and to transfer all rights of ownership resulting from the project back to the grantor after the expiration of

the concession period without any additional transaction costs. As stated by Katz and Smith (2003) and Hyman and Shah (2003), this way the state or local community is able to transfer a part of responsibility for financing, construction and maintenance of public infrastructure from public to private sector, with private co-contractors being given the possibility to maximize the rate of return on invested capital by increasing the operation efficiency. The return on invested capital is unlimited upwards (unlimited up-side potential) and represents the most important motive for the participation of private investors in public infrastructure development. The objective of participants in project financing is to maximize their function of satisfaction (Adefulu 1999). In order to attain this goal, a contractual balance representing a pareto optimum of contractual relations must be re-established. To achieve this, a development project agreement is required, regulating contractual relations regarding: (i) obligations and rights of project financing participants; (ii) provision of financial resources for the construction and maintenance of public infrastructure; (iii) allocation of financial, technical and technological, operational and other risks; (iv) measuring of the concessionary's operational efficiency and of the quality of public infrastructure maintenance in the operational phase period (problem of criteria determination); (v) mode of reimbursement or fining the delays in project implementation; (vi) various aid forms given by co-contractors in case the opposite party fails to meet its obligations; (vii) the possibility to amend or modify the articles of agreement; (viii) circumstances and ways for expansion or dispossession of concession right; and (ix) the way of solving possible disputes among the participants of the concession relation (McCarthy and Tiong 1999; Ridley 1995; Menheere and Pollalis 1996; Delmon 2000; Czuchry and Yasin 2003).

As quoted by Rickard (1988), Walker and Smith (1995), Merna and Smith (1996) and Lu et al. (2000), the BOT technique of project financing involves a temporary privatization of public infrastructure, therefore the state or local community must acquire the consent of interest groups before acceding to project financing as a form of public-private partnership. According to Gayle and Goodrich (1990), a temporary privatization of public infrastructure can be understood as a process of the public sector role reduction in the ensuring of access to public infrastructure (as a public good), while the role of the private entrepreneurial initiative is increasing with the final payer of services being the user, not the

taxpayer (user-pay principle). Therefore, before signing the concession agreement, the state or local community (principal) must carry out four analyses (Coven 1999): (i) analysis of public infrastructure and of the level of population provision with public services and goods; (ii) analysis of existing mechanisms of regulation; (iii) analyse the relation of interest groups to the admission of private sector to public economic service operations; (iv) analyse financial and other possibilities for the introduction of public-private partnership. In the opposite case, the missing consent of interest groups to the temporary privatization of public infrastructure could put the financial close or the investment project implementation at risk.

As stated by Mrak et al. (2005), the BOT project financing technique was designed on the basis of the development of the limited approach to financing and modern concession forms. In the first case we deal with a project financing technique, where creditors have no right of recourse to the sponsor's or grantor's property and therefore decide to co-finance the investment project only when it is capable of creating enough cash flow to service the debt (cash flow related lending), when there is a guarantee scheme and where the volume of equity capital is proportional to the project enterprise exposure to business risks (condition of capital adequacy) (Dias and Ioannu 1995); Rammassingheu 1999; Wang et al. 2000). In the second case we are dealing with the development of various concession forms, differing from the classical ones, as they enable a bigger role of public sector in investment decision making in the case of properly structured project financing (Shaw et al. 1996; Siegelbaum 2003).

With the characteristic of project financing being the servicing of obligations resulting from liabilities with investment project assets and cash flow, this financing technique is employed primarily in those economic activities, where prices of products or services are regulated by the state and for this reason the future cash flow can be anticipated with relative certainty (Tiong 1995a,b). When this is not possible, the stability of sales revenues will have to be guaranteed by the state or local community. The latter is opposed by many who believe that through aid in different forms of guarantees, transfers and subsidies, an aid seeking line of economy (rent seeking industry) starts to grow and finances the X-inefficiency of the concessionary. This also answers the question why the incorporation of private

sector into public provision services still does not guarantee greater efficiency in the provision of population with public goods (Stiglitz 1988; Ordober and Pittman 1995; Rees 1998; Tam 1999; Shih-Ping 2001; Amos 2004).

4 Strengths and Weaknesses of the BOT Approach to Project Financing

As quoted by Menheere and Pollalis (1996), project financing represents the fastest way of access to public infrastructure for the state or local community and the most expensive one for end-users. This is the consequence of the fact, that the concessionary, unlike the public sector, wants to maximize the profit rate on private capital and not the function of social satisfaction, although profit gain in the provision of public goods should be subjected to the satisfaction of public needs (Ivanjko 2003). Therefore a question arises, whether the concessionary will lead a policy of a socially responsible operating and whether he will take into account the maximization of economic profit rate as an objective or will the state or local community have to intervene as a price determination regulator (Osborn, 1988; Renzetti, 1992). This dilemma is being rejected by Kay and Thompson (1991); according to their opinion, public-private partnership (how the BOT technique of project financing is classified) renders possible the harmonization of expectations from the public as well as from the private sector, therefore the task of the state or local community is to ensure an efficient use of private funds in order to maximize the function of social satisfaction.

According to Mrak et al. (2005), one of the advantages of the BOT project financing is the transfer of responsibility for financing, construction and maintenance of public infrastructure from public to private sector, what prevents the negative influence of the classical financing mode of capital intensive investment projects to the state budget balance or to the increase of state or state guaranteed debts. The latter is more of an exception than a rule as the state or local community often appears in the role of a project sponsor or guarantor. As also in this case the access to state or local community funds is conditional, the most important guarantee for repayment of all obligations resulting from liabilities is

the concessionary's right to revenues resulting from the marketing of public infrastructure, which should according to investor's estimate be sufficient to service the debt and to pay the requested profit on invested capital to the owners (ibid.). As quoted by Benuit (1995) and Katz and Smith (2003), in this way the state or local community can implement those investment projects which otherwise would not be brought to a close because of public-financial and other restrictions. Should their implementation be ensured by the state or local community, it could jeopardize the long-term sustainability of public finances and the implementation of other investment projects.

By means of project financing, infrastructural projects can be implemented even when the state or local community does not have all the necessary financial funds at its disposal. A project enterprise can implement single investment projects when credit terms in capital market are the most favourable. One of project financing features is namely a bigger share of debt capital in the capital structure of a project enterprise, what makes the interest rate an important factor in defining the optimal capital structure (Logan 2003). As stated by Brigham and Gapenski (1996), the use of financial leverage is based on the principle, that debt capital can be used only when at least the cost of interest is covered by net financial gain. This enables the engagement of a bigger volume of debt capital at a lower interest rate and at an unchanged return on total capital and shortens the activation period of investment or the average time needed for an averagely realized unit of investment to activate (Žižmond and Strašek 1999).

As quoted by Menheere and Pollalis (1996), Fitzgerald and Machlin (2001) and Esty (2003), one of the advantages of the BOT project financing is the allocation of financial, technical and technological, operational and other risks. Allocation and identification of risks are of key importance for a successful implementation of an investment project. The participants in project financing can attain the pareto optimum of contractual relations only when the risks among individual participants are allocated in a way that each of them undertakes the ventures he can manage best (Wahdan, Russel and Ferguson 1995; Beenhakker 1997; Tam 1999). Risk management is very important in project financing as beside project assets the future cash flow represents the most important guarantee for the

repayment of all obligations resulting from liabilities. A danger exists that in case of risk management inefficiency, the concessionary would increase the return on invested capital at the expense of quality and consecutively turn over to the public sector an infrastructure of a low residual value (Baker 1986; Beidleman, Fletcher and Vashosky 1990; Chapman 1990).

Since one of the project sponsors targets is to maximize the rate of return on equity capital, in case of project financing the potential private investors will decide only for the implementation of the most market-interesting infrastructural projects, while projects with a lower rate of return will have to be implemented by the state or local community. As stated by Pahlman (1996), this is primarily a consequence of rational behaviour of economic subjects and market-driven tendency of potential investors to attain higher profitability. This is not bad from the efficient use of public means point of view, since in case of market-interesting infrastructural projects financed in a classical way, an opportunity loss of welfare in the value of undelivered public goods would arise (Idelovitch and Ringskog, 1995; Klein, 1996). That is why one of the strengths of the BOT approach is the allocation of responsibility for the provision of public goods.

As quoted by Frame (2003), Khan and Parra (2003) and Vincent and Price (2005), the central legal act in project financing is the granting of concession for the construction and maintenance of public infrastructure to a subject of private law (concessionary), who is in most cases selected by a public tender. Here lies a danger, that in the later negotiations, that will take place in the absence of the for-the-market competition, the concessionary will prove inadequate and the state or local community will have to repeat the procedure of granting a concession. This would result in price increase and a set-back in the construction of public infrastructure, this being the reason why here an adequate legal regulation is very important (Rees 1998; Katz and Smith 2003). Quiggin (1998) draws attention to another weakness of concession models, namely the problem of bad arrangements, which appears when the concessionary is not able or willing to fulfil all the contractual obligations. That is why high agency costs can be mentioned as one of the weaknesses of the BOT project financing, which -

according to Shughart, Chappel and Cottle (1994) - represent a sum total of cost of control, cost of engaged funds and the principal's residual loss.

5 The Financial Model of Public Railway Infrastructure Development in Slovenia

For Slovenia, which lies at the crossing of V. and X. Trans-european transport corridors, development of public railway infrastructure is of essential importance for the future rise of the domestic economy effectiveness. In the last years Slovenia encounters growing road traffic (mostly transit) and ever sharper requests regarding the protection of space and environment, that represent new requirements and opportunities by forming the Resolution on the National program of public railway infrastructure development (ReNPPRID). According to the proposal of the Resolution, we divided the investment program, of which the realization was planned for the period between 2005 and 2020, to two parts, as follows: (i) the development part, which includes investment into upgrading and enlarging of public railway infrastructure, and (ii) regular part, referring to implementation of public service and maintenance of existing infrastructure.² Since the regular part is going to be financed from the state budget, we will be focusing only on the financing of those infrastructure projects, that belong in the so called development part and promise considerable quality improvement of railway network and transport services (see Oplotnik, Križanič and Romih 2005a).

The estimated value of investment from the developmental part of the proposal of the Resolution amounts to 6.22 billion €, taking into account fixed prices from 2005, with single projects sorted into four basic groups, as follows (ibid.):

- upgrading of the existing railway infrastructure
- new construction

² Taking into account the fixed prices from 2005, the new sum total investment value of the proposal of the ReNPPRID in the Republic of Slovenia would be 9.19 billion €.

- construction of high velocity railway lines
- project management and preparation of project and investment documentation

Taking into consideration the financial burden allocation of particular investment groups (see Table 1), the financially most demanding period from the point of view of the complete investment program implementation would be between 2011 and 2017, with the two most intensive investment phases in the field of new construction and construction of high velocity railway lines.

Table 1: Annual Values and the Investment Structure of the Developmental Part of the Proposal of the ReNPPRID

	Upgrading of the existing railway infrastructure		New construction		High velocity railway lines construction		Project management and preparation of project and investment documentation		Total	
	mill €	%	mill €	%	mill €	%	mill €	%	mill €	%
2005	33	2,3	2	0,1	0	0,0	3	0,5	38	0,6
2006	46	3,1	6	0,3	0	0,0	4	0,7	56	0,9
2007	150	10,3	21	1,1	0	0,0	27	4,6	198	3,2
2008	180	12,3	66	3,5	0	0,0	39	6,7	285	4,6
2009	180	12,3	135	7,2	0	0,0	50	8,6	365	5,9
2010	129	8,8	142	7,6	0	0,0	46	7,9	317	5,1
2011	103	7,0	171	9,1	230	10,0	55	9,4	559	9,0
2012	99	6,8	154	8,2	230	10,0	51	8,7	534	8,6
2013	77	5,3	153	8,1	230	10,0	49	8,4	509	8,2
2014	83	5,7	213	11,3	230	10,0	50	8,6	576	9,3
2015	47	3,2	222	11,8	230	10,0	47	8,0	546	8,8
2016	80	5,5	127	6,8	230	10,0	35	6,0	472	7,6
2017	80	5,5	154	8,2	230	10,0	40	6,8	504	8,1
2018	64	4,4	149	7,9	230	10,0	37	6,3	480	7,7
2019	64	4,4	110	5,9	230	10,0	31	5,3	435	7,0
2020	48	3,3	54	2,9	230	10,0	20	3,4	352	5,7
Total	1463	100,0 (23,5)	1879	100,0 (30,2)	2300	100,0 (36,9)	584	100,0 (9,4)	6226	100,0 (100,0)

Source: Ministry of Traffic (2005)

5.1 Organizational Viewpoint of the Financial Model

The financial model of the developmental part of the proposal of the ReNPPRID was planned taking into consideration the present situation and long-term strategic starting-points for public railway infrastructure development (see Ministry of Traffic 2005) as a Build, Operate and Transfer (BOT) approach to project financing, which is a variety of public-private partnership (see Kumaraswamy and Zhang 2001; Bruckermann 2003). As quoted by Daran (2002), from the BOT financing mode organisational point of view, the investment project is in most cases segregated as an *ad hoc* founded project enterprise, to whom later a concession for the implementation and managing of a single project or complete investment program is granted by the state or local community. According to Irwin, Klein and Thobani (1999), Grimsey and Lewis (2002) and Dawatripont and Legros (2005), the foundation of a project enterprise is logical mostly because of the allocation of project risks; in the opposite case the financial close of investment project could be jeopardized. The ones not in favour of this model are opposed to the foundation of the project enterprise, arguing that in this way the risk of information asymmetry and contractual opportunism is increasing as a result of imperfect contracts (see Grossman and Hart 1986; Hart and Moore 1990; Hart 1995) or contractual relations based on the specificity of property (Williamson 1985; Destais 1999; Lissovska 2001).

As stated by Winkelmann (2000), the foundation of a project enterprise is logical especially when hereby debt capacity and possibility for project implementation is increased. This was one of the reasons, why along with the development of this model, we anticipated a foundation of a segregated investment enterprise (special investment vehicle), whose founders should enter an international competition for concession activity, i.e. the implementation and managing of a single infrastructural project or a complete investment program. The selected concessionary, be it a private consortium or a private enterprise, would be offered a concession contract by the state as a grantor and market regulator. By signing it, the concessionary would contract the obligation to implement a single project or a complete investment program and to provide the missing financial resources. In this part of the concession relation, the role of a segregated investment enterprise is very important as it enables the

transfer of private financial means into the financial structure of the BOT project implementation (Merna and Njiru 2002; Weight and Morgan 1992; Hupe 1992). In order to diminish project risks, it is desired for the project enterprise to be organized as an equity joint venture, having the right to make an outsourcing contract (Elliot 1992; Nevit and Fabozzi 1998). The advantage of a private investment enterprise foundation is primarily in risk transfer of the infrastructural project operative implementation from public to private sector, as the latter assumes responsibility for the operative implementation of the project and guarantees an adequate quality of public infrastructure at a pre-agreed price.

Beside the foundation of a segregated investment enterprise, within the framework of this paper also a foundation of a segregated financial fund (special financial purpose vehicle) is suggested. This fund would manage the in-flowing means and the payment of annual availability compensations (availability payments) to the concessionary. As quoted by Trujillo et al. (1998), the setting up of a segregated financial fund is logical, primarily to diminish the risk of contractual opportunism that could endanger the financial construction and implementation of the project. According to Schmidt (1996), Laffont and Tirol (1993) and Dewatripont and Legros (2005), the advantage of a segregated financial fund is displayed in the fact, that the state as the founder has access to all important information regarding fund managing and allocation control of financial resources, thus lowering the risk of information asymmetry and inadequate use of project resources. The fund would also be responsible for checking the concessionary's right to the receipt of annual compensation and a correct use of project resources, what is, according to Büschgen and Ergenzinger (1993), of key importance for a successful implementation of planned investments. With regard to the within the framework of the paper anticipated different sources for the pay-out of concession payments, such as: revenues originating from rights of usage, sources of cross-financing, budgetary funds, etc (see Table 2), the foundation of a segregated financial fund would also be important from the harmonizing the obligations of potential investors point of view, while the concessionary could focus primarily to the operative implementation of infrastructural projects (see Steward-Smith 1995; Affuso et al. 2003).

Table 2: The Segregated Financial Fund Resource Structure Projection for the Pay-off of Concession Payments

	National budget funds	Sources of cross-financing*	Ecological taxes	Usage fees	Revenues resulting from the marketing of other infrastructure	Other sources**	Total
Total, mill €	1910	1590	660	2180	143	165	6649
Structure of sources, %	28,7	23,9	9,9	32,8	2,2	2,5	100,0

Note: (*) e.g. excise taxes, ecological taxes, parking fees etc. (**) Lease of telecommunication capacities

5.2 Financial Viewpoint of the Financing Model

The financial model cash flow simulation of the developmental part of the proposal of the ReNPPRID is based on the starting points of the preliminary study on the possible public railway infrastructure financing models in the Republic of Slovenia (see Rhodes and Loschacoff, 2005; Oplotnik, Križanič and Romih, 2005a,b) and program documentation of the Ministry of Traffic (2005). Taking into account the assumptions and limitations of railway infrastructure financing, the estimated value of investment and the activation period, the cash flow simulation anticipates a concession period of 36 years, coinciding with the concession payment period between 2008 and 2040, during which concession payments will be effected from a segregated financial fund on a yearly basis. As stated by Büschgen and Erzinger (1993), the pay-off of concession payments is frequently connected with the transfer of a long-term concession right to the use of railway infrastructure back to the grantor. However, this is not the case with the BOT project financing technique as here the transfer of ownership rights is effected only after the expiration of the concession period with the exception of cases where the principal has the right to buy-back the concessionary before the expiration of the concession period (early buy-back) or when they mutually agree to terminate the contract (early termination by negotiation) (McCarthy and Pery 1989; Dias and Ioannou 1995). In project financing

the timing of ownership rights transfer is very important, as in that moment the concessionary loses the right to control cash flow creating resources (Gorton and Souleles 2005).

Taking into consideration the annual estimated values of investment from the Ministry of Traffic program documentation (2005), the projection of cash flow etc., between 2008 and 2040 the segregated financial fund should pay-off 6.65 billion € of concession payments to a segregated investment enterprise, what would cover its financial obligations and realize a 4.5 % profit rate on the project and, according to our estimation, be sufficient for private investors to participate in the financial structure of the project (see Oplotnik, Križanič and Romih 2005a).³ However, as quoted by Kay and Thomson (1991) and Button and Rietveld (1993), when employing this project financing technique, the potential investors must pay a great deal of attention to ensuring the efficiency of the received concession payments use or they will run the risk of the project enterprise overindebtedness. That is why an important task of the segregated financial fund would be to control the use of financial resources. In addition to ensuring and managing the financial resources, the fund should also take care for the transparency and efficiency of use of the in-flowing resources (see Oplotnik, Križanič and Romih 2005b). As stated by Trujillo et al. (1998) another task of the segregated financial fund is to ensure the stability of project financing, what displays the fund's capability to substitute the loss of whichever of the resources, not allowing it to affect the fulfilment of contractual obligations to the concessionary (see also Fishbein and Babbar, 1996). In the opposite case the loss of one of the resources could endanger the financial stability of the investment implementation, anticipated in the cash flow projection and according to which between 2005 and 2020 the segregated investment enterprise should ensure an additional sum of 2.13 billion € (see Table 3) in order to bridge the difference between obligations and liabilities. Together with the state the enterprise should also apply for exploitation of EU funds in the amount of 1.54 billion €.

³ As stated by Short and Kopp (2005), railway infrastructure development engages a large volume of capital which is, at a relatively low profit rate and high cost of management, returned only in a long-term period.

Table 3: *The Segregated Investment Enterprise Cash Flow Projection from the Viewpoint of Concession Payments, EU Funds and Investment Value*

	Investment value (1)	Concession payments (2)	EU funds (3)	Difference (2)+(3)-(1)
Total, 2005-2020, mill €	6223	2554	1538	-2131
Total, 2005-2040, mill €*	6223	6694	1538	2009

Source: Ministry of Traffic (2005) and the projection of the authors

Taking into account the cash flow projection, financially the most demanding period for the segregated investment enterprise would be between 2014 and 2020. During this period it should cover the total difference between the investment value and revenues resulting from concession payments as the exploitation of EU funds is anticipated only for the period of the next financial perspective with the exception of the year 2006 (see Oplotnik, Križanič and Romih 2005a). Since a successful implementation of project financing requires resources to refinance the obligations resulting from liabilities and to realize the return on capital invested by private investors (see Winkelmann 2000), the model simulation anticipates a segregated investment enterprise that would be receiving concession payments until the expiration of concession period (i.e. to the year 2040), when it would, together with the segregated financial fund, cease to operate.

6 The Developmental Part Investment Effects of the Proposal of the ReNPPRID on National Economy in the Period of the Next Financial Perspective

Since investments in the development of infrastructure have a major impact on national economy (see Eberts 1986; Conning and Pedroni 1999; Ashauer 2000), we have used (see Križanič, Oplotnik, Romih 2006) an econometric model of Slovenian economy to analyse the investment impact of the developmental part of the ReNPPRID on national economy in the period of the next EU financial perspective (see Table 4).

Table 4: *The Developmental Part Investment Effects of the Proposal of the ReNPPRID on National Economy in the Period of the Next EU Financial Perspective*

	Investments	cCW	cINV	cGDP	sQB1	cINFL	cCBS
	% GDP	%	%	%	%	%	%
2007	0,4	9,3	3,1	0,4	0,1	0,0	0,5
2008	0,7	15,8	5,3	0,6	0,2	0,0	0,9
2009	1,0	21,7	7,3	0,9	0,2	0,1	1,2
2010	0,8	18,6	6,2	0,7	0,2	0,1	1,0
2011	1,5	32,6	10,9	1,3	0,3	0,1	1,8
2012	1,4	29,9	10,0	1,2	0,3	0,1	1,6
2013	1,3	27,0	9,1	1,1	0,3	0,1	1,5
Average	1,0	22,1	7,4	0,9	0,2	0,1	1,2

Notes: change of construction work value as a result of investment (cCW); change of aggregate investment value (cINV); change of the GDP growth rate (cGDP); change of the industrial production growth (cQB1); change of the inflation rate (cINFL); change of the final consumption growth (cCBS). Source: Križanič, Oplotnik and Romih (2006).

As we see in Table 4, the developmental part investment implementation of the proposal of the ReNPPRID in the period between the years 2007 and 2013 would on average increase the value of domestic construction work by 22% and at the same time increase the value of aggregate investment by 7,4%. Taking these effects into account, we can explain the influence of investment on a higher rate of economic growth, which would on average increase by 0,9% in the period of the next financial perspective. Higher rate of industrial growth and final consumption would additionally contribute to the higher rate of economic growth, as they would on average increase by 0,2 and 1,2% respectively. The impact of investment on the price growth rate is almost negligible, as it would on average increase only by 0,1%.

7 Conclusion

The financial model of the developmental part of the proposal of the ReNPPRID presented in the paper, is based on an organisational structure which enables a more optimal allocation of financial, technical and technological, operational and other risks that could jeopardize the financial close and implementation of the investment program. The main feature of this structure is the incorporation of

three key participants: (i) state as the grantor of concession; (ii) a segregated investment enterprise whose private founders enter an international competition for the implementation and managing of the complete investment program and (iii) a segregated financial fund which in the time of concession period takes care of managing the in-flowing financial resources (budgetary resources, funds from cross-financing sources, ecological taxes, usage fees and funds from other sources) and for the annual availability payments to the concessionary, who will use them for the refinancing of obligations resulting from liabilities, including the payment of the requested profit rate on equity capital, invested by private investors.

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