

The European Investment Bank's credit enhancement for project finance: Analysis of the A-2 toll motorway (Poland)

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Abstract :

Budgetary limitations of EU Member States make public funding in the form of guarantees or subventions less available than in the pre-crisis period. The Europe 2020 Project Bond Initiative contemplates the credit enhancement of senior secured project bonds to achieve a robust level of credit quality – potentially in the single-A rating range – that would be attractive to institutional investors. Credit enhancement may take the form of either funded subordinated debt, or an unfunded partial guarantee of senior debt service. If implemented appropriately, PBCE would be capable of credit-enhancing senior secured project bonds issued by the Public – Private Partnership (PPP) projects from low investment-grade to single-A ratings. The paper presents Polish A-2 toll motorway study which shows that (1) the PPP transportation projects cannot rely exclusively on private financing. (2) The support of the A-2 project was in the form of mezzanine tranches coming both from EIB (government guaranteed senior debt - subordinated EIB with a lot of facilitations to concessionaire) and project sponsors (shareholder junior debt and shareholder contingent funding) was requisite for the A-2 project success. (3) Last but not least, Polish government guarantees mentioned in (2) should be deemed as a credit enhancement as well.

Key words: project finance, PPP, EIB, credit enhancement, project bonds, toll motorways.

الملخص:

أدت قيود الميزانية في الدول الأعضاء في الاتحاد الأوروبي إلى جعل التمويل العام في شكل ضمانات أو الإعانات المتاحة أقل مما كانت عليه في مرحلة ما قبل الأزمة. وتأمل مبادرة مشروع بوند أوروبا 2020 تعزيز الائتمان للسندات المضمونة لتحقيق مستوى عالي من جودة الائتمان والتي من شأنها أن تكون جاذبة للمستثمرين ومؤسسات الاستثمار. قد يأخذ تعزيز الائتمان شكل الدين الثانوي للتمويل، أو التمويل بضمانة جزئياً من خدمة الدين. وإذا ما نفذت بشكل مناسب، فإن PBCE تكون قادرة على تعزيز الائتمان المضمون وخاصة المشاريع العامة أو مشاريع الشراكة بين القطاعين العام والخاص (PPP).

تقدم الورقة دراسة حالة (الطريق السريع A2 في بولندا) وتخلص الدراسة إلى أنه: (1) يمكن لمشاريع النقل الشراكة بين القطاعين العام والخاص PPP أن لا تعتمد على تمويل من القطاع الخاص حصراً. (2) كان دعم تمويل المشروع البولندي للطرق A2 من بنك الاستثمار الأوروبي (الحكومة كضامنة للدين - تقديم ضمانات لبنك الاستثمار الأوروبي مع الكثير من التسهيلات لصاحب الامتياز) ورعاية المشروع (تمويل الديون والأسهم من صغار المساهمين) كان شرطاً لنجاح المشروع A-2. (3) وأخيراً وليس آخراً، ضمانات الحكومة البولندية المذكورة في (2) ينبغي أن تعتبر بمثابة تعزيز الائتمان أيضاً. **كلمات مفتاحية:** تمويل المشاريع، الشراكة بين القطاعين العام والخاص PPP، بنك الاستثمار الأوروبي، تعزيز الائتمان، السندات، المشروع، الطرق السريعة.

1. Introduction

Involvement of private sector in the provision and operation of toll roads under a project finance scheme represents an investment challenge because they involve large and sunk capital investments that have limited value as collateral and are subject to a wide range of commercial and non-commercial risks, including traffic, regulatory, exchange and political risks. Transportation projects are typically financed with equity from sponsors or other investors and bank loans. Debt represents a major part of funding sources, up to 80 % of the project value. Infrastructure projects typically require very long-term financing, something that is not widely on offer presently. Post-crisis, capital reforms (Basel III / CRD IV and Dodd-Frank Act) have led banks to cut their long-term lending programs as regulatory changes require them to hold more capital in their reserves. In the search for alternative sources of project finance project bonds have become an increasingly viable alternative. Project bonds are non-recourse bonds used for project finance with bulk of project bond issues in

Americas, Asia Pacific region and in Europe¹.

The toll road project alone seldom has clear and defined revenues that are sufficient to service principal and interest payments on the project debt over the term of the loans and provide a return on equity, which is commensurate with development and long term project risk taken by equity investors. What is more, the project's financial viability means to maintain not only a positive cash flow, but appropriate debt service coverage ratios requested by the potential commercial lenders of the project as mitigation against their own risk exposure.

The reasons for credit enhancement are lumpiness of investment and long initial periods of negative cash flows. Roads have seldom proven viable as commercial ventures. Toll revenue promises alone are unlikely to mobilize private capital for interurban road construction. Major efforts are needed to facilitate infrastructure projects' access to private finance and to develop alternative ways of debt financing for them (COM 2011). In order to improve projects' access to financing and develop a vibrant infrastructure bond market, where private initiatives have made little progress so far, the European Union (EU) intends to cooperate with the European Investment Bank (EIB) in order to create a facility to support the private issuance of project bonds, the Europe 2020 Project Bond Initiative.

The project finance market in the Middle East is beginning to evolve as it starts to incorporate other financing methods that go beyond providing conventional bank loans. Catching up with trends already entrenched in other markets in Europe and the US, the use of project finance bonds is slowly starting to gain traction in the region (Middle East Economic Digest 2014). The long-term ability of the region's governments to provide large chunks of the required infrastructure funding has also been brought into question, particularly if oil prices remain relatively flat in the coming years (Middle East Economic Digest 2014). Combined with an environment where global investors increasingly seek out high-yield securities with long tenors, that could lead to a rise in bond issuance (Song Loong 2014a). The increased use of 'sukuk' (Islamic bonds) is debated.

The trend began to gain ground last year, with a USD 2 billion 'sukuk' issuance forming part of the USD 12.5 billion project financing of the Sadara petrochemicals complex (Saudi Arabia) signed mid-2013 (International Financial Law Review 2014), (Song Loong 2014b). The same

¹ Project bonds itself are well described in the literature. See i.e. Finnerty, 2013

year's USD 825 million project bond issuance by Abu Dhabi's Shuweihat S2 independent water and power project could also pave the way for more bonds being used to refinance project finance bank debt (Middle East Economic Digest 2014).

While large volumes of funding will be needed in the next decade to finance infrastructure projects in the region, project bonds are not as easily executable as loans. This instrument requires from its holder better understanding of risk associated with regional projects. In addition, loan pricing has dropped significantly over the past year, making bond issuance more expensive for companies. As a result, project bonds accounted for just 10 per cent of project financing in the region in 2013 (Song Loong 2014a).

In the light of above, a challenge for the governments and regional development banks arises how to attract institutional investors, such as pension funds, insurance companies and sovereign wealth funds, to buy project bonds. The EC and EIB with their Project Bond Initiative are at the forefront of initiatives to promote project bonds. The Asian Development Bank (ADB) is considering the provision of credit enhancements for project bonds similar to the European Investment Bank's project bond credit enhancement (PBCE) scheme (Project Finance & Infrastructure Finance 2014). Also United States look into the European model that proves to be inspiring in US efforts to step up investment in infrastructure (Miller, Costa and Cooper 2012) and (Kane and Puentes, 2012).

The aim of the article is to present a comprehensive model for promoting toll road PPP / project finance basing on European Commission's (EC) and EIB proposals as well as on empirical studies (Poland's A-2). The hypothesis can be formulated as follows: Key to financial feasibility of a privately funded toll road investment is a credit enhancement in the area of subordinated debt. It can be in the form of subordinated loan given by sponsor / private creditor / public authority or can be in the form of contingent credit line. Once drawn upon, the credit line becomes a subordinated tranche.

Opulent though is literature on project finance and public – private partnerships, there have been hardly any comprehensive references on the PBCE itself so far. Therefore author relied mainly on EC documents and EIB studies. Last but not least author bases on his own studies, some of them are recalled in this paper (M. Liberadzki 2014a), (M. Liberadzki 2014b) and (K. Liberadzki 2014).

2. The EIB as a credit enhancer

The EIB is an autonomous institution within the European Union structure, established to finance capital investment projects that promote the balanced development of the Union. Set up in 1958 by the Treaty of Rome, as part of the decision to establish the European Union, the EIB operates as a bank, raising most of its funds on capital markets to finance projects meeting EU policy objectives.

The EIB is owned by the Member States of the European Union, who all subscribe to its capital. As a major international borrower, which has always been awarded a first class (AAA) credit rating by the leading rating agencies, the bank mobilizes large volumes of funds at fine terms. The bank on-lends these resources on a non-profit basis at interest rates reflecting its borrowing cost. The EIB is financially independent and is not funded from the Union's budget.

The volume of the EIB's operations has grown steadily and the bank is today one of the largest multilateral financing institutions in the world. EIB loans are project linked and oriented to the financing of the fixed asset components of an investment. The bank mainly finances viable public and private sector projects in transport, telecommunications, industry, energy, tourism, and recently also in health and education. It supports the development of Trans-European networks for energy, telecoms and transport.

The Europe 2020 Project Bond Initiative (PBI) is the joint program by the European Commission (EC) and the EIB². The major instrument to support the transportation infrastructure project, recommended by the European Commission, are to be the so-called project bonds. Such bonds constitute senior debt and may assume the features revenue bonds.

The PBI employs standard structuring techniques to divide the project debt into a senior tranche and a subordinated tranche, which is in turn senior to equity. PBCE scheme may be divided into either (i) funded PBCE or (ii) unfunded PBCE. The subordinated tranche may either be in the form of a subordinated loan given to the company at the outset, i.e. it is funded, or it may be in the form of a contingent credit line, which the company can

² Regulation No. 670/2012 of the European Parliament and of the Council of 11 July 2012 amending Decision No 1639/2006/EC establishing a Competitiveness and Innovation Framework Program (2007-2013), OJ L 204/1, 31/07/2012.

draw on in case of need, i.e. it is unfunded. Once drawn upon, the credit line becomes a subordinated tranche.

3. Public private partnerships in the EU

Project finance is a special model of financing big projects with high capital intensity and risk, in particular the infrastructure ones. This type of financing features high percentage of debt financing (70-80% typically). The repayment takes place using the cash flows generated by the project. The project's assets secure the loan. There is limited or no recourse to the assets of sponsors. The major advantage of project finance is the flexibility of the terms of finance.

Banks remain the major source of funding for the project finance in Europe. It is estimated that in 2012 those projects were in ca. 80% financed with the bank loans (Freshfields 2012), the remaining part being equity and bond markets. This funding source structure has been prevailing for some years now. It should be expected that the banks' capability to finance projects under project finance scheme, including infrastructural projects, will be impaired in view of the problems of the banking sector with capital and the increased capital requirements provided for in Basel III recommendations as well as the constraints on long term lending linked to this regulatory framework. In addition, in Europe, the bond financing route development has been dampened by the demise of monoline insurers providing credit enhancement, even though in the Polish context, the bond market has been going up in recent years (M. Liberadzki, 2014a).

The Europe 2020 PFI emphasized the role of PPPs in innovative financing. As underlined in the PPP Communication (COM 2009). EC believes that PPPs can provide more effective ways to deliver sustainable infrastructure and strategic public goods and services.

Public Private Partnership is a contractual relationship between the public partner and the private one, aiming at involvement of the private sector in the process of providing public goods (M. Liberadzki 2014b). Every PPP project needs to be contractually structured to combine the interests of various parties involved. Usually a Special Purpose Vehicle (SPV) is established for the implementation of the project. The major participants in such structure are: the grantor (government, municipality, and government agency), project sponsors bringing the share capital in, financial institutions, subcontractors and other parties (see Figure 1). The stakeholders' structure may change in various stages of the project.

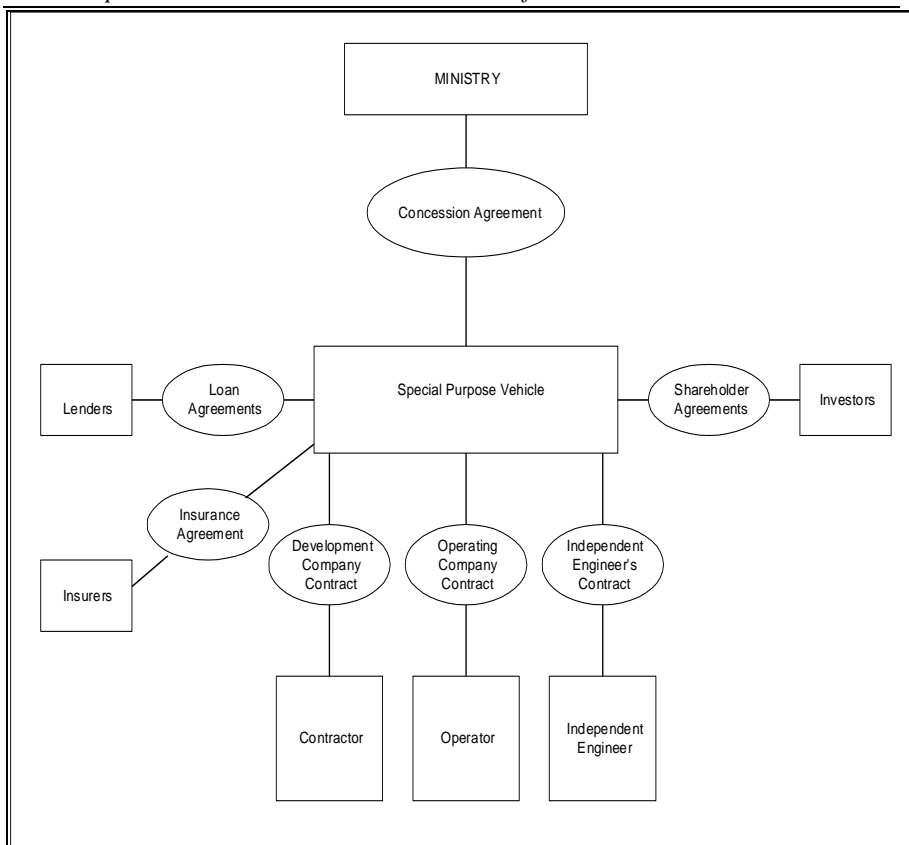


Figure 1. Sample PPP road concession deal structure

Source: Author contribution

The three basic funding sources of any SPV include:

- Private capital from investors or shareholders (*equity or quasi-equity*)
- *Mezzanine* financing that combines both debt and pseudo equity financing
- Senior debt in the form of a banking loan or public or private bonds.

The senior debt has priority rights to the revenue of the project company during normal operations and to its assets in the event of bankruptcy, while subordinated investors are paid off afterwards, but before equity holders.

Subordination of funding sources ranks as follows:

- Senior debt
- Subordinated debt
- Preferred stock
- Common equity

4. Toll motorways in Poland

Pursuant to legislation in force as at present, toll motorways may be:

- Built and operated by the private or state owned company (like segments of A-1 and A-2 toll motorways, concessions granted in 1997).
- Operated by such company after having been publicly funded. Private entity adjusts the motorway for toll collection at its own expense, bears the costs of motorway operation and repays the costs borne by the state on the motorway construction in whole or in part. For instance in case of Katowice – Kraków A-4 motorway segment the concessionaire pays off a loan granted to the Polish government by the European Bank for Reconstruction and Development (EBRD).

The land is to be acquired by the state and leased to the concessionaire, free from adverse occupancies and claims of any other person. The public authority imposes legal, economic, financial and technical regulations with regard to the motorway³ construction and operation.

An agreement between government and private partner is based on estimated costs of construction, operation costs, average daily traffic volume, assumed maximum level of toll for each category of vehicles as well as on risk- and profit- sharing profile.

5. The A-2 toll highway project financing structure

Poland's Minister of Transport awarded Autostrada Wielkopolska SA a concession to build and operate the A-2 toll highway from Świecko to Stryków - a distance of 359.8 km - for an initial period of 30 years commencing on 10 March 1997. On 12 September 1997, the two parties entered into a Concession Agreement, which was subsequently amended in years 1998 – 2000.

In return for an extension of the concession from 30 to 40 years (now expiring in March 2037), AWSA surrendered the segment between Konin and Stryków (105.9 km).

The A-2 toll motorway forms part of Poland's most strategic Berlin – Warsaw corridor, which provides one of the most important transportation links between Western and Central Europe. The A-2 is one of the Trans-European Networks (TEN-Ts) projects. It is the first toll motorway project

³ Following motorway segments were built in Poland in the PPP concession model: 152 km A-1 Gdańsk – Toruń, 61 km A-4 Katowice – Kraków, 255 km A-2 Świecko – Konin. It sums up to 468 km out of the total of 1342 km of motorways, so it's more than third part (state as at the end of 2012).

in Poland to be designed, built, financed and operated according to Public Private Partnership principles.

The A-2 project was to be designed and built for a fixed price of EUR 637.25 million within 4 years and 1 month by the development company, whose shareholders were internationally experienced construction companies (Strabag AG and NCC International AB).

The concessionaire is the Polish company Autostrada Wielkopolska SA (AWSA). AWSA is a special purpose company registered in Poland as a joint stock company and established with the objective of financing, building and operating the A-2 toll highway.

The development company was the Austrian company A2 Bau Development GmbH. This was a joint-venture company formed by Strabag AG and NCC International AB, each holding a stake of 50%.

The operating company is the Polish company Autostrada Eksploatacja SA. This is a special purpose company set up by Transroute International SA (part of the EGIS Group) (45%), Kulczyk Holding SA. (45%) and Strabag AG (10%).

The total financing requirement relating to the A-2 Project⁴ amounts to EUR 875 million. Funds provided by the EIB and senior lenders amount to EUR 590 million, whereas the shareholder contribution amounts to 27.2% of the total funding sources, corresponding to EUR 238 million.

⁴ The A2 Project refers to the design, construction, financing and operation of the A-2 highway.

Table 1 Financial plan (2000.5 - 2004.5)

Funding Requirement	Mln EUR	%	Funding Sources	Mln EUR	%
Construction and design costs	637	73.0	Equity	115	13.1
Owners' & AWSA Costs ^(*)	58	6.7	Junior Debt	123	14.1
Pre-operating Costs	3	0.3	Total Shareholder Funding	238	27.2
Advance Payment to the Operating Company	8	0.9			
Concession Costs	9	1.0	Senior Debt	235	26.9
Project Costs	715	81.9			
			Govt. Guaranteed EIB Loan (Including rolled up interest of EUR 80m)	355	40.5
Loan fees	8	0.9			
Interest rolled up	120	13.7			
Capital Reserve Account	9	1.0	Total Funds raised	828	94.6
DSRA	3	0.3			
O&M during construction	15	1.7	Revenues during construction	22	2.5
Taxes	3	0.3	Interest on cash balances	25	2.9
Working capital	2	0.2			
Total	875	100.0	Total	875	100.0
			Shareholder Contingent funding	32	

^(*) including senior lenders' advisers costs, AWSA advisers' costs and concessionaire's cost incurred since 1993 and to be incurred till the end of construction

Source: Commerzbank and Credit Lyonnais 2001

The funding requirements were met by using the following sources in the following order:

- 1) Equity,
- 2) Net operating cash flows during construction,
- 3) Interest income received on cash balances,
- 4) Pro-rata drawdown of junior debt, government guaranteed EIB loan and senior debt.

5.1. Shareholder funding

Shareholder funding is in the form of direct equity and junior debt and represents 27.2% of the project funding requirement (minimum requirement as per concession agreement is 26%).

5.1.1. Equity

Equity is provided in an amount of EUR 115 million. The equity was fully disbursed before drawdown on any other source of financing.

5.1.2. Shareholder contingent funding

In addition to the funding sources mentioned above, certain shareholders have provided shareholder contingent funding in the amount of EUR 32 million. Shareholder contingent funding is fully subordinated to the senior debt as well as the government guaranteed EIB loan. Shareholder contingent funding can be drawn:

- during construction phase, to cover additional funding needs,
- During operating phase, to cover cash flow shortfalls for senior debt service based on the scheduled outstanding profile.

Shareholder contingent funding is provided in the form of subordinated debt and is secured by bank standby LCs issued by banks having a rating of at least "A-" from Standard & Poor's or "A3" from Moody's or major subsidiaries of such banks. The shareholder contingent funding will be released 3 years following project completion if the target outstanding profile is being achieved, all reserve accounts are full and no existing or potential events of default have occurred.

5.2. Debt

5.2.1. Junior debt

Junior debt is contributed pro-rata with the government guaranteed EIB loan and the senior debt for up to EUR 123 million at an interest rate of 6 month EURIBOR + 9 %. AWSA is not permitted to pay any interest or principal on junior debt until and unless both the senior debt and the government guaranteed EIB loan have been fully repaid. Junior debt is provided in the form of EUR 55.8 million subordinated bonds issued by AWSA and an EUR 67.2 million supplier credit facility from the Development Company. Irrevocable and unconditional LCs with a rating of at least the rating of Poland have secured both equity contributions and the junior debt issued by banks.

5.2.2. Government guaranteed EIB loan

The government guaranteed EIB loan is a deferred interest bullet loan, fixed interest rate, with a maturity of 17.1 years, which is after the senior loan final maturity date (i.e. no debt service is due on the government guaranteed EIB loan until after the senior loan final maturity date). The government guaranteed EIB loan is secured by a guarantee from the Republic of Poland that has been executed by the Minister of Finance. EIB

is not permitted to accelerate or terminate its loan at any time prior to the full discharge of the senior debt.

5.2.3. Senior debt

The senior debt facility of EUR 235 million constitutes 26.9 % of funding sources and is available to meet all expenditures incurred by AWSA during the construction and startup phases. The senior debt facility has a maximum maturity of 17 years and a minimum maturity of 13 years to be achieved through a cash sweep mechanism. This has been done in order to provide the A-2 Project with flexibility (with no pre-set six monthly repayment obligation) while allowing senior debt to be repaid earlier than the 17 year scheduled maturity if AWSA's cash flows are better than the assumptions.

The facility agent is entitled under the credit agreement to convert an aggregate amount of EUR 50 million into a PLN (Polish Zloty) tranche, at the option of the majority banks after consultation with AWSA. This would occur if the majority banks were persuaded that the introduction of a PLN tranche would be beneficial to the A-2 Project at that time taking into consideration the level of fx exposure as well as the level of Polish interest rates. At this stage, no senior lender is required to commit to lend in PLN.

5.3. Reserve accounts

Since pledge over assets of special purpose company is of no significant value to creditors, they will put more emphasis on getting control over projects cash flows. A trust bank account, called 'escrow' would be used. This account is intended for the bank's control over all financial flows, both resulting from operational, investment and financial activities. A project company administrates of all the funds on that account, but all the orders to transfer funds (in a non-cash way exclusively) must be realized with a financing bank's prior consent. At the same time, the debtor grants the bank irrevocable authorization to deduct payments from the trust account. All cash from the revenue, compensations paid by the insurers from the liquidation of damages⁵, penalties paid by the contractors or various contractual guarantees are transferred into the escrow account. The A-2 Project makes use of following accounts:

⁵ With an obvious exception of payments from the civil liability insurance, which are paid directly to injured third parties.

5.3.1. Capital Reserve Account

This account was to be credited with EUR 7.9 million up-front to cover deferred investment costs in 2012.

5.3.2. Maintenance Reserve Account (MRA)

This account is credited to cover the cost of the first heavy maintenance (including a third surface layer), which is due once cumulative traffic has exceeded 6,000,000 standard axles on a particular stretch. Funding of the MRA from cash flow will commence at least five years prior the date when the first heavy maintenance is due.

5.3.3. Debt Service Reserve Account (DSRA)

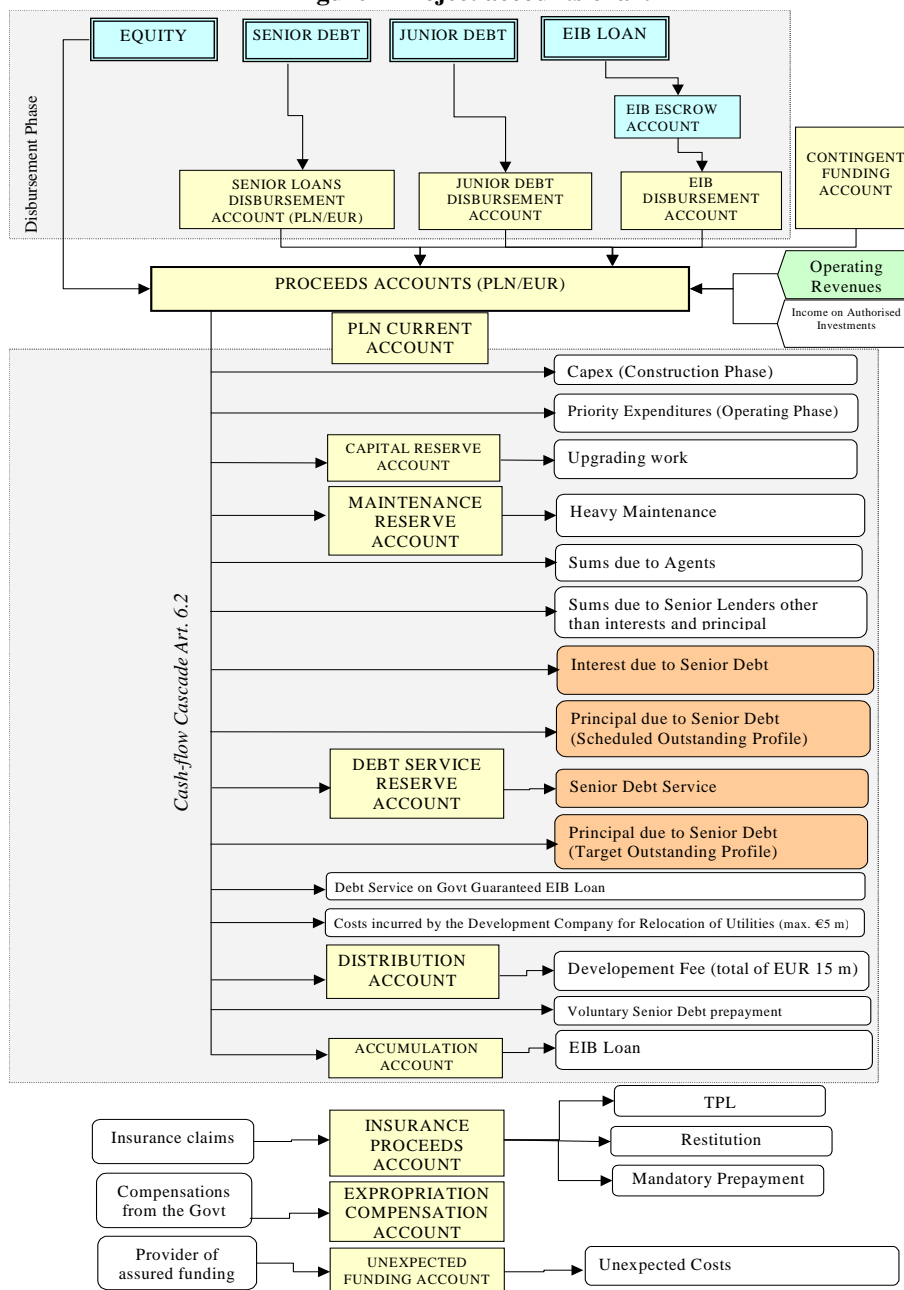
his account is to be credited in order to cover the next 6 months scheduled senior debt service payment. Due to the availability of the EUR 32 million of shareholder contingent funding that was provided at financial close (only EUR 2 million of which may be withdrawn in the construction phase subject to the consent of the majority banks - not to be unreasonably withheld), it was not considered necessary to require that the DSRA be fully funded at completion. Transfers from the DSRA to meet debt service payments shall only occur when shareholder contingent funding has been exhausted.

5.3.4. Accumulation Account

The Accumulation Account sweeps all cash flow available after: (i) senior debt reaches the target outstanding profile; (ii) up to EUR 20 million of permitted subordinated payments; and (iii) voluntary senior debt prepayments. Sums deposited to the accumulation account will be applied to the repayment of the government guaranteed EIB loan at maturity after the senior debt has been fully repaid.

The Figure 2 gives an overall view of disbursement of funds mechanism described above together with financial structure of the A-2 Project.

Figure 2 Project accounts chart



Source: Commerzbank and Credit Lyonnais 2001

5.4. Cash flow waterfall

The Figure 2 presents also a detailed cash flow waterfall. What is seen on the chart above can be translated into summary format:

- 1) Priority expenditures (taxes, unsubordinated concession payments, operating expenses, etc.)
- 2) Capital Reserve Account (deferred investment; three additional interchanges)
- 3) Maintenance Reserve Account (heavy maintenance)
- 4) Scheduled senior debt service (Debt Service Reserve Account)
- 5) Target senior debt service
- 6) Repayment of government guaranteed EIB loan (after the senior debt discharge date only)
- 7) Distribution of development fee to junior creditors (total of EUR 15 million)
- 8) Optional prepayments of senior debt
- 9) Payments into Accumulation Account for EIB repayment
- 10) Subordinated payments, incl. cash outlays other than defined project expenditures, dividends, etc.⁶

5.5. Debt service ratios

A comprehensive financial structure is something more than simply to provide lenders with positive cash flow. Its primary role is to ensure appropriate debt service cover ratios requested by the potential commercial lenders of the project as a mitigation against their own risk exposure. Two ratios seem to be most significant: Debt Service Cover Ratio (DSCR) and Loan Life Cover Ratio (LLCR). DSCR is determined as follows:

$$DSCR = \frac{\begin{array}{l} \text{Net profit + interest + amortisation} \\ - \text{Net transfers to the debt service reserve account} \\ - \text{Net transfers to the maintenance reserve account} \end{array}}{\text{Principal repayment + interest payments}}$$

This ratio determines to what degree debt may be serviced by cash flows of the project. Desired DSCR for road projects is around 1.4 (Estache and Strong 2000). In turn, LLCR ratio combines the cash flow available over the term of the loan agreement duration with the amount of debt outstanding. It is determined by a following formula (Estache and Strong 2000):

$$LLCR = \frac{\text{Present value of cash flow before full debt service}}{\text{Present value of debt service costs}}$$

⁶ No dividends or junior debt repayments are allowed while senior debt and government guaranteed EIB loan are outstanding.

Obviously banks require this ratio to be at least at 1.0.

In the A-2 Project **DSCR** is defined as:

$$\begin{aligned}
 & \text{Pre-finance post tax cash flow} \\
 \pm & \text{ Interest received / (paid) on cash (overdraft) balances} \\
 - & \text{ Net transfers to capital Reserve Account} \\
 - & \text{ Net transfer to Maintenance Reserve Account} \\
 = & \text{ Cash flow available for scheduled Senior Debt Service} \\
 & \text{(Net Cash Flow)}
 \end{aligned}$$

divided by:

Scheduled senior debt service (scheduled principal, interest and fee payments in respect of the senior debt) in any given semi-annual period.

The **DSCR with CF** is defined as:

$$\begin{aligned}
 & \text{Pre-finance post tax cash flow} \\
 \pm & \text{ Interest received / (paid) on cash (overdraft) balances} \\
 - & \text{ Net transfers to Capital Reserve Account} \\
 - & \text{ Net transfer to Maintenance Reserve Account} \\
 + & \text{ Shareholder contingent funding available (unutilised)} \\
 + & \text{ Balance of Debt Service Reserve Account} \\
 = & \text{ Cashflow available for scheduled senior debt service}
 \end{aligned}$$

divided by:

Scheduled senior debt service (scheduled principal, interest and fee payments in respect of the senior debt) in any given semi-annual period.

The **LLCR** for the A-2 Project means for a given semi-annual period the sum of the total discounted forecast net cash flow plus the aggregate of all amounts standing to the credit of the Reserve Accounts; this sum is divided by the senior loans total outstanding at the beginning of that given period.

Title:

Factor	Ratio	in year
DSCR _{Min}	2.07	2007.5
DSCR _{Average}	4.18	--
DSCR _{Min} with CF	3.47	2009.5
DSCR _{Average} with CF	5.50	--
LLCR _{Min}	3.69	2005.0
LLCR _{Average}	11.39	--

Source: Commerzbank and Credit Lyonnais, 2001

6. Conclusion

The above presented study shows that:

1. The PPP transportation projects cannot rely exclusively on private financing.
2. The support in form of mezzanine tranche coming both from EIB (government guaranteed senior debt - subordinated EIB with a lot of facilitations to concessionaire) and project sponsors (shareholder junior debt and shareholder contingent funding) was requisite for the A-2 Project success.
3. Polish government guarantees should be deemed as a credit enhancement as well.

Budgetary limitations of EU Member States make public funding in form of guarantees or subventions less available than in pre-crisis era. The Europe 2020 Project Bond Initiative contemplates the credit enhancement of senior secured project bonds to achieve a robust level of credit quality – potentially in the single-A rating range – that would be attractive to institutional investors. Credit enhancement may take the form of either funded subordinated debt, or an unfunded partial guarantee of senior debt service. If implemented appropriately, PBCE would be capable of credit-enhancing senior secured project bonds issued by PPP projects from low investment-grade to single-A ratings.

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