

# The European Union's Project Bond Credit Enhancement for Developing Infrastructure Project Finance

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Private sector financing of infrastructure in Europe still falls behind pre-crisis levels. Budgetary constraints in the public sector for infrastructure financing together with banks unable to deliver the volume of debt needed for infrastructure financing create need for alternative sources of funding from capital markets. This article provides an overview of the European Commission's Project Bond Initiative (PBI). The aim is to encourage investments in infrastructure projects by institutional investors. The study focuses on the European Investment Bank's project bond credit enhancement (PBCE) mechanism and its regulations. Subordinated debt tranche by the European Investment Bank provides cushion for senior debt service. PBCE helps support standardization and widening of investor market. As project infrastructure is a specialized asset class and new to many investors, PBI has a vital role to play in supporting institutional investment. The European Commission and European Investment Bank with their PBI are at the forefront of initiatives to promote project bonds. China and USA are considering the provision of credit enhancements for project bonds similar to the European Investment Bank's PBCE scheme. Then implementation of the pilot phase of this initiative is presented. The A11 public-private partnership (PPP) highway (Belgium) is the first green field project to reach close using the European Investment Bank's PBCE scheme. As this example shows, the credit enhancement received three notches uplift to A3 (by Moody's) and project bond holders accepted 30 years tenors. The most viable use of European Investment Bank funds would be to use unfunded guarantee facility.

*Keywords:* project bonds, credit enhancement, project bond credit enhancement (PBCE), public-private partnerships (PPP), project finance, European Investment Bank

## Introduction

Although infrastructure investments are highly capital-intensive, it is even more expensive for the economy and the society, if infrastructure projects are postponed, suffer lengthy delays, or are never undertaken. Public budgets, however, are under long lasting and severe constraints and demand for public service linked expenditures exceeds resources usually available and allocated to that purpose. Commercial provision of transport infrastructure may affect revenues for private investors with important public benefits.

Involvement of private sector into provision and operation of infrastructure under a public-private partnership (PPP) 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

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non-commercial risks, including traffic, regulatory, fx,<sup>1</sup> and political risks.

PPPs are typically financed with equity from sponsors or other investors and bank loans. Debt represents major part of funding sources, up to 80% of the project value (Liberadzki, 2014a; 2014b). Infrastructure projects typically require very long-term financing, something that is not widely on offer presently. Banks face balance sheet and maturity constraints for a number of reasons, including higher funding costs, higher capital requirements, and a continuing need to provision for losses (Reifner, Neuberger, Rissi, & Clerc-Renaud, 2011). Therefore, the potential role of bond markets increases.

The US monoline bond insurers used to absorb large quantities of project risk, but blew themselves up in the credit crisis. The disappearance of bond insurers means project bonds are now unwrapped and bondholders are taking genuine project risk. The structural challenges associated with the monolines' collapse have all-but been resolved. The European Investment Bank,<sup>2</sup> as one of European investors' most trusted credits and the development bank being already central to European infrastructure development, is well-designed to facilitate institutional investor appetite for projects by offering credit enhancement.

The Europe 2020 Project Bond Initiative (PBI) 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. The European Investment Bank is mandated to identify suitable projects (according to eligibility criteria) and provide 20% of the project's funding in the form of either funded subordinated debt or an unfunded partial guarantee of senior debt service (Liberadzki, 2014c). In addition to competitive pricing, European Investment Bank also adds value given its reputation and track record in screening, mitigating, and monitoring project risk. As project infrastructure is a specialized asset class and new to many investors, PBI has a vital role to play in supporting institutional investment.

The European Commission and European Investment Bank with their PBI are at the forefront of initiatives to promote project bonds. The Asian Development Bank is considering the provision of credit enhancements for project bonds similar to the European Investment Bank's project bond credit enhancement (PBCE) scheme (Retrieved from <https://brama.sgh.waw.pl/bsi/detail/,DanaInfo=web.a.ebscohost.com+detail?vid=3&sid=d87c9aaa-ee84-417c-94c6-51483aeeecbbb%40sessionmgr4004&hid=4204&bdata=JnNpdGU9YnNpLWxpdmU%3d#AN=95684775&db=bth>). Infrastructure spending in the Asia-Pacific is expected to approach \$5.36 trillion annually by 2025, according to a study by Price Water House Coopers. On one hand, governments will be unable to fund that level of investment, while regulations like Basel III make it more difficult for banks to hold long-tenor project loans on their books. On the other hand, project bond investors typically want an investment-grade credit profile and rating (Lee, 2014). Also the United States looks into the European model that proves to be inspiring for US efforts to step up investment in infrastructure (Miller, Costa, & Cooper, 2012; Kane & Puentes, 2012).

For the abovementioned reasons, it is valuable to provide an insight into the EU's proposal. In its first part, the paper presents an analysis of PBCE scheme. Then a clear distinction between funded and unfunded PBCE has been made. In the end, some European market experiences are presented to verify PBCE model assumptions.

<sup>1</sup> The project is exposed to exchange rate risk, if debt is denominated in foreign currency, while revenues are in local currency.

<sup>2</sup> The European Investment Bank is an autonomous institution within the European Union established to finance capital investment projects that promote the balanced development of the Union. The European Investment Bank is owned by the member states of the European Union who all subscribe to its capital.

## **Theory and Literature Review**

Public private partnership is a contractual relationship between public authority and private partners, aiming at involvement of the private sector in the process of providing public goods (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 principles of private provision of transport infrastructure are deeply rooted in microeconomic theory. There is a broad consensus that efficiency of resource allocation in the infrastructure sector is basically achieved by pricing at (or close to) short-run marginal social cost (Roth, 1997; Arnott & Kraus, 2003; Liberadzki, 2014b). However, under optimal pricing charges, revenue is insufficient to finance optimal capacity, when long average cost is (locally) decreasing (Hirshleifer, 1984). An obvious implication is that the magnitude of a government subsidy depends on the degree of returns to scale in capacity provision (Arnott & Krauss, 2003). However, the economic theory alone does not offer a comprehensive approach to support commercially provided infrastructural projects that are not self-financing. In the post-crisis environment, possibilities of direct government subsidization are limited. The extension of concession period is only partial solution (Liberadzki, 2014a). The assessment of PPPs public supporting has been loosely structured, with only attempts to employ a comprehensive approach (Liberadzki, 2014c; Roth, 1997).

The major instrument to support the transportation infrastructure project, recommended by the European Commission, is to be the so-called project bonds. Project bonds are non-recourse bonds used for project finance. Their risk profile is reflected by general nature of infrastructure debt investments. They are claims on the future net income of firms that commit large amounts of capital today in tangible assets against the promise or commitment of a multi-period income stream. Tangible assets have almost no value outside the initial contractual commitment. Infrastructure financing is mostly debt financing. Use of high leverage (project financing) explains the investment characteristics of the infrastructure.

The framework for project bonds is well described in the literature (Finnerty, 2013; Liberadzki, 2014c). There have been hardly any comprehensive references on the PBCE itself so far. Rossi and Stepic (2015) dedicated Chapter IV of their book to this issue. Besides, author relied mainly on European Commission documents and European Investment Bank studies, as well as on his own studies already recalled by Liberadzki (2014a; 2014b) and others' work by Liberadzki (2014c).

## **Hypothesis**

The hypothesis may be formulated in the following parts.

Public authorities can rely on non-bank project financing that achieves competitive pricing. In face of the implementation of Basel III and the public budgets struggling with the necessary fiscal consolidation, the capital markets are the only place to affordably fund large infrastructure projects using long-term debt. In order to attract institutional investors into financing infrastructure, the following conditions must be taken into consideration:

- Project bond investors typically want an investment-grade credit profile and rating. On this condition, they are ready to accept long tenors—15 to 20 years (or longer);
- They also like predictability in revenue streams;
- Bondholders are still reluctant to take on construction risk and the rating agencies are reluctant to give

green fields<sup>3</sup> an investment grade rating.

The European Commission's outline proposals, if implemented appropriately, would be capable of credit-enhancing senior secured project bonds issued by PPP projects from low investment-grade to single-A ratings.

### **The European Union's Proposal**

#### **Project Bonds**

Privately financed infrastructure projects in Europe rely heavily on bank lending, which is not readily available at maturities reflecting the long-term life cycle of an infrastructure project. Major efforts are needed to facilitate infrastructure projects' access to private finance and to develop alternative ways of debt financing for them (Retrieved from [http://ec.europa.eu/economy\\_finance/financial\\_operations/investment/europe\\_2020/documents/com2011\\_660\\_en.pdf](http://ec.europa.eu/economy_finance/financial_operations/investment/europe_2020/documents/com2011_660_en.pdf)). 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 EU intends to cooperate with the European Investment Bank, in order to create a facility to support the private issuance of project bonds, the Europe 2020 PBI. The Europe 2020 PBI is the joint program by the European Commission and the European Investment Bank (Retrieved from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:204:0001:0010:EN:PDF>; <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52010DC2020&from=pl>). The collapse of the monoline bond insurers, which halted the development of a liquid European project bond market, is another inspiration for the PBI (Smith, 2011).

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. 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 draw on in case of need, i.e., it is unfunded. Once drawn upon, the credit line becomes a subordinated tranche. The subordinated tranche could also be subscribed for as a bond of an appropriately lower rating. The mezzanine tranche coming from European Investment Bank is subordinated to senior debt in case of a default or a restructuring and is senior against common equity. In other words, mezzanine tranche is anything that is neither plain senior debt nor common equity.

#### **Public-Private Partnerships**

The Europe 2020 Strategy emphasized the role of PPPs in innovative financing. As underlined in the PPP Communication (Retrieved from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0615:FIN:en:PDF>), European Commission believes that PPPs can provide more effective ways to deliver sustainable infrastructure and strategic public goods and services. In China, for instance, private participation in infrastructure development is seen as an important element of four trillion RMB stimulus plan as announced by the Chinese government; only 1.8 trillion comes from the central government and the rest is to be topped up by the local government and/or the private sector. Since most of the local governments are still subject to severe budgetary pressure, there is a heavy reliance on the private sector investment. This provides opportunities for private investors to get more involved in infrastructure development via PPP mode (Ke, Wang, Chan, & Cheung, 2010).

#### **Project Bond Credit Enhancement (PBCE)**

As it was mentioned earlier, the Europe Union has devised an unwrapped project bond product, whereby

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<sup>3</sup> Green field is an amalgam of development, construction, ramp-up, and operational risks.

European Investment Bank is mandated to identify suitable projects (according to eligibility criteria) and provide 20% of the project's funding (as subordinated debt) with the capital markets picking up the rest. European Investment Bank's involvement is expected to boost the credit rating to a level of a single A where there is a liquid market. European Investment Bank's involvement is expected to boost the credit rating to a level of a single A where there is a liquid market. Now that financings do not have the monolines, the EU initiative to help improve bonds' credit ratings should hopefully open up a massive market (Davies, 2011). It should be emphasized that PBCE will not cover the total senior debt, as it can have a maximum value of 20% of project bonds. The European Commission has not justified explicitly adoption of the 20% subordinated tranches share in the total debt of the issuer. It seems that the European Commission followed the typical proportions observed in PPP transactions and project finance. It is not clear, however, whether this reasoning is backed by solid researches (K. Liberadzki & M. Liberadzki, 2012). The 20% may be regarded as a general proportion and real engagement is to be decided over in the individual cases, taking into account the specific nature of given project and debt coverage ratios. Besides, after assessments of the pilot PBCE projects, it is recommended that the PBCE cover is to be raised up to 30% of the senior debt project (EP-TRAN Committee, 2014).

### Unfunded/Funded PBCE

Both the European Investment Bank's funded and unfunded credit enhancements will be available during the entire life of the project and will be used to cover capital expenditure during the construction phase and ensure adequate debt service coverage.

Subordinated debt is an unfunded tranche, when it is granted by the European Investment Bank, as a result of the occurrence of unpredicted events, such as:

- unplanned delay or cost overrun in the construction phase;
- lower traffic volume on the toll road during the operation phase than originally expected.

Figure 1 below illustrates the contingent credit line mechanism.

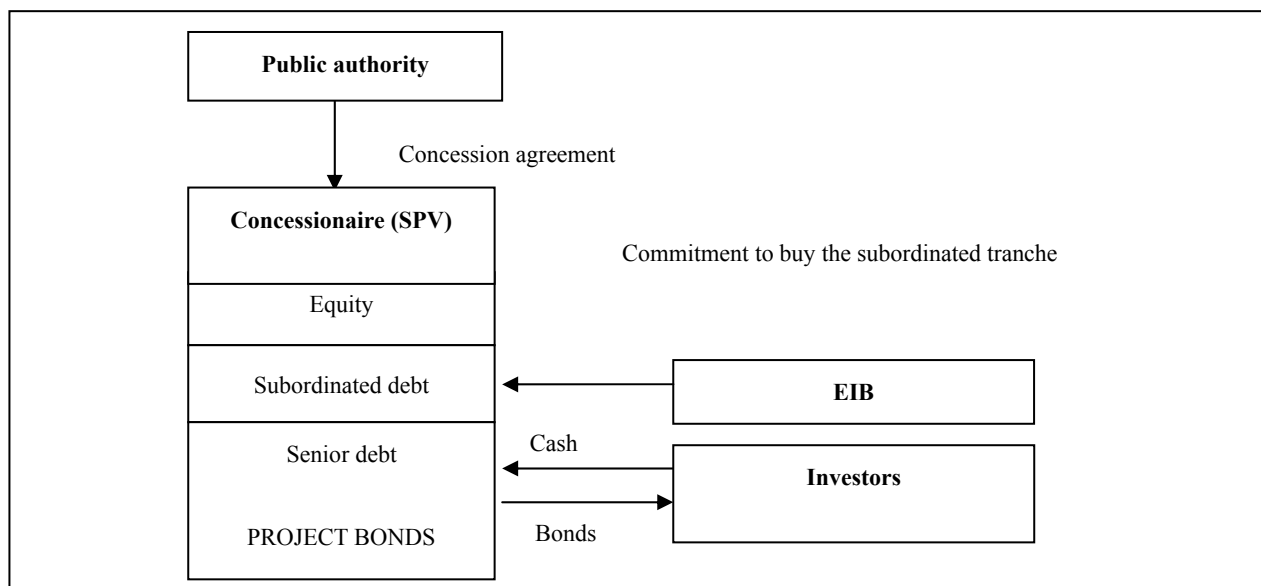


Figure 1. Unfunded PBCE—Issue scheme. Source: Own study.

Credit enhancement through the European Investment Bank can occur by granting the SPV a subordinated loan with a maximum permissible value of 20% of project bonds to give them investment grade. Funds thus obtained constitute debt subordinated to the project bonds, i.e., repayments of project bonds rank ahead of the European Investment Bank credit enhancement facility in priority of payment. This makes funded PBCE similar to mezzanine financing (see Figure 2). Funds drawn are to be used together with other funds to finance the construction phase of investment and other costs of the project and then are to be repaid during the operational phase (European Investment Bank, 2012).

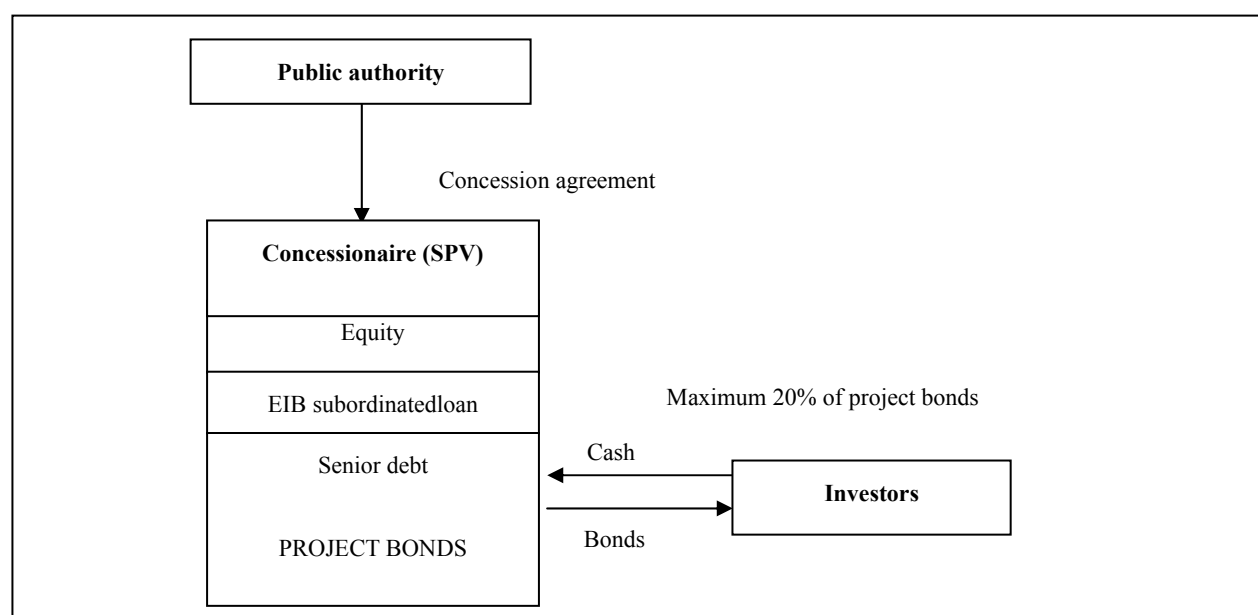


Figure 2. Funded PBCE—Issue scheme. Source: Own study.

## Analysis and Discussion

### General Remarks

The sole security of the bondholders' contractual claims is cash flow generated by the project, alternatively certain other assets (project assets, if suitable as collateral). As the bondholders take priority before all other creditors, the credit risk is reduced.

The attractiveness of the project bonds for the capital market institutions makes it necessary:

- to provide top scoring papers (investment grade rating if not A-minimum);
- to support the project in the form of mezzanine tranches coming from European Investment Bank and/or project sponsors;
- to select projects that are economically viable and well understood by investors. The project must have clear and defined revenues that will be sufficient to service principal and interest payments on the project debt over the term of the loans. Costs include all expenditures, surcharges, fees, risk premiums, reserves, and securities needed to maintain not only a positive cash-flow but appropriate debt service cover ratios requested by the potential commercial lenders of the project as a mitigation against their own risk exposure.

Institutional investors would like in an ideal world to put their money to work at the earliest stage and see an early return, however they are prepared to consider longer drawdown periods more in balance with the needs of projects. Once operational and producing consistent (often inflation linked) cash flows, PPP projects have

the characteristics of a core investment asset, appealing to pension funds for liability matching purposes. To compensate for green field risks, such as delays in receiving income until projects are complete, investors seek an incremental return on their investment over its life, the payment of which has been deferred until the project is operational.

The wait for returns is balanced by the expectation of higher returns having taken construction risk with the expectation of long-term returns being available at the same level. Moreover, if investments are based on a cash yield rather than capital appreciation model, cash may be payable from a variety of different instruments at an earlier date, e.g., mezzanine loan interest, subordinated debt loan interest, senior loan/bond interest, etc. in order to satisfy investors' requirements. Where a particularly long draw down period is considered, then investors may require that a yield be structured into the project during the construction period through the creation of interim reserve accounts that are funded by debt.

### **PBCE**

Reducing the amount of PBCE to 20% of the project financing project bonds distinguishes this type of credit enhancement from monoline wrap used earlier, i.e., senior bond repayment guarantee offered by a monoline insurer (Morgan, 2010). Thus, the investment rating of the insurer spreads over the whole investment project. The intention of the PBCE in turn is for European Investment Bank not to stretch its triple A rating over a given project, but rather to help SPV raise the rating of its senior debt to a level A or AA (Moody's Investors Service, 2011).

The difference between the contingent credit line and funded subordinated debt is most obvious during the construction phase. Whereas the first loss piece would be factored in the base case model, the contingent facility would not and could be drawn to meet cost overruns during the construction phase, provided that the technical adviser could certify that construction completion would take place before the long stop date (Rehn & Hoyer, 2012). Alternatively, if the unfunded credit enhancement is drawn during the construction phase, it would be limited to repaying debt during operations. The use of the unfunded credit enhancement during the operational phase is likely to depend on a debt service coverage ratio (DSCR) test, so that if the DSCR falls below a predetermined level, the credit enhancement would be drawn (Rehn & Hoyer, 2012).

### **Market Experiences**

PBI pilot phase was launched under the Regulation of the European Parliament and of the Council (EU) No. 670/2012 of July 11, 2012—at the end of the Multiannual Financial Framework (MFF) 2007-2013. The aim was to test the pilot phase of this initiative in the final period of the aforementioned framework, so that the conclusions of this test can be implemented at the beginning of operation of the MFF 2014-2020. For this purpose, pursuant to Regulation 670/2012, European Commission is required to report periodically on the implementation of the pilot phase of PBI. Assessed must be the impact of the introduction of the pilot phase of PBI, which compares the predicted effect of the new IFIS and other solutions considered, i.e., financing through grants, in the absence of new IFIS (baseline scenario) and the introduction of regulatory incentives for infrastructure financing (Retrieved from [http://ec.europa.eu/economy\\_finance/financial\\_operations/investment/europe\\_2020/documents/sec2011\\_1239\\_en.pdf](http://ec.europa.eu/economy_finance/financial_operations/investment/europe_2020/documents/sec2011_1239_en.pdf)).

The agreement on cooperation between the European Commission and the European Investment Bank in the field of realization of PBI was concluded on 7th of November 2012. EUR 230 million was allocated from the EU budget to ensure the support of the European Investment Bank in the form of instruments PBCE a total

value of approx. EUR 700 million. EU funds are to be used to support projects approved by the European Investment Bank to December 31, 2014 with financial closing on December 31, 2016 at the latest. Sources have been divided into three sectors: 200 million for the TEN-T, 10 million for the TEN-E, and 20 million for ICT. The European Investment Bank has supported the issue of a EUR 1.4 billion bond for the Castor gas storage facility. The PBI also supported the issue of a GBP 305 million bond for the Greater Gabbard OFTO project in the UK, which involves the electricity transmission assets linking 500MW of offshore wind farms to the UK onshore grid. These two transactions are followed by the A11 motorway project in Belgium.

The Castor project has involved building facilities so that an empty oilfield under the Mediterranean seabed off Valencia can be used to store natural gas, to improve security of supply to the Spanish network. Spanish construction firm ACS is the lead party in the project consortium, which has a 30-year concession from 2008, extendible for two 10-year periods. The project was completed on time and within budget and is going through final acceptance procedures before being declared ready for use. The original bank debt is being refinanced with the bond. Debt is about 80% of the project's capital, equity 20%. Standard & Poor's Standard believes that it will be able to run at a minimum DSCR of 1.26 (Business Source Complete, 2013).

The A11 highway PPP (Belgium) is the third (after UK's Greater Gabbard offshore transmission link) project to receive credit enhancement under the pilot phase of the European Investment Bank's 2020 scheme. The project concerns a motorway connection between Bruges and Knokke in the Belgian province of West Flanders. The A11 is the first transport project and first green field project to be financed through PBI. Via-Invest, on behalf of the Flemish government, granted an availability-based concession to design, build, finance, and maintain the road for 33.5 years, including construction. The sponsors will construct a 13 km road and approximately 90 civil structures of varying complexity. Construction will cost EUR 550 million.

The A11 project company is funded by equity injections by both Via Brugge and public sector agency Via-Invest, the European Investment Bank's EUR 115 million subordinated credit facility (which provides the credit enhancement), and EUR 578 million of project bonds. These senior-rated amortising bonds are priced at a fixed-rate coupon of 4.49%. The bonds will amortise evenly after construction. In March 2014, investors purchased EUR 287.5 million of senior privately placed and partly paid notes due 2045 with the remainder to be drawn on a quarterly schedule during construction, to mitigate negative carry. The European Investment Bank provided an undrawn letter of credit worth 20% of senior debt during the construction until 2018, which drops to 10% thereafter. Moody's rated the senior debt A3. The debt-to-equity ratio is 88 : 12. The average debt service coverage ratio is 1.25x (Retrieved from <https://brama.sgh.waw.pl/bsi/detail/DanaInfo=web.a.ebscohost.com+detail?vid=3&sid=d87c9aaa-ee84-417c-94c6-51483aeecbbb%40sessionmgr4004&hid=4204&bdata=JnNpdGU9YnNpLWxpdmU%3d#AN=95684775&db=bth>; Myles, 2014). As the first green field project, the deal sets a precedent for the cost overrun mechanic to be used in European Investment Bank—supported deals.

In addition to the transactions already executed within PBCE, the European Investment Bank has also approved additional infrastructure projects, which may be granted PBCE. These are the projects for the construction of motorways in Germany and the UK, offshore wind farms connections to the power grid in Germany and the gas storage tanks in Italy (Retrieved from <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1431074029283&uri=CELEX:52013DC0929>). What regards investment projects under evaluation, PBCE in worth of EUR 1.22 billion is contemplated, what will help to raise EUR 6.1 to 12.2 billion via issuing project



bonds. Assuming that these measures will constitute 90% of the total cost of investment projects, the total value of projects financed using PBCE is expected to reach a value of EUR 6.8 to 13.5 billion (EP-TRAN Committee, 2014).

### Conclusions

Bond financings for PPP projects and other project financings for infrastructure in Europe effectively ended with the demise of several monolines in the early stages of the credit crunch. As it was shown in this paper, the European Investment Bank subordinated credit facilities could be used to support projects that have private sector senior debt and equity, typically in a ratio of about 80 : 20. Whether the PBI could be expanded later on will depend largely on the success of the pilot phase. As the A11 PPP highway example shows, the credit enhancement received three notches uplift to A3 (by Moody's) and project bond holders accepted 30 years tenors.

The EU and European Investment Bank have so far pledged to invest EUR 230 million (USD 292 million) during the pilot phase, which is hoped to provide a multiplier of effect of roughly 29x and as such stimulate EUR 4.4 billion of capital markets issuance (Rehn & Hoyer, 2012). The new initiative is targeted towards priority projects in the transport, energy, and broadband sectors. The precise mechanism through which a 20% unfunded guarantee would work is still unclear. However, as the A11 deal shows, the credit enhancement letter of credit available as a back-up is likely to be applied to future green field deals. Whatever mechanism the European Investment Bank supports, it is a certainty that the European Investment Bank will act as a controlling creditor. On the bank debt supply side, if Basel III really does bite banks or they are constrained by a spiraling Euro-zone sovereign debt crises, the capital markets will be the only place (save from heavy direct EU and member state lending) to affordably fund large infrastructure projects using long-term debt (Smith, 2011). It seems that the most efficient and effective use of European Investment Bank funds would be to use the unfunded guarantee facility, since cash is not required upfront and the capital required to service a portfolio of unfunded guarantees should be much lower than the funded equivalent.

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