



European PPP Expertise Centre • European PPP Expertise Centre • European PPP Expertise Centre • European PPP Expertise Centre • European PPP Expertise Centre

Capital markets in PPP financing

Where we were and where are we going?

March 2010

Overview

This paper has been prepared by the European PPP Expertise Centre, in collaboration with Partnerships UK.

It provides background information on the role of capital markets in PPP financing, and their principal advantages and disadvantages compared to traditional bank financing. It then reviews the dominant delivery model for PPP bonds, the so-called “monoline model”, and the impact of the downgrading of the monolines’ rating following the credit crisis.

The paper further analyses the reasons why capital markets have withdrawn from PPP financing, and explores potential constraints and solutions to revive and expand the role of capital markets.

Although there are active capital markets for PPPs outside Europe, notably in the USA, Canada, and Australia, this paper covers only the European market, focusing on its two principal components, the UK market (Sterling zone) and continental Europe (Euro zone).

European PPP Expertise Centre (EPEC)

EPEC is a collaboration between the EIB, European Union Member and Candidate States and the European Commission which is designed to strengthen the organisational capacity of the public sector to engage in Public Private Partnership (PPP) transactions.

Contents

Capital markets for PPPs.

Market overview, current constraints and possible solutions

	1. Capital markets summary	
	1.1 Brief history	5
	1.2 Investors	6
	1.3 Bonds vs. bank debt: pros and cons	7
	2. Monoline model review	14
	2.1 History	14
	2.2 Ratings	14
	3. Reviving the capital markets: principal constraints	
	3.1. Introduction	16
	3.2. Value impairment on PPP bonds	16
	3.3. Portfolio imbalance	16
	3.4. Alternative investments	17
	3.5. Lack of analytical capability	17
	3.6. Structuring difficulties around project control	17
	3.7. Lack of a benchmark	17
	3.8. Lack of a designated pool of capital	17
	3.9. Varying appetite for construction risk	18
	3.10. Currency constraints	18
	3.11. Ratings hurdle	18
	4. Reviving the capital markets: possible solutions	
	4.1. Unwrapped bonds	19
	4.2. Revival of monoline model	20
	4.3. International financial institutions	21
	4.4. State guarantees	21
	4.5. Junior debt	21
	4.6. New debt funds	22
	4.7. State financing efforts	22
	5. How broad is the market?	
	5.1. Introduction	23
	5.2. The UK situation	23
	5.3. The Netherlands situation	26
	5.4. Other countries	27
	5.5. Expectations for developing a € PPP bond market	27
	6. Conclusion	
	6.1. Where we are now	28
	6.2. How can capital markets be encouraged?	29
	6.3. What next?	31

1. Capital markets summary

1.1. Brief history

- 1.1.1. The use of bonds to finance PPPs has differed widely among member states. They have been used most extensively in countries with significant private-sector pension schemes having long-term liabilities that need to be matched to long-term assets. This form of funding has been most prevalent in the United Kingdom where bond financing of PPPs has been commonplace since the launch of the UK's Private Finance Initiative in the 1990s. In the UK, bond financing was the dominant financing solution for large projects (>£200 million in capital value) for the last decade.

UK PPP Financing: Bank vs Bond Execution

In the period 1996 to 2009, a total of 663 PPP projects were signed.

- Of the 48 projects with a capital value $\geq$ £200 million, 25 were bond-financed (52%)
- Of the 28 projects with a capital value $\geq$ £300 million, 18 were bond-financed (64%)
- Of the 11 projects with a capital value $\geq$ £500 million, 8 were bond-financed (72%)
- Of the 12 hospital projects with a capital value $\geq$ £300 million, 10 were bond-financed (83%)

The figures above all refer to the initial financing arrangements for the projects and do not take into account any subsequent refinancings.

Source: HM Treasury and Partnerships UK

- 1.1.2. Public bond financing has been less prevalent in other countries for a variety of reasons: lack of a deep capital market, resulting in illiquidity in the asset; lack of a large private pension system, resulting in insufficient demand for the asset; a strong local banking market willing to maintain market share through aggressive pricing and terms; and insufficient knowledge of the bond market on the part of both the public sector and private sponsors leading to the perception that the bond execution is "difficult". Privately placed notes, which mimic the essential characteristics of bonds but which are not sold through a public offering have gained headway in the last three to four years, in particular as instruments for refinancing bank debt on established projects. These can be attractive in cases in which the size of the project is insufficient to create trading liquidity, which is required by many traditional bond investors.

- 
- 1.1.3. The PPP bond market in Europe has been characterized by an extensive use of monoline guarantees (see ¹⁾ below) with very few public bonds having been issued without such a guarantee. The main reason for this is that PPP projects typically have a long lead time before financial close during which the commercial terms of the underlying project and the financing terms that flow from the commercial arrangements are negotiated. Unlike banks, traditional institutional bond investors have not historically had in-house capability to carry out the transaction development and negotiation functions; instead, they have relied on the monolines to conduct due diligence and to structure project financings in a secure fashion, as well as to monitor and administer their investments on an on-going basis post-closing. As described below, this reliance has had serious implications for the PPP financing market following the widespread downgrading of the monolines.

1.2. Investors

- 1.2.1. Historically, investors in PPP bonds have been institutions with long term liabilities against which they needed to have assets to produce matching long term cash flows. The key players have been pension funds, life insurance companies, both of which invested directly, and fund management companies, whose clients are also pension funds and life insurance companies.
- 1.2.2. Over the last three to four years, banks running asset swap books have been the principal buyers of PPP bonds². The economics behind the asset swap execution were driven by the ability of these investors to purchase index-linked bonds issued by PPP project companies and wrapped by monolines, and swap the cash flows to a fixed rate basis through an inflation swap. The fixed rate flows were then sold to an end investor who wanted to have fixed rate cash flows. This arbitrage produced a stream of future cash flows that could be recognised immediately as income on the books of the asset swapper, creating a profitable business and allowing these institutions to offer a lower price on the bonds than traditional “real money” investors that were able to recognise cash flows as income only when they received them over time. Although this development was beneficial to the public sector because debt funding costs were brought down, the unintended consequence was that from 2005 traditional investors were increasingly driven from the market by the lower pricing offered by the asset swappers. The simultaneous weakening of the monolines and the problems faced by the asset swappers in rolling over their short-term funding beginning in early 2008 brought this source of funding to an end.
- 1.2.3. Mostly recently, sovereign wealth funds and “alternative investment funds” have been mooted as potential PPP investors. These investors have been active in infrastructure markets for a number of years and the current interest rate environment has made PPP debt a potentially attractive option for them. To date, however, neither class of investor has made a significant mark on the PPP bond market, partially because of the

1) These companies are called “monolines” because, although they are legally licensed and organised as insurance companies, they are permitted by law to offer only one form of insurance – financial guarantees – as opposed to other insurance companies which may offer various insurance products and are called “multi-line” insurers.

2) The dominant institutions in this market were Dexia and Depfa.

existence of other debt investment opportunities, such as utilities, offering a safe return with substantially less up-front time and effort required from the investor, and partially because the public sector and private sector sponsors have not made an effort to bring these investors into the PPP transaction flow.

1.3. Bonds vs bank debt: pros and cons

Although alternatives to public bonds and bank loans are being discussed, for the time being these two solutions remain the principal options for debt finance in the PPP market. Despite the use of bond finance for more than a decade, it remains misunderstood by many stakeholders in the PPP market. This section will identify the main ways in which bond and bank financings differ and how one form of financing may be preferable to the other in different areas.

- 1.3.1. **Interest rate on borrowed funds:** Although this differs among national markets and over time within markets, the cost of bond financing has been very attractive relative to bank financing in some markets, most notably the United Kingdom. There are a variety of reasons for this. First, the ability of traditional bond investors to lend on a fixed-rate basis eliminates the need for a swap, which can produce savings in the all-in borrowing rate. Second, the greater certainty that bond investors have that the term of their liabilities matches the term of their assets gives bond investors the ability to ascribe a lower cost to liquidity risk. Third, because most bonds have been monoline-guaranteed, they have been issued at triple-A ratings which, even when taking into account the cost of the guarantee, has produced a lower cost of funds than would have been required by banks in many cases.

Historical monoline pricing – UK market

Monoline cost of debt = gilt rate + credit spread on wrapped bond + guarantee fee

Example: A PFI hospital project rated Baa3/BBB+ which closed in 2005 was priced with a credit spread of 57 bps over the reference gilt and the monoline fee was 20 bps leading to a total cost of funds of 77 bps over the gilt rate.

Because no unwrapped PPP bonds have been issued since 1998, a direct comparison of issue price is not possible, but a comparably-rated corporate bond would have been issued at gilts + ~130 bps during this period, suggesting that the wrapped bond execution presented a significant improvement in the cost of funds (in this example ~53 bps). Although comparisons between issue

price and secondary price should be made with some caution, as a further indication of the savings achieved with the monoline execution, the trading range of the unwrapped bond for the Greenwich Hospital PFI project (Meridian) was gilts + 167-183 during 2005, indicating savings in the realm of 100 bps had the unwrapped bond financing been deliverable at that time.

Because bonds and bank debt do not use the same base rates (a floating rate such as Euribor or LIBOR, generally swapped to fixed, for bank debt against the gilt rate for bonds), it is not sufficient to compare the spread to the base rate; rather the all-in cost of funds must be compared to assess the relative cost of each option. Historically, monoline wrapped bonds have proved highly price competitive with bank debt.

Source of corporate bond spreads: iBoxx Sterling non-gilts BBB 10+ years



- 1.3.2. **Negative carry:** “Carry” refers to the interest a borrower receives on funds borrowed prior to using the funds for the purpose of the project, generally construction of an asset in the case of PPPs. Bond financing almost always provides for all of the proceeds of the debt issuance to be drawn by the borrower at financial close, even if all the funds will not be required until later in the construction programme. This requires the borrower to invest the funds until required. In general, the interest rate that the borrower receives is lower than that paid to the bondholders, resulting in “negative carry”. In contrast, banks disburse funds to the project company as required, charging a commitment fee on the undrawn amount of the loan facility, but not interest; therefore, there is no need to invest funds at a net negative return. Because PPPs do not usually generate cash flows to the project company until the asset required to provide the service is completed, the negative carry phenomenon requires the project company to borrow more in a bond-financed transaction than in a bank-financed transaction to enable it to cover interest payments during the construction period. In this respect, bond financing is less efficient than bank financing.
- 1.3.3. **Prepayment and the refinancing opportunity:** Because of the potential for creating gains by refinancing a project at a cost that is lower than the initial financing cost, the possibility of refinancing a project is of interest to both private sector sponsors and the public sector, which may have a contractual right to share

such gains. The initial financing route will have an impact on the likelihood of refinancing because of differing prepayment and breakage costs payable on various financial instruments. It is important to note that breakage costs for financial instruments vary in different markets; therefore, these comments can only be taken as an indication of possible outcomes and practitioners should take specialist advice applicable to their own jurisdictions.

Lower financing costs can arise for two reasons. First, for many projects, the perceived risk of default falls following successful completion of the construction programme, which can result in the ability to refinance the project at a lower credit margin than was available prior to the completion of construction. Second, the general level of interest rates, driven by the government or interbank borrowing rate, may have fallen since financial close, enabling the project to obtain cheaper funding even if the credit risk margin has not decreased. These two factors are independent and may move in the same direction, thereby increasing the potential refinancing gain, or in different directions, in which case the reduction in credit margin may be partially or wholly offset by an increase in the underlying rate.

In a bond financed transaction, on a voluntary prepayment by the borrower, the bond terms will generally call for a prepayment fee in addition to the return of the par amount outstanding. This is usually a sum calculated to enable the bondholder to reinvest the prematurely repaid principal in another instrument at a yield equivalent to that which the bondholder would have earned had the bond not been prepaid. This may be on a risk-adjusted basis or on a risk-free basis as is common in the U.K.

Example of a bond prepayment cost: the UK “Spens formula”:

“Spens” = a payment to the bondholder that is the higher of the par value of the bond and the present value of the payments on the bond discounted at the then current yield on the UK government bond (gilt) of the same duration

Assume:
Bond par value = £100,000,000
Bond coupon = 5%
Duration = 30 years
No principal repayment until maturity

Therefore, annual cash flows = 30 interest payments of £5,000,000 and a final principal payment of £100,000,000

If there is a prepayment at the end of year 10:

The amount owed to bondholder without a Spens clause = £100,000,000, representing the outstanding par value of the bond irrespective of prevailing rates at the time of prepayment.

But, the amount owed to bondholder with a Spens requirement if gilt rate is 4% =

$$\sum_{n=0}^{20} \frac{5,000,000}{(1.04)^n} + \frac{100,000,000}{(1.04)^{20}} = £113,590,326$$

Note that the UK practice of using the gilt rate or gilts plus a small margin exacerbates the effect of the yield maintenance provision, but even if the discount rate were kept on the same risk-adjusted basis, the principle of yield maintenance would still eliminate the economic effect of refinancing when interest rates fall.

Example: the “Par floor” effect

Assume the same bond as in the previous example, but interest rates have risen since financial close.

Amount owed to bondholder with a Spens requirement if gilt rate is 6% =

$$\sum_{n=0}^{n=20} \frac{5,000,000}{(1.06)^n} + \frac{100,000,000}{(1.06)^{20}} = £88,530,079$$

BUT

Because the bond terms dictate that the lowest amount that bondholders will receive is par, the borrower will still pay £100,000,000, not the lower amount derived from the present value of the bond’s cash flows at the higher interest rate prevailing at the date of prepayment.

The effect of such a provision is to make it difficult for a borrower to profit from a lower interest rate environment because the present value of any gain that the borrower would achieve from lower future interest payments would be given up to the existing bondholders to maintain their yield. The yield maintenance adjustment is also generally subject to a floor on the par value of the bonds. This latter feature is not particularly important to the equity providers, a negative yield adjustment implying as it does the unlikely scenario that the bond has been refinanced at an interest rate that is higher than the interest rate on the original financing; however, the par floor is important to the public sector authority which may want to terminate the project agreement for reasons unrelated to the performance of the project company (e.g. a change in operational requirements or government policy) and the par floor will produce a windfall to the bondholders in the form of compensation payable by the authority, thereby adding an uneconomic cost to termination.



Bank loans for PPPs have not historically incorporated yield maintenance provisions because they bear a floating rate and therefore always track current market rates. (It should be noted, however, that banks have begun to incorporate prepayment fees into their terms in the more constrained current market). The loan-financed project does not, however, have a free prepayment option. Because bank loans bear a floating rate and project company borrowers normally receive fixed periodic payments under the PPP agreement, the floating rate cash flows are generally swapped to fixed rate flows to mitigate the risk to the project company that interest rates rise, leaving it with unaffordable interest payments. On prepayment of the loan, the swap will be terminated and breakage costs arise. This cost is similar in concept to the bond investor's yield maintenance provision with two key differences. First, the breakage costs are always calculated using a discount rate determined on the assumption that the swap counterparty is replacing the forgone cash flows with cash flows from another party of identical risk to that of the party that is breaking the swap. The effect of this is that there is no windfall to the swap counterparty like there is to the bond investor operating in a jurisdiction (like the U.K.) in which the discount rate used is the risk-free rate. Second, the swap breakage sum may be either positive or negative, which means that an authority terminating a project in a non-default situation may have the principal sum owed to the lending bank offset by a negative swap breakage amount, which, as noted above, will not occur in the case of a bond.

Example: Swap breakage costs

With floating rate funding swapped to a fixed rate, the swap counterparty pays (receives) at each interest period the difference between the interest due under the floating rate and under the agreed swap rate. Because this flow of funds is discontinued when a prepayment is made, in order to make the swap counterparty whole, the authority pays the contractor in addition to the outstanding loan principal, the so-called "swap breakage costs", which are the present value of the expected future net payments to the swap counterparty discounted at the then current swap rate. Unlike a bond prepayment, the future margins on the loan are ignored in the calculation.

Assume:

Loan principal = £50,000,000

Initial loan rate = 6.30% (comprising a swap rate of 4.50%, a lending margin of 1.50% and a swap margin of 0.30%)

Maturity = 25 years

Mortgage profile amortisation

If prepayment occurs at the end of year 10, the authority will owe the following amounts depending on the movement in interest rates since financial close:

	Rates down 1% 3.50%	No change 4.50%	Rates up 1% 5.50%
Loan balance	£38,488,091	£38,488,091	£38,488,091
Swap breakage	£3,651,110	£801,691	£(1,782,224)
Total owed	£42,139,202	£39,289,782	£36,705,867

Note that the future stream of payments must be estimated to calculate the breakage cost. This is not left to the individual swap counterparty. The process is governed by a standard set of documents used in the global swap market so the breakage costs for any given payment profile are subjected to a market determination procedure.

- 
- 1.3.4. **Refinancing risk:** Prior to the current financial crisis, the term of bank lending was limited by the term of the swaps available. At the beginning of the PPP market, this had been relatively short and projects were limited to terms of 15 to 20 years. The bond market was able to offer terms of 30 years and longer, and over time, the swap market responded with longer terms, enabling banks to continue to compete for projects in which a long term was required to amortize the cost of the assets at an affordable level of payments for the public sector. In the current market, banks will not generally lend for the full term of the project agreement or concession, creating a refinancing risk that must be allocated. To date, generally this risk has been divided between the public and private sector, with the public sector accepting that the cost of margin step-ups incorporated in soft mini-perm loans will be covered by an increase in payments to the project company, and the private sector accepting the risk that under hard mini-perms refinancing will be unavailable at any cost and the project might be terminated following the project company's failure to repay its debt.²⁾

Bond financing, being drawn from investors having naturally long-term liabilities as opposed to banks with normally relatively short-term funding sources, is still able to offer financing of the same term as the underlying concessions, thereby avoiding the introduction of refinancing risk into projects.

- 1.3.5. **Project decisions:** PPP projects involve complex contractual arrangements under which many decisions of concessionaires are controlled by lenders. This is true not only when projects have run into difficulties but also when projects are performing as anticipated. Typically, these decisions are contained within a part of the funding agreement known as the "controls matrix". The controls matrix will cite every clause in the project documents under which the project company can or must make a decision and indicate the degree of control that the funders wish to exercise over that decision, ranging from absolute control to no control. The way in which these decisions are made differs between bank and bond funding.

The documentation of bank-funded projects will usually delegate a large class of decisions to the agent bank (or a small committee of banks in some transactions). The syndicate of banks will be called to make decisions of particular importance or in relation to decisions required because the borrower has committed serious breaches of its obligations. The speed of the decision-making process will be directly related to the number of banks in the lending group and can become cumbersome in large projects.

In bond-funded projects, the control issue has evolved around the monoline. Because the monoline takes the front-line risk of project default, bondholders have historically ceded control of decisions to it. This "controlling creditor" role has made it much easier for borrowers to obtain decisions in a bond-funded project because the lender control is vested in a single entity irrespective of the nature of the decision. How decisions would be made in the absence of a monoline is a question facing the markets now. Contractually, without a mono-

2) A "soft mini-perm" is a loan with a term that amortizes fully over the life of the concession but which contains incentives for refinancing such as margin increases and capture of cash flow that would otherwise be distributed to project sponsors. A "hard mini-perm" is a loan that does not amortize fully and which must be refinanced failing which a payment default will occur.

line, the decision-making authority would lie with the bond trustee; however, in practice, bond trustees will rarely make any decision without consultation with and indemnification from bondholders. This process is impractical in the context of a project financing in which many decisions may be required in a short period.

- 1.3.6. **Certainty:** In the pre-crisis markets, a bank solution was providing earlier and greater pricing certainty as bank lead arrangers were still prepared to “underwrite” the deals in advance of financial closing (i.e. guarantee the subscription and the margin over LIBOR/Euribor, in most cases as early as at tender submission), when a capital market issue and its margin over the relevant government bond yield would become effectively committed only at the time of issuance, shortly before or at financial close.
- 1.3.7. **Deliverability:** loan syndication vs public bond offering. Despite more than a decade of successful PPP bond financings, it is still sometimes said that bond executions are less certain in deliverability than bank loans, i.e. there is a higher risk that funds may not be available, or available at uncompetitive prices. Historically, however, even when a public bond issue has been more difficult to sell than the arrangers had anticipated, as a reputational matter, the bond lead managers have habitually purchased the unsold bonds for their own account, in the hope of re-selling them later; even though they had no contractual obligation to do so. In the current market, on large projects, a bank loan will require syndication—a process that is similar to a public bond offering and, as recent history has shown, no less likely to fail. The dislocation in the financial markets has revealed that under stressed conditions the loan syndication market is not completely reliable and lead banks have invoked market flex clauses even after financial close, resulting in a higher than expected financing cost for the public sector. On balance, in the current market, syndicated or clubbed bank and bond financings should be seen as presenting similar levels of execution risk.
- 1.3.8. **Cost of issuance:** The transaction costs associated with bond financing are higher than for bank financing due to the necessity of obtaining ratings for the debt and the legal costs associated with undertaking the listing of the bonds on an exchange. This difference, however, is insufficient to be a significant factor in the funding route decision.
- 1.3.9. **Inflation hedge:** A specific category of bond, is the inflation indexed bond, where the bond principal is adjusted for inflation following a defined price index (the way these bonds work is further explained in § 5). These bonds are particularly attractive to investors such as pension funds, which have long term inflation indexed obligations to match. It may equally be of interest to many procuring authorities which are willing to commit to unitary payments at least partially linked to inflation, in line with their budgetary resources. This is another attraction of bonds, as this type of inflation related product is not commonly available in the bank market.

In summary, bond financing has historically been less flexible than bank financing and presents issues of post-closing deal management without the participation of a monoline; however, these disadvantages must be weighed on a case-by-case basis against potential savings in financing costs, the elimination of refinancing risk, and the possibility of financing assets over longer concession periods.



2. Monoline model review

2.1. History

The monoline financial guarantor business was established in the early 1970s in the United States in response to a series of high profile municipal bond defaults. The U.S. municipal bond market was and remains a largely retail market and retail investors do not generally have the ability to analyse the risks presented by the issuers, requiring them to rely upon public ratings from rating agencies such as Standard & Poor's and Moody's Investor Service.

Historically, the monolines' basic business model was to issue unconditional and irrevocable guarantees of timely payment of principal and interest to investors while maintaining a sufficient capital base against those guarantees to achieve triple-A ratings. The amount of capital required for each guarantee issued is determined by reference to rating agency models of default probability and expected loss given default on the underlying securities. The issuer's security would benefit from the triple-A rating of the monoline rather than its own rating, thereby producing a lower cost of funds. This saving is shared with the monoline in the form of a fee from the issuer to the monoline for issuing the guarantee ("wrapping" the bond). This model is heavily dependent on the ability of the monoline to maintain a rating that is, if not triple-A, then at least sufficiently high to produce value when the guarantee is issued against the securities of most potential borrowers.

In the mid-1980s, the monolines began to extend guarantees on financial instruments outside the municipal bond sector, most notably in respect of asset-backed securities derived from consumer loan products such as residential mortgages and automobile loans. The companies arrived in Europe in the late 1980s and became key players in the PPP financing markets from the late 1990s. Monoline-guaranteed instruments have been used to finance PPP projects in a number of European countries, but the monolines' greatest impact was in the United Kingdom because of the combination of the government's extensive Private Finance Initiative scheme and the presence of a deep and liquid bond market which provided a competitive alternative to bank financing of these projects. The dominance of the wrapped bond execution in the UK is illustrated by the fact that from 1997, when the first PPP project financed through the capital markets was closed, through today, only two early projects were funded with bonds that did not bear a monoline guarantee. The effect of this reliance on the monoline to achieve a capital markets execution is discussed below.

2.2. Ratings

The effectiveness of the monolines in facilitating PPP funding through the capital markets has been severely impaired by the reduction in their ratings. The downgrades have been of differing levels of severity from company to company, but the entire sector has been affected. In considering possible lessons of the monoline story, it is useful to note that the credit problems were not related to their activities in the public finance and infrastructure sectors but rather to exposures on asset-backed securities for which

Monoline Ratings pre and post crisis

	June 2007		November 2009	
	Moody's	S&P	Moody's	S&P
Assured Guaranty Corp. Financial Security	Aaa	AAA	Aa3	AAA
Assurance (UK) Ltd.*	Aaa	AAA	Aa3	AAA
Ambac Assurance Corp.	Aaa	AAA	CC	Caa2
MBIA UK Insurance Ltd.	Aaa	AAA	BB+	B3
Syncora Guarantee (UK) Ltd.**	Aaa	AAA	Ca	CC
FGIC UK Ltd.***	Aaa	AAA	Withdrawn	Withdrawn

* Acquired by Assured Guaranty in July 2009. November 2009 ratings are for the merged entities.

** Formerly XLCA

*** Regulatory action 24/11/09 required cessation of payment of claims.

Source: public information

the underlying assets were sub-prime or other non-standard U.S. mortgage loans. With few exceptions, the infrastructure portfolios of the monolines have continued to perform, indicating that the terms and conditions required by the monolines in the sector have been effective in protecting investors from losses and should be considered as models for financings going forward.

Following the downgrading of the monolines' ratings, bond investors have withdrawn from the PPP market. The reasons for this and other constraints on reviving the capital market execution are explored in the next section.





3. Reviving the capital markets: principal constraints

3.1. Introduction

There are a number of constraints that need to be considered in attempting to revive and expand the interest of capital markets investors in PPPs. These fall into two broad categories: reasons for the retreat from PPP and obstacles to re-entry and expansion of activity.

Reasons for the retreat from PPP:

- Impairment of the value of the existing portfolio
- Portfolio imbalance
- Attractive alternative investments

Obstacles to re-entry and expansion:

- Lack of analytical and structuring capability among many investors
- Structuring difficulties around project control
- Lack of a clear asset class for performance benchmarking
- Lack of a designated pool of capital
- Variable appetite for construction risk
- Currency constraints
- Rating hurdle

3.2. Value impairment on PPP bonds

The value of the wrapped securities that investors hold has been impaired, even where there has been no deterioration in the underlying credit characteristics of the project, because the securities were bought bearing a yield reflective of a triple-A risk and those securities are now trading at a price, at best, which reflects the higher of the rating of the relevant monoline and the underlying rating of the project, the latter of which is generally in the triple-B to single-A category. In some cases, the underlying project does not have a public rating and little information is available to investors to make their own judgements about the projects' risk of default. In these cases, valuation is particularly difficult and many fund managers have been instructed to sell bonds issued for projects in this situation. This further drives down the value of the securities. Although most PPP bonds are owned by "buy-and-hold" investors with the result that little trading occurs and, therefore, these losses are unlikely to crystallise, funds must still recognise the impairment in value.

3.3. Portfolio imbalance

Fund managers are constrained in the choice of their investments by concentration limits for their portfolios which are designed to achieve diversification of risk. Despite the impairment in value of wrapped infrastructure debt noted above, the steep decline in the value of certain securities, notably asset-backed securities supported by mortgage loans, has resulted in the relative value of infrastructure debt rising in relation to bond managers' portfolios as a whole. This has produced a mathematical over-weighting of infrastructure assets

on a static portfolio basis with the result that some fund managers will be unable to purchase further infrastructure bonds until they rebalance their portfolios to comply with internal diversification requirements.

3.4. Alternative investments

PPP project financings are categorised by most institutional investors with other long-dated infrastructure debt and, therefore, fund managers are free to make substitute investments within this class. For the last year, fund managers have been able to meet the needs of their portfolios by investing in other debt, most notably that issued by European utility companies, which has been placed in the market at very attractive spreads, and which requires little effort on the part of fund managers to structure or to understand. Because these companies have become multinational in their operations, they habitually issue in sterling, euro and dollars, providing an ample supply to investors that might otherwise have currency constraints.

3.5. Lack of analytical capability

With few exceptions institutional investors have not built teams within their organisations that are capable of structuring and negotiating PPP project financings, nor do they necessarily wish to do so. There are sound economic reasons for this given that most PPPs require many months, if not years, of involvement by funders which is not a justifiable expense for most fund managers seeking to buy two or three PPP bonds per year. In effect, institutional investors in infrastructure have outsourced this function to monolines.

3.6. Structuring difficulties around project control

In addition to the pre-financial close activity performed by the monolines in producing the asset to be purchased by the investors, post-financial close the monolines acted as controlling creditor in these financings, meaning that they took responsibility for monitoring and making decisions regarding the activities of the issuers. As noted earlier, the market has not yet found a substitute for this role and it is impractical for bondholders to directly make the decisions frequently required in relation to the lender controls that are typical of PPP project financings.

3.7. Lack of a benchmark

Another side effect of the ubiquity of the monoline guarantee is that the investment management community has not developed a standard benchmark for measuring the performance of fund managers investing in PPP and other public infrastructure debt. Because of the triple-A rating of the monolines, managers tended to benchmark their performance against other triple-A securities, with the result that some funds classify these bonds with sovereign debt, others with the triple-A tranches of residential mortgage-backed securitisations, and others with high-grade corporate debt. This seemingly esoteric phenomenon is critical because without a standard benchmark against which investors can judge the performance of individual fund managers, they will be reluctant to commit capital.

3.8. Lack of a designated pool of capital

Related to the previous point, fund managers are required by investors to allocate the funds invested according to set criteria. Just as no standard performance benchmark has emerged, no standard definition



of infrastructure exists. As a result fund managers may struggle to justify the inclusion of a particular bond under any of their existing pools of funding. Frequently, bonds issued to fund the same project will find their way into commercial real estate, alternative investments, or public obligations portfolios. Investors may not agree with the fund managers' decisions as to the allocation of the asset and, in the current market, fund managers are reluctant to invest when they do not have clear home for the bond.

3.9. Varying appetite for construction risk

Investors are not unified in their appetite for construction risk, a fact that applies within national markets as well as among them. These distinctions were masked by the participation of the monolines, but have been revealed now that investors are being asked to consider PPP risks directly. Some institutional investors are highly risk averse. These tend to be those that are looking for sovereign or triple-A risk profiles and cannot accommodate any material risk. They were in PPPs only because of the triple-A monoline guarantees available. Others are willing to look at projects with construction risk but within this group, appetite varies widely. This is related to the previous point; funds approaching the PPP sector from relatively risky areas such as commercial real estate are more likely to be comfortable with some level of construction risk than those coming from the public sector debt side. The difficulty for procuring authorities and bidders is that there is still very little market intelligence about where different investors fall on this spectrum which makes the capital markets execution a more opaque and less attractive financing option than bank financing.

3.10. Currency constraints

Although not a new problem, there is an imbalance between the source of capital and the potential uses of that capital. The largest pool of long-term capital in Europe has been the sterling market, which has a limited appetite for funding euro-based infrastructure or infrastructure outside the Eurozone. The use of currency swaps to match the sources and uses of capital is limited by (1) the maximum tenor of currency swaps being well short of the optimal term of project debt; (2) the introduction of counterparty risk into the financings; and (3) the inability of SPV project companies to post the collateral that is required by swap counterparties.

3.11. Ratings hurdle

This factor varies among markets and among investors but is sufficiently frequently cited to merit discussion here. Typically, infrastructure projects funded in the capital markets have been structured to achieve a minimum rating of investment grade rating as required by the monolines. This low investment grade rating is not acceptable without credit enhancement to a large number of investors who require fund managers to adhere to a minimum rating standard of single-A. By contrast, most bank-funded projects, although not explicitly rated, would probably be rated below investment grade. The gap between the bank credit risk standard and the capital market investor standard could be bridged in a number of ways: letters of credit and high performance bonding to mitigate construction risk, higher coverage ratios to mitigate operating risk, and lower leverage to create a greater capital cushion to absorb losses before the senior debt is affected. All of these would result in increased costs and research is necessary to determine if the benefits of increased funding competition would be adequate to offset these costs.

4. Reviving the capital markets: possible solutions

4.1. Unwrapped bonds

- 4.1.1. Although efforts are being made to revive the monolines or replicate the monoline model (see below), it is useful to consider means by which an alternative unwrapped PPP bond model could be developed.
- 4.1.2. Chapter 3 of this document set out the difficulties with which the bond model is faced. Some of these – those in the first group in particular – will be addressed primarily by the passage of time. The valuation of existing wrapped PPP bonds will not change other than through the recovery of the ratings of the monolines that guaranteed them and write-downs will inevitably occur. The underlying credit quality of these bonds will be demonstrated over time, but the fact that they bear interest rates indicative of triple-A ratings when they are not of triple-A credit quality cannot be readily remedied. Similarly, the relative overweighting of infrastructure bonds in portfolios will diminish as the valuation of portfolios as a whole becomes clearer and fund managers can rebalance portfolios in a more stable price environment. The availability of simpler alternatives at attractive yields eased somewhat in the second quarter of 2009 as competition for these bonds drove down yields and issuance spreads have tightened by as much as 100 bps since March.
- 4.1.3. Addressing some of the constraints may require action from the PPP community – bond investors, equity sponsors, rating agencies, and the public sector. The constraints are not necessarily independent; the solution to one may help alleviate some of the others. For example, increasing the use of subordinated debt within PPP structures could help raise the rating of the senior debt, in addition to which, if the subordinated debt provider, as first-loss risk taker, were to have controlling creditor status the difficulty of diffuse lender control could also be addressed.
- 4.1.4. To address the problem of valuation, financing documentation should contain requirements for regular reporting to bond investors of the same kind that bank lenders and monolines routinely receive. This would allow investors to make judgements about the performance of the issuers and to assess the likelihood of a future default independently of the rating agencies. In addition, without a guarantee, the ratings of issuers must be done on a public basis with a requirement placed on issuers to maintain ratings. With publicly available ratings and a good flow of project information, the market would be able to make a rational value determination. It must be noted, however, that this depends upon the willingness and capacity of investors to undertake risk analysis, and it would appear investors are still looking for a way to avoid the cost of developing this capability.
- 4.1.5. As noted above, the single-A rating requirement may be difficult to achieve economically; however, this is an assumption based on the views of market participants rather than rating agency statements designed to address the current issue specifically. To address the bond investor rating hurdle properly, the market needs to have specific guidance from the rating agencies on their requirements to achieve the desired rating level.



4.2. Revival of monoline model

- 4.2.1. Another avenue for exploration is the revival of the monoline model. It should be remembered that, like other kinds of financial institutions, the monolines have suffered differing degrees of portfolio distress. Although some of the monolines are severely impaired and will probably not survive, some retain double-A ratings, well in excess of the stand-alone ratings of typical PPP debt (see table p 15). In principle, therefore, there is potentially value in those guarantees.
- 4.2.2. Certainly, investors' recent experience with the monolines will be difficult to overcome, but there are ways to take advantage of the monoline guarantee while mitigating the risk of monoline failure. The clearest of these is for the monoline to receive its fee over time and impose a downgrade trigger on the monoline such that if its rating falls below an agreed level, the investor has the option to give up the guarantee and receive the guarantee fee from the issuer. (Historically, the monoline has received its fee wholly or partially in advance, which would make this arrangement impossible without exposing the issuer to the risk of the monoline). The advantage of this would be to re-direct yield from the monoline to the bondholder when the rating of the bond falls, which would help to maintain the risk-adjusted return and, therefore, the trading value of the affected bond.
- 4.2.3. Despite their recent troubles, some of the monolines have retained staff experts in project structuring as well as project monitoring capability. The idea of harnessing these skills to the benefit of bond investors, even without a full guarantee, has been mooted. The essential idea is for the monoline to guarantee enough of the senior debt to retain an economic interest in project outcomes, but not the entirety of the debt because investors do not necessarily value the traditional guarantee. This would give investors confidence that the work carried out by the monoline both before and after financial close was of the high standard expected of a principal in the transaction without investors having to pay for the entirety of the debt to be guaranteed.

Mechanically, the wrapped and unwrapped debt could be issued as separately traded tranches to appeal to investors with differing views on the value of the guarantee. In this arrangement, the unguaranteed investors would receive the benefit of the monoline's structuring and due diligence without giving up yield. Alternatively, the wrapped and unwrapped bonds could be stapled to produce a single economic unit that was partially guaranteed. Lender controls would sit with the monoline for the guaranteed bonds. This model would help address investors' lack of project expertise and the problem of deal management post-closing. It would not address the rating problem, nor would it help with asset classification and performance benchmark difficulties.

- 4.2.4. Another possibility is to have a monoline take a first-loss rather than *pari passu* position *vis-à-vis* senior debt. The first-loss position could either be in the form of a guarantee or a funded position depending on investors' preferences. The principle behind this arrangement is that the expected loss on to the senior debt in a typical PPP is considerably less than the entire senior debt amount; therefore, having a party

contractually obligated to absorb the first losses that occur to the senior debt would improve the loss severity experienced by senior creditors should a default occur, which should make the debt more attractive to investors. This differs from the historical monoline arrangement in which all of the senior debt is guaranteed and therefore bears a rating that is the higher of that of the underlying project and the monoline. Unless the first loss position were structured as a separate tranche of debt, this arrangement would not change the probability of default (but only the “loss given default”) on the senior debt, and therefore would not be likely to have an effect on the rating of the senior debt, so the appetite for investors for this kind of protection needs to be assessed.

4.3. International Financial Institutions

IFI guarantees could address many of the constraints facing bond investors. Guaranteed debt would bear a triple-A rating; the controlling creditor role could be taken by the IFI; and investors will not have to develop staffing to participate in the structuring of projects and to analyse specific project risks. Additionally, such a guarantee could, in principle, be structured for a wider international coverage than was the case with monoline guarantees (or will be the case with national guarantee programmes like that of France).

4.4. State guarantees

States or state owned financial institutions can develop a debt guarantee product at a national level ³⁾. It would be similar to the monoline guarantee if it is an on-demand guarantee. State-aid issues have to be addressed by establishing a guarantee fee that approximates a market price and by offering the guarantee equally to all bidders on a given project. Like the IFI guarantee, a state guarantee would solve the problems of investor analytical capability, increases liquidity by creating a homogeneous triple-A risk asset class encompassing all debt benefiting from the guarantee, and, potentially, creates a controlling creditor.

4.5. Junior debt

- 4.5.1. In the past, the use of subordinated debt has been largely limited to quasi-equity subordinated debt lent by project sponsors as a tax efficient way of creating what is, in effect, an equity interest in the project. There have been isolated cases of mezzanine being incorporated into the capital structure, but these have been exceptional. The more routine inclusion of a layer of debt between the sponsors’ subordinated debt and the senior debt should be explored as a means of enhancing the rating of the senior debt. The size of the junior debt would likely range from 10% to 30% of the capital structure depending on the risk in the project. Simple accommodation or road projects without demand risk and low technology requirements would be at the lower end of the range while real toll roads and other projects with demand risk or involving new technology

3) France has put in place a €10b guarantee programme for PPPs, which could cover capital market issues. It is a partial guarantee only, limited to 80% maximum of senior debt. It is negotiated and administered by the MAPPP. A risk adjusted guarantee fee is applied. Portugal and more recently Spain have announced similar programmes.



would be at the higher end. There is potentially a substantial pool of capital available for mezzanine debt, some of which might be redeployed from the large amount of equity capital that was raised immediately before the financial crisis hit and which fund managers are finding difficult to invest in the absence of sufficient senior debt.

- 4.5.2. An interesting extension of the above concept is being discussed in the market in relation to junior debt which could address the project control problem. By inverting the customary intercreditor provisions to the effect that junior, rather than senior, debt providers control most lender decisions as long as losses have not eroded their economic interest in the project, decision-making could be vested in a single investor (or at least much smaller group of investors) with expertise in PPP projects. One could envision the junior creditor controlling day-to-day project decisions concerning minor variations to base case assumptions, which form the majority of lender discretions, while senior creditors would be consulted or take voting control for decisions with a financial impact above a certain threshold or in cases in which the project is distressed. Such an approach would mitigate considerably the project management burden on senior lenders and make senior lender participation necessary only for more important decisions to be agreed among the parties. This idea emerged in relation to the revival of the monoline model, but it could be explored for any provider of junior debt with sufficient expertise.

4.6. New debt funds

There has been much discussion of new funds set up expressly to make infrastructure loans. A number of financial institutions have considered the idea and there is no shortage of entrepreneurial activity, but to date there has been limited success in this area. This appears to be largely because the natural investors in such a fund are the same investors that would otherwise invest directly in infrastructure assets. Although the intermediation of a fund manager with a structuring and risk assessment capability would alleviate one of the constraints cited above, a number of the other constraints cited above will still apply. There are two principal approaches to these funds: (i) structured funds, where a vehicle raises capital on the financial markets – generally through bonds- and “transforms” it into standard project debt through a form of securitization mechanism and, (ii) “pass-through” funds where institutional debt raised from investors is on-lent to specific projects. Despite a slow start, this remains an area of interest.

4.7. State financing efforts

Various member states have declared an interest in providing PPP debt directly from the state. Both the UK and France have active programmes; however, these are addressed at alleviating the short-term lack of funding capacity and do not have reviving the capital markets as a stated goal. If anything, the existence of these facilities may slow the return of the capital markets by allowing projects to close even where bank lending is insufficient or offered on unattractive terms.

5. How broad is the market?

5.1. Introduction

As noted earlier in this paper, the availability of a capital markets execution for PPP projects differed widely among national markets prior to the onset of the financial crisis, and the most active market by a wide margin was the United Kingdom. The Eurozone has shown less enthusiasm for PPP bond financing and activity was limited to very few countries. This being the case, the approach to finding a capital markets solution to the current funding shortage will necessarily differ from country to country. In this section, the PPP capital markets picture in two countries is discussed to illustrate the different situation facing authorities wishing to attract capital markets funding. The reader's attention is drawn in particular to the role that inflation risk allocation has played and will continue to play in attracting investors to the PPP sector.

5.2. The UK situation

- 5.2.1. Prior to the onset of the financial crisis, the UK PPP bond market was supported by a core group of institutional investors comprising pension funds and fund managers. These investors bought approximately £15 billion of bonds issued by PPP project companies in the UK between 1997 and 2008. Since January 2008, no bonds have been issued to fund PPPs.



UK institutional investors historically active in the PPP bond market

	Assets under management (billions)*
Aberdeen Asset Management	£146.2
AXA UK	£42.0
Aviva Investors	£236.0
Barclays Global Investors (now BlackRock)	\$3,200.0
British Steel Pension Fund	£8.8
Henderson Global Investors	£48.9
Hermes	£20.5
Ignis Asset Management	£71.9
Legal & General	£311.0
M&G Investments	£169.0
PIMCO	\$940.0
Royal London Asset Management	£32.0
Scottish Widows Investment Partnership	£92.1
Standard Life	£136.9
Threadneedle	\$67.0
Western Asset Management	\$506.4

* Most recently reported total assets under management. Dates for figures vary according to individual companies' reporting schedules and currency units match companies' home currencies.

All of these investors with the exception of British Steel Pension Fund and Hermes, which is owned by and manages the BT Pension Scheme, are asset managers which make investments on behalf of large numbers of institutional and retail investors. The insurance companies in the list are also asset managers and the figures shown are related to their asset management activities, not the portfolios of their life insurance affiliates.

Source: public information



- 5.2.2. The large majority of UK PPP bonds have been index-linked. It is important to note that the prevalence in the UK of index-linked debt, while a natural fit for many investors as explained in 1.3.9⁴⁾, is exposing the procurers to a potentially higher inflation risk⁵⁾. UK Treasury guidance has since required authorities to assess the potential impact of inflation assumed by the public sector over the life of the project when funding is provided through index-linked debt, which will potentially make this funding route less attractive relative to fixed rate

4) The appetite for indexed linked debt was also driven on the public sector side by project evaluation criteria that allowed authorities to somewhat artificially improve project affordability by using the lower nominal interest payments of index-linked debt, relative to fixed rate debt, in the early years of a project to bring down the payments to the project company. These relatively lower early payments would, of course, later be reversed in a normal inflationary environment, but this factor was not given significant weight in the assessment of project cost.

5) Or indeed lower.

bank or bond debt than it has been in the past. It is too early to know if this will be the case, the inflation risk guidance having been issued only shortly before the onset of the financial crisis.

In the United Kingdom, the question is clearly one of revival rather than invention. There is a pipeline of several hundred million pounds of projects of a sufficient size to provide the liquidity that bond investors require. The obstacles to a return to bond financing have been given earlier in this paper and need not be repeated here. The factors that brought UK institutional investors to the PPP debt market in the 1990s continue to exist: attractive risk-adjusted returns and long-term maturities that match their liabilities. UK institutional investors have expressed interest in re-entering the market, and the UK government has made efforts to ensure that capital markets financing solutions are considered for projects currently in procurement.

- 5.2.3. For the time being, there has been little movement from institutional investors. There are sufficient alternative investments for investors to avoid addressing the impediments to their lending to PPPs in a systematic way and the government continues to be able to deliver its project pipeline using the banking market with the backstop of the Treasury's Infrastructure Finance Unit ⁶⁾. It is likely that one or both of these circumstances will need to change before UK institutional investors re-engage with the PPP market.

Example of payment flows for an indexed linked bond issued by the French Treasury:

Referenced bond = OATi 3.40% due 25/07/2029

Annual payment to bondholder = Bond coupon x par value x indexation coefficient

Indexation coefficient = daily inflation reference/base index for the referenced OATi

In practice, it is not necessary to calculate the daily inflation reference because the indexation coefficient for each OATi is published by the Agence France Trésor for every day. For the most recent interest payment date of the referenced bond, 25/07/2009, the indexation coefficient was 1.17435 and the interest paid on €1,000,000 of par value would have been:

$$3.40\% \times €1,000,000 \times 1.17435 = €39,927.90$$

When the bond matures in 2029, the principal due will also be multiplied by the indexation coefficient at the time,

which will compensate bondholders for the 30 years of inflation since the issuance of the bond in 1999.

The effect of this mechanism is to transfer the risk that inflation will exceed the interest rate on the bond from the bondholder to the issuer. Because it is generally the case that inflation is expected to be a positive figure over a long period, the stated coupon on a conventional bond is higher than that on an indexed linked bond to compensate investors for taking the inflation risk. It is therefore possible at any point in time to calculate the break-even inflation rate at which investors would be indifferent to buying conventional and indexed-linked bonds of the same duration. This calculation is made by comparing the forward yield curves of the two types of securities and is published by the AFT for each OATi issuance. For the OATi used in the example, this break-even inflation rate was 1.9% as of 1/12/2009, i.e. if annual inflation turns out to be below 1.9% for the remaining life of the bond, investors would be better off buying the fixed rate 5.5% OAT due in 2029 rather than the referenced OATi.

6) The Infrastructure Finance Unit was established as a separate unit within HM Treasury in March 2009 to provide funding for PFI projects which do not have sufficient private sector funding. It does not compete with the private market and is intended to provide funding at the market price to fill a gap or to avoid delays in closing caused by the withdrawal of a lender from a project nearing financial close. At the date of this paper, it has lent to one project, a waste management scheme sponsored by the Greater Manchester Waste Authority. In that case, a bank in the lending group reduced the amount of its commitment in the two weeks prior to scheduled financial close and the Infrastructure Finance Unit lent £120 million to make up the shortfall and allow the project to close as planned. It has been recently announced that TIFU will be merged into the newly created Infrastructure UK.



5.3 The Netherlands situation

- 5.3.1. The most significant capital markets potential for PPP in the Eurozone appears to be in the Netherlands. The Netherlands has a substantial pension scheme, a large portion of which is managed by APG and its affiliates. There is approximately €670 billion under management, which cover both public and private sector employees. APG has invested in infrastructure (not only PPPs) and has expressed interest in broadening its activities in this area.
- 5.3.2. In contrast to the UK investor focus on project risk allocation, the main driver for APG is inflation protection, in keeping with its focus on pension asset management. Inflation index-linked sovereign debt has been issued in a number of countries, providing a benchmark for pricing other inflation-linked debt. The Dutch government, however, has not issued index-linked debt, which gives rise to a point that will have to be addressed in many countries: which inflation index should be used? The government benchmark bond is critical to investors because to create liquidity for the debt that they hold, there must be a standard risk-free benchmark against which various issuers can be compared.

In the UK the problem does not arise because the UK government issues sovereign debt indexed to the Retail Price Inflation (RPI) index. Pension fund managers are legally required to hedge their liabilities against RPI; therefore, there is a match between the benchmark debt supply and investor demand. In the Eurozone, investors wishing to match future pension liabilities within a single country will also be attracted to a national index that mirrors the inflation of those liabilities, but unless the country in which they operate issues index-linked sovereign debt, that index may not be highly correlated to the inflation measure used to index the available benchmark debt instruments. In the Netherlands, for example, unless the Dutch government decides to issue index-linked sovereign debt, another country's debt must be used as the benchmark. The most active Eurozone issuer of index-linked debt has been France through its OATi bonds, which are liquid and should therefore be an attractive benchmark, but these are linked to French inflation, which, over the long periods required for PPP financing, may diverge significantly from Dutch inflation, materially lessening inflation protection for Dutch investors.

Cross-country indexation also presents risks for the public sector authority procuring a project because it will have contracted to index a portion of the unitary charge to a measure of inflation that will not necessarily track the inflation that it experiences in its tax revenues. Similar problems arise if European-wide inflation measures are used rather than national ones. Few investors will have liabilities that reflect European inflation as a whole, limiting the attractiveness of a bond indexed to European inflation.

- 5.3.3. The inflation risk allocation issue aside, it appears that the Netherlands is well-placed to bring institutional investors into PPP. Several of the problems raised earlier in the paper appear to have been addressed. APG believes that it has the analytical capability to assess projects and structure them, mitigating the need for the higher credit ratings that UK investors have demanded. The issues of lender control in a bond issue may

still need to be assessed, depending on the appetite of Dutch investors to take large percentages of the debt required in a given project. Other technical matters may need to be explored more fully between procuring authorities and APG to determine if the bond execution can be successfully implemented in the near term on a Dutch project. It would also be interesting to know APG's appetite for projects in the Eurozone but outside of the Netherlands.

- 5.3.4. Another avenue being explored is for Dutch pension funds to issue straight project debt rather than bonds.

5.4. Other countries

We are aware that in response to the ongoing shortage of bank debt other countries such as Ireland are actively pursuing a dialogue with institutional investors, the prospects for which are still developing. Other countries with significant institutional investors bases may be pursuing similar routes. Bonds solutions have been occasionally considered in other countries such as France (e.g. the A28 motorway) or Norway (the E18 Motorway - project bond issued in NOK). In Germany and Spain the "Pfandbrief" or "covered bond" market could also offer opportunities.

5.5. Expectations for developing a € PPP bond market

- 5.5.1. Beyond the Netherlands and the other countries mentioned above, it does not appear that there is a clear way forward for an early continuation of the development of a € PPP bond market. Prior to the financial crisis, development had been slow and several of the countries with the largest PPP programmes had seen no project close other than with bank debt financing. The tightening of the bank market should provide an impetus to the development of alternative executions but structurally certain conditions need to be in place, not least of which is a substantial pool of long-term capital, which, in countries that have had successful infrastructure bond markets (including those beyond Europe), has come from private pension schemes. These still do not form a significant part of the financial landscape in many European countries and the question arises as to whether those countries that do have significant pools of € capital from their domestic pension schemes can and/or are willing to support other countries PPP programmes throughout the Eurozone.



6. Conclusion

6.1 Where we are now

While there is a general consensus that capital markets are best placed to become significant funders of PPPs, it is not happening or, at least, not happening in the way it should.

The main obstacles are described in detail in the preceding sections, but can be analysed in the following way: most of the key stakeholders in the PPP market do not have a strong incentive to make it happen:

- *Commercial banks still see capital markets as competitors. Project finance has been traditionally a banks' preserve and a major source of fee business for them. They are interested in capital markets mostly to the extent that it allows them to refinance their existing long term commitments and roll over their portfolios.*
- *Institutional investors have many other opportunities, which appear simpler and often present a better risk reward/ratio. Because PPPs are complex, they generally prefer to be intermediated, but at the same time, find it difficult to get comfortable with the lack of direct control on their investment.*
- *Sponsors, are generally more comfortable with banks (over which they can exert a much stronger commercial control) and fear the "uncertainties" associated with capital markets (lack of early commitments, inflexibility of a "market" dictating its conditions).*
- *Procurers, are often not familiar with capital market and not always prepared to change their habits to fit the specific requirements of capital markets investors*
- *Investment bankers and advisers, in some cases may be keen to develop this business, but will only invest the considerable up-front costs necessary to arrange complex project bonds if they see a real prospect of repeated successes.*

There is a tendency for each category of player to expect a solution to come from others. Private players look at the public sector to create the right incentives or support mechanisms. Many in the public sector are of the view that it is up to the private sector to come up with new solutions.

Can this be changed? Can the incentives be turned around in a way conducive to a more positive attitude of all PPP stakeholders toward the capital markets?

6.2 How can capital markets be encouraged?

In summary, two ingredients seem indispensable to start the process of revival of capital markets for PPPs:

- A “capital market friendly” environment
- A “catalyst”

6.2.1 A capital market friendly environment:

There is a large number of features which can facilitate or hamper the development of capital markets. It is not possible to establish an ideal combination, which will in any event, depend on the particular circumstances prevailing in each national market.

However, the financial crisis has, in many ways, already changed the balance of incentives in the right direction:

- The banking market capacity for PPPs is significantly affected. Recent EPEC research indicates that the banks’ market for PPPs may have shrunk by over 50% in 2009 compared to previous years. Absent a revived capital market, it is likely that the availability of new funding will become a real bottleneck to the execution of the ambitious deal flows still envisaged in most European countries. This will create strong incentives for all players to find alternative financing solutions;
- Banks are increasingly aware that they will not be able to supply all the funding needs for PPPs and are opening-up to co-lending alongside bonds investors;
- Investors, which are currently caught between very low return government lending and volatile equity markets, should increasingly see infrastructure lending as an attractive complement to their portfolios;
- Procurers, governments and sponsors are concerned that the deal flow would slow down due to lack of funding;
- Private sector players are keen on reviving the market. Many are already working on creative ideas, such as mezzanine funds or debt funds.

6.2.2 The public sector as a “catalyst”

Private players definitely have a role to play. They are at the centre of innovations and can deploy considerable analytical, financial and marketing resources in developing them. The example of the monolines, again, shows that it can be done with very significant results.



However, it would take another major break-through in financial engineering to achieve a comparable result. It is not impossible, but not likely either. Although coordination from all market players will be necessary, the “catalyst” role is unlikely to be taken on by the PPP market or at least not in sufficient scale and in an acceptable time frame.

Bringing the core institutional markets -investment banks, insurers, sponsors and advisers- to the table, would therefore more likely require a significant public sector “push”, whether through procurers, governments, or multilateral organizations.

The public sector is indeed the best actor to provide the necessary policy incentives to the market. In addition it is the stakeholder which, in the final analysis, stands to lose the most from the absence of an active financing market for PPPs, as it implies a shortage of funds to deliver their key infrastructure and a lack of competition in the finance markets, leading to high prices and monopoly positions for banks.

Actions the Public Sector could take to encourage the capital markets include:

Adjust the procurement processes toward easier integration of capital market solutions:

- Use of advisers conversant with capital market techniques, to assist in establishing the terms of their tenders
- Procurement processes which allow bonds to compete with bank debt (for example, taking into account the specific process by which bonds are committed)
- Contract terms as much in line as possible with accepted “international standards”, to facilitate cross-border investments
- Specification of dual bank debt/bond routes in the tender terms (e.g. with different underlying project ratings)

- Performance by the authority, as a standard procedure, of a cost-benefit analysis of potential capital market solutions, in order to analyse the trade-off between the constraints imposed by bond solutions and the improved terms it may offer.

Facilitate dialogue between the various stakeholders under its leadership

Potential direct public support measures:

- Public guarantees or partial public guarantees for bonds
- A public infrastructure bonds agency, which could intermediate for private investors or facilitate liquidity
- Fiscal incentives ¹⁾

1) An historical example is the US tax-exempt bonds market, which played a key role in financing infrastructures in the US over the last 30 years.

6.3 What next?

Although nature abhors a vacuum, and the profit motive should bring new intermediaries to reinvest in public infrastructure assets, the market is still fragile, and the credibility and confidence gaps from past experiences will be hard to overcome.

Any proposed solutions are likely to require an impetus from governments or supranational institutions and a confirmed appetite from the financial markets, and there is a glaring need for trusted intermediaries.

There are however the first signs of new investors, for example Hadrian's Wall Infrastructure debt fund and Arcadium Infrastructure. EPEC will continue to track these initiatives and is happy to continue to work with any Governments looking to progress towards solutions.



European PPP Expertise Centre • European PPP Expertise Centre • European PPP Expertise Centre • European PPP Expertise Centre • European PPP Expertise Centre

For information:

EPEC Secretariat

☎ (+352) 43 79 - 85434

✉ (+352) 43 79 - 65499

📧 epec@eib.org



98-100, boulevard Konrad Adenauer

L-2950 Luxembourg

☎ (+352) 43 79 - 1

✉ (+352) 43 77 04

www.eib.org/epec

