Governance of PPP: the case of the Milan metro line 4 - Is there a lesson for infrastructure delivery?

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ABSTRACT

The paper addresses issues in governance of PPP looking at a recent case: the Milan Metro Line M4. The paper discusses how to optimize the use of public grants by channeling some of them into the equity of the concessionaire. This creates a true public private SPV (Concessionaire) which leaves efficiency incentives with the private party, but achieves greater public control of its funding contributions as well as project cost. Moreover, the paper demonstrates how public sector involvement in the concessionaire can reduce the information asymmetry between the public and private sector during project bidding and negotiation: greater public control of a project's technical and financial information is a crucial factor for reducing project costs. Reduction in information asymmetry and the creation of a public private SPV (concessionaire), establishes a double layer of control over the project, allowing a more efficient monitoring system during both construction and operation of the project. The paper shows how the City of Milan developed and negotiated the Line M4 project leaving little margin for increased costs but still assuring an adequate return to the private party. This Milan experience provides lessons to improve effective project delivery in infrastructure development: it can be an efficient framework to reduce project costs and to avoid opportunistic behaviors during project renegotiations. The potential applicability of the Line M4 governance structure to PPP projects elsewhere, including the United States, is discussed in relevant sections of the paper.

INTRODUCTION

The Milan Metro Line M4 project was launched in 2007, when the City of Milan, Italy was in the middle of completing construction of the first stretch of the Milan Metro Line M5 and in the process of extending the construction concession of Line M5 to the same construction consortium. Based on the experience of the Line M5, which was a pure project finance with a sort of availability payment, the concern of the City of Milan, the Concession Granting Authority, was to avoid the problems which were raised with the Line M5, notably change orders, claims, delays and additional financing for the extension of the line. Another major concern which was growing within the Milan government and the general public, was how to respond to the huge transfer of money (grants) from the Central and local government without real control and accountability for the money spent.

To deal with these problems and set the foundation for a more efficient use of public money, a new and innovative framework was developed by the City and its financial advisors, which answered some of the concerns raised and also laid out a more efficient framework for public works in Italy under a PPP scheme. The structure involved joint ownership of the concessionaire (SPV) by the Milan government and the private parties, with an availability payment mechanism granted by the City of Milan to assure the bankability of the project. The availability payment is such to compensate for the debt repayment in accordance to the financial model and to allow the SPV's contractual internal rate of return to be reached. The availability payment is a gross amount that the City will pay, while the City will own all ridership fare revenues. The availability payments will start at the beginning of operation (currently expected in 2022) and will be paid semiannually, based on the fare level indicated in the contractual concession agreement, and calculated on a demand flow of 86 million passengers per year. Fares will be indexed to inflation whereby every three years, 70% of the past inflation will be recouped in the fare. The concession agreement foresees a series of penalties to be applied to the SPV in case of non-performance, but from the lenders' perspective, the availability payment is a firm obligation of the City, which cannot stop paying. Total farebox revenues continue to be owned by the City and those amounts cover approximately 55% of the operating costs of the service contract with the operators, so from the City budget point of view, the availability payment commitment is a gross figure but its budgetary cost is net of fare revenues collected from actual ridership.

Investment in public works in Italy has been lagging for a number of reasons, but particularly for lack of funding, inappropriate design by local administration, inefficient bidding systems and a very cumbersome legislative framework including lack of access to a true PPP and Project Finance structure. Over the past 20 years, various Governments in Italy have insisted on having the private sector contribute to the development of infrastructure. The objective, as in other parts of the world, is to benefit from the efficiency gains of the private parties and also to obtain supplemental financing which was not available in the central government budget, due to budgetary restrictions and compliance with European Union or domestic deficit/GDP targets. *(1),(2)* In addition, as recent press reports show, corruption scandals have emerged, causing the Central Government in 2014 to appoint a National Anti Corruption Authority, which incorporated the existing Public Works Control Authority that had little ability to monitor works implementation and very little sanctioning power. *(3)*

These financial constraints on the Line M4 project are not dissimilar to those that emerge on many large projects in the United States and other countries. *(2),(4),(5),(6)* Infrastructure investment has lagged behind needs due to not only funding (revenue) constraints at all levels of government, but also weak governmental institutional structures that are not able to efficiently and effectively procure major projects like a new transit line. Financing limitations deriving from state or local constitutions or statutory authority have also propelled some subnational governments in the United States and elsewhere in the world toward use of private equity investment that is not included in the calculation of a government's legal debt limits and also has a longer repayment horizon than do typical governmental finance mechanisms. *(7)*

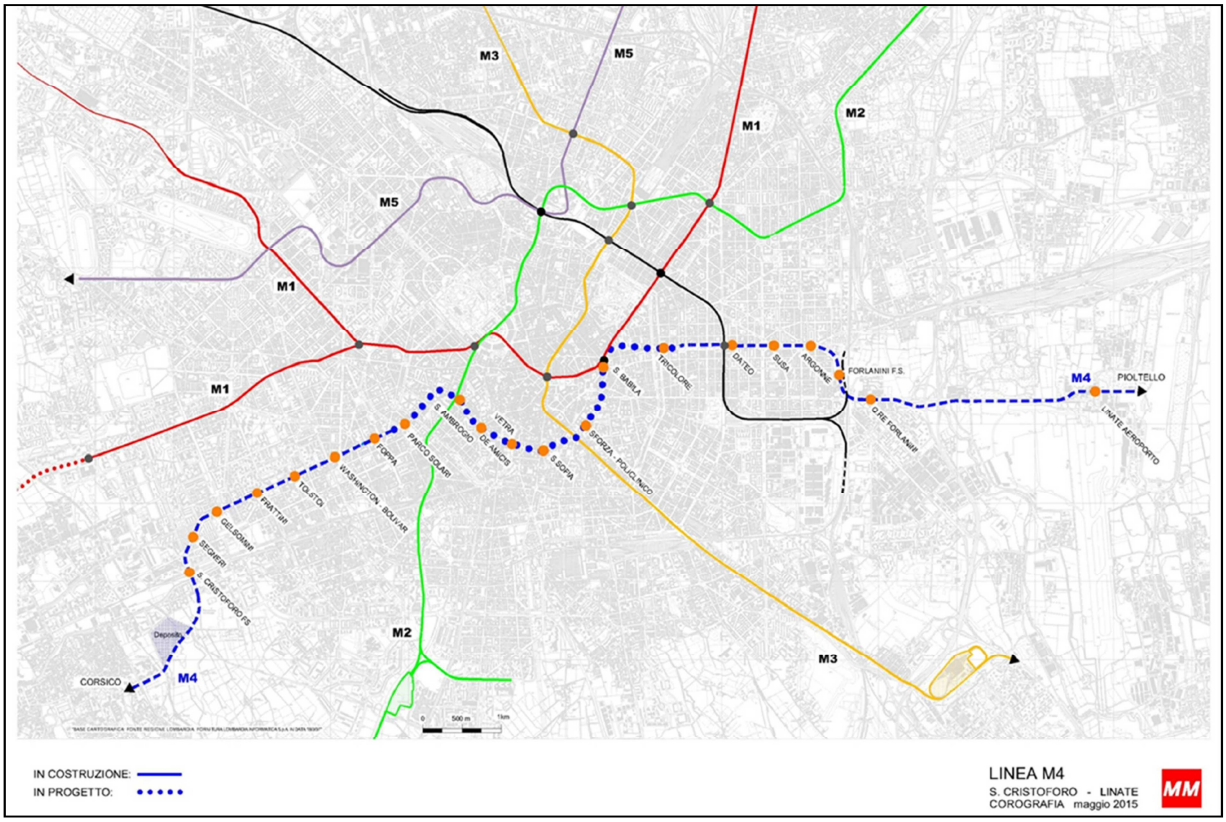
The paper first provides a description of the Milan Metro Line M4, followed by the main features of the tender process for the project. The next section highlights the new Public Private Partnership approach used by the City of Milan and its implication for the governance of infrastructure projects. The final section has general concluding remarks.

THE MILAN LINE M4 PROJECT

Literature on PPP is quite vast and relates primarily to the undertakings required from the public sector and the efficiency gains obtained by involving the private sector in infrastructure delivery. In the literature, issues such as the use of the public sector comparator or other methodology to test the value for money obtained by recurring to the private sector, have been considered at length. *(8),(9),(10,(11),(12)* Very little can be found on governance issues and corporate control in the use of PPP structures: how to best leverage public funds or grants; how to concentrate on project cost reductions; how to increase efficiency in the use of public funds in terms of corporate control on infrastructure delivery. This is what the M4 Milan project has been trying to achieve.

The Milan Line M4 is a driverless underground connecting Milan Linate from east to west (Linate Airport to Lorenteggio area), passing by the center of Milan where it connects with Line M1.

FIGURE 1 Metro system of Milan, Italy.



Courtesy of MM Metropolitana Milanese.

The Line M4 is 14.2 Km (8.8 miles) long and has 21 stations. Project costs are €1,869 million (US$2,112 million, at 1.13 USD per Euro. Table 1 details the sources of funds for the project. As for many new transit projects, governmental grants funded the majority of project costs. The City requested the private party to provide approximately 33% of the funding in the form of bank loans and equity participation, as described further in the next section.

TABLE 1 Sources of Funds for the Milan Metro Line M4

Source	% of Total	Euros	USD [a]
Private Bank Loans [b]	22%	€414	$468
Private Equity and Subordinated Debt	11%	€206	$233
Central Government Grants	47%	€871	$984
City of Milan Grants	12%	€218	$246
City of Milan Equity Stake	8%	€160	$181
Total Funding	100%	€1,869	$2,112

(a) Calculated at 1 Euro = US$1.13
(b) Includes Senior Loans, VAT Facility, and Standby Letters of Credit. Loan amount excludes €102 million (US$116 million) additional bank contingent commitments.

The City of Milan initiated the notice for expression of interest in late 2006, the full tender to the qualified bidders was launched in 2010, the City qualified three consortia in 2010, two consortia submitted their offers and the award was granted in August 2011. The winning consortium is led by Salini Impregilo, which together with Astaldi will take care of civil works, Ansaldo STS and Ansaldo Breda (signaling and trains), Sirti (telecommunications) and ATM (local public transport operator). The construction period, originally set at 78 months, has been increased to 88 months to take into account the lagging work schedule during the six months' period of Expo Milano 2015.

The losing consortium appealed the award to the Regional Tribunal and subsequently to the State Appeal Council on grounds of unfair competition by the winning consortium. Both courts rejected the appeal, but the appeal process was one factor that delayed finalization of the procurement.

At financial close the capital structure of the project changed to take into account increased capex due to the final detailed design, uncertainty over the final decision by the State Appeal Council, as well as increased financing costs deriving from the delays in closing the deal and reflecting the difficulties in the Italian financial market.

One may question why there were three interested consortia, only two of which submitted bids. The two consortia included all the big Italian civil contractors qualified for that type of works as well as Italian/foreign technology suppliers or partners. Foreign civil contractors did not participate as usually they team up with local contractors: in this case there was no room for such participation and also foreign firms were somewhat worried to participate alone in an infrastructure market that is not very open to competition, and where local knowledge of the market is essential to compete effectively. Limited bid participation may also be due to extensive costs of participation, uncertain rule of law, extensive bureaucracy and long delays in finalizing a bid outcome.

STRUCTURE OF THE TENDER AND CONCESSION AGREEMENT

In order to respond to the concern of the Authorities, notably in relation to governance and control, given the growing proportion of public funds in the financing of the Line M4 project, the following structure was developed and presented to the bidders.

The City would form a company with participation of the private party (Public Private SPV). This company would become the concessionaire. Shareholding of the SPV will be the City of Milan (2/3) and the private bidder (1/3). Total equity in the SPV was €240 million (US$271 million) of which €160 million (US$181 million) was to be contributed by the public sector (City of Milan) and €80 million (US$91 million) was to be contributed by the private sector. In their offer the winning consortium offered to underwrite a subordinated debt tranche of €80 million (US$91 million) in addition to its equity stake. The government public grants amounted to €871 million (US$984 million) (net of VAT) while the City grant contribution of €378 million (US$427 million) (net of VAT) was divided into a straight grant of €218 million (US$246 million) (net of VAT) and the balance of €160 million (US$181 million) was channeled through the participation into 2/3 of the equity of the SPV. The contribution of the City of Milan was larger than the one for the Line M5 (around €230 million or US$260 million) and the City could not afford a public equity contribution in addition to the approved grants, primarily due to compliance with restrictions on public borrowing. Therefore, channeling part of the City's grants through

the equity of the SPV, without disbursing additional public funds, helped solve the financing constraint problem and paved the way to greater public control on the project.

The solution adopted by the City Authority also established a mechanism that could substantially reduce the information asymmetry between the public and private sectors in project negotiations. Information asymmetry is a major source of negotiating conflicts around a concession agreement during negotiation, construction and operation as well as any contract renegotiation. *(4),(5),(13)* This solution enabled not only a more comprehensive and objective assessment of the bids but also importantly provided the public sector with more knowledge of and control over the governance of the concessionaire (through appointing three out of five Board members), thereby, avoiding opportunistic private sector behavior in terms of claims and/or renegotiations.

In addition to establishing a direct control on the infrastructure through a majority participation in the governance of the SPV, the solution helped create *ex ante* an asset for the City against its committed funds. In other words, on the one hand the City recognized the need for grants to assure the bankability and investment return to the private sector, while on the other hand, by transiting the public money through the capital of the SPV, the City achieved control and monitoring of the infrastructure development, while still leaving in place the efficiency of the private sector for developing, operating and maintaining the new asset, and created greater transparency and control over claims. The greater access to information and the detailed information provided to the bidders created a competitive climate whereby the Granting Authority controlled the variables of the tender in order to arrive at better and unbiased terms of comparison.

To reach this result, however, the City of Milan created a team of legal and financial experts to support the City in the design of the project and its procurement. The technical aspects of the project (engineering cost estimates, traffic studies, availability schedule of the new transit line, penalties, etc.) were prepared by in-house companies of the administration (companies totally or majority controlled by the City), notably by Metropolitana Milanese (MM), a leading underground engineering company which has designed all the Metro lines of the City of Milan and had acted as consulting engineer or high supervisory body for the construction and operation of each line.

The concession agreement and the by-laws of the SPV were subject to extensive discussion with bidders before the bid, and the text proposed, which, naturally, was subject to "minor" changes to assure the bankability of the project, was agreed within the administration. In particular, the "weak point" was in the SPV's by-laws, which not only should assure both the governance of the Public Private SPV and the benefit of private participation in the project, but also should protect the private sector from inappropriate actions taken by the majority shareholder (the City of Milan), when it had a conflict of interest due to its dual capacity as majority shareholder of the SPV and Concession Granting Authority. The issue was not clearly completely solved prior to commencement of the tender, as the City preferred to listen to the proposals of the bidders and their banks on this particular aspect, which also could have repercussions on some clauses of the concession agreement.

The initial solution was to give the SPV's Vice Chairman, who is designated by the private partner, the powers to deal with financial matters and to deal with the Granting Authority in case of conflict with the majority partner in the SPV. This issue, however, was further elaborated with the winning consortium by establishing a legal power in favor of the private party, defined in the closing documentation as "Mandato Gestorio", to overcome the potential conflicts with the majority partner. This process basically restores the power of the private partner and its banks to resolve issues with the Granting Authority, even with the opposition of the majority of the SPV Board.

The financial model was another important milestone achieved by the Granting Authority. The City prepared a financial model and presented it to the bidding teams; the model was quite detailed and very well described in the assumption book released by the City during the procurement. In particular, the assumption book stated which variables in the model the bidders could modify, in order to have more homogenous bidding terms, thus allowing for a better comparison of the competitive bids. Moreover, the City required the private sector financing of the project to be backed by a very strong letter of intent from the banks supporting a bidder. Moreover, the financing structure foresaw a procedure by which the banks should deliver the financing within six months from the official award of the tender to their client.

Another interesting feature which was envisaged in the documentation is the possibility for the winning private party to modify the bid's internal rate of return (IRR) though the following mechanism: within three

months after the award of the bid, the consortium had the possibility to modify the IRR by changing some of the variables which were fixed during the bid (for instance the payout ratio). However, the winning bidder could not change the capex or the tariff (the average ridership tariff to be paid by the City is multiplied by the expected annual passenger flow to determine the annual availability payment revenue stream). This new "modified" financial plan delivered a modified IRR, which was to remain fixed during the duration of the concession. At financial close, this modified IRR would become the Contractual IRR, and this IRR was to remain unchanged. In case of market flex conditions, including changes in interest rates or hedging costs, as either affects the financial cost structure of the model, the financial equilibrium of the model could be modified, allowing for a change in the ridership tariff (thus a change in the availability payment) in order to assure the constancy of the agreed Contractual IRR at financial close. Because the original equity IRR in the City's financial model was not particularly interesting from an investor point of view, the City decided to offer the private sector a preferred dividend by allowing nearly all of the cash available for distribution to be paid to the private partner in order to enhance its return and thereby make the project's return more comparable to the return on other types of infrastructure assets. It is worth mentioning that, during the Q&A sessions between the bidders and the City, the low profitability of the project was raised. Bidders were concerned with a 7% initial IRR as it was too low compared to their overall cost of funds and the investment return requested by eventual third party investors such as infrastructure funds. The City maintained its position, as equity investment by contractors is not seen as the driving element in their investment decision when the investor is also the construction contractor, which can make a good industrial margin on the construction price. The City's attitude proved to be correct as, notwithstanding the bidders' remarks, the two submitted bids had a return lower than the posted 7% IRR.

The well-defined time frame to bring committed financing and the introduction of a mechanism to adjust the profitability to the investors, coupled with a preferred dividend distribution in favor of the private partner, were all new developments in the Italian infrastructure market.

The financial markets at the time of the tender and later on were quite difficult due to the general financial difficulties following US and European financial crises. In addition, Italy, following concerns for the solvency of southern European countries such as Spain and Portugal and the growing concern over Greece, was encountering difficulties in obtaining financing in terms of both tenor and interest rates. This was true even though project revenues were assured through the availability payment mechanism granted by the City and covering the expected ridership of 86 million passengers per year, as defined in the ridership study prepared by the City administration. However, at that time, the credit ratings of the Republic of Italy were continuously deteriorating and therefore banks were unable to reduce loan credit spreads and also had difficulties offering long-term financing. The availability payment solution was preferred as debt financing was not available for transportation projects with ridership or revenue risks, particularly in countries experiencing credit rating problems; moreover, the private party also was not prepared to take ridership and revenue risks. Difficulties in the financial markets obliged the winning Consortium's banks to look for support from multilateral banks such as the European Investment Bank (EIB) and from development banks such as Cassa Depositi e Prestiti (CDP). In fact, the role of these two institutions was essential for closing the financing, as they contributed to mitigate the country risk, enabled access to long-term financing and, via a funding contribution of EIB to some of the lending banks, contributed to reducing the borrowing costs of the project (reduced margins).

The City conceived the tender in order to reach the minimum availability payment for the City. The financial plan was well detailed and left only some variables to be changed, namely terms and conditions of the financing, capex and operational cost, including ordinary and extraordinary maintenance. Bids were to achieve a lower value compared to the one in the financial model, with ridership fixed at 86 million passengers per year after a starting two-year ramp up. The City also specified growth of ridership, which bidders could not change. Equity was fixed, but bidders had the possibility (not the obligation) to underwrite a subordinated debt portion. The equity IRR of the project was low compared to market standards, but the City, as mentioned before, enhanced the private investors' return by granting a preferred dividend to the private partner in order to enable it to achieve the suggested IRR. In addition, if actual annual ridership *ex post* is higher than 86 million passengers, a mechanism was set up under which the City will pay an additional fee per passenger, until the private sector IRR reaches 2 percentage points more than the IRR stated at financial close. This additional tariff would be neutral for the City, as it would reflect the actual ridership fee charged by the City to Line M4 users.

WHAT DO WE LEARN FROM THE LINE M4 EXPERIENCE?

The Milan Line M4 experience shows how to address several issues related to the governance of PPP.

Asymmetric Information and the Role of the Public Administration

Management of information between the public and private parties is crucial in correct project implementation. It is well recognized that there is an information asymmetry between the two parties. *(4),(5),(14),(15)* The more the private party can control the information flow, the more likely that the public administration will be penalized, notably if lacking adequate experience in analyzing the actions and proposals of the private party.

Management of asymmetric information is an important determinant in the reduction of project costs and becomes even more critical during contract renegotiations, when mismanagement of information may trigger unfavorable consequences on project costs, public funds or user payments.

Large projects are quite complex to handle and evolve over several years, and all the possible contractual outcomes cannot be covered in the contractual documentation. Infrastructure contracts, given their complexity and the construction timing, are incomplete contracts: there is nothing wrong with contract incompleteness as it may be useful to create incentives to the private contractors, but it could also cause increased costs for the public administration, if it is not sufficiently equipped to negotiate and monitor large infrastructure contracts.

Therefore, the public administration should strive, in formulating its bidding documents, to define the optimum level of contract incompleteness, which can leave room for project incentives for the private party, while minimizing possible liabilities for the public administration. In order to do so, the public administration should be strengthened so that it can properly compete and dialogue with the private party. External resources should be deployed if not available internally. The role of experienced financial and legal advisors is essential for developing and negotiating the appropriate PPP structure. This means that external advisors, even if selected through a public tender, should be remunerated at market rates, keeping in mind that the legal advisors of the private party are usually very well paid. Looking for advisors through a public tender at rates very much below market rates, exposes the public administration to suboptimal bids and a doubtful advisory outcome. Thus, instead of reducing the information asymmetry with the private party, it effectively would increase such gap and would become a negative effect for the public administration in the event of concession renegotiations. Milan's experience shows that, in order to pursue this objective, the public administration has to be technically equipped and also needs a very strong political backing to continue with the bid negotiating path. Without such political backing, the public official will negotiate up to a certain point and then will give up to the current political will. The type of governance envisaged by the Public Private SPV does not excuse the City from adopting strict project selection criteria, including strong benefit cost analysis and analysis of the consequences of the potential triggering of contingent liabilities whenever they are envisaged for the successful financing of the project.

The information asymmetry problem also appears in P3 projects in the United States and is dealt with by governments retaining advisors with substantial expertise. However, governmental owners typically do not mandate that bidders use a common financial model that is developed by the public sector. Instead, governmental owners typically specify financial parameters that a bidder's financial model and financial proposal must satisfy. This may result in a net increase in project cost, as each bidder develops and submits its unique financial model. US state and local governments developing new procurements could consider including a financial model with their bid documents in an effort to expedite the development of financial proposals, but still providing bidders flexibility to include their own innovations in the proposed financial structure for the PPP project.

Use of Public Funds

Infrastructure projects may need public funding support to achieve a required profitability. However, particularly in countries with a budgetary constraint, the way public funds are disbursed becomes a key variable in sustaining the overall financing scheme of the project. Milan's experience shows that channeling public funds (grants) through participation in the equity of the concession vehicle can enhance public control of the project and avoid opportunistic behaviors by the concessionaire. The Milan scheme creates an incentive mechanism for control of cost and completion time and improved corporate governance, with full transparency and disclosure of

project costs, which cannot be achieved using public grants and a standard project finance framework. In addition, by transiting part of the grant through the equity of the SPV, the granting authority acquires an asset on its balance sheet *ex ante*, and potentially opens the way to recovery of the equity injected by the end of the concession period.

Looking at the Milan case, from an *ex post* point of view, one could have structured the equity participation somewhat differently: instead of acquiring a majority stake in the SPV, the City could have reached the same governance in terms of corporate control by taking a qualified minority position. The minority position could have eased somewhat the potential conflict of interest embedded in the dual role of the City as granting authority and majority shareholder in the SPV concessionaire. In any case, the City's presence in the shareholding structure of the SPV facilitated the initial financing and may ease the possibility of refinancing, which would reduce the City's availability payments to the Concessionaire, in accordance to the shareholding participation or other agreements with the private party.

Legal frameworks (state constitutions and statutes) in the US typically restrict states and local governments from investing in a private company, such as being an equity participant in a Public Private SPV. (Public employee pension funds generally do not operate under similar restrictions.) However, state and local governments contemplating the potential efficiencies of PPP project delivery should consider if the Milan co-ownership structure may be of value in creating greater transparency and public control over a PPP. A government's legal counsel could evaluate, for example, whether public ownership of a subordinated note issued by the SPV could fit within existing legal parameters and provide the benefits described for Milan's Line M4. Such partial public ownership might also substitute for the refinancing gain provisions that are included in typical US transportation PPP concessions, under which a governmental owner and the concessionaire share refinancing savings.

The question should also be evaluated if public co-ownership in a SPV would create a conflict of interest for the government owner of an availability payment project. Assuming an availability payment project includes payment deductions because of below-specified performance during the concession's operating period, it would be critical strictly to separate the government's oversight of operating performance from the government's interest as an equity-like participant in the SPV. This may be accomplished by requiring that performance deductions be fully passed down to the operating company, thus protecting the public "shareholder" from any losses.

The Line M4 project is at an early stage and it is important that the City develop its own PPP institutional structure to make sure that the City has qualified officers who know how to address and make use of off balance sheet vehicles, such as the Line M4 SPV. For the success of the steps undertaken it is important that a unit be created within the City administration which can understand and deal with project issues in full independence and therefore without being influenced by the incumbent politicians. The governance structure of the Milan Line M4 could be a success story on how to use public funds and how to control a project's realization. However, it has to maintain its independence from political interference.

Information and Renegotiation

Although it is certainly too early to talk about contract renegotiation, as the Line M4 work has just started, the fact that at the bidding stage the City supplied bidders with detailed technical and financial information was an entirely new development in the Italian infrastructure market. These strict technical and financial constraints have limited the possibility of increasing the bidding price during negotiations and thereby recovering the discount granted in the bidding phase. The latter is a standard procedure adopted by contractors to be awarded the bid and then using negotiating powers to recover the original price discount. There has been an increase in the Line M4 price during negotiation, but this is primarily due to change orders agreed between the City and the Concessionaire in relation to the final design of the project. Specifically, a detailed financial model has prevented the inclusion of unexpected expenses in the operation of the Concessionaire: bidders had to stay within the parameters set out in the model at the bidding stage. Certainly the City had to assume a certain flexibility on certain costs as the market situation changed completely between the time of bidding and the time of closing (for instance on some insurance costs and on financial conditions). In any case the access to information continued after financial close when, for the first time in Italy, all information about the project

documents was posted on the City web page, thus allowing the City's population to fully understand the development and implementation of the project.

Role of Lending Banks

The banks were required to submit a strong letter of interest with their client's bid. Moreover, if their client was selected, banks were required to underwrite the debt financing within 6 months from the awarding date. Unfortunately, the Milan Line M4 experience shows that banks are too strong in relation to the development of the project and tend to dictate the agenda and timing of the negotiation. Delay in wrapping the financial package does not necessarily stem only from the difficulties in closing the legal documentation, but often (as in the Milan case) by the difficulty in obtaining long-term loans for Italian projects. A proactive approach by the banks, both commercial and development banks, could have been useful to reach financial close before December 2014. In addition, in terms of bidding and negotiation governance, the Milan Line M4 case confirms that a solution has to be found to solve the potential conflict of interest of a bank acting as financial advisor, mandated lead arranger and lender to a client on the same project. In some instances, this comingling of roles may lengthen the time frame to conclude the financing and does not shed a clear light on whether the banks are acting in their client's or the project's interest or instead following their own interest in terms, for instance, of pricing, delivery timing or policy towards the country or the particular type of project.

Regulations now in effect in the US from the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act preclude an underwriting firm that is retained by a concession company to sell private activity bonds from also serving as the financial advisor to the concession company. However, as in Europe, banks do not operate under a similar limitation. In fact, companies that are members of PPP concession companies typically encourage their bank financial advisor to lend to the project, and concession companies perceive this dual role as a possible competitive advantage for the bidding team by resulting in a more competitive bid. The bank lending market in the United States, however, is much more competitive than was the case for Milan's Line M4. This more competitive environment results in banks working objectively to satisfy their clients' interest in winning the project bid with the most aggressive and lowest-cost financing package, In contrast, limited competition in the bank lending market, as existed for the Line M4 project, tends to bind the bidders to the banks' interests without a significant possibility of interference by the bidders or by the Concession Granting Authority.

Corruption Fighting

The Italian infrastructure market has been hit in the last few years by large scandals due to corruption practices in the assignment of public infrastructure works, such as the scandals around the Expo Milano 2015 works assignments or the Venice MOSE project. Infrastructure work is a complex activity: whoever deals with infrastructure knows that one may find fraud, malpractice or behavior that is contrary to the public interest. A way to stop corruptive attitudes is to disclose as much project information as possible. Reputation of the contactors, credible financial plans including completion time, transparent bidding procedures, adequate bonding provisions and detailed technical documentation are all necessary elements that may lead to an efficient fight against corruption. Italy created the National Anti Corruption Authority, which has strong sanctionary powers, in order to speed the delivery of infrastructure projects and reassure operators and investors that the rule of law will be respected in contract performance. The Milan Line M4 experience, with its double level of control, is certainly a contributing step forward in this direction.

CONCLUDING REMARKS

PPP's in Italy are at an early stage of development in the transportation sector, but there is a need for better understanding of PPP implications by the public administration. For a successful PPP process and result, public and private parties need to have a very clear view of their roles in order to find an optimal sharing of project risks. To better understand these roles a full disclosure of project technical and financial aspects, including public funding availability, is required.

Project finance and PPP should not be viewed as a means to gain political support from a project's constituencies, thus encouraging overspending and misallocation of public resources. Given the limited public resources available in several European countries, including Italy, public administration should strive to select the most appropriate projects to finance and should aim at reducing project costs. The reduction in the information asymmetry between the public and private sectors, combined with greater control of and governance over project implementation, are the right steps in that direction and become very useful tools at least in countries with a weak public administration, limited public funding or weak PPP institutional frameworks. The Milan Line M4 experience shows that there is room for more flexibility and constructive ideas to reach project delivery beyond the standard project finance methodology and make a more efficient use of public grants in the project interest. This could include channeling public grants into the equity participation of the concessionaire or another form that could assure better control by the granting authorities. For example, the public sector could use grants to underwrite or fund long-term subordinated debt, as the European Investment Bank is doing with its Europe 2020 Project Bond Initiative, as USDOT does with its Transportation Infrastructure Finance and Innovation Act (TIFIA) and Railroad Rehabilitation & Improvement Financing (RRIF) credit assistance programs and as Spain has done for some toll concessions. *(16), (17), (18)* Such structures could also assure better intergenerational distribution of the burden around large infrastructure projects.

The Milan Line M4 financing framework could be an additional tool in the delivery modes of infrastructure projects and elements of the framework should be evaluated for inclusion in other procurement models, including in the US. However, this framework does not alleviate the need for the public administration to take all other measures to make sure that projects are correctly selected. There remains the need for (a) extensive use of Benefit Cost Analysis, (b) review of bid evaluation and awarding systems, (c) efficient use of public funds and their availability, and (d) cutting of bureaucratic red tape in order to ensure transparency and to avoid corruptive practices or misallocation of limited public financial resources. *(19),(20)* For this latter aspect, the double layer of control established by the Milan Line M4 case will certainly help. There are further issues which need to be addressed which are beyond the scope of this paper and that require further research in order to arrive at a more cost efficient and transparent assignment and delivery of public works: we refer to issues such as the optimal budget structure to accommodate capital expenditures, project price reduction optimization, alternative financing mechanisms or the development of national, regional or local PPP agencies to launch, control and monitor the implementation of PPP projects.

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