When Taxable Infrastructure Financing Beats Tax-Exempt

A Comparative Analysis of the Public and Private Cost of Capital and Market Trends for Public Infrastructure Delivery

A Bay Area Council Economic Institute Briefing Paper
March 2015

BAY AREA COUNCIL
ECONOMIC INSTITUTE
Connecting business, labor, government and education

Acknowledgements

This briefing paper was prepared by Sean Randolph, Senior Director at the Bay Area Council Economic Institute, and Megan Matson, Principal with Table Rock Capital LLC. It continues a series of analyses by the Economic Institute on public-private partnerships and their application to infrastructure projects at the local, state and national levels.

Bay Area Council Economic Institute

353 Sacramento Street, Suite 1000, San Francisco, CA 94111
www.bayareaeconomy.org ▪ bacei@bayareacouncil.org

The Bay Area Council Economic Institute is a partnership of business with labor, government, higher education and community leaders that works to support the economic vitality and competitiveness of California and the Bay Area. It produces authoritative analyses on key economic issues in the region and the state, and mobilizes leaders from diverse backgrounds around targeted policy initiatives. A sought-after source of economic perspective, its public-private governance and fact-based approach to economic analysis underpin the Institute's forward-looking thought leadership.

A Public-Private Comparator: Tax-Exempt vs. Taxable Infrastructure Financing

There is a common public-sector bias in the United States against private financing of public-sector infrastructure, based primarily on the argument that tax-exempt debt is cheaper than taxable debt. The private sector is largely prohibited from accessing the market for tax-exempt debt, and therefore is at a perceived disadvantage. As the dialogue around public-private partnerships (P3) advances in the U.S., it is important to quantify more clearly the impact of the tax-exempt vs. taxable financing differential on the overall cost of a public infrastructure project. This will enable a more informed evaluation of the alternative project delivery methods that are available to secure the best long-term value for public stakeholders.

Two critical considerations affecting this evaluation are discussed below. The first is that the tax-exempt vs. taxable financing differential makes a comparatively small contribution to the total lifecycle cost of any public infrastructure project. The cost of capital differential should therefore be evaluated as an important but not definitive factor within the overall cost profile of the project. Recognizing that public-private partnerships commonly generate 10% to 30% in lifecycle cost savings,[1] any objective comparator of delivery costs should establish whether or not the lifecycle cost savings are present to a degree sufficient to overwhelm the tax-exempt vs. taxable financing differential.

The second consideration affecting this evaluation is that marked volatility in the spread between taxable and tax-exempt bond yields in recent years has significantly called into question the cost-of-capital advantage of tax-exempt financing. Factors such as the '08–'09 recession, multiple municipal bankruptcies, and credit agencies incorporating credit considerations such as pension obligations into their municipal ratings have all contributed to these newly unpredictable spreads between tax-exempt and taxable financing. The two considerations in combination suggest that (1) the lifecycle cost savings delivered by a P3 should be quantified and compared against any tax-exempt advantage and (2) tax-exempt funding should be critically assessed against taxable in the context of the prevailing capital market, in order to establish whether or not an alternative project delivery approach should be considered.

[1] Infrastructure Partnerships Australia. "Performance of PPPs and Traditional Procurement in Australia." June 2012.

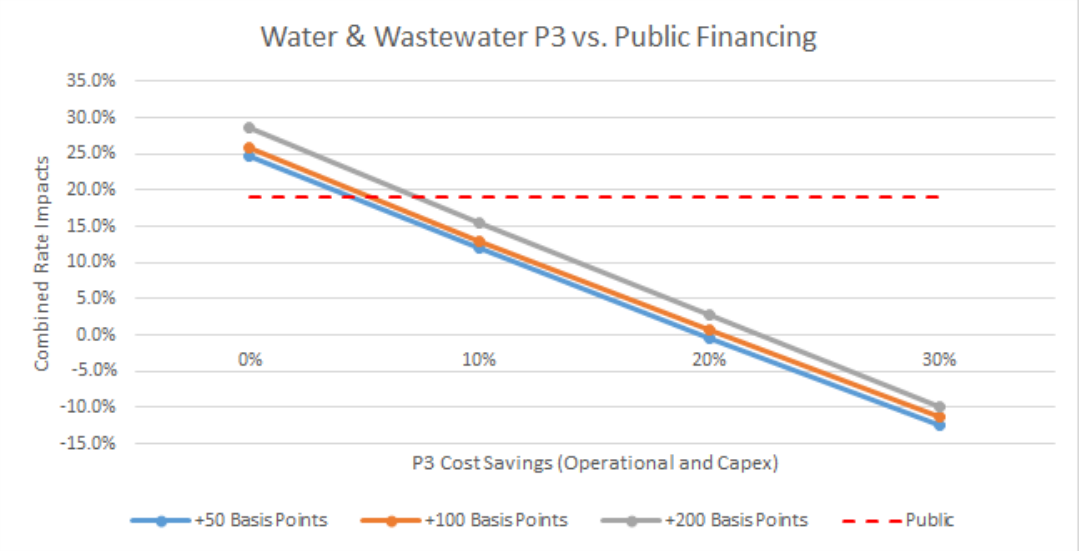
Cost-of-Financing Differential & Lifecycle Cost Savings

Infrastructure project lifecycle cost components include three major categories of expense:

- Initial Capital Investment 5% – 25%
- Annual Operations & Maintenance Expense 50% – 75%
- Cost of Capital (Financing Cost) 10% – 30%

While percentage contributions to total lifecycle costs vary across asset classes and applications, the percentage ranges above are typical for most projects. Currently the cost-of-capital differential between tax-exempt and taxable financing is approximately 100 to 120 basis points (1% to 1.2%). Given that financing costs comprise 10% to 30% of the lifecycle costs for the majority of projects, a 100 to 120 basis point cost-of-capital differential produces a 2.5% to 5% variance in lifecycle costs. As alternative project delivery in a public-private format typically delivers 10% to 30% savings on both the infrastructure improvements portion of the project, and on its ongoing operational costs, these combined savings can significantly outweigh any difference in financing costs. Where P3 can be shown to deliver sufficient savings, innovative project delivery alternatives should be evaluated.

The figure below compares how water rates are impacted for an existing water system where capital improvements and 30-year operations are delivered through a public-private partnership vs. a traditional public procurement. The three descending lines represent taxable financing at 50 basis points or .5% above tax-exempt, 100 basis points or 1% above tax-exempt, and 200 basis points or 2% above tax-exempt. The figure shows how this cost-of-capital differential affects overall cost as reflected in water rates under a P3, in a range of scenarios spanning 0% lifecycle cost savings achieved, up to 30% lifecycle cost savings achieved. As soon as the P3's lifecycle cost savings exceed 10%, the low end of the range demonstrated in the literature discussed below, P3 project delivery offers superior value for money at any of the assumed spreads over tax exempt. At cost savings of 10% or greater, the P3 approach with taxable financing can provide a lower rate increase while achieving the same public infrastructure improvement.



Source: Table Rock, LLC

U.S. Case Studies

Public-private partnerships (P3) are now well established around the world and have been rigorously critiqued and evaluated for their effectiveness in contributing to accelerated project delivery and lifecycle cost savings. In the United States, P3 is still in its early stages, but far enough along to offer a number of case studies where lifecycle cost savings can readily be analyzed relative to the cost-of-capital differential. Below is a brief synopsis of readily available public-private project comparator research for infrastructure in the U.S.

San Francisco Veterans Affairs Medical Center

This analysis[2] provides extensive modeling and case study material, including a detailed assessment of the cost-of-capital differential vs. overall lifecycle cost savings. The paper analyzes two P3 cases reflecting P3 high- and low-cost scenarios, for the development of a proposed VA research facility in San Francisco's Mission Bay area. It concludes:

> *The P3 Higher Cost scenario points to a 10% lifecycle cost savings and the P3 Lower Cost scenario points to a 28% lifecycle cost savings, versus the Publicly Funded Procurement Best Case Scenario, and 40% to 52% versus the Publicly Funded Procurement Backlog Scenario [which factors in extended delays due to a systemic VA capital projects procurement backlog.]*

[2] Bay Area Council Economic Institute. "An Assessment of Public-Private Partnership Opportunities for the Proposed Extension of the San Francisco Veterans Affairs Medical Center to the Mission Bay Area of San Francisco." March 2014.

These figures represent the net savings, factoring in the cost-of-capital differential between federally allocated monies valued at Treasury yields, and privately invested taxable debt.

Governor George Deukmejian Courthouse

This case[3] is fairly close on a comparative basis but still makes a case for the P3 approach.

> *The final VfM [Value for Money analysis] based on price of the PBI [Performance Based Infrastructure] as contracted at financial close shows a savings of $26 million, or 3.5 percent under the PBI compared with the PSC [Public Sector Comparator]. The net present cost of the PBI is projected to be $725 million compared with the PSC of $751 million.*

These figures represent the net savings after factoring in the cost-of-capital differential between tax-exempt public debt, and privately raised taxable debt.

Presidio Parkway

Three options were considered in this study:[4]

- Design, Bid, Build (DBB) traditional public procurement;
- Design, Build, Finance (DBF) where the project is turned over to the public sector to operate and maintain at completion of construction;
- Design, Build, Finance, Operate & Maintain (DBFOM) where the project is managed by the private sector from inception of construction through operations and maintenance for 30 years.

The study concluded that

> *…the DBFOM option has the lowest NPV (Net Present Value) of the three options considered by a difference of approximately 23% compared to the DBB option Public Sector Comparator.*

This figure represents the net savings after factoring in the cost-of-capital differential between tax-exempt monies and privately invested taxable debt.

[3] Administrative Office of the Courts, Office of Construction Management. "Governor George Deukmejian Courthouse: An Evaluation of Project Agreement Development, Procurement Process & Performance During Design & Construction. A Performance Based Infrastructure Project, Long Beach California." September 2012.

[4] "Analysis of Delivery Options for the Presidio Parkway Project" Prepared for San Francisco County Transportation Authority and Caltrans by Arup. December 2010.

Highway Construction Review

This study[5] of 12 U.S. based transportation projects from 1990 to 2010 offers a robust academic review of P3 performance and its impact on cost-of-capital comparative evaluation. Among other findings, the study concludes:

> *In this research of twelve (12) P3 projects, two exhibited an increase in the construction cost from the contract amount. The remaining ten projects were completed within the contract. The average cost increase for the P3 projects was 0.81%, while the average cost increase for four DBB [Design Bid, Build, traditional public procurement with tax-exempt financing] was 12.71%.*

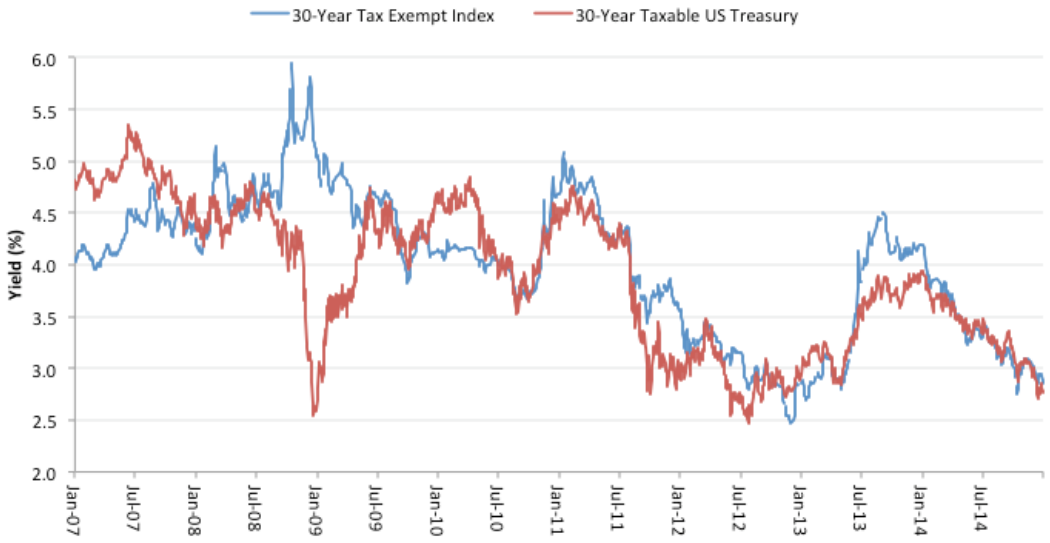
The cost research comparing the 12 projects took into consideration the cost-of-capital differential.

While the U.S. papers cited here offer a relatively small sample, it is important to note that hundreds of similar comparators and analyses from the global P3 experience offer similar conclusions. Not all comparators work out in favor of the DBFOM P3 approach, however. In some cases risk transfer, improvements in timing, and construction and operating cost efficiencies are overtaken by the increased complexity and transaction costs of a P3 project, suggesting that some projects are best performed by the public sector. Overall, research supports the observation that the majority of large public infrastructure projects can benefit from a public-private comparator taking into account not just the taxable vs. tax-exempt cost-of-capital differential, but the net overall life-cycle cost savings potential of alternative delivery.

[5] Arizona State University. "A Comparison of Public-Private Partnerships and Traditional Procurement Methods in North American Highway Construction." March 2012.

Current Market Trends in Tax-Exempt vs. Taxable Financing

Historically, the cost-of-capital differential or spread between tax-exempt bonds and taxable treasury securities has been positive, with tax-exempt bonds having a lower yield reflecting the value of the tax-exemption. This relationship is commonly referred to as the Tax-Equivalent Yield, and has been consistently stable and positive until recently. The recession of 2008–2009 has disrupted the historical stability of the tax-exempt versus taxable spread. The graph below illustrates this point and shows that on numerous occasions since 2008, tax-exempt yields have been higher than taxable yields.



Source: Barclays Research

The recent volatility in this relationship is unprecedented and reflects a number of trends in the broader economy:

- State and municipal governments are in many instances recovering from the recession at a more moderate pace than the private sector;
- During the financial crisis taxable U.S. Treasury yields hit all-time lows due to perceived credit quality, while tax-exempt municipals moved in the opposite direction due to perceived risk;
- The decline in municipal bond insurance reflecting poorer credit quality added to the stress on municipal credit;

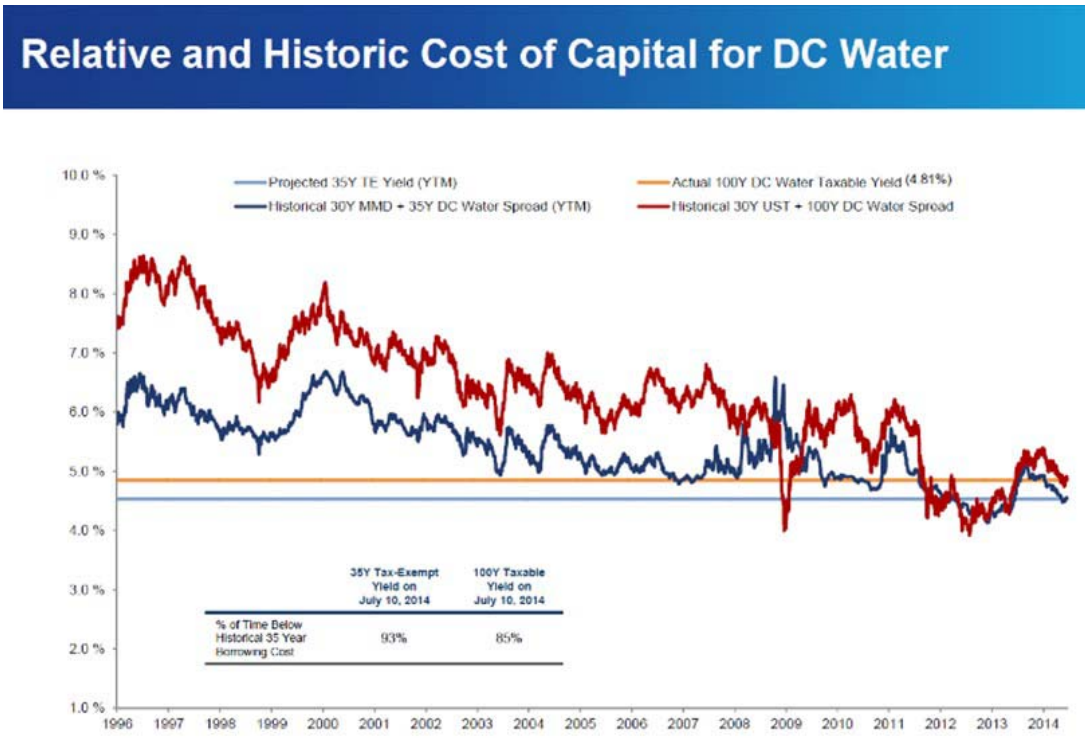
- In 2009 and 2010, the Build America Bond program subsidy for taxable bonds produced a lower overall rate than tax-exempt bonds;
- Growth in sales and property taxes have shown some improvement, but have not returned to pre-recession levels and in some areas are flattening due to tepid growth;
- Under-funded pension liabilities and a backlog of infrastructure needs add to the financial burden on municipalities and their resulting credit quality;
- Many state and local entities have experienced credit downgrades.

Taken together, these factors have contributed to volatility in the cost-of-capital differential. Any analysis of the differential related to the evaluation of an infrastructure project capital investment is therefore far more complex today than it was prior to the recession. There are specific instances where a state government or municipality might have had a clear advantage with tax-exempt issuance prior to the recession, but where today that advantage is less clear, and in some cases has eroded and shifted to a taxable financing advantage. The cost-of-capital differential is sufficiently uncertain that for many creditors, the differential at issuance must be monitored on a real-time basis in order to determine which market holds a cost-of-capital advantage at a given point in time.

Case Study

District of Columbia Water 100-Year Green Bonds

DC Water recently issued 100-year green bonds to fund a portion of a $2.6 billion project that addresses a federally mandated consent decree. The project comprises a series of three tunnel systems designed to transport combined sewer flows to the Blue Plains Wastewater Treatment Plant. The graph below illustrates the volatility of tax-exempt versus taxable funding alternatives for DC Water from 1996 to 2014. At the time of issuance (June 2014), DC water issued $350 million of taxable bonds and $100 million of tax-exempt bonds, taking advantage of a more favorable taxable bond yield. This example illustrates how variability in the cost-of-capital differential between tax-exempt and taxable debt requires careful consideration of current market conditions. Many public issuers in the U.S. are facing similar market choices when issuing new debt.



Source: Presentation by Mark Kim, DC Water, September 23, 2014

Conclusion

When viewed through a public-private comparator, it is clear that in cases where a 15% to 30% lifecycle cost savings in engineering, construction, and operations through a P3 delivery can be achieved, these savings can more than overtake the cost of capital advantages offered by tax-exempt financing. It is important to critically evaluate this factor in light of the tighter and more volatile spreads that currently prevail between taxable and tax-exempt financing.

While not a panacea, public-private partnerships should therefore not be judged on the narrow basis of perceived differences in financing costs. In an era of municipal governance defined by limited resources, persistently growing expenditures, sluggish revenue growth, and increasingly complex infrastructure needs, it is important that communities consider the efficiencies and expertise offered by public-private partnerships as reflected in the overall lifecycle savings and benefits of a project, to ensure that capital projects are delivered and managed in a manner that maximizes the value of scarce resources.