



USC Keston Institute for Infrastructure

Financing Civil Infrastructures: Is There a Role for Private Capital Markets?

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The University Club
University of Southern California

Colloquium Summary

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Financing Civil Infrastructures: Is There a Role for Private Capital Markets?

BACKGROUND

The importance of civil infrastructure systems to modern society is well established. Modern economies rely on the ability to move goods, people, and information safely and reliably. California's economic well-being and quality of life depend to a large extent on the vitality of its infrastructure. These systems represent a massive capital investment and are an economic engine of enormous power. However, in California, as elsewhere, these vital systems are at continuing risk from factors ranging from physical deterioration and underinvestment to natural hazards and acts of terrorism. Despite compelling evidence that a reliable flow of infrastructure services are critical to a healthy and vibrant economy, public commitment to funding the activities necessary to maintain a well-performing, dynamic infrastructure is intermittent, parochial in outlook, and generally focused on new projects or programs rather than maintaining or renovating existing systems.

The Keston Institute for Infrastructure was established at the University of Southern California in 2002 to leverage USC's intellectual resources to help California and the nation address critical infrastructure issues. The Keston Institute supports the formulation of infrastructure policies and practices that will improve the livability of California communities, ensure the economic well-being of its citizens, and promote environmental sustainability. The goal of the Institute is to raise the awareness of the value of infrastructure so that it can take its place with other vital issues on the public agenda such as jobs, education, and housing. To realize this goal, we need to broaden the knowledge base, broadly discuss the issues, and communicate the findings in a manner that influences public policy.

Since its inception, the Keston Institute has been committed to an outreach strategy organized around open discussions of timely or emerging issues related to infrastructure and the services it provides. The purpose of these discussions is to frame the issues in a specific area and help to focus attention on causes and solutions including possible opportunities for research into infrastructure policies or practices. The outreach program is also designed to provide information and serve as a forum to a broad range of stakeholders, including practitioners, policy-makers, and researchers, from government, academia, and the private sector. The Keston Institute for Infrastructure convened this colloquium, "Financing Civil Infrastructures: Is There a Role for Private Capital Markets?" on July 20, 2005 to

bound the problem and discuss whether and how private capital markets could address the investment deficit caused by the inability of the public sector to establish reliable funding streams for these systems (See Appendix A).

PURPOSE

Commonly accepted points of view on the state of California's civil infrastructure really differ only in timing; either we are already in a crisis or we are rapidly approaching one. The crisis originates from two intersecting trends, growth that is outstripping available capacity and underinvestment in both new capacity and maintenance and renovation of existing systems. Both lead to congestion in various forms and lowered reliability of service. The immediate effects are obvious; the longer term implications are for decreasing economic competitiveness and a reduced quality of life for all. Although there is room for endless debate over how we arrived here, just about all solutions include increased investment as part of their strategy. Traditional funding sources for infrastructure have been enterprise funds and revenue-backed debt for those systems with a fee structure, such as water and power, and transfer payments, tax revenues, and general obligation bonds for those systems where fees cannot easily be assessed, such as streets and highways and general public works. Although the enterprise systems appear to be on a sounder footing than tax-funded or transfer payment systems, the long term financial sustainability of both is open to question.

Underinvestment in infrastructure is neither a new phenomenon nor one that is unique to California. This is as much an issue in the rest of the U.S. and one that affects nations around the world. A fundamental question is how to raise the funds that most agree are needed amidst many competing priorities and flat or diminishing revenues at all levels of government. Past efforts to address this issue have looked to privatization in various forms, local government exactions on new development, and public-private investment partnerships, among other solutions. No single solution has emerged. A workable strategy for California will include many approaches at different geographic scales. It will need to integrate the ability of the private sector to marshal funds swiftly and its greater capacity for risk taking with the lower costs to governmental agencies for borrowed capital and their unique authority to compel action. A successful strategy will ultimately have to balance financial, political, and social realities and objectives.

California is fortunate in that it possesses a large and innovative private capital sector that should not be daunted by the scale of the infrastructure

investment problem. However, it is not clear whether private investment in public infrastructure can be structured in a manner that will make it more attractive to private capital markets than currently available debt and equity instruments (municipal notes and bonds of various types and publicly traded stock). The purpose of this meeting was to bring together knowledgeable representatives from the public and private sectors for a policy exploration of this issue. The question of whether there is a role for private capital markets in public infrastructure is appropriate and timely. First, new and large sources of capital are definitely needed. Second, interest rates on public debt, stock market returns, and capitalization rates on commercial real estate are all relatively low. If a new form of private investment vehicle could be developed, the synergy would be exceptional with both the investment community and the public at large benefiting.

Three invited presentations assisted in framing issues for discussion. Dr. Kim Rueben, Research Fellow at the Public Policy Institute of California presented “Paying for California’s Infrastructure” which discussed her work on the California 2025 report and provided information on historical and projected infrastructure expenditures. Ms. Heather Copp, Chief Financial Officer of the Southern California Association of Governments drew on her background with transportation funding needs in Southern California in a presentation entitled, “Resolving Regional Challenges,” an overview of the financial realities confronting transportation in the Los Angeles region. Finally, Dr. Adrian Moore, Vice President of the Reason Foundation, presented “Infrastructure PPP’s,” a summary of public private partnerships that have been used for infrastructure and how these arrangements are evolving to meet present financing realities.

SUMMARY OF DISCUSSIONS

In addition to the invited speakers, 10 other attendees participated in the discussion (See Appendix B). Using the presentations as a focal point, the attendees raised and discussed a number of issues which confirmed that infrastructure investment needs vary considerably by sector and that current revenue sources will not be adequate to fund projected needs for new projects or long-term maintenance, repair, and renovation of existing systems. Public attitudes toward infrastructure investment are complex and must be better understood if long-term funding approaches are to be developed and implemented. Although the purpose of the colloquium was not to reach consensus on the issues or approaches for their resolution, the discussions made it clear that change is needed in how we build and present the case for

infrastructure investment, identify the trade-offs that must be made to ensure a reliable flow of services, and build the political will to make the necessary choices.

Investment Needs and Available Resources

The California 2025 project as presented by Dr. Rueben looked at three infrastructure sectors, education, water, and transportation. These have significantly different funding mechanisms and hence, from a financial perspective, are all positioned differently going forward. Due to the extensive use of local bonding authority, K-12 and community colleges both appear to have adequate funding for new construction. Funding to maintain these new buildings and renew existing facilities is largely unaddressed, however. Water system needs for both capital projects and maintenance are largely funded through the rate structure and can also be controlled to some degree through demand management. Funding for eco-system restoration is more problematic. Bonds issued by the state have been used to finance these improvements but beyond the current series, a new source of funding has not been identified. Likewise, a funding source to treat stormwater runoff has not been identified despite citizen support for the concept. In the case of transportation, the situation is bleaker still. While population and vehicle miles traveled have increased significantly, growth in highway funding and new lane miles has been essentially flat. Significantly, an increasing share of highway funding is being allocated to non-capital activities which provide no additional capacity. At the same time, spending for transit has increased but ridership has not kept pace. In light of this, planners are looking to demand-side management and land use alternatives as a key component of transportation plans.

Ms. Copp presented a convincing case that transportation investment needs for goods movement, general mobility, and air quality outstrip the capacity of current revenue streams. Transportation financing is plagued by instability (Prop 42) and uncertainty (TEA-21) as well as the erosion of the buying power of gasoline taxes. Additionally, of the \$120 billion in revenue projected to be available through 2030, all but \$5 billion (4%) is committed to existing projects. Furthermore, in that time period, projected revenues fall short of projected needs by \$93 billion. In an effort to accommodate this deficit, the regional transportation plan assumes that \$62 billion in transportation improvements (Dedicated Truck Lanes, Rail Capacity Improvement Program, Maglev, HOT lanes) will be funded from user fees of various types. A great deal of uncertainty surrounds this assumption, however, as no arrangements are yet

in place for the public-private partnerships that will be necessary to make these projects a reality.

Dr. Moore presented figures from the latest available (2000) FHWA *Conditions and Performance Report* that underscored the shortfall in highway funding. Despite estimated annual investment needs statewide of \$76 billion just to maintain asset value and \$107 billion to maintain performance, annual capital spending was only \$65 billion. Without a major shift in federal highway funding policy, it is not clear that this situation can be addressed via traditional revenue sources. He presented a comparison of the telecommunications and highway infrastructure sectors to demonstrate why, despite some structural similarities, investment in the “public” infrastructure is lagging the private sector.

	Telecom System	Highway System
Structure	Interconnected network, multiple providers	Interconnected network multiple providers
Ownership	Private sector investors	Public sector
Revenues	User charges	User taxes
Investment criteria	Return on investment	Political process
Pricing	Demand-based	Virtually non-existent
Response to congestion	Raise price, add capacity	Discourage use
Incentive for maintenance	Risk of decline in asset value	When appropriations permit
Response to new technology	Entrepreneurial	Cautious

Because private investors demand a reasonable rate of return on invested capital, user charges are assessed at a rate that will ensure that return plus funds to keep the physical assets in acceptable condition. On the other hand, highways, which are usually treated as a public good, must compete for tax revenues with other public priorities and rarely receive sufficient funding to reinvest at an adequate level. For this reason, he suggested that some form of public-private partnership (of which there are many models available) could offer a solution. He noted several successful models including Build-Operate-Transfer (BOT) which has

been used extensively overseas for major highway, bridge, and tunnel projects; the sale of existing toll roads to private entities which is now occurring in the United States; and the Route 91 Express Lanes in California. Texas, Virginia, and Georgia have been particularly aggressive in exploiting the potential of public-private partnerships and 15 states now have legislation in place to permit these arrangements for transportation projects.

Problems and Approaches

Potential solutions to address identified investment shortfalls are either to reallocate expenditures within available revenues or identify new revenue sources. The presentations made clear that since such a small percentage of current expenditures in California are discretionary, reallocation absent significant changes to current spending formulas and restrictions is not a feasible solution. Furthermore, the size of the investment deficit is such that merely reallocating within the existing revenue base would not be adequate. For this reason, the remainder of the discussion focused on new, primarily private, sources of revenue.

The underlying objective of this colloquium was to determine whether and how private capital could address the investment deficit for infrastructures delivering what traditionally have been considered “public” services. In order for private capital to flow into any market, the private sector investor must be able to expect a reliable flow of revenue that equals or exceeds returns from other possible investments with the same level of risk. From the standpoint of the entity responsible for delivering the services, the private investment will be attractive if it ensures an acceptably reliable flow of services in an economically and politically feasible manner at less total cost than the services could otherwise be provided. This “commoditization” of services is a key element in attracting private capital. The public has shown willingness to pay for infrastructure services when there is a clear understanding of the services paid for and the benefits derived from them as demonstrated by the increasing use of service districts and other user-supported financial entities. Such pay-as-you-go mechanisms appear to be acceptable because as a service-specific “fee” they provide a closer and more visible link between costs and benefits than a general tax. This market-based approach to providing infrastructure is gaining increased acceptance because infrastructure—traditional “public works”—is no longer viewed by the public as a purely governmental function in the same way as other services such as police and fire protection. As the public's perception of

infrastructure continues to change, the attitude toward how it should be financed and operated, as well as its overall purpose, will change as well.

It was suggested that one way to build a fee structure for transportation infrastructure was to recast it as a trade issue. The basis for such a logistics-based model for investment recovery is that the highway system in California supports the through-put of imported manufactured goods and thereby adds value. If there is a way to quantify the value thus added, it may then be possible to assess a fee to recapture a portion of the capital investment. One method suggested was for the state (or region) to capture a portion of the Customs duties that are assessed for goods entering the U.S. either over the road through Mexico or through the ports. This approach to treating local infrastructure as part of the national supply chain, and as such, eligible for a portion of the revenues thus generated, does present some interesting opportunities for new revenue streams.

This led directly to a related and critical point that was raised by several attendees—in many instances our political leadership and public institutions have not kept pace with the public's awareness of infrastructure needs and willingness to finance them. As a result, the full range of options to encourage the flow of private capital is not being considered. Several reasons were suggested for this situation; from a lack of awareness of, or sensitivity to, the public's desires and expectations, to unwillingness by public agencies to relinquish any control over their systems, to the nature of our political system which makes it relatively easy to promote the benefits but conceal, or leave unstated, the full costs. In a truly open system, such trade-offs would be transparent and potential downside effects would be identified up-front and not left to surface years after the action. This lack of openness in regard to full life-cycle costs was cited as a fundamental disconnect in infrastructure policy decisions that needs to be addressed. Public-private partnerships can address many of these issues but have not been used extensively in California.

Private involvement in the provision of critical services is neither novel nor new. Many forms of public-private infrastructure arrangements have been used with varying degrees of success (or failure) for years. These have ranged from full private ownership and operation, to concessions and franchises, to contracting out for specific services. Although there are no universal solutions applicable to all sectors, these arrangements do offer flexibility to public entities to reduce costs, improve efficiencies and asset management practices, and reallocate cash flow. The system-specific improvements facilitated by private enterprise must be balanced against some loss of the "public good" aspect of

infrastructure services. For example, a private service provider has a contractual responsibility to the rate payer and, therefore, a greater fiduciary responsibility to ensure the delivery of service to the customer than the traditional public service provider. This is the essence of the fallacy of the “National Electrical Grid” where interconnectedness does not convey or imply any obligation to the “greater good.” In fact, one of the root causes of the 2003 blackout in the northeast United States was the unwillingness of First Energy to take its customers off-line to accommodate transmission through its system.

One of the reasons discussed for public sector reluctance to enter into public-private arrangements is that the customers of former public sector providers often bear what seems to be an inordinate share of the costs while the new private service provider captures most of the benefits. Whether this is perception, reality, or some combination of the two, it highlights a significant hurdle in broader application of public-private partnerships. Oftentimes, public sector personnel are not fully equipped to negotiate these arrangements because for PPP’s to work, both the public and private sectors need to define objectives in such a way so that a shared sense of purpose exists. This is critical to successful outcomes. Another hurdle in California is an absence of enabling legislation and/or the presence of restrictive legislation regarding PPP’s. If PPP’s are to be available to service providers as a management option, any legislative barriers must be identified and removed.

CONCLUSIONS

1. There is definitely a role for private capital in the delivery of infrastructure services although the specific nature of private involvement will be best determined on a case-by-case basis.
2. The potential availability of private capital is not clear. For example, a typical REIT has about \$3 billion in assets and a typical mutual fund about \$1 billion. When compared to investment shortfalls in the range of \$10’s of billions, a REIT-like vehicle may not be able to attract sufficient capital to address the full need. However, private investment banks seem eager to become involved with existing infrastructure projects with an established user base and revenue stream.
3. Public-private partnerships offer many potential advantages for helping to overcome investment deficits. However, the appropriate knowledge base and skill sets for the public sector to negotiate these agreements should be

determined and legislative or regulatory barriers to their implementation should be removed.

NEXT STEPS

The next step in this process will be to schedule a conference by the Keston Institute for Infrastructure to discuss obstacles to the fuller use of public-private partnerships by infrastructure providers in California and the necessary educational, regulatory, and legislative actions that need to be taken to remove them. The conference will be held in the Winter/Spring 2006.

Other activities that may also be considered as a result of the colloquium are:

- Possible use of federal and state tax credits to underwrite private investment in civil infrastructure
- Review of the experiences of other states (e.g., Georgia, Texas, Virginia) and countries with the sale to a private operating and management entity of public infrastructure, such as toll roads, which have an established revenue stream
- Assessment of the costs and benefits of transit as a congestion-reduction mechanism and its longer term impacts on land use, traffic generation, air quality, and property values

The conclusions expressed in this synopsis are those of the Keston Institute for Infrastructure and do not necessarily represent the position or opinion of the attendees at the meeting.

APPENDIX A

Agenda

**Financing Civil Infrastructures:
Is There a Role for Private Capital Markets?****Wednesday, July 20, 2005**

- 10:00 am **Welcoming Remarks**
Michael Keston, Chairman, The Keston Institute for Infrastructure
Richard Little, Director, The Keston Institute for Infrastructure
- 10:15 am **Understanding Infrastructure Financing for California**
Dr. Kim Rueben, Research Fellow, Public Policy Institute of
California, Urban Institute
- 11:00 am **Infrastructure Finance in Southern California – Challenges and
Issues**
Heather Copp, CFO, Southern California Association of
Governments
- 11:30 am **General Discussion of Finance Issues**
- 12:00 noon **Lunch (in the meeting room)**
- 12:45 pm **Experience with Public/Private Infrastructure Partnerships**
Dr. Adrian Moore, Vice President, Reason Foundation
- 1:15 pm **General Discussion of the Potential Role of Private Capital**
- 1:45pm **Summary and Next Steps**
Richard Little
- 2:00 pm **Adjourn**

APPENDIX B

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