



Testimony of Dr. Philip Fischer, Founder, eBooleant Consulting LLC

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Hearing: Paving the Way for Funding and Financing Infrastructure Investments
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Chairman Neal, Ranking Member Brady, and Members of the Committee, thank you for giving me the opportunity to testify before you today. My name is Dr. Philip Fischer. I am the founder of eBooleant Consulting, which provides unbiased and non-partisan quantitative and policy analysis of fixed income markets. Previously, I was the head of municipal bond research for several major banks and spent decades in strategy roles in the fixed income markets. The opinions expressed here, however, are solely my own.

Government at all levels has heard the growing chorus of complaints about the abysmal condition of American infrastructure as evidenced by last year's and this year's hearings.¹ States have moved to address the worst issues even as the list of what constitutes public infrastructure grows to include 5G and national security.² As a result, efforts have come forward at both the Federal and state levels, but with little in aggregate to show for it. The American Society of Civil Engineers rated American infrastructure a D+ in 2017, as it did in 2013.³ To add a personal note, I just came back from a trip to Singapore where the American rating seems distinctly generous by comparison to the high-quality infrastructure I saw there.

In my testimony, I will focus on the need to understand the economic structure of the infrastructure underfunding at the states. The infrastructure problem should not be expected to self-correct. In addition, the use of the municipal bond market will play an essential role in leveraging infrastructure revenues and should not be unnecessarily constrained in its function.

1 C-SPAN. "Nation's Infrastructure Needs."

<https://www.c-span.org/video/?458530-1/business-labor-representatives-testify-nations-infrastructure>

2 Kim Slowey, "More states invest in flood control programs," Construction Dive, August 12, 2019,

<https://www.constructiondive.com/news/more-states-invest-in-flood-control-programs/560779/>

3 American Society of Civil Engineers. "Infrastructure." <https://www.asce.org/infrastructure/>

Infrastructure Capital: The needs are both short and long term

I begin by noting that the country's infrastructure is a joint federal/state/local effort. Overall, however, the nation's public infrastructure is primarily the property of states and local governments. In 2018, state and local governments owned over 90% of the nation's non-defense structures.⁴ This is reasonable since the states are responsible for most of the nation's \$21.5 Tr GDP.⁵

Most state economies are large and complex, accounting for the bulk of the country's GDP. A very general comparison of US states and corresponding countries ranked by GDP is often given. A short list includes California/United Kingdom, Texas/Canada, New York/South Korea, Florida/Indonesia, etc.⁶ The comparison is far from perfect, of course, but serves to illustrate the magnitude of the infrastructure problem faced by the states. Not only are the infrastructure needs as large as a country's but varied by the nuances of tens of thousands of local governments and special districts.⁷

There are a variety of overviews of the nation's infrastructure available, which provide the details that space has not allowed here.⁸ What is clear, though, is that information costs are high and a one-size funding source is unlikely to meet the needs of all these highways, mass transit, rail, aviation, water transportation, and national security programs.

The states and federal government have not kept pace with infrastructure needs in the 2000s. The Congressional Budget Graph below provides a clear picture of the fall-off in funding.⁹ The states were faced with two recessions, sharply declining revenues, surging Medicaid demands,

4 Federal Reserve Bank of St. Louis, Release Tables: Table 7.5B. Investment in Government Fixed Assets." <https://fred.stlouisfed.org/release/tables?rid=356&eid=146034#snid=146035>

5 Federal Reserve Bank of St. Louis. "Gross Domestic Product." FRED Economic Data. <https://fred.stlouisfed.org/series/GDP/>

6 American Enterprise Institute, <https://www.aei.org/wp-content/uploads/2018/05/gdpnew.png>

7 Governing. "Number of Local Governments by State." <https://www.governing.com/gov-data/number-of-governments-by-state.html>
(There were 38,779 general purpose governments and 51,296 special districts in 2017).

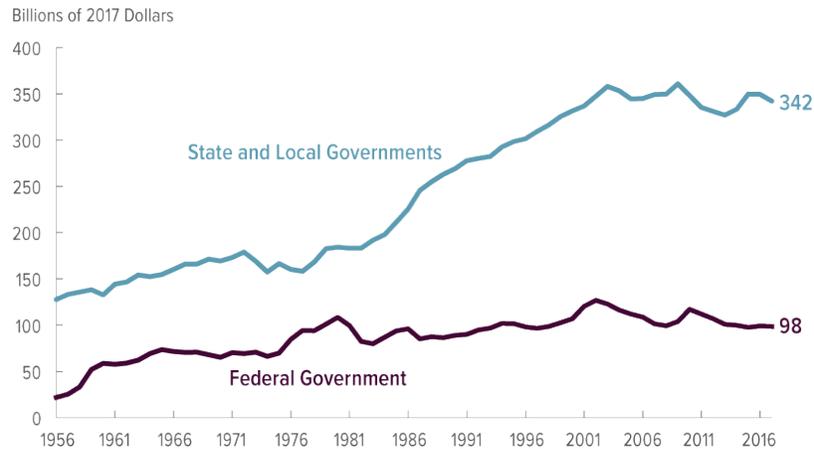
8 James McBride, "The State of Infrastructure," Council on Foreign Relations, <https://www.cfr.org/background/state-us-infrastructure>

Elizabeth McNichol, "It's time for States to Invest in Infrastructure," Policy Futures, Center on Budget and Policy Priorities, <https://www.cbpp.org/research/state-budget-and-tax/its-time-for-states-to-invest-in-infrastructure>

9 Congressional Budget Office, Public Spending on Transportation and Water Infrastructure, 1956 to 2017, <https://www.cbo.gov/publication/54539>

and pension shortfalls. The result was a broad-based deferral of infrastructure investment. State budgets are in a vastly better condition now. Fiscal 2019 mid-year budget cuts due to a revenue shortfall were avoided in 2019, according to the National Association of Budget Officers.¹⁰ Decades of tight budgets, however, have left their mark on state budget officers as state rainy day funds are now at record levels.¹¹

Public Spending on Transportation and Water Infrastructure, by Level of Government



Source: Congressional Budget Office, October 15, 2018

We now face the cumulative deficit of two decades in infrastructure, which is typically estimated in the one- to two-trillion dollar range. In addition, the states are likely to need enhanced infrastructure support funding going forward as a result of their rising pension and health care costs. A growing population and the expanding complexity of technology also suggest higher needs going forward.

Infrastructure Capital: Private capital primarily used

Financing public sector infrastructure is not different in kind from providing capital for any other project. The borrowers, generally units of state or local government, sell one of several types of liabilities to willing lenders. The source of the funds for the initial investment can be foreign or domestic, private or public. In the private sector, after the initial investment, the expectation is that the project will generate the funds to maintain the facility and payoff any debt service.

¹⁰ National Association of State Budget Officers. "Fiscal Survey of the States," <https://www.nasbo.org/reports-data/fiscal-survey-of-states>

¹¹ Reid Wilson, "Rainy day funds at record highs as states prepare for a downturn," The Hill, December 18, 2019, <https://thehill.com/homenews/state-watch/475081-rainy-day-funds-at-record-highs-as-states-prepare-for-a-downturn>

The nature of public sector infrastructure typically involves projects with large externalities generated from public goods owned and operated by the public.¹² These externalities would include benefits to residents who are not charged for the infrastructure.

Because of the externalities involved, public sector infrastructure is generally assumed to require investment subsidies. Federal government subsidies tend to be investment capital, whereas local government funding problems are often debt service and maintenance costs.

The sources of funds for the municipal bond market are almost exclusively private. The Fed data indicate that only about \$20 Bn of the \$3.8 Tr muni bonds were financed from public funds. The municipal and corporate bond markets are both capable of absorbing the necessary trillions of dollars of lending required by infrastructure expansion proposals.

State and local initiatives: A wide range of efforts

The traditional approach to public sector infrastructure investment is for a state or local government to pay as the facility is used or pay as it goes. In other words, the funds can be accumulated ahead of time for the purchase or they can be borrowed and repaid over time. Public funds used to acquire projects as single payments could be leveraged for more investment if the returns from the project were shown to be higher or the forward costs were more manageable for the governmental owner.

In the private sector, the primary method of evaluating a project is the Return on Investment (ROI). In the public sector, a variety of measures are used which usually are summarized in a type of Social Return on Investment (SROI). The ROI and SROI of return are often different because different costs and cash flows are considered. Essentially this reflects the difference in ownership of public and private facilities. In addition, public sector investments often have a hard time defining externalities, making funding difficult.

The federal government has been active for many years in supplying funds for state and local infrastructure. These efforts extend from tax subsidies and grants to infrastructure for banks for capital and credit support. Federal programs to enhance public private investment and ownership in public projects are also included. For readability, I will omit all but the most common acronyms for the various state and federal programs. These include: TIFIA, RIFF, INFRA

¹² OECD. "Infrastructure Financing and Incentives."

<http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf>

Grants and others. A compendium of muni bond terms is available from the Municipal Rule Making Board.¹³

Public policy efforts have also been directed to a social allocation of capital by regulating the municipal bond market. For example, a variety of proposals have been advanced to limit the size of the municipal bond market. This hardly seems necessary. The Federal Reserve Flow of Funds reports that the size of the municipal bond market in 2010 was nearly \$4.0Tr but by 2018 had shrunk to \$3.8 Tr. Meanwhile, the Corporate bond market had grown from \$6.7 Tr to \$9.2 Tr and the Treasury bond market from \$8.9 Tr to \$15.6 Tr.¹⁴ The municipal bond market is now quite small relative to comparable markets, and any federal costs are correspondingly smaller.

Concern about tax-expenditures in municipal finance seems overstated. Investors tend to be highly rational. Entities subject to high tax tend to buy tax-advantaged instruments and vice versa. The net result is that investors switch from tax-exempt bond to taxable investments when the tax code changes or the taxation of the instrument changes. Restricting tax-exempt financing does not necessarily increase federal tax revenues.

Efforts to reduce the size of the municipal bond market, particularly the tax-exempt market, continue aggressively. Here are three examples.

Advance Refunding Bonds

Advance refundings have been a tool available to state and local governments for many decades. When an asset is purchased with borrowed funds, it is said to be “funded.” When the source of borrowing is changed, the asset is “refunded.” Contract law establishes when an asset can be refunded. For example, most long-term municipal bonds have call provisions which prohibit a refunding for the first ten years of a bond’s life.

State and local issuers may be able to save interest costs by replacing the original financing with one in advance of the call. The Tax Cuts and Jobs Act eliminated tax-exempt advance refundings of tax-exempt bonds after December 31, 2017.

The municipal bond market has replaced tax-exempt refundings with taxable bond refundings in many places. This is done at an increased cost to the state or local government. Most

13 Municipal Rule Making Board. “Glossary of Municipal Securities Terms.” <http://www.msrb.org/glossary.aspx>

14 SIFMA. “2018 Capital Markets Fact Book, Select Tables, U.S. Equity and Debt Outstanding.” <https://www.sifma.org/resources/research/fact-book/>

importantly, in a different economic environment these new restrictions may limit the liquidity options of state and local government. One academic study found “that more than 96% of all advance refundings result in immediate but short-term cash flow savings to the municipality.”¹⁵

Taxable advance refundings have surged recently because of the extremely low interest rate environment. Issuers are rational and are willing to accept less than optimal returns from refundings in order to respect new Federal tax law.

Private Activity Bonds

The tax code envisions two types of municipal bonds: governmental and private activity. In general, governmental bonds are eligible to be financed with tax-exempt bonds.¹⁶ There are extensive regulations governing tax-exempt financing usually limiting the private share of a bond issue to 10% or less.¹⁷

The amount of some private activity bonds (PABs) is controlled by annual state caps. These caps have minimum amounts for small states, and not all private activity bonds are subject to the caps.¹⁸ The elimination of PABs continues to be proposed.¹⁹

Private sector involvement in public projects can take many forms beyond PABs. When private sector interests are highly significant, it is usually referred to a Private Public Partnership, a “P3.”

Build America Bonds

Build America bonds (BABs) were sold during the Great Recession in order to broaden the market for municipal bonds, particularly taxable municipal bonds. In fact, there always was a steady demand for taxable bonds, including foreign investors, but BABs served to deepen it.

15 Andrew Ang, Richard C. Green, Francis A. Longstaff and Yuhang Xing, “Advance Refundings of Municipal Bonds,” *The Journal of Finance*, LXXII, no. 4, (2017), 1647
<https://www.anderson.ucla.edu/Documents/areas/fac/finance/longstaff%20Advance.pdf>

16 See 26 U.S. Code § 103. (The degree to which the bonds are tax-exempt is strictly limited to the income tax.)

17 See 26 U.S. Code § 141.

18 See Rev. Proc. 2019-44.

19 Lynn Hume and Brian Tumulty, “Muni market blindsided by bond provisions in House GOP tax plan,” *The Bond Buyer*, November 2, 2017, <https://www.bondbuyer.com/news/house-gop-calls-for-the-elimination-of-pabs>

Priced correctly, public infrastructure financing is generally seen as US Treasury sub sovereign debt. The credit of rated state and local debt is very high, and defaults are low. The investment cost to foreign borrowers, however, can be quite high because of the need for currency hedging.

BABs were taxable municipal bonds authorized to be sold in 2009 and 2010. They were generally governmental purpose and PABs were not allowed under the program. Direct pay BABs provided a payment to the issuer of 35% of the coupon during the life of the issue. The holder of the BAB was subject to Federal income tax on the interest received. In 2009, \$64 Bn BABs were sold and \$117 Bn in 2010.²⁰ The program was not renewed. BABs are now traded in the secondary market. BAB subsidies have been subject to sequestration causing some issuers to caution against using them.

Policy initiatives to consider

Current efforts to expand state and local infrastructure investment often focus on increasing the amount of private as opposed to public capital. This has two main foci: expanding the PAB exception to the muni public purpose rule and growing the role of P3s.

Meanwhile, federal efforts to micromanage the municipal bond market have inhibited the growth of the market for financing of infrastructure. Reducing the size of the municipal bond market can be expected to constrain capital structure investment.

Several areas suggest themselves for policy initiatives:

1. Revive BABs

BAB revival, including tax-exempt BABs should be initiated to provide a recovery of pent up demand. The subsidy should be a fixed percent instead of the previous percent of coupon cost and should apply to Private Activity Bonds.

2. Expand Private Activity Bonds

The constraints on issuance and private sector participation should be relaxed to increase issuance.

²⁰ Charles Wallace, "Boom in Build America Bonds, Institutional Investor, March 1, 2010, <https://www.institutionalinvestor.com/article/b150qdc60wf3j/Boom-in-Build-America-Bonds>

U.S. Treasury Department, Treasury Analysis of Build America Bonds Issuance and Savings, 2011, (Washington, DC), page 2. <https://www.treasury.gov/initiatives/recovery/Documents/BABs%20Report.pdf>

3. Restore Tax-exempt Advance Refundings

The current low level of taxable interest rates is a historically unique phenomenon. Tax-exempt advance refundings are a long-term feature of the municipal market and should be restored.

4. Reduce Regulation to Lower Borrowing Costs

Federal regulation imposes an extensive network of constraints on state financing with real sector consequences. For example, eliminating the market discount rule can be expected to reduce the financing cost of tax-exempt bonds.

Sincerely,

Dr. Philip Fischer

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