Municipal Bond Tax Exemption: History, Justifications, Criticisms and Consideration of Reforms

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I. Introduction

Over the past couple months, our respective Centers have fielded dozens of questions – from state and local governments, elected officials, regulators, investors, journals, and others – about the federal tax exemption on municipal bonds. Most of those questions are motivated by the tax policy debate now unfolding in Congress. Much of that debate has focused on the advantages and disadvantages of eliminating certain tax expenditures – including the exemption on municipal bond interest – to capture additional federal tax revenue to offset the cost of extending the tax cuts originally included in the Tax Cuts and Jobs Act of 2017. We believe a policy discussion on the merits of tax expenditures in general and municipal bond tax exemption in particular is wholly appropriate exercise to ensure tax code provisions are accomplishing their objectives.

As that debate has unfolded, many have turned their attention toward this otherwise esoteric corner of public finance asking a variety of fundamental and technical questions. This paper is an attempt to answer those questions. Our goal in writing it is to ensure that policymakers have access to a concise summary of the best available evidence surrounding the exemption's history, justification and impact.

This paper proceeds in two parts. In the first part (sections I-IX), we outline the history and motivation for the exemption, and how the exemption facilitates state and local government investments in critical public infrastructure. This section also includes a brief overview of the foundational finance concepts necessary to understand how the exemption works in practice as well as some of the conceptual and operational criticisms often levied against this tax expenditure. In the second section (sections X and XI), we consider eight different proposed reforms that would limit the size and/or scope of the exemption in an effort to recapture foregone federal revenue. The reforms considered are not an exhaustive list but simply reflect our understanding of the various reforms potentially being considered by the 119th Congress.

II. Why do State and Local Governments Need to Finance Infrastructure?

At a time when there is widespread agreement that the federal debt is reaching unsustainable levels, one can legitimately question why the federal government should not only encourage, but also subsidize, borrowing on the part of state and local governments. The answer, in brief, is that municipal borrowing enhances the quality of life for the citizenry at-large while corresponding promoting economic equity.

The American Society of Civil Engineers in its most recent "report card" gave the country's infrastructure a grade of C (American Society of Civil Engineers, 2025). That was an average of 18 different categories, including bridges, airports, and ports. Hence, several types, notably dams, schools and roads, received grades of D. Of course, one

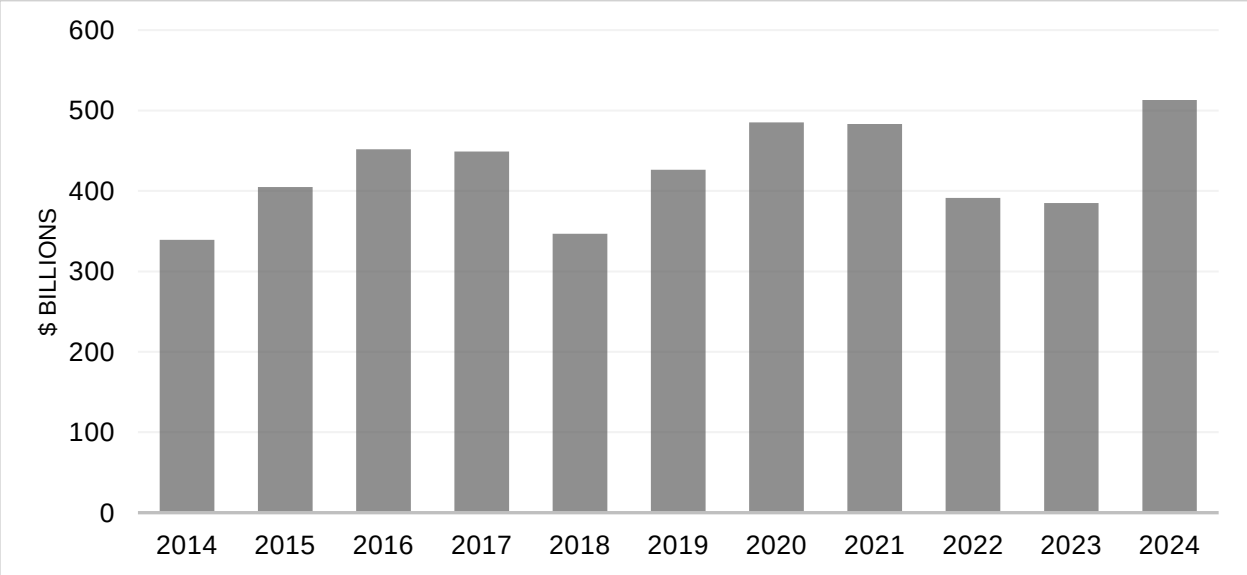
doesn't need professional engineers to remind us of the deficiencies of our infrastructure. The California wild fires and North Carolina floods did that. Anecdotally, anyone who spent hours in traffic, lost residential electricity after a routine rain storm or was stuck in an overcrowded, under air-conditioned subway car would further attest that at least parts of our infrastructure are strictly third world. U.S. infrastructure impacts the daily lives of all its citizens; it needs to be brought into the 21st century.

Infrastructure is expensive. Paying for it with debt rather than savings or current operating revenues is not a mark of profligacy or poor fiscal management. Rather, is the conceptually right way to go. Major infrastructure projects typically take several years to construct and have long useful lives. Accordingly, they provide benefits over multiple years, starting from the date they are first put into use. It would be unreasonable to impose their entire acquisition costs on the taxpayers of the years in which they are constructed or are first put into service – those who, in fact, have received none of the benefits. Therefore, to ensure what is commonly referred to as "interperiod" or "intergenerational" equity, governments issue municipal securities which are structured with "serial" bonds, which mature in installments over time (often decades) rather than on a single date, to finance major infrastructure projects. The costs of repaying the bonds thereby fall upon multiple generations of taxpayers who, not coincidentally, are the beneficiaries of the infrastructure project.

The history of municipal bonds can be traced back to the early Renaissance, when Italian city-states borrowed from wealthy banking families. Massachusetts was said to have issued the first municipal bond in 1751 and the thirteen colonies borrowed heavily to finance the revolutionary war – obligations that were later assumed by the federal government (SEC Historical Society, 2025). Then, starting in 1812, New York City issued bonds to fund the Erie canal. Thereafter, municipal bonds facilitated the 19th century boom in construction of roads, canals, railroads and other infrastructure projects. Unfortunately, municipal bonds were at the center of 19th century cycles of boom and bust and in both 1837 and 1873 speculative bubbles burst, resulting in many state and local governments defaulting on their bond obligations resulting in temporary slowdowns in municipal borrowing. The 16th Amendment and the accompanying Revenue Act of 1913 gave a major boost to the municipal bond market. By providing the advantage of tax exemption relative to both equities and other others forms of debt, they opened the way for a sizable 20th century expansion of the municipal securities market, one that continues today.

Municipal issuers sold $513 billion in municipal bonds in 2024. $450 billion of this amount was sold tax-exempt with the remaining amount issued as taxable securities (Municipal Securities Rulemaking Board, 2025). As shown in Figure 1, annual issuance has remained relatively stable over the last ten years ranging between the low $400 billion to $500 billion. As of 2024, there were approximately $4.2 trillion of municipal bonds outstanding (SIFMA, 2025). This compares with $11.2 trillion in U.S. corporate bonds (SIFMA, 2025).

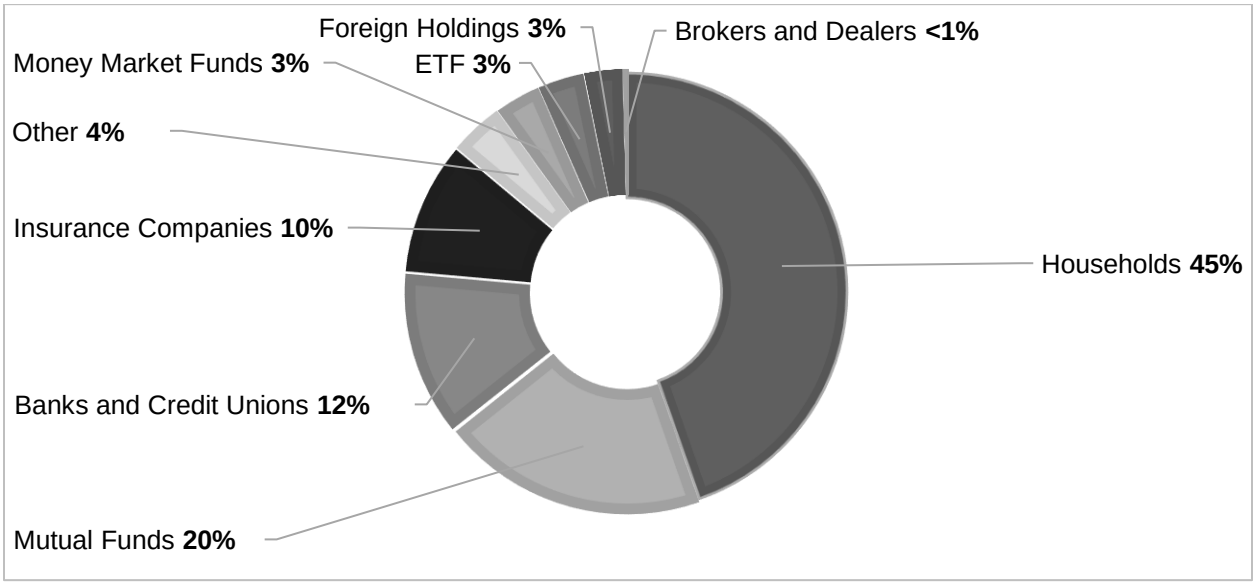
Figure 1: Total New Municipal Bond Issuance by Year (2014-2024)



Source: SIFMA, 2025

In terms of the other side of the transaction, Figure 2 shows that individual investors are the most prominent of buyers of municipal bonds, holding over 45 percent of the amount outstanding, as detailed in the chart below (Board of Governors of the Federal Reserve System, 2025). Individual investors are followed by mutual funds (20 percent), banks and credit unions (12 percent) and insurance companies (10 percent). By contrast, pension funds, universities and other entities that are not subject to income taxes generally do not invest in tax exempt municipal bonds, because the securities pay lower interest rates with no offsetting tax advantages.

Figure 2: Holders of Municipal Bonds, December 2024



Source: Board of Governors of the Federal Reserve System, 2025

Beyond the issuers and buyers of municipal securities, there is one other very important stakeholder in the municipal bond market, namely the federal government. By granting federal tax exemption on municipal securities for the purpose of reducing the financing cost to borrowers, the federal government forgoes tax revenues that it would have received in the absence of tax exemption. How much is the budgetary cost to the federal government of providing this tax benefit?

The Treasury Department estimated that the elimination of tax exemption on all municipal bonds would have produced over $52 billion in new tax revenues for the federal government in 2024 based on the current amount of tax-exempt debt outstanding (U.S. Department of the Treasury, 2025). The Congressional Budget Office estimated the elimination of tax exemption on outstanding "qualified" private activity bonds (PABs), tax-exempt bonds that benefit private entities, would produce $43 billion in new tax revenues to the federal government between 2025 and 2034 (Congressional Budget Office, 2024). The next section details the legal and policy history of municipal bond tax exemption.

III. History of Tax Exemption

The granting of tax exemption on municipal securities has been debated for decades. Such debates have evolved with constitutional and statutory law as well as Supreme Court rulings. The types of municipal bonds have also changed as result of these legal developments.

Early Legal Foundations

The prevailing feature of most municipal bonds is tax exemption. As will be discussed later, the existence of tax exemption allows municipal borrowers to finance their infrastructure at lower interest rates than if the bonds were taxable. Such lower interest rates facilitate greater capital investment by state, local and non-profit borrowers. Federal tax exemption is essentially an indirect subsidy (provided via the income tax code) granted by the federal government to municipal borrowers. The federal government could provide the same subsidy support directly through greater cash or grant assistance to these entities for infrastructure development while disallowing the tax-exempt status of their bonds. Such direct subsidy approach is a reform used in the past and will be discussed later in this report.

Early legal foundations for the tax-exempt nature of municipal bonds started with the principle of intergovernmental tax immunity established in *McCulloch v Maryland* (1819), where the Supreme Court ruled that states could not tax federal institutions (Johnson and Rubin, 1998). This principle was later extended in *Collector v. Day* (1871), where the Supreme Court ruled it unconstitutional for the federal government to tax the salary of a state judge. This introduced the concept of reciprocal intergovernmental immunity, which prevents state and federal governments from imposing taxes on one another. (Johnson and Rubin, 1998).

Reciprocal immunity was further enforced in *Pollock v. Farmers' Loan & Trust Co.* (1895), where the court ruled that the federal government did not have power to tax interest on state securities or state property. However, this decision was overturned with the ratification of the Sixteenth Amendment in 1913, which gave the federal government the right to levy taxes on all types of income, including income from state and local municipal bonds (Caudill, 2017). The amendment was codified with the passing of the Revenue Act of 1913, which exempted interest on state and local debt. Later in 1939, the US Supreme Court overturned *Collector v. Day* (1871), removing intergovernmental tax exemptions and thus allowing taxes on state salaries (Johnson, Luby & Moldogaziev, 2021).

The concept of intergovernmental tax immunity was ultimately overturned by the Supreme Court's decision on *South Carolina v Baker* (1988), establishing that the "owners of state bonds have no constitutional entitlement not to pay taxes on income they earn from (municipal) bonds." Furthermore, the court established that taxation of state and local interest payments was not a constitutional right, and must be determined by legislative action in Congress (Johnson, Luby & Moldogaziev, 2021). This ruling altered the original justification for federal tax exemption of municipal bonds, with proponents now primarily citing its value in subsidizing infrastructure investment (Greenberg, 2016).

Private Activity Bonds/1986 Tax Reform Act

The 1986 Tax Reform Act established a precedent for tax exemption by classifying municipal debt into two legal categories: governmental bonds and private activity bonds (PABs). Governmental bonds fund essential public services, such as schools, roads, bridges and public utilities, with debt repayment coming from government revenue sources. In contrast, PABs provide government-issued financing to non-governmental entities, primarily benefiting private parties. As a result of the 1986 Tax Reform Act, the interest on some PABs is subject to federal income taxation, though certain types of these bonds may retain tax-exempt status which will be detailed later (Johnson, Luby & Moldogaziev, 2021).

Recent Shifts in Municipal Bond Tax Policy

In 2009, Congress introduced Build America Bonds (BABs) through the American Recovery and Reinvestment Act (ARRA) to help state and local governments finance infrastructure projects amid the financial crisis. The purpose of BABs was to lower borrowing costs and stimulate investment in public infrastructure through the issuance of taxable rather than tax-exempt bonds. Most BABs were direct-payment BABs, whereby issuers received a 35% direct federal subsidy to offset the higher taxable interest payments on the bonds. BABs are an example of a direct subsidy from the federal government to subsidize subnational capital development. The result was over $181 billion in BABs issued in 2009 and 2010, significantly expanding the municipal bond market. However, as discussed later, the program sunset at the end of 2010, and while proposals to renew it have been made, none have passed Congress (Johnson, Luby & Moldogaziev, 2021).

The Tax Cuts and Jobs Act (TCJA), enacted in December 2017, notably restricted the ability of state and local governments to advance refund existing tax-exempt bonds with new tax-exempt debt. This limitation reduced the window of opportunity for municipal entities to call their bonds to potentially capitalize on lower interest rates. Congressional deliberation of the TCJA also included eliminating the tax exemption for certain municipal bonds, such as PABs, which are often used for projects like affordable housing and airports. While this provision was ultimately excluded, it raised concerns about future changes to municipal bond treatment (Johnson, Luby & Moldogaziev, 2021).

Both of these restrictions could have long-term effects on infrastructure financing, with potentially higher borrowing costs arising from 1) reduced refinancing opportunities 2) taxability of bonds that provide both public and private benefits (i.e., PABs). This could place a greater financial burden on local governments and taxpayers. Although the TCJA did not fully eliminate the tax-exempt status of municipal bonds, it highlighted the potential for future changes aimed at addressing federal budget deficits, which could further reduce the tax advantages of these bonds (Johnson, Luby & Moldogaziev, 2021).

As the TCJA nears its expiration at the end of 2025, the current debate in Washington centers on whether the tax-exempt status of municipal bonds should be preserved, eliminated or curtailed, with significant implications for public infrastructure financing and government budgets.

IV. Mechanics of Tax Exemption

To understand the municipal exemption and why it matters, it's helpful to briefly cover a few key technical concepts about how municipal bonds work and why investors buy them.[1]

Cash Flows and Bond Yields

A bond is issued when a borrower needs money, and an investor is willing to lend that money. The investor lends the borrower the requisite amount, known as the bond's principal. The term "bond" comes from the borrower's binding promise to repay that principal. In the municipal bond market, those borrowers are states, cities, counties, school districts, public utilities, universities, non-profit hospitals and other public entities that use that investment to build roads, bridges, school buildings, and other projects.

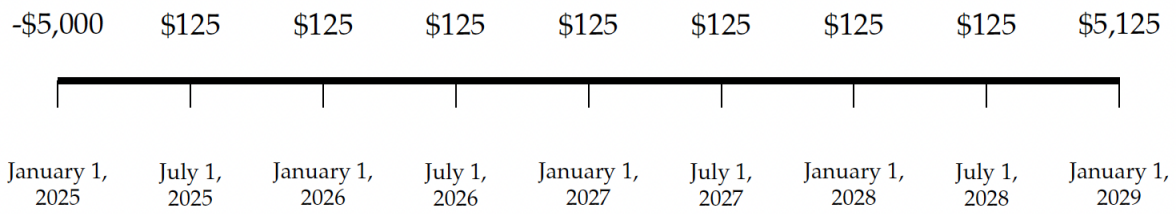
In exchange for using his or her money, the investor charges the borrower a fee known as the bond's interest rate or coupon. The borrower makes those interest payments until the bond matures. Most municipal bonds pay semi-annual interest, meaning the annual interest payments are split into two payments, one every six

[1] Much of this section is adapted from Marlowe (forthcoming).

months. When the bond matures, the borrower repays the original principal, and the bond's cash flows conclude. This is why bonds are known as “fixed income” investments. An investor who buys a bond and holds it to maturity knows exactly what cash flows to expect. This is quite different from stocks, real estate, or other investments where the cash flows are not known in advance, and in turn, investors demand much higher compensation for exposing their money to those additional risks. As mentioned earlier, the primary investors in municipal bonds are households and individuals, mutual funds, commercial banks, and insurance companies.

To illustrate, imagine a bond with a $5,000 principal whose cash flows begin on January 1, 2025. Also assume the bond matures in four years and has a 5% coupon that pays semi-annually. And finally, assume an investor purchased the bond for $5,000. This is known as purchasing “at par" – or 100% of the principal amount. Investors will often purchase bonds for more than 100% of principal amount – i.e. at a premium – if they believe the bond’s future cash flows are valuable enough to warrant a higher price.

On July 1, 2025 the first semi-annual coupon payment of $125 arrives. On January 1, 2026 the second $125 coupon payment arrives, and so forth. On January 1, 2029 the bond matures. On that date the borrower returns the investor's original $5,000 principal, plus the final $125 coupon. At that point the bond has matured and its cash flows are complete. From the investor’s perspective, this bond’s cash flows are as follows:



Yield is a bond investor's return on investment. There are several ways to calculate a bond's yield depending on our assumptions about how long the bond will generate cash flows. The most common version of that calculation is yield to maturity. Yield to maturity assumes that once an investor purchases a bond, he or she will hold it until it matures. We calculate yield to maturity as:

$$price = \frac{C}{(1+y)} + \frac{C}{(1+y)^2} + \cdots \frac{(C+P)}{(1+y)^n}$$

where Price is the bond's price, y is yield to maturity, C is the coupon, P is the principal, and n is the number of periods until maturity.

The intuition behind yield to maturity is simple. An investor will purchase a bond at a given price if that price reflects market wide interest rates, and the additional risks of lending their money to that particular borrower. For municipal bonds, the most

common risks are: 1) credit risk, or the risk the borrower does not make the principal and interest payments on time or in full; 2) liquidity risk, or the risk that the investor may need to sell the bond in the future but cannot find a buyer at their desired price; and 3) tax risk, or the risk that changes to tax policy will make the future interest and principal payments less valuable (see below), among many other factors (Schwert, 2017; Ang, Bhansali & Xing, 2010b). If the investor believes those risks are greater, all else equal, she will demand a higher yield.

Tax Exempt Yield and Tax Equivalent Yield

Municipal bonds are unique because they enjoy a distinctive federal tax treatment. That is, an investor who owns a municipal bond does not pay federal income taxes on that bond's coupon or principal payments. In most cases that benefit also extends to state and local income taxes, a feature that makes municipals especially attractive in states with comparatively high state income tax rates like California, New York, New Jersey, and others, and in cities with local income taxes like New York City, Philadelphia, Baltimore, and Columbus, OH, among others.

To understand why the municipal exemption matters, it's helpful to compare tax-exempt investment opportunities with similar taxable investment opportunities. We do that with a measure called "tax-equivalent yield" (TEY). Mathematically, TEY is:

$$\text{TEY} = \frac{\text{y}}{1 \ - \ \text{tax rate}}$$

where y is the yield on a tax-exempt municipal bond, and tax rate is the investor's marginal income tax rate. The marginal tax rate is the highest percentage of tax that investor would pay on additional income. It increases as that investor's income rises and moves into higher tax brackets.

To illustrate, imagine an investor in the top federal income tax bracket who pays a marginal income tax rate of 37%. Assume for the moment that investor lives in a state with no state or local income taxes. If that investor purchases $50,000 of corporate bonds or other taxable bonds that pay a 4% annual coupon in semi-annual installments of 2%. That investor can expect to receive $1,000 of coupon payments every six months until the bonds mature. She can also expect to pay $370 of federal income tax on each of those coupon payments.

Now imagine that same investor purchases $50,000 of tax-exempt municipal bonds with a 4% yield to maturity. The exemption allows her to keep all $1,000 of every coupon. That increases her cash flow from the bonds, and that in turn increases her overall return on the investment. The tax-equivalent yield on that tax-exempt municipal bond is 6.35%, or:

$$TEY \ = \ \frac{y}{1 \ - \ tax\ rate} \ = \ \frac{0.04}{1 \ - \ 0.37} \ = \ 6.35\%$$

In other words, the investor's yield on this municipal bond is equivalent to a yield of 6.35% on a corporate, Treasury, or other taxable bond.

The municipal exemption is even more valuable when we incorporate state and local taxes. Imagine this same investor lives in Kansas and is in the top Kansas state income tax bracket of 5.7%. Her combined income tax rate is now 42.7%, and her TEY is 6.98%:

$$TEY = \frac{y}{1 - tax\ rate} = \frac{0.04}{1 - 0.427} = 6.98\%$$

Tax-equivalent yield is important for an additional reason: It is rough indication of the yields that municipal bond borrowers would need to offer to attract investors if the tax exemption was reduced or eliminated. All else equal, without the benefit of the exemption, municipal issuers would need to compete with corporations and other taxable borrowers, and in turn, the yields on municipal bonds would need to rise to levels at or near their tax-equivalent yields.

Tax-Exempt to Taxable Ratio

Some investors are willing to buy both tax-exempt and taxable bonds. As a result, tax-exempt yields must remain relatively close to taxable yields. Otherwise, investors will shift their attention away from tax-exempt bonds, and municipal issuers will need to offer up higher yields to recapture investors' attention. That's why the relationship between tax-exempt and taxable yields is itself one of the most closely watched data points in the municipal market.

Figure 3 shows this relationship over time. The top panel shows the market-wide yield on 10-year, AAA-rated (i.e. risk-free), tax exempt municipal bonds, and the yield on an equivalent 10-year US Treasury bond. The bottom panel shows the ratio of the tax-exempt yields to taxable yields. For instance, if the tax-exempt yield was 2.75% and the yield on the US Treasury was 3.75%, the ratio would be 73.3%.

We see that prior to the Great Recession that ratio was reliably between 75-90%. Since the Great Recession that ratio has been much more volatile, including the immediate aftermath of the Great Recession and the Covid-19 pandemic, as well as several prolonged periods where that ratio was 110-125%.

Despite that more recent instability, many bond investors pay careful attention to the ratio relative to its historical pattern. A low ratio - around 70% or less - means municipals are "rich" to Treasuries. That means tax-exempt yields are low enough that an otherwise indifferent investor is more likely to buy taxable bonds. Issuers selling bonds in these market conditions can expect to offer up higher yields to compete with that pressure from the taxable market. A high ratio - around 85% or more - means municipals are "cheap" to Treasuries. In that case municipal yields are close enough to

Treasuries to attract investors who might otherwise buy taxable bonds - sometimes called “crossover” buyers.

Figure 3: Tax Exempt Municipal Yields and Taxable US Treasury Yields, 1993-2024

Notes: Top panel shows the monthly average 10-year AAA tax-exempt yield from Municipal Market Data (MMD AAA), and the monthly average 10-year US Treasury yield (UST). The bottom panel shows the ratio of MMD AAA to UST. Recessions are shaded grey. Sources: Refinitiv, 2025; Gurkaynak, Sack & Wright, 2011

V. Types of Tax-Exempt Securities

A defining feature of a municipal bond is the revenue the borrower will use to repay it. This is known as the “security pledge.” We typically divide security pledge into two basic categories.

General Obligation Bonds

General obligation (GO) bonds are backed by the general taxing authority of the issuing government. For cities, counties and school districts those taxes are usually property taxes. For states, the income tax. For special districts and other public authorities with access to a tax, the same applies.

There are two basic types of general obligation bonds. Unlimited general

obligation (GO) bonds are backed by the “full faith and credit” of the issuing government. In most states this means the issuing government is not subject to any legal limit on the tax rate or amount of revenue that can be levied to repay the bonds. Unlimited GOs are among the most secure forms of municipal borrowing because they are supported by the government's commitment to use all available resources to meet its obligations.

In most states, unlimited general obligation bonds require voter approval. For example, California's Proposition 39 permits school districts to issue unlimited GO bonds to fund modernization projects, provided they meet voter thresholds. Large cities like New York City have deployed unlimited GOs to finance transportation networks and affordable housing. And so forth.

Limited general obligation bonds – sometimes called limited tax GOs or LTGOs – are secured by the issuer government's taxing power, but with restrictions on the tax rate or revenue source that can be applied to debt repayment. These restrictions can make the bonds slightly riskier compared to their unlimited counterparts, and for that reason LTGOs tend to carry slightly lower credit ratings and slightly higher yields.

LTGOs are common in states with caps on local property tax rates and revenue growth. In Michigan, for instance, municipalities issue limited GO bonds for public improvements but are restricted by state law from raising property tax rates beyond a certain threshold. In Washington State, state law permits cities to issue LTGO debt with a simple vote of the governing body - so called “Councilmanic” debt - to an amount equivalent to 0.075% of the city's total taxable property value. Cities, counties and school districts around the country often blend unlimited GOs and LTGOs to finance a variety of basic infrastructure.

Essential Revenue Bonds

Unlike general obligation bonds, revenue bonds are secured by the revenue generated by the project they finance. Common examples include toll roads, airports, utilities, and public transit systems. It follows that a revenue bond's credit quality and appeal to investors is closely linked to the reliability of the revenues generated by the project it financed.

There are two main types of revenue bonds. Essential revenue bonds are issued to finance projects that provide critical public services, such as water and sewer systems, electricity, and public transportation. In these cases, the borrower collects additional user fees or service charges – through, for example, higher water bills or higher public transit fares – that are then used to repay the bondholders. Investors consider them relatively secure compared to other revenue bonds because the services they fund are “essential” to the community, ensuring a consistent demand and reliable revenue stream.

Other Revenue Bonds

The second category are “non-essential” or “other” revenue bonds. They are typically backed by revenues that are more volatile and unpredictable than those pledged for essential revenue bonds. This includes gas taxes, hotel/motel taxes, or lottery/gaming revenues, among others. Some revenue bonds are backed simply by the promise of an annual budget appropriation from the issuing government. These bonds are often used to finance public projects such as government buildings or schools. Unlike general obligation bonds, they are not backed by a binding legal pledge of the government’s taxing authority. Instead, the issuing entity commits to seeking budgetary approval each year to make debt payments. Another type of revenue bond is secured by lease payments made by the borrowing government in exchange for the use of a financed facility, such as office buildings or parking structures. In this case the bondholders’ security comes from the lease agreement rather than legislative appropriations. Certificates of Participation (COPs) are yet another variation on lease revenue/appropriation backed debt where the bondholders own a fractional interest in the underlying lease agreement.

Investors tend to view projects backed by these types of revenues as slightly more risky than comparable general obligation-backed projects. As a result, they tend to carry slightly higher yields, all else equal (Bunch & Smith, 2002; McCue, 2007).

Recent Trends in Pledges and Borrowers

Table 1 shows how different types of municipal borrowers borrow using each of the three different types of pledges. These data are from 2014-2024. Of the approximately $4.3 trillion of new municipals issued during this time, 59% (i.e. $2.53 trillion) were essential revenue bonds, 39% were backed by a general obligation pledge, and just under 2% were backed by another revenue pledge.

Essential revenue bonds are the mainstay of state governments and public authorities. Of the $1.49 trillion of total state borrowing, 72% was through essential revenue bonds, with the rest split almost evenly between general obligation and other revenue bonds. The pattern was similar for public authorities, where 80% of borrowing was through essential revenue bonds, with 16% and 4% in general obligation and other revenue bonds, respectively. We see a similar distribution for colleges and universities. That pattern is not surprising, given the close connections between many public universities and their respective state governments.

General obligation bonds are the instrument of choice for school districts. Roughly 94% of school district bonds are general obligation. In this case, general obligation is nearly synonymous with pledged property taxes. General obligation is also the most common pledge for “Other” issuers like tribal governments and special tax assessment districts.

General purpose local governments like cities and counties split their issuance

almost equally between general obligation and essential revenue bonds. This reflects the wide scope of infrastructure and services these governments provide. Investments in streets, sidewalks, parks and other general public infrastructure are likely to be financed with general obligation bonds, where water/sewer systems, electricity distribution, public transit systems, and other essential services supported in large part by user charges are likely to be financed by essential revenue bonds.

Table 1: Tax Exempt Municipal Bond Issuance by Security Pledge and Type of Issuer, 2014-2024

	General Obligation		Essential Revenue		Other Revenue	
Issuer	***Amount ($ Billions)***	***% of Total***	***Amount ($ Billions)***	***% of Total***	***Amount ($ Billions)***	***% of Total***
Cities	480.70	24.08%	504.20	19.91%	19.10	17.98%
Colleges/Universities	9.74	0.57%	133.54	5.28%	0.42	0.39%
Counties	175.95	10.37%	254.76	10.07%	12.77	12.02%
Other	34.86	2.05%	19.63	0.78%	2.56	2.41%
Public Authorities	100.40	5.92%	510.05	20.15%	20.38	19.17%
School Districts	599.90	35.35%	31.36	1.24%	8.84	8.32%
States	367.47	21.65%	1,077.77	42.58%	42.21	39.71%
Total	**1,697.02**	**100.00%**	**2,531.13**	**100.00%**	**106.28**	**100.00%**

Notes: Shows borrowing from July 2014 through June 2024. All dollars in nominal billions. “Other” issuers includes Tribal governments, ad valorem tax special districts, incremental tax special districts, and land-based tax special districts. “Other Revenue” includes certificates of participation, lease revenue, fuel/vehicle tax, hotel/lodging tax, lottery/gaming revenue, mortgages, and special assessments. General obligation includes both unlimited and limited pledges. **Source:** S&P Global/Ipreo, 2025

VI. Justifications for Tax Exemption

Advocates have justified the granting of federal tax exemption on municipal bonds for several reasons. The primary reasons are discussed below.

Lower Cost of Borrowing

The key rationale most commonly advanced by entities that most benefit directly from tax exemption is its role in lowering financing costs for municipal issuers. As discussed above, a traditional view of tax exemption posits that exempting municipal bond interest from federal income taxation essentially functions as a capital cost subsidy, incentivizing investors to accept lower yields, which then allows municipal issuers to issue debt at lower interest rates than they would incur with taxable bonds. Issuing debt at lower rates translates to lower debt service costs and greater fiscal flexibility as governments finance public infrastructure projects, while avoiding unnecessary tax increases or expenditure cuts that would be required to finance projects using taxable alternatives. Additionally, lower borrowing costs should induce greater investment in infrastructure projects, increasing the positive spillover effects discussed in the next section. Accordingly, reports estimate that state and local

governments saved $714 billion in borrowing costs from 2000 to 2014 due to federal tax exemption on municipal bond interest (Marlowe, 2015). Other projections estimate borrowing cost savings of $824 billion over the next 10 years, illustrating the magnitude of state and local cost savings resulting from federal tax exemption (Public Finance Network, 2025).

Moreover, a comprehensive meta-analysis of the literature on tax exemption highlights ample empirical evidence suggesting that federal tax exemption results in significant long-term savings in borrowing costs for municipal issuers (Spreen and Gerrish, 2021). Studies spanning several decades indicate that tax exemption has historically reduced borrowing costs for state and local governments and will continue to reduce borrowing costs in the future, often by substantial margins (Holtz-Eakin, 1991; Fortune, 1992; Marlowe, 2015; Public Finance Network, 2025). The magnitude of savings is estimated to be in the hundreds of billions of dollars over extended periods, demonstrating the fiscal impact of tax-exempt municipal bonds compared to taxable alternatives. Additionally, the impact of tax exemption has been found to be more pronounced during economic downturns, when borrowing costs tend to rise and governments are facing greater fiscal restraints (Riegel, 2021). Collectively, the landscape of empirical evidence points to the efficacy of tax exemption in lowering the cost of capital for municipal governments.

However, critiques of tax exemption highlight inefficiencies, such as arbitrage opportunities, subsidization of private projects, and disproportionate benefits for high-income investors. These factors are important to note as they provide a more wider view of the beneficiaries of tax exemption. Arbitrage concerns surface when issuers exploit the tax advantages by reinvesting proceeds in taxable alternatives or using the proceeds to lower future taxes, despite various legal regulations imposed in and after 1969 (Gordon & Slemrod, 1986; Gordon & Metcalf, 1991). Tax exemption has also historically been used to subsidize private business activity, such as sports stadium construction, rather than strictly funding public infrastructure. While PABs may not be used to finance sports stadiums, these projects are often financed using tax-exempt governmental bonds structured to avoid private business use restrictions (Drukker, Gayer & Gold, 2020). Moreover, research largely indicates that tax exemption primarily subsidizes tax burdens on higher-income households rather than effectively reducing municipal borrowing costs, incurring significant costs to the federal government while not necessarily maximizing public investment benefits[2] (Fortune, 1992; Congressional Budget Office, 2009; Galper et al., 2013; Poterba & Verdugo, 2011; Greenberg, 2016).

It can be inferred based on these critiques that while tax exemption generally reduces borrowing costs, its efficiency and distributional impacts warrant further examination. The magnitude of savings may also vary depending on a variety of other factors, including issuer characteristics, market conditions, and alternative financing options (Kessel, 1971; Spreen & Gerrish, 2021).

[2] See Greenberg's (2016) Tax Foundation report for a more detailed explanation.

Spillover Effects

From the lens of neoclassical economics, a key justification for municipal bond tax exemption is positive spillover effects, which is related to the nature of public good and service provision. State and local governments rely primarily on tax-exempt municipal bonds to finance projects related to roads, schools, public utility systems, hospitals, and other public infrastructure (The University of Chicago Center for Municipal Finance, 2025). These public goods often provide economic benefits to those beyond direct taxpayers, which is an inefficiency from the perspective of the government making the investment. Without the support of tax-exemption for municipal interest, state and local governments, who primarily rely on debt issuance to finance infrastructure projects, expect to bear the full cost of financing these projects while the benefits are also likely to be realized by non-residents, who do not directly contribute to the cost of provision. In other words, if municipal infrastructure financing is to be supported without federal intervention, governments will view these projects as inefficient as residents may expect to pay for the benefits of nonresidents, and this may result in the under-provision of these types of infrastructure projects.

For example, public transit systems such as commuter rail networks, are expected to provide immediate benefits to not only local riders but also non-resident riders using the system for business or leisure. These benefits may include decreased traffic congestion or vehicle emissions, leading to improved traffic efficiency and air quality, both of which are benefits that spread across geographical borders. When lower borrowing costs motivate expanded investment in infrastructure, the economic benefits of these projects spread regionally and even nationally by improving mobility, market productivity, and social outcomes. However, when faced with the full cost of financing sans tax-exemption, state and local governments and their residents are faced with the full cost of financing and therefore would be less incentivized to fund these projects. This could lead to the suboptimal fragmentation of state and local service provision, with each jurisdiction prioritizing only immediate local needs and underfunding broader and higher-impact projects that span larger geographical areas, creating downstream inefficiencies across jurisdictions (Congressional Research Service, 2018). This underscores the importance of the exemption in ensuring adequate investment, particularly for projects that generate widespread effects.

Stimulating Investment and Growth

Essentially all governments use pay-as-you-go (PAYGO) capital financing to some degree, but it is not the most feasible or efficient option for large-scale projects that are expected to provide long-term benefits. This explains why approximately 90 percent of state and local capital spending relies on long-term debt (Marlowe, 2015). Most of this financing is tax-exempt, which is expected to reduce borrowing costs for these entities. The assumed benefit of reduced borrowing costs is that this encourages public infrastructure investment and stimulates the economy. On that point, proponents point out that the US municipal bond market represents 70% of all sub-national government debt in the world (OECD, 2024). In many other countries, central

governments make infrastructure investment decisions and sub-national governments use PAYGO to finance most or all of their own investments. Access to sub-national borrowing allows for targeted investments in local infrastructure that can stimulate economic growth in ways that more centralized infrastructure planning and financing might not.

Thus, tax exemption is expected to encourage state and local governments to pursue essential infrastructure projects which improve economic efficiency in a myriad of ways. For example, consider a wastewater system improvement project. This investment immediately creates employment opportunities. Over the long-term and improved water system infrastructure enhances public health, reduces service disruptions, and lowers maintenance costs. Additionally, reliable access to water can increase property values, support industrial growth, and attract private investment. Compared to taxable financing, tax-exempt financing makes such large-scale and long-term projects more feasible and attractive to municipal governments, increasing access to these economic benefits.

Despite the theoretical logic of this mechanism, the empirical evidence of its magnitude is mixed. First, there is some evidence to indicate that tax exemption incentivizes greater capital investment (Fortune, 1992; Fortune, 1998; Coronado, 1999). Yet, this finding is contested as other findings emphasize that while tax exemption increases the share of debt-financed capital projects compared to PAYGO projects, it does not increase the supply of municipal debt itself (Gordon & Metcalf, 1991; Holtz-Eakin, 1991; Choate et al., 2010). In other words, though tax exemption is likely to fiscally impact municipal governments by lowering the cost of capital, it may not actually increase capital investment. There are clear limitations of PAYGO compared to debt-financing when it comes to large-scale projects – however, there is little research examining whether the availability of tax-exempt debt financing results in governments undertaking larger projects than they would have if they only relied on tax revenue or taxable debt (Marlowe, 2015). Exploration of this question would provide a clearer picture of tax exemption's impact on the size and types of capital investments that governments make.

While there is some empirical support linking state and local tax-exempt debt-financing and capital investment, whether increased tax-exempt debt-financing facilitates economic growth is inconclusive. There is not currently a literature examining whether the capital investment financed through tax-exempt municipal bonds then leads to improved economic productivity 10, 20, or 30 years into the future (Spreen & Gerrish, 2021). Often, studies broadly focus on public investment and national economic efficiency, with only a small minority exploring debt-financed projects at the state and local level, though many allude to the importance of including tax-exempt municipal debt in these discussions (Nunn, 1991; Chapman, 2008; Fisher & Wassmer, 2015). Furthermore, general reviews of the relationship between public capital investment and economic development show that positive relationships, if identified, are often limited to specific policy contexts or volatile to different estimation techniques (Fisher, 1997). This underscores the need for further research examining tax-exempt municipal bonds and economic growth to accurately assess the long-term fiscal impact of tax-exempt municipal bonds.

Fiscal Federalism

Fiscal federalism generally refers to the division of taxing, spending and borrowing between levels of government (federal, state and local) (Tiebout, 1956; Oates, 1972). Many scholars have argued that local governments know best in terms of their project and financing needs and, thus, fiscal decision-making should be deferred to the local level as much as possible (Tiebout, 1956; Oates, 1999; Weingast, 2009). The general latitude afforded tax exempt bonds in terms of the wide range of general-purpose projects eligible to be financed with municipal bonds and the limited federal impact on the indirect subsidy has respected that tenet of fiscal federalism. Such deference to local governments in their financing decisions is especially important given the vast diversity of issuers and communities served by municipal bonds in terms of geography, fiscal capacity, local political environment, fiscal institutions and current state of infrastructure.

A couple of federal subsidy alternatives we discuss later in this report (Build America Bonds and federal infrastructure bank) allow for greater federal involvement in state and local infrastructure policy and financial decision-making. Such policy alternatives also expose these subnational governments to the policy whims of the federal budget. Tax exemption, on the other hand, protects state and local governments from federal encroachment and its attendant impacts.

VII. Projects Financed by Tax-Exempt Securities

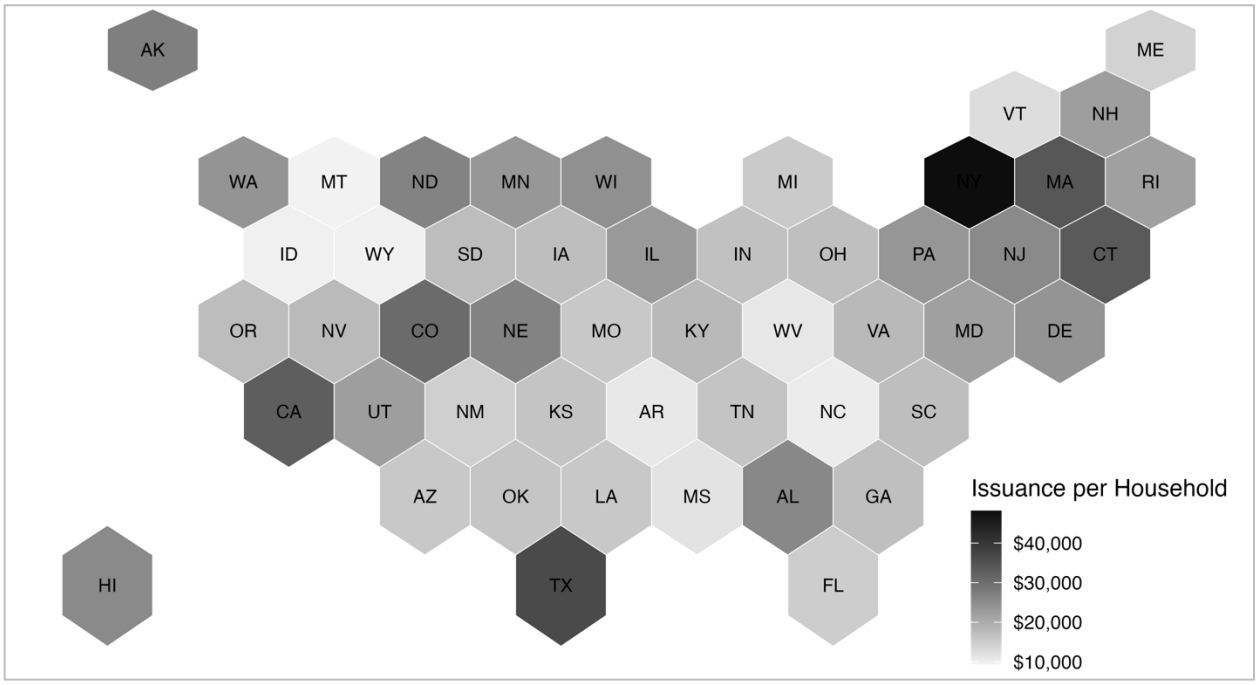
As mentioned earlier, today there are approximately $4.2 trillion of outstanding tax-exempt municipal bonds. Within that $4.2 trillion there are considerable differences in the amount of borrowing by geographic region and by the type of investments made possible by that borrowing.

Patterns of Total Issuance

Figure 4 is a plot of the total amount of new municipal bond issuance per household from 2015-2024, by state. This includes all state and local issuers.

The total amount of borrowing varies considerably, from as low as $9,480 per household in Montana to $48,130 in New York State. The average was $20,384. That pattern is not closely linked to population size or geography. Some states around the country with comparatively smaller populations – Alabama, Alaska, Nebraska, and North Dakota, among others – also have comparatively higher per household debt levels. Larger population states have household debt totals that are both comparatively high – like California, New York, and Texas – and also comparatively low – like Florida and Georgia.

Figure 4: Total Tax-Exempt Municipal Bond Issuance Per Household by State, 2015-2024



Source: Authors' calculations based on Intercontinental Exchange (ICE) geospatial and municipal reference data.

Table 2 illustrates another key fact about municipal bond issuance: Most municipal bonds are issued in comparatively small amounts. For the 8,219 tax-exempt issues in 2024, nearly two-thirds were less than $25 million, and barely two percent were $500 million or greater. The pattern was similar for taxable issuance.

Table 2: Municipal Bond Issues by Size, 2024

	Tax-Exempt		Taxable	
Bond Issue Size	**# of Issues**	**% of Total**	**# of Issues**	**% of Total**
$5MM or Less	2,080	25%	362	41%
>$5MM to $25MM	3,262	40%	238	27%
>$25MM to $50MM	1,139	14%	93	11%
>$50MM to $1000MM	786	10%	76	9%
>$100MM to $500MM	804	10%	94	11%
>$500MM to $1Bn	104	1%	10	1%
$1Bn or More	44	1%	–	–
Total	**8,219**	**100%**	**873**	**100%**

Source: Municipal Securities Rulemaking Board, 2025

Issuance and Types of Projects

What types of investments does this borrowing make possible? Table 3 shows the breakdown of types of projects financed by each of the three main security pledges.

Education and general purpose – a category that includes streets, sidewalks, highways, parks and other general public infrastructure – projects are financed by a mix of both general obligation and essential revenue borrowing. Most other categories are dominated by essential revenue borrowing. Health care projects are financed by hospital user charges. Affordable housing projects are backed by mortgage payments. Transportation projects are financed by motor fuels taxes and toll revenues, and so forth.

Table 3: Tax Exempt Municipal Bond Issuance by Security Pledge and Use of Proceeds, 2014-2024

	General Obligation		Essential Revenue		Other Revenue	
Use of Proceeds	***Amount ($ Billions)***	***% of Total***	***Amount ($ Billions)***	***% of Total***	***Amount ($ Billions)***	***% of Total***
Education	731.19	43.09%	437.79	17.30%	20.99	19.75%
General Purpose	799.43	47.11%	536.03	21.18%	44.65	42.01%
Health Care	13.72	0.81%	256.26	10.12%	0.99	0.94%
Housing	3.74	0.22%	206.96	8.18%	11.49	10.81%
Other	45.15	2.66%	140.05	5.53%	13.01	12.24%
Transportation	53.07	3.13%	463.34	18.31%	10.25	9.64%
Utilities	5.97	0.35%	210.18	8.30%	0.86	0.80%
Water & Sewer	44.75	2.64%	280.52	11.08%	4.04	3.80%
Total	**1,697.02**	**100.00%**	**2,531.13**	**100.00%**	**106.28**	**100.00%**

Notes: Shows borrowing from July 2014 through June 2024. All dollars are nominal billions. "Other" use of proceeds includes agriculture, economic development, pensions, pollution control, public health, recreation, sanitation, and other non-categorized. Source: S&P Global/Ipreo, 2025

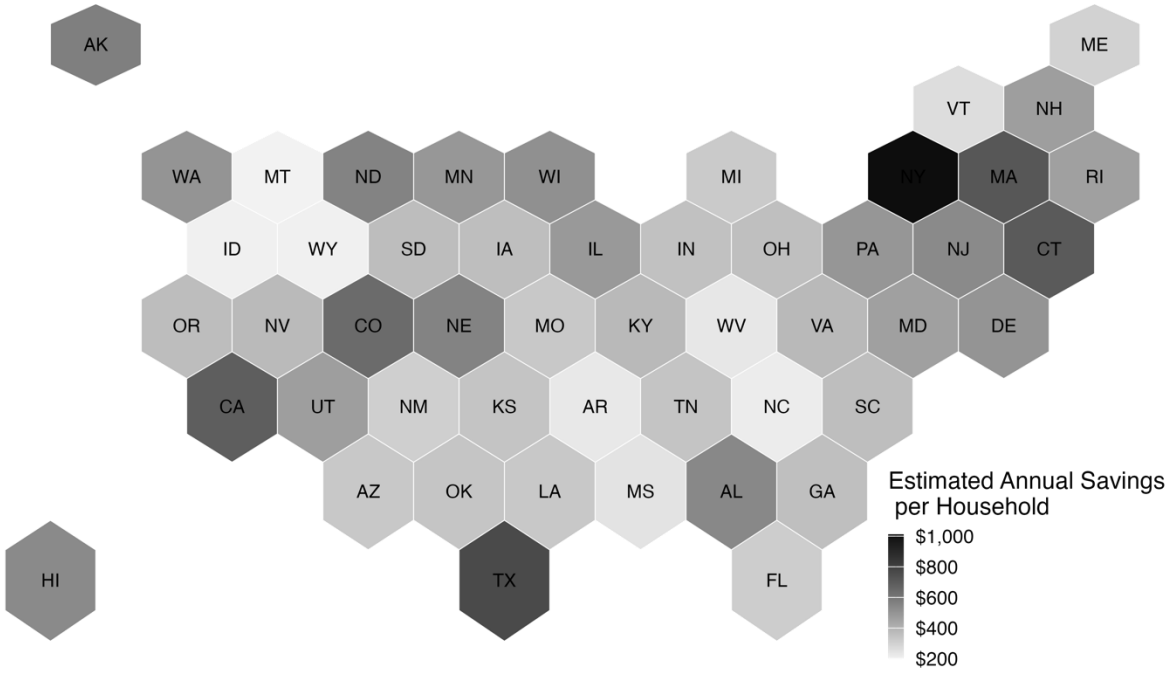
Taxpayer Savings from the Exemption

As shown above, the exemption allows state and local governments to invest in a wide array of projects at varying levels of size, scope and complexity. That said, much of the current policy debate surrounds the savings to state and local taxpayers that follow from the exemption. As mentioned earlier, several prior studies have attempted to estimate those savings using a variety of statistical techniques. None of those estimates, however, reflect more recent borrower behavior or market conditions.

That said, we can compute a rough figure of the more recently realized savings by applying the Public Finance Network's 210 basis points estimate to the total debt currently outstanding in each state (Public Finance Network, 2025). If we assume that the amount of outstanding debt is constant over time – i.e. issuers retire debt but then replace it with the same amount of new debt – then we can think of this savings estimate as an annual amount. This is, of course, not how most municipal issuers manage their debt portfolio, nor does it reflect the dynamics of interest rates and other factors that affect how much debt an issuer will borrow. But it is a reasonable, broad estimate of the exemption's localized effects. Those estimated annual savings per household are shown in Figure 5.

Like with issuance, these estimated savings vary considerably. The low is Montana at $199/household annually, and the high is New York at $1,011 annually. The mean annual savings is $428. They also roughly track the pattern of total issuance across the states. If we apply that mean of $428 annually across the 128.7 million households in the United States, the estimated annual savings is just over $55 billion.

Figure 5: Estimated Annual Savings per Household Due to the Municipal Bond Tax Exemption



Source: Authors' calculations based on Intercontinental Exchange (ICE) geospatial and municipal reference data. Annual estimate is based on debt outstanding as of January 15, 2024.

VIII. Criticisms of Tax Exemption

The current debate around municipal bond tax exemption appears mainly to be related to its cost to the federal government. Removal of tax exemption would provide Congress the ability to recover these previously foregone tax revenues to help fund other priorities including extension of the Tax Cuts and Jobs Act of 2017 set to expire on December 31, 2025 (Sowers & Devitt, 2025). In January 2025, *The Bond Buyer* received a 51-page document from the U.S. House Ways and Means Committee that

included various proposals to pay for a reconciliation bill to advance the policy priorities of Congress. This document identified $250 billion in savings over ten years by eliminating "the exclusion of interest on state and local bonds." It also identified $114 billion in ten-year savings by ending the "tax preferences for other bonds" identified as PABs, BABs and other non-municipal bonds (Sowers & Devitt, 2025).

However, beyond the criticism of the expense to the federal government, there lie other criticisms levied for decades on municipal bond tax exemption as a tool in subsidizing infrastructure investment. These criticisms did not foreclose on the need for federal infrastructure subsidies to municipal entities but rather proposed alternatives in providing subsidies relative to tax exemption (Congressional Research Service, 2021; State Debt Management Network, 2021; McKinsey & Company, 2009). The criticisms are fourfold arguing that tax exemption 1) is inefficient, 2) limits investor participation, 3) is inequitable, and 4) lacks federal budget transparency.

Inefficiency

This criticism is directly related to the diversity of buyers of municipal bonds in terms of their marginal tax rates. The market-clearing municipal bond investor determines the interest rate paid by the municipal borrower. This investor is typically in a lower marginal income tax bracket than the average municipal bond investor (Johnson, 2007; Congressional Budget Office, 2009; Poterba & Verdugo, 2011; Greenberg, 2016; Congressional Budget Office, 2018). The marginal tax rate of the *average tax-exempt bond investor* determines the total amount of foregone federal tax revenues. Thus, the reduction in interest rates (as determined by the marginal tax rate of the lower tax rate investor) realized by municipal borrowers is less than the amount of foregone federal tax revenues (as determined by the marginal tax rate of the average tax rate investor).

A simple example will demonstrate this subsidy inefficiency. Let's assume there are two investors interested in buying a $20,000 municipal bond. Investor A is in the 25% marginal income tax bracket and Investor B is in the 37% marginal income tax bracket. Each investor wants to buy $10,000 of the bond. Let's also assume that the taxable interest rate for a similar bond is 10%. As described above, the interest rate on the tax-exempt municipal bond will be determined by the lower marginal income tax rate investor. Thus, the interest rate on the municipal bond would be 7.5% (i.e., 10%*25%) as the lower marginal tax investor would be indifferent between a tax-exempt bond paying 7.5% and a taxable bond paying 10% since the after-tax returns are identical. The municipal borrower would see his interest cost decline by $500 per year (i.e., [($20,000*10%) – ($20,000*7.5%)] relative to selling taxable bonds. However, the federal government would see a reduction in federal tax revenues of $620 (i.e., [($1,000*25%) + ($1,000*37%)]. In layman terms, the federal government is not "getting bang for its subsidy buck." The amount the federal government is giving up in federal tax revenues ($620) is less than the amount the municipal borrower is receiving in lower interest costs ($500) as provided by tax exemption. Thus, tax exemption represents an inefficient subsidy.

Investor Participation

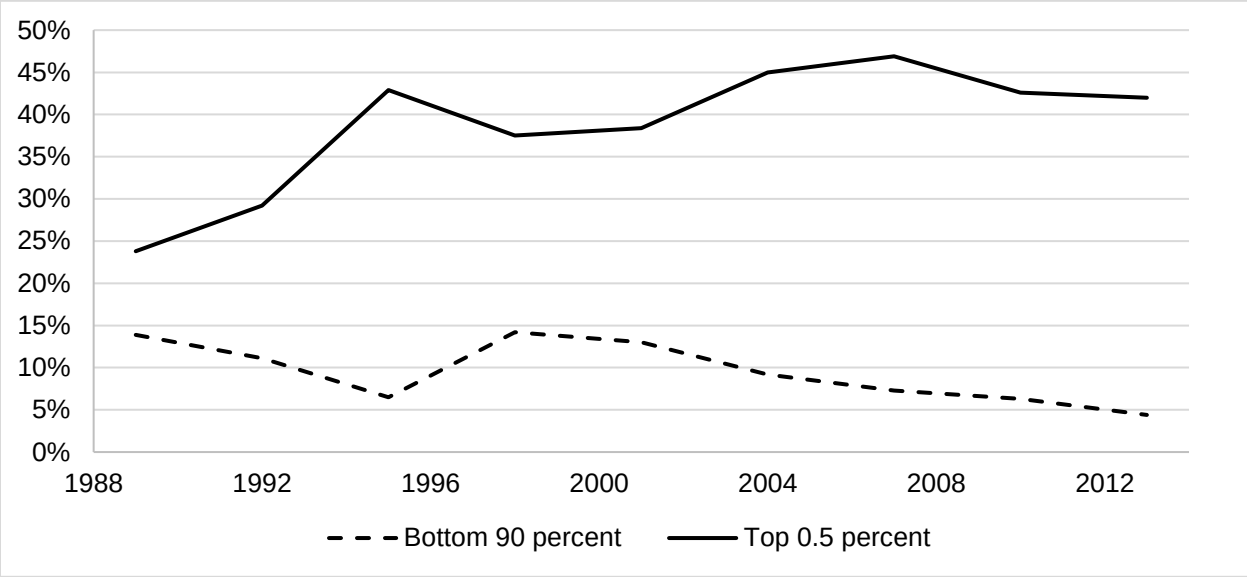
Another common criticism levelled at municipal bond tax exemption relates to the investor base. Most municipal bonds are tax-advantaged financial securities. Thus, they are attractive to investors who have a tax liability and unattractive to those that do not. As such, foreign investors, foundations, non-profits and government pension funds are generally not incentivized to purchase tax-exempt municipal bonds. The absence of these investors dramatically reduces the pool of potential buyers. Based on traditional principles of market competition and all else equal, a reduction in market demand for municipal bonds should correspond to a lowering of these securities prices. Since bond prices and interest rates are inversely related, lower investor participation results in higher interest rates paid by municipal borrowers. The creation of the taxable Build America Bond program discussed in the next section explicitly aimed to expand the pool of municipal bond buyers. However, it should be noted that expanding the municipal bond market to these traditional non-buyers will not provide a budgetary benefit to the federal government since these entities do not pay federal income taxes.

Inequity

The phenomenon that makes tax-exempt bonds inefficient also has tax equity implications. The tax shield of municipal bonds makes them more valuable to higher marginal income tax rate investors. At the same time, as described above, lower marginal tax rate investors who set the market-clearing interest rate on the bonds, also buy municipal bonds. Let's go back to the previously described two investors to illustrate the potential inequity of tax exemption. The tax benefit in buying the municipal bond for Investor A is $250 (i.e., $1,000*25%) and $370 for Investor B (i.e., $1,000*37%). The diversity of marginal income tax rates in which lower marginal tax rate investors "set" the interest rate produces a $120 tax-free windfall to the higher income investor. In terms of effective tax rates, this example shows how tax exemption reduces the overall progressivity of the federal income tax system.[3] In fact, municipal bond ownership has increasingly become concentrated in the wealthiest 0.5 percent of households, nearly doubling from 24 percent to 42 percent between 1989 and 2013 (Bergstresser & Cohen, 2016). This trend is illustrated in Figure 6.

[3] It should be noted that the overall federal income tax system is progressive based on the average tax rate by income quintile (Tax Policy Center, 2024a). Thus, higher income taxpayers that benefit from municipal tax exemption generally bear a higher effective federal income tax rate based on their overall tax liability and total income.

Figure 6: Share of Municipal Bonds Held by Wealth Group, 1989-2013



Source: Bergstresser & Cohen, 2016

Federal budget transparency

As described above, tax exemption is effectively an indirect subsidy granted to municipal borrowers through provisions in the tax code. With few exceptions, there are no restrictions on the amount of municipal bonds sold and the subsidy remains unless there are changes to the applicable provisions in the tax code. However, as has been demonstrated in previous research, once tax preferences are in the tax code, it is difficult to curtail or remove them (Burman & Phaup, 2012). Moreover, significant tax law changes do not occur frequently. On the other hand, the subsidy for tax exemption could be provided directly through cash assistance or grants. Such direct spending, at least by definition, is subject to annual review and appropriation by Congress. Thus, a direct subsidy program enjoys greater transparency in terms of regular federal review and oversight than an indirect subsidy like tax exemption as provided through the much less frequently reviewed and "sticky" tax code.

IX. Benefits of Tax Exemption Relative to Direct Subsidy Bonds

The criticisms of tax exemption detailed in the previous section were justifications for the creation of a different type of municipal bond mentioned earlier in this report. Namely, the Build America Bond (BAB) program aimed to address the four criticisms of tax-exempt municipal bonds. BABs were created in 2009 as part of the American Reinvestment and Recovery Act of 2009. $181 billion in BABs were sold by state and local governments between March 2009 and the program's sunset on December 31, 2010 (Salwati & Wessel, 2021).

BABs were taxable securities and were only eligible to finance new infrastructure projects by state and local governments. Since BABs were sold on a taxable basis, they carried higher interest rates than comparable tax-exempt bonds. However, the federal government provided direct cash payments to state and local governments to reduce the net interest costs. The subsidies were equal to 35% of the interest costs for as long as the bonds remained outstanding. In this sense, BABs represented a direct subsidy for infrastructure development compared to the indirect subsidy afforded municipal borrowers through tax exemption.

Many economists and policy analysts have touted tax credit and direct subsidy bonds like BABs as potentially superior to typical tax-exempt municipal bonds for several reasons (Galper & Peterson, 1973; Fortune, 1973; Congressional Budget Office, 2004; Congressional Research Service, 2021). First, in terms of efficiency, the removal of the tax-exempt status meant that the subsidy realized by the state or local government (35% of the interest costs) was exactly equal to the cost to the federal government (35% of the interest cost). Second, these bonds do not offer any equity implications since investors do not realize a tax benefit from buying the taxable securities. Third, the direct subsidy is part of the federal appropriations process so it can (and was) scrutinized and adjusted every year. Finally, in the case of BABs, they were created at a time when access to capital was limited as a result of the Great Financial Crisis and attendant Great Recession. The taxable nature of the bonds appealed to a wider swath of investors including the ones previously mention (foreign, foundations, pension funds). Theoretically, such added competition should have driven down the interest rate of these bonds relative to the smaller pool of tax-exempt municipal bond buyers.

BABs were initially very popular with state and local governments selling over $181 billion in 2009 and 2010. Initial research showed the interest costs of BABs were significantly lower than traditional municipal tax-exempt bonds (U.S. Department of the Treasury, 2010; Liu & Denison, 2014). However, later research estimated such benefits to be less than originally thought due to factors described below (Luby, Orr & Ryffel, 2021).

While the aforementioned benefits were addressed by BABs, the program became controversial shortly after its sunset. First, the Budget Control Act of 2011 through its sequestration process reduced the bond subsidies between 5.7 and 8.7 percent every year between 2013 to the present (Internal Revenue Service, 2024a). The threat of sequestration was enhanced in 2023 when the full amount of the subsidy (35%) was potentially going to be eliminated because of the 2021 American Rescue Plan being passed through the reconciliation process (Sowers, 2022). Such seemingly permanent “haircutting” of federal subsidies within just a couple years of the program’s establishment has deeply frustrated state and local governments. Many of these governments have indicated they would be very skeptical of any reinstatement of a federal direct subsidy bond program (Devitt, 2024).

Another criticism of the BAB program related to the call features of the bonds.

Unlike traditional tax-exempt bonds which are usually sold with a 10-year par call (can call the bond in ten years at face value), most BABs carried a make-whole call provision. The par call facilitates refinancing of tax-exempt bonds when interest rates decline. The make-whole call does not since the state or local government needs to make the investor "whole" if they decide to exercise the call and pay off the bonds early. This structural feature common in taxable bonds frustrated municipal borrowers when refinancing was not feasible even as rates declined and remained low subsequent to the BAB program sunsetting. Conversely, these borrowers actively refinanced their tax-exempt bonds for significant budgetary savings due to the flexible embedded call feature.[4]

Perhaps the biggest criticism of direct subsidy bonds lie at the heart of fiscal federalism. As described earlier, the normative aspect of fiscal federalism argues that government entities closest to the impacted parties will make taxing, spending and financing decisions that provide the greatest economic outcomes. In the context of municipal bonds, this theory has generally advocated for allowing state and local governments a reasonable amount of financial autonomy in their financing decisions (Johnson, Luby & Moldagaziev, 2021). Moving to a direct subsidy approach has the potential to threaten this financial autonomy. The quote below from Senator Ron Wyden (D-OR) supporting an extension of the BAB program with greater federal involvement evinces this concern:

> "I would like to see different flavors of BABs created. That would allow us to adjust the subsidy and give, for example, transportation infrastructure investment a larger subsidy than other types of projects because transportation projects typically create more jobs and other public benefits. (Seymour, 2010)

The Congressional Budget Office expresses a similar preference in its 2018 report on BABs:

> "…the amount of the subsidy is determined by the tax code and does not vary among projects according to federal priorities. Lawmakers could, instead, provide a direct subsidy by guaranteeing loans or making loans available for certain private-sector projects at below-market rates of interest. By offering a direct subsidy rather than providing one through the tax system, the federal government could both select the types of projects receiving support and determine the amount of the subsidy. (Congressional Budget Office, 2018)

Both of these statements represent a "federalization" of financial decision-making historically reserved to the subnational level. A direct subsidy bond simply provides the vehicle for greater federal involvement in state and local financing activities. On the other hand, traditional tax-exempt bonds, as currently authorized, give deference to these governments in the project selection and financing decision-making. Such financial autonomy is greatly valued by state and local finance officials who realize the

[4] Some market participants argue that taxable municipal bonds could be sold with a traditional 10-year par call. In fact, a small amount of BABs did carry a ten-year par call.

aforementioned benefits of direct subsidies but are willing to accept the lack of optimization to fend off greater federal encroachment into their financing activities.

X. Consideration of Reforms to Municipal Tax Exemption

Eliminating the tax exemption of municipal bonds is a policy option being considered by the 119th Congress to help fund its fiscal priorities. We evaluate several proposals that have been floated to "reform" municipal bond tax exemption with the express intent to raise additional federal tax revenue.

1. Fully eliminate municipal bond tax exemption

As discussed earlier, critics of the exemption argue that it primarily benefits high-income investors while delivering only indirect and uneven benefits to governments and taxpayers. They contend that the policy is an inefficient and costly subsidy, with much of the federal tax expenditure going to individuals in the highest tax brackets. Reforming or ending the exemption, in their view, would free up federal revenue – perhaps as much as $250 billion over ten years (Sowers & Devitt, 2025). To these observers, tax-exempt municipal bonds could be replaced with more targeted tools that provide the same benefits to borrowers without the upside for wealthy investors.

Of course, supporters of the exemption warn that ending it could increase borrowing costs for municipal issuers, leading to reduced investment in essential public infrastructure. They argue that the tax exemption helps preserve the financial health of state and local governments and enables them to take on long-term projects that benefit entire communities.

Harmonizing Tax-Exempt and Taxable Yields

That said, a key question is: In a taxable market, how much would municipal bond yields have to rise to compete with corporate, Treasury and other taxable bonds?

Proponents of ending the exemption suggest that the market for taxable bonds is much more robust than for tax-exempts. That broader investor demand would, in concept, push taxable municipals below their tax equivalent yield and produce net benefits for issuers. Opponents argue that one cannot simply assume that taxable coupons would draw taxable investors into the municipal market. Taxable and tax-exempt investors have inherently different investment objectives, with the former focused on generating investment returns and matching long-term assets to long-term liabilities, and the later focused on generating current income and managing tax. The taxable market is driven primarily by large institutional investors, where the tax-exempt market caters to individual, buy-and-hold investors. Taxable investors price taxable bonds to a spread to US Treasury yields, but tax-exempt investors price tax-exempt

bonds to the exempt-to-taxable ratio, and so forth. These fundamental differences in market mechanics would take years to resolve, critics point out, and, in the meantime, would place municipal issuers at a severe disadvantage relative to corporate issuers.

There is little academic research on this question. The limited work that has been done is grounded in the previously described experience with taxable Build America Bonds. In general, that literature suggests that taxable investors may or may not be a reliable substitute for tax-exempt investors. Research showed that taxable BABs were no more liquid than traditional tax-exempt municipals, and that they tended to require higher transaction costs for their issuer governments (Cestau, Green & Schürhoff, 2013). It also showed that BABs were a tremendous benefit to new and "cross-over" taxable institutional investors like pension funds and insurance companies, but were a disadvantage to traditional individual issuers (Ang, Bhansali & Xing, 2010a). Other studies showed that BABs were an effective substitute for tax exempt bonds. They offered taxable yields almost identical to their tax-equivalent yields given the federal subsidy (Liu & Denison, 2014). That said, in the aggregate, the BABs experiment shows that taxable investors are not, as some have suggested, a fast and efficient substitute for tax exempt investors, even with higher yields on offer.

Concerns About Market Access

Any suggestion of ending the exemption also raises important questions about issuer access in a taxable market, especially for smaller and infrequent municipal borrowers. Smaller issuers would be especially vulnerable if the exemption were ended because they would struggle to attract investor attention in a taxable market. This is because taxable investors – including and especially large institutions like corporate pension funds, foreign central banks, sovereign wealth funds, and corporations – tend to buy and sell bonds in large blocks of tens or hundreds of millions of dollars at once. That's why most taxable bond indices – a key platform for issuers to remain visible to investors – will only include $300 million single CUSIP bonds from issuers. By contrast, recall from earlier that more than two-thirds of new municipal issues have a par amount of less than $25 million.

How many governments might struggle with market access in a taxable market? One simple definition is that a "small" municipal issuer has $30 million of outstanding debt or less. This $30 million threshold is a good indicator because it represents one-tenth the amount of outstanding bonds needed for index inclusion. According to Intercontinental Exchange (ICE) geospatial and municipal reference data, for outstanding municipal debt as of January 15, 2025, on average, 52% of the issuers in a Congressional district are below the $30 million threshold. In six Congressional districts more than 90% of issuers are below that threshold. In short, many small issuers would need to fundamentally alter their debt management practices to attract adequate investor attention in a taxable municipal market. This would entail significant additional transaction costs on top of the higher borrowing costs. Though, it should be noted that absorbing some of these additional transaction costs, such as developing better disclosure, could enhance the functioning and efficiency of the overall municipal market.

Another indicator of market access is how often investors buy and sell an issuer's bonds in the months and years after those bonds were issued. That buying and selling activity is called the "secondary market." As mentioned earlier, municipal bonds are traditionally a buy-and-hold market. For that reason, secondary market trading is comparatively thin. A typical municipal bond will trade four times from issuance to maturity (Marlowe, 2024), compared to corporate bonds or Treasury bonds that trade hundreds or thousands of times each day (FINRA, 2024).

We are then led to wonder how the liquidity that does exist in the municipal market is distributed among municipal bond investors? An issuer whose bonds do trade more actively enjoys more visibility and "brand recognition" among investors. Smaller municipal issuers can and often do build strong brand recognition in the market, and municipal issuers of all sizes have developed sophisticated investor relations programs to that effect. If smaller issuers enjoy robust secondary market trading among tax-exempt investors, that might allay some concerns about their ability to compete for the attention of sophisticated institutional investors in a taxable market.

However, the data from the municipal secondary market do not support that claim. In fact, since 2022, more than half of all municipal secondary market trades are in bonds issued by the 100 most actively traded municipal issuers (Marlowe, 2024). Not surprisingly, those large issuers include several states, large cities, large public utility systems, and other high-profile municipal issuers. The other half of secondary market trades are distributed across the other roughly 49,000 municipal issuers. That suggests many smaller municipal issuers who are largely unknown even to tax-exempt investors, much less taxable investors who prefer much larger and more visible entities in which to invest. Taken together, all this evidence suggests that concerns about smaller municipal issuer access in a taxable market are well-founded.

Impact on State and Local Budgets

How would that increase in yields affect municipal borrowers' ability to finance essential infrastructure projects? Recent work on this question has pointed out that taxable interest would mean debt service would occupy a much greater share of state and local budgets (Tax Policy Center, 2025). This is especially true for large cities, where principal and interest payments on municipal bonds already account for an average of 5.6% of annual city expenditures. In cities like Atlanta, Houston and Chicago it accounts for more than 10% of annual city expenditures. Taxable borrowing would almost certainly mean an even greater share of local budgets devoted to debt service. This would no doubt exert downward credit pressure on these issuers.

An essential point to consider is that any increase in local borrowing costs that would follow from ending or restricting the municipal exemption represents a fundamental shift in the previously described long-standing principles of state-local fiscal federalism. Proponents of the exemption point out that it is not a "cost" to the federal government, but rather an investment in the federal government's own

infrastructure and economic development priorities, executed through a partnership with state and local governments. States and localities plan, finance, and carry out infrastructure investments aided by the federal government's indirect support through the exemption. Ending or scaling back the exemption does not change the state and local demand for infrastructure investment. Roads and bridges must be repaired, water and sewer systems upgraded, public school buildings updated for the 21st Century. Less federal support simply means that states and localities will need to invest more state and local dollars to meet those infrastructure needs. In other words, ending or scaling back the exemption is a de facto state and local tax increase.

Impact on Investors

Another key fact is that a considerable amount of municipal bonds are owned by investors outside the top marginal tax bracket. This suggests that the effects of eliminating the exemption would not be isolated to a small number of high-net-worth investors.

Table 4 illustrates this point. It shows the amount of tax-interest claimed by tax filers in 10 different categories of adjusted gross income. Tax exempt interest is a good proxy for municipal bond ownership because municipal bond owners must claim that exempt income on their annual taxes. Those categories range from under $1 of income to $1 million or more. The second column in this table shows the amount of tax-exempt interest claimed by tax filers in each category, and the third column shows the number of filers in that category. The fourth and fifth columns show the % of total exempt income attributable and the % of all filers attributable to each category, respectively.

From this table we see that, as expected, more than two thirds of the total amount of tax-exempt interest is from filers in the top two income categories. However, when we focus on the number of filers, we see that nearly two-thirds of taxpayers who claim tax exempt interest have adjusted gross incomes of less than $500,000. This suggests that ending the exemption would affect taxpayers of all incomes, and not just high net worth individuals.

Another important but often overlooked consideration for impacts on investors is the effect on international investors. As explained in Section II, foreign investors hold approximately three percent of all outstanding municipal bonds. Since foreign investors do not typically pay federal or state income taxes, ending the exemption would not produce additional federal revenues for that three percent. This is also true for pension funds and foundations as tax-privileged investors. It's not entirely clear if that fact is reflected in the Treasury and other estimates of the revenue savings from eliminating or scaling back the exemption.

Table 4: Total Tax-Exempt Income and Number of Filers Claiming Tax-Exempt Income by Category of Adjusted Gross Income, 2022

Adjusted Gross Income Category	Tax-Exempt Income ($ Billions)	Filers with Tax-Exempt Income	% of all Tax-Exempt Income	% of all Filers with Tax-Exempt Income
Less than $1	1.31	149,480	1.26%	1.13%
$1 to < $10,000	0.65	382,440	0.62%	2.88%
$10,000 to < $50,000	1.37	610,940	1.32%	4.60%
$50,000 to < $75,000	3.01	1,052,230	2.90%	7.92%
$75,000 to < $100,000	4.18	1,285,490	4.03%	9.68%
$100,000 to < $200,000	4.62	1,320,900	4.45%	9.94%
$200,000 to < $500,000	16.75	3,721,000	16.13%	28.02%
$500,000 to < $1,000,000	24.02	3,091,130	23.14%	23.27%
$1,000,000 or more	47.92	1,668,450	46.15%	12.56%
Total	**103.81**	**13,282,060**	**100.00%**	**100.00%**

Notes: Dollars are in billions. Source: Authors' calculations, based on Internal Revenue Service, 2022

Moreover, ending the exemption would presumably draw more taxable investors into the market, including and especially more foreign investors, foundations and pension funds. If the share of foreign ownership of municipals increases over time, then the estimated revenue savings from ending the exemption will also decrease over time. But again, it's often unclear if that shift in the ownership pattern is reflected in the most often cited estimates of the potential revenue savings.

2. Cap the value of municipal bond tax exemption

As an alternative to fully eliminating the exemption, some reform proponents have suggested capping the value of the exemption to investors at a rate below the top tax bracket. That would require investors in tax brackets above the cap to pay federal income taxes on municipal bond interest. This idea has been proposed many times in the past, most recently during President Obama's administration as part of the "Fiscal Cliff" talks in 2012.

How much additional federal revenue would such a cap generate? The Obama administration at one time proposed a cap at 28%. To illustrate, let's apply that cap to the 2022 statistics on tax-exempt income shown in Table 4.

In 2022 the federal marginal tax of 37% applied to income greater than $731,201 for a married filed joint return. If we return to Table 4, we see that tax bracket roughly corresponds to the $500,000 to $1,000,000 income category for exempt interest, and to the $1,000,000 or more category. For simplicity, assume that half the $24.2 billion of exempt interest claimed from the $500,000 to $1,000,000 category was from filers subject to the 37% tax rate, and the other half was from filers subject to the 35% tax rate that began at $431,900. Assume also that all of the $47.92 billion of exempt interest in the $1,000,000 or greater income category would also be subject to the 37% tax rate.

We also see that in 2022, filers in the $200,000 to $500,000 income category claimed $16.75 billion of exempt interest. In 2022, taxable income of $340,000 to $431,000 was subject to a 32% tax rate, and income of $178,150 to $340,100 was subject to a 24% tax rate, again, for a married filing joint return. Following the logic above, assume half the $16.75 billion of exempt interest in the $200,000 to $500,000 income category would be subject to the 32% tax rate, and the other half would be subject to the 24% rate. Altogether, that means $60.02 billion of interest exempted from the 37% tax rate (i.e. $47.92 billion + $12.1 billion); $20.48 exempted from the 35% rate; and $8.38 billion exempted from the 32% rate.

A proposed 28% cap would mean that filers in the 37% bracket would be subject to a 9% tax on otherwise exempt income (i.e. 37% – 28% = 9%). Applying that 9% rate to the $60.02 billion of assumed exempt interest from the 37% tax bracket would produce $5.40 billion of federal revenue ($60.02 billion*9%). For the 35% bracket the new tax would be 7%, for additional revenue of $1.44 billion. And for the 32% bracket the additional revenue the new 4% tax would result in $0.34 billion. In total, this suggests a 28% cap would produce $7.18 billion of federal income tax from otherwise tax-exempt municipal bond interest.

We must then weigh that additional federal revenue against the likely effects of such a cap on municipal bond investors and issuers. Academic research has shown that a 28% cap would increase borrowing costs for a typical municipal issuer by at least 5% (Garrett et al., 2023). That increase would happen because investors would demand higher rates to align with the new tax-equivalent yields in the new higher tax rate regime. But borrowing costs would also increase since the reduced tax advantage would depress competition among investors and inflate investor's transaction costs. With these results in mind, these researchers point out that "because reductions in the tax advantage inflate bidder markups and depress competition [among investors], the resulting increase in municipal borrowing costs more than offsets the tax savings to the government. These authors go on to say, "while this (municipal) tax advantage is mostly enjoyed by top-income individuals, its effect on the market structure of municipal bond offerings makes it a cost-effective way to lower the borrowing rates used to finance public goods."

3. Cap the annual amount of tax-exempt bond issuance per issuer

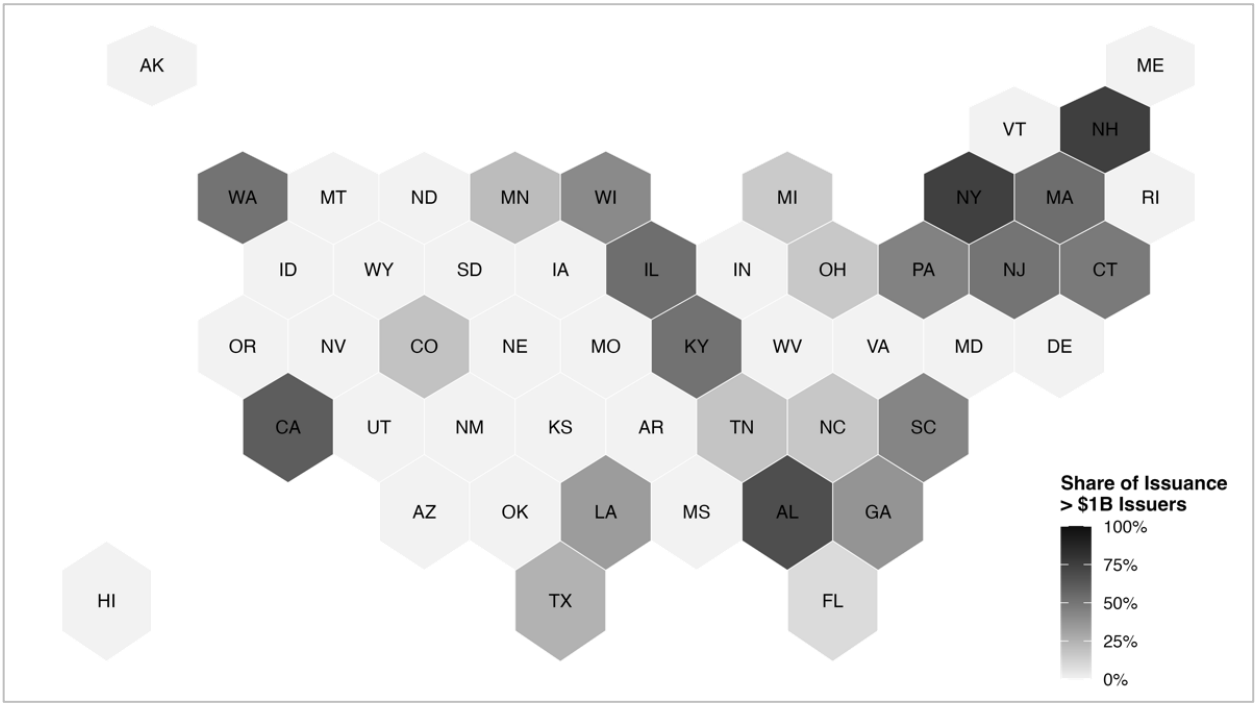
A more modest reform to fully eliminating the exemption involves a cap on the annual amount of bonds an issuer can sell on a tax-exempt basis (Devitt, 2025). For illustrative purposes, a couple cap examples might be $500 million or $1 billion. Under a $500 million cap, the first $500 million of an issuer's bonds each year could be sold tax-exempt. Any amounts over the $500 million cap would have to be sold on a taxable basis. The same approach applies to the $1 billion threshold. There is precedent for this sort of bond volume restriction under the $150 million cap on beneficiaries of 501(c)(3) bonds that was in existence until 1997.

Based on 2024 municipal bond activity by issuer, the $500 million threshold

would have resulted in 186 issuers selling a portion of their bonds taxable.[5] 5,725 issuers would still have been able to sell all their bonds tax-exempt. This would result in $198 billion in municipal bonds sold taxable and $298 billion issued on a tax-exempt basis in 2024. Using the higher threshold of $1 billion, 93 issuers would sell a portion of their bonds taxable while 5,818 would sell all their bonds tax-exempt. This would result in $130 billion and $366 billion sold taxable and tax-exempt, respectively.

Figures 7 and 8 show the percentage of municipal bonds issued in each state from 2024 from issuers that would be subject to a $500 million or $1 billion cap.

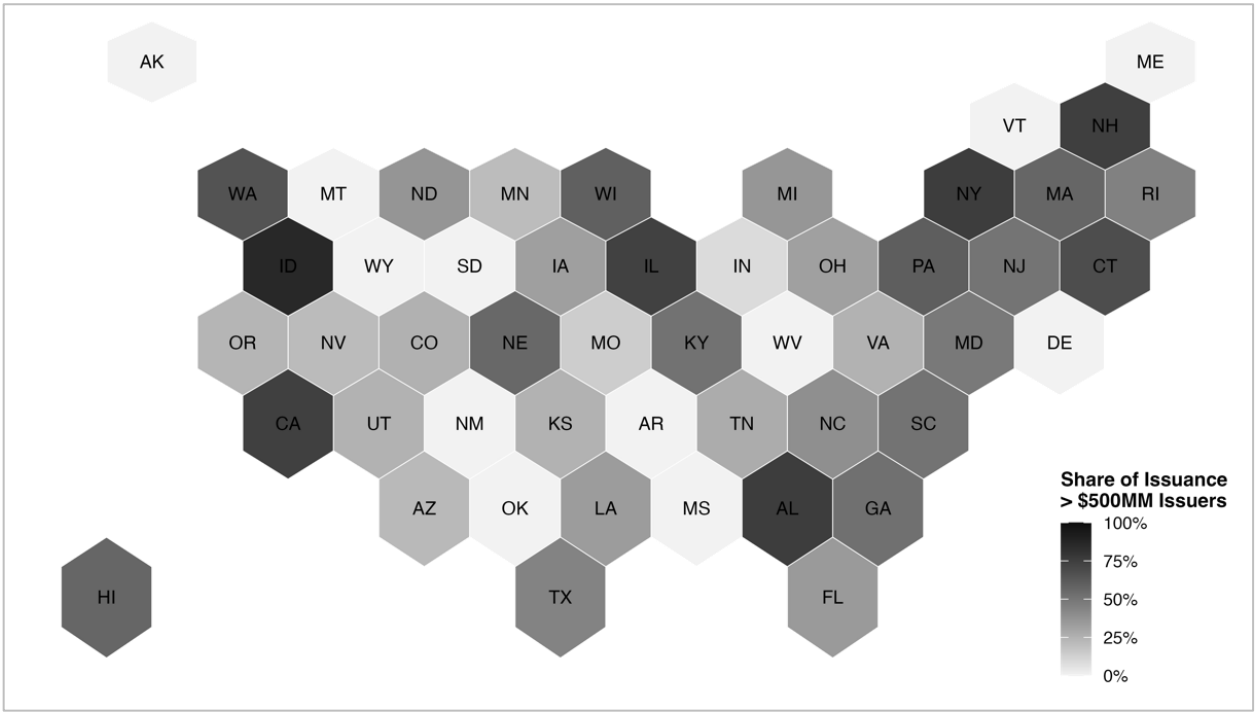
Figure 7: Share of Statewide New Tax-Exempt Municipal Bond Issuance in 2024 from Issuers of $1 Billion or More



Source: Authors' analysis of Intercontinental Exchange (ICE) geospatial and municipal reference data.

[5] Information on the specific issuers impacted by the illustrative $500 million and $1 billion caps is available in the separate Appendices document to this report.

Figure 8: Share of Statewide New Tax-Exempt Municipal Bond Issuance in 2024 from Issuers of $500 Million or More



Source: Authors' analysis of Intercontinental Exchange (ICE) geospatial and municipal reference data.

On average, 18.5% of the debt issued within a state in 2024 was sold by issuers that would be subject to a $1 billion cap. This includes conduit issuers who sell bonds on behalf of smaller borrowers. For the half billion cap, it's 34.3%. Like with all the other statewide figures, there's considerable variation. In 12 states, none of the debt within the state was sold by issuers that would be affected by the half billion-dollar cap. By contrast, in six states – Alabama, California, Idaho, Illinois, New Hampshire, and New York – more than 75% of debt across the state is issued by borrowers subject to the half-billion cap.

The benefit of capping the annual amount of tax-exempt issuance is that it would only "capture" the largest issuers.[6] As described above, presumably these "high volume" issuers are more sophisticated and could handle the transition of selling their bonds in a taxable market to different investors, some of whom may be foreign investors.
The vast majority of the municipal bond market in terms of number of issuers would be unaffected by the policy change. This includes the smaller issuers less well-positioned to sell their debt to a new universe of taxable bond buyers that will be more global in nature. While the taxable universe of bond buyers will be aware of larger issuers like the State of New York or the City of Chicago, they are unfamiliar with smaller issuers like towns, small cities, school districts. Thus, under the scenario of full elimination of tax exemption for all issuers, one would expect such lack of familiarity and less liquidity in

[6] Under an annual cap policy, an inflation adjustment should be included to mitigate a "bracket creep" phenomenon in which greater number of issuers are unintentionally captured each year.

these securities (as evidenced in fewer secondary market trades) to result, at a minimum, in additional risk and liquidity premiums demanded from investors for bonds sold by smaller issuers. However, even more worrisome would be if these small issuers were not able to come to market for capital funds due to lack of investor demand. Protecting most municipal market issuers through a volume cap avoids this fate of increased financing costs and reduced market access..

However, it should be noted that some of large sellers that would be captured by the caps are conduit issuers who borrow on behalf of smaller entities. For these issuers, we would expect that the increased taxable interest rates will simply be passed on to and borne by these smaller entity borrowers thus reducing the benefit of the cap to smaller municipal borrowers. Moreover, such a cap could result in distortive issuance patterns by borrowers to avoid being subject to the cap and having to sell bonds on a taxable basis.

Of course, allowing for a significant portion of the municipal market to remain tax-exempt reduces the amount of tax revenues the federal government will realize from this policy change. Relative to eliminating tax exemption on all bonds going forward, the federal budgetary benefit from capping is more modest. Assuming a cap of $1 billion with $130 billion in new taxable issuance each year, a 6% taxable interest rate and 27% average marginal income tax rate investor, new federal tax revenues would be $2.1 billion in the first year and $116 billion over ten years. However, this assumes that taxable issuance remains the same each year which is unlikely given that higher taxable interest rates will disincentivize new money issuance and reduce refunding opportunities. As such, this estimate should be treated as a high-end forecast of federal tax revenues.

4. Eliminate the tax exemption for qualified private activity bonds

State and local governments can issue tax-exempt bonds that finance public purpose projects that also benefit private entities. These are known as “qualified private activity bonds.” Certain types of qualified PABs sold in each state are subject to a “volume cap” determined primarily by state population. The general types of qualified PABs include financing for certain types of mortgages, student loans, redevelopment projects related to affordable housing, private hospitals and higher education institutions, airports, seaports, waste disposal facilities and other 501(c)(3) organizations (Maguire and Hughes, 2018).

PABs allow private entities to borrow at lower interest rates than would be offered in the corporate or private debt markets. The private entity beneficiaries are responsible for repayment of the PABs. PABs are controversial both in terms of the perception of who benefits from these bonds as well as their policy efficaciousness. Unfortunately, previous empirical research on the impact of PABs has been limited.

In terms of local economic development, the cheaper form of financing offered by PABs theoretically makes more private sector projects financially feasible. However,

there is a concern that PABs may not be effective in terms of inducing investment if they simply serve as a substitute for conventional financing. Moreover, there is a concern that cheaper financing costs will lead firms to substitute capital for labor leading to a reduction in firm employment. On these points, research supports that an increase in the supply of PABs in a state leads to both greater private sector capital investment and firm employment (Knauer, 2023).

Another potential impact of PABs is on the borrowing cost of other state and local governments. It has been argued that an increase in the supply of PABs would increase the interest rate on state and local general obligation bonds as well as the PABs themselves (Temple, 1993). Another study examined the supply of PABs on their impact on the borrowing cost of all tax-exempt bonds in a state and identified that each $100 per capita of PABs was associated with increases in tax-exempt rates between 9 and 51 basis points depending on the state (Marlin, 1991). In doing so, it argues that federal subsidy is not costless to state and local governments thus there would no “free lunches” in expanding PAB authority.

Table 5 details tax-exempt PAB issuance in 2021, the most recent data available from the Internal Revenue Service (Internal Revenue Service, 2024b). According to the IRS, long-term tax-exempt governmental bonds totaled $343 billion and long-term PABs totaled $115 billion in proceeds for total municipal bond issuance of $458 billion in 2021. As a percentage of the total long-term municipal bond market, 25% of all issuance were tax-exempt private activity bonds. Of this $115 billion in PABs, $69 billion was new money and $46 billion was sold to refinance prior debt.

The largest amount of PABs were sold for 501(c)(3) organizations that were not hospitals ($21.3 billion) and qualified residential rental facilities ($19.4 billion). The next three highest purposes were airports ($8.9 billion), qualified hospital facilities ($7.1 billion) and qualified mortgages ($6.7 billion).

As can be seen in Table 5, PABs help finance much of the physical infrastructure that citizens and businesses use on a daily basis and provide access to cheaper forms of financing to targeted groups. This includes infrastructure related to airports, ports, hospitals, colleges and affordable housing. This includes not-for-profit senior living facilities which are under pressure to develop significant more housing and skilled nursing care to accommodate the impending baby boomer needs. It also provides access to capital for veterans, college students, and first-time and low-moderate income homebuyers. Eliminating the exemption for private activity bonds would likely reduce investment in these forms of physical infrastructure and raise financing costs for these groups of Americans.

Table 5: Long-term Tax-Exempt Private Activity Bonds, by Bond Purpose and Issue Type, 2021

Purpose	All Issues		New Money Issues		Refunding Issues	
	# of Issues	Amount ($ Millions)	# of Issues	Amount ($ Millions)	# of Issues	Amount ($ Millions)
Airport	67	14,753	35	8,890	47	5,863
Docks and wharves	14	1,094	8	398	8	695
Solid waste disposal	42	3,129	35	2,165	14	964
Qualified residential rental facilities	856	22,087	775	19,430	97	2,657
Qualified mortgages	97	10,392	88	6,695	66	3,696
Qualified small issues	169	153	108	108	61	44
Qualified hospital facilities	147	15,289	67	7,146	111	8,143
Qualified Section 501(c)(3) nonhospital	1,160	40,853	637	21,307	811	19,547
All other tax-exempt bonds	58	4,951	23	1,507	35	3,444
Total	**2,596**	**113,967**	**1,766**	**68,446**	**1,244**	**45,521**

Source: Internal Revenue Service, 2024b; Internal Revenue Service, 2025b

The area of affordable housing may be especially impacted by the elimination of tax exemption for PABs. For example, multifamily affordable housing projects that rely on the low-income tax credit (LITC) as a source of funding also require the use of private activity mortgage revenue bonds in the financing mix (Eyre, 2004). Eliminating tax exemption for these mortgage bonds has the potential to reduce the number of affordable housing projects undertaken exacerbating the nation's overall home affordability challenges. Mortgage PABs are also sold to provide cheaper financing to low to moderate income families in purchasing a home. The reduced interest cost on the PABs are passed on to the homeowner thereby making the purchase of a home more financially feasible. Eliminating PABs in providing mortgage financing support could reduce the pool of eligible homebuyers.

In terms of the federal budget benefit, according to the CBO, eliminating the exemption on all newly issued PABs would produce federal tax revenues of $200 million in 2025 and $43.1 billion between 2025 and 2034 (Congressional Budget Office, 2024). Another policy option might be to tighten the eligibility of projects than can be deemed "qualified PABs" and thus be sold on a tax-exempt basis. This could be achieved either through reducing the eligible PAB categories or reducing the annual PAB volume cap. While this option would maintain cheaper cost of funding for a reduced portfolio of projects, it would reduce the amount of foregone tax revenues realized by the federal government. An example of this policy proposal is described in # 5 below.

5. Eliminate municipal bond tax exemption for higher education institutions and

large non-profit organizations

An example of a more targeted PAB policy approach would be to abolish the tax exemption used by charitable organizations or limit its availability to organizations of a specified type. Bonds issued by charitable organizations are commonly referred to as Qualified 501(c)(3) bonds, named for the section of the IRS code that defines a charitable organization for purposes of federal taxes. Per the code, organization must exist exclusively for charitable purposes – that is "organized and operated for religious, charitable, scientific, testing for public safety, literary or educational purposes, or for the prevention of cruelty to children or animals" (Internal Revenue Service, 2025a)

Insofar as 501(c)(3) bonds are a type of private activity bond, for their interest to be eligible for tax exemption, they must satisfy the requirements applicable to all other bonds of that designation. In addition, however, they must adhere to various specific rules incorporated into IRS Code Section 145. Most notably, proceeds from the bond issue can be used to fund acquisitions only of property which is owned by the 501(c)(3) organization or some other governmental unit and is not significantly used in unrelated private businesses.

In recent years some observers have criticized many American universities for no longer providing the educational benefits with which they have long been associated with and, in fact, are simply indoctrinating their students with objectionable political ideas (Finley, 2025). As such, these critics object to tax benefits and taxpayer subsidies for these institutions. One proposal suggested would be for the federal government to increase the tax rate on the investment income earned by certain university endowments or apply the tax rate to more endowments. More germane for this report is another proposal that would eliminate or curtail the ability of these institutions to issue tax exempt debt.

The obvious advantage of eliminating the tax exemption for higher education institutions or other non-profits is that it would generate additional federal tax revenues. However, the increase in tax revenues would be modest. According to data from Bloomberg as of the start of 2025 there were less than $600 billion of 501(c)(3) bonds outstanding. This is less than 15% of the municipal bond market.

Although it is inevitable that tax policy will reflect political values, using the tax code for punitive purposes risks undermining public confidence that the tax system is both designed and administered evenhandedly. Moreover, while some prominent educational institutions have been accused of offensive practices, there are over 1,700 private, nonprofit colleges and universities that would be affected by the elimination of the tax exemption for their bonds (Albright & Querolo, 2024).

Of greater consequence, eliminating the exemption for all charitable institutions, not just colleges and universities, would impose additional costs on scores of institutions that by definition, provide services that are in the public interest. Especially hard-hit could be health care institutions, which, in dollar volume are one of largest beneficiaries

of the municipal bond tax exemption (Internal Revenue Service, 2024b). In the face of the added financing costs, some proposed hospitals, particularly those in rural areas, may not be built. Other health care providers may be unable to make needed upgrades to their existing facilities.

A further consequence of the elimination of the tax exemption on charitable institutions would be to pressure state and local governments to compensate for any resultant decline in services that those institutions provide; in other words, to shift services and their attendant costs from the private/non-profit to the public sector. Ironically, that would run counter to one of the goals of the Trump administration related to federal debt reduction – that of downsizing governments to the benefit of businesses and other nongovernmental enterprises (Lawder & Shalal, 2025).

6. Replace municipal bond tax exemption with a direct subsidy bond program

The considerations of this reform were detailed in the previous section on Build America Bonds. A direct subsidy bond program would satisfy the various criticisms of tax-exempt municipal bonds related to efficiency, equity, budget transparency and the limited investor base. However, a direct subsidy program more greatly exposes state and local governments to the whims of the federal budget process and provides greater opportunities for federal involvement in state and local infrastructure project selection and financial decision-making. Moreover, depending on the subsidy level, moving to a direct subsidy program does not provide the federal budget benefit that previously described proposals offer.

For supporters of direct subsidies, one could envision a compromise between the need to continue to federally subsidize subnational infrastructure investment but at a lower cost through a direct subsidy program. This could take the form of a BAB-like program with two modifications: 1) the direct subsidy bonds could be used for new investments AND refinancing of old debt for state and local governments AND other traditional tax-exempt borrowers and 2) the direct subsidy would be significantly less than the 35% granted to BABs. Under this proposal, municipal borrowers could still issue debt for both purposes allowable under municipal tax exemption (new money and refunding) but would receive a lower subsidy from the federal government. Congress would determine the subsidy rate netted against the repeal of municipal tax exemption that produced the targeted amount of new tax revenue.

Again, the problems manifest in the BAB program would remain under this reform. In addition, full repeal of tax exemption would push all borrowers into a taxable market which could limit small issuers access to capital as described above. It is important to note than when the BAB program was available to all state and local governments, many state and local government issuers continued to sell tax-exempt bonds with only 27% of the municipal market consisting of taxable BABs in 2010 (Luby, 2012).

7. Create a national infrastructure bank as an alternative to a public municipal

securities market

The proposal of a national infrastructure bank is not novel, having been introduced in the Clinton, Obama, and Trump presidential administrations. However, it is now more salient as Congress explores alternatives to tax exemption, or the public municipal securities market as a whole. A national infrastructure bank essentially functions as a government-owned lending entity, offering loans, guarantees, and lines of credit to fund infrastructure projects executed by state and local governments. This alternative may focus on a limited set of infrastructure projects (e.g., energy), but would likely touch a broader spectrum of project types (Congressional Research Service, 2024).

While there is somewhat of a U.S. precedent for a national infrastructure bank with state and local infrastructure banks, the funding, scale, and scope of a national infrastructure bank deviates from these examples. The European Investment Bank, also helpful in understanding the goals of a centralized infrastructure bank, still operates under a different governance structure than it would in the U.S. While these examples are generally independent financial entities, a U.S. national infrastructure bank would be considered part of the federal government, and therefore accounted for in the federal budget (Congressional Budget Office, 2012).

With a more centralized and systematic approach to project selection under a national infrastructure bank, the most apparent advantages are more equitable access to capital and the provision of technical expertise to state and local governments (Congressional Budget Office, 2012; Puentes, 2012; Wahba, 2021; Congressional Research Service, 2024). A national infrastructure bank would facilitate a more strategic approach to project selection, with much more incentive to pursue projects that have greater national or regional economic benefits or projects in high-need areas that are not as attractive to private investors (Congressional Budget Office, 2012).

Smaller and underserved municipalities can face difficulties accessing the traditional municipal securities market, despite often demonstrating greater infrastructure needs, due to limited financial capacities or insufficient credit ratings. By providing more equitable access to capital, national infrastructure bank funding could help bridge the infrastructure gap. Additionally, it can be used to gain traction for projects that align with national policy and economic interests that are not as easily financed through the traditional municipal securities market, such as large-scale port, rail, or renewable energy projects (Puentes, 2012). Of course, technical financing expertise and project management can aid municipalities with insufficient administrative capacities in managing these projects more efficiently, as well as large-scale projects that require complex and diverse financing techniques.

However, there are significant drawbacks to a national infrastructure bank as well. State and local governments are likely to face higher borrowing costs under a national infrastructure bank than in the traditional municipal securities market. State and local governments have historically faced lower borrowing rates than the U.S. Treasury bond interest rate, making it less a much less attractive financing method (Krol, 2017b).

Alternatively, the bank may issue debt at a lower rate than the U.S. Treasury if approved by Congress, but this would increase the bank's cost to federal taxpayers as its capital would eventually diminish. This decision would also attract more projects with lower returns (Krol, 2017b; Congressional Budget Office, 2012). These problems can be observed in historical cases of state and local infrastructure banks and resulted in relatively unsuccessful or unsubstantial endeavors. For example, approximately 28 percent of agreements issued by state infrastructure banks as of 2017 were interest-free, resulting in unsustainable institutions (Krol, 2017a). The Chicago Infrastructure Trust, which was implemented in 2012 and eventually dismantled in 2019, likewise proved unsustainable as it failed to gain traction in funding significant infrastructure projects as promised (WTTW, 2019).

Another consequence of the national infrastructure bank is that it requires a federal overhaul of what has traditionally been in the domain of state and local governments, threatening the current fiscal federalism equilibrium discussed earlier. This introduces, first, a high risk of politicization infrastructure funding decisions. Though many of the potential benefits of a national infrastructure bank are economic, economic considerations may be overpowered by political incentives in the decision-making process. Second, the federal government may not exercise the same level of scrutiny on borrowers as private market actors. While private investors are primarily focused on profitability and discipline fiscal imprudence in borrowing entities, the federal government operates under a different set of political incentives and leaves room for riskier fiscal behavior (Kornai, Maskin & Roland, 2003). Private investors are also directly liable for their investments while the federal government can theoretically fall back on taxpayers. These qualities introduce risk for less fiscal accountability under a national infrastructure bank.

8. Enable more P3s

Another idea floated as a potential alternative to municipal bond tax exemption is the expansion of public-private partnerships (P3s). P3s are arrangements in which a government agency contracts with a private partner to design, construct, finance, maintain, and/or operate a facility or system. In a simple example, a transportation authority partners with a private contractor to design, construct, finance, maintain and operate a toll road. The private party assumes all costs of constructing the road and of operating and maintaining it for a specified period after which the road reverts back to the government. In exchange, the contractor is granted the rights to collect and keep all, or a significant portion, of the toll payments during that period.

P3s provide several advantages over projects carried out solely by a government. For example, projects can sometimes bypass the multiple layers of approval characteristic of government-undertaken ventures. Further, owing to greater experience, the private party may be capable of carrying out project more effectively and efficiently. In fact, budget documents in the first Trump administration claimed that P3s provide "better procurement methods, market discipline and a long-term focus on maintaining assets" (Sheck, Gilber & Craft, 2017).

In many P3 arrangements the financing is complex, often involving a combination of private equity and debt, federal loans, and state and/or local bonds. Because a government agency is one of the partners, the P3 is almost always structured so that interest on the debt can be tax exempt. Thus, the public debt is issued directly by the government itself by way of PABs.[7]

The Capital Beltway project in Virginia is a good example of this use of multiple financing sources. In 2008, the Virginia Department of Transportation granted a private operator the right to design, construct, finance and operate high occupancy toll lanes on I-495. The $1.4 billion project included the following sources of financing which included municipal bonds, federal loan and private equity (Luby, 2009):

- $589 million in private activity bonds (4.97%)
- $525 million in federal TIFIA loans (4.45%)
- $300 million+ private equity

The weighted average cost of capital for the debt (PAB and TIFIA) was 4.71%, which was much lower than the 7-7.50% BAA corporate debt interest rates in the market at the time. The use of PABs made the project much more feasible for the private operator.

By inviting private sector investment, public-private partnerships (P3s) have proven successful in easing the burden of financing major infrastructure projects. Some have criticized the tax exemption of municipal bonds as disincentivizing an appropriate level of privatization of the nation's physical assets or, at a minimum, reducing the use of P3s in building the nation's infrastructure (Mileszko, 2025). These observers view P3s as a sensible alternative to the continuing heavy use of tax-exempt municipal bond finance.

However, by their very nature, P3s cannot be a panacea for enhancing our nation's infrastructure development since these arrangements do not produce new revenues. Further, to induce private operators to participate in a P3 project, they need to be able to make a profit. This usually necessitates that the infrastructure asset levy a user charge (e.g., toll payments on a road) or an annual payment from the government (e.g., availability payment) (US Department of Transportation, Federal Highway Administration). However, state and local governments do not directly charge citizens for use of much of the nation's infrastructure. Thus, much of the nation's portfolio of physical assets are not easily conducive to the use of P3.

Moreover, most germane to this report, if efforts to eliminate municipal bond tax exemption are successful, actual use of P3s as a means of building, financing and maintaining infrastructure will most assuredly be curtailed. As shown above, the municipal bond tax exemption is central to many P3s. Without the attendant reduction in

[7] For a list of recent transportation-related P3s and an indication of the variety of forms they can take, see the website of the U.S. Department of Transportation, Federal Highway Administration: FHWA - Center for Innovative Finance Support - Project Profiles

interest costs, many of the private participants would find the arrangements to be fiscally untenable. It would make little sense for a private party to issue taxable debt when the participating government could issue lower-cost exempt debt. Of course, irrespective of whether the debt is issued by the government or the private party, any increase in financing costs owing to the elimination of tax-exempt debt would have to be passed along to the facility users, in the form of added tolls or fees, or to the taxpayers at large.

The benefits of the municipal bond tax exemption are not always obvious and eliminating it can have unintended consequences. One of these would most certainly be to deter the establishment of P3s. At a time when there is a critical need for greater investment in the nation's infrastructure by both the private and public sectors, this would indeed be an unfortunate and regrettable outcome.

XI. Key Takeaways

This report offered a high-level discussion of the history, justifications, mechanics and criticisms of municipal tax exemption. Below are some key takeaways from the report with a particular focus on some of the various reforms to tax exemption being discussed in Congress.

- Development and maintenance of the nation's physical infrastructure has historically utilized a mix of federal, state and local funding sources. State and local governments have justifiably used long-term financing (municipal bonds) to help finance a substantial portion of these investments. These municipal bonds carry an indirect subsidy from the federal government via tax exemption.

- Today there are approximately $4.2 trillion of outstanding municipal bonds. That equates to approximately $20,000 per household, with considerable variation from state to state. These bonds finance a wide variety of infrastructure projects, including streets, sewers, public school buildings, water filtration and delivery systems, hospitals, convention centers, airports and many others.

- The tax exemption is invaluable to municipal bond issuers. Some estimates suggest state and local governments saved $714 billion in borrowing costs from 2000 to 2014 due to federal tax exemption on municipal bond interest (Marlowe, 2015). Other projections estimate borrowing cost savings of $824 billion over the next 10 years (Public Finance Network, 2025). These financing cost savings allow substantially greater investment in the nation's infrastructure.

- While beneficial to municipal issuers, the subsidy does represent a budgetary cost to the federal government (approximately $52 billion in 2024). Beyond the cost to the federal government, some observers have criticized the exemption on grounds of efficiency, economic equity and budget transparency. On the other hand, in addition to the borrowing cost benefit, proponents of municipal tax

exemption value this indirect subsidy for the financial autonomy and subsidy protection from the federal appropriations process it affords state and local governments.

- The vast majority of municipal bond issuers are small, infrequent borrowers that benefit from the unique incentives for individual investors made possible by the exemption. Ending or scaling back the exemption would force tens of thousands of these smaller issuers to either compete for investor attention in the taxable bond market, or reduce their own investments in public infrastructure.

- By contrast, the vast majority of the outstanding bonds were issued by a small number of large sophisticated issuers. Some proposals for reform call for capping the amount of tax-exempt debt a municipal borrower can issue in a given year. Such a cap would affect a small number – perhaps 100-200 – of municipal issuers. Presumably, these issuers would be best equipped to navigate a new taxable bond market and, thus, this proposal would be less disruptive to the municipal market. At the same time, some of those large issuers are “conduit” issuers who sell bonds on behalf of other local governments and other organizations pushing the additional financing cost burden to these smaller entities.

- A more scaled back policy eliminating the exemption on private activity bonds has been discussed for many years. Given these types of bonds provide financing for private entities, eliminating their tax exemptions has been seen as more justifiable by some. However, tax exempt (“qualified”) PABs provide low-cost financing 1) for critical infrastructure projects that do provide a public purpose and 2) to targeted groups like students for higher education and first time, low to moderate income and veterans for home purchases. Moreover, PABs are a critical financing source for many P3 projects. Expansion of P3s are often touted as a better alternative to municipal tax exemption. Eliminating tax exemption on PABs would likely reduce the financial feasibility of many P3s.

- Though it is wholly appropriate that Congress would review various tax expenditures to help pay for its current policy priorities, eliminating the municipal bond tax exemption (without providing a subsidy in another form) will likely have a significant impact on infrastructure development in the United States and/or impose greater fiscal stress to many state and local governments. Moreover, given the current state of issuance patterns, it would have a disparate impact on certain communities and regions in the country. Assuming the need to maintain our infrastructure at current or better levels, such subsidy elimination essentially transfers greater funding responsibility to state and local governments. Given the national benefit of infrastructure maintenance and development, such transfer effectively serves as an unfunded mandate to state and locals.

XII. References

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