Municipal Securities Rulemaking Board

Municipal Securities: Financing the Nation's Infrastructure

The Municipal Securities Rulemaking Board (MSRB) is a Congressionally chartered, self-regulatory organization that ensures the integrity of one of the country's most important capital markets. Accessed for centuries by state and local governments to finance trillions of dollars in infrastructure projects, the municipal securities market is essential to meeting the local needs of the nation's residents.

Created in 1975, the MSRB oversees the $3.8 trillion municipal market and ensures that investors, state and local governments and other municipal entities can participate in this market and engage in fair and efficient transactions to finance projects in the public interest.

Development and maintenance of the country's infrastructure is primarily a function of state and local governments that issue municipal bonds. This paper is intended to:

1) Clarify the role of the municipal securities market in financing U.S. infrastructure;

2) Serve as a primer on municipal securities and their relationship to federal programs and private partnerships; and

3) Provide considerations for policymakers seeking to optimize municipal securities and integrate private investment with the public finance of infrastructure.

Contents

Shouldering the Costs of U.S. Infrastructure

The challenges for the development and maintenance of the nation's infrastructure are significant when considering the age of U.S. infrastructure and the breadth of community needs across the country. A 2017 report by the American Society of Civil Engineers finds that the nation has $2 trillion in unmet needs for infrastructure investment, and that the U.S. has been paying just half of the costs needed to properly maintain aviation, transportation, power, drinking water and other public necessities.[1] State and local governments shoulder most of the burden for maintaining or building many public assets, and the municipal securities market is their primary means of accessing the capital required.

Federal, state and local governments, and the private sector each invest in public works such as surface transportation, water and wastewater infrastructure, electric utilities, airports, ports, dams, waste facilities, parks, railways, schools and more. Federal spending is generally directed at transportation projects; state and local government spending focuses on schools, highways and water systems; and private-sector investment is concentrated in electricity and telecommunications assets.[2]

Federal, state and local governments and the private sector each invest in public works such as surface transportation, water and wastewater infrastructure, electric utilities, airports, ports, dams, waste facilities, parks, railways, schools and more.

Congress directs a considerable portion of its agenda toward legislation to provide for investment in highways, transportation and water infrastructure. However, it is state and local governments that commit the bulk of the capital required to pay for U.S. infrastructure. The Congressional Budget Office (CBO) regularly reports on public spending on transportation and water infrastructure, and its analysis shows that state and local government spending eclipses the federal share of the nation's infrastructure spending. The federal government spends less than state and local governments on each type of infrastructure, and since 1987, state and local governments have contributed approximately three quarters of total public spending for transportation, and water infrastructure.[3] Note in Figure 1, reflecting the most recent comprehensive government data across infrastructure categories, state and local government spending in 2004 was nearly on par with private sector spending, and three times federal spending overall, with federal, state/local and private sectors focused in different infrastructure categories.

FIGURE 1: State and Local Governments Account for Nearly 75% of Public Infrastructure Spending, 2004 (in Billions)

Public Infrastructure	Federal	State and Local	Private
Schools	$0.40	$75.50	$23.80
Highways	30.2	36.5	n/a
Drinking Water	2.6	25.4	n/a
Mass Transit	7.6	8.0	0.0
Energy	1.7	7.7	69
Telecommunications	3.9	n/a	68.6
Other	16.1	17.2	12.1
Total	**$62.50**	**$170.30**	**$173.50**

Source: McNichol, Elizabeth. February 23, 2016. "It's Time for States to Invest in Infrastructure." Center on Budget and Policy Priorities. https://www.cbpp.org/research/state-budget-and-tax/its-time-for-states-to-invest-in-infrastructure.

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In addition, the nation's infrastructure has aged to a point that it requires considerable maintenance beyond simply funding new projects, and it will be state and local governments that primarily pay those costs. State and local governments own more than 90 percent of non-defense public infrastructure assets, and pay approximately 75 percent of the cost to maintain those assets, with the balance paid by federal and private capital.[4]

Data from a 2014 CBO study on transportation and water spending show that state and local governments spent $320 billion on transportation and water infrastructure alone[5] — not accounting for spending on schools, typically their largest expenditure.[6] Federal, state and local public spending for operation and maintenance exceeded capital spending in 2014, and state and local governments provided 88 percent of that operation and maintenance spending.[7]

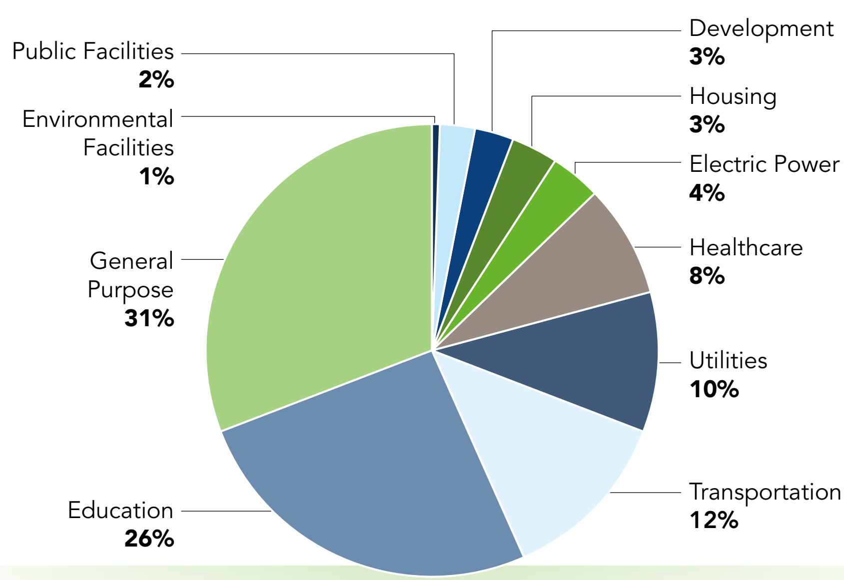
State and local governments use direct spending, intergovernmental transfers, grants and loans to fund or finance their needs, but their **primary means of financing public infrastructure is the municipal securities market.**

State and local governments use direct spending, intergovernmental transfers, grants and loans to fund or finance their needs, but their primary means of financing public infrastructure is the municipal securities market. According to one analysis, approximately 90 percent of state and local capital spending is financed with debt.[8] Municipal securities ensure state and local governments can affordably access capital markets to build and maintain infrastructure on every scale, from big cities to small towns, from roadways to alleyways, and from universities to elementary schools. The municipal securities market provides nationwide access to capital to address localized community needs and priorities for more than 50,000 individual state and local entities that issue municipal securities.[9]

Each year, state and local governments borrow hundreds of billions of dollars from investors to finance their infrastructure needs. From 2010 to 2016, approximately $3 trillion of municipal bonds were issued by state and local governments with an annual average volume of $430 billion.[10] Figure 2 illustrates how the proceeds from these bonds were spent, with education, transportation and "general purpose" bonds (including those for broad-based capital improvement plans) as the three largest categories.

As these snapshots of public spending illustrate, the municipal securities market must be understood as the basis for making policy choices about maintaining the nation's public works and driving additional infrastructure investments.

FIGURE 2: Use of Proceeds from Municipal Bonds Issued 2010–2016



$3 trillion total issuance with an annual average of **$430 billion**

Source: MSRB, Thomson Reuters. 2016.

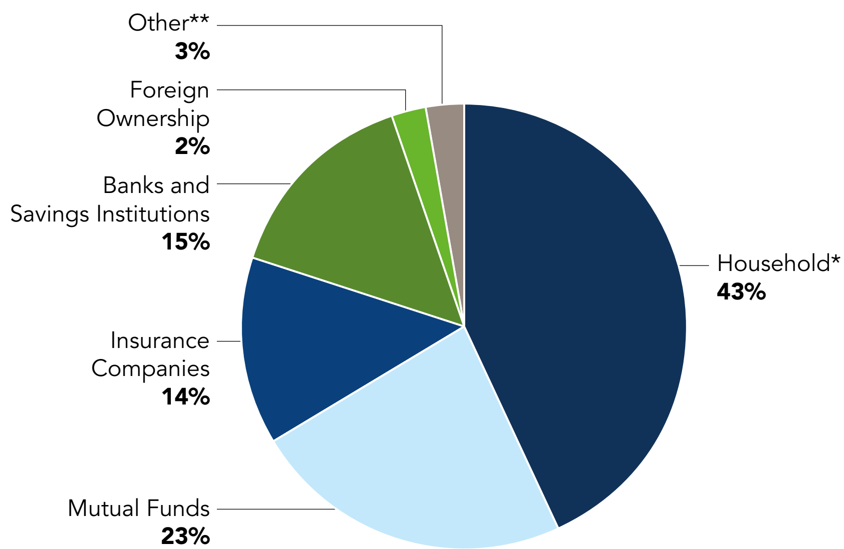
A Primer on Municipal Securities

A **municipal bond** is a debt obligation issued by a state or local government or one of its agencies or authorities (including cities, towns, villages, counties, special districts and other political subdivisions).

Tax-Exempt Municipal Bonds

A **municipal bond** is a debt obligation issued by a state or local government, or one of its agencies or authorities (including cities, towns, villages, counties, special districts and other political subdivisions — collectively referred to as "municipal entities"). The purpose of this debt obligation is to raise funds for public projects, such as schools, roads, sewers and other community needs. In essence, a municipal entity ("issuer" or "borrower") sells a bond to receive a loan from investors ("bondholders"), and uses the proceeds to finance a project with a public benefit. The issuer must pay bondholders principal plus interest over the life of the bond, typically until its maturity.[11] Maturities of municipal securities range from short-term (months to two years) to 30 years or more, with longer maturities reflecting the useful life of public assets. Most municipal bonds are held by individual retail investors, either directly or through municipal bond mutual funds (see Figure 3).

FIGURE 3: Majority of Municipal Bonds Held by Individuals, Either Directly or through Mutual Funds



Source: Federal Reserve Flow of Funds, as of December 2016. "Household" may include both direct investments by individual investors as well as other accounts that do not fall into other tracked categories. "Other" includes non-financial corporate and non-corporate business, state and local governments, credit unions, state and local government retirement funds, exchange-traded funds, government-sponsored enterprises, brokers and dealers and non-U.S. entities.

General obligation (GO) bonds generally rely upon the full faith and credit of the municipal entity issuing the bond, based on its unlimited capacity to either apply revenue or raise income or property taxes to repay the bond.

A primary feature of most municipal securities is that interest payments received by investors purchasing the bonds are exempt from federal and often state and local income taxes.[12] This tax preference permits state and local government issuers of municipal bonds to offer investors lower interest payments than, for example, interest paid to investors in taxable corporate bonds. This savings to issuers is possible because the investor or bondholder does not pay tax on the interest income from the bond and will accept a lower interest rate. State and local governments therefore enjoy relatively lower costs for borrowing money, and investors can collect interest income on a tax-exempt basis. Certain municipal securities pay interest that is subject to federal income tax, although the issuers or bondholders may receive other federal tax preferences in lieu of the tax exemption (municipal bonds with any form of tax subsidy are collectively referred to as **tax-preferred** bonds).

The federal tax exemption for municipal securities dates to the first U.S. Internal Revenue Code in 1913. The Tenth Amendment to the Constitution provides that powers not expressly granted to the national government are reserved to the states, establishing co-sovereign entities — a national government and state governments. While there are open legal questions on the topic of taxation, these entities traditionally do not tax one another, and for over 100 years, the federal government has not undertaken to tax state and local debt obligations.[13] From a tax policy perspective, the U.S. Treasury and Congress have long taken the view that, in effect, the municipal tax exemption — and associated loss of federal revenue — is available only for securities that finance public purposes. For state and local governments, local decision making and access to capital through tax-exempt bonds are woven into the fabric of the nation.

Bonds that finance public facilities or activities of a municipal entity, with little or no benefit to particular non-governmental entities, are broadly described as **governmental bonds**. Different types of tax-exempt governmental bonds have different features and sources of revenue for repayment, and these are described more fully in the glossary (see Appendix A). **General obligation (GO) bonds** generally rely upon the full faith and credit of the bond 's issuer, based on its unlimited capacity to either apply revenue or raise income or property taxes to repay the bond. Given that GO bonds may be repaid through taxation, these types of bonds typically require voter approval for issuance and are the most secure form of municipal debt from the perspective of a bondholder. A limited tax general obligation bond only obligates the issuer to pay the bonds up to a certain rate; other varieties of GO bonds are described in the glossary. **Revenue bonds**, described in greater detail later in this paper, typically rely on revenues from a specific project or system, such as a water or electric utility, to repay the bondholders. In 2014, roughly 60 percent of state and local issuances were revenue bonds, and 40 percent were general obligation bonds.[14]

Issuers of governmental bonds below certain annual dollar thresholds (such as bonds issued to construct public schools) can sell their bonds directly to banks as **bank-qualified bonds**. These bonds provide tax relief for banks that purchase them in addition to providing tax-exempt interest for investors. A small issuer of municipal bonds may save on underwriting, marketing and other costs of issuance by selling the bond directly to a bank. The bank in turn can avoid the interest expense that it would otherwise incur to purchase or carry municipal securities that are not bank-qualified.

Private activity bonds (PABs) finance projects with public purposes, but also involve private business use.

While governmental bonds represent the largest category of bonds — accounting for approximately 87 percent of the tax-exempt debt issued to finance public infrastructure since the early 1990s[15] — the **private activity bond (PAB)** is another key category of municipal bond.[16] PABs finance projects with public purposes, but also involve private business use. For these securities, a municipal entity issues the debt, while a private business receives some benefits from the project. This transfer of benefits to the private sector can occur for a governmental project that has a private operator and/or involves leases, management contracts, loans and other arrangements with a private entity. Private activity bond issuance tends to be concentrated in airport construction and, secondarily, in other types of transportation projects and water infrastructure.[17]

A private activity bond can only have interest payments exempt from federal gross income tax if the project financed by the bond falls within the federally permitted purposes for such bonds (called a **qualified private activity bond**).[18] Congress specifies private activity bonds used to finance certain types of infrastructure projects as qualifying for the income tax exemption, including but not limited to "exempt facility bonds," which serve a general public purpose despite private benefit, and bonds for nonprofit, 501(c)(3) organizations. Unlike governmental bond interest, qualified private activity bond interest is typically subject to the Alternative Minimum Tax (AMT). Note that issuance of private activity bonds on a taxable basis is infrequent but sometimes necessary for a specific project.

Qualified private activity bonds have been a feature of the U.S. tax code for decades, but for many of these bonds, the amount that can be issued is limited on a state-by-state basis by volume caps, which set a par value limitation on the aggregate amount of municipal securities that can be issued. Temporary expansions of the eligible purposes for qualified private activity bonds have at times been enacted by Congress to boost infrastructure investment on a targeted basis by expanding the benefits of tax-exempt borrowing. One example is "Gulf Opportunity Zone Bonds" enacted by Congress to help rebuild areas destroyed by Hurricane Katrina; another is "Liberty Zone Bonds" used to encourage infrastructure investment after September 11, 2001 in New York City.

While payments to investors in general obligation bonds are backed by the taxing authority of the issuer, qualified private activity bonds are most often issued as revenue bonds. Revenue bonds, whether governmental or private activity bonds, repay investors from a dedicated revenue stream, such as tolls collected for a road, airport user fees, the sale of electricity from a municipal facility or college and university tuition payments. State and local government authorities known as **conduit issuers** may issue qualified private activity bonds as revenue bonds to finance a project to be used primarily by a third party, such as a for-profit entity engaged in private enterprise, or a 501(c)(3) organization, referred to as the **conduit borrower**. In a conduit financing, the conduit borrower is responsible for making principal and interest payments on the bonds. Industrial development bonds, multi-family housing revenue bonds and qualified 501(c)(3) bonds are common types of conduit financings.

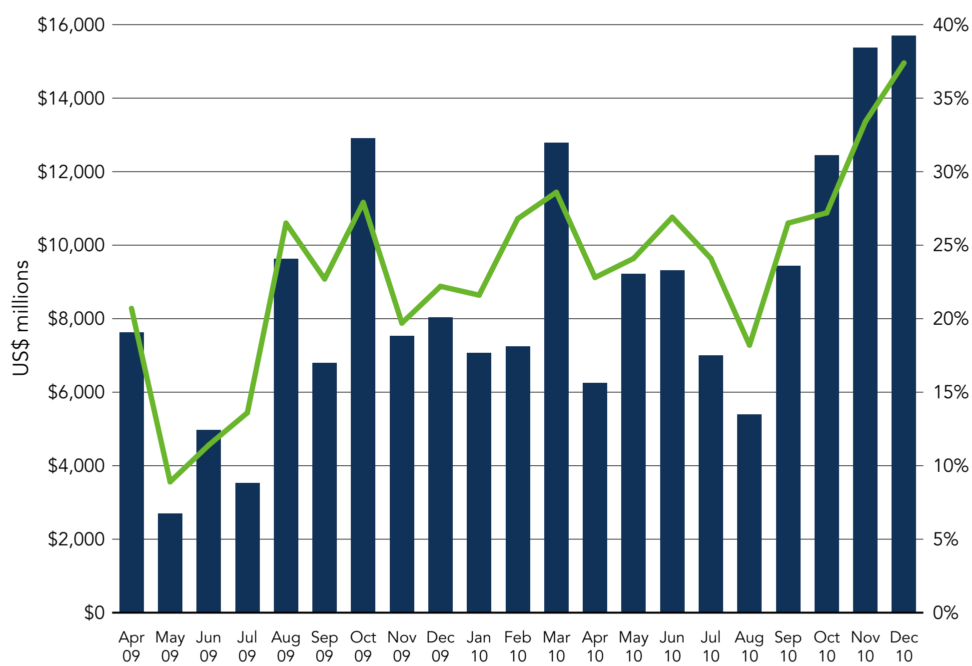
Alternative Tax-Preferred Bonds

The tax-exempt municipal bonds described in the previous section provide affordable borrowing costs for state and local governments accessing capital to finance the nation's infrastructure. While tax-exempt bonds represent the majority of the market, Congress has also established alternative, taxable municipal bond structures. These structures are designed to increase the federal subsidy available to the issuer, expand the market for the security or achieve both goals. One such structure is the **tax-credit bond**, which subsidizes the issuer's cost of borrowing by providing a tax credit to the investor in lieu of or in addition to providing taxable interest payments to the bondholder. "Qualified Zone Academy Bonds" to finance schools were the first tax-credit bond program established by Congress, but other examples are modeled on that program (see the glossary in Appendix A).

A **direct-pay bond** is a municipal security that entitles the issuer to receive a federal cash subsidy paid directly to the issuer of municipal securities in an amount that may be equal to a percentage of the interest paid on the municipal securities.

A second, more popular alternative municipal security structure is the **direct-pay bond**. These bonds pay taxable interest to investors, but the issuer is subsidized directly through a payment from the U.S. Treasury that offsets a portion of the interest the issuer pays to the investors, thereby lowering the issuer's borrowing costs. "Build America Bonds" (BABs), enacted under the American Recovery and Reinvestment Act of 2009, are the best-known example of direct-pay bonds. From the inception of the program in April 2009 to its expiration on December 31, 2010, 2,275 BABs were issued, providing more than $181 billion of financing for new public capital infrastructure projects.[19] Much like the market for corporate bonds, direct-pay bonds draw from a broad base of investors, including those that would not benefit from a tax exemption or tax credit, such as pension funds and foreign investors.

FIGURE 4: Build America Bonds Monthly Issuance, April 2009–December 2010



Source: MSRB, Bloomberg and Thomson Reuters

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Direct-pay bonds and tax-credit bonds give policymakers seeking to encourage priority investments the flexibility to statutorily establish a federal subsidy for qualified municipal issuers that is deeper than the subsidy available through the tax exemption for municipal bond interest. These federal programs typically are limited to specific purposes or time periods to target federal stimulus.

Although BABs and tax-credit bonds accounted for only approximately 13 percent of municipal issuance from 2009 through 2016, these bonds have inspired continued discussion among policymakers and market participants. Many of these tax-preferred programs have expired, but federal policymakers have considered resurrecting them on either a time-limited or volume-capped basis to provide state and local government issuers with the flexibility to choose traditional tax-exempt bonds, reach a wider pool of investors through direct-pay bonds or benefit from a deeper subsidy. Conversely, federal involvement and certain features associated with the programs can restrict issuers with respect to the types or timing of projects that can be financed. Moreover, since Congress can legislate to decrease the subsidy level of the programs, and Treasury can offset payments owed to issuers with other amounts that may be owed, such federally subsidized bond programs can inject a level of uncertainty over the delivery of promised federal incentives.

Considerations for Policymakers

As policymakers weigh tax reform and infrastructure-related legislation that may affect tax-exempt bonds or alternative structures, the following are factors that bear consideration:

- The tax exemption has been a key feature of municipal securities for over 100 years — since the inception of the nation's infrastructure development and the U.S. tax code. Proposals to prospectively limit the exemption by partially taxing municipal bond interest for high earners, have been considered under certain tax reform proposals that limit most deductions and exemptions for higher earners as a means of raising federal revenue.
- Municipal defaults and bankruptcies are extremely rare; according to data from Moody's Investors Service, the cumulative rate of default for all rated municipal securities was 0.14 percent from 1970–2014, while the cumulative corporate bond default rate was 11.58 percent.[20] While rare, defaults or bankruptcies can at times challenge the concept of a secure, "full faith and credit" backing for a general obligation municipal bond.[21]
- A discussion of underfunded public pension plans, which have contributed to fiscal stress for some state and local government budgets, is outside the scope of this primer. However, it should be noted that state and local laws, and judicial decisions in municipal defaults and bankruptcies can cause conflict between the rights of retirees entitled to public pension payments and investors who have purchased general obligation bonds from those state and local governments.[22]

Considerations for Policymakers *(continued)*

- The CBO and Congress's Joint Committee on Taxation (JCT) have considered tax-credit bonds and direct-pay bonds to be more efficient than tax-exempt bonds in delivering more of the intended federal subsidy to the municipal entity that issues the bonds.[23] To ensure adequate demand for tax-exempt bonds, a state or local government issuer must offer investors yields high enough to be attractive relative to other investment choices, such as taxable corporate bonds. From one policy perspective, the market price for the municipal bond should make investors indifferent between tax-exempt municipal bonds and comparable taxable corporate bonds. While there is debate about assumptions underlying their analyses, the CBO and JCT have stated that to generate sufficient demand for municipal bonds, investors in the highest income brackets may receive a "better-than-indifferent" price given that the market price for the bond is typically set by the investors in a lower tax bracket, resulting in an inefficient transfer of the federal subsidy. Stated differently, investors in tax-exempt bonds in the higher income tax brackets may effectively receive some of their subsidy from the state and local governments themselves, reducing the potency of the federal subsidy intended for those issuers.

- With tax-credit and direct-pay bonds, the CBO and JCT assert that the subsidy intended by the federal government as it forgoes tax revenue to provide the tax exemption can be allocated more fully to the state or local government issuer of the bond, either through a check directly from Treasury, such as in the case of BABs, or through a tax credit with a credit rate that is set in relationship to the credit rate for corporate taxable bonds.[24]

- Notwithstanding a theoretical efficiency analysis, certain risks have been experienced by users of both tax credit bond and direct-pay bond programs. Tax credit bonds have faced challenges in achieving acceptance from investors and issuers given their quantities were limited by volume caps, a lack of taxable income for some investors such that a tax-credit would not be a benefit, and a complex structure that has included having the Treasury Department estimate and set the tax-credit rate.

- The interest subsidy for direct-pay bond programs has been decreased versus what was initially promised by Congress due to across-the-board discretionary budget cuts under the Budget Control Act (BCA), known as "sequestration." These reductions have made some issuers and investors wary of future issuance or investment in such programs.

Federal Programs and Private Partnerships to Enhance Infrastructure

While most U.S. infrastructure is financed by municipal securities, policymakers have engaged in active discussions about supplementing the municipal securities market through federal incentives and greater private-sector participation in infrastructure investment. When it comes to enhancing the federal role, policymakers in Congress and the Administration have considered establishing a federal infrastructure bank, providing federal tax credits or enhancing current federal grant, loan and guarantee programs and policies to facilitate public-private partnerships.

A **federal infrastructure bank** is a concept for a bank that would be Congressionally chartered and capitalized to issue bonds, tax credits and loan guarantees for federally reviewed and selected projects, with the federal backing aimed at encouraging private investment.

With respect to current **federal loan and guarantee programs**, Congress has established the Transportation Infrastructure Finance & Innovation Act (TIFIA) to authorize the Department of Transportation (DOT) to provide loans, loan guarantees and lines of credit to states, localities, public authorities and private entities undertaking eligible transportation projects sponsored by public authorities. Similarly, the Railroad Rehabilitation and Improvement Financing program (RRIF) authorizes DOT to provide federal loans and loan guarantees to develop railroad infrastructure, and the Water Infrastructure Finance and Innovation Act (WIFIA) authorizes the Environmental Protection Agency to provide loans and loan guarantees for eligible water projects.

Public-private partnerships, or **P3s**, require no Congressional authorization; the term refers to a variety of alternative contractual arrangements for government infrastructure projects that transfer a degree of the risk associated with and control of a project to a private partner.[25] P3s are most popularly associated with transportation projects, but there are also examples in water and sewer, energy and housing. The structures can exist only in states with enabling legislation; currently, 33 states allow P3s.[26]

Expanding the use of P3s is a frequent discussion topic of U.S. policymakers, as it remains a sliver of the nation's infrastructure finance. From 1989 to 2013, 98 highway P3 projects were completed, equaling only 1.5 percent of approximately $4 trillion spent on highways during that period by all levels of government.[27] It is noteworthy that other nations lacking a municipal securities market as large and developed as the U.S. market have turned instead to P3s.

A popular P3 structure — Design-Build-Finance-Operate-Maintain — is one in which a private firm or consortium has a contract with a public entity and provides financing for a project, such as a highway; designs and builds it; and operates and maintains it over its useful life in return for tolls, availability payments[28] or other project revenues.[29] Another permutation among many relies upon public financing and a single contract with a private entity for design, construction, operation and maintenance (Design-Build-Operate-Maintain). In this publicly financed example, a share of the project financing can be provided through qualified private activity bonds, or through federal loan programs like TIFIA and WIFIA.

From 1989 to 2013, **98 highway P3 projects were completed**, equaling only **1.5 percent of approximately $4 trillion** spent on highways during that period by all levels of government.

Considerations for Policymakers

As policymakers discuss how to optimize various options for infrastructure finance, it is important to consider how private investment and innovation can integrate with public finance. There are inherent conflicts between preserving the federal tax exemption as an intended subsidy for public benefit, and incentivizing the investment of private equity. Given that tax-exempt bond proceeds must be used for primarily public purposes, there can be tax consequences or legal constraints when combining public and private sources of capital. To name just one example, for an infrastructure project financed with tax-exempt general obligation bonds that remain outstanding, there are ongoing limits on private business use. These limits would restrict that project's control and operation from being turned over to a private operator unless the tax-exempt bondholders are first fully repaid, potentially making the transfer uneconomical.

Federal tax law does provide a bridge between public and private financing to an extent via qualified private activity bonds and allowances for private business uses or specific purposes. Policymakers seeking to further liberalize the interface between private capital and municipal securities face some considerations, all of which must be weighed against the need of the U.S. Treasury to preserve appropriate tax revenue, apply the benefits of tax exemption to the public good and/or reform the tax code more generally. These considerations include the following:

- Qualified private activity bonds exist for many specified purposes, but those purposes could be broadened.
- State volume caps applicable to private activity bonds that create competing demands on a limited pool of resources could be raised or removed.
- Interest payments from qualified private activity bonds are subject to the AMT, and therefore are often costlier to issuers than tax-exempt bonds.
- Tax code restrictions on the use of private-sector leases or concessions for public assets previously financed with tax-exempt bonds, and limits on the use of private-sector operating and management agreements could be eased.[30]

Conclusion

As a critical debate is underway in Congress and the Administration about the best ways to finance and fund U.S. infrastructure, the municipal securities market continues to provide the largest share of capital investment with an annual average issuance of $430 billion. There are important considerations for policymakers seeking innovative solutions to help close the $2 trillion infrastructure gap. Such policy solutions must first look to optimize the municipal securities market as the foundation upon which additional federal and private involvement could be built. Progress in closing the infrastructure investment gap is possible with a fair and efficient municipal securities market. This sizeable, flexible market, comprising over 50,000 distinct state and local government issuers of municipal securities, is equipped to help meet this need at the state and local level. Other financing mechanisms, from public-private partnerships to infrastructure banks, can be important enhancements to this most fundamental building block for the nation's infrastructure. Increasing infrastructure investment relies upon a municipal securities market that works for investors, state and local government issuers, and the public interest.

ENDNOTES

1. American Society of Civil Engineers. 2017. 2017 Infrastructure Report Card, American Society of Civil Engineers. http://www.infrastructurereportcard.org/.
2. Congressional Budget Office. May 16, 2008. Issues and Options in Infrastructure Investment. https://www.cbo.gov/publication/19633. 3
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5. Congressional Budget Office. March 2015. Public Spending on Transportation and Water Infrastructure, 1956 to 2014. https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/49910-infrastructure.pdf. 1
6. Congressional Budget Office. May 16, 2008. Issues and Options in Infrastructure Investment. https://www.cbo.gov/publication/19633. 3
7. Congressional Budget Office. March 2015. Public Spending on Transportation and Water Infrastructure, 1956 to 2014. https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/49910-infrastructure.pdf. 11
8. Marlowe, Justin. August 2015. "Municipal Bonds and Infrastructure Development – Past, Present and Future". An International City/County Management Association and Government Finance Officers Association White Paper.
9. 50,000 is an estimate. Bloomberg tracks the number of issuers with outstanding debt, which was 38,600 as of June 20, 2017. This figure does not account for issuers who have previously issued debt and retired that debt. According to the U.S. Census Bureau, there were 90,107 local governments in 2012. These governments could issue municipal debt, but not all do.
10. MSRB, Thomson Reuters. 2016.
11. A bond's maturity is the date the principal becomes due and payable to the bondholder. Some bonds are "callable," meaning the issuer is permitted to redeem the bond before the stated maturity at a specified price, usually at or above par, by giving notice of redemption in a manner specified in the bond contract.

[12] State and local government taxation of interest income on municipal securities is determined by individual state laws. The specific provisions and conditions of such exemption vary from state to state, and not all states provide an exemption and many states provide residents with a state income tax exemption for municipal securities issued by the state but not for securities issued out-of-state.

[13] Spiotto, James E. February 2013. The Renewed Battle over Tax Exemption of Interest on State and Local Government Debt Obligations. Government Finance Officers Association. http://www.gfoa.org/sites/default/files/GFR_FEB_13_24.pdf.

[14] Tax Policy Center. 2017. What are municipal bonds and how are they used? http://www.taxpolicycenter.org/briefing-book/what-are-municipal-bonds-and-how-are-they-used.

[15] Congressional Budget Office. August 1, 2007. Trends in Public Spending on Transportation and Water Infrastructure, 1956 to 2004. https://www.cbo.gov/publication/19032. 15

[16] A PAB is a bond issue of which more than 10 percent of the proceeds is used for any private business use, and more than 10 percent of the payment of the principal or interest is either secured by an interest in property to be used for private business use (or payment for such property), or is derived from payments for property (or borrowed money) used for a private business use. A bond is also considered a private activity bond if the amount of the proceeds used to make or finance loans (other than loans described in IRC section 141(c)(2)) to persons other than governmental units exceeds the lesser of 5 percent of the proceeds or $5 million.

[17] Congressional Budget Office. August 1, 2007. Trends in Public Spending on Transportation and Water Infrastructure, 1956 to 2004. https://www.cbo.gov/publication/19032. 15

[18] Generalists often refer to private activity bonds as financing infrastructure, but technically, it is qualified, or tax-exempt, private activity bonds that are being issued as state and local governments and beneficiaries seek to avoid issuing such bonds on a taxable basis with more expensive borrowing costs.

[19] U.S. Treasury Department. May 16, 2011. Treasury Analysis of Build America Bonds Issuance and Savings. https://www.treasury.gov/initiatives/recovery/Documents/BABs%20Report.pdf. 2

[20] US Municipal Bond Defaults and Recoveries, 1970 – 2014, Moody's Investors Service, (July 24, 2015), https://www.moodys.com/research/Moodys-No-US-municipal-defaults-in-2014-but-credit-quality--PR_330818. Exhibit 13.

[21] Out of over 80,000 municipal entities that may be authorized to file (state laws vary on the availability of municipal bankruptcy, known as "Chapter 9" of the U.S. Bankruptcy Code) – only 666 have filed from Chapter 9's enactment in 1937, through July 31, 2016. (Spiotto, James E., Acker, Anne E., Appleby, Laura E. "Municipalities in Distress? How States and Investors Deal with Local Government Financial Emergencies". Chapman and Cutler LLP (2016)).

[22] Spiotto, James E., Acker, Anne E., Appleby, Laura E. "Municipalities in Distress? How States and Investors Deal with Local Government Financial Emergencies". Chapman and Cutler LLP (2016).

[23] Congressional Budget Office. March 2011. Reducing the Deficit: Spending and Revenue Options. https://www.cbo.gov/sites/default/files/112th-congress-2011-2012/reports/03-10-reducingthedeficit.pdf. 163

[24] A Joint Congressional Budget Office/Joint Committee on Taxation Study. October 2009. Subsidizing Infrastructure Investment with Tax-Preferred Bonds. https://www.cbo.gov/sites/default/files/111th-congress-2009-2010/reports/10-26-taxpreferredbonds.pdf. 13

[25] Congressional Budget Office. January 2012. Using Public-Private Partnerships to Carry Out Highway Projects. https://www.cbo.gov/sites/default/files/112th-congress-2011-2012/reports/01-09-PublicPrivatePartnerships.pdf. viii

[26] Bipartisan Policy Center. May 2016. Bridging the Gap Together: A New Model to Modernize U.S. Infrastructure. https://cdn.bipartisanpolicy.org/wp-content/uploads/2016/05/BPC-New-Infrastructure-Model.pdf. 40

[27] Panel on Public-Private Partnerships, U.S. House of Representatives Transportation and Infrastructure Committee. September 17, 2014. Public Private Partnerships: Balancing the needs of the public and private sectors to finance the nation's infrastructure. https://transportation.house.gov/uploadedfiles/p3_panel_report.pdf. 23

[28] A private entity or "concessionaire" receives a payment from the public partner based on the public availability of the facility at a specified performance level.

[29] U.S. Department of Transportation. March 2016. Successful Practices for P3s: A review of what works when delivering transportation via public-private partnerships. https://www.transportation.gov/sites/dot.gov/files/docs/P3_Successful_Practices_Final_BAH.PDF. 1

[30] U.S. Department of Treasury and U.S. Department of Transportation. January 16, 2015. Recommendations of the Build America Investment Initiative Interagency Working Group. https://www.treasury.gov/resource-center/economic-policy/Documents/Build%20America%20Recommendation%20Report%201-15-15%20FOR%20PUBLICATION.pdf. 10

Appendix A: Glossary of Terms

The following is an abridged glossary of key municipal securities market terminology. Access the full glossary of municipal securities terms on the MSRB's website in its online Education Center.

AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA) – A federal law that, among other things, authorized the issuance of Build America Bonds and certain other municipal securities, through December 31, 2010, as taxable tax-credit bonds or direct pay subsidy bonds. The Act also temporarily expanded the scope of bonds that could be issued as bank qualified bonds.

BANK QUALIFIED (BQ) – Designation given to a public purpose bond offering by the issuer if it reasonably expects to issue in the calendar year of such offering no more than $10 million ($30 million for bonds issued in 2009-2010) of bonds of the type required to be included in making such calculation under the Internal Revenue Code. When purchased by a commercial bank for its portfolio, the bank may deduct a portion of the interest cost of carry for the position. A bond that is bank qualified is also known as a "qualified tax-exempt obligation."

BOND BANK – Agency or instrumentality created in certain states to buy issues of bonds directly from municipalities or other local governmental entities. The purchases are financed by the issuance of bonds by the bond bank. Bond banks frequently provide low-cost financing for local governments.

CONDUIT FINANCING – The issuance of municipal securities by a governmental unit (referred to as the "issuer" or "conduit issuer") to finance a project to be used primarily by a third party, which may be a for-profit entity engaged in private enterprise, a 501(c)(3) organization, or another governmental entity (referred to as the "conduit borrower"). In a conduit financing, the conduit borrower is liable for making debt service payments on the bonds. Industrial development bonds, multi-family housing revenue bonds and qualified 501(c)(3) bonds are common types of conduit financings.

TAX-PREFERRED BOND – A municipal security, such as a direct pay subsidy bond or tax credit bond, wherein the issuer or the bondholder receives a subsidy through a mechanism other than a tax exemption.

DIRECT PAY SUBSIDY BOND – A municipal security that entitles the issuer to receive a federal cash subsidy paid directly to the issuer of municipal securities in an amount that may be equal to a percentage of the interest paid on the municipal securities. Such subsidy is typically provided in lieu of the exemption from gross income for federal income tax purposes of the bondholders of such municipal securities. The following programs include a direct-pay feature:

- **BUILD AMERICA BONDS (BABs) –** Taxable municipal securities issued through December 31, 2010 under the American Recovery and Reinvestment Act of 2009 (ARRA). BABs may be direct pay subsidy bonds or tax credit bonds.
- **NEW CLEAN RENEWABLE ENERGY BONDS (NEW CREBs) –** Bonds issued to finance renewable energy projects such as solar, wind and geothermal, among others. In contrast to the original CREBs, at the election of the issuer, the issuer is entitled to receive a direct pay subsidy or the bondholders are entitled to receive federal tax credits. There are also differences between original CREBs and new CREBs with respect to the financing of projects and the level of tax credits.
- **RECOVERY ZONE ECONOMIC DEVELOPMENT BONDS (RZEDBs) –** A category of taxable Build America Bonds to fund infrastructure and facility improvement in areas of significant unemployment and poverty. RZEDBs are direct pay subsidy bonds that provide a higher subsidy rate than other direct pay subsidy BABs.

TAX CREDIT BONDS – Municipal securities that entitle the bondholder to receive, in lieu of interest payments, a credit against federal income tax. The following programs are categorized as tax credit bonds:

- **CLEAN RENEWABLE ENERGY BONDS (CREBs) –** Bonds issued to finance certain types of renewable energy projects such as solar, wind and geothermal. These bonds provide the bondholder with a federal tax credit in lieu of payment of interest.
- **QUALIFIED ENERGY CONSERVATION BOND (QECBs) –** Bonds issued to finance energy conservation projects. At the election of the issuer, the issuer is entitled to receive a direct pay subsidy or the bondholders are entitled to receive a federal tax credit in lieu of interest.
- **QUALIFIED TAX CREDIT BONDS –** Certain categories of tax credit bonds that must meet the applicable qualified tax credit bond requirements set out in the Internal Revenue Code.
- **QUALIFIED SCHOOL CONSTRUCTION BOND (QSCBs) –** Bond issuance authorized under American Recovery and Reinvestment Act of 2009 for capital improvements and/or the acquisition of land at K-12 schools. At the election of the issuer, the issuer is entitled to receive a direct pay subsidy or the bondholders are entitled to receive a federal tax credit in lieu of interest.
- **QUALIFIED ZONE ACADEMY BONDS (QZAB) –** Municipal securities issued to finance projects for certain eligible public schools in conjunction with private business contributions. At the election of the issuer, the issuer is entitled to receive a direct pay subsidy or the bondholders are entitled to receive a federal tax credit in lieu of interest.

ELECTRONIC MUNICIPAL MARKET ACCESS (EMMA®) SYSTEM – A centralized online source for free access to municipal disclosures, market transparency data and educational materials about the municipal securities market operated by the MSRB. EMMA serves as the official source for official statements and other primary market disclosure documents for new issues of municipal securities as well as the official source for continuing disclosures for outstanding issues of municipal securities for which the issuer or obligated person has entered into a continuing disclosure agreement as contemplated under SEC Rule 15c2-12.

GENERAL OBLIGATION BOND OR GO BOND – Typically refers to a bond issued by a state or local government that is payable from general funds of the issuer, although the precise source and priority of payment for general obligation bonds may vary considerably from issuer to issuer depending on applicable state or local law. Most general obligation bonds are said to entail the full faith and credit (and in many cases the taxing power) of the issuer, depending on applicable state or local law. General obligation bonds issued by local units of government often are payable from (and in some cases solely from) the issuer's ad valorem taxes, while general obligation bonds issued by states often are payable from appropriations made by the state legislature. Subcategories include:

- **LIMITED TAX BOND –** A bond secured by a specific tax or category of taxes, or a specific portion of any such taxes.
- **LIMITED TAX GENERAL OBLIGATION BOND –** A general obligation bond payable from ad valorem taxes that are limited by law in rate or amount.
- **UNLIMITED TAX BOND –** A bond payable from ad valorem taxes that are not limited by law in rate or amount.

HOUSING REVENUE BOND – A bond issued to finance multi-family housing projects or single-family home mortgages secured by the payment of the underlying mortgage loans. Subcategories include:

- **SINGLE FAMILY MORTGAGE REVENUE BONDS –** Bonds issued to finance mortgage loans on single-family homes, either directly by purchasing newly originated or existing mortgage loans or indirectly by allowing lenders to purchase mortgage loans using bond proceeds. Such mortgage loans generally are targeted to first-time homeowners meeting certain income and purchase price requirements. Repayment of the mortgages may be further secured by federal programs or through private mortgage insurance.
- **MULTI-FAMILY HOUSING REVENUE BONDS –** Bonds issued to finance construction or rehabilitation of multi-family housing projects where a specified proportion of the units will be rented to moderate- and low-income families, in some cases specifically targeted toward elderly residents. These securities may provide financing either directly or through a

loans-to-lenders program, and may be secured, in whole or in part, by federal agency guarantees or subsidies.

INFRASTRUCTURE BANK – A bank at the federal or state level that would select construction projects for funding based upon criteria and provide financing for the projects through loans, loan guarantees or other subsidies.

STATE INFRASTRUCTURE BANK – State Infrastructure Banks are revolving infrastructure investment funds for surface transportation that are established and administered by states, offering a range of loans and credit assistance enhancement products to public and private sponsors of highway construction projects, transit capital projects and railroad projects.

MUNICIPAL SECURITY – A general term referring to a bond, note, warrant, certificate of participation or other obligation issued by a state or local government or their agencies or authorities (such as cities, towns, villages, counties or special districts or authorities). A prime feature of most municipal securities is that interest or other investment earnings on them are generally excluded from gross income of the bondholder for federal income tax purposes. Some municipal securities are subject to federal income tax, although the issuers or bondholders may receive other federal tax advantages for certain types of taxable municipal securities. Some examples include Build America Bonds, municipal fund securities and direct pay subsidy bonds.

MUNICIPAL FUND SECURITY – A municipal security that, but for section 2(b) of the Investment Company Act of 1940, would constitute an investment company. Municipal fund securities generally have features similar to mutual funds or "fund of funds" and are not fixed income securities. Interests in local government investment pools, 529 college savings plans and ABLE programs are examples of municipal fund securities:

- **LOCAL GOVERNMENT INVESTMENT POOL (LGIP) –** An investment pool established by a state or local governmental entity or instrumentality that serves as a vehicle for investing public funds of participating governmental units. Participants purchase shares or units in the pool (often formed as a trust), and assets are invested in a manner consistent with the portfolio's stated investment objectives. The investment adviser invests in a manner consistent with the cash management needs of the governmental unit participants.

- **529 COLLEGE SAVINGS PLAN –** A program, sometimes referred to as a "college savings plan," established by a state as a "qualified tuition program" pursuant to Section 529 of the Internal Revenue Code. Under a 529 college savings plan, a person may make contributions to an account established for the purpose of meeting the qualified higher education expenses of the designated beneficiary of the account. Contributions generally are used to acquire shares or units in a state trust, with trust assets invested in a manner consistent with the trust's stated investment objectives. Shares or units typically constitute municipal fund securities. Under current federal tax law, earnings from a 529 college savings plan used for qualified higher education expenses of the designated beneficiary are excluded from gross income for federal income tax purposes.

- **ACHIEVING A BETTER LIFE EXPERIENCE (ABLE) PROGRAM –** A program established by states to provide opportunities for federally tax-advantaged savings for individuals with disabilities and their families. Section 529A of the Internal Revenue Code allows a state (or state agency or instrumentality) to establish and maintain a tax-advantaged savings program under which contributions may be made to an account for the purpose of providing for the qualified disability expenses of a designated beneficiary. In general, neither the ABLE account nor distributions from the account are treated as income or resources of a designated beneficiary. The undistributed income earned in an ABLE account is not taxable and distributions made from an ABLE account for qualified disability expenses of the designated beneficiary are not included in the designated beneficiary's gross income for federal income tax purposes. However, the earnings portion of account distributions in excess of qualified disability expenses generally is includible in the gross income of the designated beneficiary.

NOTE – A short-term obligation of an issuer to repay a specified principal amount on a certain date, together with interest at a stated rate, usually payable from a defined source of anticipated revenues. Notes usually mature in one year or less, although notes of longer maturities are also issued. The following types of notes are common in the municipal market:

- **BOND ANTICIPATION NOTES (BANs) –** Notes issued by a governmental unit, usually for capital projects, that are repaid from the proceeds of the issuance of long-term bonds.
- **COMMERCIAL PAPER (CP) –** Short-term obligations issued by municipal entities usually backed by a line of credit with a bank that mature within 270 days. The issuer typically pays maturing principal of outstanding commercial paper with newly issued commercial paper, referred to as a "roll over," thereby borrowing funds on a short-term basis for an extended period of time. Rate reset periods may vary from one to 270 days and different portions of a single issue of commercial paper may simultaneously have different reset periods.
- **CONSTRUCTION LOAN NOTES (CLNs) –** Notes issued to fund construction of projects (typically housing projects). CLNs are repaid by the permanent financing, which may be provided from bond proceeds or some pre-arranged commitment.
- **GRANT ANTICIPATION NOTES (GANs) –** Notes issued on the expectation of receiving grant funds, usually from the federal government. The notes are payable from the grant funds, when received.
- **REVENUE ANTICIPATION NOTES (RANs) –** Notes issued in anticipation of receiving revenues at a future date.
- **TAX ANTICIPATION NOTES (TANs) –** Notes issued in anticipation of future tax receipts, such as receipts of ad valorem taxes that are due and payable at a set time of year.
- **TAX AND REVENUE ANTICIPATION NOTES (TRANs) –** Notes issued in anticipation of receiving future tax receipts and revenues at a future date.

PENSION OBLIGATION BOND – Bonds issued by a state or local government to finance an unfunded pension liability of the entity.

PRIVATE ACTIVITY BOND (PAB) – A municipal security of which the proceeds are used by one or more private entities. A municipal security is considered a private activity bond if it meets two sets of conditions set out in Section 141 of the Internal Revenue Code. A municipal security is a private activity bond if, with certain exceptions, more than 10 percent of the proceeds of the issue are used for any private business use (the "private business use test") and the payment of the principal of or interest on more than 10 percent of the proceeds of such issue is secured by or payable from property used for a private business use (the "private security or payment test"). A municipal security also is a private activity bond if, with certain exceptions, the amount of proceeds of the issue used to make loans to nongovernmental borrowers exceeds the lesser of 5 percent of the proceeds or $5 million (the "private loan financing test"). Interest on private activity bonds is not excluded from gross income for federal income tax purposes unless the bonds fall within certain defined categories ("qualified bonds" or "qualified private activity bonds"), as described below. Most categories of qualified private activity bonds are subject to the alternative minimum tax. The following categories of private activity bonds are qualified bonds under current federal tax laws:

- **ENTERPRISE ZONE (EZ) BOND –** A private activity bond issued to provide financing for projects (including certain commercial private activity bonds that could not otherwise be issued on a tax-exempt basis) located in federally-designated empowerment zones and enterprise communities. Issuers must meet specific ownership and employment targets relating to residents of the zone or community.
- **EXEMPT FACILITY BONDS –** Private activity bonds issued to finance various types of facilities owned or used by private entities, including airports, docks and certain other transportation-related facilities; water, sewer and certain other local utility facilities; solid and hazardous waste disposal facilities; certain residential rental projects (including multi-family housing revenue bonds); and certain other types of facilities. Enterprise zone and recovery zone facility bonds are also considered exempt facility bonds.
- **INDUSTRIAL DEVELOPMENT BOND (IDB) –** A private activity bond issued by state and local governments on behalf of non-governmental corporations and businesses.

- **QUALIFIED 501(c)(3) BONDS –** Private activity bonds issued to finance a facility owned and utilized by a 501(c)(3) organization. Qualified 501(c)(3) bonds are not subject to the federal alternative minimum tax.
- **QUALIFIED MORTGAGE BONDS –** Private activity bonds issued to fund mortgage loans to finance owner-occupied residential property. Qualified mortgage bonds are often referred to as single family mortgage revenue bonds.
- **QUALIFIED REDEVELOPMENT BONDS –** Private activity bonds issued to finance certain acquisition, clearance, rehabilitation and relocation activities for redevelopment purposes by a governmental entity in designated blighted areas. Qualified redevelopment bonds are payable from general taxes or from tax increment revenues.
- **QUALIFIED SMALL ISSUE BONDS –** Private activity bonds issued to finance manufacturing facilities. Qualified small issue bonds may be issued on a tax-exempt basis in an amount up to $1 million, taking into account certain prior issues, or an amount up to $10 million, taking into account certain capital expenditures incurred during the three years prior and the three years following the issuance of such bonds.
- **QUALIFIED STUDENT LOAN BONDS –** Private activity bonds issued to finance student loans for attendance at higher education institutions.
- **QUALIFIED VETERANS' MORTGAGE BONDs –** Private activity bonds that are general obligations of a state issued to fund mortgage loans to finance owner-occupied residential property for veterans. The ability of states to issue new and refunding qualified veterans' mortgage bonds on a tax-exempt basis is limited.
- **RECOVERY ZONE FACILITY BONDS (RZFBs) –** Tax-exempt private activity bonds issued through December 31, 2010 under the American Recovery and Reinvestment Act (ARRA) enacted in 2009 to make available certain tax benefits to financings in recovery zones.

PUBLIC PRIVATE PARTNERSHIPS (P3s) – A generic term for a wide variety of financial arrangements whereby governmental and private entities agree to transfer an ownership interest of, or substantial management control over, a governmental asset to the private entity in exchange for upfront or ongoing payments.

REFUNDING – A procedure whereby an issuer refinances outstanding bonds by issuing new bonds. There are generally two major reasons for refunding: to reduce the issuer's interest costs or to remove a burdensome or restrictive covenant imposed by the terms of the bonds being refinanced. The proceeds of the new bonds are either deposited in escrow to pay the debt service on the outstanding bonds when due in an "advance refunding" or used to promptly (typically within 90 days) retire the outstanding bonds in a "current refunding." The new bonds are referred to as the "refunding bonds," and the outstanding bonds being refinanced are referred to as the "refunded bonds" or the "prior issue." Generally, refunded bonds are not considered a part of the issuer's debt because the lien of the holders of the refunded bonds, in the first instance, is on the escrowed funds, not on the originally pledged source of revenues.

REVENUE BOND – A bond that is payable from a specific source of revenue. Pledged revenues may be derived from operation of the financed project, grants, or excise or other specified non-ad-valorem taxes. Generally, no voter approval is required prior to issuance of such obligations. Only the revenue specified in the bond contract is required to be used for repayment of interest and principal.

ABOUT THE MSRB

The MSRB protects investors, state and local governments and other municipal entities, and the public interest by promoting a fair and efficient municipal securities market. The MSRB fulfills this mission by regulating the municipal securities firms, banks and municipal advisors that engage in municipal securities and advisory activities. To further protect market participants, the MSRB provides market transparency through its Electronic Municipal Market Access (EMMA®) website, the official repository for information on all municipal bonds. The MSRB also serves as an objective resource on the municipal market, conducts extensive education and outreach to market stakeholders, and provides market leadership on key issues. The MSRB is a Congressionally-chartered, self-regulatory organization governed by a 21-member board of directors that has a majority of public members, in addition to representatives of regulated entities. The MSRB is subject to oversight by the Securities and Exchange Commission.

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