1. Introduction to *State and Local Financial Instruments*

Why is understanding the financial instruments sold by state and local governments in the United States of America important?

At the time of writing the first edition of *State and Local Financial Instruments*, the municipal market had just gone through the 2007–2009 Financial Crisis and Great Recession, which tested financial institutions and markets like nothing else since the depression of the 1920s and 1930s, changing them in fundamental ways. The municipal securities market and its institutions were no exception. The municipal market was placed under extreme stress and several of its practices and institutions did not stand up to the challenge. We argued that the municipal market was a changed market, and our understanding of the market had to evolve as well.

Now, we are writing the second edition in 2020 in the middle of the COVID-19 pandemic and social justice protests. The municipal securities market, state and local government finances, indeed the entire nation and world, are changing at a rapid pace. It is within these uncertain, turbulent, and unprecedented times that we offer our take on the policy and management of state and local financial instruments.

The scope of this book remains the market that state and local (subnational)¹ governments in the United States have used to meet their capital needs since the seventeenth century (Johnson and Rubin, 1998). The municipal market is essential to the well-being of American society; it has been and will remain strong. But during the COVID-19 pandemic, certain fissures occurred in the market, calling into question its durability. Our book discusses these fissures and how the market can mitigate them from fracturing the very foundation of the market. Our book provides an analytical treatment of the essentials of the market.

The first edition of our book contributed to the understanding of the municipal securities market in the post-Financial Crisis era. The second edition does the same for the beginning of the COVID-19 pandemic era. The focus of the book is subnational debt issuers and their constituents. The aim of the book is to assist scholars and students, policymakers and practitioners, develop policies and implement practices that help the municipal securities market serve its vital role in society. Throughout the book, we stress the importance

of understanding how the role and function of the municipal market operates alongside the unique structure of American fiscal federalism. It has become almost customary to refer to American state governments as “fiscal sovereigns”. While we recognize and appreciate the constitutional undergirding providing states with the “right” of fiscal independence from the United States federal government, we also focus on the “responsibilities” that states have regarding their own fiscal affairs and that of the local governments they create.

Moreover, fiscal federalism lies at the heart of the ability of subnational governments to maintain access to the market for capital at reasonable prices in a free market system, where economic resources are allocated by private decision makers, not coerced from, or by, a higher level of government. In the current world of federal fiscal and monetary involvement in state and local affairs, a basic fiscal federalism question must be asked: what is the role of the federal (central) government in the financial market of state and local (decentralized) debt issuers?

This question takes on more urgency given the Federal Reserve’s unprecedented, direct financial assistance to certain state and local governments in response to the COVID-19 pandemic. Our perspective on this question is that state–local capital financing decision making is more likely to optimize social welfare than centralized decision making. We follow the view articulated by Oates (2005, p. 351): “an outcome with local outputs tailored to the demands (and particular conditions) of each jurisdiction will clearly provide a higher level of social welfare than one in which a central government provides a single, uniform level of public output in all jurisdictions.”

Subnational governments should have the fiscal freedom to finance the particular capital needs of their constituents without undue federal interference. Otherwise, local capital output will provide a level of social welfare that may be less than optimal. For many generations the municipal market flourished largely as a decentralized market left to its own devices. Federal laws governing the market started to change with the Revenue and Control Act of 1968 (Public Law 90-364). Since then, the federal government has passed a series of municipal market reform laws, the most pivotal being the Tax Reform Act of 1986 (Public Law 99-514), designed to limit the federal tax expenditure and regulate the intermediaries that provide services to municipal issuers.

More recently, problems leading up to and during the Financial Crisis led federal authorities to investigate any segment of the market that remained unregulated and opaque. Structural changes in the federal income tax base and marginal tax rates, along with the elimination of tax-exempt advanced refunding in the 2017 Tax Cuts and Jobs Act, is a reminder of just how exposed state and local debt finance is to federal fiscal policy changes. We do, however, recognize and appreciate the essential roles played by national fiscal and monetary authorities working together in times of severe economic

distress and financial market turmoil to support liquidity and price stability in the municipal securities market.

Our book is intended to help inform current public policy debates on the future of municipal issuers, intermediaries, and regulation. Our approach utilizes modern financial economics and is a part of those ideas and methodologies described by Oates (2005) as the “second-generation theory of fiscal federalism”. We use modern financial economics, information economics, public choice, principal-agent, and network theories to analyze how the market operates, how the market should operate, the role and practice of financial intermediaries, and the appropriate level and type of state-local and federal-subnational regulation. The book will help policymakers, public administrators, and practitioners make informed decisions during the pandemic era and beyond.

1. OVERVIEW OF THE MUNICIPAL SECURITIES MARKET

In the American federalist system, much of the responsibility for building, operating, and maintaining the nation’s basic physical infrastructure (roads, bridges, airports, educational, and health facilities, etc.) rests with state and local (municipal) governments and their public benefit organizations. General governments, along with special districts, public authorities, non-profit organizations, and other public-purpose entities have a demand for funds to finance the primary capital facilities the nation needs for the economy to run and society to function.

Yet the supply of available funds for the physical infrastructure provided by municipal governments has always been limited. Unlike the federal government, subnational governments cannot print money. They also have no constitutional right to share in federal revenues or to require the federal government to meet their capital financing needs. While municipal governments do receive funds from the federal government in the form of inter-governmental grants and loans, such funds do not, nor are they intended to, fulfill the basic capital financing needs of subnational governments. Prudent debt issuance and management practices are required for state and local governments to meet the capital needs of their citizens at reasonable cost.

In 2020 the total amount of state and local outstanding debt is substantial at \$3.097 trillion (Board of Governors of the Federal Reserve System, 2020). Local debt comprises 62 percent of all state and local debt.² City and county general governments account for 56 percent of local debt.³ Local governments include a diverse array of governmental units, townships, school districts, and special districts, which are responsible for issuing and repaying a large amount of debt issued in the municipal securities market. School districts and

special districts account for 41 percent of local debt. Overtime, the share of school district and special district debt has increased slightly, while the share of township debt declined.

Subnational governments must raise money for most of their capital projects from private sector funds. The private suppliers of financial capital, which are mostly households, mutual funds, commercial banks, and property and casualty insurance companies, must agree to supply the government with funds in the form of a loan contract or a bond. They are not legally required to buy government debt obligations. Subnational governments must compete in the marketplace with other investments for a share of investor funds. This means that, in order to meet their constituents' capital needs, state and local government officials must work to put their government in a position to obtain sufficient funds at lowest cost.

Moreover, subnational governments must operate within the legal constraints imposed by fiscal rules and institutions such as balanced budget requirements, revenue and expenditure limitations, and debt requirements and limitations. This book is written to help issuers meet the needs of their constituents within a constrained financial and legal environment.

The municipal market, also referred to fondly as the “muni” market or more matter of factly as the “tax-exempt” market (since interest payments on most debt instruments sold in the market are not subject to income taxation), is not typically viewed as a leader in financial innovations. But its transformation over the years demonstrates both financial and political ingenuity. Funds flow into the municipal market through credits made directly by large institutions and individuals or indirectly through money market and mutual funds. These funds finance facilities that are used in everyday activities: government buildings, convention centers, schools, roads, bridges, airports, hospitals, water and wastewater treatment facilities, and many other uses.

While sharing the basic characteristics of any modern fixed income market, the “muni” market, however, is different from other markets in more than just name. The “muni” market has developed uniquely because of the nature of the US federalist system, which gave birth to it and helped develop the institutional arrangements and practices that support it to this day. The unique nature of the municipal securities market has spawned institutional arrangements and practices that, while not always economically efficient, did and do enable state and local governments to raise significant capital in a timely manner at an affordable price.

The soundness of the municipal securities market comes from the strength of the federalist system that created it. State governments in the United States of America are not merely fiscal “creatures” of the national government. As each state has its own power to raise revenue, spend money, and borrow and take on debt, all are viewed as fiscal sovereigns. Moreover, the fiscal federal-

ism relationship also covers the relationship between state governments and their local governments. Local governments are created by their state governments, and they are fiscally constrained by state laws. State governments have fiscal control over their local governments, including control over debt finance. Mikesell (2018, 39) puts it this way: “In state–local relationships, state government holds all powers. That is a critical limitation on local government fiscal activity.” He notes that some states have conferred home-rule powers on certain local governments, but such empowered local governments are often constrained by the state government in their fiscal activities.

The nature of the states’ fiscal sovereignty extends to the centuries-old hands-off posture of the federal government when it comes to directly regulating municipal debt issuers. While the federalist system has created a secure municipal bond, it has also produced a disjointed regulatory framework for municipal bond issuers and the intermediaries that are their primary financial service providers: underwriters, municipal advisors, rating agencies, and bond insurers. Strengthening the federal regulation of financial service providers has been the impetus behind many important legislative initiatives, including the 2010 Dodd–Frank Wall Street Reform and the Consumer Protection Act (Public Law 111-203).

Debt obligations are large, long-term, expensive contractual obligations. The willingness and ability of any government to meet its debt obligations is tested during times of financial crises and economic distress. Many state and local governments currently find themselves in deep financial trouble partly as a hangover effect from fiscal shocks of the 2007–2009 Financial Crisis and Great Recession, and the initial impact of the COVID-19 pandemic in 2020. However, some governments are in financial trouble because of the poor decisions they made, and continue to make, regarding their debt obligations. Financial and economic turmoil merely lays bare the inherent weaknesses of several financial management practices that state and local governments use (Bifulco et al., 2012). In order to mitigate the impacts of economic and policy shocks on subnational governments and to guard finances from poor financial decisions, it is critical to have a solid understanding of the municipal securities market, its instruments and practices, and the roles of financial intermediaries and regulation.

2. THE BASIC CHARACTERISTICS OF MUNICIPAL FINANCIAL INSTRUMENTS

Debt securities are financial instruments that represent a pledge to fulfill a contractual obligation: the borrower promises to repay to the lender the amount borrowed plus interest over some specified period of time. A municipal debt instrument is a financial instrument that is sold and bought on the municipal

securities market. Municipal debt represents a financial asset that is designed to produce funds to support the production of real goods and services (roads, bridges, buildings, etc.).

Municipal debt is commonly sold in denominations of \$5,000. This is the principal value, also known as the face or par value, which is to be repaid to debtholders on the maturity date. Debt instruments selling above the face or par value are selling at a premium; debt selling below par value is priced at a discount. Traditionally, most municipal debt consists of long-term bonds that pay interest at a fixed coupon interest rate. We continue our discussion by describing municipal securities in terms of maturity, coupon interest rate, and security.

3. TERM-TO-MATURITY

The term-to-maturity represents the life of the security, and the amount of time before the principal amount becomes due. State and local governments issue both long- and short-term securities. In 2019, the maturity mix of debt in the market is approximately 90 percent long term and 10 percent short term, but that was not always the case. From 1969 to 1975, 50 percent or more of the annual issuance was short term. This was a period of historically high interest rates and high inflation, and it preceded the use of variable rate and derivative securities. Short-term issuance peaked at 55 percent in 1974 and dropped to 8 percent in 1985. It increased to 19 percent in 2011, following the Financial Crisis, but dropped to an all-time low of 7.5 percent in 2016.

3.1 Short-Term Notes

Traditional short-term debt instruments, or notes, have a stated maturity of 13 months or less, often have a fixed interest rate, and are usually issued to meet cash flow needs in anticipation of future revenues. Short-term notes are defined by the source of funds used to repay the obligation at maturity and can be divided into two major categories based on the general purpose for which they are issued: (1) to smooth cash flows; and (2) to provide temporary or bridge financing.

Notes are named after the revenue source(s) the issuer expects to receive in the future to repay the notes, which include tax anticipation notes (TANS), revenue anticipation notes (RANS), tax and revenue anticipation notes (TRANS), and grant anticipation notes (GANS). GANS and bond anticipation notes (BANS) may be issued as a form of bridge financing for construction projects. Notes are referred to as GONS when they are backed by the general obligation of the issuer rather than a specific source of revenue.

Also, a recent innovation in the market is the floating rate note (FRN). FRNs are often sold directly to money market funds and are variable rate notes that pay a floating rate at a spread to the Securities Industry and Financial Markets Association (SIFMA) Index, or another broadly accepted short-term interest rate. The benefit of FRNs is that they are not expected to have to rely on secondary market demand for liquidity, and thus, do not require a liquidity facility or a remarketing agent (Wallace, 2011).

3.2 Commercial Paper Programs

Municipalities also issue commercial paper (CP) to meet short-term working capital or interim financing needs. CP is an unsecured short-to-intermediate-term promissory note that may contain a wide variety of interest rates and maturities of 270 days or less. Tax-exempt commercial paper programs are run by remarketing agents that structure the interest rates and maturities of the CP program to meet the specific cash flow needs of investors. Despite being sold mostly by highly rated issuers, CP issuers commonly purchase a bank letter of credit (LOC) or a revolving line of credit to provide enhanced liquidity protection against potential cash flow problems.

3.3 Long-Term Debt

Long-term debt instruments, or bonds, have maturities greater than 13 months and are most often sold to finance capital improvements, although they may also be sold to augment the operating positions of state and local governments. The sale of long-term bonds to finance short-term operating problems is not viewed as a prudent use of debt financing. While it may seem like an immediate solution by state and local government officials faced with an operating budget deficit, it is likely to lead to more and greater problems in the future.

4. THE INTEREST RATE: FIXED RATE DEBT

Most bonds pay interest at a fixed coupon interest rate. While the bond is outstanding, borrowers make semi-annual payments of coupon interest (the rate stated on the face of the bond) at a specified percentage of the face value (for example, a 5 percent interest rate). Usually, the coupon interest rate is the same, or fixed, over the life of the bond. A bond with a fixed coupon interest rate is called a fixed rate or fixed income bond. Bonds that pay interest are referred to as current interest bonds (CIBs), but some bonds do not pay interest. They are called “zero” coupon or capital appreciation bonds (CABs). These bonds are sold at a deep discount to par value and their value grows, or accretes, to the

principal payment at maturity. The only cash flow the bondholder receives is the principal payment at maturity.

Most fixed rate municipal bonds with a final maturity greater than 10 years tend to have a call option.⁴ The call option gives the issuer the right, but not the obligation, to “call” and redeem the bond prior to final maturity at the call date. The call option is effectively “sold” by investors to borrowers at the initial sale, therefore a callable bond sells at a lower price (higher yield) than a non-callable bond. For the additional cost issuers buy the right to redeem their bonds prior to the final maturity. This benefits issuers if they want to terminate the bond contract early, restructure the terms of the bond contract, or as in most cases, if they would like to realize savings from a lower interest rate environment or step down to a lower yield curve for the (now shorter) remaining bond maturities. If interest rates decrease significantly, issuers can sell a new, lower interest rate bond and “buy back” the old, higher interest rate bond, and benefit from the interest cost savings.

5. VARIABLE RATE DEBT

A debt instrument with an interest rate that changes at intervals according to an index, formula, or auction is floating, or variable, rate debt. Variable rate bonds have a long-term final maturity date, but their interest rate is reset at scheduled intervals. If the interest rate is tied to a formula or market index it is usually the yield on an index of high-quality, variable-rate tax-exempt securities such as the SIFMA index.

Variable rate bonds potentially enable issuers to reduce borrowing costs by selling long-term bonds priced at the shorter maturity, and typically lower cost, end of the yield curve. Since the municipal yield curve normally slopes steeply upward, selling long-term bonds pegged to short-term interest rates can result in significant interest-cost savings. The potential borrowing cost advantage is shown in Figure 1.1. During almost all periods of time, the SIFMA index of high-grade variable rate municipal debt produced lower interest rates compared to the Bond Buyer 20-Year GO Index (BB20GO),⁵ an index of high-grade 20-year fixed rate general obligation municipal bonds. However, during economic downturns at extraordinary points, the difference can be inverted. This happened in September of 2008 and in March of 2020 when liquidity decreased in the municipal securities market during the Great Recession and the COVID-9 pandemic, respectively.⁶

Recognizing the potential advantages of variable rate debt, the Government Finance Officers Association advocated for the use of variable rate debt in certain circumstances for some issuers, stating that “variable rate debt can be an important tool in managing a government’s debt program and can help lower the cost of borrowing and provide a hedge against interest rate risk”

Source: Board of Governors of the Federal Reserve System 2020 and *The Bond Buyer*.

Figure 1.1 Historical trends in interest rates: long-term vs. short-term municipal bond interest rates (2000–2020)

(GFOA, 1997). The advantages of an expected lower interest expense and increased flexibility, however, must be weighed against the uncertainty of future debt service payments and additional issuance costs for the standard remarketing agreements and liquidity facilities. To protect issuers and bondholders against extreme fluctuations in market interest rates, early variable rate bonds sometimes contained an upper (cap) and lower (floor) bound on interest rates. The cap is designed to reduce the risk of higher-than-expected interest costs to issuers by placing a ceiling on the interest rate. The floor is to reduce the risk of lower-than-expected returns for bondholders if interest rates decrease.

5.1 Variable Rate Demand Obligations

Variable rate bonds were first issued in 1980. Several variable rate bonds have provisions enabling the issuer to convert the interest rate to a fixed rate. This conversion feature is of benefit to the issuer if long-term interest rates fall significantly and the issuer would like to lock in a low, fixed interest rate (Peng, 2003). Most variable rate bonds have been variable rate demand

obligations (VRDOs). VRDOs are issued with long-dated final maturities of 20 to 40 years, but their yield may be reset on a daily, weekly, or monthly basis. VRDOs contain a put option, referred to as a demand or tender option, that gives bondholders the right to demand payment from the issuer at regular scheduled intervals prior to the stated maturity date (possibly even daily), at a price specified in the bond contract, often par plus accrued interest.

A put option, in direct contrast to a call option, is effectively “sold” by issuers to investors in the form of a lower required yield on the bonds. Put options protect investors from being locked into a security with a yield lower than that available in the current market, effectively giving investors the right to turn a long-term bond into a shorter investment, but it can place a large and unexpected demand on the issuer’s revenues. To ensure that sufficient funds are available, if investors choose to exercise their put option and tender their securities back to borrowers for payment before final maturity, variable rate securities are backed by liquidity support facilities such as bank letters of credit or standby bond purchase liquidity agreements. The trade-off is that, at the initial sale, variable rate put-option bonds have significantly lower yields than fixed-rate bonds, which should produce lower all-in costs for the issuer.

There have been three major peaks in variable rate issuance. First, on the heels of historically high and volatile interest rates from 1978 to 1982, variable rate bond issuance peaked at 25 percent of total municipal debt in 1985. The peak in 1985 came as issuers began to seek hedges against potential opportunity losses if interest rates declined in the future, as they did from 1982 to 1986. In a decreasing interest rate environment, the sale of variable rate debt, rather than fixed rate debt, enabled issuers to raise money, but at a rate that would decrease in the future if interest rates decreased, thus potentially producing significant savings over fixed rate debt. Second, interest rates dropped substantially in 2000 from 6.09 percent in January to 5.14 percent in December. In response to increased interest rate uncertainty, the issuance of variable rate securities increased to 24 percent of total debt, largely from an increase in auction rate and linked rate securities, as well as VRDOs.

Third, variable rate issuance peaked at 28 percent of total issuance in 2008 during the tumult of the Financial Crisis. This was due to interest rate and supply-and-demand factors. For the second time in modern municipal market history, short-term interest rates briefly went above longer-term rates (an inverted yield curve).⁷ In such an interest rate scenario, issuers have an incentive to try to lock in lower long-term rates, but there are unlikely to be substantial buyers for fixed long-term debt. Indeed, in the midst of a collapsing banking industry, investors had no appetite for locking in long-term interest rates, much less low long-term rates. As the financial collapse rippled through the economy, municipal budgets began feeling the pinch of the recession, but they still needed debt financing. Total debt issuance dropped only 7 percent

from 2007–2008, because issuers rushed to market in the second half of 2007 as the extent of the Great Recession began to unfold. Variable rate debt issuance dropped to 9 percent in 2009, which is roughly its annual average to 2018, where it stood at 7.3 percent.

5.2 Municipal Auction Rate Securities

Another variable rate debt instrument is the Municipal Auction Rate Security (MARS), which has its interest rates reset via an auction process.⁸ Auction rate securities emerged in the mid-1980s as another way for corporations, mutual funds, and state and local governments and authorities to issue long-term debt instruments at short-term interest rates. The interest rate on auction rate securities is tied to short-term interest rates with the rate reset through a Dutch auction process at predetermined and frequent intervals, commonly 7, 28, or 35 days. Owners of MARS have the option to hold their securities at each auction regardless of the new rate, bid to hold an existing position at a specified rate, or request to sell at the rate set by the auction. Therefore, provided an auction does not fail, investors viewed MARS as short-term securities and bid on them as such. Consequently, MARS enjoyed similar pricing advantages as VRDOs since they were also able to take advantage of the historical interest rate benefit of the short end of the yield curve.

Auction rate securities, however, were viewed as more liquid (i.e., could be sold more quickly without a loss in principal value) than traditional variable rate debt instruments because the interest rate was reset at auction, and investors had historically been able to liquidate their positions at par value when needed. They were also viewed to have lower transaction costs, since they could be sold without a put option and the liquidity enhancements typically required for VRDOs.

In 1990, five MARS debt issues were sold for a total of \$283 million, representing 2.1 percent of variable rate debt, and only 0.17 percent of the entire market. By 2004 the sale of \$42 billion in MARS represented the peak of the market at 85 percent of variable rate debt issues and 10 percent of the total market, evidencing a dramatic shift in the process of setting interest rates on variable rate securities in the municipal market. The years 2005, 2006, and even 2007 saw significant MARS sales, where almost half the total size of the auction rate securities market (both municipal and corporate) was accounted for by MARS (Han and Li, 2008). By late 2007 the MARS market was in free-fall, and in 2008 zero MARS were issued, and no new issues have been sold since. In the brief span of 21 years, we actually saw the birth, growth, and death of the MARS primary market. MARS presents an interesting case on the diffusion of a financial innovation. In Chapter 11, we analyze the curious rise

and fall of the MARS market, and its implications for subnational government finance.

6. REPAYMENT PLEDGES

Municipal debt instruments vary according to the type of revenue security pledged as the source of debt service repayment. Until the mid-1970s municipal debt mostly consisted of general obligation (GO) bonds repaid with general tax revenues. Now, the repayment structure of today's municipal bond market is more diverse, more complex, and much less dependent on general government tax revenues. Today, there is relatively more debt sold with a limited liability repayment promise, and fewer debt issues sold with a full faith and credit unlimited liability repayment pledge. Figure 1.2 shows the historic shares of revenue vs. general obligation debt in the US municipal market. One of the most significant transformations in the municipal market over the past years is the decline in the amount of GO debt issued and the corresponding increase in the amount of revenue debt. In 1969, 84 percent of new issue dollar volume was GO debt; by 1985, revenue debt peaked at almost 70 percent of new debt. Revenue debt has since fluctuated in the high 50s and low 60s, and stood at 56 percent of new debt issue volume in 2019.

6.1 Unlimited and Limited General Obligation Debt

There are two basic types of GO debt: unlimited liability (ULGO) and limited liability (LLGO) debt.⁹ Most GO debt carries an unlimited liability pledge (ULGO), but some GO debt is backed only by a limited liability pledge (LLGO). ULGO bonds have traditionally financed general governmental operations and are backed by the full faith and credit and general taxing power of the debt issuer. Because of the unconditional repayment pledge, voter approval is often required by state law for the issuance of ULGO debt. ULGO bonds have traditionally been viewed as the most secure of all municipal bond investments and therefore the least costly to municipal issuers.

Other GO bonds may be backed by a limited liability or limited general tax repayment pledge, such as the whole general sales tax or a portion of the sales tax (i.e., .25 percent of a 6 percent sales tax). LLGO bonds may also be backed by a special tax obligation, such as bonds sold to construct a convention center repaid only from hotel receipt surtaxes, or by special taxing districts, such as tax increment districts. LLGO bonds may also be sold by general governments that by law are not allowed to put up an unlimited, or full faith and credit pledge. Indeed, several state governments only pledge their faith and credit, not full faith and credit.

Source: Board of Governors of the Federal Reserve System 2020, new security issues, state and local governments.

Figure 1.2 General obligation (GO) vs. revenue bonds, 1962–2019

6.2 General Fund, Appropriation-Backed or Lease Rental Obligations

Municipalities regularly issue securities that are repaid from lease rental payments. The lease rental payments are not secured by a specific revenue stream or tax pledge. In the leasing arrangement, the lessee contracts to include in the budget an annual appropriation to cover rental payments. Therefore, these securities are supported only by the anticipated annual appropriation. The lessee, however, has the legal right not to make the annual appropriation. That is, the lessee has the right to “non-appropriate”, not make an appropriation to pay the rental, and it is not legally a default. Beginning in the 1980s, certificates of participation (COPs) became the preferred lease-backed security. Since COPs, like other lease-backed securities, are not legally classified as “debt” in most states, they are commonly used to circumvent state debt limitations and voter requirements.

Appropriation-backed securities are sometimes referred to as general fund securities because they enable an issuer to tap the general fund to increase debt capacity beyond formal debt limits. Issuers in several high-profile cases begin-

ning in the 1990s have shown a willingness to “non-appropriate”, resulting in investors reaffirming the view that the issuers’ commitment to service their COPs is just as morally binding as the issuers’ pledge on traditional bonds.¹⁰ Therefore, issuers should consult with their constituents prior to obligating future general fund revenues in the form of future lease rental payments, even though they may not be legally required to do so.

6.3 Revenue Debt

One of the most significant transformations in the security of municipal debt instruments is the establishment of revenue debt as a preferred security pledge. The greatly expanded use of municipal bond proceeds to finance projects previously financed through the private sector (for example, single-family home mortgages) primarily account for the changes in revenue debt, combined with newer legal constraints on the issuance of GO debt and tax revenue limitations (many arising directly from taxpayer revolts).

Revenue bonds are primarily secured by the revenue generated from a project—usually, intended to be self-sustaining—not the taxing power of the government. They are commonly issued by public authorities, which are associated with (but for debt issuance purposes are not a legal part of) an affiliated general governmental unit. Therefore, the revenue bonds they issue are not included under constitutional or statutory debt limits, often do not require voter approval, and may promote economic efficiency (to the extent that user charges, rather than general tax revenues, are used to repay the debt). However, because of the narrower repayment pledge, revenue bonds typically incur higher interest costs and exhibit higher issuance costs than comparable GO debt.¹¹

Revenue bonds consist of three broad categories: enterprise, conduit, and asset-backed securities. Enterprise bonds are payable from the revenues, usually user charges, of a government-owned enterprise, such as a water, sewer, or electric utility. Conduit revenue bonds are payable from the income or revenues of private entities or individuals, such as private hospitals, for-profit businesses, or homeowners. These bond issues are referred to as conduit bonds because the sponsoring government provides the private entity with access to the municipal market, but provides no commitment to pay or guarantee debt service on the bonds. The issuance of conduit bonds was severely curtailed by the federal Tax Reform Act of 1986, however.

Municipalities may also provide additional security for their revenue bonds by including a “moral obligation” or a “double-barrel” pledge. Moral obligation bonds are revenue bonds, typically issued by a state authority, that bear the state legislature’s moral commitment to meet any shortfall in debt service payments by the authority.¹² A double-barrel repayment pledge may have the

revenues from the project as the primary source of repayment, but may also carry a tax or general obligation pledge as an additional repayment guarantee.

6.4 Asset-Backed or Securitized Debt

Asset-backed securities have a cash flow structure similar to other debt instruments, but the debt service payments come directly from the asset(s) being securitized. In a typical revenue bond financing, the revenue generated from the project or enterprise is dedicated to repaying the bond issue. A fundamental difference between a typical revenue bond issue and a securitized bond issue is who “owns” the cash flows. On a typical revenue bond, the issuer pledges revenue for repayment, but retains ownership of the revenue. In a securitization, the government no longer owns the cash flows expected to pay debt service (Johnson, 2004). The expected cash flows (assets) are in effect put into a “trust” and the cash flows from the trust are “sold” to investors in return for the net proceeds from the sale of the securitized debt issue.

For years, subnational governments attempted to securitize several receivables, such as property tax liens, with limited success. Then in 1998, the major United States tobacco companies¹³ and 46 state governments, the District of Columbia, and five United States territories agreed to settle all legal claims brought by the signatories against the major tobacco companies and signed the “Master Settlement Agreement” (MSA).¹⁴ The MSA is the largest civil settlement in United States’ history. At the time the agreement was signed, payments from the tobacco companies to the subnational governments and territories were estimated to amount to \$229 billion (nominal dollars) between 1998 and 2025.¹⁵ Annual settlement payments are structured in a similar way to an annuity, with roughly equal payments to be paid by the tobacco companies annually, *in perpetuity*.

Several governments decided to cash-in all or a portion of their expected MSA payments by securitizing their expected revenue stream and creating asset-backed securities for sale to investors (Johnson, 2004; Johnson and Kioko, 2005). Tobacco securitization bonds are created through the securitization process by transferring, irrevocably, the rights to the expected MSA payments to a trust organization (commonly a public authority) established by the subnational government but that is legally a separate and distinct entity from the government. The public authority then uses the trust assets, the expected MSA payments, as collateral to support the repayment of the asset-backed securities. The sale of tobacco asset-backed debt produces net proceeds, thereby transforming the stream of relatively illiquid, expected MSA payments into up-front cash.

When the government sells a TSB, it is selling its right to all or some of their future MSA settlement payments, but the proceeds can come with high costs.

TSBs are an expensive form of financing, as they exhibit high transaction costs and low realized net proceeds (Johnson et al., 2013). Finally, there are also other public policy implications associated with TSBs. The agreement did not place any legal restrictions (earmarks) on the use of MSA funds, and research shows that state governments that securitize their settlement payments spend less, not more, money on anti-tobacco spending and often use such proceeds to address operating deficits (Johnson et al., 2013).

Securitizing expected MSA payments has become an enduring form of debt sold by subnational governments, but it is not the only type of securitization. The sales tax has been viewed as a practical revenue source for securitization in several cities. Though more volatile than the property tax over the economic cycle, the sales tax provides a steady source of revenue under reliable state government administration. For most cities the control of the local sales tax base and administration of the rate structure is at the state level. Local sales tax revenue is typically collected by the state and then distributed to local governments.

The most recent and largest securitization bond issues have been sold by the city of Chicago's Sales Tax Securitization Corporation (STSC) to refinance and restructure the city of Chicago's debt burden for the purpose of providing substantial interest cost savings. The city of Chicago has effectively sold its right to a significant amount of its future sales tax revenue in a sales agreement to the STSC.¹⁶ The legal arrangement is designed to "break-off" a piece of the city's sales tax revenue stream, while simultaneously insulating the STSC from the political, budgetary, and financial problems of the city.

The STSC is a not-for-profit special purpose entity (SPE) corporation established under special legislation created by the state of Illinois. The STSC operates as an instrumentality of the city but is legally separate and distinct from the city. This separation provides bondholders with an additional wall of security. STSC bondholders have a statutory lien on the city's sales tax revenue stream, rather than just a general obligation pledge. In addition, the revenue stream is isolated from the city's budget, as are the uses of funds flowing from the revenue stream. Also, the SPE is considered "bankruptcy-remote" in the sense that the STSC's assets—dedicated city sales tax revenues—are not expected to be considered a part of the city's assets in a bankruptcy proceeding. At the time of the STSC's first financing in 2017, the credit rating agencies rewarded the STSC with strong ratings: AAA(Fitch)/AAA(Kroll)/AA(Standard and Poor's). These ratings compare very favorably to the city's general obligation bond ratings: BBB-(Fitch)/BBB+(Kroll)/BBB+(Standard and Poor's) (Banerji, 2017).

7. INTERMEDIARIES AND REGULATORS

The municipal securities market contains a complex network of facilitators and regulators. The facilitators consist of several types of financial intermediaries and consultants that help governments raise capital in the municipal bond market. These financial intermediaries reside in a debt management network, where each member's tasks are clearly delineated, but also where they work together in the network in the pursuit of a successful capital-raising outcome. From a financial market efficiency perspective, the intermediary network facilitates the disclosure of all the information investors need to know to make an informed investment decision.

In the primary market, debt issue information is disclosed to the market through the process of origination. Origination involves all of the activities necessary to bring a debt issue to market, including producing essential information for investors in the notice of sale and bond prospectus or official statement. Intermediaries directly involved in the origination process include bond counsel, municipal advisors (MAs), and underwriters.

7.1 Bond Counsel, Municipal Advisors, Underwriters

Municipal advisors (MAs) are financial consultants to state and local governments that may provide advice on every aspect of the issuer's strategic capital financing program and the tactical, day-to-day issues of bringing a debt issue to market. MA responsibilities may vary by method of sale. In a competitive sale, the MA coordinates the auction bid process for the issuer, and is responsible for producing the bond offering documents, including the notice of sale and official statement. In a negotiated offering, the MA may help the issuer manage the process of choosing the underwriter and providing a pre- and post-sale analysis. In both methods of sale, the MA serves the government as an independent advisor, whose fiduciary responsibility is solely to the government.

The underwriter, in contrast, serves as a link between investors and issuers, and therefore, having responsibilities to both parties in a transaction. However, while underwriters have to "deal fairly" with issuers, they do not have a fiduciary responsibility to them. Underwriters are commercial and investment banking firms that purchase the bonds from the government entity and resell them to investors. In a negotiated offering, the underwriter is responsible for origination, including the production of origination documents. In a competitive sale, the underwriter bids on bonds to purchase and has no role in the origination process. In Chapter 6, we discuss in more detail the different roles of MAs and underwriters across different methods of sale. Among other poten-

tial responsibilities, bond counsel draft essential bond offering documents and offer their opinions on the legality and tax status of the issue.

7.2 Accounting Firms, Credit Rating Agencies, Credit Enhancers, Engineers and other Consultants

There are several other intermediaries that provide essential information to the market on state and local debt issues. Accounting firms are information intermediaries and provide important information certification services on debt issues. Accounting firms may be contracted by governments to produce an annual comprehensive financial report (ACFR). The ACFR is usually included in debt offering documents and provides important financial and management information to the market. ACFRs contain a management discussion and analysis (MD&A) section, financial statements with accompanying notes, and statistical information. The MD&A section describes the activities of the government during the year and provides an explanation of the most important information presented in the financial statements. Bond offering documents typically contain a full ACFR, but at minimum should contain financial statements audited by a third-party accounting firm.

Many debt issues come to market with a bond rating from a credit rating agency. The credit rating is a determination of the debt issuer's ability and willingness to pay debt service in full and on time and provides an assessment of default risk. Credit rating agencies use publicly available information and their own internal analyses to assess the credit quality of the bonds. Investors rely on credit ratings in making their bond purchase decisions because the credit rating is considered a certification of creditworthiness or default risk of the debt issue.

Some intermediaries enhance the credit quality of the debt issue by providing an additional layer of repayment security in the event of default. Private credit enhancers such as bond insurance companies, bank lines, and letters of credit providers, put their capital on the line if debt service payments from the issuer become insufficient. By doing so, credit enhancers provide an important signal to the market on the repayment probability of the debt issue. If the government entity cannot pay its debt service on the bonds in a timely fashion, the credit enhancer steps in and makes the payment to investors on behalf of the government. Bond insurance is generally used on fixed rate municipal securities, while letters of credit and liquidity facilities provide credit support on variable rate securities. Public financial intermediaries, such as state revolving funds and K-12 credit enhancement programs, also play an important credit enhancement role by enabling smaller, lower credit quality municipal issuers access to market at a reasonable cost.

Most bonds are sold to finance the construction of capital projects. On both general obligation and revenue bond projects, information is usually produced by architects, engineers, and other consultants. Engineering feasibility reports provide the market with information on project design and may follow the project through implementation. Also, revenue consultants on revenue and special tax and assessment bonds analyze the ability of the financed facility or tax/assessment structure to generate the expected cash flows to cover debt repayment.

7.3 Federal Regulation: Direct and Indirect

The direct federal regulation of municipal government debt finance is mostly limited to determining whether a municipal bond is entitled to tax-exemption under federal tax law and the enforcement of arbitrage restrictions. The federal regulation of municipal securities is largely accomplished by regulating municipal vendors like MAs, underwriters, and credit rating agencies. The federal government is not allowed to directly regulate municipal government debt or order disclosure requirements.

Congress passed the Securities Acts Amendments of 1975, which created a “limited regulatory scheme” for the federal regulation of municipal securities. The 1975 amendments gave the Securities and Exchange Commission (SEC) broad regulatory and enforcement authority over broker-dealers and banks transacting in municipal securities, and it created the Municipal Securities Rulemaking Board (MSRB) to make rules regulating the municipal securities activities of broker-dealers and banks, subject to SEC oversight. The 1975 amendments, however, did not impose any new requirements, disclosure or otherwise, on municipal issuers.

Indeed, the 1975 amendments expressly prohibited the SEC or MSRB from imposing any direct or indirect disclosure requirements on municipal issuers (see Exchange Act 15B(b), 15B(d)(1) and 15(B(d)(2)). The amendments exempting municipal issuers from disclosure requirements are now commonly referred to as the Tower Amendments, referring to the remarks of Senator John Tower during US Senate debate of the Act.¹⁷ But by directly regulating the private firms that provide financial services to municipal issuers, the federal government can indirectly regulate key areas of the debt financing activities of municipal governments. This may include important aspects of the form, content, and timing of information provided to the market on bond sales and continuing disclosure over the life of the bond.

8. MAPPING THE BOOK

The remainder of the book is divided into three parts. The first part contains four chapters and is titled “What makes the ‘muni’ market different?” Part I provides the structural backbone of our book and the “muni” market. In this part we discuss why the “muni” market is a special, uniquely American financial institution, and why it works despite it being diverse, complex, decentralized and segmented (Martell and Kravchuk, 2012).

Part I begins with Chapter 2, which covers the nature of the tax exemption of municipal debt, including a discussion and analysis of the Tax Cuts and Jobs Act (TCJA) of 2017. Chapter 3 covers the essential importance of the idea of the “state” as “fiscal sovereign” in debt finance, and Chapter 4 concludes the fiscal federalist discussion by describing the multi-layered, disjointed regulatory structure, and the growing federal regulatory requirements including Governmental Accounting Standards Board (GASB) accounting, financial reporting, and disclosure requirements. Despite the shrinking discretionary space over the governance of their financial market, subnational governments still retain ultimate control over their debt financing affairs. With fiscal rights, come fiscal responsibilities.

Part II describes the business and technical side of how subnational governments, financial intermediaries, and investors create value. The part details how subnational governments create financial instruments that non-coerced investors are willing to buy, which subnational governments can and do repay. Chapters 5 and 6 cover technical, yet fundamental, subnational government debt financial management principles, policies, networks, and practices. Chapter 5 describes basic principles and provides examples of essential policies. Chapter 6 walks the reader through the process of bringing a debt issue to market, using the frameworks of network analysis and principal–agent theory.

The municipal securities market is a developed and sophisticated capital market. Understanding the market requires a technical sophistication of fixed income mathematics and investments. Chapter 7 covers the basic serial bond structure of debt issues in the municipal securities market. It should be read in conjunction with Appendix A: Review of time value of money, and Appendix B: Basic principles of valuing debt instruments. The technical appendices can be read through in their entirety, or by topic as needed. They are in the book because we believe understanding and effectively participating in the municipal market requires a basic understanding of time value of money principles and fixed income mathematics.

Chapter 8 concludes this part of the book with an analysis of secondary market disclosure. Secondary municipal market research has blossomed in recent years, with the creation of new data sources available for empirical

research. Our focus is for general readers, primary market participants, and scholars, to develop an understanding of the secondary market that was heretofore unavailable; for issuers to appreciate how the secondary market affects their primary market debt issues; and to underscore the fiscal federalist issues involved in the federal regulation of the secondary market.

Part III covers the risks and rewards of structuring municipal debt instruments. The first three chapters in Part III describe several sophisticated financial instruments used by subnational governments; they analyze their risks and rewards, and provide analytical frameworks for evaluating the appropriate use of such instruments. Chapter 9 covers engineering financial derivatives; Chapter 10 covers debt refinancing; and Chapter 11 analyzes the birth, growth, and collapse of the Municipal Auction Rate Securities (MARS) market.

Chapter 12 discusses credit enhancement and analyzes the supply and demand of municipal bond insurance, before, during, and after the Financial Crisis and the COVID-19 pandemic. Chapter 13 covers federal credit support and loan programs and public-private partnerships (P3s). Chapter 13 is expanded in the second edition to cover other innovative and emerging capital financing techniques, including socially responsible investing, green bonds, crowdsourcing, and pay-for-performance or social impact bonds. Chapter 14 provides the book's concluding remarks.

NOTES

1. Throughout the book we use the terms “municipal”, “subnational”, and “state” and “local” interchangeably, unless otherwise indicated.
2. This figure is based on 2017 US Bureau of Census, Governmental Finances data; 2017 is the latest year available.
3. Data on the components of the local share of total state and local debt are from the 2003–2012 US Bureau of Census, Governmental Finances data. Data on 2012 represent the latest year available.
4. The time period before a bond with a call option can be called by the issuer is referred to as the call deferment period.
5. The BBI 20-Bond GO Index consists of 20 GO Bonds that mature in 20 years with an average rating of Aa2 from Moody's Investors Service and AA from Standard & Poor's.
6. Peng (2003) simulates the annual interest rate difference between the average short-term rate and the annual 20-Bond Index from 1970 to 2000 for a 20-year bond. He finds that, for all years except three, the average short-term rate was lower. The three exceptional years were in 1971, 1972, and 1973. He concludes that: “barring a revisit of ... hyperinflationary times, the average short-term rate should generally be lower than a 20-year fixed rate”.
7. The municipal yield curve was inverted for the first time on 26 December 1990; the SIFMA Index was 7.89 percent and the BBI 20 GO Index was 7.14 percent.
8. Much of the discussion on MARS is adapted from the unpublished paper by Johnson and Luby (2009).

9. Data sources do not universally make a distinction between ULGO and LLGO debt—both are considered GO debt; and revenue debt figures do not usually include limited liability GO debt. See Board of Governors of the Federal Reserve; The Bond Buyer; Comprehensive Annual Financial Reports (ACFRs); and SIFMA.
10. See Johnson and Mikesell (1994) for a discussion of the Richmond Unified School District default in California and the post-sale voter referendum in Brevard County, Florida.
11. It is important to note that, according to the Bond Buyer data from January 2000 to September 2020, the Revenue Bond Index has always been above the BBI 20-Bond GO Index.
12. The government has no legal obligation, however, to honor its moral commitment.
13. The MSA was signed by companies representing almost all of the tobacco industry's United States sales: Brown & Williamson, Lorillard, Phillip Morris USA (now Altria), R.J. Reynolds, Commonwealth Tobacco, and Liggett & Myers.
14. Master Settlement Agreement (1998), <http://www.naag.org/backpages/naag/tobacco/msa/msa-pdf>.
15. US Government and Accountability Office, GAO-01-851, Tobacco Settlement: States' Use of Master Settlement Agreement Payments 14 (2001).
16. The sales agreement is authorized by Division 13 of Article 8 of the Illinois Compiled Statutes.
17. See 94th Congress, 1st Session, 121 Congressional Record 10727 (1975).