1. Introduction

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

The 2007–09 Financial Crisis and Great Recession 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. The municipal market is a changed market, and our understanding of the market must evolve as well.

The scope of this book is the market that state and local (subnational) governments have used to meet their capital needs since the seventeenth century. The municipal market is essential to the well-being of American society and our book provides an analytical treatment of the essentials of the market. Our book contributes to the understanding of the municipal securities market in the post-Financial Crisis era. The focus of the book is on 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 United States 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 post-Financial Crisis world, 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?
Our perspective on this question is that state–local (subnational) capital financing decision making is more likely to optimize social welfare than centralized decision making. We follow the view articulated by Oates that: ‘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.’ (Oates, 2005, p. 351). 3

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 is 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. Problems leading up to and during the Financial Crisis led federal authorities to investigate any segment of the market that was not under federal regulation.

Our book is intended to help inform current public policy debates on the future of municipal issuers and their intermediaries. 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 and principal–agent 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 regulation. The book should help policymakers, public administrators and practitioners make informed decisions in the post-Financial Crisis world.

1. OVERVIEW OF THE MUNICIPAL SECURITIES MARKET

In the federalist system in the United States of America 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 entities have a
Introduction

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 intergovernmental grants and loans, such funds do not, nor are they intended to, fulfill the basic capital financing needs of subnational governments. Good debt issuance and management practices are required for state and local governments to meet the capital needs of their citizens at reasonable cost.

In 2012 there were 89054 state and local governments in the United States. Table 1.1 shows the indebtedness by level and type of subnational government. The total amount of subnational outstanding debt is substantial, $2.9 trillion in 2011, 61 percent the responsibility of local governments, and reaching $3.7 trillion in 2013. City and county general governments account for over 50 percent of local debt, and they include a diverse array of governmental units, townships, school districts and special districts that are responsible for issuing and repaying a large amount of debt issued in the municipal securities market.

Subnational governments must raise money for 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 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 securities 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 innovation. But its transformation over the years demonstrates financial and political
### Table 1.1 Indebtedness and debt transactions of state and local governments, in millions of dollars

**Panel A**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Debt State and Local</th>
<th>State Debt</th>
<th>State Share of Total Debt</th>
<th>Local Debt</th>
<th>Local Share of Total Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>$75,024</td>
<td>$19,993</td>
<td>26.65%</td>
<td>$55,031</td>
<td>73.35%</td>
</tr>
<tr>
<td>1976</td>
<td>$240,086</td>
<td>$84,379</td>
<td>35.15%</td>
<td>$155,707</td>
<td>64.85%</td>
</tr>
<tr>
<td>1991</td>
<td>$1,124,509</td>
<td>$345,554</td>
<td>37.74%</td>
<td>$778,955</td>
<td>62.26%</td>
</tr>
<tr>
<td>1997</td>
<td>$1,456,657</td>
<td>$346,657</td>
<td>37.29%</td>
<td>$1,110,000</td>
<td>61.71%</td>
</tr>
<tr>
<td>2003</td>
<td>$1,290,775</td>
<td>$1,132,814</td>
<td>38.96%</td>
<td>$1,174,942</td>
<td>61.04%</td>
</tr>
<tr>
<td>2011</td>
<td>$1,812,666</td>
<td>$1,114,737</td>
<td>61.50%</td>
<td>$1,174,942</td>
<td>60.44%</td>
</tr>
</tbody>
</table>

**Panel B**

<table>
<thead>
<tr>
<th>Year</th>
<th>Local Share of Debt Total</th>
<th>County</th>
<th>County Share of Local Debt</th>
<th>Municipality</th>
<th>Municipality Share of Local Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>$55,031</td>
<td>$4,949</td>
<td>8.99%</td>
<td>$25,108</td>
<td>46%</td>
</tr>
<tr>
<td>1976</td>
<td>$155,707</td>
<td>$20,372</td>
<td>13.08%</td>
<td>$68,785</td>
<td>44%</td>
</tr>
<tr>
<td>1991</td>
<td>$570,157</td>
<td>$121,755</td>
<td>21.35%</td>
<td>$226,554</td>
<td>40%</td>
</tr>
<tr>
<td>1997</td>
<td>$767,852</td>
<td>$166,652</td>
<td>21.70%</td>
<td>$293,380</td>
<td>38%</td>
</tr>
<tr>
<td>2003</td>
<td>$1,114,737</td>
<td>$210,893</td>
<td>18.92%</td>
<td>$433,307</td>
<td>39%</td>
</tr>
<tr>
<td>2007</td>
<td>$1,468,691</td>
<td>$258,131</td>
<td>17.58%</td>
<td>$568,379</td>
<td>39%</td>
</tr>
</tbody>
</table>

**Panel C**

<table>
<thead>
<tr>
<th>Year</th>
<th>Township</th>
<th>Township Share of Local Debt</th>
<th>School District</th>
<th>School District Share of Total Debt</th>
<th>Special District</th>
<th>Special District Share of Total Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>$1,117</td>
<td>2.13%</td>
<td>$12,963</td>
<td>23.56%</td>
<td>$10,840</td>
<td>19.70%</td>
</tr>
<tr>
<td>1976</td>
<td>$4,034</td>
<td>2.59%</td>
<td>$34,862</td>
<td>22.39%</td>
<td>$27,654</td>
<td>17.76%</td>
</tr>
<tr>
<td>1991</td>
<td>$11,111</td>
<td>1.95%</td>
<td>$56,755</td>
<td>9.95%</td>
<td>$153,982</td>
<td>27.01%</td>
</tr>
<tr>
<td>1997</td>
<td>$15,261</td>
<td>1.99%</td>
<td>$107,659</td>
<td>14.02%</td>
<td>$184,900</td>
<td>24.08%</td>
</tr>
<tr>
<td>2003</td>
<td>$23,341</td>
<td>2.09%</td>
<td>$221,888</td>
<td>19.90%</td>
<td>$225,308</td>
<td>20.21%</td>
</tr>
<tr>
<td>2007</td>
<td>$30,027</td>
<td>2.04%</td>
<td>$292,573</td>
<td>19.92%</td>
<td>$319,582</td>
<td>21.76%</td>
</tr>
</tbody>
</table>

*Source:* US Bureau of Census, Governmental Finances, various years.
ingenuity. Funds flow into the municipal market through loans made directly by large institutions and individuals or indirectly through money market and mutual funds. Funds finance facilities that are used in everyday activities: government buildings, convention centers, schools, roads, bridges, airports, hospitals, water and wastewater treatment facilities, and others.

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 it 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 efficient, did and do enable state and local governments to raise sufficient capital in a timely manner at an affordable price.

The soundness of the municipal security 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. Because each state has its own power to raise revenue, spend money, borrow and take on debt, they are viewed as fiscal sovereigns. Moreover, the fiscal federalism 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 (2011) 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, financial advisors, rating agencies and bond insurers. Strengthening the federal regulation of financial service providers has been the impetus behind many important legislative initiatives over the recent years, including the Dodd–Frank Wall Street Reform and Consumer Protection Act (Public Law 111-203), enacted on 21 July 2010.

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 national financial crises and economic distress. Many local and state governments found themselves in deep financial trouble partly as a result of the Financial Crisis in 2007–09 and the resulting economic recession, but also because of bad decisions they made regarding their debt obligations. The financial and economic turmoil merely laid bare the weaknesses in several financial management practices. Prior to discussing the intricacies of the municipal market, it is useful to provide more background on the fundamental characteristics of municipal financial instruments.

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 $5000. 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. Most debt is long-term, but short-term securities provide an important option for municipal issuers. From 1990–2011, 14 percent of all municipal securities issued were short-term and 86 percent were long-term securities. This contrasts to the period from 1969–75 when 50 percent or more of the annual issuance was short-term. This was a period of historically high interest rates, high
inflation, and preceded the use of variable rate and derivative securities. Short-term issuance peaked at 55 percent in 1974, dropped to a low of 8 percent in 1985, and stabilized at the current rate of issuance of 14 percent by 1992.

3.1 Short-Term Notes

Traditional short-term debt instruments, or notes, have a stated maturity of 13 months or less, have a fixed interest rate, are sold at a discount, 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 Financial Market Index (SIFMA), or the London Interbank Offered Rate (LIBOR). The benefit of FRNs is that they are not expected to rely on secondary market demand for liquidity, and thus, do not require a liquidity facility or 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 for 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 cash flow problems at maturity.
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 sound use of debt financing. While it may seem like an immediate solution to 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 bond. Some bonds are sold that do not pay interest. They are called ‘zero’ coupon or capital appreciation bonds. 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 have a call option. 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. If interest rates decrease significantly, issuers can sell a new, low interest rate bond and ‘buy back’ the old, higher interest rate bond, and benefit from the interest expense 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 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 potentially result in significant interest-cost savings. The potential borrowing cost advantage is shown in Figure 1.1.

Between March 1990 and March 2012, the SIFMA index of high-grade variable rate municipal debt has produced lower interest rates in almost all periods compared to the Bond Buyer 20-Year GO Index (BBI 20 GO),\(^9\) an index of high-grade 20-year fixed rate general obligation municipal bonds. The average interest rate for the SIFMA index for this period was 3.11 percent compared to 5.45 percent for the BBI 20 GO, a 233 basis point advantage for short-term floating rate securities.\(^{10}\)

Recognizing the potential advantages of variable rate debt, the Government Finance Officers Association advocated the use of variable rate debt in certain circumstances for some issuers, stating that ‘variable

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Figure 1.1  Historical trends in interest rates: long-term vs. short-term municipal bond interest rates 1989–2012

Source:  Board of Governors of the Federal Reserve System, selected interest rates, state and local bonds. Thomson Reuters.
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 (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. Most variable rate bonds issued now are 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 for payment before final maturity, variable rate securities are backed by liquidity support facilities such as bank letters of credit or standby bond purchase 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.

Many 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). There have been two major peaks in VRDO 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, VRDO issuance peaked to almost 30 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). 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 2007–08, because issuers rushed to market in the second half of 2007 as the extent of the Financial Crisis began to unfold.

5.2 Municipal Auction Rate Securities

The most recent innovation in variable rate debt instruments is the Municipal Auction Rate Security (MARS), which has its interest rates reset via an auction process. 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 since the interest rate was reset at auction,
and investors had historically been able to liquidate their positions at par value if needed. They were also viewed as having lower transaction costs since they could be sold without a put option and the liquidity supports 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 issuance 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 have actually seen 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 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 governmental 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. Unlimited liability debt is called general obligation (GO) debt. Limited liability debt has two basic forms: appropriation-backed and revenue debt. One of the most significant transformations in the municipal market over the past 40 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 accounted for 70 percent of new debt. In 2012, revenue debt has declined to only 56 percent of new debt issue volume. Figure 1.2 shows the historic shares of revenue vs. general obligation debt in the US municipal market.
6.1 Unlimited and Limited Tax-Supported Debt

There are two basic types of tax-supported bonds: unlimited tax (GO) bonds and limited tax bonds. GO bonds have traditionally financed general governmental operations and are backed by the full faith and credit (or, in other words, the 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 GO debt. Unlimited tax-supported bonds have traditionally been viewed as the most secure of all municipal bond investments and therefore the least costly to municipal issuers. Other tax-supported bonds are backed by a limited, dedicated or special tax obligation. For example, bonds sold to construct a convention center may be repaid from hotel receipt surtaxes. Limited tax obligation bonds are also sold by special taxing districts, such as (property) tax increment districts.

6.2 Revenue Debt

One of the most important transformations in municipal debt 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 this shift, combined with new legal constraints (many arising directly from taxpayer revolts) on the issuance of GO debt. Revenue bonds are primarily secured by the revenue generated from a project – usually one intended to be self-sustaining – not the taxing power of 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 government unit. Therefore, the revenue bonds they issue are not included under constitutional or statutory debt limits, often do not require voter approval, and 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.

Revenue bonds consist of three broad categories: enterprise, conduit and asset-backed. 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. Municipalities may provide additional security for their revenue bonds by including a ‘moral obligation’ or ‘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. 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.

6.3 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. Certificates of participation (COPs) have become the preferred lease-backed security beginning in the 1980s. 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 enable issuers to tap the general fund to increase debt capacity beyond formal debt limits. Several high-profile cases occurred in the 1990s where the issuer demonstrated the 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. 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.

6.4 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 repay the bond issue. A fundamental difference between a 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 subnational government no longer owns the cash flows expected to pay debt service. 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 securitization 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 companies 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). 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. 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. 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 illiquid, expected MSA payments into up-front cash.

Tobacco securitization debt has become one of the most enduring forms of securitization by subnational governments, with state governments alone reportedly selling over $46 billion in tobacco securitization bonds (TSBs) from 2000–11. 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, they exhibit high transaction costs and low realized net proceeds. 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 (Johnson et al., 2013).

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 its being diverse, complex, decentralized and segmented. Part I has chapters on the nature of the tax exemption of municipal debt (Chapter 2), and the essential importance of the idea of the ‘state’ as ‘fiscal sovereign’ in debt finance (Chapter 3). Chapter 4 concludes the fiscal federalist discussion by describing the multi-layered, disjointed regulatory structure, and the growing federal regulatory requirements. Despite the shrinking discretionary space over the governance of their financial market, subnational government issuers 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 and subnational governments can and do repay. Chapters 5 and 6 cover technical, yet fundamental, subnational government debt financial management principles, policies 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 and primary market participants 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 and after the Financial Crisis. Chapter 13 concludes the part by discussing ‘non-traditional’ capital financing mechanisms, focusing on public–private partnerships and federal credit support and loan programs. 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.
7. The SIFMA Municipal Swap Index is an often used index which consists of seven-day maturity high quality tax-exempt VRDOs. It was formerly The Bond Market Association/PSA Municipal Swap Index. LIBOR is the wholesale money market rate of interest at which banks lend money to each other in London.
8. The time period before a bond with a call option can be called by the issuer is referred to as the call deferment period.
9. The BB 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.
10. Peng (2003) simulates the annual interest rate difference between the average short-term rate and the annual 20-Bond Index from 1970–2000 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’.
11. 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.
12. Much of the discussion on MARS is adapted from the unpublished paper by Johnson and Luby (2009).
13. The government has no legal obligation, however, to honor its moral commitment.
17. 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.