



Understanding the Great Recession's Impact on City Bond Issuances

Overview

The Great Recession of 2007-2009 took a substantial toll on city finances that continues to this day. In the cities at the center of America's 30 largest metropolitan areas, persistent revenue shortfalls and increased demands on spending for services are straining budgets. As a result, local leaders continue to look for ways to relieve fiscal pressures while spurring economic activity.

Policymakers have previously issued bonds to save money on existing debt and jump-start an economic recovery. However, this tepid municipal fiscal recovery, combined with federal aid to states and localities in response to the recession, has influenced recent borrowing decisions for these 30 cities. Following the end of the recession, these cities refinanced existing debt at historic levels to take advantage of low interest rates, and they borrowed to speed up infrastructure projects so they could be ready to benefit from the American Recovery and Reinvestment Act, or ARRA. Although these actions had a notable effect on the timing and amount of debt the cities issued, the total number of projects cities undertook was somewhat lessened by declines in city tax revenues.

To better understand how city officials managed debt in response to the Great Recession as compared with previous national economic downturns, The Pew Charitable Trusts examined these cities' recent borrowing, using inflation-adjusted data from the Thomson Reuters SDC Platinum database, which includes information on bond issuances by municipal governments. This investigation found that, collectively, the 30 cities issued \$13.9 billion in refunding bonds—a mechanism to refinance existing debt—in 2012, the largest amount in two decades.¹ For the first time since 1991, such issuances accounted for more than half (57 percent) of the total bonds originated by these cities.² New York, Houston, and Chicago, which had the three largest dollar amounts of refunding issuances, will collectively save an estimated \$709 million over the life of the bonds, compared with the obligations they refinanced.³

Pew also found that the national fiscal and economic policy responses to the Great Recession changed the way cities used debt to finance new projects when compared with past recoveries. Federal policy interventions through ARRA—notably the Build America Bonds program and direct infrastructure grants to local governments—created incentives for cities to undertake projects during 2009 and 2010 that had been planned for future years.

Although these federal policies cleared out a number of capital projects and lowered demand for new ones in the following years, the lack of new money issuances among the 30 cities in 2011 and 2012 was likely driven as much or more by revenue challenges than by a shortage of new infrastructure projects. In 2011, new money bond issuances in the 30 cities were at their lowest level in more than 20 years (\$10.4 billion), when adjusted for inflation. These issuances remained low in 2012, increasing by just \$200 million.

This brief looks at how local borrowing patterns changed in response to the Great Recession and the impact of federal stimulus efforts on municipal debt issuances. It further considers the role of debt as a financial management tool for the future fiscal health of U.S. cities.

Why Do These 30 Cities Matter?

Pew's American cities project conducts original research that analyzes fiscal conditions, service delivery, and the impact of demography on the center city in each of the nation's 30 largest metropolitan areas: Atlanta; Baltimore; Boston; Chicago; Cincinnati; Cleveland; Dallas; Denver; Detroit; Houston; Kansas City, MO; Las Vegas; Los Angeles; Miami; Minneapolis; New York; Orlando, FL; Philadelphia; Phoenix; Pittsburgh; Portland, OR; Riverside, CA; Sacramento, CA; San Antonio; San Diego; San Francisco; Seattle; St. Louis; Tampa, FL; and Washington.

American cities have an outsized impact on the economies and long-term prosperity of states and the nation. These 30 cities and their surrounding metropolitan areas account for half (49 percent) of the nation's total gross domestic product.ⁱ Over the period Pew examined, they represent roughly one-third (35 percent) of municipal bond issuances including more than half (53 percent) of the \$21.6 billion in Build America Bonds issued by all U.S. cities. Collectively, these 30 cities have nearly 34 million residents—more than 1 in 10 Americans—with an additional 108 million living in the regions they anchor.ⁱⁱ

i Pew calculations from the U.S. Conference of Mayors and the Council on Metro Economies and the New American City. *U.S. Metro Economies Outlook: Gross Metropolitan Product and Critical Role of Transportation Infrastructure*, July 2012, <http://usmayors.org/metroeconomies/0712/FullReport.pdf>.

U.S. Department of Commerce. "National Income and Product Accounts—Gross Domestic Product, First Quarter 2013 (Third Estimate)," June 26, 2013, http://www.bea.gov/newsreleases/national/gdp/2013/pdf/gdp1q13_3rd.pdf.

ii Pew calculations from the U.S. Census Bureau's American Community Survey, 2011 data, <http://www.census.gov/acs/www>.

The Great Recession altered the way cities manage debt

Cities issue bonds primarily to finance large infrastructure projects—such as roads, bridges, schools, libraries, and public utilities. Generally, recessions and the immediate postrecessionary periods result in low interest rates that make it attractive to cities for funding new long-term capital projects, because they can do so at a lower total cost. These periods of low interest rates are also opportune times for cities to issue refunding bonds to reduce annual debt-service costs and trim spending.

Municipalities also issue refunding bonds to take advantage of declining-rate environments such as those that typically follow recessions to reduce annual and long-term costs by lowering interest payments. A common practice during periods when interest rates are low, refunding is an important part of municipal governments' long-term fiscal management. Refunding bonds pay off the outstanding principal on a previous bond by reissuing that debt at a lower interest rate. Unlike many other areas of state and local budgets, the payments (for principal and interest) are fixed over the term of the bond—typically 10 to 30 years.⁴ City officials can therefore use refunding bonds to trim the cost of existing obligations, similar to the way homeowners can lower their mortgage payments through refinancing.

The recessions of 1990-1991 and 2001 demonstrate this pattern of behavior for new and refunding debt issuances. In 1993, two years after the 1990-1991 recession ended, interest-rate declines and improving economic conditions contributed to an increase of \$2.6 billion in bonds for new projects—often called “new money bonds”—a 14 percent inflation-adjusted increase from the previous year (Figure 1A). Refunding bonds also increased from \$8.2 billion to \$11.1 billion—a 37 percent jump (Figure 1B). Similar increases also occurred two years after the 2001 recession ended, with new money bond issuances growing by \$5.2 billion (25 percent) and refunding bond issuances jumping by \$1 billion (30 percent).⁵

After the Great Recession, the 30 cities changed their debt issuance patterns

Figure 1A: Total annual value of new money bonds issued, 1991-2012

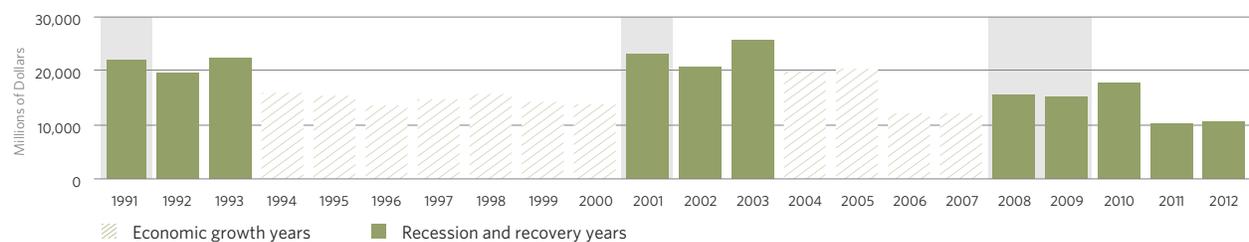
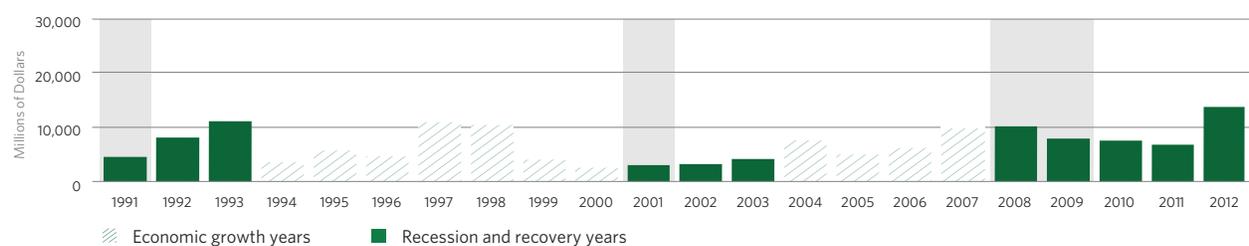


Figure 1B: Total annual value of refunding bonds issued, 1991-2012



Note: Gray shaded areas indicate periods of economic recession as defined by the National Bureau of Economic Research.

Source: Pew calculations from Thomson Reuters SDC Platinum municipal issuances database

Cities used increased refunding to reduce future debt-service payments substantially

In total, across the 30 cities studied, both the dollar value of refunding bonds and the share of those bonds as a portion of all debt issued reached 22-year highs in 2012—driven in part by historically low interest rates.⁶ Of the \$24.5 billion in total bonds issued by the cities, \$13.9 billion, or 57 percent, was used to refinance previous debt. This stands in contrast to prior years, when refundings never exceeded \$11.1 billion, or 45 percent of total bonds issued; the averages for the 22-year period Pew examined were \$6.9 billion and 29 percent.

While particularly extensive in 2012, this refunding follows the general pattern of previous economic recoveries, when cities took advantage of ongoing low interest rates two to three years postrecession to refinance substantial amounts of existing debt, when compared with prior years (Figure 1B).

Through refunding, cities realize significant interest savings on future debt-service payments, strengthening their ability to pay for other needs, particularly when revenues were declining. Cities also can refund and convert existing liabilities with interest rates that reset periodically, also known as variable-rate debt obligations, to debt with fixed interest rates—thus, increasing the predictability of future payments. Philadelphia, for example, reduced the debt subject to variable rates by half, to \$1 billion, through refundings.⁷ When refunding existing debt, many cities follow the recommendations of the Government Finance Officers Association, which advises governments to obtain an overall debt-service savings of at least 3 to 5 percent of the total issued amount to justify the costs associated with issuing a refunding bond.⁸

The savings from annual refunding bond issuances represented a significant share of cities' annual bills for debt service and significant sums in their overall budget picture. New York, for example, reduced its future debt service, in today's dollars, by \$548 million in 2012, Chicago saved at least \$52.1 million, and Houston reported savings of \$109 million over the life of the refinanced bonds.⁹

New issuances fell to lowest levels in over two decades

While refunding issuances followed, albeit at higher-than-average levels, typical postrecession patterns (new money bonds) which typically rebound two years after a downturn, did not do so after the Great Recession (see Figure 1A). In fact, in the 30 cities, new money bonds fell in 2011 to \$10.4 billion, the lowest level in the 22 years studied and a 42 percent decline from the 2010 total of \$17.9 billion.

The falloff in issuances for new projects was widespread across the cities, despite decreases in interest rates similar to previous recessions. About two-thirds of the cities examined decreased the amount of new bonds they issued in 2011, compared with the previous year.¹⁰ Of these cities, eight—Atlanta; Dallas; Miami; Orlando, FL; Phoenix; Pittsburgh; San Diego; and San Francisco—did not issue any bonds for new projects that year; on average, only three cities issued no new bonds in any year over the 22 years examined.¹¹

Although new money bond issuances grew by \$200 million from 2011 to 2012, they remained 30 percent below the 22-year average for the 30 cities.¹² This suggests that many cities either funded new projects through other means or simply did not undertake new projects.

Revenue declines made it difficult for cities to take on new debt

The severity and length of the Great Recession and the resulting prolonged revenue slump for cities contributed to the lack of municipal borrowing for new projects. Unlike previous recessions, the Great Recession followed

an unprecedented collapse within the housing market. Beginning in 2006, the bursting of the housing bubble set the stage for large and protracted declines in overall property values, which in turn decreased property tax collections, the largest revenue source for most of the 30 cities studied. For many cities, these declines continued well after the recession ended. The impact of the real estate collapse lingered because properties often are not reassessed annually, with median property tax collections across the 30 cities falling by 3 percent between 2009 and 2011 in inflation-adjusted terms, from \$317 million to \$307 million.¹³

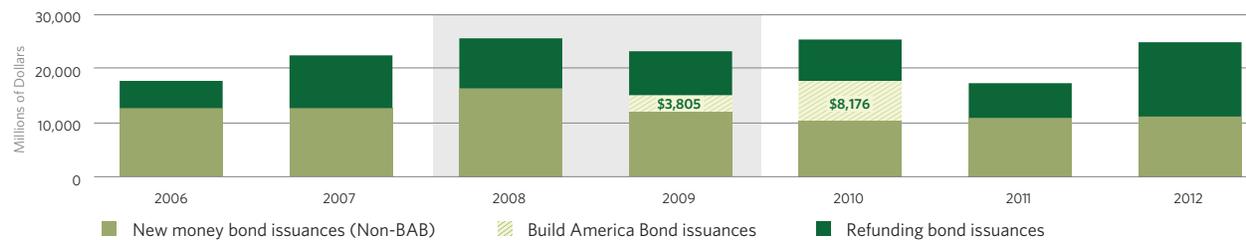
Overall, in more than two-thirds of the cities, revenues were still below their prerecession peaks, in inflation-adjusted terms, in 2011, two years after the end of the downturn.¹⁴ Without the necessary funding to seed or pay for new projects, cities were reluctant to borrow additional funds, which would increase their annual debt-service costs. This forced cities to make tough budget choices, which often meant cutting back on new debt-financed capital projects, even as low interest rates and demand for more secure investments created favorable borrowing opportunities. The 30 cities cut capital spending by \$19 million in inflation-adjusted terms (a decrease of 12 percent) as revenues declined from 2009 to 2011.¹⁵

Many cities leveraged federal government interventions to maximize investment

Unprecedented aid from the federal government also played a substantial role in changing the timing and levels of investment in new projects relative to previous recessions in the 30 cities. Despite the Great Recession’s toll on city finances, a key federal program encouraged cities to continue issuing new bonds. Build America Bonds, or BABs, restored access to credit after the market disruptions caused by the financial crisis, resulting in substantially higher new money bond spending in 2009 and 2010 than likely would have occurred without the program.¹⁶ BABs, as a result, represented a significant portion of the total value of all bonds issued by the 30 cities in both of those years, with New York, for instance, using them for 70 percent of new money issuances in fiscal 2010.¹⁷ Overall, the 30 cities issued \$3.8 billion in BABs in 2009 in inflation-adjusted dollars, 16 percent of their total issuances that year. The following year, this amount more than doubled, to \$8.2 billion (Figure 2).

Build America Bonds buoyed new bond issuances

Figure 2: Municipal bond issuances by bond type across the 30 cities, 2006-2012



Note: Shaded areas indicate period of the Great Recession as defined by the National Bureau of Economic Research.

Source: Pew calculations from Thomson Reuters SDC Platinum municipal issuances database

BABs also had the effect of speeding up previously planned projects.¹⁸ To take advantage of the program, many cities moved up projects that were planned for later years to 2009 and 2010, as the savings presented by the federal interest-rate subsidy helped lower total project costs. According to Ted Chapman, a senior analyst at Standard & Poor’s, many cities responsible for managing water and wastewater utilities sped up projects to ensure those ventures would qualify as BABs.¹⁹ San Francisco’s public utilities commission, for example,

Build America Bonds

As part of ARRA, the federal government instituted the Build America Bonds program, making a new type of municipal bond available to state and local governments. For these bonds, the interest paid was subject to federal income taxation, but, in order to offset the projected increase in interest rates due to the bonds being taxable, the federal government provided a direct subsidy to the issuers equal to 35 percent of the interest rate on each bond.ⁱ This subsidy was designed to make the bonds cheaper to issue than tax-exempt bonds.

In 2011, The U.S. Department of the Treasury estimated that state and local governments saved more than \$20 billion in borrowing costs through the use of the program, compared with issuing traditional tax-exempt municipal bonds.ⁱⁱ While the new bonds generally could be issued to finance almost any governmental purpose for which traditional tax-exempt bonds could be used, the Internal Revenue Service did impose some conditions. First, the bonds were restricted to new projects and in most instances could not be used to refund previous issuances.ⁱⁱⁱ In addition, if a government retained any excess proceeds from the bonds in excess of a reasonable reserve fund designed to cover cost overruns, those proceeds could only be used to fund capital expenditures.^{iv}

Over the course of the program—which lasted from the date of the ARRA’s signing (Feb. 17, 2009) until the end of 2010—the Treasury Department estimated that \$181 billion in total BABs were issued by states, cities, and other municipal governments.^v

i The terms of BABs also brought new investors into the municipal market that had not been large holders of municipal bonds, including pension plans, insurance companies, mutual funds, and commercial banks.

ii U.S. Treasury Department, *Treasury Analysis of Build America Bonds Issuance and Savings*, May 16, 2011, p. 2, <http://www.treasury.gov/initiatives/recovery/Documents/BABs%20Report.pdf>.

iii Internal Revenue Service, “Build America Bonds and Direct Payment Subsidy Implementation Notice 2009-26,” 2009, <http://www.irs.gov/pub/irs-drop/n-09-26.pdf>.

iv Ibid.

v U.S. Treasury Department, *Treasury Analysis of Build America Bonds Issuance and Savings*.

accelerated a planned \$350 million bond issuance by several months to the end of 2010.²⁰ In Chicago, the city’s Metropolitan Water Reclamation District issued \$600 million in BABs in 2009, saving the district \$118 million compared with what it would have cost to issue traditional tax-exempt municipal bonds.²¹

Despite this trend, about a third of the 30 cities studied chose not to issue BABs for various reasons: Atlanta, Detroit, Kansas City, Miami, Minneapolis, Philadelphia, Pittsburgh, Portland, Sacramento, San Diego, and St. Louis. One reason that some of these cities did not use BABs was that, on average, their bond ratings were three rating levels lower than the cities that issued at least one BAB.²² Because of these lower bond ratings, cities such as Philadelphia projected the use of BABs would have resulted in higher interest rates than traditional tax-exempt bonds even when factoring in the subsidy.²³ In addition, several of these cities typically do not issue large amounts of new debt for statutory or political reasons, and BABs were more cost-effective for large issuance amounts.²⁴

Further, BABs were not the only federal program provided through ARRA. The act also included more than \$105 billion in direct infrastructure spending and grants designed to jump-start new projects—primarily in 2009 and 2010—that states and localities would otherwise not have been able to afford.²⁵ This likely contributed to the substantial decline in new issuances in 2011 and 2012 as cities fast-tracked projects to take advantage of the federal subsidies and grants. Case in point: Los Angeles undertook a number of new infrastructure projects funded through the act, including retrofitting street-lighting and municipal buildings to reduce energy usage and upgrading water pipes.²⁶

The future of refunding bonds as a near-term fiscal tool is uncertain

Even as revenues rebound in the near term, some cities are likely to keep using refunding bonds as a significant debt-management tool. But, tax-exempt bonds can be advance refunded only once—per federal statute—and many governments have already refinanced most of their outstanding bonds.²⁷ In addition, continued refunding is contingent on interest rates remaining historically low. Although the Federal Reserve has indicated that it intends to hold interest rates down until unemployment reaches 6.5 percent, recent concern over possible tapering of the Fed’s monthly \$85 billion assets purchases as soon as September has increased the volatility of interest rates in the municipal market. This has led to uncertainty over whether rates will remain low enough for cities to justify continuing the large amounts of refunding exhibited in 2012.²⁸

Furthermore, despite the original intent of BABs as low-interest-rate financing mechanisms, officials in some cities may seek to refund those bonds as well. Due to the ongoing federal sequestration, the BAB subsidy payments to state and local governments, once 35 percent of the bond’s interest rate, have been cut to 27.4 percent.²⁹ As a result, issuing governments have had to pick up the tab for the difference, raising the rate for some of these bonds above prevailing rates. In response, several cities, including Columbus, OH, and Monona, WI, have invoked what are known as “extraordinary redemption” provisions that will allow them to issue refunding bonds for their BABs.³⁰ California, the nation’s largest issuer of BABs, is also examining its options for refunding.³¹ If the federal sequester continues, it is possible that other state and local governments will begin to examine the potential fiscal benefits of such a move.³²

Conclusion

America’s largest cities focused on debt management as a key component of protecting their fiscal health during and after the Great Recession. On the heels of a deep and prolonged economic decline, cities issued fewer new money bonds in 2011 and more refunding bonds in 2012 than at any other point in the previous 22 years. As cities continued to face fiscal challenges in the recession’s aftermath, they were reluctant to incur large amounts of new debt before their finances substantially recovered. Federal policy responses to the economic downturn through the American Reinvestment and Recovery Act also likely played a significant role in the reduction of new issuances in 2011 and 2012 by encouraging state and local governments to accelerate “shovel ready” projects to begin in the immediate postrecession years. At the same time, cities took advantage of historically low interest rates to achieve substantial savings on debt-service payments—undoubtedly relieving some fiscal stress.

Looking ahead, municipalities will continue to face difficult economic conditions until revenues recover more substantially. At the same time, other factors such as the federal sequester and pending changes to Federal Reserve policy are also changing the landscape for cities as they seek to manage costs associated with debt service while financing needed infrastructure improvements.

Appendix: Data and methods

The principal data source for this report is the Thomson Reuters SDC Platinum database on municipal bond issuances.³³ Researchers from Pew's American cities project began by examining data on all new municipal bond issuances from Jan. 1, 1991, through Dec. 31, 2012, for 30 large U.S. cities³⁴—Atlanta; Baltimore; Boston; Chicago; Cincinnati; Cleveland; Dallas; Denver; Detroit; Houston; Kansas City, MO; Las Vegas; Los Angeles; Miami; Minneapolis; New York; Orlando, FL; Philadelphia; Phoenix; Pittsburgh; Portland, OR; Riverside, CA; Sacramento, CA; San Antonio; San Diego; San Francisco; Seattle; St. Louis; Tampa, FL; and Washington.

The data Pew researchers collected includes the sale date of the issuance, the issuer name, the use of bond proceeds, the total amount of the issuance, the amount of the issuance used to refund previous debt, the issuance type (general obligation or revenue), the bond's taxable status, and whether the issuance included a BAB. Pew then ran cross-tabulations of the data to examine how patterns changed over 22 years.

Because of the overhead and other administrative costs associated with issuing bonds, cities and other municipalities generally issue multiple bonds at once in a single "issuance." The Thomson Reuters database tracks each issuance (as opposed to individual bonds) as a single observation, or case. Therefore, Pew's analysis does not discuss the bonds that cities issue on an individual level, but instead reports in aggregate the amount of debt that cities have issued over a specific time. The analysis includes only bonds that were issued by the city government in order to focus on cities' debt-management patterns.³⁵

To accurately compare dollars across this extensive period, the data were adjusted to account for inflation using the U.S. Bureau of Economic Analysis' National Income and Product Account estimates of annual nominal and chained 2005 gross domestic product (a GDP deflator).

Additional sources of information for the report included the Comprehensive Annual Financial Reports of individual cities, as well as the Bond Buyer's interest rate indices for general obligation and revenue bonds.

To evaluate the role of a city's credit ratings in the issuance of BABs, Pew researchers assigned a numerical value to each city's general obligation bond rating from Standard & Poor's for 2009 and 2010.³⁶ The lowest observed rating received a 1 (Detroit 2009 and 2010—BB) and ratings each increased by 1 up to AAA, which received a 12. The team then compared the average rating of cities that issued at least one BAB with the average rating of those that issued none in each year.

Endnotes

- 1 Pew examined general obligation and revenue bond issuances by the cities themselves, not governments in the surrounding metropolitan area or separate special purpose governments such as transportation authorities or school districts. See Appendix: Data and methods for further details.
- 2 Pew chose to examine data since 1991 to capture as much information as possible while retaining data integrity. See Appendix: Data and methods and Endnote 34 for further details.
- 3 Although comprehensive information on the savings that cities realize from the issuance of refunding bonds is not available in any single location, the American cities project contacted the city controller's offices of the three cities that issued the most refunding bonds (New York, Chicago, and Houston) to obtain an estimate of the reduction in future debt-service costs to the cities from their refunding issuances in 2012. New York and Houston provided the team with direct dollar estimates of their savings. Chicago was unable to provide the team with a dollar estimate but indicated that it seeks to achieve savings of at least 3 percent of the total issuance per Government Finance Officers Association guidelines. To arrive at a savings estimate for Chicago, the project team took the city's 3 percent guideline and multiplied it by the city's total refunding issuances for 2012.
- 4 By federal law, tax-exempt municipal bonds may be refunded in only two ways. First, they may be refunded within 90 days of their "call date"—a date on which the bonds are "callable" (i.e., refundable), typically 10 years after the bonds are issued. Bonds may also be "advance refunded"—that is, refunded outside of the 90-day call-date window—but only once, and then cannot be advance refunded a second time outside of the call window.
- 5 The Thomson Reuters data set does not distinguish between new money debt for capital projects and new money debt for cash balance. While most new issuances represent borrowing for long-term capital projects, it is not uncommon for municipal governments to issue new money debt for short-term cash-flow management.
- 6 Average interest rates, as defined by the annual average of the Bond Buyer's Revenue Bond and 20 General Obligation Bond Indices hit a 22-year low in 2012 of just 4.15 percent—a drop of 75 basis points from the previous year. In contrast, the average interest rate in 1993 was 5.70 percent (and had dropped 81 basis points from its 1992 level) and the average rate in 2003 was 4.95 percent, a 25-basis-point drop from the prior year. The average interest rate for the entire 22-year period examined by Pew was 5.35 percent.
- 7 Nancy Winkler, interview with American cities project, Washington, July 10, 2013.
- 8 Government Finance Officers Association, "Analyzing and Issuing Refunding Bonds (1995 and 2010) (DEBT)," accessed March 28, 2013, p. 2, <http://www.gfoa.org/downloads/debt-analyzing-advance.pdf>.
- 9 Data on New York's savings was provided by Zoriat Agayeva, bureau chief of the Department of Accountancy within the city Controller's Office. Data on Houston's savings were provided by Charisse Mosely, the city's deputy controller. Data on Chicago's savings were estimated based on an interview with Jeremy Fine, the city's director of debt management.
- 10 Twenty-one cities decreased their new issuances in 2011—Atlanta, Boston, Chicago, Cleveland, Dallas, Denver, Los Angeles, Miami, Minneapolis, New York, Orlando, Philadelphia, Phoenix, Pittsburgh, Portland, Riverside, Sacramento, San Antonio, San Diego, San Francisco, and Seattle—with New York representing the greatest decrease, from \$4.1 billion to \$1.8 billion.
- 11 The reasons these cities did not issue new money debt in 2011 vary and are not necessarily indicative of fiscal distress. Pittsburgh, for example, funds capital projects on a "pay as you go" basis instead of issuing bonds to cover the cost.
- 12 Of the 30 cities, 18 issued more new money debt in 2012 than in 2011: Atlanta, Boston, Cincinnati, Cleveland, Dallas, Denver, Kansas City, Los Angeles, Miami, New York, Phoenix, Portland, Sacramento, San Antonio, San Diego, San Francisco, St. Louis, and Tampa. The largest increase was from San Francisco, which issued \$663 million, up from zero the previous year.
- 13 Pew analysis of Comprehensive Annual Financial Reports from 30 cities (fiscal 2006-2011).

- 14 Ibid.
- 15 Ibid.
- 16 The Bond Buyer, *2010 in Statistics Annual Review: Could They Come Back From the Dead?* Feb. 2011, p. 2A, <http://www.bondbuyer.com/pdfs/2010yrend.pdf>.
- 17 City of New York, *Comprehensive Annual Financial Report of the Comptroller for the Fiscal Year Ended June 30, 2010*, 2010, p. XV, <http://www.comptroller.nyc.gov/bureaus/acc/cafr-pdf/cafr2011.pdf>.
- 18 Patrick McGee, "Last-Minute Flurry of BABs Puts 4Q at \$133B," *the Bond Buyer*, Jan. 3, 2011, http://www.bondbuyer.com/issues/120_2/new_issue_volume-1021711-1.html.
- Rich Kirchen. "Federal bond program speeds up projects," *the Business Journal*, Oct. 29, 2010, <http://www.bizjournals.com/milwaukee/print-edition/2010/10/29/federal-bond-program-speeds-up-projects.html>.
- 19 The Bond Buyer, *2012 in Statistics Annual Review: Refundings Take Biggest Piece of the Pie*, Feb. 11, 2013, <http://www.bondbuyer.com/pdfs/BB-2012-stats-supp.pdf>.
- 20 Ashley Lutz, "Build America Borrowers Race Countdown Clock Before Year-End: Muni Credit," *Bloomberg*, Dec. 11, 2010, <http://www.bloomberg.com/news/2010-12-10/build-america-s-end-has-issuers-from-east-to-west-rushing-to-market-bonds.html>.
- 21 Ibid.
- 22 Pew assigned a numerical value to the bond rating of each city, calibrated to the lowest rating of the entire group, and then averaged the ratings of the cities that issued BABs and compared them to the average of the cities that did not. In 2009 and 2010, the cities that issued BABs had bond ratings 3 points higher than those that did not. See Appendix A: Data and Methods for further details.
- 23 Nancy Winkler, interview with American cities project, Washington, May 21, 2013.
- 24 Ibid. Pittsburgh does not issue bonds for capital improvement projects, instead using a "pay as you go" system.
- 25 Government Printing Office, *American Recovery and Reinvestment Act of 2009*, accessed May 24, 2013, <http://www.gpo.gov/fdsys/pkg/BILLS-111hr1enr/pdf/BILLS-111hr1enr.pdf>.
- 26 Carleen Marquez, interview with American cities project, Washington, May 30, 2013; and Anthony Sanchez, interview with American cities project, Washington, June 7, 2013.
- 27 Nancy Winkler, interview with American cities project, Washington, July 10, 2013.
- 28 Joshua Zumbrun and Jeff Kearns, "Fed Maintains \$85 Billion Pace of Monthly Asset Purchases," *Bloomberg*, March 20, 2013, <http://www.bloomberg.com/news/2013-03-20/fed-keeps-85-billion-pace-of-bond-buying-as-job-market-improves.html>. Also, Matt Fabian, interview with the American cities project, Washington, July 3, 2013.
- 29 National Association of Bond Lawyers, "Effect of Sequester on Direct-Pay Bonds," February 2013, p. 1, http://www.nabl.org/uploads/cms/documents/NABLNet_Alert_Effect_of_Sequester_on_Direct_Pay_Bonds.pdf.
- 30 Karen Pierog, "Some cities ditch Build America Bonds as sequester hits stimulus," *Reuters*, April 15, 2013, <http://www.reuters.com/article/2013/04/15/municipals-babs-redemptions-idUSL2NOCZ24120130415>. See also, Michelle Kaske, "Columbus Set to Redeem Up to \$476 Million of Build America Bonds," *Bloomberg*, May 8, 2013, <http://www.bloomberg.com/news/2013-05-08/columbus-set-to-redeem-up-to-476-million-of-build-america-bonds.html>.
- 31 Karen Pierog, "Some cities ditch Build America Bonds."
- 32 To date, none of the 30 cities examined by Pew has announced that it will refund all or a portion of its BAB issuances.

33 Thomson Reuters, SDC Platinum, accessed May 29, 2013, http://thomsonreuters.com/products_services/financial/financial_products/a-z/sdc/#tab2. The database contains historical information on the bond issuances of more than 550,000 global entities, dating back to the 1960s across 174 variables that cover a variety of topics, including information about the issuer (the city, county, state, or other government), the bond deal (such as interest rate, amount, and term length), and the parties (underwriters, insurers, obligors, etc.) involved.

34 After consulting with external experts on the municipal bond market, the team chose to focus on the period beginning with 1991 due to concerns regarding the accuracy of data reporting from years prior to that period. Specifically, prior to widespread computerization, records on bond issuances had to be transferred from paper at a later date, introducing greater potential for data entry error.

35 Therefore the analysis does not include any issuances from governmental organizations other than the city, including school districts, transportation authorities, convention center authorities, counties, or other metropolitan governments.

36 Portland and Tampa were not rated by Standard & Poor's, so the team used Moody's Investors Service ratings for those cities.

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