

U.S. TREASURY DEPARTMENT

**Treasury Analysis of
Build America Bonds Issuance and Savings**

Over \$180 billion of Build America Bonds were issued over the lifetime of the program

*State and local governments reaped approximately \$20 billion in present value
savings from issuing Build America Bonds*

*The President's FY2012 Budget proposes to reinstate and expand the
Build America Bonds program*

May 16, 2011

Executive Summary

This Treasury report examines the effects of Build America Bonds (BABs) on issuer borrowing costs. Introduced as part of the American Recovery and Reinvestment Act of 2009, BABs are taxable bonds for which the U.S. Treasury Department pays a 35 percent direct subsidy to the issuer to offset borrowing costs. BABs had a very strong reception from both issuers and investors. From the inception of the program in April 2009 to when it expired on December 31, 2010, there were 2,275 separate BABs issues, which supported more than \$181 billion of financing for new public capital infrastructure projects such as schools, bridges and hospitals.

The empirical analysis presented in this report indicates that state and local governments that issued BABs realized considerable savings as compared to the cost of issuing tax-exempt bonds. This report provides evidence that President Obama's proposal to extend and expand the BABs program would lead to continued savings on borrowing costs for state and local governments.

Summary of Results:

- **There was a very strong market reception for BABs.** Over the lifetime of the program, \$181 billion in BABs were issued by state and local governments in all 50 states, the District of Columbia and two territories.
- **BABs issuers received significant savings.** Expanding on an April 2010 analysis, this report estimates that BABs issuers saved, on average, 84 basis points on interest costs for 30-year bonds and also received significant savings on shorter maturities, as compared to traditional tax-exempt bonds.
- **BABs issuers saved an estimated \$20 billion in borrowing costs.** Due to the large savings in interest costs, state and local governments that issued BABs saved an estimated \$20 billion in borrowing costs, on a present value basis, as compared to tax-exempt bonds. This is considerably greater than the net cost to the federal government of the BABs program.
- **The President's FY2012 proposal to reinstate and expand BABs at a revenue neutral rate would benefit municipalities, retail investors and the municipal bond market.**

Background

The financial crisis of 2008 severely impaired credit markets for state and local governments. Like other financial markets, the municipal bond market faced liquidity, credit, and market access constraints with widespread aversion to risk exposure during this time. In addition, features particular to the municipal bond market – including credit rating downgrades of large monoline bond insurers and auction failures in February 2008 affecting nearly \$300 billion in auction rate securities – exacerbated the turmoil. By the fourth quarter of 2008, monthly issuance had fallen to 68 percent of pre-crisis levels, the relative cost of borrowing had increased by more than 100 percent, and many municipal issuers had no access to the capital markets.

Without access to financing, many state and local governments were forced to put infrastructure and capital projects on hold, which contributed to a larger contraction in aggregate demand. The projects that were successfully financed required higher costs than usual, putting additional strain on already stressed budgets.

In February 2009, the Administration and Congress passed the American Reinvestment and Recovery Act of 2009 (the Recovery Act) to address the economic contraction caused by the financial crisis. The Recovery Act included many provisions that provided direct support to state and local governments, including \$151 billion in grants to help address revenue shortfalls and support ongoing expenditures.

The Recovery Act also included Build America Bonds (BABs) program. This program, which enjoyed bipartisan support, provided an innovative new lower cost borrowing tool for state and local governments. BABs are taxable bonds for which Treasury pays a 35 percent direct subsidy to the issuer to offset borrowing costs.

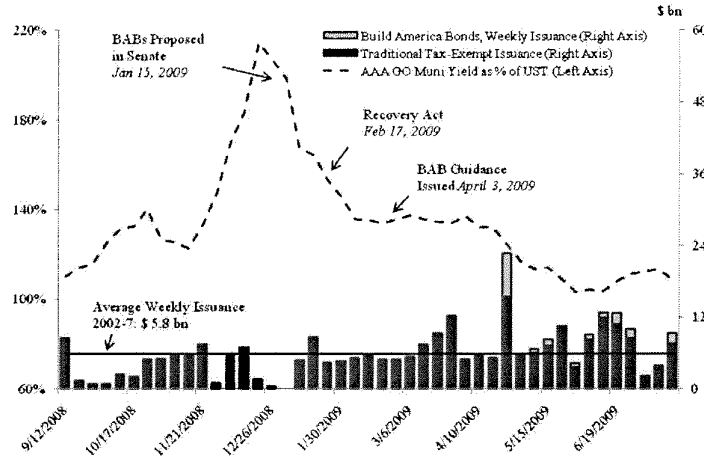
BABs Broaden the Market for Municipal Borrowing

At a time when borrowers of all kinds were struggling to obtain financing, BABs provided a much needed expansion of opportunities for state and local governments to access credit. Since BABs are taxable bonds which were sold without regard to tax status, they appeal equally to investors that do not have tax liability, including pension funds and other long term institutional investors, and to traditional investors of tax-exempt bonds. Moreover, BABs are equally attractive to middle class taxpayers, which helps to diversify the base of retail investors.

The increase in potential investors is substantial: whereas the traditional tax-exempt bond market has a total size of about \$2.8 trillion and a predominately retail investor base (individuals and mutual funds own 70 percent of tax-exempt bonds), the BABs program provides access to the

much bigger \$30 trillion conventional taxable bond market, which includes more long-term institutional investors.

Figure 1: BABs Issuance and Tax-Exempt Yields



Source: Data are from Bloomberg

By broadening the set of investors interested in holding municipal bonds, BABs helped to reduce issuer borrowing costs, especially on longer maturity issues.¹ The benefits were significant not only for BABs issuers, but traditional tax-exempt issuers as well. As the investor base broadens, tax-exempt issuers benefit from reduced supply pressure. As is evident in the chart above, around the time that BABs were introduced, yields on tax-exempt bonds fell from historic highs to slightly above pre-crisis levels.

BABs Improve Efficiency

In addition to broadening the market for municipal bonds, BABs more efficiently deliver the federal subsidy for state and local government borrowing because each dollar of subsidy goes directly to the issuer. By comparison, the subsidy for tax-exempt bonds is widely considered to be inefficient because federal revenue costs (in lost federal taxes) are greater than benefits to state and local governments (in lower borrowing costs).²

¹ For example, *The Bond Buyer* reported that analysts from Citigroup find that “yield savings to issuers on longer term BAB issues continue to be in the 80 to 100 basis point range, before the value of the call option is considered.” (See *Bond Buyer* “Market Close: Muni Finish Unchanged to Slightly Firmer”, May 18, 2009)

² See “Subsidizing Infrastructure Investment with Tax-Preferred Bonds,” CBO/JCT, October 2009 <http://www.cbo.gov/ftpdocs/106xx/doc10667/10-26-TaxPreferredBonds.pdf>

Since 1986, interest rates on long-term investment grade tax-exempt bonds have averaged about 20 percent lower than comparable corporate taxable bonds whereas Federal revenue costs for tax-exempt bonds have averaged about 25-30 percent.

BABs also have a more streamlined tax compliance framework that focuses directly on governmental issuers who benefit from the subsidy, as compared with tax-exempt bonds and tax credit bonds, which involve investors as tax intermediaries.

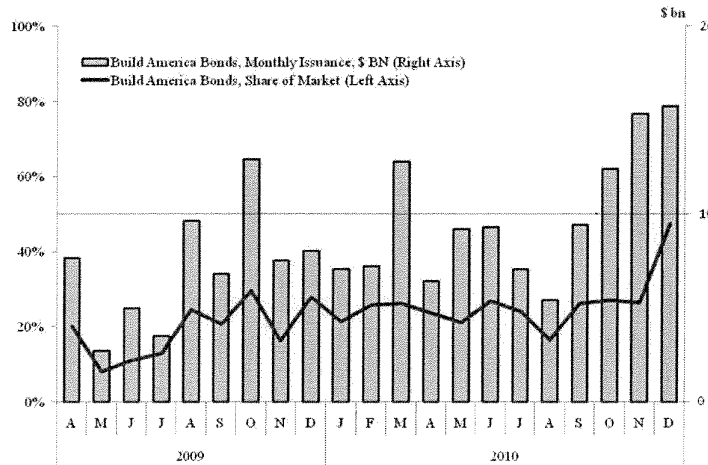
Further, in a July 2010 report, the Treasury Inspector General for Tax Administration determined that, in its initial administration of the BABs program, the IRS generally processed all complete requests for the BABs Federal subsidy payments accurately, timely, and without indications of fraudulent or erroneous disbursement.³

BABs Issuance

BABs Issuance Over Time

From the inception of the program in April 2009 to December 31, 2011, there were 2,275 separate BABs issues for over \$181 billion of total BAB issuance.⁴

Figure 2: Monthly BABs Issuance



Source: Data are from Bloomberg

³ See TIGTA Report, entitled “Initial Build America Bond Subsidy Payments Were Processed Accurately and Timely” (July 14, 2010) at: <http://www.treas.gov/tigta/auditreports/2010reports/201011083fr.pdf>.

⁴ Data on aggregate BABs issuance by state and by month can be found on the Treasury website at: <http://www.treasury.gov/initiatives/recovery/Pages/babs.aspx> In addition, the website provides state-level tables with details on each of the 2,275 BABs issuances.

The first few months of the BABs program issuance averaged \$5.8 billion per month and constituting only 16 percent of the total municipal bond issuance through September 2009. By end of 2009, issuers and investors had developed familiarity with the program and issuance increased accordingly. From October 2009 to June 2010, BABs issuance averaged nearly \$9 billion per month and constituted 24 percent of all issuance.

BABs issuance slowed slightly in the summer of 2010 and fell to \$5.4 billion or 16 percent of all municipal bonds issued in August 2010. BABs issuance then surged in the final quarter of 2010. Many state and local governments appear to have accelerated the timing of financings of needed public capital projects in 2010 in anticipation of the scheduled expiration of the program on December 31, 2010, which was consistent with the objective of the Recovery Act to stimulate capital investment. In the last three months of 2010, BABs issuance averaged \$14.4 billion and constituted one-third of the market. In December 2010, BABs constituted nearly 50 percent of all municipal issuance.

BABs Issuance by State

BABs were issued in all 50 states, the District of Columbia, and two territories. The table below presents state-by-state issuance totals.

BABs have been used by small issuers, such as Cass County School District in Nebraska, to finance construction of local schools, firehouses, and community centers. At the same time, BABs have been used by large issuers, such as the Bay Area Toll Authority, to finance major infrastructure initiatives and capital projects. BABs were only available for capital financing and could not be used for cash management or for closing budget shortfalls.

Table 1: BABs Issuance by State

State / Territory	Total Issuance (\$Millions)	No. of Issues	State / Territory	Total Issuance (\$Millions)	No. of Issues
AK	358	5	NC	1,623	36
AL	614	18	ND	68	7
AR	40	3	NE	1,008	60
AZ	1,978	39	NH	355	6
CA	37,680	158	NJ	7,364	33
CO	4,074	63	NM	276	7
CT	1,915	19	NV	2,562	25
DC	1,950	8	NY	20,630	59
DE	519	6	OH	8,344	123
FL	5,537	75	OK	816	29
GA	3,729	17	OR	971	8
HI	1,268	7	PA	5,022	64
IA	760	37	PR	1,013	5
ID	143	6	RI	12	1
IL	11,231	245	SC	1,193	32
IN	2,072	38	SD	355	22
KS	1,629	55	TN	1,836	42
KY	2,975	105	TX	16,676	95
LA	949	9	UT	2,900	47
MA	4,836	17	VA	3,821	45
MD	3,465	40	VI	37	1
ME	88	3	VT	126	4
MI	2,625	70	WA	6,133	89
MN	1,495	115	WI	2,170	142
MO	2,992	120	WV	88	2
MS	765	6	WY	142	6
MT	30	1	Total	181,256	2,275

Source: Data are from Bloomberg

BABs Savings

An April 2010 Treasury report outlined a new method for estimating the savings to BABs issuers, as compared to the cost of issuing tax-exempt bonds. This estimation method relied on comparing BABs yields with tax-exempt yields for a selected sample of issuers who issued both BABs and tax-exempt bonds on the same day.

This estimation method allows for a comparison that nets out any differences between BABs and tax-exempt bonds that are due to issuer-specific characteristics or to trends in bond yields over time. This approach eliminates many potential sources of the difference between BABs and tax-exempt yields that are unrelated to the direct effect of the BABs program. For example, BABs issuers may have consistently different risk profiles than non-BABs issuers. Also, interest rates

vary from day to day, and changed considerably throughout the two years that BABs were available. Failure to account for such differences, including differences in risk profiles or in time of issuance, could affect the accuracy of the comparison of BABs and tax-exempt yields and confound the estimates of the direct effect of the program. The estimation method in this analysis also controls for several observed characteristics of the bonds themselves, including their maturity and call features.

Additional details on the “fixed-effects” regression models used in this estimation can be found in the April 2010 Treasury Report, available online at:

<http://www.treasury.gov/initiatives/recovery/Documents/BABs-Report-4-2-2010-FINAL.pdf>

The Sample of Paired Issues

The previous analysis consisted of 92 cases in which both BABs and tax-exempt bonds were issued by the *same* issuer on the *same* day from April to September of 2009. By adding over a year of additional data, the current analysis is able to expand the estimation sample to 528 cases of paired issuers.

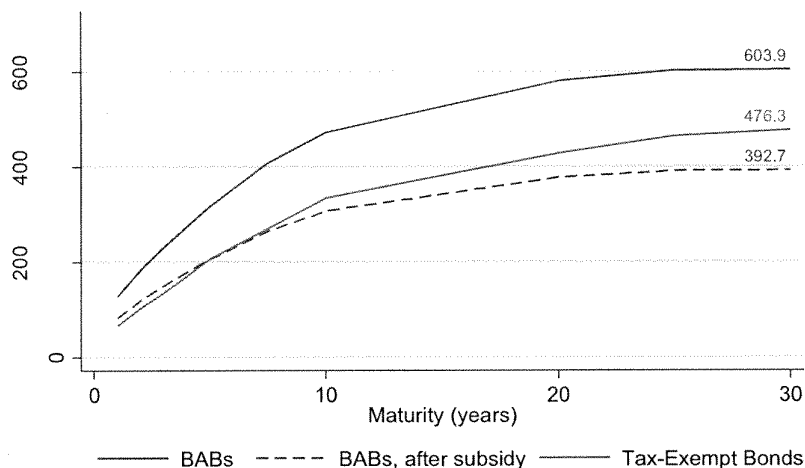
As before, many of these cases are serial bonds, so the sample consists of 11,156 separate BABs and tax-exempt bond placements. In this sample, as in the universe of BABs more generally, the BABs tend to be issued at longer maturities than tax-exempt bonds. The average maturity for BABs in the analysis sample is 14.3 years, whereas the average maturity for tax-exempt bonds is only 8.2 years. Given the difference in maturities, it is very important to flexibly control for maturity in the analysis.

Estimation Results: BABs Offer Savings at Longer Maturities

Figure 3 summarizes the regression estimates. The figure provides the average yield at various maturities for BABs and tax-exempt bonds that were issued by state and local governments that issued both types of bonds on the same day, controlling for other factors. In addition, the dashed line shows the yield cost of BABs after deducting the 35 percent subsidy to the issuer.

On average, BABs have provided savings at longer maturities, and provided greater savings at very long maturities. The savings on the yield for a 30-year bond is 84 basis points in this sample. Statistical tests indicate that these differences are very unlikely to have occurred by chance.

Figure 3: Predicted Yields: BABs v Tax-Exempt Bonds



Source: Estimates based on a multivariate regression with issuer/day fixed effects.

The yield curves displayed above were estimated from a multivariate regression of individual bonds where the bond yield is the dependent variable. The independent variable of interest is an indicator variable that is equal to one if the bond is a BAB and equal to zero otherwise.

The BABs indicator is interacted with controls for maturity, which allows for separate BABs effects to be estimated at multiple points along the yield curve. Unrestricted dummy variables were included as independent variables for each issuer and day the bonds were issued; these “fixed effects” control for any unobserved issuer-specific characteristics. In addition, the regression also includes controls for observed bond characteristics, including the size of the issue, the rating, and call features of the bond.⁵

BABs Underwriting Fees

There has been much confusion and some controversy surrounding underwriting fees paid for BABs issuances. Critics of the BABs program have claimed that underwriters charge exorbitant fees for BABs issues and that BABs fees have been significantly higher than regular tax-exempt underwriting fees.

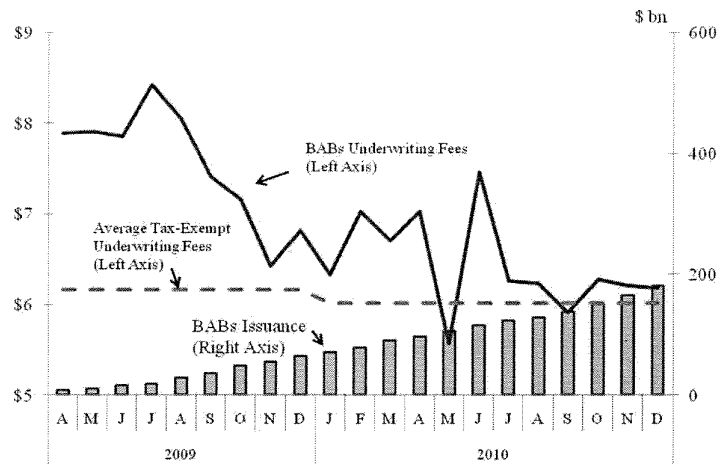
⁵ Specifically, the estimating equation is:

$$Y_{itbm} = \sum \beta_m M_{itbm} + \sum (BAB) \beta_m M_{itbm} + \gamma X_{itbm} + \alpha_{it} + \varepsilon_{itbm}$$

Where Y = yield; M = 10 maturity dummies (0-1 yrs, 2yrs, .. 27+); BAB = BAB indicator dummy; X = features of the bond, such as callable, sinkable, putable, floater, log size; α_{it} = issuer / day fixed effects; and ε_{itb} = error term.

This appears to have been true at the beginning of the BABs program. However, as Figure 4 below shows, underwriting fees for BABs issues have since come down significantly and over the last six months of the program have been only slightly above underwriting fees for tax-exempt bonds.

Figure 4: BABs and Tax-Exempt Underwriting Fees



Source: Data are from Thomson - Reuters. For each month, underwriting fees are calculated as the weighted average of all BABs issues in that month.

There are many possible reasons why BABs underwriting fees may have started higher than tax-exempt underwriting fees. Probably most important is that the initial underwriting fees reflected risk and uncertainty about the reception to the initial BABs offerings, which caused underwriters to demand higher fees for placing these bonds. Over time, BABs have become better known and less risky from the underwriter's perspective, which likely lowered underwriting fees. In addition, the initial BABs placements required underwriters to incur some start-up costs, which likely raised the underwriting costs. Over time underwriting fees decreased significantly as certainty improved in the BABs market and issuers and investors alike became more familiar with the product.

The magnitude of underwriting fees must also be kept in perspective. Underwriting fees are paid only once at the issuance of the bond, whereas the issuer receives any savings on interest costs with each coupon payment. Thus, the one-time differential in BABs underwriting fees, which was 7 basis points on average over the life of the program, should be compared with yield savings that could be on the order of 80-90 basis points *per year* for issuers of BABs relative to longer term tax exempt debt.

Further, it should be kept in mind that the statutory program restrictions for BABs limit the total amount of bond proceeds that can be used for bond issuance costs, including underwriting fees and all other issuance costs, to no more than two percent (2%) of the bond proceeds.

Total Estimated Savings to Issuers

The savings to BABs issuers in borrowing costs by issuing BABs instead of traditional tax exempt bonds are significant. The total savings depend on the differential in yields, the 35 percent interest subsidy, and any differential in underwriting fees. Moreover, because savings occur in the future through lower after-subsidy yield payments, it is necessary to discount future net yield payments.

Here we provide an illustrative estimate of the present value of savings on borrowing costs for each of the municipalities that issued BABs rather than tax exempt bonds. For each of the 2,275 bonds issued during the life of the program, we assume that the savings for a BABs issue equal the maturity-specific savings implied by the regression results displayed in Figure 3.⁶ The savings were discounted to a present value using the same-day, same-rating, same-maturity yield on tax-exempt debt for a discount rate. Finally, we assume underwriting fees for BABs were 7 basis points higher than the underwriting fees on tax-exempt debt, following the findings on underwriting fees above.

This calculation indicates that the \$181 billion of BABs that were issued between April 3, 2009 and December 31, 2010 will allow state and local governments to save an estimated \$20 billion in borrowing costs, on a present value basis, as compared to issuing traditional tax-exempt bonds. In other words, had the state and local government that issued BABs issued comparable tax-exempt bonds instead at the same time, their borrowing costs would be around \$20 billion higher in present value.

Two caveats to this estimate should be noted. On the one hand, it disregards any interactions between BABs and tax-exempt bonds. It is possible that the availability of BABs lowered borrowing costs for tax-exempt bonds, especially given the severe credit and liquidity constraints that the municipal bond market faced at the time the BABs program started. In this case, the estimate understates the total reduction in state and local government borrowing costs due to the BABs program. On the other hand, it is possible that the estimated yield curves for the subsample of municipalities that issued BABs and tax-exempt bonds on the same day do not

⁶ Specifically, computing the savings for each bond proceeded in the following steps: First, start with the yield on newly issued BABs. Second, compute a predicted tax-exempt yield by subtracting from the BABs yield the maturity-specific, time-specific difference between the BABs and tax-exempt yields that was estimated in the “fixed effects” regression. Third, apply a 35 percent subsidy to the predicted BABs yield to get the after-subsidy BABs borrowing cost. Fourth, compute yearly savings as the predicted tax-exempt yield minus the final BABs borrowing cost. Finally, compute the present value over the maturity of the bond using the tax-exempt borrowing rate for a discount rate.

apply to the broader set of BABs issuers. For these reasons, the calculation should be viewed as illustrative of the magnitude of the savings on borrowing costs for state and local governments.

Importantly, the \$20 billion in savings to borrowers is considerably greater than the net cost to the federal government of the BABs program. This reflects the efficiency gains from the BABs program, which attracts new investors to the municipal bond market, especially at longer maturities.

The President's FY2012 Budget Proposal

The President's FY2012 Budget proposes to reinstate and expand the Build America Bonds program at a revenue-neutral 28 percent rate.⁷

Permanent Program for Build America Bonds: This proposal would make the Build America Bonds program permanent at a Federal subsidy level equal to 28 percent of the coupon interest on the bonds. The proposed Federal subsidy level is intended to be approximately revenue neutral relative to the estimated future Federal tax expenditure for tax-exempt bonds. A permanent Build America Bonds program should facilitate greater efficiency, a broader investor base, and lower costs for State and local governmental debt.

Expanded Uses: This proposal would also expand the eligible uses for Build America Bonds to include the following: (1) original financing for governmental capital projects, as under the initial authorization of Build America Bonds; (2) current refundings of prior public capital project financings for interest cost savings where the prior bonds are repaid promptly within ninety days of issuance of the current refunding bonds; (3) short-term governmental working capital financings for governmental operating expenses (such as tax and revenue anticipation borrowings for seasonal cash flow deficits), subject to a thirteen-month maturity limitation; and (4) financing for Section 501(c)(3) nonprofit entities, such as nonprofit hospitals and universities.

Conclusion

The estimates presented in this report indicate that the BABs program has provided significant savings on borrowing costs for state and local governments. President Obama's proposal to reinstate and expand BABs at a revenue-neutral 28 percent subsidy rate would provide greater certainty in municipal financing, a broader and more efficient market for municipal debt, lower underwriting and transaction costs, and additional savings on borrowing costs for state and local governments.

⁷ The Administration's Fiscal Year 2012 Revenue Proposals are available online at <http://www.treasury.gov/resource-center/tax-policy/Documents/Final%20Greenbook%20Feb%202012.pdf>.