



U.S. TREASURY DEPARTMENT

Treasury Analysis of Build America Bonds and Issuer Net Borrowing Costs

*Build America Bonds Issued To Date Will Save State and Local Governments
Around \$12 Billion in Present Value.*

*Underwriting Fees Are Declining to Levels Almost Comparable to Tax Exempt
Bonds.*

April 2, 2010

Executive Summary

This Treasury report examines the effects of Build America Bonds (BABs) on issuer borrowing costs. 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 have had a very strong reception from both issuers and investors. From the inception of the program in April 2009 to March 31, 2010, there have been 1,066 separate BABs issues, which have supported more than \$90 billion of municipal financing for new building projects.

The empirical analysis presented in this report indicates that state and local governments that issued BABs will realize considerable savings as compared to the cost of issuing tax-exempt bonds. This is partly due to the BABs program improving the efficiency of the municipal bond market by attracting a broader set of investors that would not traditionally hold municipal bonds. The findings in this report provide evidence that President Obama's proposal to extend and expand the BABs program would likely lead to continued savings on borrowing costs for state and local governments.

Summary of Results:

- **BABs issuers have received significant savings on interest costs.** On average, BABs have provided savings on interest costs for issuers at virtually all maturities. The estimated savings on the yield for a 10 year bond is 31 basis points and the savings on the yield for a 30 year bond is 112 basis points.
- **Underwriting fees for BABs are declining to levels comparable to tax-exempt bonds.** Although the weighted-average BABs underwriting fee was initially higher than the average for tax-exempt bonds, BABs underwriting fees have declined significantly over time. Moreover, the underwriting fees paid by BABs issuers have been small relative to the savings on interest costs due to the program.
- **BABs issuers are projected to save around \$12 billion in borrowing costs on bonds issued during the first year of the program.** For the \$90 billion of BABs that have been issued since the program was launched on April 3, 2009, it is estimated that state and local governments will save approximately \$12 billion in present value borrowing costs compared with issuing traditional tax-exempt bonds, taking into account underwriting fees and net interest costs. These savings are considerably greater than the net cost to the federal government of the BABs program.

Build America Bonds and Issuer Net Borrowing Costs

Overview

This report examines the effects of Build America Bonds (BABs), an innovative new tool for municipal financing created by the American Reinvestment and Recovery Act of 2009, on issuer borrowing costs. BABs are taxable bonds for which the U.S. Treasury Department pays a 35 percent direct subsidy to the issuer to offset borrowing costs. Unlike traditional tax-exempt municipal bonds, BABs are *target efficient*, meaning that each dollar of revenue foregone by the federal government benefits state and local governments by a dollar. In addition, the design of BABs was intended to reduce the cost of municipal borrowing in order to stimulate economic activity during the recession and to provide relief to struggling municipalities.

The BABs subsidy was intentionally set to be deeper than the implicit subsidy in traditional tax-exempt bonds to encourage building projects during the economic downturn, but BABs also help to reduce issuer borrowing costs because they appeal to a broader set of investors than do tax-exempt bonds, including pension funds and foreign investors. The increased investor demand likely drives down required interest payments. It is also worth noting that BABs became available at a time when the municipal bond market was severely impaired. The availability of BABs likely relieved pressure on traditional tax exempt bonds by providing a major new market for municipal bonds, and therefore helped the overall municipal finance market to recover and function better.

In the first section of this report we analyze how BABs have reduced issuer borrowing costs by focusing on a set of issuers that issued *both* BABs and tax-exempt debt on the same day. By focusing on this subsample of issuers, we are able to address possible concerns that BABs issuers differ from other municipal bond issuers in important respects. This analysis indicates that BABs have provided issuers with significant savings at all maturities on the yield curve, especially at the long end of the yield curve.

The second section analyzes the fees paid to underwriters by BABs issuers. Fees are typically paid to underwriters to compensate them for the effort expended in placing the bond and for the risk they bear in the initial bond purchase. Using data from Thomson/Reuters, we find that while BABs underwriting fees were initially higher than fees for tax-exempt bonds, underwriting fees for BABs have been declining over time and today are almost comparable to underwriting fees for tax-exempt bonds. Moreover, any differential in underwriting fees for placing BABs is small in comparison to the savings for state and local governments that issued BABs as opposed to tax-exempt bonds.

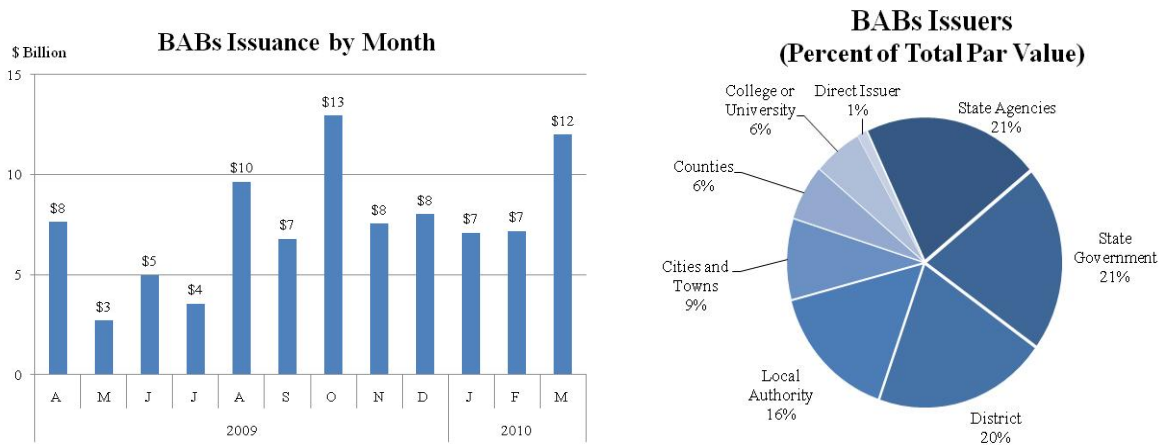
In the final section of this report, we estimate the reduction in issuer borrowing costs from the BABs program, taking into account yields, the direct 35 percent subsidy and underwriting fees. We estimate that the \$90 billion of BABs issued through March 31, 2010 will save state and local governments around \$12 billion in net present value on their borrowing costs over the lifetime of the BABs that they have issued as compared to tax-exempt debt.

BABs Issuance to Date

BABs were created by the America Reinvestment and Recovery Act. Treasury released expedited guidance on BABs on April 3, 2009, less than two months after the Recovery Act was signed into law. Shortly thereafter, the University of Virginia was the first organization to issue BABs on April 15, 2009.

From the inception of the program in April 2009 to March 31, 2010, there have been 1,066 separate BABs issues for over \$90 billion of total BAB issuance. BABs have been issued in 48 states and also in the District of Columbia.¹

Figure 1: Description of BABs Issuance and Issuers



Source: Bloomberg and Thomson Reuters.

State and local governments that traditionally can issue tax-exempt bonds can issue BABs to finance new capital projects. The amount of BABs that can be issued is uncapped for 2009 and 2010. BABs have been used extensively by state governments and state agencies, which make up more than 40 percent of all BABs issuance to date. Smaller entities – such as cities, public colleges and universities, and school districts – have also issued a considerable volume of BABs.

¹ Data are from Bloomberg. The Department of Treasury publishes monthly updates of Build America Bond issuance. The release for March can be found at: <http://www.ustreas.gov/press/releases/tg575.htm>

In the 12 months since the program was launched, the market reception for BABs has been strong. Between April 2009 and March 31st 2010, for example, BABs constituted more than 20 percent of all new issuances in the municipal bond market. This new financing tool has quickly established itself as an important part of the municipal bond market and is being utilized by municipal issuers of all sizes for a variety of projects.

Section 1: BABs Yields Compared to Tax-Exempt Yields

In this section we provide an estimate of how much BABs have reduced issuer interest costs by comparing yields for BABs, net of the 35 percent subsidy, and yields for tax-exempt bonds.

An important feature of our analysis is that we compare yields for municipalities that issued both BABs and tax exempt bonds on the same day. This approach enables us to net out any differences between yields on BABs and tax-exempt bonds that are due to the issuer.

Controlling for differences among issuers is potentially important because the municipalities that issue BABs could differ from municipalities that issue tax-exempt bonds in subtle ways, such as in their perceived riskiness to investors. In addition, interest rates vary from day to day, and fell throughout much of the period we study. BABs became more prevalent over time, as the municipal interest rates were declining. By comparing yields on BABs and tax exempt debt for the same issuer on the same day, we can net out these differences. We also control for several observed characteristics of the bonds themselves, including their maturity and call features.

Specifically, “fixed-effects” regression models were estimated to net out issuer-by-date-of-issue effects. The fixed-effects regression essentially controls for all issuer-specific characteristics on the date of issue, including the market perception of the risk of the issuer, the quality of the underwriting, and the market perception of any economic factors affecting the outlook for the issuer. These regression models controlled for measured features of the bonds as well, and allowed the differential in yields between BABs and tax-exempt bonds to vary with the maturity of the bonds. The conceptual experiment is to statistically compare yields on BABs and tax-exempt bonds that were issued by the same issuer on the same day, for bonds with the same maturity and other features.

It is reassuring that other comparisons of BABs and tax exempt municipal bonds that are not limited to the subsample of issuers that issued BABs and tax exempt bonds on the same day have reached qualitatively similar conclusions to ours.²

1.1 The Sample of Paired Issues

Our analysis sample consists 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. In many cases, serial bonds were issued, so the sample consists of 1,815 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 years, whereas the average maturity for tax-exempt bonds is only nine years. (Weighted by issuance, the maturity disparity is even larger: 27 versus 14 years.) Yields on tax-exempt municipal bonds relative to Treasuries have historically been higher at longer maturities than at shorter maturities, which is due in part to lack of retail demand for long dated tax-exempt debt.³ In contrast, BABs have attracted many investors that demand long dated securities that match their long dated liabilities (e.g. pension funds and life insurance companies). Given the difference in maturities, it is very important to flexibly control for maturity in our analysis.

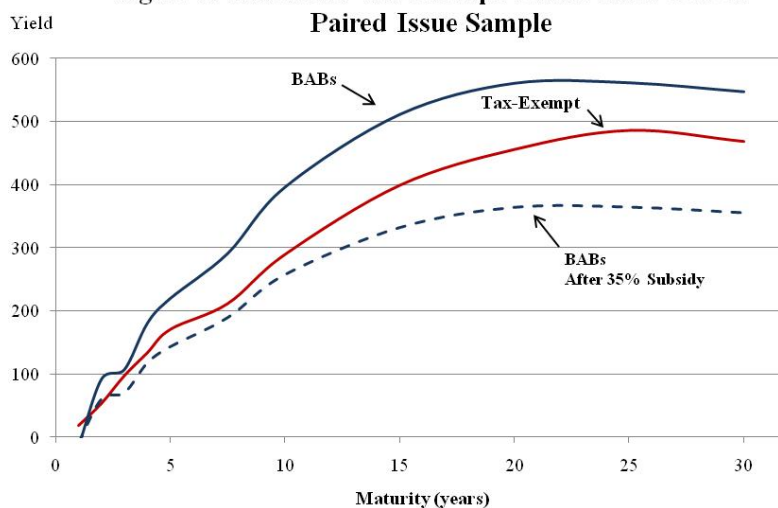
1.2 Estimation Results: BABs Offer Savings at All Maturities on the Yield Curve

Figure 2 summarizes the regression estimates. The figure provides the average yield at various maturities for BABs and tax-exempt bonds that were issued by issuers 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 all maturities, although the savings are greater at the longer maturities. The savings on the yield for a 10 year bond is 31 basis points and the savings on the yield for a 30 year bond is 112 basis points in this sample. Statistical tests indicate that these differences are very unlikely to have occurred by chance.

² 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)

³ According to data from Bloomberg, the average ratio of AAA municipal bond yields to U.S. Treasury yields from 1991 to 2007 are as follows: 87.7 percent at 30 years, 82.5 percent at 10 years, and 73.6 percent at 1 year.

**Figure 2: BABs and Tax-Exempt Bonds Yield Curves
Paired Issue Sample**



Source: Estimates based on a multivariate regression of bond yields on the following independent variables: 92 issuer-specific fixed effects, an indicator variable for the BABs structure, 11 indicator variables for the maturity of the bond, interactions between the BABs indicator and the 11 maturity indicators, indicators for the rating of the bond, the log of the par value of the bond, and indicator variables for whether the bond was callable or sinkable.

The yield curves displayed in Figure 2 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; 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.

Section 2: Underwriting Fees

There has been much confusion and some controversy surrounding underwriting fees paid for BABs issuances. On March 10, 2010 the *Wall Street Journal* published an article stating that underwriters had received in excess of \$1 billion from BABs issuers. This claim was amplified in a *Wall Street Journal* editorial on March 23. On March 25, however, the *Journal* issued a correction, stating that, “Wall Street firms have collected about \$700 million in fees from underwriting ‘Build America Bonds,’ according to Thomson Reuters.” Our tabulation of the underlying Thomson Reuters data indicates that around \$609 million of underwriting fees were collected as of March 10.⁴

Underwriting fees affect borrowing costs in two respects. First, they have a direct impact on the cost of borrowing as underwriting fees are an expense borne by the issuer.⁵ Second, fees paid to the underwriter indirectly affect the total borrowing costs by influencing the final yield on a bond. Placing bonds with a lower yield requires more work and risk from the underwriter, and as such may be expected to necessitate higher underwriting fees. From the issuer’s perspective, underwriting fees should optimally be set so as to minimize total borrowing costs, taking into account the direct impact of the underwriting fees as well as their indirect impact on the final yield.

To provide more information on underwriting fees, we used the Thomson Reuters data to compute the average underwriting fee for BABs weighted by par issuance amount each month.⁶ Assessing whether underwriting fees are appropriate or excessive is a complicated task, however, because fees vary with the complexity of the deal, size of the deal, difficulty of placement, and other factors. In this report we estimate only the weighted average of underwriting fees for BABs and traditional tax-exempt bonds, and do not attempt to adjust for factors that may affect underwriting fees.

Figure 3 displays BABs average underwriting fees each month, together with monthly BABs issuance and the average underwriting fee for tax-exempt bonds since January 2009. Over the entire duration of the BABs program, the average of BABs underwriting fees has been somewhat higher than the average of underwriting fees for tax-exempt bonds. The weighted average

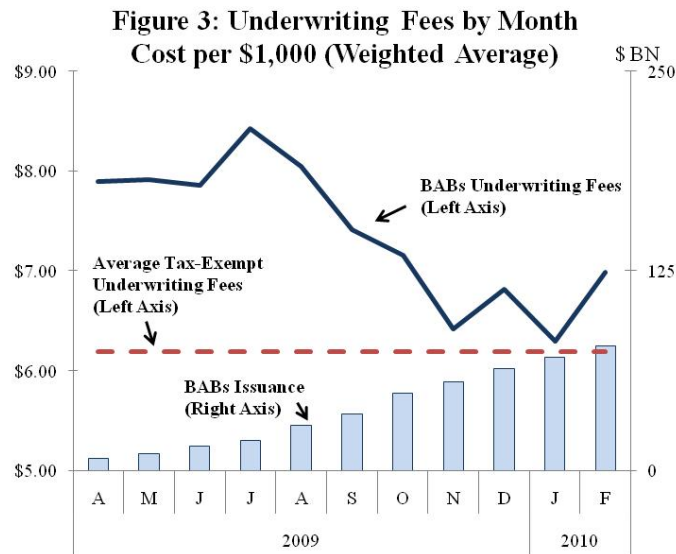
⁴ This figure is roughly consistent with the product of the average underwriting spread and total BABs issued reported in the original March 10th *Wall Street Journal* article. The *Journal* reported that underwriting fees were \$8.29 per \$1,000, and total BABs issuance was \$78 billion, the product of which is \$646 million of total underwriting fees. However, the \$8.29 figure is apparently an unweighted average, and the larger issuances tend to have lower underwriting spreads, so this calculation provides an overestimate of underwriting fees.

⁵ Underwriting fees on BABs are restricted by statute to be less than 2 percent of the par value of the issuance.

⁶ Weighting by the par issuance is common and appropriate for evaluating overall program costs (i.e., fees per dollar of BABs issued).

underwriting fees for BABs issued since April 2009 is \$7.29 per \$1,000. By contrast, the weighted average of the underwriting fees for tax-exempt bonds issued in 2009 and early 2010 was \$6.19 per \$1,000. In terms of basis points, the difference in underwriting fees between BABs and traditional tax-exempt bonds was 11 basis points, on average.

Although the figure clearly shows that the weighted-average BABs underwriting fee was initially higher than the average for tax-exempt bonds, BABs underwriting fees have declined significantly over time. Indeed, during the first two months of 2010, the BABs underwriting fees have been \$6.64 per \$1,000, which approaches the average of tax-exempt bonds over the whole period.



Source: Tabulations based on Thomson Reuters data.

There are many possible reasons why BABs underwriting fees have decreased over time. First, the market’s reception to the initial BABs offerings was much more uncertain than it was to traditional tax-exempt bond offerings, and as a consequence underwriters likely demanded 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. Second, the initial launch of BABs required underwriters to incur some start-up costs, including developing the appropriate legal framework, investor education, and writing placement documents, which likely raised the underwriting costs. Third, institutional factors may have affected the cost of the initial BABs issues. According to some market participants, BABs were initially placed by corporate bond desks at some underwriters, which often charge higher underwriting fees. As the program has matured, underwriting has migrated to the tax-exempt desks, and underwriting fees have come down as a result. Finally, there has been a shift away from negotiated sales to competitive sales, especially for small deals, which may have put downward pressure on underwriting fees.

Regardless of the reason, the decline in underwriting fees is a welcome development. Furthermore, many of the factors that have contributed to the decrease in underwriting fees, such as improved certainty in the BABs market and increased investor familiarity, could continue to lower underwriting fees in the coming months. And a permanent extension of the BABs program, as proposed in President Obama's FY2011 Budget, would also likely put further downward pressure on underwriting fees as certainty would be increased and underwriters would devote more resources to competing for BABs placements.

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 11 basis points differential in BABs underwriting fees should be compared with yield savings that could be on the order of 100 basis points per year for issuers of BABs relative to longer term tax exempt debt. In the next section, the total savings in borrowing costs for BABs is estimated.

Section 3: Total Estimated Savings to Issuers

How much in borrowing costs have BABs issuers saved by issuing BABs instead of traditional tax exempt bonds? 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 1,066 bonds issued so far, it is assumed that the yield for a BAB or tax exempt bond would equal the maturity-specific yield shown in Figure 2. For BABs the net yield is the gross yield adjusted for the 35 percent subsidy payment. The differential after-subsidy yields were discounted to a present value using a discount rate equal to the yield on tax-exempt debt on the day the bond was issued for a generic bond of the same rating and maturity, using fair market value indexes published by Bloomberg. Finally, underwriting fees for BABs were assumed to be 11 basis points higher than the underwriting fees on tax-exempt debt, following the findings in Section 3.

This calculation indicates that the \$90 billion of BABs that have been issued since the program was launched on April 3, 2009 will lead state and local governments to save an estimated \$12.3 billion in net present value borrowing costs compared with 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 \$12 billion higher in present value. This is considerably greater than the net cost to the federal government of the BABs program.

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 stress the municipal bond market was facing at the time the BABs program started. In this case, the estimate understates the total reduction in state and local governments' 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 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.

Conclusion

The estimates presented in this report indicate that the BABs program has provided significant savings on borrowing costs for municipalities that issued both BABs and tax-exempt bonds at the same time. Today underwriting fees on BABs are approaching underwriting fees on tax-exempt bonds, and the differential in underwriting fees at the beginning of the program is relatively small compared with the savings for state and local governments. President Obama's proposal to expand BABs and make the program permanent with a 28 percent subsidy rate that is revenue neutral for the federal government would provide greater certainty in municipal financing, likely leading to lower underwriting fees, enhanced retail ownership of BABs and continued savings on borrowing costs for state and local governments.