

Performance Audit Report

Opportunities for the State to Help School Districts Minimize the Costs and Interest Paid on Bond Debt

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Mission Statement

The State Auditor’s Office independently serves the citizens of Washington by promoting accountability, fiscal integrity and openness in state and local government. Working with these governments and with citizens, we strive to ensure the efficient and effective use of public resources.

Executive Summary

This report contains the results of the performance audit we conducted to determine whether school districts receive adequate guidance when issuing general obligation bonds. Our work focused on whether any state agency or local government has explicit authority, responsibility or statutory requirement to provide such guidance.

We found no requirements for state or local governments or other organizations to assist districts with bond sales. Further, some districts were not aware of the guidance that is available through manuals published by the Office of the Superintendent of Public Instruction and the Washington State School Directors' Association.

We also found that school districts do not receive advice or guidance on best practices for issuing debt. These best practices could potentially save districts millions of dollars in bond underwriting fees and interest charges.

To estimate potential savings, we used best practices on bond issues published by the Government Finance Officers Association and applied a statistical analysis to bonds issued by Washington school districts from 2003 through 2007.

We concluded that districts could have saved between \$44 million and \$79 million during those five years if they had followed the Association's best practices for financing debt.

Some districts sell bonds infrequently and therefore do not retain or may not be able to afford in-house expertise to effectively sell bonds and obtain lower underwriting fees and interest rates. Since the Superintendent of Public Instruction has broad legal authority over districts, and because of its already established business relationship with districts, that Office would be in the best position to facilitate guidance and training related to bond issues by bringing together school districts, educational service districts and staff from the Office of the State Treasurer to improve guidance and develop training.

The results of this audit provide districts with the support they need to issue general obligation bonds in the most cost-effective manner. Significantly reducing the borrowing costs would result in more money being available for school construction in the future.

About the Audit

Why we did this audit

From January 1, 2003 through December 31, 2007, Washington school districts and educational service districts issued roughly \$6.9 billion in general obligation bonds to finance various school capital projects. In doing so, they paid about \$317 million in interest costs and fees to underwriters. The bulk of school districts' operating budgets comes from state tax dollars. In addition, the state spends between \$450 million and \$800 million every biennium helping districts pay for the construction of schools. Therefore, the state has an interest in helping districts sell bonds in a cost-effective manner. We conducted this audit to help districts minimize the amount of tax dollars they spend on fees and interest associated with bond sales.

Our primary objectives were to answer the following questions:

- Is the State of Washington providing districts with adequate guidance on how to sell general obligation bonds in the most cost-effective manner?
- If guidance is not sufficient, what are the resulting costs and what can be done to reduce them?

We conducted this audit in accordance with Generally Accepted Government Auditing Standards, prescribed by the U.S. Government Accountability Office. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We also conducted this audit in accordance with the required elements of Initiative 900, detailed in Appendix A.

What we found

Although some districts obtained competitive rates on their general obligation bonds, from 2003 to 2007, districts as a whole paid higher interest costs and fees than they should have. We estimate the districts could have saved between \$44.6 million and \$79.4 million over that five-year period if they had followed the best practices identified in this report. We also found that Washington school districts could save money if they received more guidance from state government on how to sell bonds.

Scope and methodology

We reviewed studies, audits and publications that identify best practices associated with public debt issuance.

We examined all district general obligation bonds that were reported to the state Department of Commerce¹ (formerly the Department of Community, Trade and Economic Development) and sold from January 1, 2003 to December 31, 2007. We conducted a statistical and analytical analysis (see Appendix C) of these 287 issues, 21 of which were sold competitively, to calculate the amount of money districts could have saved in interest and fees if they had followed best practices in Appendix B. The soundness and reliability of our statistical model and methodology were independently verified by a firm with statistical expertise (see Appendix C). We made separate calculations using both the Net Interest Cost and the True Interest Cost, defined in Appendix D. Both calculations used the same statistical model that was independently verified (Appendix C).

We interviewed employees at seven districts and reviewed data to determine if and how districts received bond sale information, how they conducted previous bond sales and whether independent market information would have resulted in lower costs.

We also interviewed former and current officials from the Offices of Superintendent of Public Instruction and State Treasurer regarding how bond sale services and guidance to school districts could be improved.

The audit cost \$216,788.

¹ We compared the Commerce database with the Municipal Securities Rulemaking Board's municipal debt database, Electronic Municipal Market Access, for accuracy.

Background

What are general obligation bonds?

In the simplest terms, bonds are loans. The government that issues a bond is the borrower and the individuals who purchase the bonds (bondholders) are the lenders. A government's taxing authority is the security for the loan. The terms of repayment and debt structure are established in the bond's official statement. Typically, governments issue general obligation bonds to pay for construction projects like schools, roads and other facilities.

How are bonds sold?

Bonds are generally sold in one of two ways: directly to investors or through underwriters, which are typically banks or security firms. Selling directly to investors is called private placement and requires sellers to have their own understanding of the sale process and access to investors. When using an underwriter, the firm buys the entire bond issue and resells the bonds to investors, usually at a profit. School districts usually use underwriters for two reasons: to decrease the risk they will not sell the bonds and to sell the bonds more quickly. With either sale type, districts that sell bonds may use independent financial advisors who are familiar with the bond market to provide guidance about the market rates for bonds and the best manner to sell them. Most districts that issue bonds do not use independent financial advisors.

How does selling bonds through an underwriter affect costs?

When districts sell bonds through an underwriter, they pay a fee that is either a percentage of the bond value or a set amount. In addition, underwriters profit from the difference between the amount they pay for the bonds and the amount investors pay for the bonds. This is known as underwriter spread. Bonds with higher investment yields are more attractive to potential investors, but higher investment yields mean issuers – in this case, districts – pay higher borrowing costs. Higher initial borrowing costs can increase the likelihood of refunding or refinancing the bonds at a later time (addressed later in this report), which could mean districts will pay closing fees again.

Districts typically do not deal directly with the market or have access to investors. Instead, they acquire the services of an underwriter and rely on the underwriters' expertise when selling the bonds. Because underwriters may have competing interests when underwriting a bond issue – for example a district's desire to sell bonds at the lowest interest rate possible, the investors who hope to purchase them at the highest rate of return and the underwriter's profit – districts could be subject to higher costs if they do not fully understand this process.

Best practices

The Government Finance Officers Association publishes recommended best practices related to bond issues. The Association recommends using independent financial advisors and keeping the underwriter and advisor roles separate when bonds are sold or refunded. Districts can hire an independent financial advisor or designate an experienced employee to give them impartial information on the market's condition before they work with an underwriter. The financial advisor helps the issuer with all aspects of the issue prior to the sale. Then, when districts select an underwriter to purchase the bonds, they are prepared with independent market information.

Financial advisors also can assist districts with deciding whether to hire an underwriter through a competitive or a negotiated process, based on the Association's recommended practices and market conditions. In a competitive process, districts request proposals from underwriters stating the bond interest rate and underwriter fees. In a negotiated process, districts work with a preselected underwriter to negotiate the interest rate and fees. If districts opt not to consult with a financial advisor and proceed with a negotiated sale, the risk is much higher that the issuer is paying too much money in interest and in fees, and increases the likelihood of refunding (refinancing) at a later time. Regardless of whether a negotiated or competitive method is chosen, the financial advisor gives districts objective information on what an underwriter is offering.

The Association also recommends "issuers select a method of sale based on a thorough analysis of the relevant rating, security, structure and other factors pertaining to the proposed bond issue ... where a government agency does not have sufficient in-house expertise, this analysis and selection should be undertaken in partnership with a financial advisor." A financial advisor can provide impartial information on the market's condition and help the issuer with all aspects of the issue prior to the sale. The Association further recommends that "issuers should not use a broker/dealer or potential underwriter to assist in the method of sale selection unless that firm has agreed not to underwrite that transaction."

The Association identifies several factors that favor the use of a competitive sale including stronger credit ratings, standard bond structure and the absence of unusual financing features. Other factors favor the use of a negotiated sale such as lower credit ratings, variable rate debt, deferred interest bonds or a pooled bond program.

Issue

The state can take a greater role in helping school districts save taxpayers' money when issuing bonds.

Condition

Washington districts used the competitive sale method – a best practice – for only 7 percent of their sales from January 1, 2003 to December 31, 2007. This is much lower than the national average of 54 percent. While negotiated sales are permitted under state law – and may be appropriate in some instances – the State Treasurer's Office followed the best practice by using the competitive sale method exclusively during the five-year period.

A relatively infrequent use of the competitive sales method by the districts may correspond with the districts' infrequent use of independent financial advisors. While competitive issues used independent financial advisors 100 percent of the time, negotiated issues used them only 26 percent of the time. The majority of districts that sold bonds obtained financial advice exclusively from underwriters during the same time period, as reported to Commerce.

Under certain conditions (see Appendix B), an independent financial advisor may appropriately recommend a negotiated sale based on nationally recognized practices. Typically, when an independent financial advisor is involved in a negotiated sale, the result is likely a lower interest rate than when an independent financial advisor is not involved with a negotiated sale, in part because independent financial advisors are more inclined than underwriters to recommend competitive sales over negotiated sales. However, both financial advisors and underwriters may still appropriately recommend negotiated sales under certain conditions, such as the volatile credit markets that have occurred during the last 12 months.

After an initial bond sale, underwriters often approach districts to refund (refinance) bonds the underwriters had previously purchased from the district. Refunding a bond is essentially repurchasing the bonds at a lower interest rate, but districts also have to pay the associated fees with selling bonds. When districts refund bonds, they pay the fees twice – once for the original sale and again when they refund the bonds – but will also obtain a lower interest rate and savings for their taxpayers from the refunding.

Districts refunded 54 percent of negotiated bond sales, compared to only 19 percent of competitive sales. The majority of districts that used the negotiated sale method did not consult with an independent financial advisor. Our audit indicates that independent financial advice may result in a lower interest rate for the original bond issue, making refunds less likely.

The school officials we interviewed did not know the Office of the State Treasurer has expertise in these matters and could provide independent market condition information; nor, in some cases, did school districts know they could use independent financial advisors. Districts we interviewed were not well informed about bond issue options or the market at the time of sale. Certain bond features can help save districts

money when issuing their bonds, such as the State Treasurer's School Bond Guaranty Program and LOCAL program, bond insurance and breaking bonds into smaller sale amounts for bank-qualified bonds². We found instances in which underwriters had not informed district officials about the cost savings associated with these bond features. However, independent financial advisors routinely provide this type of information.

The Office of the State Treasurer currently runs the School Bond Guaranty program, which allows school districts to use the state's credit rating, and in some instances, provides the district a better interest rate. However, the State Treasurer does not provide guidance on how to sell bonds; it provides only the credit rating enhancement.

Our interviews with district officials and officials at the Superintendent and Treasurer's Offices show:

- School districts typically lack complete and independent market information necessary to sell bonds at the lowest possible rate and fee.
- School districts do not receive adequate guidance³ from the state on how to sell bonds at the lowest possible rates and fees.
- State law does not require school districts to sell bonds at the lowest possible rate and fee or to follow accepted best practices when selling bonds.

Causes

State law does not require districts to hire independent financial advisors or separate the duties of the financial advisor and underwriter. In addition, districts are not required to sell bonds competitively or follow a competitive process to hire underwriters. In 1981, the state Legislature changed a law that had required school districts to use a competitive bid process when issuing bonds. Since then, most districts use the negotiated sale method.

Additionally, school districts receive little guidance or supervision over bond sales.

- No state agency is required to provide guidance or market information to school districts that sell bonds.
- Educational Service Districts, whose purpose is to help school districts, occasionally assist school districts with bond sales, but typically refer districts to other districts that have recently sold bonds.
- Based on interviews and other procedures, some school districts were not aware of best practices for selling bonds. Districts mostly rely on underwriters' expertise in the bond sale process, while underwriters are paid more for having larger underwriter spreads.

² Bank-qualified bonds are (i) issued by a qualified small issuer, (ii) issued for public purpose and (iii) designated as qualified tax-exempt obligations. — WM Financial Strategies, www.munibondadvisor.com/BQBonds.htm

³ School District Facilities Manual, Chapter 4, Section 407 Sale of UTGO Bonds

Effect

Our statistical analysis shows with a high degree of probability that districts as a whole paid higher interest costs and underwriting fees on bonds issued from January 1, 2003 through December 31, 2007 than they might have otherwise achieved. Specifically, the analysis showed that competitively issued bonds had interest rates that were two-tenths of a percentage point lower than those issued through negotiated sales. The higher interest rates districts paid for negotiated bond sales resulted in \$44.6 million to \$79.4 million in additional five-year costs that could have been lower had competitive sales been used more often. In the future, districts can reduce and can avoid such costs by more closely following the best practices identified in this report, including more frequent use of competitive bond sales when appropriate and the use of independent market information.

Recommendation

The Office of Superintendent of Public Instruction is in the best position to address the conditions described above. The Office of Superintendent of Public Instruction has broad constitutional authority to provide assistance to school districts, which can include bond sales. However, because the Office of Superintendent of Public Instruction lacks technical expertise related to bond sales, the Superintendent of Public Instruction requires assistance from the Office of the State Treasurer or other sources with technical expertise to address these conditions.

We recommend the Office of the Superintendent of Public Instruction work with school districts, educational service districts and the Office of the State Treasurer to develop guidance and training that follow best practices to incur lower costs on bond sales.

What happens next?

The release of this audit report triggers a series of actions by the state Legislature. The appropriate committee(s) will:

- Hold at least one public hearing within 30 days of this report's issue to receive public testimony.
- Review this report to identify audit recommendations that request legislative action.
- The Joint Legislative Audit and Review Committee, the Legislature's performance audit committee, will produce a report by July 1 of each year detailing the Legislature's progress in responding to the State Auditor's recommendations. The Committee must justify any recommendations it did not respond to and detail additional corrective measures taken.
- Consider the findings and recommendations contained in this report during the budget process.

Follow-up performance audits of any state or local government entity or program may be conducted when determined necessary by the State Auditor.

Appendix A: Initiative 900 elements

I-900 elements addressed in report

Initiative 900 Element	Addressed in report?
Identification of cost savings.	Yes
Identification of services that can be reduced or eliminated.	N/A*
Identification of programs or services that can be transferred to the private sector.	N/A*
Analysis of gaps or overlaps in programs or services and recommendations to correct gaps or overlaps.	Yes
Feasibility of pooling information technology systems.	N/A
Analysis of the roles and functions and recommendations to change or eliminate roles or functions.	Yes
Recommendations for statutory or regulatory changes that may be necessary to properly carry out its functions.	Yes (guidance from the Office of the Superintendent of Public Instruction)
Analysis of performance data, performance measures and self-assessment systems.	Yes
Identification of best practices	Yes

*Services already provided by the private sector. We are not recommending the elimination of these services.

Appendix B: Best Practices

More than 20 independent studies show that state and local governments that issue debt competitively obtain, on average, lower interest rates than those that use negotiated sales.

While some states require school districts and local governments to conduct competitive bond sales, others also require the competitive process to hire underwriters or even require a separate financial advisor and underwriter when issuing debt. The Washington School Bond Manual produced by the Washington State School Directors' Association, states, "The role of the financial advisor is to protect the interests of the school district and to negotiate the best terms possible for the bonds, whether through a negotiated or competitive sale. If an underwriting firm is engaged to provide independent financial advisory services, they would not also serve as the bond underwriter."

In addition to the comments contained in the Washington School Bond Manual, the Government Finance Officers Association recommends similar best practices as follows:

If the school district has insufficient in-house expertise and access to market information, it should hire an outside financial advisor prior to undertaking debt financing. Issuers must keep in mind that underwriters and financial advisors have distinct roles and that competing interests cannot serve the same function. Financial advisors that serve as underwriters in the same negotiated deals pose significant conflicts of interest. School Districts should select financial advisors using a competitive process. Issuers should pay fees to financial advisor on an hourly or retainer basis, reflecting the nature of the services to the issuer.

The Washington State School Directors' Association's Washington School Bond Manual states: "Given the complexity and constantly changing nature of investors preferences, districts are urged to [consult] financial advisors ... Such early consultation will assist the district in developing the best possible debt management plan."

Factors for Choosing Type of Bond Sale Methods

Competitive	Negotiated
Average or Good Credit	Poor Credit
Normal Size Issue	Unusually Large or Small Issues
Older Entity	New Entity
Usual Financing Terms	Unusual Financing Terms
Normal to low Market Volatility	High Market Volatility
Normal Structure or Security	Innovative Structure

Summarized Best Practices and Criteria

The pages that follow are summarized best practices from the Government Finance Officers Association.



RECOMMENDED PRACTICE

Pricing Bonds in a Negotiated Sale (1996, 2000, and 2009) (DEBT)

Note: This Recommended Practice (RP) is one of a group of four relating to the sale of bonds. These four RPs should be read and considered in conjunction with each other because of the interaction of the processes to which they apply. The four RPs are:

- *Selecting and Managing the Method of Sale of State and Local Government Bonds*
- *Selecting Financial Advisors*
- *Selecting Underwriters for Negotiated Bond Sales*
- *Pricing Bonds in a Negotiated Sale*

Background. The cost of borrowing in a negotiated bond sale is established through the bond pricing process. Compared to a competitive sale, pricing bonds in a negotiated sale requires much greater issuer involvement if the issuer is to be confident that pricing results reflect prevailing market conditions at the time of sale. The key items typically negotiated during the pricing process include bond yields, coupons, the underwriter's discount, optional redemption provisions, and the use of term bonds.

Achieving a successful negotiated pricing requires that the issuer have access to current bond market data as well as skills and experience in negotiating the pricing of bonds. Many, if not most, issuers do not have sufficient in-house access to market data nor extensive experience in negotiating and evaluating bond pricings. In such cases, the Government Finance Officers Association (GFOA) recommends that issuers should only consider a negotiated sale if the issuer intends to retain the services of a financial advisor (unrelated to the underwriter) to advise them on all aspects of the sale, including the selection of the underwriter, structuring of the bonds, preparation of disclosure information, pricing of the bonds, and post-sale evaluation of the sale results.

Recommendation. The GFOA recommends that the primary goal of state and local government issuers should be to achieve the lowest overall cost of financing. The GFOA recommends that issuers, together with their financial advisors, undertake the following to enhance the issuer's ability to achieve a successful negotiated pricing:

1. Select negotiated sale underwriters through a formal request for proposals (RFP) process. Among the information requested in the RFP, proposers should be required to state their estimated underwriter's discount for the proposed bonds by component (takedown, management fees, and expenses). The proposed underwriter's discount should be used by the issuer during the final bond pricing negotiations as the basis for the amount of compensation to be paid to the underwriter. Any significant increase in any component of the underwriter's discount from the proposal to the actual bond pricing should be fully explained to the satisfaction of the issuer and its financial advisor.
2. Develop an understanding of prevailing market conditions, evaluate key economic and financial indicators, and assess how these indicators may affect the timing and outcome of the pricing. Request and obtain a pricing book from the underwriter several days prior to the sale which includes a discussion of at least the following information:

- the near-term supply and expected demand for municipal bonds;
 - the timing of the release of key economic data, anticipated actions by regulatory or political bodies, and other factors that might affect the capital markets;
 - the coupons and yields of recently priced bonds with characteristics similar to that of the issuer's bonds (e.g., ratings, security, structure);
 - data showing the issuer's historic pricing data for the type of bonds being sold, indexed to the current market;
 - the proposed scale of coupons and yields for the proposed bonds based on the information provided above;
 - the proposed underwriter's discount for the bonds.
3. Prepare independent bond pricing ideas separate from those of the underwriter. In order to ensure an active negotiation and successful bond pricing, the issuer and its financial advisor should not rely solely on information provided by the underwriter. As such, the issuer and financial advisor should assemble data on recent pricings of comparable bonds (especially bonds sold through competitive sale), the issuer's historic indexed pricing data, and, most importantly, the issuer's/financial advisor's independent determination of expected market yields for the proposed bonds.
 4. Work with the underwriter to develop an appropriate pre-marketing effort to gauge and build investor interest. Consider inclusion of a one- or two-day retail order period.
 5. Request that the senior managing underwriter propose a consensus pricing scale on the day prior to the pricing that represents the individual views of the members of the underwriting syndicate and obtain a number of interest rate scales from other syndicate members.
 6. Evaluate whether structural features, such as call features and original issue premiums or discounts, that impact the true interest cost (TIC) of a bond offering, but limit future flexibility in managing the debt portfolio, will result in greater overall borrowing costs.
 7. Maintain close contact with the underwriter and actively monitor bond market conditions during the marketing period of the bonds. Request access to the underwriter's electronic order entry system in order to observe and evaluate the flow of orders by maturity during the pricing process. Consider re-pricing at lower interest rates at the end of the order period, giving consideration to order flow and order volumes.
 8. Negotiate the order priority and designation policies with the underwriter prior to the sale. Issuers have a legitimate role in determining how bonds will be allocated among underwriting syndicate members and ultimate investors. The designation policy has a significant impact on the distribution of underwriter compensation among the syndicate members. The results of these negotiations should be accurately reflected in the preliminary pricing wire prepared by the underwriter prior to the sale.
 9. Approve underwriter's proposed allotment of the bonds prior to the final allocation in order to ensure that the issuer's allocation objectives are achieved.
 10. Document and evaluate the final pricing of the bonds and compare the results to the pricing data that was prepared prior to the sale. Observe secondary market trading activity on the bonds for several days following bond pricing as a further indication of the fairness of the pricing of the bonds. Such information is available without charge on the internet via web sites such as the Municipal Securities Rulemaking Board (MSRB) Electronic Municipal Market Access (EMMA) platform (www.emma.msrb.org). Pre- and post-sale bond pricing data should be retained by the issuer in order to fully document the bond pricing.

11. Develop a database with information on each issue sold with regard to pricing performance, including the types of bonds sold (general obligation or revenue bonds), credit rating, maturities, yield and takedown by maturity, and TIC.

References.

- GFOA Recommended Practices:
 - Selecting and Managing the Method of Sale of State and Local Government Bonds (2008)
 - Selecting Underwriters for Negotiated Bond Sales (2008)
 - Selecting Financial Advisors (2008)
- *Pricing Bonds in a Negotiated Sale: How to Manage the Process*, J.B. Kurish, GFOA, 1994

Approved by the GFOA's Executive Board, February 27, 2009.



GFOA Recommended Practice

Selecting and Managing the Method of Sale of State and Local Government Bonds (1994 and 2007) (DEBT)

Background. State and local government bond issuers should sell their debt using the method of sale that is most likely to achieve the lowest cost of borrowing while taking into account both short-range and long-range implications for taxpayers and ratepayers. Differing views exist among issuers and other bond market participants with respect to the relative merits of the competitive and negotiated methods of sale. Moreover, research into the subject has not led to universally accepted findings as to which method of sale is preferable when taking into account differences in bond structure, security, size, and credit ratings for the wide array of bonds issued by state and local governments.

Concerns have been raised about the lack of a competitive Request for Proposals (RFP) process in the selection of underwriters in a negotiated sale and the possibility of higher borrowing costs when underwriters are appointed based on factors other than merit. As a result, issuers have been forced to defend their selection of underwriters for negotiated sales in the absence of a documented, open selection process.

There is also a lack of understanding among many debt issuers about the appropriate roles of underwriters and financial advisors and the fiduciary relationship that each has or does not have with respect to state and local government issuers. The relationship between issuer and financial advisor is one of “trust and confidence” which is in the “nature of a fiduciary relationship”. This is in contrast to the relationship between the issuer and underwriter where the relationship is one of some common purposes but also some competing objectives, especially at the time of bond pricing.

Recommendation. When state and local laws do not prescribe the method of sale of municipal bonds, the Government Finance Officers Association (GFOA) recommends that issuers select a method of sale based on a thorough analysis of the relevant rating, security, structure and other factors pertaining to the proposed bond issue. If the government agency has in-house expertise, defined as dedicated debt management staff whose responsibilities include daily management of a debt portfolio, this analysis and selection could be made by the government’s staff. However, in the more common situation where a government agency does not have sufficient in-house expertise, this analysis and selection should be undertaken in partnership with a financial advisor. Due to the inherent conflict of interest, issuers should not use a broker/dealer or potential underwriter to assist in the method of sale selection unless that firm has agreed not to underwrite that transaction.

The GFOA believes that the presence of the following factors may favor the use of a competitive sale:

- The rating of the bonds, either credit-enhanced or unenhanced, is at least in the single-A category.
- The bonds are general obligation bonds or full faith and credit obligations of the issuer or are secured by a strong, known and long-standing revenue stream.
- The structure of the bonds does not include innovative or new financing features that require extensive explanation to the bond market.

Similarly, GFOA believes that the presence of the following factors may favor the use of a negotiated sale:

- The rating of the bonds, either credit-enhanced or unenhanced, is lower than single-A category.
- Bond insurance or other credit enhancement is unavailable or not cost-effective.
- The structure of the bonds has features such as a pooled bond program, variable rate debt, deferred interest bonds, or other bonds that may be better suited to negotiation.
- The issuer desires to target underwriting participation to include disadvantaged business enterprises (DBEs) or local firms.
- Other factors that the issuer, in consultation with its financial advisor, believes favor the use of a negotiated sale process.

If an issuer, in consultation with its financial advisor, determines that a negotiated sale is more likely to result in the lowest cost of borrowing, the issuer should undertake the following steps and policies to increase the likelihood of a successful and fully documented negotiated sale process:

- Select the underwriter(s) through a formal request for proposals process. The issuer should document and make publicly available the criteria and process for underwriter selection so that the decision can be explained, if necessary.
- Enter into a written contractual relationship with a financial advisor (a firm unrelated to the underwriter(s)), to advise the issuer on all aspects of the sale, including selection of the underwriter, structuring, disclosure preparation and bond pricing.
- Due to inherent conflicts of interest, the firm acting as a financial advisor for an issuer should not to be allowed to resign and serve as underwriter for the transaction being considered.
- Due to potential conflicts of interest, the issuer should also enact a policy regarding whether and under what circumstances it will permit the use of a single firm to serve as an underwriter on one transaction and a financial advisor on another transaction.
- Issuers with sufficient in-house expertise and access to market information may act as their own financial advisor. Such issuers should have at least the following skills and information: (i) access to real-time market information (e.g. Bloomberg) to assess market conditions and proposed bond prices; (ii) experience in the pricing and sale of bonds, including historical pricing data for their own bonds and/or a set of comparable bonds of other issuers in order to assist in determining a fair price for their bonds; and (iii) dedicated full-time staff to manage the bond issuance process, with the training, expertise and access to debt management tools necessary to successfully negotiate the pricing of their bonds.
- Remain actively involved in each step of the negotiation and sale processes in accordance with the GFOA's *Recommended Practice, Pricing Bonds in a Negotiated Sale*.
- Require that financial professionals disclose the name(s) of any person or firm compensated to promote the selection of the underwriter; any existing or planned arrangements between outside professionals to share tasks, responsibilities and fees; the name(s) of any person or firm with whom the sharing is proposed; and the method used to calculate the fees to be earned.
- Review the "Agreement Among Underwriters" and ensure that it governs all transactions during the underwriting period.

- Openly disclose public-policy issues such as the desire for DBEs and regional firm participation in the syndicate and the allocation of bonds to such firms as reason for negotiated sale; measure and record results at the conclusion of the sale.
- Prepare a post-sale summary and analysis that documents the pricing of the bonds relative to other similar transactions priced at or near the time of the issuer's bond sale, and record the true interest cost of the sale and the date and hour of the verbal award.

References

- *Who are the Parties in My Deal? What are Their Roles? How Do I Sell My Bonds?*, Julia H. Cooper and David Persselin, Government Finance Review, April 2006.
- *An Elected Official's Guide to Debt Issuance*, J.B. Kurish and Patricia Tighe, GFOA, 2005.
- *Debt Management Policy*, GFOA Recommended Practice, 2003.
- *Pricing Bonds in a Negotiated Sale*, GFOA Recommended Practice, 2000.
- *Preparing RFPs to Select Financial Advisors and Underwriters*, GFOA Recommended Practice, 1997.
- *Debt Issuance and Management: A Guide for Smaller Governments*, James C. Joseph, GFOA, 1994.
- *Competitive v. Negotiated: How to Choose the Method of Sale for Tax-Exempt Bonds*, GFOA, 1994.
- *Competitive v. Negotiated Sale Debt*, Issue Brief No. 1, California Debt Advisory Commission, September 1992.

Approved by the GFOA's Executive Board, October 19, 2007.



RECOMMENDED PRACTICE

Selecting Underwriters for Negotiated Bond Sales (2008) (DEBT)*

Note: This Recommended Practice (RP) is one of a group of four relating to the sale of bonds. These four RPs should be read and considered in conjunction with each other because of the interaction of the processes to which they apply. The four RPs are:

Selecting and Managing the Method of Sale of State and Local Government Bonds
Selecting Financial Advisors
Selecting Underwriters for Negotiated Bond Sales
Pricing Bonds in a Negotiated Sale

Background. State and local governments select underwriters for the purpose of selling bonds through a negotiated sale. The primary role of the underwriter in a negotiated sale is to market the issuer's bonds to investors. Assuming that the issuer and underwriter reach agreement on the pricing of the bonds at the time of sale, the underwriter purchases the entire bond issue from the issuer and resells the bonds to investors. In addition, negotiated sale underwriters are likely to provide ideas and suggestions with respect to structure, timing and marketing of the bonds being sold.

Issuers must keep in mind that the roles of the underwriter and the financial advisor are separate, adversarial roles and cannot be provided by the same party. Underwriters do not have a fiduciary responsibility to the issuer. A financial advisor represents only the issuer and has a fiduciary responsibility to the issuer. In considering the roles of underwriter and financial advisor, it is the intent of this Recommended Practice to set a higher standard than is required under MSRB Rule G-23, because disclosure and consent are not sufficient to cure the inherent conflict of interest.

The issuer's goal in a negotiated bond sale is to obtain the highest possible price (lowest interest cost) for the bonds. To maximize the potential of this occurring, the issuer's goal in the underwriter selection process is to select the underwriter(s) that has the best potential for providing that price. Those underwriters are typically the ones that have demonstrated both experience underwriting the type of bonds being proposed and the best marketing/distribution capabilities.

Recommendation. The Government Finance Officers Association (GFOA) recommends that unless the issuer has sufficient in-house expertise and access to market information, it should hire an outside financial advisor prior to undertaking a negotiated debt financing. The financial advisor can lend objective knowledge and expertise in the selection of underwriters for negotiated sales. GFOA recommends that a firm hired as a financial advisor should not be allowed to resign in order to underwrite the proposed negotiated sale of bonds.

GFOA further recommends the use of a Request for Proposal (RFP) process when selecting underwriters in order to promote fairness, objectivity and transparency. The RFP process allows the issuer to compare respondents and helps the issuer select the most qualified firm(s) based on the evaluation criteria outlined

in the RFP. An issuer and its financial advisors should have a clear understanding of the issuer's underwriting needs and should carefully develop an RFP that complies with state and local bidding requirements (including the use of regional, local or disadvantaged firms if deemed appropriate by the issuer).

A negotiated bond sale does not entail the purchase of any goods or services by an issuer from an underwriter. Therefore, an RFP process for underwriters should not be treated as a procurement process for goods or services, notwithstanding the obligation of the issuer to comply with state and/or local procurement requirements. The only legal relationship between the issuer and an underwriter is created by a Bond Purchase Agreement signed at the time of the pricing of the bonds, wherein the issuer agrees to sell the bonds to the underwriter at an agreed upon price.

An RFP process can result in selection of one or more underwriters for a single transaction or result in identification of a pool of underwriters from which firms will be selected over a specific period of time for a number of different transactions. Each issuer should weigh the advantages and disadvantages of each type of arrangement with the assistance of their financial advisor.

No firm should be given an unfair advantage in the RFP process. Procedures should be established for communicating with potential proposers, determining how and over what time period questions will be addressed, and determining when contacts with proposers will be restricted.

Request for Proposal Content. The RFP should include at least the following components:

1. A clear and concise description of the contemplated bond sale transaction.
2. A statement noting whether firms may submit joint proposals. In addition, the RFP should state whether the issuer reserves the right to select more than one underwriter for a single transaction.
3. A description of the objective evaluation and selection criteria and explanation of how proposals will be evaluated.
4. A requirement that all underwriter compensation structures be presented in a standard format. Proposers should identify which fees are proposed on a "not-to-exceed" basis, describe any condition attached to their fee proposal, and explicitly state which costs are included in the fee proposal and which costs are to be reimbursed.
5. A requirement that the proposer provide at least three references from other public-sector clients, preferably clients where the firm provided underwriting services similar to those proposed to be undertaken as the result of the RFP.

Requested Proposer Responses. RFPs should include questions related to the areas listed below to distinguish firms' qualifications and experience, including but not limited to:

1. Relevant experience of the firm and the individuals assigned to the issuer, and the identification and experience of the individual in charge of day-to-day management of the bond sale, including both the investment banker(s) and the underwriter(s).
2. A description of the firm's bond distribution capabilities including the experience of the individual primarily responsible for underwriting the proposed bonds. The firm's ability to access both retail and institutional investors should be described.

3. Demonstration of the firm's understanding of the issuer's financial situation, including ideas on how the issuer should approach financing issues such as bond structures, credit rating strategies and investor marketing strategies.
4. Demonstration of the firm's knowledge of local political, economic, legal or other issues that may affect the proposed financing.
5. Documentation of the underwriter's participation in the issuer's recent competitive sales or the competitive sales of other issuers in the same state.
6. Analytic capability of the firm and assigned investment banker(s).
7. Access to sources of current market information to provide bond pricing data before, during and after the sale.
8. The amount of uncommitted capital available and the ability and willingness of the firm to purchase the entire offering of the issuer, if necessary, in the case of a firm underwriting.
9. Any finder's fees, fee splitting, or other contractual arrangements of the firm that could present a real or perceived conflict of interest, as well as any pending investigation of the firm or enforcement or disciplinary actions taken within the past three years by the SEC or other regulatory bodies.

Additional Considerations. Issuers should also consider the following in conducting the underwriter selection process:

1. Take steps to maximize the number of respondents by using mailing lists, media advertising, resources of the GFOA, resources of the financial advisor and applicable professional directories.
2. Give adequate time for firms to develop their responses to the RFP. Two weeks should be appropriate for all but the most complicated RFPs.
3. Establish evaluation procedures and a systematic rating process, conduct interviews with proposers, and undertake reference checks. Where practical, one individual should check all references using a standard set of questions to promote consistency. To remove any appearance of a conflict of interest resulting from political contributions or other activities, elected officials should not be part of the selection team.
4. Document and retain the description of how the selection was made and the rankings of each firm.

Underwriter's Compensation. The underwriter in a negotiated sale is compensated in the form of an underwriter's discount or "spread", which consists of the negotiated difference between the amount the underwriter pays the issuer for the bonds and the amount the underwriter expects to receive selling the bonds to investors. The underwriter's discount includes up to four components: the management fee, takedown, expenses and underwriting fee. The only component of spread that can be fixed in a proposal is the management fee. The management fee compensates the investment bankers for the time and expertise brought to the negotiated sale by the investment bankers. It is appropriate to ask the proposer for a firm management fee quote, although its weighting in the evaluation criteria should be low. In

addition, issuers may want to leave room to negotiate this fee lower or higher, depending on the actual complexities of the transaction.

The remaining components of spread, as noted below, should be determined through the negotiation process.

1. Expenses – includes various fees and overhead expenses and also should not be part of the RFP evaluation criteria. However it is important to note that all underwriter expenses be clearly identified and defined at the appropriate time during the bond negotiation.
2. Takedown – is the “sales commission” of the deal. Current market levels of takedown can be determined by the issuer or its financial advisor just prior to the time of negotiation. The takedown is the principal component of the potential profit to an underwriter in a bond sale. The issuer must weigh the impact of takedown on the resulting true interest cost to the bond issuer. An inadequate takedown may result in less aggressive marketing of the bonds and a higher interest cost to the issuer. A fair balance must be struck between a “market rate” takedown and the cost to the issuer in future interest costs.
3. Underwriting Fee – is almost never part of the final underwriter’s discount and should not be part of the discussion at the RFP stage. Discussion of the payment of an underwriting fee may occur during pricing negotiation, but only to the extent the underwriter agrees to underwrite a substantial amount of unsold bonds.

Issuers should include a provision in the RFP prohibiting any firm from engaging in activities on behalf of the issuer that produce a direct or indirect financial gain for the firm, other than the agreed-upon compensation, without the issuer’s informed consent. Procedures should be established for communicating with potential proposers, determining how and over what time period questions will be addressed, and determining when contacts with proposers will be restricted.

References.

- GFOA Recommended Practice: *Selecting Bond Counsel*, 2008.
- GFOA Recommended Practice: *Selecting Financial Advisors*, 2008.
- GFOA Recommended Practice: *Selecting and Managing the Method of Sale of State and Local Government Bonds*, 2007.
- *Preparing Requests for Proposals*, Issue Brief No. 3, California Debt Advisory Commission, October 1994.
- *Debt Issuance and Management: A Guide for Smaller Governments*, James C. Joseph, GFOA, 1994.
- *A Guide for Selecting Financial Advisors and Underwriters: Writing RFPs and Evaluating Proposals*, Patricia Tigue, GFOA, 1997.
- Municipal Securities Rulemaking Board Rule G-23, *Activities of Financial Advisors*; <http://www.msrb.org/msrb1/rules/ruleg23.htm>.

* This Recommended Practice, along with the Recommended Practice on Selecting Financial Advisors, replaces the 1997 RP, Preparing RFPs to Select Financial Advisors and Underwriters.

Approved by the GFOA’s Executive Board, October 17, 2008.



RECOMMENDED PRACTICE

Selecting Financial Advisors (2008) (DEBT)*

Note: This Recommended Practice (RP) is one of a group of four relating to the sale of bonds. These four RPs should be read and considered in conjunction with each other because of the interaction of the processes to which they apply. The four RPs are:

Selecting and Managing the Method of Sale of State and Local Government Bonds
Selecting Financial Advisors
Selecting Underwriters for Negotiated Bond Sales
Pricing Bonds in a Negotiated Sale

Background. State and local governments employ financial advisors to assist in the structuring and issuance of bonds whether through a competitive or a negotiated sale process. Unless the issuer has sufficient in-house expertise and access to market information, it should hire an outside financial advisor prior to undertaking a debt financing. A financial advisor represents the issuer, and only the issuer, in the sale of bonds. Issuers should assure themselves that the selected financial advisor has the necessary expertise to assist the issuer in selecting other finance professionals, planning the bond sale, and successfully selling and closing the bonds. In considering the roles of the financial advisor and underwriter, it is the intent of this Recommended Practice to set a higher standard than is required under MSRB Rule G-23, because disclosure and consent are not sufficient to cure the inherent conflict of interest.

Recommendation. The Government Finance Officers Association (GFOA) recommends that issuers select financial advisors on the basis of merit using a competitive process and that issuers review those relationships periodically. A competitive process using a request for proposals or request for qualifications (RFP) process allows the issuer to compare the qualifications of proposers and to select the most qualified firm based on the scope of services and evaluation criteria outlined in the RFP.

Before starting the RFP process, issuers should decide whether the financial advisor will assist the issuer for a single bond sale, for a multi-year engagement or whether the issuer seeks to establish a qualified pool of financial advisors to choose from for future bond sales. The RFP then can be carefully written in order to result in the form of relationship desired by the issuer. Additionally, issuers should write the RFP to comply with applicable procurement requirements.

If an issuer is contemplating the possibility of selling bonds through a negotiated sale, the financial advisor should be retained prior to selecting the underwriter(s). This allows the issuer to have professional services available to advise on the appropriate method of sale, and if a negotiated sale is selected, to prepare the underwriter RFP and assist in the evaluation of the underwriter responses.

No firm should be given an unfair advantage in the RFP process. Procedures should be established for communicating with potential proposers, determining how and over what time period questions will be addressed, and determining when contacts with proposers will be restricted.

Due to potential conflicts of interest, the issuer also should enact a policy regarding whether, and under what circumstances, it would permit a firm to serve as an underwriter on one transaction and a financial advisor on another transaction. Additionally, it is recommended that when an issuer has a financial advisor contract with a firm that also is a broker-dealer, there should be a lockout period from the time that the financial advisor contract ends to the time when the broker-dealer can serve as a negotiated underwriter for the issuer.

Request for Proposal Content. The RFP should include at least the following components:

1. A statement from the issuer stating that due to inherent conflicts of interest, the firm selected as financial advisor will not be allowed to resign in order to serve as underwriter for the proposed transaction (See GFOA Recommended Practice, *Selecting and Managing the Method of Sale of State and Local Government Bonds*).
2. A clear and concise description of the scope of work, specifying the length of the contract and indicating whether joint proposals with other firms are acceptable.
3. Clarity on whether the issuer reserves the right to select more than one financial advisor or to form financial advisory teams.
4. A description of the objective evaluation and selection criteria and explanation of how proposals will be evaluated.
5. A requirement that all fee structures be presented in a standard format. Issuers also should ask all proposers to identify which fees are to be proposed on a "not-to-exceed" basis, describe any condition attached to their fee proposal, and explicitly state which costs are included in the fee proposal and which costs are to be reimbursed.
6. A requirement that the proposer provide at least three references from other public-sector clients, preferably from ones that the firm provided similar services to those proposed to be undertaken as the result of the RFP.

Requested Proposer Responses. RFPs should request relevant information related to the areas listed below in order to distinguish each firm's qualifications and experience, including:

1. Relevant experience of the individuals to be assigned to the issuer, identification of the individual in charge of day-to-day management, and the percentage of time committed for each individual on the account.
2. Relevant experience of the firm with financings of the issuer or comparable issuers and financings of similar size, types and structures, including financings in same state.
3. Discussion of the firm's financial advisory experience necessary to assist issuers with either competitive or negotiated sales.

4. Demonstration of the firm's understanding of the issuer's financial situation, including ideas on how the issuer should approach financing issues such as bond structures, credit rating strategies and investor marketing strategies.
5. Demonstration of the firm's knowledge of local political, economic, legal or other issues that may affect the proposed financing.
6. Discussion of the firm's familiarity with GFOA's Recommended Practices relating to the selling of bonds and the selection of finance professionals.
7. Disclosure of the firm's affiliation or relationship with any broker-dealer.
8. Analytic capability of the firm and assigned individuals and the availability of ongoing training and educational services that could be provided to the issuer.
9. Description of the firm's access to sources of current market information to assist in pricing of negotiated sales and information to assist in the issuer in planning and executing competitive sales.
10. Amounts and types of insurance carried, including the deductible amount, to cover errors and omissions, improper judgments, or negligence.
11. Disclosure of any finder's fees, fee splitting, payments to consultants, or other contractual arrangements of the firm that could present a real or perceived conflict of interest.
12. Disclosure of any pending investigation of the firm or enforcement or disciplinary actions taken within the past three years by the SEC or other regulatory bodies.

Additional Considerations. Issuers should also consider the following in conducting the financial advisor selection process:

1. Take steps to maximize the number of respondents by using mailing lists, media advertising, resources of the GFOA and applicable professional directories.
2. Allow adequate time for firms to develop their responses to the RFP. Two weeks should be appropriate for all but the most complicated RFPs.
3. Establish evaluation procedures and a systematic rating process, conduct interviews with proposers, and undertake reference checks. Where practical, one individual should check all references using a standard set of questions to promote consistency. To remove any appearance of a conflict of interest resulting from political contributions or other activities, elected officials should not be part of the selection team.
4. Document and retain the description of how the selection of the financial advisor was made and the rankings of each firm.
5. Consider whether to require disclosure of gifts, political contributions, or other financial arrangements in compliance with state and local government laws or other applicable policies.

Basis of Compensation. Fees paid to financial advisors should be on an hourly or retainer basis, reflecting the nature of the services to the issuer. Generally, financial advisory fees should not be paid on a contingent basis to remove the potential incentive for the financial advisor to provide advice that might unnecessarily lead to the issuance of bonds. GFOA recognizes, however, that this may be difficult given the financial constraints of many issuers. In the case of contingent compensation arrangements, issuers should undertake ongoing due diligence to ensure that the financing plan remains appropriate for the issuer's needs. Issuers should include a provision in the RFP prohibiting any firm from engaging in activities on behalf of the issuer that produce a direct or indirect financial gain for the financial advisor, other than the agreed-upon compensation, without the issuer's informed consent.

Form of Contract. As part of the RFP package, the issuer may also include a "Form of Contract" which incorporates elements and provisions conforming to prevailing law and procurement processes and requires RFP respondents to comment on the acceptability of the Form of Contract. The comments on the acceptability of the Form of Contract should be part of the evaluation process. The contract development process should allow for reasonable negotiation over the final terms of the contract. A final negotiated contract should make clear those services that will be included within the basic financial advisor fee and any services or reimbursable expenses that might be billed separately.

References.

- GFOA Recommended Practice: *Selecting Bond Counsel*, 2008.
- GFOA Recommended Practice: *Selecting Underwriters for Negotiated Bond Sales*, 2008.
- GFOA Recommended Practice: *Selecting and Managing the Method of Sale of State and Local Government Bonds*, 2007.
- *Preparing Requests for Proposals*, Issue Brief No. 3, California Debt Advisory Commission, October 1994.
- *Debt Issuance and Management: A Guide for Smaller Governments*, James C. Joseph, GFOA, 1994.
- *A Guide for Selecting Financial Advisors and Underwriters: Writing RFPs and Evaluating Proposals*, Patricia Tigue, GFOA, 1997.
- Municipal Securities Rulemaking Board Rule G-23, *Activities of Financial Advisors*; <http://www.msrb.org/msrb1/rules/ruleg23.htm>.

* This Recommended Practice, along with the Recommended Practice on Selecting Financial Advisors, replaces the 1997 RP, *Preparing RFPs to Select Financial Advisors and Underwriters*.

Approved by the GFOA's Executive Board, October 17, 2008.

Appendix C: Contractor Verification

We engaged Northern Economics as a subject-matter expert to confirm the results of our statistical analysis for this audit report. Their summarized review follows.



April 9, 2009

Michael Evans
Senior Performance Audit Coordinator
Washington State Auditor's Office
3200 Capitol Boulevard
P.O. Box 40031
Olympia, Washington 98504-0031

Dear Mr. Evans:

This letter serves as our final report for our review of the Washington State Auditor's Office's (SAO) statistical analysis of the cost of bonding practices in Washington State. The SAO is conducting an audit of how general obligation (GO) bonds are issued by school districts in the State of Washington. A component of this audit is a statistical analysis that examines how certain practices and characteristics affect the cost of issuing bonds, as measured by a bond's total net tax-exempt interest rate. This analysis reviews the SAO's analytical methods as they pertain to that specific portion of the larger project and answers the question "Did the SAO follow the accepted analytical procedures and methods for this type of statistical analysis?"

Our process for answering these questions included the following steps as defined by our Scope of Work:

- A kickoff meeting with SAO staff to obtain data and references and to review the process SAO staff used in their analysis.
- A literature review of statistical analyses, audits, and audit reviews, which have addressed the question of the cost differential between negotiated and competitive bond sales.
- A qualitative "best practices" review of the statistical audit undertaken by the SAO.
- A quantitative review of the statistical audit, including reproducing the SAO audit's results.
- The development of draft and final reports.

In summary, our conclusions are as follows:

- We find that the SAO staff conducted a thorough literature review and obtained the materials necessary to conduct a competent and reasonable statistical analysis. The staff identified more than 90 percent of recent peer-reviewed literature. This literature identified both the history of this type of analysis, the current issues in front of researchers, and the current accepted analytical practices.
- We find that the data collected by the SAO staff are robust enough to support a detailed statistical analysis. However, we identified a number of minor documentation and variable definition errors as well as potential additions to the dataset. These issues are minor and can be rectified with improved data validation and documentation practices. We note that some of these practices are outside of the SAO's control under the current audit and these issues reside with the original agency that created the dataset. We provide recommendations (see pages 4 and 5) and examples (see Appendix B: STATA Execution File) to help improve these practices.

- We conclude that the SAO staff is aware of the current accepted analytical methods and is following them accordingly, based on analytical results submitted to us for this review.
- We recommend that the SAO's final model include a variable for the inverse-mills ratio (IMR) to account for selection bias. Northern Economics' statistical results show that the IMR variable is statistically significant even though it affects the modally in a manner different from that previously seen in peer-reviewed literature.

Analysis

Background

For the last 40 years, researchers have analyzed the components that drive bond costs, and have attempted to explain why different bond offerings result in different costs to issuing governments. This research and many years of both positive and negative experiences in bonding have led to recommended practices issues by the Government Finance Officers Association and the Municipal Securities Rulemaking Board. However, not all governments follow these practices and researchers are still analyzing why bond costs differ. These researchers are publishing roughly one-dozen peer-reviewed papers per decade on this topic. The SAO conducted such an analysis using a two-stage regression technique. This analysis is part of a larger audit examining how much Washington School Districts could save if they followed the published best practices. This report focuses on the SAO's statistical analysis and does not examine the conclusion generated in the larger audit.

The generally accepted path for conducting this type of statistical analysis is as follows:

1. Conduct a review of applicable peer-reviewed and publicly available literature with a goal of understanding the current best practices in data cleaning and analysis and the intellectual history of the topic.
2. Identify, collect, and clean the data.
3. Identify the appropriate functional form for the analysis based on the previous two steps.
4. Analyze the data based on the functional form and methods identified in the literature review while developing new variables that fit the unique qualities of the data specific to the analysis.

Northern Economics conducted each of these steps using the same data collected by the SAO and then compared our results to results provided by the SAO staff. These comparisons form the basis of our conclusions on the previous page.

Step 1. Literature Review and Comparison

Our literature review identified one hundred documents pertinent to the topic of comparing the cost of bonds issued through competitive or negotiated means. We found 21 relevant and timely electronic articles, 1 thesis, 24 government documents, and 54 peer-reviewed articles. Some of these documents are interrelated. For example, a government analysis may eventually be turned into a peer-reviewed journal article and a researcher may write several papers based on the same set of data or the same analysis. This list of references is included in Appendix A.

Peer-reviewed journal articles are widely considered the gold standard for recording prior analytical results and methods. The publication of peer-reviewed articles usually follows a jury process, whereby an

author submits an article to a publication, and the publication submits the article to a double-blind jury¹ whose members have knowledge of either the subject matter or the analytical methods contained in the article. The jury members then independently recommend that the article be accepted as published, accepted with revisions, or rejected. For our purposes, we wanted to see if SAO staff members had collected enough articles to understand the theoretical and practical issues that researchers wrote about, and debated, in the peer-reviewed literature. Ideally, we wanted to see that SAO staff members have an understanding of the past with a firm grip on the current state of analytical methods. Peer-reviewed articles frequently provide a short summary of the analytical question's history before discussing the current advancement and findings contained in the article. For this reason, one does not have to read 100 percent of the past articles to grasp the major concepts contained in the body of literature. In fact, we wanted to see a heavier focus on the most recent articles, as these contain both the history and the state-of-the-art.² This focus is exactly what we see from the SAO staff. Our analysis of the literature found by SAO staff noted that they found approximately 40 percent of the literature published prior to 2000, but that they located more than 90 percent of the peer-reviewed literature that has been published in the last decade. We would expect that the SAO would spend less time looking for older articles and spend more time on new articles. This fact, and our conversations with SAO staff members, makes it clear that they have a good understanding of the current peer-reviewed literature. In addition, the staff members' location of recent government publications means they also established a good understanding of the non-peer reviewed literature.

Table 1. WSAO Citation of Peer-Reviewed Journal Articles

Time Period	Number Located	WSAO Cited	% WSAO Cited
1960-1969	4	0	0.0
1970-1979	11	5	45.5
1980-1989	15	7	46.7
1990-1999	13	5	38.5
2000-Present	11	10	90.9
Total	54	27	50

Conclusion: We find that the SAO staff conducted a reasonable literature review and that the documents they located could provide them with a necessary understanding of the issues and analytical methods involved in this analysis.

Step 2. Data Identification and Cleaning

The SAO combed multiple data sources to build the data for this analysis. The base data are from the Community, Trade, and Economic Development (CTED) bond database, cross-referenced with the Electronic Municipal Market Access (EMMA) database and the State Treasurer's database. This approach generated 3,373 bonds, which were eventually whittled down to 290 bonds that meet the study's conditions of being education-related, general-obligation bonds sold between January 2003 and December 2007.

¹ Not all journals follow the double-blind procedure.

² Older articles provide insight into how the analysis of a certain topic developed over time while newer articles provide a certain level of historical insight and a discussion on the important topics of the day. All things being equal, we would prefer that a researcher focus on newer articles as these can provide both history and a grounding in the current arguments before researchers.

A. Data Identification

Northern Economics verified the integrity of the SAO dataset by replicating the methodology provided by SAO and identified the same list of 290 bonds from the original list of 3,373 bonds. The methodology the SAO provided is a series of steps to limit the list to unique records of general obligation bonds issued by School Districts in Washington State during the years 2003 through 2007 using a series of database actions. These steps included:

- Verifying the original data count contained 3,373 records
- Removing exact duplicates and uniform sequence ID duplicates (3,342 records remain)
- Sorting all records by date and removing those sold before 2003 and after 2007. (1,934 records remain)
- Keeping only those issued by school districts (424 records remain)
- Keeping only general obligation (GO) bonds (404 records remain)
- Keeping only records which clearly indicated negotiated sales or competitive bids (290 records remain)

The final analytical dataset contains 290 records, of which 21 of the observations are competitive sales and 269 observations are negotiated sales. While Northern Economics did match the records kept and the number of records kept, we did not verify the details of the bonds on the EMMA website.

Conclusion: The dataset that the WSAO used in their analysis contains only education general obligation bonds from the State of Washington between 2003 and 2007 and the method the SAO used to clean the data is replicable.

B. Data Cleaning and Preparation

We reviewed the dataset that SAO used in its SAS statistical analysis. This dataset includes the data produced in the data identification phase *plus* variables that the SAO created from the dataset for its analysis. These variables include items such as the *net interest cost* (i.e., the total expected cost of a bond expressed in terms of a lifetime interest rate), *AAArating* (i.e., whether or not the bond issuers received a AAA rating), and many other variables. We noted the following issues in our review:

- We note the lack of a data “library” that described each variable as it arrived from the Community Trade and Economic Development (CTED) and EMMA databases. As SAO is not auditing CTED for this analysis the issue of creating a data library is outside of the SAO’s scope at this time. However, SAO staff noted this issue as well and also noted the existence of duplicate records within the database. We note that they have taken appropriate steps (see above) for removing duplicate entries and they have indicated their final report will include variable definitions.
- We note that SAO staff members created alternative-specific constants (i.e. variables that can only take a 1 or a 0 value) from the CTED data. These “dummy” variables are critical when estimating equations using categorical variables. However, the sum total of the dummy variables for any given variable must equal the number of observations (N) in the dataset or N/2 if one is simply creating one dummy variable for a categorical variable that can only take two values. This practice was not followed in the dataset. Specifically, the SAO analytical dataset contained one dummy variable for each bond rating that issuance could receive (e.g., A rating, AA rating, AAA rating). Our review of these variables found that no observations received the A rating and eleven observations contained no rating at all. So the sum of all of the observations was 279 as opposed to 290 and the “A rating” variable was superfluous. There are two options for how to code this set

of variables correctly. The first option would be to create the AA rating, AAA rating variables and code them as before and then add a "rating missing" variable. This creates a set of three dummy variables that correctly and accurately transform the single categorical variable they represent. The second option is to fill in the rating missing data using data from other observations and then create a "rating missing" variable to test whether anything was actually different about those observations.³ Either method is valid, but these particular variables that the SAO had created in their draft analysis were invalid. We pointed out this error to SAO staff.

Conclusion: We believe that the analysis of the CTED dataset used in the SAS analysis is complicated by a lack of careful documentation. We recommend that the SAO staff take the time to create a data library in their final write up of their analysis and encourage CTED to maintain variable definitions as part of their database. Ideally, descriptions of each variable will be included in the final report (or a report appendix), in the excel workbook used to house the original data, and in the SAS code used to conduct the actual analysis.

In addition, we further recommend that SAO staff adopt the practice of creating variables in code instead of in their EXCEL workbooks when they plan to do their analysis using a statistical software package. The use of code makes mistakes identifiable and correctable, while creating a variable in EXCEL does not create a documented action that can be corrected. We recognize that in certain cases EXCEL is the most convenient way to create new variables. However, in these circumstances, the only prudent course is to include a variable label or description in a comment in EXCEL.

We provide examples of these practices including variable creation and labeling in both the write-up of our analysis and analytical code (see Appendix B and Appendix C).

Step 3. Analytical Method

The current state of the science is a Heckman two-stage regression analysis that was first used in this context by Kriz (2003) and has subsequently been used by Peng and Brucato (2003), Robbins and Simonsen (2007), Robbins (2008), and Fruits (2008). The first stage of the analysis uses a probit model to create an explanatory variable, which is used in the second stage, an ordinary-least square (OLS) analysis. Work prior to Kriz (2003) focused on a standard single-state OLS model used to test the effect of different independent variables on the cost of bonds. Kriz (2003) postulated earlier works did not account for "selection bias" in their analysis. In other words, there might be reasons why an issuing authority might choose to use a negotiated sale or a competitive sale, and that failing to account for these reasons would bias the results of the original OLS model. While there has been substantial debate about the overall strength of these selection biases (reasons), the authors who are active in this literature have settled on the fact that attempting to account for selection bias is the appropriate course of action and can do no harm as the worst result is a statistically insignificant coefficient on the selection bias variable in the OLS model.

As noted above, the first stage of the statistical analysis is the probit model. The intent of running this model is to explain why a bond issuance might be competitive or negotiated. As Robbins and Simonsen (2007) stated, "good identifying variables (as to why one method was chosen over the other) are theoretical determinants of sale type, but not interest." Robbins and Simonsen (2007) use measures such as whether the bond is a "refunding" bond, whether the issuing authority has experience in issuing bonds, whether bond insurance was purchased, the years to maturity, recent market volatility, and the amount of

³ Northern Economics analysis uses this second approach because we believe that potential bond buyers can look back at the recent history to see the prior ratings that a county's general obligation bonds have received. However, we also recognize that the bond rating data can be "missing" or truly "unrated" and that not all buyers may be so sophisticated as to check bond history. We recoded the missing data with the prior ratings for the same county if the county had a bond sale in the prior twelve months. We then included the "ratingmissing" variable to test whether the total interest costs were statistically significantly different for bond sales where no rating was issued.

the bond. Peng and Brucato (2003) use similar variables including size, bond rating, frequency to market, whether the bond received a credit rating, and bond insurance. In general, Peng and Brucato's model exhibited better fit statistics, but poorer prediction performance than Robbins and Simonsen. Peng and Brucato's model placed 75 percent of the observations into the correct issuance category while Robbins' and Simonsen's model placed 89.4 percent into the same category. In either case, both developed models they believed explained why a bond issuance might use one method or another. They then used these models to calculate an inverse mills ratio (IMR), which is used as an explanatory variable in the second model. If the IMR variable is statistically significant, then it indicates the presence of a selection bias (i.e., underlying reason why the bond issuer selected that method). A statistically insignificant result means a lack of evidence suggesting selection bias.

The second phase of the analysis includes the OLS model. In this case, the dependent variable is the net interest cost (NIC) of the bond and the explanatory variables are good identifying variables that might explain the cost of the bond. Commonly used variables include the bond rating, the year to maturity, the amount, whether the bond is callable⁴, whether the bond used insurance, a measure of the underlying bond market via a bond index, whether the bond is purchasable by banks (who have stricter investment standards called Bank Qualified (BQ)), and the bond issuer's experience, which is a measure of how frequently the issuer has participated in the marketplace.

Northern Economics' approach is that any variable for which there is a strong theoretical argument for its being a good identifying variable, should be included in a model, even if the end result is a statistically insignificant estimate for that variable. A statistically insignificant result does not mean that a variable has no influence on the dependent variable; it simply means the model is unable to assure us with statistical confidence that this effect is different from zero.

Conclusion: Draft statistical models provided by the SAO match this methodology. Thus, we conclude that the SAO staff is aware that the two-stage Heckman procedure is the appropriate technique for this analysis.

Step 4. Statistical Analysis

This section describes the statistical analysis that Northern Economics conducted on the SAO's data.

Our first analysis follows the standards set by Robbins and Simonsen (2007), Peng and Brucato (2003), Kriz (2003) and Fruits (2008). Our dependent variable is *Competitive Sale*—a 1/0 variable which indicates whether or not a bond issuance was competitive or negotiated. In this case a "1" indicates a competitive sale. Our independent variables are:

- *Experience*: The number of bonds issued over the previous 56 months. We expect a positive coefficient as more experienced issuers may be more likely to go with a competitive sale.
- *Refund*: A 1/0 variable on whether or not the bond is a refund (refinance) bond, as opposed to a new issue or combination bond. We expect a negative coefficient, as refunding bonds are more complicated than new bonds, which could lead to issuers seeking an additional negotiated sale versus braving the open market (see Robbins and Simonsen, 2007; Peng and Brucato, 2003).
- *Combination*: A 1/0 variable on whether or not the bond combines refunding with new financing, as opposed to a new issue or refund bond. We expect a negative coefficient for the same reason as listed above.
- *Yearstomat*: A continuous variable indicating the years to maturity for the bond. We do not have an *a priori* expectation of sign.

⁴ Data for this particular variable are not available in the CTED dataset SAO used for their analysis.

- *Amountln*: The natural log of the bond amount. We do not have an *a priori* expectation of sign.
- *Amountlnsq*: The natural log of the bond amount squared. We do not have an *a priori* expectation of sign.
- *AAArating*: A 1/0 variable indicating whether or not a bond received an AAA rating. We expect a positive coefficient, because counties with higher bond ratings should be more willing to enter a competitive sale, as their rating should result in a lower interest rate. As noted, if the rating value was missing, we replaced it with the bond rating the county received on another issuance in the previous 12 months.⁵

Our results are similar to those found by other researchers. The key identifying variable is the *Refund* variable, which is statistically significant at the 5 percent level and exhibits the expected sign on the coefficient. The *Experience* and *AAArating* variables are nearly significant at the 10 percent level and also exhibit the expected sign.

Table 2. Northern Economics Probit Analysis

```

Probit regression                                Number of obs   =      290
                                                LR chi2(8)      =      37.34
                                                Prob > chi2     =      0.0000
Log likelihood = -56.682172                    Pseudo R2       =      0.2478
    
```

compsale	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
experience	.1347153	.0829326	1.62	0.104	-.0278296	.2972602
refund	-.9549344	.4801837	-1.99	0.047	-1.896077	-.0137917
combination	.0503516	.4807119	0.10	0.917	-.8918264	.9925296
yearstomat	.0166953	.0426723	0.39	0.696	-.0669409	.1003315
amountln	.6215225	3.568522	0.17	0.862	-6.372653	7.615698
amountlnsq	-.0053282	.1041094	-0.05	0.959	-.209379	.1987225
aaarating	.4644874	.3028979	1.53	0.125	-.1291816	1.058156
voted	-.17329	.36816	-0.47	0.638	-.8948703	.5482903
_cons	-10.94739	30.30087	-0.36	0.718	-70.336	48.44123

The Probit model's performance in correctly classifying observations is similar to that exhibited in Robbins and Simonsen (2007) and Peng and Brucato (2003). The model correctly classifies 92.75 percent of the observations in the dataset.

The analysis compares our results to a similarly-specified probit run by the SAO (see Appendix D: SAO SAS Results). We note very similar results with the same statistically significant variables. The constant is the only variable different by more than one one-hundredth of a point (see Table 3).

⁵ We would also have included the *ratingmiss* variable indicating if a record's bond rating data was missing or the bond was unrated. However, this variable is perfectly correlated with the "0" condition of the dependent variable so we dropped it from the analysis. We do include this variable in the second stage of the analysis and the coefficients are statistically insignificant.

Table 3. Comparison of Northern Economics and SAO Probit Models

Variable	No IMR			With IMR		
	Coef.	Std. Err.	Significance	Coef.	Std. Err.	Significance
experience	0.135	0.083	*	0.137	0.083	*
refund	-0.955	0.480	**	-0.955	0.464	**
combination	0.050	0.481		0.051	0.496	
yearstomat	0.017	0.013		0.017	0.046	
amountln	0.622	3.569		0.631	3.534	
amountlnsq	-0.005	0.104		-0.005	0.103	
aaarating	0.464	0.303		0.462	0.303	
voted	-0.173	0.369		-.171	0.359	
_con	-10.947	30.301		-10.561	30.619	

Our second-stage OLS analysis follows the standards set by prior researchers, as described above, but includes variables specific to this dataset that we felt might be explanatory. Our dependent variable is the *net_ic*—a continuous numeric variable of the bond’s (observation’s) net interest cost.⁶ Our independent variables are:

- *Competitivesale*: A 1/0 variable for whether or not an observation was a competitive sale or negotiated sale. Based on prior research, we expect a negative coefficient.
- *Amountln*: The natural log of the bond amount. We do not have an *a priori* expectation of sign.
- *Amountlnsq*: The natural log of the bond amount squared. We do not have an *a priori* expectation of sign.
- *Bankqual*: A 1/0 variable on whether or not the bond is bank qualified. We expect a negative coefficient as these observations should be of higher quality if bank qualified.
- *Insured*: A 1/0 variable indicating whether insurance was purchased for the bond to secure the rating.
- *AAArating*: A 1/0 variable indicating whether or not a bond received an AAA rating. We expect a positive coefficient, because counties with higher bond ratings should be more willing to enter a competitive sale as their rating should result in a lower interest rate. As noted, if the rating value was missing, we replaced it with the bond rating the county received on another issuance in the previous 12 month.
- *Ratingmis*: A 1/0 variable indicating whether an observation was missing the rating data.
- *Yearstomat*: A continuous variable indicating the years to maturity for the bond. We expect higher costs associated with longer bonds, because the greater timeframe may result in greater uncertainty.
- *Experience*: The number of bonds issued over the previous 56 months. We do not have an *a priori* expectation of sign.
- *Experiencesq*: The number of bonds issued over the previous 56 months squared. We do not have an *a priori* expectation of sign.
- *Creditenh*: A 1/0 variable indicating whether or not the observation was indicated as participating in the State of Washington’s credit enhancement program. We expect a negative sign on the coefficient, because the enhancement program places the full faith and credit of the State of Washington behind the issue.

⁶ Northern Economics did not replicate the SAO’s calculation of this variable.

- *Voted*: A 1/0 variable indicating whether the bond issuance was voter approved. We do not have an *a priori* expectation of sign.
- *Regional*: A 1/0 variable indicating whether the bond lead underwriter was a regional (1) or national (0) firm. As we are measuring total interest cost, we thought we would test to see whether either of these institution types was less expensive overall.
- *Fadvisor*: A 1/0 variable indicating whether the bond issuer retained a financial advisor. We do not have an *a priori* expectation of sign.
- *Bondcov*: A 1/0 variable indicating whether the bond had covenants attached. We have an *a priori* expectation of a negative sign as covenants could reduce a buyer's or issuer's flexibility.
- *Bbindexissue*: A continuous numeric variable of the weekly 20-year Municipal Bond Buyer Index published by the Federal Reserve. The coefficient on the variable should be positive.
- *Multcounty*: A 1/0 variable indicating whether or not an issuance involved multiple counties. This variable is included to test whether bond buyers place higher interest burdens on more complicated issuances involving multiple taxing authorities.
- *IMR*: The inverse mills ratio calculated using the first-stage Probit model. This variable is included in one version of the model for comparison purposes.

Table 4 and Table 5 display the second-stage OLS model results. The difference between the two model runs is the inclusion of the IMR ratio from the first-stage Probit model in Table 5. We provide a discussion of both models, including their similarities and differences, after Table 4 and Table 5 and preceding Table 6.

Table 4. Northern Economics OLS Results- NO IMR

Source	SS	df	MS	Number of obs = 288		
Model	108.092737	17	6.35839627	F(17, 270)	=	45.71
Residual	37.5566267	270	.139098617	Prob > F	=	0.0000
-----				R-squared	=	0.7421
-----				Adj R-squared	=	0.7259
Total	145.649363	287	.507489071	Root MSE	=	.37296

net_ic	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
compsale	-.1857301	.1018922	-1.82	0.069	-.3863342	.0148741
amountln	.2472416	.4399219	0.56	0.575	-.6188718	1.113355
amountlnsq	-.0060342	.013502	-0.45	0.655	-.0326168	.0205484
bankqual	-.1482293	.0802963	-1.85	0.066	-.3063158	.0098572
insured	-.0207626	.0613315	-0.34	0.735	-.1415113	.0999862
aaarating	.0690131	.066131	1.04	0.298	-.0611848	.199211
ratingmiss	.1904246	.1390213	1.37	0.172	-.0832791	.4641282
yearstomat	.0969263	.0054448	17.80	0.000	.0862066	.1076459
experience	.0079783	.0424397	0.19	0.851	-.0755766	.0915331
experiencesq	.0070091	.0082769	0.85	0.398	-.0092863	.0233045
creditenh	-.1328468	.1314388	-1.01	0.313	-.391622	.1259284
voted	.1187809	.0560679	2.12	0.035	.0083951	.2291667
regional	-.00527	.0611257	-0.09	0.931	-.1256136	.1150736
fadvisor	.0364622	.0609055	0.60	0.550	-.0834479	.1563723
bondcov	-.0005969	.0650425	-0.01	0.993	-.1286519	.1274582
bbindexissue	-.3376637	.0961777	-3.51	0.001	-.5270172	-.1483102
multcounty	.0364327	.0660763	0.55	0.582	-.0936576	.1665229
_cons	1.561299	3.618976	0.43	0.667	-5.563701	8.686299

Table 5. Northern Economics OLS Results-IMR

Source	SS	df	MS	Number of obs = 288		
Model	108.760185	18	6.04223249	F(18, 269)	=	44.06
Residual	36.8891784	269	.137134492	Prob > F	=	0.0000
				R-squared	=	0.7467
				Adj R-squared	=	0.7298
Total	145.649363	287	.507489071	Root MSE	=	.37032

net_ic	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
compsale	-.1983272	.1013312	-1.96	0.051	-.3978303	.001176
amountln	.181156	.4378308	0.41	0.679	-.680855	1.043167
amountlnsq	-.00573	.013407	-0.43	0.669	-.0321261	.0206661
bankqual	-.1314506	.0800893	-1.64	0.102	-.2891322	.026231
insured	-.0139808	.0609745	-0.23	0.819	-.1340286	.1060671
aaarating	.0122796	.0705186	0.17	0.862	-.1265589	.1511181
ratingmiss	.134011	.1403848	0.95	0.341	-.1423818	.4104037
yearstomat	.0860355	.007321	11.75	0.000	.0716218	.1004492
experience	-.0234802	.0444863	-0.53	0.598	-.1110658	.0641053
experiencesq	.0097156	.0083093	1.17	0.243	-.0066439	.0260751
creditenh	-.1161861	.1307258	-0.89	0.375	-.3735619	.1411897
voted	.1112938	.055774	2.00	0.047	.0014848	.2211028
regional	.0036047	.0608258	0.06	0.953	-.1161504	.1233599
fadvisor	.0395393	.0604901	0.65	0.514	-.0795548	.1586335
bondcov	-.0220127	.0653072	-0.34	0.736	-.1505909	.1065656
bbindexissue	-.3319099	.0955318	-3.47	0.001	-.5199951	-.1438248
multcounty	.0580833	.066338	0.88	0.382	-.0725245	.1886911
imr	-.1647591	.0746817	-2.21	0.028	-.311794	-.0177242
_cons	3.156733	3.665383	0.86	0.390	-4.059754	10.37322

Both OLS models estimate that competitive sales are less expensive than negotiated sales by nearly 20 basis points (i.e., 0.2 percent). The model that does not include the IMR estimates that competitive sales save bond issuers 18.6 basis points while the IMR model estimates a savings of 19.8 basis points. Both of these results are statistically significant, although at different levels. In addition, both models find that the variables for *Bankqual*, *Yearstomat*, and *BBindexissue* are statistically significant. However, we note that the coefficient for *BBindexissue* is the wrong sign while the other variables maintain their expected sign. We have no explanation for this result, except that we did not have access to actual index numbers for the day of sale or day of issue.⁷ We were only able to access weekly averages maintained by the Federal Reserve. We note that the *IMR* is significant, which indicates selection bias. The inclusion of the *IMR* does not substantially change the coefficients associated with the most important variables. Fruits et al. (2008) found that including the *IMR* negated the difference between competitive sales and negotiated sales. We found that this change does not occur with this set of data; in both cases we find that competitive sales are less expensive than negotiated sales.

⁷ SAO staff may have access to this information through their audit. If they do, we recommend using those data instead of the weekly data we have access to for this analysis.

Table 6. Northern Economics OLS Results- Comparison

Variable	No IMR			With IMR		
	Coef.	Std. Err.	Significance	Coef.	Std. Err.	Significance
compsale	-0.186	0.102	*	-0.198	0.101	**
amountln	0.247	0.440		0.181	0.438	
amountlnsq	-0.006	0.014		-0.006	0.013	
bankqual	-0.148	0.080	*	-0.131	0.080	*
insured	-0.021	0.061		-0.014	0.061	
aaarating	0.069	0.066		0.012	0.071	
ratingmiss	0.190	0.139		0.134	0.140	
yearstomat	0.097	0.005	***	0.086	0.007	***
experience	0.008	0.042		-0.023	0.044	
experiencesq	0.007	0.008		0.010	0.008	
creditenh	-0.133	0.131		-0.116	0.131	
voted	0.119	0.056	**	0.111	0.056	**
regional	-0.005	0.061		0.004	0.061	
fadvisor	0.036	0.061		0.040	0.060	
bondcov	-0.001	0.065		-0.022	0.065	
bbindexissue	-0.338	0.096	***	-0.332	0.096	***
multcounty	0.036	0.066		0.058	0.066	
imr				-0.165	0.075	**
_cons	1.561	3.619		3.157	3.665	

Another interesting result of these models is the finding that voter-approved bonds face higher net tax-exempt interest rate costs of around eleven to twelve basis points. While we do not definitively know why this is the case, we theorize that it may be caused by the fact that voter-issued bonds may face a deadline to head to the market and thus are not able to avoid short-term interest rate fluctuations, while issuers with more flexibility can time their appearance in the market.

We believe, based on the process we have used, that these models are reasonable specifications for this analysis. Our specifications match the designs provided in the peer-reviewed literature and include adaptations that fit these specific data. We have tried numerous different specifications and we note that the coefficients associated with the key variables are stable. However, we do not claim that this model is the only reasonable specification. We think this specification fits the theoretical model based on the data available to us and other, similar specifications would be reasonable as well. We think the key is that if the analyst believes a variable is theoretically important and if it is feasible to include that variable, then it should appear in the model.

A comparison of Northern Economics' No IMR base model and a similar model from the SAO shows almost no differences between the two model runs. The few differences that do exist are measured in thousandths of a percentage point (see Table 7). The SAS output for the SAO model is included in Appendix D: SAO SAS Results.

Table 7. Northern Economics and SAO OLS Comparison- No IMR

Variable	Northern Economics No IMR			SAO No IMR		
	Coef.	Std. Err.	Significance	Coef.	Std. Err.	Significance
compsale	-0.186	0.102	*	-0.187	0.108	*
amountln	0.247	0.440		0.237	0.436	
amountlnsq	-0.006	0.014		-0.006	0.013	
bankqual	-0.148	0.080	*	-0.141	0.080	*
insured	-0.021	0.061		-0.021	0.061	
aaarating	0.069	0.066		0.071	0.068	
ratingmiss	0.190	0.139		0.195	0.137	
yearstomat	0.097	0.005	***	0.090	0.007	***
experience	0.008	0.042		0.007	0.043	
experiencesq	0.007	0.008		0.007	0.008	
creditenh	-0.133	0.131		-0.127	0.188	
voted	0.119	0.056	**	0.111	0.058	*
regional	-0.005	0.061		-0.005	0.070	
fadvisor	0.036	0.061		0.037	0.061	
bondcov	-0.001	0.065		-0.000	0.065	
bbindexissue	-0.338	0.096	***	-0.331	0.096	**
multcounty	0.036	0.066		0.036	0.066	
_cons	1.561	3.619		1.561	3.619	

Conclusion: We conclude that SAO's base model produces equivalent results to our model with any differences attributable to the minor differences between statistical packages (i.e., SAO uses SAS while Northern Economics uses STATA). We also recommend the inclusion of the IMR variable given the strength of the variable in our results.

Sincerely,



Jonathan King, M.S.
 Senior Economist and Principal
 JRK

10:09 Monday, June 8, 2009 1

The REG Procedure
 Model: MODEL1
 Dependent Variable: TIC_OST

Number of Observations Read 290
 Number of Observations Used 285
 Number of Observations with Missing Values 5

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	17	101.19442	5.95261	30.97	<.0001
Error	268	51.89254	0.19219		
Corrected Total	285	153.08696			

Root MSE 0.43840 R-Square 0.6610
 Dependent Mean 3.84201 Adj R-Sq 0.6397
 Coeff Var 11.41070

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value
Intercept	Intercept	1	6.30287	4.29213	1.47
Experience	Experience	1	0.00376	0.04948	0.08
Experience_SQ	Experience_SQ	1	0.00605	0.00971	0.62
MultiCounty	MultiCounty	1	-0.04052	0.07981	-0.51
Voted	Voted	1	0.21329	0.06542	3.26
buc_IssuerCompetitiveSales	buc_IssuerCompetitiveSales	1	-0.36228	0.17175	-2.11
Years_to_Maturity	Years_to_Maturity	1	0.08706	0.00658	13.24
Amount_ln	Amount_ln	1	-0.02098	0.50752	-0.04
Amount_ln_SQ	Amount_ln_SQ	1	0.00108	0.01559	0.07
Bank_Qualified	Bank_Qualified	1	-0.19382	0.09456	-2.05
Imr	Imr	1	-0.12456	0.07667	-1.62

Parameter Estimates

Variable	Label	DF	Pr > t
Intercept	Intercept	1	0.1431
Experience	Experience	1	0.9395
Experience_SQ	Experience_SQ	1	0.5340
MultiCounty	MultiCounty	1	0.6120
Voted	Voted	1	0.0013
buc_IssuerCompetitiveSales	buc_IssuerCompetitiveSales	1	0.0358
Years_to_Maturity	Years_to_Maturity	1	<.0001
Amount_ln	Amount_ln	1	0.9671
Amount_ln_SQ	Amount_ln_SQ	1	0.9447
Bank_Qualified	Bank_Qualified	1	0.0414
Imr	Imr	1	0.0203

10:09 Monday, June 8, 2009 2

The REG Procedure
 Model: MODEL1
 Dependent Variable: TIC_OST

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value
CreditEnhancement	CreditEnhancement	1	0.55078	0.33617	1.64
Insured	Insured	1	-0.01053	0.07296	-0.14
Fadvisor	Fadvisor	1	-0.03452	0.07148	-0.48

RegionalUnderwriter	RegionalUnderwriter	1	-0.18808	0.17233	-1.09
AAA_Rating	AAA Rating	1	0.11098	0.07871	1.41
Rating_Missing	Rating_Missing	1	0.18793	0.17585	1.07
BondCov	BondCov	1	-0.00441	0.07475	-0.06
BBI_Average	BBI Average	1	-0.77493	0.18437	-4.20

Parameter Estimates

Variable	Label	DF	Pr > t
CreditEnhancement	CreditEnhancement	1	0.1025
Insured	Insured	1	0.8854
Fadvisor	Fadvisor	1	0.6296
RegionalUnderwriter	RegionalUnderwriter	1	0.2761
AAA_Rating	AAA Rating	1	0.1597
Rating_Missing	Rating_Missing	1	0.2861
BondCov	BondCov	1	0.9530
BBI_Average	BBI Average	1	<.0001

Appendix D: Definitions

Bond Structure

Bonds are typically split into different maturity dates with different interest rates. While a bond may not fully mature for 15 or 20 years (different maturities exist), periodic interest payments are built into the bond, so the buyer or lender of funds is entitled to payments throughout the bond lifetime. How these interest payments are structured impact the actual interest rate paid over bond's lifetime. The determination of the overall interest rate can be computed in different ways, including True Interest Cost or Net Interest Cost.

Net Interest Cost

A bond's net interest cost is simply a weighted average of the various interest rates within a bond's lifetime. It considers a dollar today is worth the same amount in the future. The net interest cost calculation does not take into account when interest payments are due. Whether the higher interest rate payments are due up front (front-loaded bond structure) or due towards the end of the bond's lifetime (back-loaded bond structure) has no impact on the actual interest rate. Net Interest Cost does not take the bond structure or timing of interest payments into account, except for the final maturity date.

True Interest Cost

The True Interest Cost of a bond takes into account the time value of money. It recognizes that a dollar today is likely worth less than a dollar tomorrow. The calculations used to determine true interest cost take into account the timing of each interest payment (front-loaded or back-loaded) and more accurately reflects the bond's actual interest rate. However, the calculations are more complex than Net Interest Cost, which is why Net Interest Cost is used much more often in the municipal bond process.

Appendix E: Responses

Office of the State Treasurer's Response



JAMES L. McINTIRE
State Treasurer

State of Washington
Office of the Treasurer

August 11, 2009

Brian Sonntag, State Auditor
302 Sid Snyder Ave SW, Suite 200
Olympia, WA 98504

Dear Mr. Sonntag:

Thank you for the opportunity to comment on your analysis of how Washington state school districts issue bonds. I appreciate having a chance to work with you, the Office of Superintendent of Public Instruction, and local school districts to find ways to save taxpayer money at this challenging time.

We agree with a number of your recommendations. The Office of the State Treasurer, in partnership with the Office of Superintendent of Public Instruction (OSPI), can reach out to school districts in a cost-effective and thoughtful way to help districts improve the way they issue bonds. For example, we can work with the Washington State School Directors Association to help update their school bond manual so that better guidance can be shared directly with the local elected officials that oversee the issuance of voter approved and locally financed debt for their school districts.

The Office of the State Treasurer has a strong record of supporting cost-effective school district access to credit markets through the School Bond Guarantee Program. Before the market crisis in 2008, "A" rated districts saved an estimated 10 basis points and districts with lower ratings saved about 20 basis points a year. In today's much tougher market, savings for "A" rated districts is an estimated 50 points and is up to 100 points for those with lower ratings. Since 2000 when the program started it saved school district tax payers nearly \$68 million (on a net present value basis). In keeping with your recommendations, we look forward to providing school districts even more information about how they can benefit from this successful program.

To come out ahead in today's credit market requires reliable and timely information, experienced professional staff, and top-quality advice. The state's excellent AA+ credit rating provides access to the market and low bond prices that save money for the state's taxpayers. But credit spreads have widened sharply since the 2003-2007 period that forms the basis for your report. In 2006, municipal borrowers with "A" credit would have paid approximately 25 basis points more than those with "AAA" credit – but now the difference is closer to 80 points. Today, unrated and low rated municipal borrowers can pay as much as 225 basis points more than "AAA" compared with a 45 point premium in 2006.



We share your view that school districts can learn some things from experience acquired from 2003 to 2007 – a period of rapid economic growth and easy credit. But lessons learned from 2003-07 may be hard to apply in today's more challenging markets. This means advice and guidance from financial advisors will be even more important. Those school districts that do choose to hire financial advisors will need to pay for these services, even though your report does not appear to account for this added cost when estimating the potential savings for school districts.

The state is a large issuer of debt with excellent credit and relatively uncomplicated finance structures that let us benefit from competitive bond sales. However, school districts often issue smaller amounts of debt infrequently and may use more complex debt structures to manage the tax load their voters carry – which makes it harder for them to issue debt on a competitive basis. This means that while your analysis suggests potential savings for school districts in the aggregate, it may not be possible for each district to realize its share of the potential savings.

In addition to your recommendations, we suggest exploring other ways to help manage and guide school district bond issuances. Our experience running a successful certificate of participation option to help local governments and school districts finance real estate and equipment purchases could serve as a model. We would be happy to work with OSPI, school districts and the legislature to further develop these options.

We are committed to working with your office, OSPI, school districts and the legislature to provide as much useful guidance to school districts as possible – especially at a time when one size does not fit all and good professional judgment, experience and timely information are important to deciding how to best borrow money. Thank you for the opportunity to comment on your report. Please do not hesitate to contact me if you have any questions or concerns. I look forward to working with you more in the future.

Sincerely,



James L. McIntire,
Washington State Treasurer

Office of the Superintendent of Public Instruction's Response



SUPERINTENDENT OF PUBLIC INSTRUCTION

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RECEIVED
STATE AUDITOR

August 11, 2009

Brian Sonntag, State Auditor
Office of the State Auditor
P.O. Box 40021
Olympia, WA 98504-0021

Dear Mr. Sonntag:

I appreciate the findings of the State Auditor's office regarding school district General Obligation bonds. And I agree wholeheartedly, especially in these difficult economic times, that providing districts the resources they need regarding the sale of bonds, even more so if there is a potential for future savings, is worth pursuing.

Some guidance on the complicated process of issuing bonds is available through the Office of Superintendent of Public Instruction (OSPI). The OSPI facilities manual, the Washington State School Directors Association bond manual and the Office of the State Treasurer's expertise on market information are all valuable resources. Your audit has determined that not all districts are aware of these resources.

Since OSPI has an already established business relationship with school districts, we will be happy to partner with the State Treasurer's Office to facilitate any communication regarding bond sales to the districts, which includes helping districts become more aware of available resources. OSPI does not currently have the capacity to provide this technical assistance in-house.

To be clear, though, "guidance" should not be mistaken for "requirement." While OSPI does have broad authority over K-12 education, it is broad, and districts may have valid reasons for choosing a specific bond method. We have a long and firm tradition of local control in this state: districts oversee their day-to-day operations largely without influence from the state. We have no desire to subvert that tradition by forcing districts to accept our guidance and any recommendations.

The guidance we offer also needs to be given with the understanding that often districts know their situations best. During the audit process, districts were not asked to provide rationales for their bond issuing decisions. It is possible that choosing a competitive bonding method, while potentially costing less for the bond, could result in districts incurring other costs during the competitive bidding process, making it less appealing in the long run. Second-guessing a district decision without allowing a response is unfair.

I fully believe that this report highlights the need for future guidance. Working with the State Treasurer's Office and others, OSPI will do whatever we can to make sure that districts have the best information with which to make the most informed decisions they can.

I want to thank the audit staff for their efforts and we appreciate the opportunity to respond to this report.

Sincerely,

A handwritten signature in black ink that reads "Randy Dorn". The signature is fluid and cursive, with a long horizontal line extending to the right.

Randy I. Dorn
State Superintendent
of Public Instruction

State Auditor's Office Concluding Remarks

School districts used financial advisors on 91 of the 287 bond sales at a total actual cost of \$1,286,701. We estimate that if all 287 districts had used a financial advisor, the total cost would have been approximately \$7,399,476.

We greatly appreciate the school districts and educational service districts that we interviewed helping us understand why they chose the sale processes they used and possible solutions for the state to provide guidance and training. We would also like to thank the Office of the Superintendent of Public Instruction, the Office of the State Treasurer, the Department of Commerce and the educational associations for their input and contributions to this audit.



WASHINGTON
BRIAN SONNTAG
STATE AUDITOR

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