

Advance Refundings: Discussion and Case Studies

*Council of Development Finance Agencies
“The Advanced Bond Finance Course”*

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Basic Definition of Advance Refunding

- A refunding where the refunded issue remains outstanding for a period of time of more than 90 days after the issuance of the refunding issue.
- The proceeds of the refunding issue are usually invested in Treasury securities or federal agency securities, with principal and interest from these investments used to pay principal and interest on the refunded issue. This is called an escrow.
- In general, there are two types of advance refundings:
 1. Escrow to Call Date (“ETC”): Where the proceeds of the escrow are established prior to 90 days of the first call date of the bonds to be refunded; in this case the old bonds are called pre-refunded.
 2. Escrow to Maturity (“ETM”): Proceeds of the refunding issue are deposited into an escrow to pay principal and interest being refunded on the original interest payment and maturity dates. The escrow then stays in place until the final maturity of the refunded bonds.
- Note: For ETC transactions, usually if the escrow is put in place prior to within 90 days of the call date, they are categorized as advance refundings; and within 90 days, current refundings.

There Are Several Methods of Advance Refunding

- **Full Cash or Gross Refunding**
- **Net Cash Refunding**
- **Crossover Refunding**
- **Forward Refunding**
- **Synthetic Refunding**

Full Cash or Gross Refunding

- A method of advance refunding in which the proceeds of refunding bonds, without reinvestment, will provide sufficient funds to pay debt service on the refunded bonds.
- In simple terms, cash equal in an amount equal to what is needed to refund the outstanding bonds is used.
- Typical applications: cash defeasances, tenders, etc.

Net Cash Refunding

- This method of advance refunding occurs where the proceeds of the refunding issue and any other available monies, together with interest earnings, will pay the debt service on the refunded bonds.
- Simply speaking, a net cash refunding features an escrow.
- Other available monies could be existing debt service reserve funds, debt service monthly deposits, cash on hand, etc.

Crossover Refunding

- This method of advance refunding occurs where a revenue stream originally pledged to secure bonds that are being refunded continues to be used to pay debt service on the refunded bonds until they mature or are called.
- When the pledged revenues “cross over” to the refunding bonds, the escrow pays for defeasing the refunded bonds.
- During the time when both the refunded and the refunding bonds are outstanding, debt service on the refunding bonds is paid from interest earnings on the refunding escrow.

Forward Refunding

- Typically, a forward refunding is done when an issue is not eligible to be advance refunded on a tax-exempt basis under the Internal Revenue Code.
- The basic concept is a forward agreement between an issuer and underwriter, whereby the issuer agrees to issue bonds on a certain date and the underwriter agrees to purchase these bonds on said date.
- The proceeds of the bonds, when issued will be used to refund the issuer's outstanding bonds (again, most common in forward current refundings).
- Also used with forward starting swaps (synthetic) as a method of refunding.

How Does One Generally Determine if a Bond Issue is Eligible for Tax-Exempt Advance Refunding?

ELIGIBLE

- ✓ New Money
- ✓ Current Refundings
- ✓ Bonds originally issued as advance refundings prior to 1986 are allowed one more refunding in accordance with the Internal Revenue Code
- ✓ Non-AMT debt in certain instances

NOT ELIGIBLE

- ✗ Advance Refundings
- ✗ Private Activity Bonds
- ✗ Taxable Bonds

Why do an Advance Refunding?

RATIONALE

- ✓ Present Value (PV) Savings
- ✓ The chance to exchange high coupon debt for lower coupons (high-to-low refunding)
- ✓ Decisions are sometimes driven by the value of exercising the option in existing call provisions vs. the future interest rate outlook
- ✓ New Indenture Provisions/Flexibility
- ✓ Debt Restructuring
- ✓ Other

HOWEVER



Rates could go lower after you have issued the refunding bonds. Remember, you are only allowed one advance refunding (post 1986).

Interplay between Escrow Yield and Arbitrage Yield

- The Internal Revenue Code prohibits issuers from earning arbitrage by investing the proceeds of an escrow to yield more than the arbitrage yield of a tax-exempt refunding bond issue.
- The arbitrage yield is by definition, the maximum allowable yield.
- In a tax-exempt refunding, the issuer is faced with the task of structuring a portfolio with a variety of taxable securities in order to meet the “yield restriction”.

Types of Securities That Can be Used in an Escrow

- **State and Local Government Securities (“SLGS”)**: These are specially created for tax-exempt issuers by the U.S. Treasury. Issuers purchase them directly from the U.S. Treasury rather than in the open market.
 - The regulations provide that the purchase price of the SLGS is the actual price paid to the Treasury
 - The issuer can choose the maturity and interest rate from a variety of SLGS
 - The yield on the escrow can therefore be customized to comply with arbitrage restrictions
- **Open Market Securities (“OMS”)**: These are existing securities that can be purchased in the open market by dealers. In the mid-90s, several dealers purchased OMS for escrows at yields that were artificially misrepresented as being below or at the arbitrage yield. This process was called “yield burning” which is now prohibited. In 1996 the IRS proposed a three-bid process to ensure that the cost of the OMS portfolio would not be greater than the cost of the most efficient SLGS portfolio.
- Agencies, Strips, Investment/Float Contracts, Certificates of Deposit and Cash are other types of taxable securities or mechanisms that can be used legally in an escrow portfolio.

Case Study 1: Advance Refunding Candidates

- Issuer A has \$139 million in bonds outstanding that are eligible for an advance refunding.
- There are two term bonds maturing in 2027 and 2033
- These bonds have a call date of 1/15/2012

Summary Of Bonds Refunded

Issue	Maturity	Type	of Bond	Coupon	Maturity Value	Call Date	Call Price
Dated 6/15/2002 Delivered 6/15/2002							
2002A	01/15/2022	Term 1	Coupon	5.000%	2,805,000	01/15/2012	101.000%
2002A	01/15/2023	Term 1	Coupon	5.000%	2,945,000	01/15/2012	101.000%
2002A	01/15/2024	Term 1	Coupon	5.000%	3,095,000	01/15/2012	101.000%
2002A	01/15/2025	Term 1	Coupon	5.000%	8,145,000	01/15/2012	101.000%
2002A	01/15/2026	Term 1	Coupon	5.000%	8,555,000	01/15/2012	101.000%
2002A	01/15/2027	Term 1	Coupon	5.000%	8,985,000	01/15/2012	101.000%
2002A	01/15/2028	Term 2	Coupon	5.000%	9,430,000	01/15/2012	101.000%
2002A	01/15/2029	Term 2	Coupon	5.000%	17,200,000	01/15/2012	101.000%
2002A	01/15/2030	Term 2	Coupon	5.000%	18,065,000	01/15/2012	101.000%
2002A	01/15/2031	Term 2	Coupon	5.000%	18,965,000	01/15/2012	101.000%
2002A	01/15/2032	Term 2	Coupon	5.000%	19,915,000	01/15/2012	101.000%
2002A	01/15/2033	Term 2	Coupon	5.000%	20,910,000	01/15/2012	101.000%
Subtotal	-			-	\$139,015,000	-	-
Total	-			-	\$139,015,000	-	-

Case Study #1: Calculating the Defeasance Requirements

Debt Service To Maturity And To Call

Date	Refunded Bonds	Premium	Interest to Call	D/S To Call
01/15/2008	-	-	6,950,750.00	6,950,750.00
01/15/2009	-	-	6,950,750.00	6,950,750.00
01/15/2010	-	-	6,950,750.00	6,950,750.00
01/15/2011	-	-	6,950,750.00	6,950,750.00
01/15/2012	139,015,000.00	1,390,150.00	6,950,750.00	147,355,900.00
01/15/2013	-	-	-	-
01/15/2014	-	-	-	-
01/15/2015	-	-	-	-
01/15/2016	-	-	-	-
01/15/2017	-	-	-	-
01/15/2018	<p><u>Defeasance Requirements</u></p> <ul style="list-style-type: none"> ➤ Principal redeemed after call date ➤ Call Premium ➤ Interest prior to call date 			-
01/15/2019				-
01/15/2020				-
01/15/2021				-
01/15/2022				-
01/15/2023				-
01/15/2024				-
01/15/2025	-			
01/15/2026	-			
01/15/2027	-			
01/15/2028	-	-	-	-
01/15/2029	-	-	-	-
01/15/2030	-	-	-	-
01/15/2031	-	-	-	-
01/15/2032	-	-	-	-
01/15/2033	-	-	-	-
Total	\$139,015,000.00	\$1,390,150.00	\$34,753,750.00	\$175,158,900.00

Case Study #1: Verifying Escrow Sufficiency

Escrow Fund Cashflow

Date	Principal	Rate	Interest	Receipts	Disbursements	Cash Balance
04/01/2007	-	-	-	0.26	-	0.26
07/15/2007	1,712,615.00	-	1,762,760.39	3,475,375.39	3,475,375.00	0.65
01/15/2008	436,712.00	-	3,038,663.15	3,475,375.15	3,475,375.00	0.80
07/15/2008	436,712.00	-	3,038,663.15	3,475,375.15	3,475,375.00	0.95
01/15/2009	436,711.00	-	3,038,663.15	3,475,374.15	3,475,375.00	0.10
07/15/2009	436,712.00	-	3,038,663.15	3,475,375.15	3,475,375.00	0.25
01/15/2010	436,712.00	-	3,038,663.15	3,475,375.15	3,475,375.00	0.40
07/15/2010	436,712.00	-	3,038,663.15	3,475,375.15	3,475,375.00	0.55
01/15/2011	436,712.00	-	3,038,663.15	3,475,375.15	3,475,375.00	0.70
07/15/2011	436,712.00	-	3,038,663.15	3,475,375.15	3,475,375.00	0.85
01/15/2012	140,841,861.00	4.315%	3,038,663.15	143,880,524.15	143,880,525.00	-
Total	\$146,048,171.00	-	\$29,110,728.74	\$175,158,900.00	\$175,158,900.00	-

Investment Parameters

Investment Model [PV, GIC, or Securities]	Securities
Default investment yield target	Bond Yield

Cash Deposit	0.26
Cost of Investments Purchased with Bond Proceeds	146,048,171.00
Total Cost of Investments	\$146,048,171.26

Target Cost of Investments at bond yield	\$146,047,331.63
Actual positive or (negative) arbitrage	(839.63)

Yield to Receipt	4.2559980%
Yield for Arbitrage Purposes	4.2561349%

State and Local Government Series (SLGS) rates for	2/02/2007
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Case Study #1: Calculating the Escrow Yield

- Generally, this is the yield, compounded semi-annually, on a 30/360 day basis, computed assuming that the purchase cost of the escrow (i.e. escrow deposit) funds the cost of the portfolio, including interest.

Primary Purpose Fund Proof Of Yield @ 4.2559980%

Date	Cashflow	PV Factor	Present Value	Cumulative PV
04/01/2007	-	1.0000000x	-	-
07/15/2007	3,475,375.39	0.9879076x	3,433,349.75	3,433,349.75
01/15/2008	3,475,375.15	0.9673230x	3,361,810.22	6,795,159.97
07/15/2008	3,475,375.15	0.9471673x	3,291,761.57	10,086,921.53
01/15/2009	3,475,374.15	0.9274315x	3,223,171.56	13,310,093.09
07/15/2009	3,475,375.15	0.9081070x	3,156,012.57	16,466,105.67
01/15/2010	3,475,375.15	0.8891852x	3,090,252.04	19,556,357.71
07/15/2010	3,475,375.15	0.8706576x	3,025,861.73	22,582,219.44
01/15/2011	3,475,375.15	0.8525161x	2,962,813.10	25,545,032.54
07/15/2011	3,475,375.15	0.8347525x	2,901,078.18	28,446,110.72
01/15/2012	143,880,524.15	0.8173591x	117,602,060.28	146,048,171.00
Total	\$175,158,899.74	-	\$146,048,171.00	-

Composition Of Initial Deposit

Cost of Investments Purchased with Bond Proceeds	146,048,171.00
Adjusted Cost of Investments	146,048,171.00

Case Study #1: Securities Funding the Escrow Portfolio

Escrow Summary Cost

Maturity	Type	Coupon	Yield	Price	Par Amount	Principal Cost	+Accrued Interest	= Total Cost
Escrow								
07/15/2007	SLGS-CI	-	-	100-.000000	1,712,615	1,712,615.00	-	1,712,615.00
01/15/2008	SLGS-CI	-	-	100-.000000	436,712	436,712.00	-	436,712.00
07/15/2008	SLGS-NT	-	-	100-.000000	436,712	436,712.00	-	436,712.00
01/15/2009	SLGS-NT	-	-	100-.000000	436,711	436,711.00	-	436,711.00
07/15/2009	SLGS-NT	-	-	100-.000000	436,712	436,712.00	-	436,712.00
01/15/2010	SLGS-NT	-	-	100-.000000	436,712	436,712.00	-	436,712.00
07/15/2010	SLGS-NT	-	-	100-.000000	436,712	436,712.00	-	436,712.00
01/15/2011	SLGS-NT	-	-	100-.000000	436,712	436,712.00	-	436,712.00
07/15/2011	SLGS-NT	-	-	100-.000000	436,712	436,712.00	-	436,712.00
01/15/2012	SLGS-NT	4.315%	4.315%	100-.000000	140,841,861	140,841,861.00	-	140,841,861.00
Subtotal		-	-	-	\$146,048,171	\$146,048,171.00	-	\$146,048,171.00
Total		-	-	-	\$146,048,171	\$146,048,171.00	-	\$146,048,171.00
Escrow								
Cash Deposit								0.26
Cost of Investments Purchased with Bond Proceeds								146,048,171.00
Total Cost of Investments								\$146,048,171.26
Delivery Date								4/01/2007

Case Study #1: The Refunding Bonds Provide Proceeds to Fund the Escrow and Defeas the Prior Bonds

Pricing Summary

Maturity	Type of Bond	Coupon	Yield	Maturity Value	Price		Dollar Price
01/15/2008	Serial Coupon	5.000%	3.610%	1,335,000.00	101.066%		1,349,231.10
01/15/2022	Serial Coupon	5.000%	4.090%	2,735,000.00	107.274%	c	2,933,943.90
01/15/2023	Serial Coupon	5.000%	4.110%	2,875,000.00	107.107%	c	3,079,326.25
01/15/2024	Serial Coupon	5.000%	4.130%	3,020,000.00	106.940%	c	3,229,588.00
01/15/2025	Serial Coupon	5.000%	4.150%	8,065,000.00	106.774%	c	8,611,323.10
01/15/2026	Serial Coupon	5.000%	4.170%	8,475,000.00	106.608%	c	9,035,028.00
01/15/2027	Serial Coupon	5.000%	4.190%	8,900,000.00	106.443%	c	9,473,427.00
01/15/2033	Term 1 Coupon	5.000%	4.250%	103,870,000.00	105.948%	c	110,048,187.60
Total	-	-	-	\$139,275,000.00	-	-	\$147,760,054.95

Bid Information

Par Amount of Bonds	\$139,275,000.00
Reoffering Premium or (Discount)	8,485,054.95
Gross Production	\$147,760,054.95
Total Underwriter's Discount (0.376%)	\$(524,040.00)
Bid (105.716%)	147,236,014.95
Total Purchase Price	\$147,236,014.95
Bond Year Dollars	\$3,068,572.50
Average Life	22.032 Years
Average Coupon	5.0000000%
Net Interest Cost (NIC)	4.7405629%
True Interest Cost (TIC)	4.5820663%

Transferred Proceeds

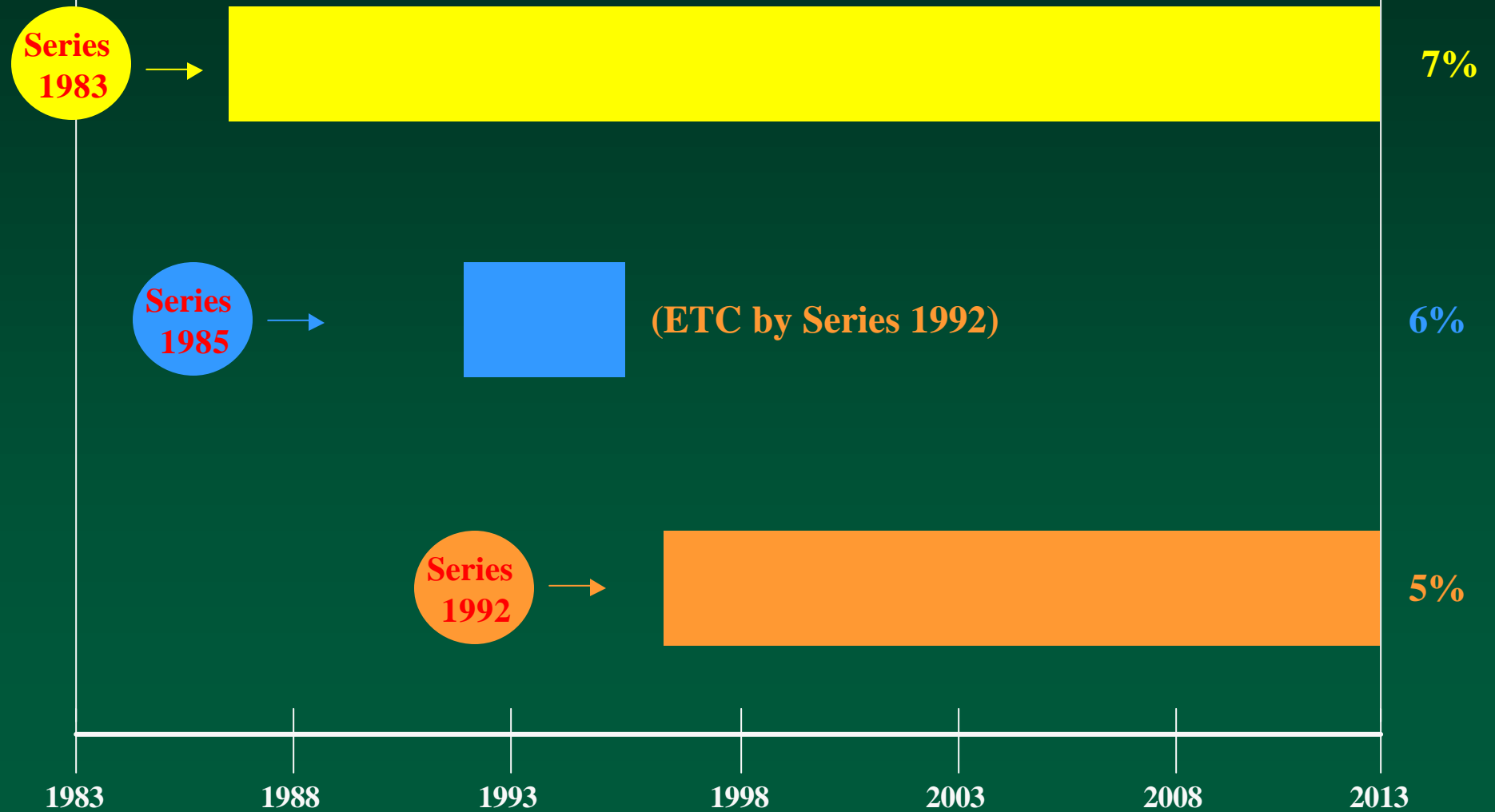
- Proceeds of a refunded issue which remain unexpended after all or a portion of that refunded issue has been paid from the proceeds of the refunding issue.
- The general idea is that if the proceeds of one issue pay debt service on another issue, then the proceeds of the discharged issue should at that point become “transferred,” i.e., allocated to the refunding issue.
- If this did not occur, then the proceeds of the refunded issue would always remain allocated to the old bonds and an issuer could earn arbitrage by simply replacing the refunded bonds with new lower coupon refunding bonds, consequently capturing the spread between the old, high coupon investments and the new, low coupon bonds.
- When refunded proceeds are “transferred” or allocated to a refunding issue, the refunded proceeds and any investments become subject to yield restriction and rebate at the yield on the refunding issue or yield reduction payments in lieu of rebate (sometimes called a “transferred proceeds penalty”).



Key Point: No transfer occurs until the actual payment or “discharge” date of the prior bonds.

Illustration

(ETM by Series 1985)



Existing Debt Service Reserve Funds

- Used to satisfy an issuer's debt service reserve requirement
 - Cash Funded
 - Surety
- In a refunding, with an existing cash funded reserve fund, this can be liquidated entirely and the refunding issue funds a new one, or you can liquidate the "margin"
- The liquidated amount is deposited in the escrow
 - Spend first vs. pro-rata

Prior Debt Service (Sinking) Funds

- “Sinking Funds” include any fund (such as a debt service fund, a redemption fund or a reserve fund) that is reasonably expected to be used directly or indirectly to pay debt service on an issue.
- The classic type of sinking fund is a fund to which the issuer deposits surplus moneys that are not derived from sales proceeds and applies these money to payment of debt service of the outstanding issue. These moneys are subject to yield restriction and rebate.
- In addition, most term bonds have sinking funds, which are mandatory annual repayments of principal prior to the stated maturity.

Debt Service Deposits

- Many issuers are required (legally or as a matter of policy) to make monthly deposits into their debt service fund.
- Principal deposits are over a twelve month period.
- Interest deposits are made over a six month period.
- In a refunding, these funds are often contributed as a source of funds, and then used to lower the escrow requirements.
 - Spend first vs. pro-rata

Case Study #2: Prior Debt Service Deposits

	Interest Deposit	Cumulative Interest	Interest Payment	Principal Deposit	Cumulative Principal	Principal Payment
1/1/2006	1,000,000	1,000,000		1,000,000	1,000,000	
2/1/2006	1,000,000	2,000,000		1,000,000	2,000,000	
3/1/2006	1,000,000	3,000,000		1,000,000	3,000,000	
4/1/2006	1,000,000	4,000,000		1,000,000	4,000,000	
5/1/2006	1,000,000	5,000,000		1,000,000	5,000,000	
6/1/2006	1,000,000	-	6,000,000	1,000,000	6,000,000	
7/1/2006	1,000,000	1,000,000		1,000,000	7,000,000	
8/1/2006	1,000,000	2,000,000		1,000,000	8,000,000	
9/1/2006	1,000,000	3,000,000		1,000,000	9,000,000	
10/1/2006	1,000,000	4,000,000		1,000,000	10,000,000	
11/1/2006	1,000,000	5,000,000		1,000,000	11,000,000	
12/1/2006	1,000,000	-	6,000,000	1,000,000	-	12,000,000

On refunding date, \$10 million can be contributed to the refunding in this example


Treatment of Multipurpose Issues

- Multipurpose issues include series of bonds were issued for new money as well as refunding purposes.
- The simplest example is when the refunding and new money portions were clearly separated into different series of bonds. For example, Series 1998A, would be identified as having been for new money purposes and Series 1998B, for a refunding. Clearly, each series has its definable purpose.
- ❖ However, sometimes the multi-purpose is not broken out and can only defined by further review of the official statement, tax documents and verification reports, and an allocation then needs to be made to determine what portion of the original deal is eligible for an advance refunding.

Allocation of Specific Bonds to a Refunding Purpose

Three Allocation Methodologies

1. Pro-rata Allocation Method (pending tax-counsel review to verify the exact portion and maturities that are eligible for the advance refunding).

 Quick Tip: Start with the Sources & Uses page in the Official Statement. Use the Escrow to determine a ratio of what is not eligible for advance refunding. Subtract this from 100 percent to determine what is eligible. Multiply these ratios by the bonds top to bottom, and round each maturity to the nearest \$5,000 to get two strips. Make sure your total strips equal the original principal amount prior to the allocation.

2. Debt Service on the refunding portion is, in each year less than, equal to or proportionate to debt service on bonds.
3. Allocation of the entire multipurpose issue such that each portion is in proportion to the remaining weighted average economic life of the capital project being financed or refinanced

Case Study #3: Example of a Multipurpose Issue

NEW ISSUE — BOOK ENTRY ONLY

In the opinion of Co-Bond Counsel, interest on the 1999A Bonds will be excluded from gross income for federal income tax purposes and exempt from present income taxation within the State of Georgia. Interest on the 1999B Bonds will not be so excluded or exempt.



\$1,108,745,000 City of Atlanta Water and Wastewater Revenue Bonds Series 1999

Dated: April 1, 1999

Due: November 1, as shown on the inside cover

This Official Statement describes the water and wastewater system (the "System") of the City of Atlanta (the "City") and other facts relevant to the bonds (the "Bonds") listed above. The Bonds will be issued in two series —

\$1,000,140,000 Water and Wastewater Revenue Bonds, Series 1999A **\$13,605,000 Water and Wastewater Revenue Bonds, Series 1999B (Taxable)**

The Bonds are being issued to finance a program of capital improvements to the System and to refund all of the City's outstanding water and wastewater revenue bonds. Revenues of the System will be pledged as security for payments on the Bonds. The Bonds shall not constitute a lien or encumbrance on any other property of the City and Bondholders will not have the right to compel the exercise of any taxing power of the City for payments on the Bonds. The Bonds may be owned only in book entry form through a depository or indirect participant in The Depository Trust Company ("DTC"). Interest on the Bonds is payable semiannually on each May 1 and November 1, commencing November 1, 1999. Maturity principal of the Bonds is payable on November 1 in the years shown on the inside cover. Certain of the 1999A Bonds are subject to redemption prior to maturity as described herein.

The scheduled payment of the principal of and interest on the Bonds when due will be guaranteed under a municipal bond insurance policy to be issued concurrently with the delivery of the Bonds by

FGIC Financial Guaranty Insurance Company

This cover page contains limited information for quick reference only. It is not a summary of the matters relating to the Bonds. Potential investors must read the entire Official Statement to obtain information essential to making an informed investment decision. Certain new information is contained in the paragraph entitled "Litigation Development" on page 38.

See Inside Cover For Maturities, Amounts, Interest Rates And Prices Or Yields

The Bonds are being offered when, as and if issued and received by the Underwriters named below and subject to the approval of validity by Kilpatrick Stockton LLP, Atlanta, Georgia and The Payne Group, Atlanta, Georgia, Co-Bond Counsel. Certain legal matters will be passed upon for the Underwriters by Hunn & Williams, Atlanta, Georgia and Howell & Associates, LLC, Atlanta, Georgia. Ownership of the Bonds is expected to be available through DTC in New York, New York, on or about April 22, 1999.

Bear, Stearns & Co. Inc. **PaineWebber Incorporated**

Staylock & Partners, L.P.

Legg Mason Wood Walker Incorporated

Siebert Brandford Shank & Co., LLC

Greicap, Inc.

Interstate/Johnson Lane Corporation

J. C. Bradford & Co.

Date: March 31, 1999

1993 Bonds

Maturity (January 1)	Outstanding Principal Amount	Redemption or Maturity (January 1)	Redemption Price
2000	\$ 5,440,000	2000	100%
2001	3,660,000	2001	100
2002	5,900,000	2002	100
2003	6,155,000	2003	100
2004	6,425,000	2004	100
2005	6,710,000	2004	102
2006	7,020,000	2004	102
2007	7,350,000	2004	102
2008	7,705,000	2004	102
2009	8,080,000	2004	102
2010	8,485,000	2004	102
2011	8,910,000	2011	100
2015	40,705,000	2004	102
2018	36,010,000	2004	100
2023	72,620,000	2004	102

SOURCES AND USES OF FUNDS

The following table shows the uses of Bond proceeds. In addition, upon the refunding of the Prior Bonds, some amounts from the System's existing renewal and extension fund will be transferred to the City's General Fund, the remainder in such fund will be transferred to the new Renewal and Extension Fund created under the Bond Ordinance and amounts in existing construction funds will be transferred to the Project Fund created under the Bond Ordinance.

Source		
	Par Amount of 1999 Bonds	\$1,108,745,000.00
	Less: Original Issue Discount	(19,364,961.70)
	Plus: Original Issue Premium	31,661,377.25
	Plus: Debt Service Amounts from Prior Bonds	7,650,303.47
	Plus: Accrued Interest	3,311,669.05
	Total Sources	\$1,132,003,388.07
Uses		
	Escrow Fund	\$508,827,059.72
	Project Fund	660,000,000.00
	Capitalized Interest	77,329,021.87
	Debt Service Reserve Account	71,852,680.00
	Costs of Issuance ¹¹	10,686,955.43
	Accrued Interest	3,311,669.05
	Total Uses	\$1,132,003,388.07

¹¹ Includes Underwriters' discount, legal fees, printing costs, financial advisory fees, premium for the Policy and other miscellaneous expenses.

Case Study #3: Example of a Multipurpose Issue

Original Pricing and Structure of the Bonds

\$1,096,140,000 Series 1999A

<u>Maturity</u>	<u>Amount</u>	<u>Interest Rate</u>	<u>Price or Yield</u>	<u>Maturity</u>	<u>Amount</u>	<u>Interest Rate</u>	<u>Price or Yield</u>
2000	\$10,000,000	3.50%	3.20%	2006	\$6,220,000	4.00%	4.15%
2001	3,695,000	3.50	3.53	2007	3,515,000	4.25	100
2004	4,765,000	4.00	3.95	2008	1,705,000	4.25	4.32
2005	10,300,000	4.00	4.05	2009	6,410,000	4.30	4.41
2001	6,305,000	4.50%	3.53%	2012	22,830,000	5.50%	4.66%
2004	4,270,000	5.00	3.95	2013	24,075,000	5.50	4.72
2006	9,395,000	5.00	4.15	2014	25,370,000	5.50	4.76
2007	12,800,000	5.00	4.25	2015	26,740,000	5.50	4.80
2008	15,405,000	5.00	4.32	2016	28,215,000	5.50	4.85
2009	13,230,000	5.00	4.41	2017	29,745,000	5.50	4.89
2010	20,560,000	5.50	4.49	2018	31,360,000	5.50	4.92
2011	21,625,000	5.50	4.58	2019	33,040,000	5.50	4.95
				2023	6,860,000	5.00	99.875

\$110,300,000 - 5.50% Term Bonds due November 1, 2022, Yield 4.98%

\$204,545,000 - 5.00% Term Bonds due November 1, 2029, Yield 5.16%

\$402,860,000 - 5.00% Term Bonds due November, 2038, Yield 5.21%

\$12,605,000 Series 1999B (Taxable)

<u>Maturity</u>	<u>Amount</u>	<u>Interest Rate</u>	<u>Price or Yield</u>
1999	\$12,605,000	4.99%	100%

(plus accrued interest, if any)

Case Study #3: Illustrative Allocation (Pro-Rata)

Allocation % (from Sources & Uses)

Escrow	508,827,059.72	48.64%
Project Fund	460,000,000.00	
Capitalized Interest	<u>77,325,021.87</u>	
	1,046,152,081.59	

Prior to Allocation

2000	10,000,000	
2001	3,695,000	
2002	4,765,000	
2003	10,300,000	
2004	6,305,000	
2005	4,270,000	
2006	9,395,000	6,220,000
2007	12,800,000	3,515,000
2008	15,405,000	1,705,000
2009	13,230,000	6,410,000
2010	20,560,000	
2011	21,625,000	
2012	22,830,000	
2013	24,075,000	
2014	25,370,000	
2015	26,740,000	
2016	28,215,000	
2017	29,745,000	
2018	31,360,000	
2019	33,040,000	
2022	110,300,000	
2023	6,860,000	
2029	204,545,000	
2038	402,860,000	
	<u>1,078,290,000</u>	<u>17,850,000</u>

\$1,096,140,000

After Pro-rata Allocation

New Money Portion	Refunding Portion
5,135,000	4,865,000
1,900,000	1,795,000
2,445,000	2,320,000
5,290,000	5,010,000
3,240,000	3,065,000
2,195,000	2,075,000
8,020,000	7,595,000
8,380,000	7,935,000
-	-
8,790,000	8,320,000
10,090,000	9,550,000
10,560,000	10,000,000
11,105,000	10,520,000
11,725,000	11,105,000
12,365,000	11,710,000
13,030,000	12,340,000
13,735,000	13,005,000
14,490,000	13,725,000
15,280,000	14,465,000
16,105,000	15,255,000
16,970,000	16,070,000
-	-
56,650,000	53,650,000
3,525,000	3,335,000
-	-
105,060,000	99,485,000
-	-
206,915,000	195,945,000
<u>563,000,000</u>	<u>533,140,000</u>
51.36%	48.64%

Case Study #3: Example of a Multipurpose Issue

The Actual Allocation May Differ in Certain Instances

City of Atlanta, Georgia Water and Wastewater Revenue Bonds

Outstanding Bonds

Water and Wastewater Revenue Bonds			
Series 1999A			
\$1,096,140,000			
Dated: April 1, 1999			
Call: May 1, 2009 @ 101			
November 1			

2005					2023	19,105,000 *	6,860,000	5.000
2006	6,220,000	4.000	9,395,000	5.000	2024	27,265,000 *		
2007	3,515,000	4.250	12,800,000	5.000	2025	28,625,000 *		
2008	1,705,000	4.250	15,405,000	5.000	2026	30,055,000 *		
2009	6,410,000	4.300	13,230,000	5.000	2027	31,560,000 *		
2010	20,560,000	5.500			2028	33,140,000 *		
2011	21,625,000	5.500			2029	34,795,000 T^ 5.000		
2012	22,830,000	5.500			2030	36,535,000 *		
2013	24,075,000	5.500			2031	38,360,000 *		
2014	25,370,000	5.500			2032	40,280,000 *		
2015	26,740,000	5.500			2033	42,295,000 *		
2016	28,215,000	5.500			2034	44,410,000 *		
2017	29,745,000	5.500			2035	46,630,000 *		
2018	31,360,000	5.500			2036	48,960,000 *		
2019	33,040,000	5.500			2037	51,410,000 *		
2020	34,840,000 *				2038	53,980,000 T^ 5.000		
2021	36,735,000 *							
2022	38,725,000 T	5.500						
2023	19,105,000 *		6,860,000	5.000				
2024	27,265,000 *							
2025	28,625,000 *							
2026	30,055,000 *							
2027	31,560,000 *							
2028	33,140,000 *							
2029	34,795,000 T^ 5.000							

Partial Refunding		
2023 Serial Maturity		
\$3,590,000		5.000
2029 Term Maturity		
\$107,110,000		5.000
2038 Term Maturity		
\$210,970,000		5.000

Outs. :	\$735,135,000
Defeased:	\$321,670,000
FGIC	
^ These maturities were partially refunded; This was a New Money/Advance Refunding	
Tax-Exempt	

Series 1999A Series 2001B

Prohibitive Abusive Transactions

- **Hedge Bonds.** Reg. Section 1.149(g)-1 of the Internal Revenue Code contains an anti-abuse rule which provides that a refunding bond is treated as a hedge bond unless there is a significant governmental purpose for the issuance of that bond. For example, advance refundings to realize debt service, or to relieve the issuer of onerous document provisions satisfy the government purpose requirement, whereas a refunding issue with the purpose of hedging against future increases in interest rates will result in the refunding bonds being treated as hedge bonds.
- **Over Issuance.** Original proceeds cannot exceed by more than 5 percent, the amount necessary for the purpose of the issue.
- **Artifice or Device.** A transaction, or series of transactions which enable the issuer to exploit the difference between tax-exempt and taxable interest rates to gain a material financial advantage AND increase the burden on the market for tax-exempt obligations.