

Lesson 2

Advanced Topics in Arbitrage

Overview

Introduction

This lesson explores the elements of Arbitrage and Rebate introduced in Phase I in greater depth.

Computation of the correct bond yield is vital in determining compliance with yield restriction rules, arbitrage rebate rules and certain private activity bond tests. The bond yield for an issue must be entered on Form 8038 and Form 8038-G and can often be found in other documents, such as the Tax Certificate or No-Arbitrage Certificate. However, we must be able to independently compute the bond yield.

Yield on a bond issue is calculated in accordance with Regulations § 1.148-4. There are many rules which apply to certain types of bonds when calculating bond yield, both for fixed and variable rate issues. This lesson will cover the principles and techniques for all types of bond yield calculation.

The municipal market has developed complex derivative debt structures. This lesson will review the elements of the different derivative and hedge products used in the municipal market. Derivative structures often involve credit enhancement in various forms. This lesson will also review the requirements and treatment of qualified guarantees.

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Overview, Continued

Introduction (continued)

Section 148(a) prohibits the use of bond proceeds to acquire "higher yielding investments" or to replace funds which were directly or indirectly to acquire higher yielding investments. The purpose for this rule is to prevent municipal issuers from issuing tax-exempt debt, which generally bears lower interest rates than taxable debt, and investing the bond proceeds in taxable securities having a higher investment return.

In order to determine whether the investment of proceeds will result in a bond being an arbitrage bond, the correct investment yield must be determined. This lesson will discuss yield restriction requirements, computation of yield on investments and valuation of investments.

Objectives

At the end of this lesson, you will be able to:

- Describe the special yield rules that apply to callable bonds
- Calculate bond yield on issues with callable premium and deep discount bonds
- List the elements involved in calculating yield for a variable yield issue
- Compute yield of an issue containing both fixed and variable rate bonds
- Compute the yield of a variable rate bond issue when it is converted to a fixed yield issue
- Identify a qualified guarantee and incorporate related payments into the computation of bond yield
- Explain the mechanics and functioning of swaps. List their key attributes and discuss their interaction with bond issues
- Identify a qualified hedge and incorporate related payments into the computation of bond yield

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Overview, Continued

Objectives (continued)

- Explain the impact of superintegrated and anticipatory hedges on bond yield
- Identify permitted methods of valuing investments
- Determine the value of investments using Fair Market Value and other permitted methods specified in the Regulations
- Identify qualified administrative costs and determine whether or not they are taken into account when computing the yield on the investments
- Identify key attributes of debt vs. equity
- Determine Original Issue Discount and explain the rules which apply to municipal debt.
- Explain the working of certain financial products used in the tax exempt market, such as VRDOs, ARS, and inverse floaters

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Overview, Continued

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Section 1

Bond Yield – Special Rules for Fixed Yield Issues

Overview

Introduction

Fixed yield municipal bond issues may contain structural elements which affect the computation of bond yield. Although individual bonds bear a stated maturity date, they are often subject to redemption prior to maturity, a feature which can be either mandatory or optional. Bonds are also frequently issued at prices other than par, i.e. sold to the initial investors at a either premium or discount.

Additionally, unforeseen events such as a transfer of certain rights can occur after the sale of a bond issue. This will require that the yield be recomputed as of the date of the transfer.

All these factors can impact the computation of yield on a fixed yield issue. In this section we will examine the ways in which the yield computation is affected by these elements.

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Bonds Subject to Optional Early Redemption

General

Regulations § 1.148-4(b)(1)(i) provides that the yield on a fixed rate issue is the discount rate that, when used in computing the present value as of the issue date of all unconditionally payable payments of principal, interest and fees for qualified guarantee on the issue and amounts reasonably expected to be paid as fees for qualified guarantees on the issue, produces an amount equal to the present value, using the same discount rate, of the aggregate issue price of the bonds of the issue as of the issue date.

In general, yield on a fixed rate issue is computed as of the issue date and is not recomputed to take into account subsequent unexpected events.

Premium Bonds

Bonds are sometimes sold with coupons greater than their stated yields. These are known as “premium” bonds, as the initial offering price is greater than par. If these bonds include an optional early redemption feature, market rules require that the price at which bonds are sold to investors reflect the potential redemption prior to maturity. Thus, the bonds will be priced as if they are redeemed at the date which produces the lowest yield to the investor, which is generally the first redemption date (although this can vary, depending on the redemption prices).

Since callable premium bonds are initially priced to their redemption date, leaving them outstanding to maturity will result in the actual yield (to maturity) being greater than initially stated. However, if an issuer has the resources, there is a high likelihood that they will redeem these high-coupon bonds prior to maturity.

According to the definition above, yield is generally computed assuming bonds will be outstanding until their scheduled maturity date. However, there are special rules for callable premium bonds. These rules exist to more accurately reflect the lower bond yield that would result when premium bonds are redeemed prior to maturity.

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Bonds Subject to Optional Early Redemption, Continued

Special Rules for Callable, Premium Bonds

According to Regulations § 1.148-4(b)(3), if a fixed yield bond is subject to optional early redemption (callable) and meets any of the requirements below, then the yield on the issue containing the bond is computed by treating the bond as redeemed on the optional redemption date that would produce the lowest yield on the issue.

1. is subject to optional redemption within five years of the issue date,
AND
the yield on the issue computed by assuming that all bonds subject to the early redemption will be redeemed **on their maturity date** is more than 0.125 percent higher than the yield on the issue computed by assuming that all bonds subject to optional redemption are redeemed **at the earliest call date, (see example 1)**
2. is issued at an issue price that exceeds its stated redemption price at maturity by more than 0.25 percent times the product of the stated redemption price at maturity and the number of complete years to the first optional redemption date, **(see example 2)** OR
3. bears interest at increasing interest rates (i.e. a stepped coupon bond)

Proposed regulations (Reg 106143-07, issued September 26, 2007) would amend § 1.148-4(b)(3)(i) to require that the yield on the issue containing the bond is computed by treating the bond as redeemed at its stated redemption price on the optional redemption date that would produce the lowest yield on that **bond** (instead of the entire issue).

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Bonds Subject to Optional Early Redemption, Continued

Example 1

On January 1, 1994, City A issues \$30,000,000 principal amount of bonds. The issue contains three bonds, each having a principal amount of \$10,000,000. Bond X bears interest at five percent per year and matures on January 1, 1999. Bond Y bears interest at six percent per year and matures on January 1, 2002. Bond Z bears interest at seven percent per year and matures on June 1, 2004. Bonds Y, and Z are callable by the issuer at par plus accrued interest beginning on January 1, 1999.

First, compute the yield on the issue by assuming that each bond will remain outstanding to its stated maturity date. The yield is 6.0834 percent, compounded semiannually, computed as shown in Table B-1.

Table B-1: Computation of Yield (All Bonds to Final Maturity)		
Date	Payments	Present Value @ 6.0834%
1/1/1995	1,800,000	1,695,299
1/1/1996	1,800,000	1,596,689
1/1/1997	1,800,000	1,503,814
1/1/1998	1,800,000	1,416,342
1/1/1999	11,800,000	8,744,830
1/1/2000	1,300,000	907,375
1/1/2001	1,300,000	854,595
1/1/2002	11,300,000	6,996,316
1/1/2003	700,000	408,190
1/1/2004	10,700,000	5,876,551
	44,300,000	30,000,000

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Bonds Subject to Optional Early Redemption, Continued

**Special Rule for
Callable
Premium
Bonds**
(continued)

Second, compute the yield on the issue by assuming that the bonds will be redeemed on their earliest redemption date. The yield computed as follows is 5.9126 percent, compounded semiannually, as shown in Table B-2:

Table B-2: Computation of Yield (to earliest Redemption Date)		
Date	Payments	Present Value @ 5.9126%
1/1/1995	1,800,000	1,698,113
1/1/1996	1,800,000	1,601,994
1/1/1997	1,800,000	1,511,315
1/1/1998	1,800,000	1,425,769
1/1/1999	31,800,000	23,762,810
	39,000,000	30,000,000

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Bonds Subject to Optional Early Redemption, Continued

Analysis

The bonds are subject to optional redemption within five years of the issue date. The yield computed assuming no early redemption (6.0834 percent) exceeds the yield computed assuming bonds being redeemed at the earliest call date (5.9126 percent) by more than 0.125 percent.

Therefore, each bond is treated as redeemed on the date that would produce the lowest yield on the issue. The lowest yield on the issue would result from all the bonds being redeemed on the earliest redemption date, January 1, 1999.

The yield on the issue is 5.9126 percent, compounded semiannually.

See Regulations § 1.148-4(b)(6), Example 3.

Continued on next page

Bonds Subject to Optional Early Redemption, Continued

Example 2

On January 1, 2010, City issues bonds in the principal amount of \$10,000,000. The stated maturity date of the bonds is January 1, 2030. The issue price of the bonds is \$10,500,000. The bonds may be redeemed without a call premium at the option of City on January 1, 2020.

Regulations § 1.148-4(b)(3)(ii)(B) provides that the “allowable” premium is:

stated redemption price times number of complete years to first optional redemption date times .25 percent or,

$$\$10,000,000 \times 10 \times .25\% = \$250,000$$

The bonds were sold at a premium of \$500,000, exceeding the allowable amount computed above. Therefore, the special rule requiring that the bond yield be computed as if the bonds are redeemed on the date which produces the lowest yield will apply.

Bonds Subject to Mandatory Early Redemption

Introduction

There are two types of interest bearing, fixed rate bonds – serial and term.

Serial bonds have stated maturity dates, at which time the bonds are redeemed. Term bonds also have stated maturity dates, but they may also have “mandatory redemption dates” that are prior to the stated maturity dates. On these mandatory redemption dates, a portion of the term bonds will be redeemed, according to the redemption schedule set forth in the bond documents. The trustee normally selects term bonds for redemption by lottery and therefore, an investor in a term bond will not know if their bond will be outstanding until the stated maturity date or if it will be redeemed at some earlier date.

Term bonds are sometimes sold at a discount. If the bonds are redeemed prior to maturity, the discount will be amortized more quickly, resulting in a higher yield to the investor than if they were left outstanding to their stated maturity date.

If bonds are available on the open market at a discount on a mandatory redemption date, an issuer might buy such bonds and turn them in to the trustee. This would satisfy the mandatory redemptions for that date and the trustee would avoid holding the lottery. However, a distortion in the bond yield would result. If the bond yield has been computed assuming that the full principal amount will be paid on each redemption date, but instead, something less than that is actually paid, the bond yield will be overstated. For this reason, special rules exist for bonds subject to mandatory early redemption that are sold with more than a minor amount of discount. These bonds are commonly referred to as “deep discount bonds”.

Special Rules for Mandatory Redemption, Discount Bonds

According to Regulations § 1.148-4(b)(2)(ii), if a fixed yield bond is subject to mandatory early redemption and the stated redemption price at maturity exceeds the issue price by more than .25 percent multiplied by the product of the stated redemption price at maturity and the number of years to the weighted average maturity date of the bonds, then the bonds must be treated as redeemed at present value. Weighted average maturity is determined by taking into account the mandatory redemption schedule.

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Bonds Subject to Mandatory Early Redemption, Continued

Example 3

On January 1, 2010, City issues a term bond in the principal amount of \$10,000,000. The bonds are initially sold at a price of 95% of par. Thus, the issue price is \$9,500,000. The stated maturity date of the bonds is January 1, 2030. \$2,000,000 of bonds are subject to mandatory early redemption on each January 1 beginning on January 1, 2026.

Regulations § 1.148-4(b)(2)(ii) provides that the “allowable” discount is:

stated redemption price times number of years to weighted average maturity date of bonds times .25 percent, computed as follows:

Table B-3 Computation of Weighted Average Maturity				
Maturity Date	Principal	Issue Price	Years to Maturity	Bond Years
1/1/2026	2,000,000	1,900,000	16.00	30,400,000
1/1/2027	2,000,000	1,900,000	17.00	32,300,000
1/1/2028	2,000,000	1,900,000	18.00	34,200,000
1/1/2029	2,000,000	1,900,000	19.00	36,100,000
1/1/2030	2,000,000	1,900,000	20.00	38,000,000
	10,000,000	9,500,000		171,000,000
				Stated Redemption price at maturity 10,000,000
				Weighted Average Maturity (bond years / issue price) 18.00
			factor	0.25%
				Allowable Discount 450,000
				Actual Discount 500,000

The bonds were sold at a discount of \$500,000, exceeding the allowable amount computed above. Therefore, the special rule requiring that the bonds be treated as redeemed at their present value will apply. Section 3 of this lesson will discuss computation of present value of bonds.

Build America Bonds (Direct Payment)

General Rule Build America Bonds (Direct Payment) are taxable bonds, but are still subject to the § 148 Regulations. Qualified Build America Bonds (BABs) which incorporate the direct payment structure are allowed a credit with respect to each interest payment. In the case of direct pay BABs issued prior to January 1, 2011, the amount of the credit is 35 percent of the interest payable on the bonds on each date (or 45 percent in the case of Recovery Zone Economic Development Bonds).

For purposes of § 148, the yield on Build America Bonds (Direct Payment) is reduced by the credit allowed. Accordingly, the credit is subtracted from the interest payments when computing the bond yield (see § 6431(c), and Notice 2009-26).

Note that this rule applies to both fixed yield bonds as well as variable yield bonds.

Transfer of Certain Rights Associated with the Bond

General Rule According to Regulations § 1.148-4(b)(4), if the issuer transfers, waives, or modifies any right associated with the bond, AND such transfer is separate from the original sale of the bond, then the issue is treated as if retired and reissued on the transfer date.

The redemption price of the retired issue and the issue price of the new issue equal the aggregate values of all of the bonds on the transfer date.

In computing yield on the new issue, all amounts received by the issuer in consideration of the transfer are taken into account.

Example 4 County X issues \$10,000,000 principal amount of bonds on June 1, 2004. The bonds are subject to optional redemption on or after June 1, 2014. On August 1, 2008, County X sells its right to redeem the bonds to Corporation Y for an amount equal to \$500,000. The yield on the issue is calculated as if the bonds were retired and reissued as new bonds on August 1, 2008. The redemption price of the issue and the issue price of the new issue will be the aggregate value of the bonds on August 1, 2008. The \$500,000 is taken into account as a payment received by County X.

The value of the bonds is determined as described in Section 3 of this lesson.

Section 2

Bond Yield – Special Rules for Yield Variable Issues

Overview

Introduction In Phase I you learned the basic elements required to compute bond yield on a variable yield issue. In this section we will review the methodology for variable yield computation, and discuss specific rules which apply to special circumstances.

In this Section This section contains the following topics:

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Calculating the Yield on an Issue with Fixed and Variable Rate Bonds	20
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Calculating Yield on a Variable Yield Issue

Definition of a Variable Yield Issue

Regulations § 1.148-1(b) provides that a **variable yield issue** means any issue that is not a fixed yield issue. A variable yield bond means any bond that is not a fixed yield bond.

If the yield on any bond in the issue is not fixed and determinable on the date of issue, the bond issue is a variable yield issue.

Yield Calculated Looking Backward

The yield on a variable rate issue cannot be calculated on the issue date because the interest rates are unknown on the issue date. Therefore, the yield has to be calculated on a “looking backward” basis. Regulations § 1.148-4(c)(1) provides that a yield on a variable yield issue is computed separately for each computation period.

Computation Periods and Computation Dates

For variable yield issues, the issuer has limited discretion in determining when to compute bond yield. Within the guidelines described in the regulations, the issuer can select periods which will then be used both for yield computation as well as rebate and yield reduction calculations. These periods are defined by the choice of computation date(s). The issuer must make a choice of the first computation date.

For a variable yield issue, Regulations § 1.148-3(e)(1) provides that the issuer may treat as the computation date:

- the last day of any bond year ending on or before the first required rebate payment date, AND
- thereafter, the end of each bond year or the end of each fifth bond year

Once selected, the issuer may not change the computation dates after the first required rebate payment date.

First Required Computation Date

According to Regulations § 1.148-3(f)(1), the first required computation date cannot be later than five years after the issue date.

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Calculating Yield on a Variable Yield Issue, Continued

**Final
Computation
Date**

Regulations § 1.148-3(e)(2) provides that the final computation date is the date that an issue is discharged.

If the issue is retired within three years of the issue date, the final computation date need not occur before the end of eight months after the issue date or during the period in which the issuer reasonably expects that any of the spending exceptions under Regulations § 1.148-7 will apply to the issue.

**Computation of
Yield**

The yield on a variable yield issue is computed separately for each computation period.

According to Regulations § 1.148-4(c)(1), the yield for each computation period is the discount rate that, when used in computing the present value, as of first day of the computation period, of all the payments of principal and interest and fees for qualified guarantees that are attributable to the computation period, produces an amount equal to the present value, using the same discount rate, of the aggregate issue price (or deemed issue price), of the bonds of the issue as of the first day of the computation period.

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Calculating Yield on a Variable Yield Issue, Continued

Payments Generally Included in the Yield Computation

Under Regulations § 1.148-4(c)(2), payments included in the yield computations are the following:

- any amounts actually paid for principal of the bond during the computation period;
- any amounts paid during the computation period for
 - (i) interest accruing on the bonds during such period, and
 - (ii) interest accruing during the prior period that was included in the deemed issue price of the bond as unpaid accrued interest at the start of the current computation period; and
- any amounts properly allocable to fees for a qualified guarantee of the bond for the period
- any amounts properly allocable to a qualified hedge for the period

It is important to note that the payments described above are included in the yield computation on the dates they are actually made. In the case of interest on a variable rate bond, the timing of interest payments can vary from issue to issue. For instance, some variable rate bonds have an interest rate that varies daily and payments on the first business day of each month, or a rate that varies weekly with payments on the first business day of each quarter. Other types of variable rate debt can have different payment schedules, such as interest payments occurring at a fixed interval defined by a set number of weeks or some other interval. The specific payment parameters of each issue are generally described in detail in the offering documents.

The same applies for qualified guarantee payments, which are typically payable in advance, and may occur periodically on a set schedule, usually described in the guarantee documents. Likewise, payments relating to a qualified hedge are included in the yield computation on the dates they are actually made or received.

Actual Redemption

According to Regulations § 1.148-4(c)(2)(ii), if a bond is actually redeemed during a computation period, an amount equal to the greater of its value on the redemption date, or the actual redemption price is included as a payment on the actual redemption date.

Calculating the Yield on an Issue with Fixed and Variable Rate Bonds

What is an Issue?

For arbitrage purposes, an issue may consist of more than one series of bonds. Although several separate series of bonds may be issued by the same issuer at the same time, they may be considered a single issue under the arbitrage regulations. This will affect all the arbitrage related calculations, including bond yield, rebate and yield reduction.

Regulations

The regulations define the conditions under which several separate bond series are considered to be a single issue for arbitrage purposes.

Regulations § 1.150-1(c)(1) provides that the term **issue** means two or more bonds that meet all of the following requirements:

- sold at substantially the same time (less than 15 days apart),
- sold pursuant to the same plan of financing, and
- reasonably expected to be paid from the same source of funds

For example, bonds sold to finance a single facility or related facilities are considered part of the same financing plan, but short-term bonds to finance working capital and long-term bonds to finance capital projects would not be considered part of the same plan. Certificates of participation in a lease and general obligation bonds secured by tax revenues would not be considered part of the same plan.

In the case of bonds reasonably expected to be paid from the same source of funds, this is determined without regard to guarantees from unrelated parties, such as bond insurance or other forms of credit enhancement.

Multiple series in same issue

This definition can result in the combination of multiple series into a single issue, which may include both fixed yield and variable yield bonds. Therefore, before the yield for an issue is calculated, the bonds which comprise the issue must be identified.

Continued on next page

Calculating the Yield on an Issue with Fixed and Variable Rate Bonds, Continued

Exception for Taxable Bonds

Regulations § 1.150-1(c)(2) contains an exception for taxable bonds. Taxable bonds and tax-exempt bonds are not considered part of the same issue under § 1.150-1(c). However, the Regulations caution that the inclusion of tax-exempt and taxable bonds in a single transaction may constitute an abusive arbitrage device under § 1.148-10(a), or a means to avoid other limitations in the Regulations. This includes structures involving windows or unreasonable allocations of bonds.

Example 5

Facts:

City Y sold two series of bonds on January 1, 2004. Series A is a fixed yield issue at 5 percent for \$10M maturing in five years. Interest is paid each January and July 1st. All principal is paid at maturity. This series was used to make road improvements around a new courthouse complex.

Series B is a five-year variable rate issue sold for \$10M. Interest is adjusted weekly and paid each January and July 1st. All principal is paid at maturity. The proceeds were used to build the courthouse.

Both series were general obligation bonds to be paid from general revenues. These bonds meet all three of the requirements of Regulations § 1.150-1(c)(1) as follows:

- both bonds are sold less than fifteen days apart,
- both bonds are for the same project - the courthouse facility, AND
- both bonds will be paid from general revenues.

Since the bonds meet all of the requirements, they should be treated as one issue, and only one yield calculation should be performed. Further, because the yield on the issue is not fixed and determinable on the date of issue, this bond issue is a variable rate issue.

Note: In this example the fixed rate bonds mature on the first computation date. If the bonds matured at a later date, the value of the bonds as of the computation date must be computed. Calculation of the value of bonds is discussed in the next section of this lesson.

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Calculating the Yield on an Issue with Fixed and Variable Rate Bonds, Continued, Continued

Example 5
(continued)

Debt service for Series A consists of semiannual payments of \$250,000 with a final payment of \$10,000,000 plus interest.

Debt service for Series B is as follows:

7/1/2004 = \$200,000	1/1/2007 = \$ 195,000
1/1/2005 = 225,000	7/1/2007 = 215,000
7/1/2005 = 240,000	1/1/2008 = 175,000
1/1/2006 = 220,000	7/1/2008 = 185,000
7/1/2006 = 180,000	1/1/2009 = 10,210,000

The yield on the issue is equal to 4.550815%.

Calculating the Yield on an Issue with Fixed and Variable Bonds				
Issue Date:	1/1/2004			
Issue Price:	20,000,000			
Issue Yield:	4.550815%			
Date	Fixed Rate Debt Service	Variable Rate Debt Service	Combined Debt Service	Present Value @ 4.550815%
7/1/2004	250,000	200,000	450,000	439,988.47
1/1/2005	250,000	225,000	475,000	454,099.65
7/1/2005	250,000	240,000	490,000	458,017.87
1/1/2006	250,000	220,000	470,000	429,549.27
7/1/2006	250,000	180,000	430,000	384,248.66
1/1/2007	250,000	195,000	445,000	388,805.77
7/1/2007	250,000	215,000	465,000	397,241.32
1/1/2008	250,000	175,000	425,000	354,992.50
7/1/2008	250,000	185,000	435,000	355,261.61
1/1/2009	10,250,000	10,210,000	20,460,000	16,337,794.88
	12,500,000	12,045,000	24,545,000	20,000,000.00

Conversion from Variable to Fixed Rate Issue

Introduction There are occasions when an issuer of variable yield bonds decides to convert the interest rate on the bonds to a fixed interest rate. An issuer may decide to convert their bonds to fixed rate for a variety of reasons. A conversion can often be accomplished without changing the underlying bond documents, but will effectively change the treatment of the bonds under the arbitrage regulations.

Regulations § 1.148-4(d) specifically addresses the recalculation of bond yield when an issue is converted from variable yield to fixed yield.

Recalculation of Yield The date the variable rate issue is converted to fixed is known as the “conversion date”. The issue is treated as reissued as a fixed yield issue on this date, meaning that the variable rate bonds are treated as redeemed and the fixed rate bonds are treated as newly issued.

The redemption price of the variable rate issue and the issue price of the fixed rate issue equal the aggregate value of all the bonds on the conversion date. Thus, for example, for plain par bonds, the deemed issue price would be the outstanding principal amount plus accrued interest.

Special Rule for Conversions within Computation Periods If the conversion takes place on a date other than a computation date, the issuer may continue to treat the issue as a variable yield issue until the next computation date, at which time it must be treated as converted to a fixed yield issue.

Special Aggregation Rules

General Rule According to Regulations § 1.148-4(b)(5), two variable rate bonds of an issue are treated as a single fixed yield bond if:

- the aggregate treatment would result in a fixed yield bond, AND
- the terms of the bonds do not contain any features that would distort the aggregate yield from what it would be if a fixed yield bond were issued.

This typically occurs when an issue contains a related pair of bonds, such as floaters and inverse floaters, which as a combined pair would yield a fixed rate of interest, and can only be redeemed simultaneously. In other words, from the issuer's perspective, their payment requirements are identical to those of a fixed rate bond.

Example 6 County Y's bond issue contains two separate bonds with an aggregate principal amount of \$50,000,000. The two separate bonds have the same maturity date and amortization structure. One bond (\$25,000,000 principal amount) is issued as a variable rate bond ("floaters") for which the interest rate is determined every 30 days. The other bond, also in the amount of \$25,000,000, (the "inverse floaters") bears interest at a fixed rate minus the interest rate on the floaters. In addition, if County decides to redeem a portion of the floaters, it must also redeem an identical portion of the inverse floaters. The two bonds are essentially a matched pair, and when combined would bear a single fixed rate of interest.

In this case, the two related bonds are treated as a single fixed yield bond for purposes of yield computation.

Section 3

Value of Bonds

Overview

Introduction Various situations require determination of the “value” of bonds. For example, these include the calculation of yield on deep discount bonds discussed in Section 1 of this lesson, the transfer of certain rights associated with the bond, the calculation of yield for variable rate issues and the calculation of the universal cap.

Regulations § 1.148-4(e) discusses how bonds are valued for such purposes. For purposes of determining the “value” of bonds, bonds are looked at as individual maturities, and can be either “plain par bonds” or “other bonds”.

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Valuing Plain Par Bonds and Other Types of Bonds

Plain Par Bonds

The value of a plain par bond is its outstanding stated principal amount, plus accrued unpaid interest.

In the case of a plain par bond that is actually redeemed, or treated as redeemed, its value is its stated redemption price, plus accrued unpaid interest. (Regulations § 1.148-4(e)(1).)

Definition of a Plain Par Bond

According to Regulations § 1.148-1(b), a plain par bond means a bond:

- issued with no more than a de minimis amount of original issue discount or premium;
- issued for a price that does NOT include accrued interest other than pre-issuance accrued interest;
- that bears interest from the issue date at a single, stated, fixed rate or that is a variable rate debt instrument under § 1275; for both fixed and variable, interest is payable at least annually; AND
- that has a lowest redemption price which is NOT less than the outstanding stated principal amount

The de minimis amount in reference to Original Issue Discount or Premium is defined as an amount not exceeding 2 percent of the stated redemption price at maturity plus any Original Issue Premium attributable exclusively to reasonable underwriters' compensation.

Continued on next page

Valuing Plain Par Bonds and Other Types of Bonds, Continued

Other Bonds

According to Regulations § 1.148-4(e)(2), the value of a bond other than a plain par bond on any date is its present value on such date.

In general, the present value of a bond is calculated under the economic accrual method using the yield on the bond as the discount rate and taking into account all unconditionally payable payments of principal, interest and qualified guarantee fees. Note that the definition includes qualified guarantee fees – this means that in computing the present value of a bond, the portion of a qualified guarantee fee allocable to that bond must be taken into account. Allocation of qualified guarantee fees will be discussed in the next section of this lesson.

In general, the yield used in computing present value is the yield on the bond, with two commonly used exceptions:

1. For the universal cap, bonds may be present valued at the yield on the issue, rather than each bond being valued at its individual yield.
 2. For substantially identical bonds subject to mandatory early redemption (eg. term bonds), the bonds are present valued using the yield to the final maturity date (i.e., not taking into account the sinking fund redemptions).
-

Section 4

Qualified Guarantees

Overview

Introduction

Many issuers pay a third party to guarantee the payment of principal and interest on their bonds, with the goal of improving the creditworthiness of their bonds and making them more marketable to investors. If the guarantee meets certain requirements, it can be considered a “qualified guarantee”. This allows the issuer to treat payments for the guarantee as additional interest on the issue. This treatment will increase the yield on the issue and therefore, will generally reduce any liability the issuer may have under the arbitrage rules.

Credit enhancement that may be considered a qualified guarantee usually takes the form of bond insurance or a letter of credit. However, the qualification is based on the substance and effect of the guarantee, and is not limited to a particular form or type of guarantee. This section discusses the requirements and treatment of a qualified guarantee under Regulations § 1.148-4(f).

In this Section

This section contains the following topics:

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Allocation of Qualified Guarantee Payments	34
Safe Harbor for Variable Yield Issues	35
Refund or Reduction of Guarantee Payments	37

Elements of a Qualified Guarantee

Introduction To be treated as a qualified guarantee, a guarantee must meet certain conditions. These are discussed in Regulations § 1.148-4(f). These requirements are discussed in detail below.

Interest Savings The guarantee must result in interest savings which are greater than the fee paid for the guarantee. Specifically, the issuer must reasonably expect that the present value of the fees for the guarantee will be less than the present value of the expected interest savings on the issue as a result of the guarantee. For this purpose, present value is calculated using the yield on the issue determined with regard to (i.e. including) the qualified guarantee. (Regulations § 1.148-4(f)(2).)

Continued on next page

Elements of a Qualified Guarantee, Continued

Guarantee in Substance – Shifts Credit Risk

The guarantee must result in a genuine and substantive shifting of credit risk to the guarantor. However, the reasonable expectation must remain that the issuer will pay debt service on the bonds. If the guarantee is in substance a separate debt instrument or investment that is expected to pay the bonds, it is not a qualified guarantee.

Regulations § 1.148-4(f)(3) provides that the guarantee must impose a secondary liability that unconditionally shifts substantially all of the credit risk for all or part of the payments on the bonds. Reasonable procedural and administrative requirements do not cause the guarantee to be conditional.

On the date of issuance, the issuer must reasonably expect to be able to pay debt service on the guaranteed bonds. The guarantor must not be a co-obligor and must not expect to make any payments on the bonds (unless under a direct pay letter of credit or similar arrangement which is drawn on to pay debt service, but where the guarantor is reimbursed immediately.)

A number of revenue rulings address the question of whether or not defaulted interest that is paid by the guarantor is excludable from gross income under § 103(a)(1). The rulings discuss insurance which is purchased either by the issuer, the underwriter or the investor. In all these cases, the identity of the purchaser of the insurance used to pay defaulted interest on the bonds does not affect the exclusion from gross income of the interest payable on the bonds. (See Rev. Rul. 72-134, 1972-1 C.B. 29, Rev. Rul. 72-575, 1972-2 C.B. 74, and Rev. Rul. 76-78, 1976-1 C.B. 25.)

However, in Rev. Rul. 94-42, 1994-2 C.B. 15, the Service, in essence, held that an “insurance” contract purchased by the bondholder to insure debt service payments on the bonds did not create a guarantee in substance. Rev. Rul. 94-42 explains that the insurance contract was not incidental to the bonds and was a separate debt instrument because the amount the bondholder paid was not reasonable, customary or consistent with the reasonable expectation that the issuer, and not the insurer, would pay debt service on the bonds. The result is the same regardless of whether the holders of the bonds purchased the guarantee at original issuance or on the secondary market.

Continued on next page

Elements of a Qualified Guarantee, Continued

**Guarantee in
Substance –
Shifts Credit
Risk**

In Rev. Rul. 94-42, one year after the issuance date, the holder of the bonds entered into an agreement with a third-party to insure the payment of the debt service. At that time there was significant risk that revenues from the bond-financed facility would be insufficient to pay debt service. The third-party insurer used the funds received in payment for the agreement to purchase Treasury securities, placing them in a trust to secure its obligation under the agreement. The principal and interest on the Treasury securities were sufficient to provide for timely payment of debt service on the “insured” bonds. Since the premium paid was not reasonable and customary, and the reasonable expectation was that the Treasury securities (not the issuer) would be making the bond payments, any amounts paid under the “insurance” agreement were not excluded from gross income under § 103.

Continued on next page

Elements of a Qualified Guarantee, Continued

Reasonable Charge

The fees paid for the guarantee must be reasonable, and must represent fees paid only for the transfer of credit risk.

Regulations § 1.148-4(f)(4) requires that the fee must not exceed a reasonable, arm's-length charge for the transfer of credit risk. The issuer may not rely upon the representations of the guarantor regarding the reasonableness of the fees.

The amounts included as guarantee fees in the yield computation must not include fees for services other than for the transfer of credit risk. Examples of fees which include payment for services other than transfer of credit risk are:

- underwriting and remarketing costs,
- cost of casualty insurance for the bond-financed facility,
- the fee is refundable upon early redemption of the bonds and the amount of refund would exceed the unearned portion of the fee, OR
- the three-year temporary period rules are not met and the guarantor is not reasonably assured that the bonds will be repaid if the project is not completed

Continued on next page

Elements of a Qualified Guarantee, Continued

Guarantee of Purpose Investments

Sometimes a guarantee is not applied directly to the bonds themselves, but to an underlying loan or other similar agreement. This can still be considered a qualified guarantee under certain conditions.

According to Regulations § 1.148-4(f)(5), a guarantee for purpose investments, such as payment by the conduit borrower on the loan, may be a qualified guarantee of the issue if:

- all payments on the purpose investments reasonably coincide with the payments on the underlying bonds,
- payments on the purpose investments must be unconditionally payable not more than six months before the corresponding interest payment and twelve months before the corresponding principal payment, AND
- the guarantee is, in substance, a guarantee on the bonds allocable to the purpose investments and no other bonds

A guarantee on purpose investments for qualified mortgage loans and qualified student loans is not treated as a qualified guarantee.

Example 7

Industrial Development Authority of City A issues bonds and loans the proceeds to Corporation X. Corporation X uses the proceeds to build a low-income multifamily project. As security for the payments to be made by Corporation X, City A will have a mortgage on the project. City A will use the payments made by Corporation X to pay debt service on the bonds.

Because Corporation X has no financial history, the bonds are a risky investment and will be difficult to sell. The Federal Housing Administration (FHA) insures the mortgage payments to be made by Corporation X to City A, but does NOT insure the debt service payments.

As long as the mortgage payments coincide with the debt service payments as described above, the mortgage insurance is a qualified guarantee and premium payments made by Corporation X to FHA are treated as interest and may be taken into account in the calculation of bond yield.

Allocation of Qualified Guarantee Payments

Introduction If bonds are secured by a guarantee that is a qualified guarantee, fees paid for the guarantee are included in computing the yield on the bonds.

In computing the yield, guarantee fees must be allocated to bonds and computation periods in a manner that properly reflects the credit risk. (Regulations § 1.148-4(f)(6)(i).)

Reasonable Methods of Allocation Proportionate credit risk for the bonds that are not substantially identical may be determined using any reasonable, consistently-applied method.

For example, a reasonable method for allocating risk may be based on the ratio of total principal and interest on the guaranteed bond to the total principal and interest paid on all bonds of the guaranteed issue.

An allocation method which allocates a substantial amount of the fee to the construction period and an insubstantial amount to the later years covered by the guarantee is NOT reasonable.

Letter of Credit Fees Up-front letter of credit fees may be allocated ratably during the initial term of the letter of credit.

Early Redemption If variable yield bonds are redeemed early, fees which were allocated to the period after the redemption are allocated to the remaining outstanding bonds.

If no bonds remain outstanding, then the fees are allocated to the period before the redemption.

Safe Harbor for Variable Yield Issues

Introduction For variable rate issues, bond yield is computed separately for each computation period, which can be no greater than five years. Therefore, an upfront qualified guarantee fee that spans two or more computation periods must be allocated among those periods. For example, a letter of credit fee paid on the date of issuance covering the first eight years of the issue would overstate the yield for the first five-year period and understate the yield in the second five-year period if it were not allocated in some fashion between the two periods. Regulations § 1.148-6(f)(6)(ii) provides a safe harbor method for performing such an allocation.

General Rule An allocation of non-level payments for a qualified guarantee of a variable yield bond is proper if, for each bond year the guarantee is in effect, an equal amount is treated as paid as of the beginning of that bond year. (Regulations § 1.148-4(f)(6)(ii).)

Calculation of Present Value The present value of the annual amounts must equal the fee for the guarantee allocated to that bond, with present value computed as of the first day the guarantee is in effect.

Present value is calculated by using as the discount rate the yield on the bonds covered by the guarantee, determined without regard to the upfront fee.

Continued on next page

Safe Harbor for Variable Yield Issues, Continued

Example 8

On January 1, 2009, City Y issues bonds and pays a LOC fee of \$100,000. The bonds are ten-year bonds. When City Y calculates the yield on the bonds, in order to meet Regulations § 1.148-4(f)(6)(ii), City Y includes \$12,363.87 along with required principal and interest payments for each of ten years. \$12,363.87 (rather than a straight-line amortization of \$10,000 per year) is included each year because the present value of the payments using the bond yield (without the LOC fees) must equal \$100,000.

Remember, though, that only \$100,000 is actually paid, AND it is paid on the issuance date. The allocated annual payments of \$12,363.87 are not actually paid by City Y.

Allocation of Upfront Letter of Credit Fee		
Upfront LOC Payment		100,000.00
Payment Date		1/1/2009
Yield w/o regard to LOC fee		5.000%
Date	Allocated Payments	Present Value @ 5.000000%
1/1/2009	12,363.87	12,363.87
1/1/2010	12,363.87	11,768.11
1/1/2011	12,363.87	11,201.06
1/1/2012	12,363.87	10,661.33
1/1/2013	12,363.87	10,147.61
1/1/2014	12,363.87	9,658.64
1/1/2015	12,363.87	9,193.23
1/1/2016	12,363.87	8,750.25
1/1/2017	12,363.87	8,328.61
1/1/2018	12,363.87	7,927.29
	123,638.73	100,000.00

Refund or Reduction of Guarantee Payments

General Rule If as a result of a refunding, the issuer receives a refund of a portion of a qualified guarantee payment for the refunded bonds, the issuer must treat such refund as a reduction in payments on the refunding bonds. (Regulations § 1.148-4(f)(7).)

Example: In 2000, City pays \$100,000 for an insurance premium for bonds maturing in 20 years. In 2007, the issue is advance refunded and the issuer receives a partial refund of its insurance premium in the amount of \$60,000. The issuer does not have to recalculate the yield on its 2000 issue, taking into account the reduced insurance premium. However, it does have to take into account the premium refund in computing the yield on the refunding issue, thereby reducing the permitted yield on the refunding escrow and any other amounts subject to rebate and/or yield restriction.

Section 5

Qualified Hedges

Overview

Introduction

In some circumstances, issuers enter contracts that modify their risk of interest rate changes with respect to a bond. Such a contract is referred to as a hedge. Upon satisfaction of requirements set forth in Regulations § 1.148-4(h), a hedge relating to a bond issue is a “qualified hedge”, and payments made or received by an issuer under a qualified hedge relating to bonds of the issue are taken into account to determine the yield on the issue.

Hedge contracts come in a variety of forms, including interest rate swaps, interest rate caps, futures contracts, forward contracts, and options. The most common form of qualified hedge is the interest rate swap.

Depending on the circumstances, hedges may lower overall projected borrowing costs, expand financing flexibility beyond the limits of traditional bonds, and allow issuers to achieve objectives with respect to matching fixed and variable rate assets to fixed and variable rate liabilities.

NOTE: Regulations relating to qualified hedges often refer to the bonds to which the hedge relates as “hedged bonds.” Do not confuse this reference with the term “hedge bonds” described in § 149(g). The terms are not related to each other.

In This Section

This section contains the following topics:

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Hedges Generally

What is a Hedge?

Hedges are part of a larger family of financial products called “derivatives”, which include options, futures, and other financial instruments, the value of which can be “derived” only by reference to the value of some other security or financial product. Parties use hedges to manage various risks. The global derivatives market is extremely large and is participated in widely. According to a 2009 ISDA survey, 94% of the world’s 500 largest companies use derivatives to manage and hedge their business and financial risk.

Most Common Hedges-- Interest Rate Swaps

In the municipal market, the most common hedge is an interest rate swap. An interest rate swap is an agreement between 2 parties in which one party agrees to make future payments calculated based on one rate and the other party agrees to make future payments calculated based on another rate. In each case the payments are calculated based on an amount (frequently called a “notional amount”) specified in the agreement. The parties are effectively “swapping” the rates for the contract period. Generally, at least one of the rates used to calculate the parties’ payment obligations is variable and is typically determined by reference to an external index such as SIFMA/BMA or LIBOR. The other rate is often a fixed rate, but may also be a variable rate determined by reference to the bond rate or a different external index.

Interest rate swaps have mechanics similar to other common swap products such as foreign exchange swaps and credit default swaps. However, interest rate swaps address specific needs and carry different risks than these other types of swaps, which are typically not used by issuers of municipal bonds.

Continued on next page

Hedges Generally, Continued

Other Types of Hedges

Other types of contracts that may be treated as qualified hedges take various forms. Hedges used in the municipal market (including interest rate swaps) are generally notional principal contracts. Notional principal contracts provide for payments between two parties, where the payments are based in part on an amount referred to as a “notional principal amount” or “notional amount”. Unlike bond principal, which is sold by an issuer to generate proceeds and repaid by the issuer, notional amounts do not generate proceeds or represent an independent repayment obligation.

Other types of notional principal contracts used as qualified hedges are:

- caps,
- floors,
- collars,
- forwards, and
- options

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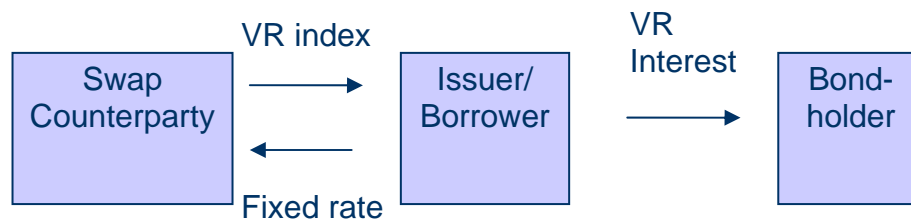
Hedges Generally, Continued

Relationship between Hedges and Bonds

Municipal bond issuers and conduit borrowers use qualified hedges to modify their aggregate obligations with respect to interest payments on bonds.

An issuer might issue variable rate bonds, which bear interest in amounts based on variable rates determined under the bond documents.

Simultaneously, that issuer could enter a “fixed payer” interest rate swap and agree with a third party swap provider to make payments to the swap provider based on a fixed rate and receive payments from the swap provider based on a variable rate. If the variable rate payments the issuer receives under the swap are the same as the variable rate payments the issuer makes on the bonds, the issuer’s net obligation on the bonds and the swap will be a payment based on the fixed swap rate because the variable rate payment to bondholders and the variable rate receipt from the swap provider effectively cancel each other out. A graphical representation of the technique is as follows:



Other hedges function differently, but all qualified hedges modify (increasing or decreasing) risk with respect to interest on the related bonds.

Hedges Affect Bond Yield: Qualified Hedges and Anti-Abuse Rules

When an issuer enters into a hedge with respect to bonds, payments made and received by the issuer under the hedge are taken into account for purposes of determining yield on the bonds if the hedge satisfies the requirements for a qualified hedge. These requirements are set forth in Regulations § 1.148-4(h) and are described in detail in this section.

Additionally, under the anti-abuse rule in Regulations § 1.148-10(e), the Commissioner, taking into account the economic substance of a transaction, may determine to treat a hedge as a qualified hedge. The anti-abuse rule also permits the Commissioner to take into account the economic substance of a transaction to determine to treat a hedge that satisfies the requirements for a qualified hedge as not a qualified hedge.

Continued on next page

Hedges Generally, Continued

**Why use
Hedges?**

Issuers and conduit borrowers use hedges to achieve financing objectives that might be unattainable otherwise. For example, a structure that paired variable rate bonds (VRBs) with an interest rate swap might be projected to produce lower overall borrowing costs compared to traditional fixed rate bonds. Similarly, issuers and conduit borrowers can create a “synthetic” advance refunding when tax law would not permit an advance refunding of bonds but the market environment is such that it is desirable to capture then-current market rates available through a forward starting swap.

**International
Swaps and
Derivatives
Association
 (“ISDA”)**

ISDA is an organization that represents participants in the derivatives industry. Its website (www.isda.org) contains additional information.

ISDA engages in many activities in furtherance of its objectives and, perhaps most significantly in the municipal bond context, developed the ISDA Master Agreement and related documentation. This standard form of agreement is the basis for most hedges executed in connection with municipal bonds.

Continued on next page

Hedges Generally, Continued

Hedge Documentation Most hedges are executed under an “ISDA Master Agreement”. The Master Agreement is generally in the exact form published by ISDA. Multiple hedge transactions can be executed under a single Master Agreement. For particular hedge transactions, the terms of the Master Agreement are supplemented by one or more of the following:

- Definitions published by ISDA;
- Schedule, which includes modifications negotiated by the parties to the standard terms of the Master Agreement;
- Credit Support Annex, which sets forth circumstances under which parties may be required to post collateral to secure obligations under the hedge, together with Definitions to the Credit Support Annex (published by ISDA);
- One or more trade confirmations, which set forth the specific terms (fixed payer rate, variable payer rate, notional amount, and any other terms negotiated by the parties) of actual swap transactions.
- Guarantees or other credit support documents.

The documentation in the derivatives industry allows hedge contracts to be executed quickly; however, the technical nature of the documentation presents challenges in ascertaining all aspects of the transaction.

Key Document-Trade Confirmation The primary terms of the hedge relevant to determining its impact on bond yield are set forth in the trade confirmation. This document will contain specific terms of the hedge such as rates, notional amounts, term, and other trade specific terms such as payment dates.

Continued on next page

Hedges Generally, Continued

Hedge Terminology Primer

Frequently used hedge terminology includes:

Fixed payer rate. The fixed payer rate is the rate specified in a swap as the rate to be used to calculate the payment obligations of the fixed payer (often but not always the municipal bond issuer). This rate is determined at the execution of the trade (similar to the determination of bond rates at pricing).

Variable payer rate. The variable payer rate is the rate used to determine the payment obligations of the variable payer, and in the context of a municipal financing is often an indexed rate equal at any given point in time to a tax-exempt index (SIFMA/BMA) or a percentage of a taxable index (LIBOR).

Notional amount. Notional amount is the amount to which the parties' payment rates are applied to calculate the parties' payment obligations. Notional amount is used similarly to the way that bond principal is used to calculate payments, however notional amounts are not borrowed or repaid like principal, but simply used to calculate payment obligations.

Netting of payments. Many hedges permit the "netting" of payments on any given payment date so that if both parties are required to make a payment on a day, the party with the larger payment reduces the amount of its payment by the amount receivable from the other party and sends the "net" payment.

Requirements for Qualified Hedges

Introduction

If a hedge is a qualified hedge, payments and receipts on the hedge impact bond yield. Specifically, under Regulations § 1.148-4(h)(1), payments made or received by an issuer under a qualified hedge relating to bonds of an issue are taken into account to determine the yield on the issue.

The amounts of payments made or received under a qualified hedge that are taken into account in computing yield on an issue are subject to adjustment in accordance with the regulations. Additionally, under circumstances where a qualified hedge satisfies requirements under Regulations § 1.148-4(h)(4), the related bonds may be treated as fixed yield bonds.

In a conduit financing the party entering into the hedge is generally the conduit borrower and not the entity that issues the bonds. Regulations § 1.148-1(b) defines an issuer as the entity that actually issues the bonds, and, unless the context or a provision clearly requires otherwise, each conduit borrower.

Continued on next page

Requirements for Qualified Hedges, Continued

General Definition of a Qualified Hedge

Regulations § 1.148-4(h)(2) describes several requirements for a qualified hedge. This list summarizes the requirements. Certain additional requirements are set forth in Regulations § 1.148-4(h)(5).

- Contract is entered into primarily to modify the issuer's risk of interest rate changes with respect to a bond.
- Contract does not contain a significant investment element.
- Issuer and hedge provider are not related parties
- Contract covers, in whole or in part, all of one or more groups of substantially identical bonds in the issue.
- Contract is primarily interest based.
- Payments received from hedge provider correspond closely in time to specific payments being hedged on the hedged bonds or specific payments required to be made under the bond documents, regardless of the hedge
- Payments to hedge provider reasonably expected to be made from same source of funds that, absent the hedge, would be reasonably expected to be used to pay the hedged bonds
- Timely and sufficient identification on actual issuer's books and records, and notation on information return

Continued on next page

Requirements for Qualified Hedges, Continued

Risk Modification

Under Regulations § 1.148-4(h)(2)(i)(A), a qualified hedge must be entered into primarily to modify the issuer's risk of interest rate changes with respect to a bond.

EXAMPLE: Floating-to-fixed rate swap modifies issuer's risk that interest rates in the market will increase above a certain fixed rate.

Special rule for fixed rate issues

Under Regulations § 1.148-4(h)(2)(i)(B), if the bond is part of an issue that, absent the contract, would be a fixed rate issue, the contract must be entered into:

- no later than 15 days after the issue date of the issue, or
- no later than the expiration of another qualified hedge with respect to the bonds of that issue.

Contracts with certain acquisition payments (off market payments)

Under Regulations § 1.148-4(h)(2)(i)(C), if a hedge provider makes a payment to the issuer in connection with the acquisition of a hedge, the issuer may treat a portion of the contract as a qualified hedge if:

- the hedge provider's payment and the issuer's excess payments made above those it would have made had the contract been on-market are separately identified in a certification of the hedge provider, and
- the excess payments are not included in calculating yield.

EXAMPLE: Issuer enters a hedge and agrees to make payments based on a 6% rate and receive payments based on the floating SIFMA rate. The "on-market" rate for a swap where the issuer receives SIFMA is 5%. Issuer receives an "up front" payment of \$1,000,000 from the provider (paid to acquire the contract at an above market rate). For the hedge to be a qualified hedge, the provider must certify the up front payment and the excess of the issuer's payments above those it would have made had the fixed payer rate been on market (5%) and such excess must not be included in calculating yield.

Continued on next page

Requirements for Qualified Hedges, Continued

No Significant Investment Element

Under Regulations § 1.148-4(h)(2)(ii)(A), a qualified hedge cannot contain a significant investment element. If an interest rate swap agreement provides for an up-front payment, the contract contains a significant investment element unless the issuer treats only a portion of the contract as a hedge in accordance with Regulations § 1.148-4(h)(2)(i)(C).

EXAMPLE: In the immediately preceding example, the issuer must treat only the portion of its payments calculated based on the on market rate as a hedge, or the hedge will have a significant investment element.

Other examples of contracts that contain a significant investment element are a debt instrument held by the issuer and an interest rate cap requiring the issuer's premium for the cap to be paid in a single, up-front payment

Parties to Hedge Not Related

Under Regulations § 1.148-4(h)(2)(iii), a qualified hedge must be entered into between the issuer and a provider that is not a related party.

Hedged Bonds

Under Regulations § 1.148-4(h)(2)(iv), a qualified hedge must cover, in whole or in part, all of one or more groups of substantially identical bonds (i.e., all of the bonds having the same interest rate, maturity, and terms). For example, a qualified hedge may include a hedge of all or a pro rata portion of each interest payment on the variable rate bonds in an issue for the first five years following their issuance.

NOTE: Regulations relating to qualified hedges often refer to the bonds to which the hedge relates as "hedged bonds." Do not confuse this reference with the term "hedge bonds" described in § 149(g). The terms are not related to each other.

Interest based Contract

Under Regulations § 1.148-4(h)(2)(v), a qualified hedge must be primarily interest based. The regulations provide that a hedge is not primarily interest based unless certain requirements described therein are met.

Continued on next page

Requirements for Qualified Hedges, Continued

Payments Closely Correspond

Under Regulations § 1.148-4(h)(2)(vi), a qualified hedge requires that the payments received by the issuer from the hedge provider correspond closely in time to the payments being hedged on the hedged bonds or specific payments required to be made under the bond documents.

EXAMPLE: Issuer issues fixed rate bonds the interest on which is payable on June 1 and November 1. Issuer enters into a fixed-to-floating interest rate swap under which issuer's obligations are based on a floating rate and the hedge provider's obligations are based on a fixed rate equal to the fixed rate on the bonds. The periodic payments by each party are to be made on each June 1 and November 1. The payments closely correspond.

Source of Payments

Under Regulations § 1.148-4(h)(2)(vii), for a hedge to be a qualified hedge, payments to the hedge provider must be reasonably expected to be made from the same source of funds that, absent the hedge, would reasonably be expected to be used to pay debt service on the bonds.

Identification

Under Regulations § 1.148-4(h)(2)(viii), a qualified hedge must be identified by the **actual** issuer on its books and records maintained for the hedged bonds not later than three days after the date on which the issuer and the hedge provider enter into the contract.

In a conduit financing the actual issuer of the bonds as opposed to the conduit borrower is required to make the identification.

The identification must specify the hedge provider, the terms of the contract, and the hedged bonds, and must contain sufficient detail to establish that the qualified hedge requirements (and superintegration requirements if applicable) are satisfied.

In addition, the existence of the hedge must be noted on the first form relating to the issue of which the hedged bonds are a part that is filed with the Service on or after the date on which the contract is identified.

Continued on next page

Requirements for Qualified Hedges, Continued

Example of Qualified Hedge

City issues fixed rate bonds with semi-annual interest payment dates. Within 15 days of issuance, City enters into a contract with Bank pursuant to which Bank will pay City amounts based on a fixed rate equal to the rate on the bonds and City will pay Bank amounts at a variable rate based on the SIFMA index, in each case based on a notional amount equal to the scheduled outstanding principal amount of the bonds and on semi-annual payment dates that are the same as the semi-annual interest payment dates on the bonds. The payments under the contract will be netted on each payment date. Neither party makes an upfront payment related to the contract. City reasonably expects to make debt service payments out of its general fund. If any payments are owed by City to Bank, those payments are reasonably expected to be made from City's general fund. City's bond counsel prepares a detailed document describing the terms of the contract, including all the information listed above and City keeps this document with the transcript for the issue. City files Form 8038-G approximately one month after the bonds are issued and marks the box on the form identifying a hedge.

This contract is a qualified hedge. As such, any payments made or received by City are taken into account in computing the yield on the bonds.

Accounting Rules for Qualified Hedges

General Rule and Exception

Under Regulations § 1.148-4(h)(3)(i), payments made or received by the issuer under a qualified hedge are treated as payments made or received, as appropriate, on the hedged bonds that are taken into account in determining the yield on those bonds.

Certain amounts included and excluded from such payments, the timing and allocation of such payments to the hedged bonds, and special rules relating hedge terminations and deemed terminations are discussed below.

EXCEPTION: Upon satisfaction of certain requirements for the relationship between a qualified hedge and hedged bonds, hedged bonds that are variable yield bonds are treated as fixed yield bonds. This treatment is referred to as “superintegration.” Special accounting rules for superintegrated qualified hedges are described under the heading “Requirements and Accounting Rules for Superintegration.”

Amounts Included and Excluded

Included as payments made or received under a qualified hedge are:

- Payments deemed made or received when a hedge is terminated or deemed terminated as described in the regulations;
- Payments reasonably allocable to the modification of risk of interest rate changes; and
- Payments reasonably allocable to the hedge provider’s overhead.

Excluded as payments with respect to a qualified hedge are:

- Payments for other services, and
- Payments for any items in the contract not expressly listed in the regulations as included.

Continued on next page

Accounting Rules for Qualified Hedges, Continued

Timing and allocation of payments

Under Regulations § 1.148-4(h)(3)(i), hedge payments are reasonably allocated to the hedged bonds in the period to which the payments relate. Regulations § 1.148-4(h)(3)(iii) provides that (subject to certain limited exceptions) payments made or received by the issuer under a qualified hedge are taken into account in the same period in which those amounts would be treated as income or deductions under Regulations § 1.446-4 (without regard to Regulations § 1.446-4(a)(2)(iv)) and are adjusted as necessary to reflect the end of a computation period and the start of a new computation period.

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Accounting Rules for Qualified Hedges, Continued

Termination payments

Termination payments are payments made to terminate a hedge. The amount of a termination payment under a qualified hedge is generally equivalent to the value of the hedge on the date of termination.

The value of a hedge at any time depends on a variety of factors including the market for similar contracts at the time the hedge is valued. For example, if a floating-to-fixed interest rate swap with a fixed payer rate of 6% and a variable payer rate of SIFMA is being valued at a time when the market for swaps with similar terms would produce a fixed payer rate of 5%, the fixed payer would owe the variable payer a termination payment and the amount of the termination payment would be based on the lower current market. One way to think of the amount of the termination payment is the amount that the variable payer would have to pay to a 3d party for the third party to enter into a swap with identical terms as the 6% fixed payer swap being terminated, including the above market fixed payer rate. Payment by the fixed payer to the variable rate payer of such an amount would allow the variable rate payer to replace the swap with an identical contract and thus sustain no economic disadvantage from the termination.

Under standard ISDA documentation, there are multiple methods to calculate the amount of a termination payment (e.g., Market Quotation, Loss), and the different methods do not always produce identical results. Actual termination payment amounts (or the methodology for calculating) may be negotiated between the issuer and the hedge provider.

Generally, the amount of the termination payment should be the value of the hedge on the date of termination. The determination of value requires consideration of a variety of factors.

Continued on next page

Accounting Rules for Qualified Hedges, Continued

Termination payments- General Rule

Regulations § 1.148-4(h)(3)(iv)(B) provides that a payment made or received by an issuer to terminate a qualified hedge, including loss or gain realized or deemed realized, is treated as a payment made or received on the hedged bonds.

A termination payment is treated as paid when there is a deemed termination as defined below. In the case of a deemed termination, issuers select and apply some methodology in calculating the deemed termination payment amounts, and may utilize input from consultants.

The payment is reasonably allocated to the remaining periods originally covered by the terminated hedge in a manner that reflects the economic substance of the hedge.

Termination defined

Regulations §. 1.148-4(h)(3)(iv)(A) provides that a termination of a qualified hedge includes any sale or other disposition of the hedge by the issuer or the acquisition by the issuer of an offsetting hedge.

A deemed termination occurs when the hedged bonds are redeemed or when the hedge ceases to be a qualified hedge of the hedged bonds. Under certain circumstances described in the regulations, an assignment by the hedge provider of its remaining rights and obligations under the hedge or a modification of the contract may be treated as a termination.

Special rules for terminations related to redemption of hedged bonds

Regulations §. 1.148-4(h)(3)(iv)(C) provides a special rule for determining the amount and allocation of a termination payment if a deemed termination occurs as a result of a redemption of bonds. Generally, the fair market value of the hedge on the redemption date is treated as a termination payment.

Regulations §. 1.148-4(h)(3)(iv)(D) provides special rules for determining the allocation of a termination payment if a termination occurs in connection with a redemption of bonds by a refunding bond issue. Generally, the termination payment is treated as a payment on the refunding issue rather than as a payment on the hedged bonds.

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Accounting Rules for Qualified Hedges, Continued

Safe harbor for allocation of certain termination payments

Regulations §. 1.148-4(h)(3)(iv)(E) provides certain methods of allocating termination payments that will satisfy the regulatory allocation requirements. A payment to terminate a qualified hedge does not result in the hedge failing to satisfy the allocation rules for termination payments if:

- For an issue that is a variable yield issue after the termination, a termination payment is taken into account by allocating amounts to each date on which the hedge provider's payments would have been made such that (i) the amounts allocated to each date bear the same ratio to the notional principal amount that would have been used to calculate the hedge provider's payment on such date and (ii) the sum of the present values of those amounts equal the present value of the termination payment as of the termination date and using the yield on the bonds determined without regard to the termination payment for the period that the hedge was in effect as the discount rate.
- For an issue that is a fixed yield issue after the termination, a termination payment is taken into account as a single payment on the date it is paid.

Example of Termination Payment

Issuer issues \$100,000,000 principal amount of fixed rate bonds on January 1, 1999. The term of the bonds is 20 years. The interest rate on the bonds is 6%. Issuer executes a 20-year swap agreement that is a qualified hedge with Hedge Provider on the issuance date. Under the swap agreement, Issuer agrees to make payments to Hedge Provider based on a variable rate equal SIFMA and Hedge Provider agrees to make payments to Issuer based on a rate of 6%, in each case based on a notional principal amount equal to the scheduled outstanding principal amount of the bonds (\$100,000,000).

On June 1, 2002, the market-based fixed payer rates for obligations similar to the swap have dropped to 5%. Issuer and Hedge Provider agree to terminate the swap agreement and Hedge Provider is required to make a termination payment to Issuer because the fixed payer rate on the swap is higher than the current market rate. The termination payment is taken into account in computing the yield on the bonds.

Requirements and Accounting Rules for “Superintegration”

Introduction

Under Regulations § 1.148-4(h)(4), if the issuer of variable yield bonds enters into a qualified hedge, the hedged bonds are treated as fixed yield bonds paying a fixed interest rate if certain requirements are satisfied.

Treatment of variable yield bonds as fixed yield bonds pursuant to this provision is generally referred to as “superintegration.”

Accounting— The Benefit of Super- integration

Under Regulations § 1.148-4(h)(4)(ii), upon satisfaction of the requirements for superintegration, in determining the yield on hedged bonds, all the issuer’s payments on the hedged bonds and all payments made and received on the hedge are taken into account. However, variable bond interest rates and variable rates used to calculate payments on the hedge that are substantially the same, but not identical, are treated as if they were identical for purposes of calculating yield.

EXAMPLE: Bonds bearing interest at a variable rate, determined weekly to permit the bonds to be remarketed at par, are issued. Issuer executes a qualified hedge pursuant to which issuer receives payments based on a short-term floating rate index which is substantially the same as, but not identical to, the weekly rate on the bonds. For purposes of calculating the yield on the bonds, the interest payments on the bonds are treated as equal to the payments received by the issuer under the hedge (and thus cancel each other out in the yield calculation).

Requirements for Super- integration

For a hedge to cause variable yield bonds to be treated as fixed yield bonds, the hedge must be a qualified hedge (i.e., must satisfy requirements relating to qualified hedges) and also satisfy additional requirements relating to:

- The term to maturity of the hedged bonds and the term of the hedge;
 - The timing of payments under the hedge and the hedged bonds; and
 - The nature of the issuer’s aggregate payments on the hedge and the hedged bonds as fixed and determinable.
-

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Requirements and Accounting Rules for “Superintegration”, Continued

Maturity Under Regulations § 1.148-4(h)(4)(i)(A), the first additional requirement for superintegration is that the term of the hedge must be equal to the entire period during which the hedged bonds bear interest at variable interest rates, and the issuer does not reasonably expect that the hedge will be terminated before the end of that period.

**Payments
Closely
Correspond** Under Regulations § 1.148-4(h)(4)(i)(B), the second additional requirement for superintegration is that payments to be received under the hedge must correspond closely in time to the hedged portion of payments on the hedged bonds. Hedge payments received within 15 days of the related payments on the hedged bonds generally correspond closely in time.

**Aggregate
Payments Fixed** Under Regulations § 1.148-4(h)(4)(i)(C), the third additional requirement for superintegration is that taking into account all payments made and received under the hedge and all payments on the hedged bonds (i.e. after netting all payments), the issuer’s aggregate payments are fixed and determinable as of a date not later than 15 days after the issue date of the hedged bonds.

Payments on bonds are treated as fixed for purposes of this requirement if (i) payments on the bonds are based, in whole or in part, on one interest rate, (ii) payments on the hedge are based, in whole or in part, on a second interest rate that is substantially the same as, but not identical to, the first interest rate and (iii) payments on the bonds would be fixed if the 2 rates were identical.

For purposes of this requirement, rates are treated as substantially the same if they are reasonably expected to be substantially the same throughout the term of the hedge.

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Requirements and Accounting Rules for “Superintegration”, Continued

Special Rules for Terminations of Super- integrated Qualified Hedges

Under Regulations § 1.148-4(h)(4)(iii), if a qualified hedge that is superintegrated is terminated, special rules apply that may result in:

- Treatment of the termination payment differently than a treatment of a termination payment for a qualified hedge that is not superintegrated; or
- The inapplicability of fixed yield treatment (superintegration) for purposes of arbitrage rebate (but not yield restriction) rules if the hedge is terminated within 5 years after the issue date of the issue of which the hedged bonds are a part (i.e., the hedged bonds are treated as variable yield bonds from the issued date).

However, under Regulations § 1.148-4(h)(4)(iii)(C), these special rules for terminations of superintegrated qualified hedges do not apply to a termination if, based on the facts and circumstances (taking into account both the termination and any qualified hedge that immediately replaces the terminated hedge) there is no change in yield on the hedged bonds.

EXAMPLE: A termination would be disregarded if an issuer terminated a swap with a provider and replaced it with a substantially identical swap with a different provider. This might occur if the original swap provider’s credit was impaired.

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Requirements and Accounting Rules for “Superintegration”, Continued

**Example in
which rates are
not
“Substantially
the Same”**

City issues variable rate bonds. The interest rate on the bonds is determined weekly as the rate at which the bonds can be remarketed at par. At the same time as issuing the bonds, City enters into a hedge contract with Bank. The contract requires Bank to make payments to City computed weekly based on the 6 month Treasury Bill rate and requires City to make payments to Bank computed weekly based on a fixed rate. Each payment is calculated based on a notional amount equal to the scheduled outstanding principal amount of bonds.

Assuming that (i) the contract satisfies the requirements for a qualified hedge and (ii) both the maturity relationship requirement and the payments closely correspond requirement for superintegration are satisfied, should the contract be “superintegrated” such that the variable yield bonds are treated as fixed yield bonds?

ANALYSIS: No. The regulations do not require the rates used to calculate variable interest payments on the bonds and variable receipts on the hedge to be identical, but the rates are required to be “substantially the same” for superintegration. A weekly tax-exempt bond rate and a 6-month Treasury Bill (i.e., taxable) rate are not substantially the same.

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Requirements and Accounting Rules for “Superintegration”, Continued

**Example
regarding early
termination of
super-
integrated
qualified hedge**

Assume the same facts as in the previous example, except that the bonds were issued on March 30, 2000 and that the rate used to calculate the Bank’s payments to City under the contract is SIFMA (a short term tax-exempt index rate), so that the rates on both the bonds and on the hedge are substantially the same. On these facts, the contract is superintegrated and the bonds are treated as fixed yield bonds.

What are the ramifications if City terminates the hedge on December 28, 2002?

ANALYSIS: Under Regulations § 1.148-4(h)(4)(iii)(B), because of the termination within 5 years after the issue date, the bonds are treated as variable yield bonds from the issue date for purposes of computing arbitrage rebate. Under Regulations § 1.148-4(h)(4)(iii)(A), for purposes of § 1.148-3 (rebate), the issue of which the hedged bonds is a part is treated as reissued on the termination date.

Additional Requirements for Anticipatory Hedges

Anticipatory Hedge-General Concept

An anticipatory hedge is simply a hedge entered into prior to the issue date of the hedged bonds. Many, if not most, hedges in the municipal bond market are anticipatory hedges.

General Rule

Regulations § 1.148-4(h)(5)(i) provides that a contract does not fail to be a qualified hedge solely because it is entered into before the issue date of the hedged bond. However, such an anticipatory hedge must satisfy one of 2 sets of requirements in order to be a qualified hedge. The applicable set of requirements depends on the issuer's reasonable expectations on the date the anticipatory hedge is entered into with regard to whether the contract will be:

- Closed (terminated) substantially contemporaneously with the issue date of the hedged bond or
 - Not closed substantially contemporaneously with the issue date of the hedged bond
-

Hedges Expected to Close on Issue Date

Regulations § 1.148-4(h)(5)(ii) applies if the issuer reasonably expects to terminate the contract substantially contemporaneously with the issue date of the hedged bonds.

The amount paid or received by the issuer to terminate the contract is treated as an adjustment to the issue price of the hedged bonds. It is also treated as an adjustment to the sale proceeds of the hedged bonds for purposes of § 148.

The amounts paid or received, or deemed paid or received, before the issue date are treated as paid or received on the issue date. Such amounts are equal to the future value of the payment or receipt on that date. Future value is calculated using the yield on the hedged bonds, without taking into account amounts paid or received on the contract.

Continued on next page

Additional Requirements for Anticipatory Hedges, Continued

Hedges Not Expected to Close on Issue Date

Regulations § 1.148-4(h)(5)(iii) applies if the issuer does not reasonably expect to terminate the contract substantially contemporaneously with the issue date of the hedged bonds.

If the contract is terminated in connection with the issuance of the hedged bonds, the amounts paid or received, or deemed to be paid or received, is treated as an adjustment to the issue price of the hedged bonds. It is also treated as an adjustment to the sale proceeds of the hedged bonds for purposes of § 148.

If the contract is in fact not terminated substantially contemporaneously with the issue date of the hedged bonds, no payments made by the issuer before the issue date are taken into account.

Identification of Anticipatory Hedges

Regulations § 1.148-4(h)(5)(iv) provides that in addition to any information otherwise required for a qualified hedge, the identification required for an anticipatory hedge generally must specify the following with respect to the hedged bonds:

- reasonably expected governmental purpose,
- issue price,
- maturity,
- issue date,
- the manner in which interest is reasonably expected to be computed,
- whether the issuer reasonably expects to close the hedge substantially contemporaneously with the issue date of the hedged bonds,

If an issuer identifies an anticipatory hedge that would be a qualified hedge with respect to the anticipated bond, but does not issue the anticipated bond on the identified issue date, the contract is taken into account as a qualified hedge of any bond of the issuer that is issued for the identified governmental purpose within a reasonable interval around the identified issue date of the anticipated bond.

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Additional Requirements for Anticipatory Hedges, Continued

**Example of
Hedge
Expected to
Close on Issue
Date**

Issuer is preparing to issue fixed rate bonds. While all is progressing smoothly, the documents and other analysis will take several more weeks to complete and Issuer is concerned about interest rates rising during that time.

Issuer enters into a contract with Bank that provides that if as of the issue date, an objective index representing bonds similar to Issuer's bonds goes above a certain rate (the "strike rate"), then Bank will pay Issuer an amount based on that difference. If rates stay below the strike rate, Issuer will pay Bank an amount based on the difference. The contract expires on the issue date of the bonds and neither party pays the other for the contract.

Rates do in fact rise, and Bank pays Issuer the specified amount on the issue date. This amount is to be taken into account in computing the issue price of the bonds (decreasing the bond yield) and taken into account in computing the sale proceeds of the bonds (meaning that the payment is subject to rebate). If the payment was made before the issue date, then the future value of the payment as of the issue date would be taken into account. Future value would be computed at the yield on the bonds, not including the payment on the contract.

2007 Proposed Regulations

General Background

In 2007, proposed regulations (REG 106143-07, September 26, 2007) were issued that would amend Regulations § 1.148-4 in general and certain provisions applicable to qualified hedges in particular.

Although these amendments are not final, it is important to be aware of some of the primary changes and clarifications contained in the proposed regulations. These proposed changes are summarized below.

No Significant Investment Element - Hedges based on issuer's cost of funds

An amendment proposed for Regulations § 1.148-4(h)(2)(ii)(A) clarifies that for a qualified hedge the definition of “specified index” under Regulations § 1.446-3 (upon which periodic payments for a qualified hedge are required to be based) includes payments an issuer receives under a hedge that are computed to be equal to the issuer's cost of funds, such as the issuer's actual market-based tax-exempt variable interest rate on its bonds. This definition is used to determine whether a hedge has a significant investment element.

Interest Based Contract – Size and Scope of Hedge

Amendments proposed for Regulations § 1.148-4(h)(2)(v) clarify that for a qualified hedge the size and scope of the hedge is limited to that reasonably necessary to hedge the issuer's risk with respect to interest rate changes on the hedged bonds and provide additional clarification regarding the permissible size and scope.

Continued on next page

2007 Proposed Regulations, Continued

**Interest Based
Contract –
Substantially
Similar Rates**

An amendment proposed for Regulations § 1.148-4(h)(2)(v)(B) imposes the following limitations in order for the variable rate on the hedge and the variable rate on the bonds to be considered substantially similar:

- The difference between the two rates must not be greater than 0.25% on the date the issuer enters into the hedge AND
 - The average of the difference between the two rates during the three years immediately preceding the date the issuer enters into the hedge must not be greater than 0.25%. If no comparable bonds of the issuer are outstanding during that period, a comparable tax-exempt market index may be substituted.
-

**Payments
Closely
Correspond**

An amendment proposed for Regulations § 1.148-4(h)(2)(vi) clarifies that payments will be treated as corresponding closely in time if they are made within 60 calendar days of each other.

Identification

An amendment proposed for Regulations § 1.148-4(h)(2)(viii) extends the deadline for the issuer's identification of the hedge from 3 days to 15 calendar days after the date on which the issuer and the hedge provider enter into the hedge.

Continued on next page

2007 Proposed Regulations, Continued

**Amount of
termination
payment**

An amendment proposed for Regulations § 1.148-4(h)(3)(iv)(B) clarifies that the amount of the termination payment in a termination or deemed termination is equal to the fair market value of the qualified hedge on the date of the termination.

**No super-
integration of
LIBOR swaps**

An amendment proposed for Regulations § 1.148-4(h)(4)(i)(C) clarifies that (except for certain hedges terminated on the issue date of the hedged bond) a hedge based on a taxable interest rate or taxable interest index (for example, LIBOR) will not meet the requirement for superintegration as a hedge of tax-exempt bonds that issuer's aggregate payments are fixed and determinable.

**Permissive
Earlier
Application**

Sections 1.148-4(h)(2)(ii)(A), 1.148-4(h)(2)(v), 1.148-4(h)(2)(vi), 1.148-4(h)(2)(viii), 1.148-4(h)(3)(iv)(B), and 1.148-4(h)(4)(i)(C) may be applied, in whole but not in part, for qualified hedges entered into after the date of publication of the proposed regulations.

Section 6

Rebate Payments – Timing and Mechanics

Overview

Purpose The Regulations establish when and how rebatable arbitrage must be paid to the United States. This is very important, because a failure to pay rebate when due may cause bonds to become arbitrage bonds.

Objectives In this section you will learn:

- When rebate must be computed
- When and how rebate amounts due must be paid
- What are the penalties for underpayment
- How to determine if an issuer has made an overpayment
- How to calculate a refund of overpayment which may be due to an issuer
- What amounts may be included as computation credits
- What regulations are currently in effect

Overview, Continued

In This Section This section contains the following topics:

Topic	See Page
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Rebate Payments – Timing and Mechanics	69

Rebate Payments – Timing and Mechanics

**Payment
Requirements**

If arbitrage rebate is due on a bond issue, the amounts due must be paid in installments which are made at least once every 5 years, as specified in § 148(f)(3) and Regulations § 1.148-3(f). The minimum amount required to be paid is 90 percent of the amount due on installment payments and 100% on the final computation date.

If rebate is due on a bond issue, the first installment payment must be made for a computation date that is not later than 5 years after the issue date. Subsequent installment payments may not be later than 5 years after the previous computation dates on which a rebate payment was made. Although issuers may in some cases perform rebate computations more frequently than every 5 years, payments are not due on every single computation date, only on those that correspond with required installment payment dates.

Continued on next page

Rebate Payments – Timing and Mechanics, Continued

Computation Dates

The requirements for determining rebate computation dates are set out in Regulations § 1.148-3(e). The rules are different for fixed yield and variable yield issues.

For a fixed yield issue, any date may be treated as a computation date. As long as rebate payments are made at least every 5 years, the issuer has the option of selecting any date as a computation date.

For a variable yield issue, the first computation date may be on the last day of any bond year ending on or before the 5th anniversary of the bond issue. Once the first computation date has been selected, it may not be changed

When selecting subsequent computation dates, the issuer can choose to have rebate computation dates either every year or every five years thereafter. However, the issuer may not change these computation dates after the first payment date.

A bond year is defined in Regulations § 1.148-1(b). It means, in reference to an issue, each 1-year period that ends on the day selected by the issuer. The first and last bond years may be short periods. If no day is selected by the issuer before the earlier of the final maturity date of the issue or the date that is 5 years after the issue date, bond years end on each anniversary of the issue date and on the final maturity date.

Final Computation Date. The date all bonds of an issue are retired is automatically considered the final computation date. Thus, if all outstanding bonds are redeemed on an optional call date, that date becomes the final computation date. If all bonds remain outstanding until the final maturity date, the final maturity date will be considered the final computation date.

If an issue, however, is retired within 3 years of issuance, the final computation date need not occur before 8 months after issuance, or during the period in which the issuer reasonably expects any spending exceptions from rebate to be in effect.

Continued on next page

Rebate Payments – Timing and Mechanics, Continued

How and When Rebate is Paid

Rebate payments are submitted with Form 8038-T. Any rebate due must be paid no later than 60 days after the applicable computation date. A Payment made within this 60-day period may be treated as if it was made on the computation date to which it relates.

Rebate installment payments must be at least 90 percent of the amount due. The final rebate payment, however, must be equal to 100 percent of the rebate due on the final computation date. See Regulations §§ 1.148-3(f) and (g).

Underpayments and Penalties

The rules concerning underpayments of rebate and related penalties are contained in Regulations § 1.148-3(h).

In general, failure to pay the required rebate payment will cause the bonds to become arbitrage bonds, unless the Commissioner determines the failure is not caused by willful neglect and the issuer promptly pays a penalty.

Any amounts due accrue interest at the underpayment rate under § 6621. The accrual of interest on the underpayment begins on the date the rebate is due, and ends on the date 10 days before it is paid.

Penalties. The penalty for underpayment of rebate is either 50 or 100 percent of the amount due, depending on the type of bond issue. If no bond of the issue is a private activity bond (other than a qualified 501(c)(3) bond), the penalty equals 50 percent of the rebate amount not paid. In other words, for an issue which is exclusively governmental or 501(c)(3), the penalty is 50 percent. For all other issues, the penalty is 100 percent of the amount not paid.

The penalty may be waived if certain conditions are met. The penalty is automatically waived if the issuer pays the rebate amount due plus interest within 180 days of the discovery of the failure, unless the failure was due to willful neglect, or the issue is under examination at any time during the period beginning on the date the failure occurred and ending 90 days after the receipt of the rebate amount. Extensions or other waivers are generally granted only in unusual circumstances.

Continued on next page

Rebate Payments – Timing and Mechanics, Continued

Recovery of Overpayments

Rebate is calculated at different points during the period a bond issue is outstanding. However, the amount of rebate due is cumulative over the life of the issue. Thus, there may be situations when rebate is paid at one computation date, but negative arbitrage earnings in later periods may enable the issuer to subsequently claim a refund of rebate previously paid.

The rules governing recovery of overpayments of rebate are contained in Regulations § 1.148-3(i).

In general, the issuer must first establish that an overpayment occurred. To accomplish this, the issuer submits a Form 8038-R (Request for Recovery of Overpayments) with supporting documentation. The supporting documentation will contain detailed computations which establish the amount of rebate due and the amount of overpayment which the issuer is entitled to claim as a refund.

An overpayment is the excess of the amount paid under § 148 over the amount of rebate due for the issue on the most recent computation date (and any other amounts due under § 148). The amounts paid and due under § 148 include both rebate and yield reduction payments.

Continued on next page

Rebate Payments – Timing and Mechanics, Continued

Recovery of Overpayments (continued)

Rebate paid is not future valued. It is important to note that for purposes of determining the overpayment amount, only the actual dollar amount paid under § 148 is considered. The amounts paid are not adjusted or future valued to reflect interest since the time of payment. However, for the purpose of determining net rebate liability as of a subsequent computation date, payments made are considered at future value as of that computation date.

Limitations: An overpayment can be recovered only if the recovery on the date it is first requested would not result in an additional rebate amount if that date were treated as a computation date. This limitation refers to any positive rebatable arbitrage earned during the period between the computation date and the actual date the refund claim was filed. If the issuer earned positive arbitrage during that period which exceeds the amount claimed, no refund is allowed.

Additionally, overpayments of less than \$5,000 may not be recovered before the final computation date, except for overpayments of penalty in lieu of rebate.

Interest is not allowed on recoveries of overpayment.

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Rebate Payments – Timing and Mechanics, Continued

Computation Credits

When calculating rebate, an issuer may include certain amounts as computation credits, as specified in Regulations § 1.148-3(d)(1)(iv).

A computation credit may be included in the rebate cash flows on the last day of each bond year when there are proceeds subject to rebate and on the final maturity date. Thus, in the last bond year of a final rebate computation, the issuer may include two computation credit amounts.

The amounts allowable as computation credits are as follows:

For bond years ending in:

2006 (and earlier years): \$1,000 (§ 1.148-3(d)(1)(iv))

For bond years ending in 2007 (Proposed regulations REG 106143-07, September 26, 2007) provide for a computation credit of \$1,400 with a cost of living adjustment for subsequent years. The increased amounts may be applied for bond years ending on or after the date of publication of the proposed regulations. The permissive computation credit for subsequent years is as follows:

2008: \$1,430 (Rev Proc 2007-66)

2009: \$1,490 (Rev Proc 2008-66)

2010: \$1,500 (Rev Proc 2009-50)

The above amounts are for issues subject to the 1993 regulations.

Continued on next page

Rebate Payments – Timing and Mechanics, Continued

Regulations Since 1979 the Service has issued a number of regulations, amendments, and proposed regulations relating to arbitrage. The current regulations consist primarily of regulations issued in 1993, with a number of subsequent clarifications for specialized situations.

1993 Regulations Generally, the regulations currently in effect relating to arbitrage date to June 1993, and apply to issues issued after June 30, 1993. Additionally, issuers may retroactively apply the 1993 regulations to bonds issued prior to that date, as described in Regulations § 1.148-11.

1992 Regulations The 1992 regulations were published in May 1992, and expired as of June 30, 1993. They have been superseded by the 1993 regulations.

Section 7

Rebate – Debt Service Funds

Overview

Purpose

Bond debt service on a fixed rate issue is generally payable semiannually. To manage cash flow and create a more consistent stream of required payments, an issuer may set up a debt service fund. This is a fund into which the issuer will generally make monthly deposits of principal and interest. For instance, a fund may be set up with deposits of $1/12^{\text{th}}$ of annual principal and $1/6^{\text{th}}$ of semiannual interest made every month. This enables the issuer to spread out the payment of debt service more evenly over the entire year.

The fund is then drawn down to pay bond debt service on the semiannual interest and annual principal payment dates.

Debt service funds which function in a similar manner may also be set up for variable rate issues.

A debt service fund will typically be created and described in the bond documents governing a bond issue. Additionally, a debt service fund may sometimes include more than one account. For example, a debt service fund may have separate accounts for payments of interest and principal.

A number of rules determine the way in which a bond debt service fund may be included in the rebate computations for a bond issue. This section will review these rules in detail.

Objectives

In this section you will learn:

- What constitutes a bona fide debt service fund
 - How a debt service fund is treated for purposes of rebate
 - How to allocate a pooled debt service fund
-

Overview, Continued

In This Section This section contains the following topics:

Topic	See Page
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Rebate – Debt Service Fund

Bona Fide Debt Service Fund As defined in Regulations § 1.148-1(b), a bona fide debt service fund must meet certain tests to be considered “bona fide”. To be considered a bona fide debt service fund, the fund must follow these guidelines:

- 1) The fund must be primarily used to achieve a proper matching of revenues with bond principal and interest payments within each bond year; and
- 2) It must be depleted at least once each bond year, except for a reasonable carryover amount not to exceed the greater of
 - i) the earnings on the fund for the immediately preceding year or
 - ii) one-twelfth of the principal and interest payments on the issue for the immediately preceding bond year.

A bona fide debt service fund qualifies for specific treatment in the rebate calculations. If a debt service fund is not bona fide, it may be subject to both yield restriction and rebate as replacement proceeds of the bonds.

A debt service fund can be allocated by the issuer into two parts, one of which is the bona fide portion and the other which is the non bona fide portion. In this case, the allocated funds are treated separately when computing rebate and yield restriction, and must comply individually with the rules which apply to each type of fund.

Temporary Period As specified in § 1.148-2(e)(5)(ii), a bona fide debt service fund qualifies for a temporary period of 13 months, during which the fund is not subject to yield restriction, and may be invested at a rate materially higher than the bond yield. If only a portion of a fund qualifies as a bona fide debt service fund, only that portion qualifies for this temporary period.

Continued on next page

Rebate – Debt Service Fund, Continued

Rebate Exceptions

There are a number of instances when a bona fide debt service fund will not be subject to rebate and should not be included in the rebate computation.

These criteria are generally applied on a bond year basis. The debt service fund is evaluated in each bond year, and is included in the rebate calculations only during the bond years during which it is subject to rebate.

According to § 148(f)(4)(A)(ii), earnings on a bona fide debt service fund are not included in rebate if the gross earnings on the fund during the bond year are less than \$100,000. Furthermore, for fixed rate issues which are entirely governmental purpose and have an average maturity greater than 5 years, all amounts earned in a bona fide debt service fund are not subject to rebate.

Regulations § 1.148-3(k) contains an additional exception from rebate. It specifies that bona fide debt service fund for an issue with average annual debt service of \$2,500,000 or less may be treated as satisfying the \$100,000 limitation in § 148(f)(4)(A)(ii), and is therefore not subject to rebate.

Continued on next page

Rebate – Debt Service Fund, Continued

Pooled debt service funds

In some cases, issuers may have a single debt service fund which pays debt service on many different bond issues. In this case, it is considered a commingled fund, and may need to be allocated among the different bond issues.

The rules for allocating debt service funds are contained in section Regulations § 1.148-6(e)(6). The rules specify that commingled funds, after making adjustments to account for any proceeds, may be allocated using one of three different methods, as follows

- A) The relative values of the bonds of the issues under § 1.148-4(e).
- B) The relative amounts of remaining maximum annual debt service on the outstanding principal of the issues.
- C) The relative original stated principal amounts of the outstanding issues.

These allocations must be made at least every three years, and must be recalculated each time another issue becomes secured by the commingled fund. If the relative original principal amounts (method C) are used, the allocation must be recomputed each time a bond issue is retired.

After the allocation is made, the fund can be further divided into bona fide and non bona fide portions.

Non bona fide debt service fund

A debt service fund, or the allocable portion thereof that is considered non bona fide is considered a sinking fund (as described in Regulations § 1.148-1(c)), and is treated as replacement proceeds of the issue. As such, the non bona fide amounts are subject to yield restriction as well as rebate.

Section 8

Introduction to Computation of Yield on Investments

Overview

Introduction An important part of rebate and yield reduction analysis is determining the yield on the invested funds. It is necessary to know the investment yield to determine if the investments comply with the yield restriction rules, as well as to determine if the investment earnings will be subject to rebate.

This section will discuss the methodology used to compute investment yield, as well as a number of special rules which apply to certain situations.

In this section This section contains the following topics:

Topic	See Page
Overview	81
Basic Yield Computation Terms and Definitions	82
Basic Yield Computation Exercise	83
Special Rules	86

Basic Yield Computation Terms and Definitions

**General Rule:
Method,
Interval and
Conventions** The yield on investments is essentially a determination of the rate of return on the investments. It is computed under the economic accrual method, using the same compounding interval and financial conventions used to compute the yield on the issue. For example, if the yield on the issue is computed using the 30/360 days convention, with semi-annual compounding, then the same methodology must be used to compute the yield on the investments. Regulations § 1.148-5(b)(1).

**Definition of
Yield** Regulations § 1.148-5(b)(1) provides that the yield on an investment allocated to an issue is the discount rate that, when used in computing the present value as of the date the investment is first allocated to the issue of all unconditionally payable receipts from the investment, produces an amount equal to the present value of all unconditionally payable payments for the investment.

**Definition of
Payments** Regulations § 1.148-5(b)(1) provides that payments means amounts to be actually or constructively paid to acquire the investment

**Definition of
Receipts** Regulations § 1.148-5(b)(1) provides that receipts means amounts to be actually or constructively received from the investment, such as earnings and return of principal.

Basic Yield Computation Exercise

Computing the Yield

Yield calculations are typically done in a spreadsheet, as they often involve a significant amount of investment data, along with a correspondingly large number of calculations. The simple example below is designed to illustrate the underlying concepts and formulas. Let's take a look at how to compute the yield on this investment.

Facts

Part	Function
1. Date of investment	March 1, 2000
2. Proceeds used to buy investment	\$980,000
3. Par amount of investment	\$1,000,000
3. The nominal investment rate	8%
4. The anticipated interest receipt dates	March 1 and September 1
5. The term	2 years
6. Day count convention	30/360
7. Compounding interval	Semi-annual

The first step is to create a schedule of the payments and receipts over the term of the investment, as follows:

Date	(Payments)/Receipts
3/1/2000	(980,000)
9/1/2000	40,000
3/1/2001	40,000
9/1/2001	40,000
3/1/2002	1,040,000

Continued on next page

Basic Yield Computation Exercise, Continued

Computing the Yield,
(continued)

The definition of yield above requires some present value analysis, so let's look at the formula for present value:

$$PV = \frac{FV}{(1 + r/c)^{y * c}}$$

where:

FV = Future Value

r = rate

y = years between settlement and future value date

c = number of compounding intervals per year

According to the definition, our goal is to determine the rate (“r”) that will cause (1) the present values of all the payments to equal (2) the present value of all of the receipts, with all of those present values computed as of the date the investment is first allocated to the issue. A formula does not exist to solve directly for “r” – we must find it through an iterative process. Basically, the process involves choosing a value for “r”, computing all the present values, then adjusting the value of “r” up or down until the present value of all payments equals the present value of all receipts. This is also known as an internal rate of return or “irr” calculation.

So, we'll take a guess at what the rate might be and determine the results using the formula above. We'll continue doing that, refining the number for “r” until we get the precise rate which causes the combined present values to equal zero. When calculating investment yield in an Excel spreadsheet, this process can be streamlined by using the “goal seek” function to determine the correct interest rate. In the following example, all present values are calculated assuming a 30/360 basis and semiannual compounding.

Continued on next page

Basic Yield Computation Exercise, Continued

Computing the Yield
(continued)

In our example, the investment is purchased at a discount, so we know the yield will be something more than the 8 percent nominal investment rate. Let's guess that the yield will be 10 percent and determine the results.

<u>Date</u>	<u>Cash Flow</u>	<u>y</u>	<u>r</u>	<u>Present Value on 3/1/00</u>
3/1/00	(980,000)	0.00	0.10000	(980,000)
9/1/00	40,000	0.50	0.10000	38,095
3/1/01	40,000	1.00	0.10000	36,281
9/1/01	40,000	1.50	0.10000	34,554
3/1/02	1,040,000	2.00	0.10000	855,611
			Difference	(15,460)

Again, we're trying to make the present values of the payments equal the present value of the receipts, or said another way, make the difference between the two numbers equal to zero. It turns out that our guess of 10 percent was a little high, so let's try 9 percent:

<u>Date</u>	<u>Cash Flow</u>	<u>y</u>	<u>r</u>	<u>Present Value on 3/1/00</u>
3/1/00	(980,000)	0.00	0.09000	(980,000)
9/1/00	40,000	0.50	0.09000	38,278
3/1/01	40,000	1.00	0.09000	36,629
9/1/01	40,000	1.50	0.09000	35,052
3/1/02	1,040,000	2.00	0.09000	872,104
			Difference	2,062

Our "difference" is getting closer to zero, and we can continue to narrow our guesses closer and closer to the correct answer. Using interpolation, we continue to adjust the value of "r" until the difference is zero. In this case, the investment yield is 9.1165 percent, computed as follows:

<u>Date</u>	<u>Cash Flow</u>	<u>y</u>	<u>r</u>	<u>Present Value on 3/1/00</u>
3/1/00	(980,000)	0.00	0.091165	(980,000)
9/1/00	40,000	0.50	0.091165	38,256
3/1/01	40,000	1.00	0.091165	36,588
9/1/01	40,000	1.50	0.091165	34,993
3/1/02	1,040,000	2.00	0.091165	870,162
			Difference	0

Special Rules

**Variable Rate
Instruments**

Regulations § 1.148-5(b)(1) provides that the yield on a variable rate instrument is determined in a manner comparable to the determination of the yield on a variable issue. See Regulations § 1.148-4(c) for computation of yield on a variable yield issue.

**Mortgage
Revenue and
Qualified
Student Loan
Bonds**

Regulations § 1.148-5(b)(1) also provides that for an issue of qualified mortgage bonds, qualified veterans' mortgage bonds, or qualified student loan bonds on which the interest is paid semiannually, all regular monthly loan payments received during a semi-annual debt service period may be treated as received at the end of that period.

**Payments Made
by the Conduit
Borrower**

Regulations § 1.148-5(b)(1) provides that for any conduit loan, payments made by the conduit borrower are not treated as paid until the conduit borrower ceases to receive the benefit of earnings on those amounts.

Section 9

Yield Reduction Payments

Overview

Introduction

Section 148(a) provides that the use of bond proceeds to acquire higher yielding investments results in the bonds being arbitrage bonds. However, proceeds may be invested in higher yielding investments during a temporary period, without causing the bonds to be arbitrage bonds.

Once the temporary period is over, there are a number of ways in which issuers can comply with the yield restriction rules. In addition to selecting particular types of investments, the issuer may in certain cases be able to make a payment to the Treasury to reduce the yield on the investments.

These payments are known as Yield Reduction Payments, and are discussed in detail in this section.

In this section

This section contains the following topics:

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Eligible Investments	92
Example – Yield Reduction Payments	94
Yield Reduction Payments for Advance Refunding Issues	96

General Rules

Issuer Choices for Yield Restricted Investments

Once the temporary period is over, proceeds may no longer be invested at a yield in excess of the materially higher amounts as described in Regulations § 1-148-2(d)(2). In this instance, an issuer has several choices:

- Buy tax-exempt investments.
- Buy investments which earn a yield below the materially higher limit.
- Make yield reduction payments.

The first option, purchasing tax exempt investments, includes municipal bonds of other issuers which qualify for tax exemption. The investments can be either fixed or variable yield, as long as they are tax-exempt under section 103. As long as the investments are tax-exempt and are not investment property, no yield limitation applies (see Regulations § 1.148-2(d)(2)(v)).

The second option is to purchase investments earning less than the materially higher limits. These can be securities purchased on the open market or through competitive bidding, as long as prevailing market yields are such that the investment yield does not exceed the materially higher limit. It is critically important that the investments be acquired at fair market value, to avoid any risk of their yield being improperly established. The valuation of investments is discussed in Section 10.

As an alternative to open market investments, the issuer may purchase SLGS, which are discussed in the section below.

Continued on next page

General Rules, Continued

**Issuer Choices
for Yield
Restricted
Investments**
(continued)

If the investments are eligible for yield reduction payments, the issuer may reduce the yield on the investments by making yield reduction payments directly to the Treasury. In some cases, yield reduction payments may have economic advantages over the other choices, and may also be the least burdensome administratively. However, yield reduction payments are only available for certain types of investments. This Section discusses the use of yield reduction payments to comply with the yield restriction rules.

As a reminder, the rules concerning temporary periods are discussed at length in Phase I, Lesson 5, Section 6, Arbitrage & Rebate.

General Rules, Continued

SLGS

SLGS, or State and Local Government Series, are U.S. Treasury Securities issued by the Bureau of Public Debt. They are intended specifically for use by issuers of tax exempt bonds, and are designed to comply with the yield restriction rules. SLGS can be purchased with maturity dates as long as 30 years, at investment rates which are set and published by the Bureau of Public Debt on a daily basis. If the published rates are above the yield restriction limit for a particular set of investments, the issuer can request SLGS with an investment rate below the current maximum rate. This will enable the issuer to satisfy the yield restriction rules on any given investment.

SLGS are issued by the Bureau of Public Debt at the request of the issuer of tax-exempt bonds. The issuer can request SLGS with a coupon rate anywhere between the daily maximum rate and zero percent, depending on what is needed by the issuer for their investments. SLGS which bear a coupon rate of zero are not discount securities. They are sold at par and mature at par. They are used to reduce, or blend down the yield on yield restricted funds when needed. This may occur when other investments in the same class are invested above the materially higher limit, and offsetting lower yielding investments are needed to comply with the yield limit.

The regulations governing SLGS are contained in 31 CFR Part 344 issued by the Bureau of the Public Debt.

Terms of Payment

The yield restriction rules operate in parallel fashion to the rebate rules. Payments made for yield reduction must generally follow the same rules for timing and manner of payment as rebate payments, as indicated in Regulations § 1.148-5(c)(2)(i). The provisions that apply to rebate payments, such as due dates, making 90 percent installment payments, correction of late payments, and recovery of overpayments, all apply to yield reduction payments as well. These rules are discussed in detail in Section 6 of this Lesson.

Continued on next page

General Rules, Continued

Treatment of Payments

The yield restriction rules are coordinated with the rebate rules when considering actual payments made under the rules. As provided in Regulations § 1.148-3(d)(1)(v), yield reduction payments on non-purpose investments are treated as payments for purposes of rebate calculations. This treatment prevents an issuer from having to pay the same arbitrage twice, once as a rebate payment and then again as a yield reduction payment.

Special Rule for Purpose Investments

The yield reduction payment rules are different for purpose investments. Purpose investments are defined in Regulations § 1.148-(b) as investments made to carry out the governmental purposes of the issue. For purpose investments allocable to an issue:

- No yield reduction payments need be made until the earlier of:
 - the tenth bond year after the issue date; or
 - 60 days after the issue is no longer outstanding.
 - For payments made prior to the issue's retirement, only 75 percent of the amount need be paid.
- See Regulations § 1.148-5(c)(2)(ii)
-

Eligible Investments

Investments Eligible for Yield Reduction Payments

Not all investments are eligible for yield reduction payments. An issuer may only make yield reduction payments for the following types of investments pursuant to Regulations § 1.148-5(c)(3):

- Non-purpose investments allocable to proceeds that qualified for certain initial temporary periods. Initial temporary periods included are for capital projects, restricted working capital expenditures, pooled financings and certain investment proceeds. For example, a project fund which qualified for an initial three year temporary period would become yield restricted after the end of the temporary period, and investments in the fund would be eligible for yield reduction payments.
- Investments allocable to an issue in which at least five percent of the bonds are variable yield bonds, unless the issue is an issue of hedge bonds.
- Non-purpose investments allocable to transferred proceeds of a current refunding issue.
- Non-purpose investments allocable to transferred proceeds of an advance refunding issue if investment of sale and investment proceeds in zero-yielding non-purpose investments is insufficient to comply with yield restriction (zero-yielding non purpose investments generally refers to zero percent SLGS). It is important to note that proceeds invested in an advance refunding escrow are not eligible for yield reduction payments in most circumstances.
- Federally guaranteed student loans under § 144(b)(1)(A).
- Non-purpose investments allocable to gross proceeds of an issue in a reasonably required reserve or replacement (4-R) fund in a fund that, except for its failure to satisfy the three-part size limitations of Regulations § 1.148-2(f)(2)(ii) (i.e. the least of 10 percent of the principal amount of the issue, maximum annual debt service; and 125 percent of average annual debt service), would qualify as a 4-R (reasonably required reserve or replacement fund). This provision, allowing yield reduction payments, is limited to either:
 1. the value of the non-purpose investments in the fund are not greater than 15 percent of the stated principal amount of the issue, or

Eligible Investments, Continued

**Investments
Eligible for
Yield
Reduction
Payments**
(continued)

2. the amounts in the fund are not reasonably expected to be used to pay debt service on the issue other than in connection with reductions in the amount required to be in that fund (e.g. a reserve fund for a revolving fund loan program).

Thus, if a debt service reserve exceeds the size limitations described above, the portion that exceeded the limit would be subject to yield restriction, and eligible for yield reduction payments.

- Non-purpose investments allocable to replacement proceeds of a refunded issue as a result of the universal cap to amounts in a refunding escrow.
 - Certain reserve or replacement funds required by the pre-1978 legislation described in Regulations section 1.148-11(f) or replacement funds required by the pre-1978 legislation described in Regulations section 1.148-11(f)
-

Example - Yield Reduction Payments

Example 1

On January 2, 1998, City issues fixed rate Bonds to construct a new hospital building. The issue qualifies under § 148(f)(4)(C) as a construction issue. City does not elect to pay penalty in lieu of rebate. Also, City sets up a 4-R fund equal to 10 percent of the proceeds of Bonds and elects to exempt the earnings on the 4-R fund from ACP.

[NOTE: “ACP” means the Available Construction Proceeds. It is defined in § 148(f)(4)(C)(vi), and generally applies for capital construction projects. Technically ACP = issue price plus earnings on both the investment proceeds and a 4-R fund not funded by the issue, reduced by issuance costs and the 4-R fund]

Further, assume that Bonds qualify for a three-year temporary period under Regulations § 1.148-2(e)(2).

Accordingly, City may invest the construction issue proceeds without regard to yield restriction for three years and is exempt from rebate if it complies with the two year spending schedule of § 148(f)(4)(C)(ii). Also, City may invest the 4R fund without regard to yield restriction, but must rebate any arbitrage earnings from the date of issue.

City fails to spend all of the ACP by the 2nd anniversary date of the issue. City earns negative arbitrage on the unspent ACP during the three-year temporary period.

Because of a change in market conditions, City earns positive arbitrage during Years 2001 and 2002 (Years 4 and 5) on its unspent ACP. City expends all ACP on the project by January 2, 2003.

January 2, 2003 is the first rebate computation date. Under Regulations § 1.148-5(b)(2)(ii), the non-purpose investments held in the 4R fund and those allocated to the construction issue for the three-year temporary period are treated as a single investment class. The yield must be separately calculated for this class of investments.

Also, under Regulations § 1.148-5(b)(3), on January 2, 2001, the investments allocable to the construction issue are treated as being sold for an amount equal to their value and reinvested in a separate class of non-purpose investments. The yield must be separately calculated for this class in order to test the yield restriction rules.

Continued on next page

Example - Yield Reduction Payments, Continued

Example 1
(continued)

Assume that, because of the large amount of negative arbitrage earned during the three-year temporary period, no rebate is due on January 2, 2003. The investment yield on the construction fund investments must then be calculated over the two year period beginning January 2, 2001 and ending on January 2, 2003 (the first rebate computation date). If the investment yield exceeds the materially higher limit (in this case bond yield plus 1/8 of a percent), the issuer may need to make a yield reduction payment.

If we assume the investments allocable to the construction issue after the end of the temporary period were invested in higher yielding investments, City must make a yield reduction payment in the amount of the positive arbitrage earned over the materially higher limit during Years 4 and 5. No offset is allowed for the negative arbitrage earned during the three-year temporary period because the investment during that 3-year period is treated as a separate class of investments.

The correct yield reduction payment would be used to blend the yield down to the bond yield plus 1/8 percent.

Yield Reduction Payments for Advance Refunding Issues

Introduction This section discusses when yield reduction payments may be used for advance refunding issues.

General Rule Generally, yield reduction payments are not allowed to reduce yield on proceeds of advance refunding issues. There are a few exceptions, chiefly related to transferred proceeds and replacement proceeds. These exceptions are described in Regulations § 1.148-5(c)(3)(ii) and discussed below.

Exceptions Yield reduction payments may only be used for advance refunding issues in the following limited circumstances:

- Non-purpose investments allocable to transferred proceeds of an advance refunding issue if investment of sale and investment proceeds in zero-yielding investments is insufficient to comply with yield restriction. (See also § 1.148-5(c)(3)(i)(C)(2).
 - Non-purpose investments allocable to replacement proceeds of a refunded issue as a result of the universal cap (See § 1.148-5(c)(3)(i)(F), AND
 - Transferred proceeds allocable to an oversized 4R fund, but only to the extent necessary to satisfy yield restriction under § 148(a) on those proceeds treating all investments allocable to those proceeds as a separate class.
-

Example 2 City issues floating rate refunding bonds to advance refund a prior fixed rate issue. City might want to use the proceeds of the refunding issue to create a fixed rate refunding escrow to defease the prior issue, while using the revenues of the escrow to make yield reduction payments based on the difference between the fixed and floating rates. The regulations prohibit use of yield reduction payments in this manner.

Continued on next page

Yield Reduction Payments for Advance Refunding Issues, Continued

Proposed 2007 Regulations An amendment proposed for Regulations § 1.148-5(c)(3) adds certain additional categories of investments to proceeds of advance refunding issues which are eligible for yield reduction payments:

- 1) Nonpurpose investments purchased when SLGS were not available due to a suspension in sales by the U.S. Treasury.
 - 2) Nonpurpose investments purchased with proceeds of a variable rate advance refunding, as long as the issuer has entered into a qualified hedge on the bonds and the investments have been yield restricted to the hedged yield on the bonds. In this instance, yield reduction payments can only be made to address basis risk differences between payments on the hedge and interest on the hedged bonds.
-

Section 10

Valuation of Investments

Overview

Introduction This section discusses rules applicable to the valuation of nonpurpose investments.

General Rule Under Regulations § 1.148-6(c), upon the purchase or sale of a nonpurpose investment, gross proceeds of an issue are not allocated to a payment for that nonpurpose investment in an amount greater than, or to a receipt from that nonpurpose investment in an amount less than, the fair market value of the nonpurpose investment as of the purchase or sale date.

Definition of Fair Market Value (FMV) Regulations § 1.148-5(d)(6)(i) defines fair market value, or FMV, generally as the price at which a willing buyer would purchase the investment from a willing seller in a bona fide, arm's length transaction. The FMV of a United States Treasury obligation that is purchased directly from the United States Treasury is its purchase price. The Regulations provide special rules for determining the FMV of other types of investments.

Determination Date Generally, FMV is determined on the date on which a contract to purchase or sell the nonpurpose investment becomes binding (i.e. the trade date rather than settlement date).

Continued on next page

Overview, Continued

**Rebuttable
Presumption**

Regulations § 1.148-5(d)(6)(i) provides that, subject to certain exceptions, an investment that is not of a type traded on an established securities market, within the meaning of § 1273, is rebuttably presumed to be acquired or disposed of for a price that is not equal to its FMV. However, safe harbors exist for some types of investments that are not of a type traded on such markets, such as certificates of deposit (CDs) and guaranteed investment contracts (GICs).

In this section

This section contains the following topics:

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Valuation Methods	100
Yield Burning	106

Valuation Methods

Introduction

Regulations § 1.148-5(d)(1) provides in general certain methods that must be applied to determine the value of an investment on any date. The selected method must be applied consistently for all purposes of § 148 to that investment on that date. The permitted valuation methods for any date are:

- For a plain par investment: Outstanding stated principal amount, plus any accrued unpaid interest on that date.
- For a fixed rate investment: Present value on that date.
- Any investments: Fair market value on that date.

However, other subsections (discussed below) of Regulations § 1.148-5(d) further limit the permitted valuation method that may be applied with respect to an investment.

Plain Par Investments: Outstanding Principal Amount plus Accrued Interest

A plain par investment may be valued at its outstanding stated principal amount, plus any accrued unpaid interest. See Regulations § 1.148-5(d)(1)(i).

A plain par investment generally is an investment that is an obligation

- Issued with not more than a de minimis amount of original issue discount or premium, or, if acquired on a date other than the issue date, acquired with not more than a de minimis amount of market discount or premium;
- Issued for a price that does not include accrued interest, other than pre-issuance accrued interest;
- That bears interest from the issue date at a single, stated, fixed rate or that is a variable rate debt instrument under § 1275, in each case with interest unconditionally payable at least annually; and
- That has a lowest stated redemption price that is not less than its outstanding stated principal amount.

See Regulations § 1.148-1(b).

Continued on next page

Valuation Methods, Continued

**Fixed Rate
Investments:
Present Value**

A fixed rate investment may be valued at its present value. See Regulations § 1.148-5(d)(1)(ii).

A fixed rate investment is an investment whose yield is fixed and determinable on the issue date. See Regulations § 1.148-1(b).

Generally, the present value of an investment is computed under the economic accrual method, using the same compounding interval and financial conventions used to compute the yield on the issue. The present value of an investment on a date is equal to the present value of all unconditionally payable receipts to be received from and payments to be paid for the investment after that date, using the yield on the investment as the discount rate. See Regulations § 1.148-5(d)(5).

[An example of computing the present value of an investment is shown in Exhibit ___ of this Lesson.]

**Any
Investment:
FMV**

Any investment may be valued at its FMV. See Regulations § 1.148-5(d)(1)(iii).

The fair market value of an investment is the price at which a willing buyer would purchase the investment from a willing seller in a bona fide, arm's length transaction. The FMV of a United States Treasury obligation that is purchased directly from the United States Treasury is its purchase price.

Generally, except as otherwise provided in the Regulations, an investment that is not of a type traded on an established securities market, within the meaning of § 1273, is rebuttably presumed to be acquired or disposed of for a price that is not equal to its fair market value. However, the Regulations provide “safe harbors” for certain types of such investments that are not of a type traded on such markets: certificates of deposit (CDs), and guaranteed investment contracts (GICs) and investments purchased for yield restricted defeasance escrows.

Continued on next page

Valuation Methods, Continued

Safe harbor for establishing FMV of CDs

For a CD that has a fixed interest rate, a fixed payment schedule, and a substantial penalty for early withdrawal, the purchase price of the CD is treated as its FMV on the purchase date if the yield on the CD is not less than:

- The yield on reasonably comparable direct obligations of the United States and
 - The highest yield that is published or posted by the provider to be currently available from the provider on reasonably comparable certificates of deposit offered to the public.
-

Safe harbor for establishing FMV of GICs and investments purchased for yield restricted defeasance escrows

Regulations § 1.148-5(d)(6)(iii) provides a safe harbor for GICs and investments purchased for yield restricted defeasance escrows that permits the purchase price of the GIC or such an investment to be treated as the FMV of the investment on the purchase date if certain requirements are satisfied.

Generally, the requirements prescribe a process through which the issuer makes a bona fide solicitation for the purchase of the investment, receives at least 3 bids for the investment that meet certain requirements, and awards the investment to the highest bidder. The requirements of this safe harbor are technical and specific, and the Regulations should be referenced in order to evaluate whether all of the requirements have been satisfied with respect to a particular investment.

Valuation Methods, Continued

Note

Regulations § 1.148-5(d)(6)(iii) applies to bonds sold on or after March 1, 1999. Issuers may apply this rule to bonds sold from December 30, 1998 to March 1, 1999. For bonds sold before December 30, 1998, the 1993 regulations (as amended by the 1994 regulations) apply.

Proposed 2007 Regulations

An amendment proposed for Regulations § 1.148-5(d)(6)(iii) specifies that written bid specifications are also valid if they are made available on an internet website or similar electronic media which is regularly used to post bid specifications to potential bidders.

Mandatory Rules

In addition to other limitations on valuation methodology, there are two mandatory valuation rules:

Mandatory valuation of yield restricted investments at present value

Yield restricted investments must be valued at present value. See Regulations § 1.148-5(d)(2). Note, however, that under Regulations § 1.148-5(b)(3), in computing the yield on investments that are held beyond an applicable temporary period under Regulations § 1.148-2, for purposes of Regulations § 1.148-2 those investments may be treated as purchase for an amount equal to their FMV as of the end of the temporary period.

EXAMPLE. An investment held in an issuer's construction fund as of the expiration of the three-year temporary period may be valued as of that date using present value or FMV. The issuer is permitted to use the method that produces the highest price and, therefore, the lowest yield. See Regulations § 1.148-5(b)(3).

Continued on next page

Valuation Methods, *Continued*

**Mandatory
Rules**
(continued)

Mandatory valuation of certain investments at FMV

With certain exceptions, an investment must be valued at FMV on the date that it is first allocated to an issue or first ceases to be allocated to an issue as a consequence of a deemed acquisition or deemed disposition.

EXAMPLE. – If an issuer deposits existing investments into a sinking fund for an issue, those investments must be valued at FMV as of the date first deposited in to the fund. See Regulations § 1.148-5(d)(3)(i).

EXCEPTION. An investments is not required to be valued at FMV under this mandatory valuation rule if:

- the investment is allocated from one issue to another issue (both of which are exclusively tax-exempt bond issues) as a result of the transferred proceeds allocation rule under Regulations § 1.148-9(b) or the universal cap rule under Regulations § 1.148-6(b)(2), or
- it is an investment in a commingled fund (other than a bona fide debt service fund) unless it is an investment being initially deposited in or withdrawn from a commingled fund that operates exclusively as a reserve fund, sinking fund, or replacement fund for two or more issues of the same issuer.

Continued on next page

Valuation Methods, *Continued*

Special Transition Rule for Transferred Proceeds

The value of a nonpurpose investment that is allocated to transferred proceeds of a refunding issue on a transfer date may not exceed the value of that investment on the transfer date used for purposes of applying the arbitrage restrictions to the refunded issue. This transition rule would apply when an issue under the 1993 Regulations refunds an issue under the 1992 Regulations. The 1992 Regulations required transferred proceeds to be valued at FMV, while the 1993 Regulations permit either present value or FMV. If the present value of the transferred proceeds was greater than the FMV on a transfer date, this transition rule would limit the value of the transferred proceeds for the refunding issue to their FMV. See Regulations § 1.148-5(d)(4).

Investments held beyond Redemption Date

Regulations § 1.148-5(b)(3) provides that for investments held beyond the reasonably expected redemption date of the issue, those investments are treated as sold for an amount equal to their value on that date.

Continued on next page

Yield Burning

Introduction

Yield burning is a term that refers to the improper transfer of arbitrage from the issuer and subject to arbitrage rebate to the Federal government or yield restriction limitations to some other party through manipulation of the yield on the issuer's investments.

Yield Burning in Advance Refunding Transactions

Yield burning may exist in any type of tax-exempt financing, and in particular may occur in advance refunding transactions when an issuer pays more than FMV to a provider for escrow securities. Because an investment's price moves inversely to its yield, yield is "burned" if an issuer pays greater than FMV for an investment.

Curing Yield Burning Violations

Revenue Procedure 96-41, 1996-2 C.B. 301, outlines a procedure for issuers to enter into a closing agreement with the IRS to cure yield burning violations for bonds sold prior to July 19, 1996. (See also Notice 96-49, 1996-2 C.B. 215).

Section 11

Administrative Costs of Investments

Overview

Introduction

Administrative costs are costs or expenses incurred to purchase, carry, sell or retire an investment, whether paid directly or indirectly. When looking at rebate or yield reduction computations, it is important to know what is includable in the investment yield, which may include administrative costs as one of its components.

Administrative costs related to investments of bond proceeds are generally not included in the determination of investment yield. However, in certain cases administrative costs may qualify for inclusion in the investment yield calculation. This section discusses which administrative costs qualify for inclusion in investment yield, and the how they are treated when determining investment yield.

General Rule

The rules regarding administrative costs are contained in Regulations § 1.148-5(e). In general, computation of yield on an investment does not take into account any costs or expenses paid to purchase, carry, sell, or retire the investment (i.e. administrative costs) UNLESS those administrative costs are qualified. *See Regulations § 1.148-5(e)(1).*

Continued on next page

Overview, Continued

Effect of General Rule Unless the administrative costs are qualified, administrative costs are not included in the computation of investment yield. In other words, nonqualified administrative costs do NOT increase the payments for, or reduce the receipts from investments. *See Regulations § 1.148-5(e)(1).*

In this Section This section contains the following topics:

Topic	See Page
Overview	107
Qualified Administrative Costs of Non-purpose Investments	109
Qualified Administrative Costs of Purpose Investments	113

Qualified Administrative Costs of Non-purpose Investments

General Qualified administrative costs are taken into account in determining payments and receipts for non-purpose investments. These costs increase the payments for, or decrease the receipts from, the investment. See Regulations § 1.148-5(e)(2)(i).

Definition of Qualified Administrative Costs Qualified administrative costs are reasonable, direct administrative costs, **other than carrying costs**. Examples of costs which would qualify are separately stated brokerage or selling commissions. Costs which do not qualify include legal and accounting fees, record-keeping, custody, and similar costs. See Regulations § 1.148-5(e)(2)(i).

Definition of Reasonable To qualify, administrative costs must be reasonable. This means that administrative costs must be comparable to administrative costs that would be charged for comparable investments if acquired with a source of funds other than gross proceeds of tax-exempt bonds. See Regulations § 1.148-5(e)(2)(i).

Overhead and Rebate Computation Costs NOT Qualified Administrative Costs General overhead costs and similar indirect costs such as employee salaries and office expenses and costs associated with computing the rebate amount are NOT qualified administrative costs. See Regulations § 1.148-5(e)(2)(i).

Special Rule for RICs and Commingled Funds In the case of investments in regulated investment companies and external commingled funds, there is an exception to the above rule. Regulations § 1.148-5(e)(2)(ii) provides that generally, for regulated investment companies (RICs) and external commingled funds, qualified administrative costs include all reasonable administrative costs, including indirect costs. The regulations specify that this exception applies only to widely held external commingled funds, with a minimum number of unrelated investors and certain balance thresholds.

Continued on next page

Qualified Administrative Costs of Non-purpose Investments, Continued

Prior Treatment of External Commingled Funds

The current regulations, effective for issues issued on or after July 8, 1997, changed the treatment of external commingled funds to include only widely held commingled funds.

Special Rules for GICs and Yield Restricted Escrows

Special rules apply for guaranteed investment contracts (GICs) and investments in a yield restricted defeasance escrow. These rules are contained in Regulations § 1.148-5(e)(2)(iii), which provides that a broker's commission or similar fee paid with respect to a GIC or investments purchased for a yield restricted defeasance escrow is treated as an administrative cost. The fee must be considered reasonable, as defined earlier in this section.

Safe Harbor

The regulations provide a safe harbor for establishing if these fees are reasonable. The fee is considered reasonable if the amount treated as a qualified administrative cost does not exceed the lesser of:

- \$30,000 and
- 0.2% of the computational base or, if more, \$3,000 and
- for any issue the issuer does not treat as qualified administrative costs more than \$85,000 in brokers' commissions or similar fees with respect to all GICs and investments for yield restricted defeasance escrows purchased with gross proceeds of the issue.

The computational base is the amount of gross proceeds the issuer reasonably expects to be deposited in a GIC over the term of the contract. For investments in a yield restricted defeasance escrow, it is the amount of proceeds initially invested.

Continued on next page

Qualified Administrative Costs of Non-purpose Investments, Continued

Prior Regulations

The safe harbor amounts are subject to a cost of living adjustment for calendar years after 2004. The cost of living adjustments are described in detail in Regulations §§ 1.148-5(e)(3) through (6). To date, the threshold amounts incorporating cost of living adjustments are:

Calendar Year*	Maximum Per Investment	Minimum Per Investment	Maximum Per Issue
2004	30,000	3,000	85,000
2005	31,000	3,000	87,000
2006	32,000	3,000	90,000
2007	33,000	3,000	93,000
2008	34,000	3,000	95,000
2009	35,000	4,000	99,000
2010	35,000	4,000	100,000

*See Revenue Procedures 2004-71, 2005-70, 2006-53, 2007-66, 2008-66 and 2009-50.

Continued on next page

Qualified Administrative Costs of Non-purpose Investments, Continued

Prior Regulations (continued)

Prior to December 11, 2003, the publication date of the current regulations, the regulations provided that the safe harbor for a qualified administrative cost for a GIC was for the present value of the commission, as of the date the contract is allocated to the issue, not to exceed the lesser of a reasonable amount or the present value of annual payments equal to 0.05 percent of the weighted average amount reasonably expected to be invested each year of the term of the contract, except in the case of an issue that is a \$5,000,000 small governmental issue (as described in § 148(f)(4)(D)(i)).

The safe harbor for a yield restricted defeasance escrow was the lesser of \$10,000 or 0.10 percent of the initial principal amount of investments deposited in the yield restricted defeasance escrow. (See T.D. 8801, December 30, 1998).

Prior Special Rule for GICs

The regulations for issues issued prior to July 8, 1997, contain a different special rule for administrative costs associated with GICs. See Temporary Regulations § 1.148-5A(e)(2)(iii) for bonds issued prior to July 8, 1997.

Qualified Administrative Costs of Purpose Investments

Definition of Qualified Administrative Costs: Purpose Investments

Regulations § 1.148-5(e)(3)(ii)(A) provides that qualified administrative costs for **purpose investments** include costs:

- to purchase, carry, sell, or retire the investment
 - of issuing, carrying, or repaying the issue, and any underwriters' discount.
-

Payments Made by a Conduit Borrower

Regulations § 1.148-5(e)(3)(i) provides that in a conduit borrowing, the qualified administrative costs paid by the conduit borrower are taken into account.

This rule applies even if these payments merely reimburse the issuer.

Although the actual payments by the conduit borrower may be made at any time, for this purpose, a pro rata portion of each payment made by a conduit borrower is treated as a reimbursement of reasonable administrative costs, if the present value of those payments does not exceed the present value of the reasonable administrative costs paid by the issuer, using the yield on the issue as the discount rate.

Limitation for Program Investments

Regulations § 1.148-5(e)(3)(ii)(B) provides that for program investments, qualified administrative costs include only:

- costs of issuing, carrying, or repaying the issue, and
 - any underwriters' discount
-

Continued on next page

Qualified Administrative Costs of Non-purpose Investments, Continued

**Example of
Accounting for
Qualified
Administrative
Costs in the
Yield
Computation of
Conduit Loans
that are NOT
Tax-Exempt
Bonds**

County X issues a pool financing issue with a principal amount of \$10,200,000 and a coupon rate of 5 percent, paid annually. The arrangement requires County X to pay \$200,000 of issuance costs, but the county will be reimbursed by Corporations Y and Z. After these costs are paid, the proceeds of the bonds are split equally and loaned to Corporations Y and Z, both of which are 501(c)(3) organizations. Both loans meet the definition of a program investment under Regulations § 1.148-1(b).

The yield on the pooled financing bonds is 4.9390 percent, as shown below. Note that all yields are computed assuming a 30/360 day basis and semiannual compounding.

The proceeds are loaned to Corporations Y and Z, at a rate of 6.80%, payable at the same time and frequency as the bonds. The annual payment on the combined loans is \$1,410,640. When computing the yield of the purpose investments, because they are both program investments, Regulations § 1.148-5(b)(2)(ii) permits the investments to be treated as a single investment. As show in the table below, the yield on the loans is 6.6882%

According to Regulations § 1.148-2(d)(2)(iii) the yield on program investments cannot exceed the bond yield by more than 1.5 percentage points. The yield on these investments exceeds the bond yield by 1.75 percent (6.6882% less 4.9390%).

However, Regulations §§ 1.148-5(e)(3)(i) and (ii)(B) provide that the reimbursement of issuance costs is taken into account when computing the yield on the investment, by increasing the payments or decreasing the receipts. Therefore, if each receipt is reduced by \$25,824 (this amount represents issuance costs amortized over ten years), then the yield becomes 6.3048%, which is within the permitted spread (4.9390% + 1.5% = 6.4390%).

Continued on next page

Qualified Administrative Costs of Non-purpose Investments, Continued

Caution!

Note that this example is NOT illustrating the waiver of the 1.5 percent permitted spread to allow the issuer to deduct loan costs. The issuer is permitted to take issuance costs into account when computing the investment yield without waiving the 1.5 percent spread.

Computation of Bond Yield			
Issue price		10,200,000.00	
Settlement		1/1/1998	
Payment date	Debt Service Payments		PV @ 4.9390%
1/1/1999	\$1,320,946.66		1,258,044.44
1/1/2000	1,320,946.66		1,198,137.56
1/1/2001	1,320,946.66		1,141,083.39
1/1/2002	1,320,946.66		1,086,746.09
1/1/2003	1,320,946.66		1,034,996.28
1/1/2004	1,320,946.66		985,710.74
1/1/2005	1,320,946.66		938,772.13
1/1/2006	1,320,946.66		894,068.70
1/1/2007	1,320,946.66		851,494.00
1/1/2008	1,320,946.66		810,946.66
	13,209,466.65		10,200,000.00
Computation of Loan Yield			
Loan Amount		10,000,000.00	
Settlement		1/1/1998	
Payment Date	Loan Payments		PV @ 6.6882%

1/1/1999	\$1,410,640.78	1,320,824.70
1/1/2000	1,410,640.78	1,236,727.25
1/1/2001	1,410,640.78	1,157,984.31
1/1/2002	1,410,640.78	1,084,254.97
1/1/2003	1,410,640.78	1,015,220.01
1/1/2004	1,410,640.78	950,580.54
1/1/2005	1,410,640.78	890,056.68
1/1/2006	1,410,640.78	833,386.41
1/1/2007	1,410,640.78	780,324.35
1/1/2008	1,410,640.78	730,640.78
	14,106,407.78	10,000,000.00

Computation of Loan Yield - Including Qualified Administrative Costs				
Loan Amount	10,000,000.00			
Payment Date	1/1/1998			
date	Loan Payments	Qualified Admin Costs	Loan pmts less costs	PV @ 6.3048%
1/1/1999	1,410,640.78	\$25,824.26	1,384,816.52	1,301,468.04
1/1/2000	1,410,640.78	25,824.26	1,384,816.52	1,223,136.10
1/1/2001	1,410,640.78	25,824.26	1,384,816.52	1,149,518.75
1/1/2002	1,410,640.78	25,824.26	1,384,816.52	1,080,332.23
1/1/2003	1,410,640.78	25,824.26	1,384,816.52	1,015,309.87
1/1/2004	1,410,640.78	25,824.26	1,384,816.52	954,201.03
1/1/2005	1,410,640.78	25,824.26	1,384,816.52	896,770.17
1/1/2006	1,410,640.78	25,824.26	1,384,816.52	842,795.93
1/1/2007	1,410,640.78	25,824.26	1,384,816.52	792,070.26
1/1/2008	1,410,640.78	25,824.26	1,384,816.52	744,397.63
	14,106,407.78			10,000,000.00

Section 12

Debt / Equity Considerations

Overview

Introduction The question of whether an instrument is properly treated as debt or equity for tax purposes has long been a contentious issue. This has been a problem because of the absence of clear-cut rules and the need for application of subjective criteria.

This is important in the municipal market because an instrument must properly be characterized as debt in order for interest paid on it to qualify from exclusion from gross income under § 103. If it is characterized as equity, the rules under § 103 would no longer apply.

This section discusses the characteristics of debt instruments and various types of interest rate setting mechanisms for tax-exempt debt instruments.

Objectives Identify the characteristics which can be used to determine if an instrument is properly characterized as debt or equity.

In this Section This Section contains the following topics:

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Debt/Equity Considerations

Tax-exempt debt

The interest on a tax-exempt debt instrument is excluded from gross income of the holder if the instrument meets the requirements of §§ 103, 141-150. Thus, the holder may exclude amounts received on an instrument that purports to be tax-exempt if:

- the amount received is “interest”, and
- the instrument is “debt” of the issuer.

Additionally, for the interest on the tax-exempt instrument to be excludible from gross income under § 103(a), the instrument must be debt and issued pursuant to the borrowing power of the issuer.

Example

The simplest example of debt is – Bank loans \$1 Million to Corporation and Corporation issues a note to Bank. The note is payable in 10 years and bears interest at 7%. The note is debt of the Corporation. Corporation is the debtor and Bank is the creditor.

Code and Regulations

Neither the Code nor the regulations provide complete guidance on identifying an instrument as debt rather than equity. The Service has published and withdrawn proposed and final regulations discussing characteristics of debt instruments.

Section 385(b) provides that certain factors may be considered in making a determination whether a debtor-creditor relationship exists.

Section 385(c) provides that the issuer’s determination of the character of an instrument is binding upon the holder. Although the parties are bound by the issuer’s determination, the Service is nevertheless free to disregard the issuer’s determination.

Continued on next page

Debt/Equity Considerations, Continued

Notice 94-47 The Service issued and withdrew regulations under § 385(c). After withdrawing the regulations, the Service published Notice 94-47, 1994-1 C.B. 357.

Notice 94-47 provides that the characterization of an instrument as debt or equity depends upon the terms of the instrument and all surrounding facts and circumstances. Some of the factors provided in Notice 94-47 in making such determination are discussed below.

Judicial Factors The courts have often ruled on whether a particular instrument is debt or equity and have relied upon certain factors in making such rulings. Although no uniform standards have been set by the courts, the factors enunciated by the courts must also be taken into account along with the factors discussed in Notice 94-47. The goal in applying the factors is not to count how many factors fit, but to determine the intent of the parties in structuring the instrument in a certain manner and the economic realities. Generally, speaking, instruments that bear too great a risk of repayment to the holder resemble equity more than debt.

Continued on next page

Debt/Equity Considerations, Continued

Factors

Some of the factors (listed in Notice 94-47 and in case law) in making such determination include, but are not limited to, the following:

- Name given to the instrument;
- Whether there is an unconditional promise to pay on demand or on a specified date the principal of the instrument;
- Whether the maturity date of the instrument is unreasonably long.
- Whether the holder of the instrument can enforce payment of principal or interest against the obligor;
- Adequacy and certainty of income;
- Whether the other creditors of the obligor are subordinated to, or preferred over, the holder of the instrument;
- Whether there is a relationship between the holders of the equity in the obligor and the holders of the instrument in question;
- The ratio of debt to equity of the obligor.

No particular factor listed above is conclusive in making the determination whether an instrument is debt or equity. The weight to be given to any factor depends upon the facts and circumstances, and the overall effect of an instrument's debt and equity features must be taken into account.

Continued on next page

Debt/Equity Considerations, Continued

Name Given by Parties The simplest and clearest factor is the name given to the instrument by the parties. If the issuer calls an instrument “stock,” one would presume the intent to issue an equity interest to the holder. On the other hand, issuance of a “bond” or “note” connotes the intent to issue debt to the holder. Because the goal is to determine the economic substance of the transaction, this factor is simply the starting point of the inquiry.

Unconditional Promise to Pay at Fixed Maturity Date The unconditional obligation to pay the holder of the instrument and the ability of the holder to reasonably expect repayment are important factors in classifying an instrument as debt.

The absence of a maturity date or a payment on demand feature suggests that the holder intends to make a permanent investment in the obligor.

If the instrument does not have a maturity date, the question also arises whether the issuer has an unconditional obligation to pay the principal of the instrument.

If the instrument does not have a fixed maturity date but the issuer has a right to redeem the instrument and has the financial ability to undertake such redemption (such as a guarantee by a third party or a line of credit), the instrument has debt characteristics.

Continued on next page

Debt/Equity Considerations, Continued

Maturity is Too Long A fixed maturity date does not have much meaning if such date is not in a reasonable period of time. A holder of a debt instrument reasonably expects to receive its principal back within a reasonable period of time. A determination whether the maturity is too far in the future must be made based on all of the facts and circumstances.

Examples

Example 1. In 1998 the issuer issues a note on which it is unconditionally liable to pay the principal (\$1 Million) to the holder. The note bears interest at a fixed rate of 5% accruing annually. The maturity date is June 1, 2048.

Example 2. In 1998 the issuer issues a note on which it is unconditionally liable to pay the principal (\$1 Million) to the holder. The note bears interest at a variable rate based on an index. The note has no maturity date but the holder can put the note to the issuer at anytime after 10 years.

Example 3 In 1998 the issuer issues a note which provides that the issuer is unconditionally obligated to pay the principal (\$1 Million) on June 1, 2008. The note will bear interest at a fixed rate of 5%. However, at the option of either of the issuer or the holder the issuer may extend the maturity for additional ten-year periods.

What additional facts in the above examples, if known, would make a difference in your determination as to the classification of the instrument as debt or equity?

Continued on next page

Debt/Equity Considerations, Continued

Enforceability by Holder

Whether the holder of the instrument has the ability to enforce the obligation of the obligor is important. Although the obligor of the instrument may have an unconditional obligation to repay the principal of the instrument to the holder, if the holder cannot enforce such obligation, the unconditional obligation is meaningless.

For example, if the holder of a note has no recourse in the event of default of a scheduled interest or principal payment, a question arises whether the instrument should properly be characterized as debt.

Generally, creditors are provided a mortgage or security interest on certain assets and/or revenues of the obligor. In the case of tax-exempt bonds, the bondholders are secured parties. In the event of nonpayment, the creditor can enforce the debtor's obligation by foreclosing on the mortgage or security interest. However, a security interest in and of itself may not carry much weight if the security interest is inadequate or the holder cannot enforce it.

An example of an inadequate security interest maybe where the instrument requires no sinking fund redemptions and/or the interest accretes to the point that the stated redemption price at maturity is so large that there is no expectation of repayment by the creditor.

Even if the creditor does not have a security interest in any property of the debtor (an unsecured creditor), such creditor can pursue a claim in bankruptcy court. In contrast, a shareholder (other equity holder) cannot require payment by the issuer of the instrument or pursue a claim in bankruptcy court.

Continued on next page

Debt/Equity Considerations, Continued

Examples

Example 1. Issuer issues an instrument with a face amount of \$1 Million. The holder will receive interest in the amount of \$600 per year. The maturity date of the instrument is 10 years.

Example 2. Issuer issues a bond at an issue price of \$1 Million. The maturity date of the bond is 25 years after the issue date. The stated redemption price at maturity of the bond is \$10 Million. The issuer of the bond is an entity that provides housing for low-income persons. The bondholder has a lien on the facility.

Example 3. Issuer, a single-purpose corporation, issues a note with a face amount of \$10 Million. The note provides that the holder will receive \$500,000 on each July 1 until the note is redeemed by the issuer at a redemption price of \$10 Million. The note does not have a set redemption date. The note is secured by the revenues of the issuer. The purpose of the issuer is to own and operate a nursing home. The holder has a lien on the assets of the issuer.

Example 4. In Example 3, the issuer is large university system described in § 501(c) (3).

What additional facts in the above examples, if known, would make a difference in your determination as to the classification of the instrument as debt or equity?

Continued on next page

Debt/Equity Considerations, Continued

Adequacy and Certainty of Income

The holder of a debt instrument expects to receive interest on the funds loaned to the debtor. The interest is generally based on prevailing market rates and represents the time value of money. This differs from the holder of an equity interest, who typically seeks to profit from the success of the enterprise. The return to an equity holder is not certain, and may not be adequate if the enterprise is not successful.

If the instrument provides for no interest or interest far below or above the prevailing market rate(s), the instrument resembles equity rather than debt.

A debt instrument generally yields a certain rate of return based on the time value of money. The debtor is required to pay interest to the holder regardless of the success or failure of the enterprise.

On the other hand, an equity holder generally wants its return to be based on the success of the enterprise. The more successful the enterprise, the greater the return. In other words, the holder of a debt instrument counts on the certainty of the income to be received. However, the fact that the return is based on the revenue of the enterprise does not necessarily make the instrument equity.

Continued on next page

Debt/Equity Considerations, Continued

Examples

Example 1. The issuer issues a note in the face amount of \$10 Million payable 10 years after the issue date. The note will bear interest at 3%. On the date of issue, the prevailing interest rate for similar instruments is 7%.

Example 2. The issuer issues a certificate in the face amount of \$10 Million. The issuer provides to the holder that the return on the note will be determined by the board of directors of the issuers at its annual meeting. The issuer is unconditionally obligated to pay the \$10 Million to the holder and such obligation is secured by a stand-by letter of credit issued by an unrelated bank.

Example 3. Issuer issues a certificate secured by a mortgage on the manufacturing facility owned and operated by the issuer. The note is due 7 years after the issue date. There are no sinking fund redemptions. Interest on the note is paid semi-annually in an amount equal to 7% of the gross revenues of the facility.

Subordination

Generally, the holder of a debt instrument of an issuer has rights superior to those of holders having an equity interest. Thus, in the event of default, the creditor (and other creditors) has a right to the assets of the issuer that is superior to the equity holders.

One creditor may be subordinate to another creditor(s) without such creditor's interest being treated as equity. However, if a creditor is subordinated to the extent that the possibility of repayment is remote, then the creditor's interest maybe more akin to equity.

Continued on next page

Debt/Equity Considerations, Continued

Example

Issuer borrows moneys from a related entity X and issues a note to X that is payable 5 years after the issue date of the note. The issuer and X can agree to defer the payment on the note as long as X receives an annual interest payment based on a 10 % interest rate. The issuer has previously issued debt to other creditors and such prior debt is secured by the assets and revenues of the issuer. The note to X provides that the issuer is unconditionally obligated to pay the note after the senior lien creditors and the general unsecured creditors have been paid.

How would you resolve whether the instrument is debt or equity?

Relationship between Debtor and Creditor

If there is a relationship between the holder of the instrument and the issuer, the instrument may be equity. This is because shareholders generally have a right to participate in the management of the enterprise where as debtors generally do not.

However, this factor may be of limited value in many cases, as creditors often require some control over the debtor's ability to run its business. For example, a bank may restrict the debtor from incurring additional secured debt, sell assets, or require review of the debtor's budgets.

If the holder of the debt instrument is the manager of the enterprise, in determining whether the instrument is debt or equity, it is important to review the methodology for determining the management fee and the interest on the instrument. If payment of one is related to the payment on the other, the instrument may be equity.

Example

Issuer issues a note in the face amount of \$5 Million to Manager. The annual management fee is equal to 10% of the gross revenues of the facility. The note provides that if the Manager receives less than \$250,000 each year, the interest rate on the note will be 7%, however, if the Manager receives more than \$250,000 in fee, the interest rate on the note will be 5%.

What if the Manager owns 10% of the stock of the Issuer?

Continued on next page

Debt/Equity Considerations, Continued

Debt/Equity Ratio and Capital Structure

The adequacy of the capital structure of the issuer at the time the instrument is issued is an important factor in determining whether the instrument is debt or equity. A person issuing debt to a thinly capitalized corporation bears greater risk than a person issuing debt to an adequately capitalized corporation. Thus, the debt-equity ratio of a debtor can provide an indication whether there is reasonable expectation of payment.

However, capitalization is just one of the factors to be considered. This factor must be weighed against the general norm in the applicable industry and the character of the business. For example, a start-up single purpose corporation may have a high debt to equity ratio but the creditor may have an enforceable claim against the debtor and reasonable assurance that the debt will be paid on the maturity date (e.g., bond insurance, guarantee, or other credit enhancement). This is often the case with respect to new money bond financings for a single purpose entity.

On the other hand, the ratio of debt to equity is often raised in connection with a work-out situation where the debtor has been unable to pay on the debt and is trying to restructure the debt. In such situations the debt/equity ratio becomes an important factor.

Continued on next page

Debt/Equity Considerations, Continued

Conclusion The tax consequences to the holder and the issuer of a debt instrument are quite different than to a holder and the issuer of an instrument that is characterized as equity. The tax consequences become especially relevant where the debt instrument qualifies under § 103.

The receipt of proceeds of a debt instrument by the issuer of the instrument is not a taxable event because the issuer has the liability to repay the amount. However, if the issuer receives premium on the issue date the issuer has taxable income with regard to the premium. The issuer can generally deduct the interest paid to the holder of the debt instrument.

If the instrument is determined to be equity, the issuer's interest deductions will be lost.

From the holder's perspective, the interest on a taxable debt is included in income. However, if the instrument qualifies under § 103, the interest is excludible from gross income.

The notional principal contracts described in the Section on Qualified Hedges are not considered debt of either of the counterparties. Thus, even if an issuer makes "interest payments" with respect to such contract to the other counterparty, such payments are not excludible "interest" for purposes of § 103.

Section 13

Interest and Original Issue Discount

Overview

Introduction

Interest is the amount paid by the borrower to the lender as compensation for the use of borrowed money. Interest on a debt instrument may be at a fixed rate, variable rate, inverse floating rate, or contingent rate.

The Original Issue Discount (“OID”) rules also play a part in determining the amount of interest which is paid on a bond issue.

This section provides a brief outline of the rules applicable to OID, variable rate debt instruments and contingent debt instruments.

Objectives

Identify when a bond is an OID bond, variable rate bond or contingent payment bond.

Calculate OID on a debt instrument and determine under what circumstances it may be characterized as interest.

Continued on next page

Overview, Continued

In this Section This Section contains the following topics:

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Original Issue Discount

General

To determine the amount of interest paid on a debt instrument, it may be necessary to apply the rules regarding original issue discount (OID). Under the OID rules, amounts paid as principal may be recharacterized as interest. The OID rules are included in §§ 1271-1275 and the regulations. In addition to providing guidance regarding determining the amount of interest paid, the rules also provide guidelines concerning the timing of interest accrual for tax purposes.

OID Defined

In general, Original Issue Discount means the excess of the Stated Redemption Price of the instrument at maturity over its Issue Price, as defined in § 1273(a). There is a de minimus exception in § 1273(a)(3), which states that if the OID is less than $\frac{1}{4}$ of a percent times the number of complete years to maturity, it shall be treated as zero (see also Regulations § 1.1273-1(d)).

The Stated Redemption Price at Maturity means the sum of all payments to be received on the instrument, less any qualified stated interest. Regulations § 1.1273-1(b).

The Issue Price is defined in Regulations § 1.148-1(b), and generally means the first price at which a substantial amount of the bonds is sold to the public. The Regulations consider ten percent to be a substantial amount.

Qualified Stated Interest is interest that accrues at fixed rate and that is unconditionally payable at fixed periodic intervals of 1 year or less during the entire term of the instrument as defined in Regulations § 1.1273-1(c)(1).

Continued on next page

Original Issue Discount, Continued

OID Rules

Other than for certain exceptions, OID rules affect all debt that is issued at a discount, including debt that provides for:

- Deferred payments of interest
- A variable rate of interest, or
- Contingent payments

The general rules for the treatment of Original Issue Discount are in §§ 1288(a) and 1272(a). Section 1288(a) states that OID on debt instruments shall be treated as accruing in the manner provided by section 1272(a). Section 1272(a) states that OID accruing on debt instruments is included in the gross income of the holder. The detailed description of the method of computing OID accrual is contained in Regulations § 1.1272-1(b).

Exceptions

There are several exceptions in § 1272(a). In the case of tax-exempt bonds, the rule which includes OID in the gross income of the holder does not apply pursuant to § 1272(a)(2).

Calculation of OID requires determination of the qualified stated interest. However, interest may not be unconditionally payable if the payment of the interest on a debt instrument is contingent on an external event.

Although, OID rules generally do not apply to tax-exempt obligations, if the contingent payment debt instruments do not meet specific requirements under Regulations § 1.1275-4(d), a portion of the interest on the bonds may be taxable.

Continued on next page

Original Issue Discount, Continued

Examples

Example 1. A zero coupon bond having an issue price of \$3,000,000 and maturing at \$30,000,000 is issued at a discount and thus is an OID debt instrument. The stated redemption price at maturity is \$30,000,000. Interest rate is zero so there is no qualified stated interest.

Example 2. Debtor issues a note having an issue price of \$825 bearing interest at 10% and maturing in 2 years. The interest accrues semiannually. The lender will receive \$175 in interest during the 2 years and will receive \$825 at maturity. Debtor could also issue a note to lender having an issue price of \$825 with no interest payments but the note matures at \$1,000. The net dollar amounts paid by the lender to the debtor are the same. Lender received \$175 in interest.

The above example illustrates the importance of determining the timing of interest accruals on the \$175 received from the OID note. The OID rules not only specify the amount of interest on the instrument but also establish the timing of the accrual. The timing rules determine when the lender must include the interest in income and also when the debtor can take an interest deduction.

Types of Interest Rates

Generally	Interest on a debt instrument can be based on a fixed rate, a variable rate or contingent payments.
Fixed Rate	A debt instrument bears interest at a fixed rate if the rate on the instrument, from the issue date to its stated maturity date, is fixed and determinable on the issue date.
Variable Rate	For purposes of § 148, a debt instrument that does not have a fixed yield is considered a variable yield debt instrument. However, for all other purposes, to determine whether an instrument is a variable rate instrument § 1275 applies.
Contingent Payment	Under § 1275, a variable rate debt instrument (VRDI) must meet certain requirements to qualify as a VRDI. Generally, the instrument must meet four tests provided in subsections (2), (3), (4) and (5) of Regulations § 1.1275-5(a). If the requirements of these sections are not met, the debt instrument may not qualify as a VRDI. If a debt instrument is not a fixed rate instrument or a VRDI, it is a contingent payment instrument.
Debt Instrument	<p>Neither the Code nor the regulations define contingent payment debt instrument.</p> <p>The regulations list several situations where a debt instrument is <u>not</u> considered a contingent payment debt instrument and is not subject to Regulations § 1.1275-4.</p>

Continued on next page

Types of Interest Rates, Continued

Tax Exempt Obligations

Generally, the contingent payment regulations limit the interest payment that may be excludable from gross income of the holder. Thus, the rules in Regulations § 1.1275-4(d) generally operate to restrict the yield on tax-exempt obligations to the tax-exempt Applicable Federal Rate (“AFR”) that applies to the obligation.

However, the regulations provide that two categories of tax-exempt obligations, interest-based payments and revenue-based payments, are not subject to the limitations.

Interest-Based Payments

Interest-based payments. Tax-exempt obligations that have interest-based payments are not subject to the limitations described above. A tax-exempt obligation provides for interest-based payments if it would otherwise qualify as a VRDI except that

- It provides for more than one fixed rate;
- It provides for one or more caps, floors, or similar restrictions that are fixed as of the issue date;
- The interest on the obligation is not compounded or paid at least annually; or
- It provides for interest at one or more rates equal to the product of a qualified floating rate and a fixed multiple greater than zero and less than .65, or at one or more rates equal to the product of a qualified floating rate and a fixed multiple greater than zero and less than .65, increased or decreased by a fixed rate

See Regulations § 1.1275-4(d)(2)(ii).

Continued on next page

Types of Interest Rates, Continued

Interest-Based Payments (continued)

Example 1. A note that has interest payable monthly and the interest is based on the SIFMA Index but is in no event greater than 3.5% is an interest-based contingent payment debt instrument.

Example 2. A note having a term of five years that states that the interest rate for the first year shall be based on the SIFMA Index plus 40 basis points and thereafter it will be a fixed rate to be determined on the first anniversary of the issue date is an interest-based contingent payment debt instrument.

Revenue-Based Payments

Revenue-based payments. Tax-exempt obligations that have revenue-based payments are not subject to the limitations described above. A tax-exempt obligation provides for revenue-based payments if:

- It is issued to refinance (including a series of refinancings) obligations, the proceeds of which were used to finance a project or enterprise; and
- It would otherwise qualify as a VRDI except that it provides for stated interest payments at least annually based on a single fixed percentage of the revenue, value, change in value, or other similar measure of the performance of the refinanced project or enterprise.

See Regulations § 1.1275-4(d)(2)(iii).

Continued on next page

Types of Interest Rates, Continued

**Revenue-Based
Payments**
(continued)

Example 1. Issuer issued bonds in 1989 to finance a project. In 1999, the issuer issued bonds to refinance the 1989 bonds. The interest on the 1999 bonds is determined yearly and is equal to 5% fixed interest rate plus 10% of the gross revenue generated by the project during the prior fiscal year; provided, however, the cumulative payment each year shall not exceed an amount that would produce a yield of 15%. The 1999 bonds are revenue-based contingent payment debt instruments.

Example 2. Same as Example 1 except that the interest on the 1999 bonds is determine annually and is based solely on 50% of the increase in gross revenues of the project during the prior fiscal year over the previous fiscal year, with an annual yield not to exceed 15%. The 1999 bonds are revenue-based contingent payment debt instruments.

Example 3. Same as Example 1 except that the interest on the 1999 bonds is determined annually and is based on 5% fixed rate plus 10% of the net revenues of the corporation that owns the project. The corporation owns four other enterprises that were not financed with the 1989 bonds. The 1999 bonds are not revenue-based contingent payment debt instruments.

Section 14

Tax-Exempt Markets: Financial Products

Overview

Introduction There are many different products used by issuers in the tax-exempt market. These include different types of floating rate debt, as well as certain products and structures which are used in the secondary market. This section will review a number of financial products commonly seen in the municipal market, and discuss their key structural elements.

Objectives At the end of this section, you will be able to identify and describe a number of financial products commonly used in the tax-exempt market.

In this Section This Section contains the following topics:

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Variable Rate Demand Obligations

Variable Rate Demand Obligations

Also known as Variable Rate Demand Bonds, “VRDOs” (or “VRDBs”) are the most commonly seen form of floating rate bonds in the tax-exempt market. Although they may have a maturity of 30 years or more, and are considered long term debt by issuers, VRDOs are structured so that they can be treated as short term investments by investors.

Long Term Debt with Short Term Features

The structural features of VRDOs give investors the assurance that they will be able to liquidate their investments on short notice, and that the securities will maintain a value at or very close to par. VRDOs are typically purchased by money market funds, or by large institutional or high net worth investors looking for a place to invest short term cash holdings. VRDOs are most commonly issued in denominations of \$100,000.

Interest rates on VRDOs are reset at short intervals, typically daily or weekly, and are based on prevailing rates in the short term markets. From the issuer’s perspective, they are paying short term interest rates, while securing long term financing. VRDOs are priced as short term securities, with interest rates which are often considerably lower than those on longer term fixed rate bonds, depending on the prevailing yield curve.

Liquidity and Credit Support

An essential feature of VRDOs is the ability of investors to demand the repurchase of their securities at par at regular intervals. This is the key feature which enables investors to treat them as short term investments. To provide for liquidity, VRDOs are structured with a credit or liquidity facility (also known as a backstop) which may take the form of a letter of credit or standby bond purchase agreement. While the final maturity of a VRDO issue may be as long as 30 years or more, credit or liquidity facilities are rarely issued for periods longer than a few years. These facilities must therefore be renewed periodically, and may be subject to changes in price (or substitution of provider) over the life of the bonds, introducing another element of variability into VRDO structures.

Continued on next page

Variable Rate Demand Obligations, Continued

Remarketing Agent

VRDOs are priced and remarketed on their interest reset dates by a remarketing agent, generally a municipal bond dealer. The remarketing agent will make a market in the security and remarket any VRDOs which are put back by investors. Thus, if a particular investor chooses not to keep a VRDO in their portfolio, they are able to sell it on short notice, and the remarketing agent will attempt to find another buyer for the bond. Typically, the credit or liquidity facility will not be drawn on to pay the bond, and the remarketing agent will be able to find another buyer immediately. However, the backstop provides assurance to investors that funds will be available whenever they choose to liquidate their investment, regardless of the remarketing agent's ability to place the bonds with another investor.

Hedging

Depending on the shape of the yield curve at any given moment, the short term interest rates paid on VRDOs are often considerably lower than those of long term bonds. However, the issuer must deal with the fluctuating nature of VRDO interest rates. This uncertainty may present challenges from a budgeting and planning perspective, as well as overall exposure to potential increases in short term interest rates.

For these reasons, VRDOs are sometimes structured with a corresponding hedge, such as a swap to fixed rate. This enables issuers to reduce or eliminate the interest rate exposure inherent in VRDO structures. For a detailed description of hedges, see section 5 of this lesson "Qualified Hedging Transactions."

Regulations for Variable Rate Debt Instruments

The rules concerning variable rate debt instruments are contained in Regulations § 1.1275-5. These include definitions of qualified floating rates and objective rates, and other rules regarding stated interest and principal payments.

Auction Rate Securities

Auction Rate Securities

Auction Rate Securities, or “ARS”, are another form of variable rate debt used in the municipal market. The main difference between ARS and traditional VRDOs is the absence of a liquidity facility. ARS do not have the liquidity feature found in VRDOs, and do not have the ability to demand repurchase of their securities on short notice. In an ARS structure, investors must rely solely on the willingness of other investors to purchase the securities, should they wish to sell their bonds.

Dutch Auction

In an ARS structure, the interest rate on the securities is reset at periodic intervals by means of a dutch auction. In a dutch auction, the interest rate is set through a process which determines the lowest rate which clears the market, in other words, the lowest rate at which investors will purchase all of the securities.

ARS do not have a remarketing agent. The auction process for ARS is managed by an auction agent. However, there is no assurance or guarantee that any single auction will produce a sufficient number of willing buyers for all the securities. If a particular auction fails to generate bids for all the securities, an investor may be unable to liquidate their Auction Rate Securities until there are a sufficient number of willing buyers.

Dutch Auction Mechanics

Auction dates on ARS in the Tax-exempt market are typically 7 or 35 days apart, although other auction frequencies are also possible. On each auction date, a holder of the ARS has three options. It can notify the auction agent that it wants to sell, hold or bid.

- Sell means to sell the ARS regardless of rate.
 - Hold means the investor will keep the ARS regardless of rate.
 - A bid order sets a target rate. If the new rate is at or above the target, the investor will keep the security, but if it is below, the investor wishes to sell.
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Continued on next page

Auction Rate Securities, Continued

Dutch Auction Mechanics (continued)

Naturally, prospective investors who do not currently own the ARS can also submit bid orders. The rate for the next reset period is the lowest rate which clears the auction, i.e. the lowest rate at which there are bidders for all the securities.

If there are insufficient bidders for the securities, it is considered a failed auction. The current holders are not able to sell their ARS, and must continue to hold them until willing purchasers are found. In the case of a failed auction, the interest rate is set by a formula (the “Failed Auction Rate”), which is defined in the bond documents and described in the offering document.

ARS Risks

Auction Rate Securities have certain risks and benefits. For the issuer, the main advantage is that ARS do not require liquidity, so there is no need to include bank or other liquidity provider in the structure.

One of the main risks to all parties is that of a failed auction. This can be problematic both for issuers and investors. From the issuer’s perspective, a failed auction may result in higher rates than anticipated, depending on the failed auction rate. From the investor’s perspective, a failed auction may mean that the ARS are no longer liquid, and cannot be sold as desired. If no willing buyers are available, the investor may be forced to hold their ARS until the maturity date.

Market Collapse

This is precisely what occurred during the market crisis of 2007-2008. When the bond insurance providers were dramatically downgraded during that time, many auctions failed due to lack of buyers. As a result, many ARS holders were unable to sell their securities and ended up holding them at the failed auction rate. Ultimately, many of these issues were refunded, and others were repurchased by the underwriters, many of whom had marketed them as liquid investments.

Inverse Floating Rate Bonds

Inverse Floating Rate Bonds

Inverse floating rate bonds are bonds which pay an interest rate which varies inversely based on changes in short term municipal bond rates. Sometimes these are also referred to as residual interest bonds.

Structure

Typically, an inverse floating rate bond will be part of a matched pair of bonds, one of which is a traditional floating rate bond, and the other which is an inverse floater. When taken together, the combined bonds pay a fixed rate of interest. In fact, from the issuer's perspective, the issuer is paying a fixed rate of interest on the combined bonds, and may consider the bond as fixed rate debt. Regulations § 1.148-4(b)(5) provides a special aggregation rule treating these bonds as a single field yield bond.

The holder of the floating rate securities receives a variable rate of interest based on short term municipal rates, and the holder of the inverse floater receives all the remaining interest. Thus, in periods of very low short term rates, the holder of the inverse floater will receive a relatively high rate of interest, and vice versa.

Although floating rate securities such as VRDOs typically are not subject to price fluctuation, this is not the case with inverse floating rate bonds. Since the interest rates on inverse floating rate bonds move in a direction opposite to that of the short term market, inverse floaters will be subject to corresponding fluctuations in price.

Example

City X issues bonds in the amount of \$10,000,000, with a coupon rate of 5%, initially sold at par. The issue consists of two separate bonds of \$5,000,000, each with the same maturity date. One is a floating rate bond, structured as VRDOs, the other consists of inverse floating rate bonds. If the rate on the VDROs during an interest period is 3%, the interest rate on the inverse floater will be 7%, so that the total payment on the full \$10 million remains a constant 5% (\$5mm at 3% plus \$5mm at 7% equals \$10mm at 5%).

Tender Option Bond Trusts

Tender Option Bond Trusts

A tender option bond trust is a specially created trust into which one or more fixed rate tax-exempt bonds are deposited. The trust then issues new securities, based on the underlying bonds in the trust. One security will be a traditional floating rate bond, the other will be an inverse floater.

Generally, the creator of the trust retains the inverse floating rate portion, and sells the floating rate bonds to investors, usually money market funds. This effectively leverages the investment of the creator of the trust. The holder of the inverse floating rate portion retains price exposure to the entire underlying bond, with a net cash investment which is less than the value of the underlying security.

The holder of the floating rate bond will retain credit exposure to the underlying security. This is necessary to preserve the pass-through of tax-exempt interest. If the underlying credit deteriorates below a pre-determined level, it may cause a termination of the tender option. In that case, the holder of the floating rate portion will no longer be able to put their certificates back on demand. Although the holder of the floating rate bond may be senior to the inverse floater holder, they are still exposed to the credit risk on the underlying fixed rate tax-exempt bonds.

Inflation Indexed Bonds

Inflation Indexed Bonds

Typically called Municipal CPI bonds, this is a type of bond which has an inflation indexed component. The interest rate on a Muni CPI bond is made up of two parts: a fixed rate plus a floating rate portion which is based on the year over year change in the Consumer Price Index. Thus, the overall interest rate paid on a Muni CPI bond will change every year, depending on the current annual rate of inflation.

Muni CPI Bond Characteristics

Although the interest rate on a Muni CPI bond will vary from year to year, these bonds have very different characteristics than other variable rate securities, for instance VRDOs. Muni CPI bonds are long term securities, and do not have the liquidity features of VRDOs. There is no repurchase on demand available, and the market price of the securities will fluctuate over time. At any given moment, Muni CPI bonds may be valued by the market at a discount or premium to par. Price changes may be based on inflation expectations, as well as the difference between the fixed rate component and current market levels, in addition to the usual credit and other pricing considerations.

The interest component on a Muni CPI is the only part of the security which is indexed to inflation. The principal amount does not vary, and the bonds mature at par. Additionally, some Muni CPI bonds may include a call feature similar to that of traditional fixed rate bonds. Interest is generally payable semiannually, as with traditional fixed rate bonds.

Summary

Review

This Lesson discussed the calculation of bond yield when specific circumstances are present.

For fixed rate issues, term bonds sold at a discount and callable bonds sold at a premium sometimes require special calculations.

For issues that have a combination fixed and variable rate bonds, the entire issue is treated as a variable rate issue. When a variable yield issue is converted to a fixed yield issue, two bond yields are computed - one for the variable yield issue as of the redemption date, and one for the fixed yield issue treating the conversion date as the issuance date.

In certain situations, the value of the bonds must be determined. The value of a plain par bond is its outstanding principal amount, plus accrued interest. The value of a bond other than a plain par bond is its present value.

In computing bond yield, payments made for qualified guarantees and qualified hedges are taken into account. To be included in the bond yield, a guarantee fee must meet certain tests to be considered qualified. These include generating net interest savings and shifting credit risk to the guarantor. A hedge must meet a number of defined criteria to be treated as qualified. Additionally, if a qualified hedge has certain other attributes, it can be considered “superintegrated”, which results in special treatment when computing bond yield.

Issuers are required to compute rebate according to guidelines which vary depending on the type of issue. Rebate and yield reduction payments must be paid when due, and there are penalties for non-payment. If an issuer has overpaid rebate, they are entitled to claim a refund. Debt service funds may be subject to rebate, but there are a number of exceptions which must be taken into account first.

Continued on next page

Summary, Continued

Review
(continued)

To determine compliance with yield restriction rules, the yield on investments must be computed. Investment yield is the discount rate that, when used in computing the present value as of the date the investment is first allocated to the issue of all receipts from the investment, produces an amount equal to the present value of all payments for the investment. Payments are amounts actually or constructively paid to acquire the investment, and receipts are amounts to be actually or constructively received from the investment, such as earnings and return of principal.

Certain issue proceeds are yield restricted, and may not be invested at a rate above a defined yield limit. Issuers have a number of investment options for yield restricted investments, including U.S. Treasury SLGS, tax-exempt securities, and open market securities earning less than the applicable limit. Issuers also have the option of making yield reduction payments, which can be used to reduce the yield on certain investments

When computing investment yield, the regulations specify several methods to value investments. Investments are valued using one of three methods specified in Regulations § 1.148-5(d). These methods are outstanding principal plus accrued interest, present value and fair market value. The regulations provide special rules for determining fair market value for certain types of investments.

Only qualified administrative costs of investments are taken into account when computing the yield on the investments. The definition of qualified administrative costs is different for purpose investments, program investments, and non-purpose investments.

Continued on next page

Summary, Continued

Review
(continued)

In order for interest on a municipal bond issue to qualify from exclusion from gross income, the instrument must first be properly characterized as debt. The question of whether any instrument is properly treated as debt or equity for tax purposes has long been a contentious issue. Although the regulations do not provide complete guidance on identifying debt versus equity, there are a number of characteristics which can be evaluated to make that determination.

Original Issue Discount also plays a part in determining the amount of interest which is paid on a bond issue, and may need to be evaluated.

The tax-exempt market encompasses a wide range of financial products, many of which are commonly used by issuers. These include various forms of variable rate debt, such as Variable Rate Demand Obligations, Auction Rate Securities, and Inverse Floating Rate bonds. There are also complex structured products found in the municipal market, such as Inflation indexed bonds and Tender Option Bond programs.

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