Voluntary Closing Agreement Program for Certain Forward Float Investments in Advance Refundings

Introduction

This document provides the terms of a special Voluntary Closing Agreement Program ("VCAP") that the Internal Revenue Service (the "Service") is offering to cure certain violations involving non-fair market value purchases of certain forward float investments with proceeds of tax-exempt advance refunding bonds for purposes of compliance with applicable arbitrage investment restrictions on tax-exempt bonds under Section 148 of the Internal Revenue Code (the "Code") and applicable Income Tax Regulations, based on a pricing model involving implied forward U.S. Treasury rates, as described further herein. Separately, forward float investments that meet an existing bidding safe harbor for establishing the fair market value of an investment are treated as purchased at fair market value.

Background

When interest rates decline, an issuer of tax-exempt bonds can benefit from refunding or refinancing its bonds at the lower prevailing interest rates. Typically, tax-exempt bonds have call protection such that they cannot be redeemed for a period of 10 years after issuance.

Under Code Section 149(d) and Section 1.150-1(d) of the Income Tax Regulations, there are two kinds of refundings of tax-exempt bonds: a current refunding and an advance refunding. In general, a current refunding is a refunding in which the proceeds of the refunding bonds are used to redeem or retire the refunded bonds within not more than 90 days after issuance of the refunding bonds and an advance refunding is any other refunding. Code Section 149(d) prohibits advance refundings for most private activity bonds under Code Section 141, except for qualified 501(c)(3) bonds under Code Section 145.

Tax-exempt governmental bonds that are not private activity bonds under Code Section 141 or that are qualified 501(c)(3) bonds under Code Section 145 are eligible for certain advance refundings in instances when the bonds are not redeemable within the 90-day period necessary to qualify for a current refunding. In these instances, an issuer can issue advance refunding bonds at lower interest rates and deposit the proceeds into a refunding escrow until the prior refunded bonds are redeemable. The refunding escrow will be structured to contain highly-rated investments (typically U.S. Treasury securities) that generate a cash flow sufficient to provide for the debt service requirements of the refunded bonds in both amount and timing in order to be sufficient to defease the refunded bonds.

There may be occasions when permitted investments for a refunding escrow are not available with payments that match exactly the timing of debt service requirements on the refunded bonds. For instance, the refunded bonds may have debt service requirements each January 1 and July 1 and the closest maturing investment securities available for a refunding escrow fund may have maturity dates of November 15 and May 15, a mismatch of approximately 45 days each debt service date.

An issuer could invest maturing amounts at the rates in effect at the beginning of each of those 45-day "float periods." Applicable arbitrage yield restriction rules governing advance refunding issues, however, require that an issuer have certainty as of the issue date as to the exact yield of the escrow fund over its life. Reinvesting at unknown future rates may cause the issuer difficulty in complying with the yield restriction rules.

A tailored investment, commonly known as a "forward float agreement" or "float agreement" ("Float Agreement") was developed for such situations. In these transactions, the issuer will enter into a Float Agreement with an investment provider to invest the idle cash during the float periods. Typically, the investment earnings on a Float Agreement are prepaid to an issuer in a one-time, up-front payment. An issuer benefits by being able to fully invest its escrow fund while still having the ability to compute the yield of the escrow over its entire term.

Investment Fair Market Value and Bidding Safe Harbor

In general, Section 1.148-6(c) of the Income Tax Regulations requires that purchases and sales of investments of gross proceeds of tax-exempt bonds be made at fair market value for arbitrage purposes. In general, Section 1.148-5(d)(6)(i) defines the term "fair market value" of an investment for arbitrage purposes as the price at which a willing buyer would purchase the investment from a willing seller in a bona fide, arm's length transaction.

Section 1.148-5(d)(6)(iii) provides a safe harbor for establishing the fair market value of certain investments for arbitrage purposes, including guaranteed investment contracts and investments for yield-restricted defeasance escrows, based on a bidding process. The safe harbor involves a bidding process which generally requires three bids from independent parties and which includes numerous requirements related to the bid specifications, bidding procedure, selection of the winning bid, and record keeping.

Float Agreements that meet all applicable requirements of this safe harbor are treated as purchased at fair market value.

Yield Burning

During the mid-1990s, a widespread practice in which securities brokerage firms charged inflated prices in excess of fair market value for escrow securities purchased with proceeds of tax-exempt advance refunding bonds to comply artificially with arbitrage yield restriction rules (so-called "yield burning") came to the attention of various regulatory authorities, including the Service, the Securities and Exchange Commission and the Department of Justice. This yield burning practice diverted millions of dollars of arbitrage-based investment earnings from both Federal and State and local governments and was the subject of a global settlement agreement in 2000. The underpayment of earnings on a Float Agreement creates a similar potential for yield burning.

Pricing of Float Agreements

Because Float Agreements pertain to cash-flows that will occur in the future, they are generally priced using implied forward rates. Implied forward rates may be modeled based on different benchmark market interest rates, including the U.S. Treasury market and certain other known benchmark market interest rates. The Service has analyzed Float Agreements using certain different pricing models and in various yield-curve conditions

(including relatively flat, medium, and steep yield curves). Based on its analysis, the Service found similar valuation results with certain different pricing models.

For purposes of the special VCAP for Float Agreements provided for herein, the Service will value Float Agreements with a pricing model which uses implied forward interest rates derived from the U.S. Treasury Daily Yield Curve (the "Forward Treasury Model"), with certain adjustments described under the heading below entitled "Dealer Risk and Profit." The Service determined to use the Forward Treasury Model for this purpose because this is a simple fundamental model based on the transparent U.S. Treasury market.

Based on generally accepted financial theory regarding forward rates under the Forward Treasury Model and an assumption of an assumed efficient market, in the case of an upward-sloping yield curve, the yield applicable for a float period should exceed the yield applicable to a U.S. Treasury with a term measured from the trade date of the float to the end of the float period. For reference herein, the U.S. Treasury rate for the period from the trade date of a Float Agreement until the beginning of a float period is referred to as the "beginning rate" and the U.S. Treasury rate for the whole period from the trade date of a Float Agreement until the end of a float period is referred to as the "ending rate." To take a simple example, if the beginning rate was a 1-year U.S. Treasury interest rate of 3% and the ending rate was a 2-year U.S. Treasury interest rate of 4%, then the implied forward rate for a 1-year float period beginning 1 year from now would be 5%, and would exceed the 2-year U.S. Treasury rate of 4%. Stated differently, when interest rates in successive periods are combined, the overall equivalent interest rate is the average rate during the whole period. (e.g., 3% for the first year combined with 5% for the second year result in an average of 4% for the whole two years). This results from the fact that in an efficient market, the average of the beginning rate and the float rate will equal the ending rate.

Therefore, in an upward-sloping yield curve environment, the float rate will be greater than the ending rate, simplified as follows:

If weighted avg (a , b) = c and $a < c$, then $b > c$

where:
a = beginning rate
b = float rate
c = ending rate

Forward rates can be computed using the following formula, adapted from John C. Hull's, "Options, Futures and Other Derivatives":

$$\text{Forward Rate} = \frac{(Re*Te) - (Rb*Tb)}{Te - Tb}$$

where:
Rb – interest rate applicable to beginning of float period.
Re – interest rate applicable to end of float period.
Tb – time between date float contract commences and beginning of float period.
Te – time between date float contract commences and end of float period.

An example of a float rate computation can be found using the following link:

Float Rate Computation Example

The financial theory on which the Forward Treasury Model is based is sometimes referred to as the "expectations theory" of the yield curve, which conjectures that long-term interest rates should reflect expected future short-term interest rates. More specifically, the expectations theory posits that a forward interest rate for a certain future period corresponds to the expected future interest rate for that period.

Dealer Risk and Profit

The discussion under the heading "Pricing of Float Agreements" above describes the determination of a theoretical interest rate for a Float Agreement under the Forward Treasury Model in an efficient market. Adjustments to this theoretical rate are necessary to approximate the fair market value rate of a Float Agreement. These adjustments cover reasonable costs and expenses associated with a Float Agreement, such as an investment provider's profit, legal and other administrative costs, and hedging costs.

Special Voluntary Closing Agreement Program

The purchase of a Float Agreement with a yield below fair market value could result in a violation of applicable arbitrage yield restriction requirements for which there is generally no "self-correction" vehicle available.

The Service announces a special Tax Exempt Bond Voluntary Closing Agreement Program or VCAP available to issuers who wish to cure such violations. This special VCAP applies only to Float Agreements involving refunding escrows in advance refundings. Under this special VCAP, the Service will treat a Float Agreement as being purchased at fair market value for arbitrage purposes if it has an upfront payment equal to at least 80 percent of the upfront payment determined using the float rate computed using the Forward Treasury Model (the "VCAP Float Earnings Amount").

Issuers shall recompute the yield on a refunding escrow using an assumed upfront payment amount on the applicable Float Agreement of not less than the VCAP Float Earnings Amount. The Service will then accept a closing agreement payment equal to the amount necessary to reduce the recomputed investment yield on the refunding escrow to the permissible yield sufficient to satisfy the applicable yield restriction requirement under Code Section 148 and the applicable Income Tax Regulations thereunder. The following links provide an example of the computations described herein:

Computation of VCAP Float Earnings Amount

Computation of VCAP Settlement Amount

An issuer that believes that the computation methodologies described in this special VCAP are not reflective of the facts and circumstances surrounding a particular tax-exempt bond issue may also make submission under this special VCAP. The Service will analyze any such submissions and determine if a deviation from the general settlement terms is warranted, based on all the facts and circumstances.

Issuers may submit a closing agreement request under this special VCAP in accordance with the requirements in Notice 2001-60. The resolution terms described in this special VCAP are only available until March 1, 2008. Failure to correct a violation could result in the related bonds being deemed to be taxable arbitrage bonds.

Note on Limitation of Methodology

The methodology described herein does not purport to produce a valuation for a complex Float Agreement with extreme precision. This methodology, however, is based on a fundamental widely-accepted financial theory. The use of this methodology is designed to allow the Service and practitioners to determine if a Float Agreement has been significantly overpriced and to provide the basis for computation of reasonable settlement amounts. The Service cautions that the computation methodology described in this special VCAP should not be interpreted to be a general "safe harbor" for Float Agreements or any other investment or financial product. Finally, it is a general policy of the Service to resolve violations brought forward voluntarily on more favorable terms than those discovered as part of an examination.

Computation of Forward Float Rate

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Description: Computation of rate for float contract entered into 3/1/00 with a 90-day float period from 10/1/03 to 1/1/04.

Yield Curve Data:

	3/1/00 Treasury Rates (A)
6-mo	6.02
1-yr	6.17
2-yr	6.52
3-yr	6.54
5-yr	6.59
7-yr	6.63

Computation:

Months	Date	3/1/00 Rate	360 Days	Years	
36	3/1/03	6.5400%	1080	3.0000	
43	10/1/03	6.5546% *	1290	3.5833	***Tb***
46	1/1/04	6.5608% *	1380	3.8333	***Te***
60	3/1/05	6.5900%	1800	5.0000	

Number of days to beginning of float period	1290
Number of days to end of float period	1380
Float period	90

Applicable interest rate at beginning of float period	6.5546% ***Rb***
Applicable interest rate at end of float period	6.5608% ***Re***

Float rate: **6.6504%** $= \dfrac{(Re \times Te) - (Rb \times Tb)}{Te - Tb}$

$= \dfrac{(6.5608 \times 3.8333) - (6.5546 \times 3.5833)}{3.8333 - 3.5833}$

Proof:

Borrow	$ 1,000,000	for 1380 days at	6.5608%	pay	$ 280,770	of interest	($1m x 6.5608% x 1380 days)
Loan	$ 1,000,000	for 1290 days at	6.5546%	receive	$ 259,993	of interest	($1m x 6.5546% x 1290 days)
Loan	$ 1,259,993	for 90 days at	6.6504%	receive	20,777	of interest	($1,259,993 x 6.6504 for 90 days)
					$ 280,770		

6.5608%
1380 days

1290 days	90 days
6.5546%	6.6504%

$= 6.5608\%$

Conventions:
semi-annual compounding
360 daycount

* - interpolated (linear)

(A) Source: U.S. Treasury Daily Yield Curve

Computation of VCAP Float Earnings Amount

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Description: Computation of VCAP Float Earnings Amount for float agreement with the following cash flow ($20m for 90 days, 3 years and 7 months forward).

Forward Rate: 6.6504%

Date	Cash Flow		Present Value on 3/1/00
3/1/00	256,648	(A)	256,648
10/1/03	(20,000,000)		(15,820,429)
1/1/04	20,000,000		15,563,781
	256,648		0.00

Earnings at Forward Rate	256,648
Adjustment Factor	80%
VCAP Float Earnings Amount	205,318

(A) - The amount that, when combined with the remaining cash flows of the float agreement, generates a yield equal to the "Forward Rate" shown above.

Note: This example is for a float agreement with a single cash flow. Float agreements containing multiple cash flows will require separate pricing of each cash flow. Alternatively, a simplifying assumption may be made for float agreements priced at a time with a generally upward sloping yield curve to use the float rate computed for the final cash flow in the float agreement for all cash flows. As the final cash flow is frequently more significant in terms of dollar amount than all the other cash flows in a float agreement, this simplified approach generally will not significantly distort the valuation of the float agreement.

Computation of Settlement Amount Under Voluntary Closing Agreement Program for Forward Float Agreements

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Description: Computation of Settlement Amount under Forward Float VCAP for advance refunding bonds issued on 3/1/00 with a yield of 4% and an escrow fund structured as follows:

Original Escrow Yield: 3.9999%

Date	Open Markets Cash Flow	Float Agreement Cash Flow	Total Cash Flow	Present Value on 3/1/00
3/1/00	(50,000,000)	145,000	(49,855,000)	(49,855,000.00)
7/1/00	5,015,000		5,015,000	4,949,230.38
1/1/01	5,015,000		5,015,000	4,852,189.68
7/1/01	5,015,000		5,015,000	4,757,051.68
1/1/02	5,015,000		5,015,000	4,663,779.07
7/1/02	5,015,000		5,015,000	4,572,335.27
1/1/03	5,015,000		5,015,000	4,482,684.44
7/1/03	5,015,000		5,015,000	4,394,791.41
10/1/03	20,000,000	(20,000,000)	0	0.00
1/1/04		20,000,000	20,000,000	17,182,938.07
	5,105,000	145,000	5,250,000	0.00

Escrow Yield using VCAP Float Earnings: 4.0493%

Date	Open Markets Cash Flow	Float Agreement Cash Flow	Total Cash Flow	Present Value on 3/1/00
3/1/00	(50,000,000)	205,318	(49,794,682)	(49,794,681.60)
7/1/00	5,015,000		5,015,000	4,948,430.39
1/1/01	5,015,000		5,015,000	4,850,229.15
7/1/01	5,015,000		5,015,000	4,753,976.71
1/1/02	5,015,000		5,015,000	4,659,634.39
7/1/02	5,015,000		5,015,000	4,567,164.29
1/1/03	5,015,000		5,015,000	4,476,529.25
7/1/03	5,015,000		5,015,000	4,387,692.85
10/1/03	20,000,000	(20,000,000)	0	0.00
1/1/04		20,000,000	20,000,000	17,151,024.57
	5,105,000	205,318	5,310,318	(0.00)

Permissible Yield: 4.0010%

Date	Cash Flow	Future Value as of 7/1/07
3/1/00	(49,794,682)	(66,580,957.43)
7/1/00	5,015,000	6,617,640.13
1/1/01	5,015,000	6,487,850.68
7/1/01	5,015,000	6,360,606.74
1/1/02	5,015,000	6,235,858.39
7/1/02	5,015,000	6,113,556.69
1/1/03	5,015,000	5,993,653.65
7/1/03	5,015,000	5,876,102.23
10/1/03	0	0.00
1/1/04	20,000,000	22,974,501.68
Settlement Amount payable no later than 9/1/07		78,812.77

Yield Proof After VCAP Payment: 4.0010%

Date	Open Markets Cash Flow	Float Agreement Cash Flow	Total Cash Flow	Present Value on 3/1/00
3/1/00	(50,000,000)	205,318	(49,794,682)	(49,794,681.60)
7/1/00	5,015,000		5,015,000	4,949,212.15
1/1/01	5,015,000		5,015,000	4,852,144.99
7/1/01	5,015,000		5,015,000	4,756,981.57
1/1/02	5,015,000		5,015,000	4,663,684.56
7/1/02	5,015,000		5,015,000	4,572,217.35
1/1/03	5,015,000		5,015,000	4,482,544.06
7/1/03	5,015,000		5,015,000	4,394,629.50
10/1/03	20,000,000	(20,000,000)	0	0.00
1/1/04		20,000,000	20,000,000	17,182,210.05
7/1/07		(78,812.77)	(78,812.77)	(58,942.63)
	5,105,000	126,506	5,231,506	0.00