



Tax ~ Exempt  
**ZERO COUPON  
MUNICIPAL BONDS**

*Capital accumulation for  
long-term savings such as a retirement  
or an education fund.*



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## INTRODUCTION

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To understand fully how zero coupon municipal bonds work, it is important first to become acquainted with the principal characteristics of both municipal bonds and the zero coupon structure.

### WHAT ARE ZERO COUPON BONDS?

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Zero coupon bonds were introduced to the fixed-income market in 1982. They were — and are — a unique concept in the marketplace.

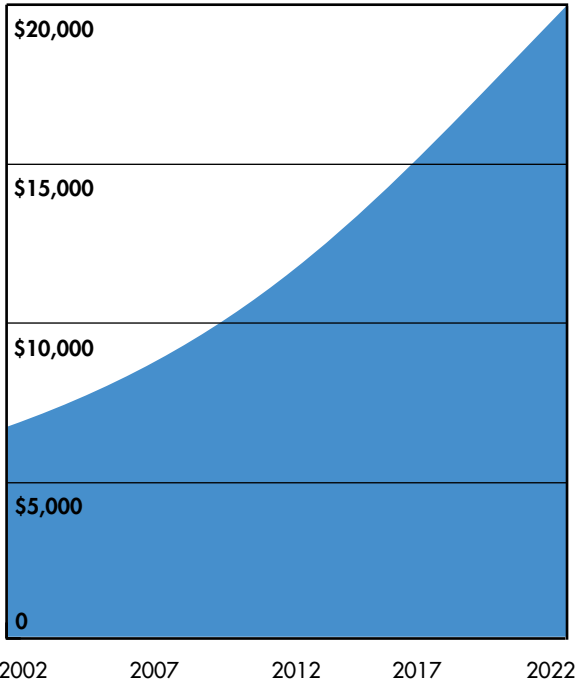
While most municipal bonds provide semiannual interest payments, zero coupon bonds, as their name suggests, have no “coupon,” or periodic interest payments. Instead, the investor receives one payment — at maturity — that is equal to the principal invested plus the interest earned, compounded semiannually, at a stated yield.

Zero coupon bonds are sold at a substantial discount from the face amount. When a zero coupon bond matures, the investor receives the full face amount of the bond. For example, a bond with a face amount of \$20,000, maturing in 20 years, may be purchased for roughly \$6,757. At the end of the 20 years, the investor will receive \$20,000. The difference between \$20,000 and \$6,757 represents the interest. This example is based on an interest rate of 5.5% which compounds automatically until the bond matures (see example on the next page).

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**ESTIMATED FUTURE VALUE OF A  
20-YEAR 5.5% ZERO COUPON MUNICIPAL**

**\$6,757.04 PURCHASE**



Example: A \$6,757.04 purchase of municipal zeros on January 1, 2002, due January 1, 2022, with a 5.5% original-issue yield and semi-annual compounding will be redeemed in 20 years for \$20,000. The purchase will accrete as shown below on January 1 of each of the following years:

2007	\$ 8,862.88
2012	\$ 11,625.01
2017	\$ 15,247.96
2022	\$ 20,000.00



**Types of Zero Coupon Bonds**

The three largest categories of zero coupon securities available are zero coupon Treasury bonds, zero coupon corporate bonds and zero coupon municipal bonds. They are issued by the U.S. Treasury, corporations, and state and local government jurisdictions, respectively. Zero coupon Treasury bonds are generally considered the safest zero coupon bonds, backed by the full faith and credit of the U.S. government. Zero coupon corporate and municipal bonds offer a potentially higher rate of return commensurate with additional credit risk, which will vary based on the issuing entity. Only zero coupon municipal securities earn interest that compounds free from federal income tax and, in many cases, free of state and local tax as well.

**Size of the Municipal Zero Coupon Market**

The municipal zero coupon market is substantially larger today than it was in 1982, when there were 53 new offerings totaling \$0.5 billion in issuance. In 2001, there were 353 new issues totaling \$2.7 billion. More than \$33.7 billion of zero coupon municipal bonds have been issued over the past ten years.

**UNDERSTANDING THE  
MUNICIPAL MARKET**

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Municipal securities are the debt obligations of states, their political subdivisions and certain agencies and authorities. The municipal securities market is one of our nation's most remarkable institutions, providing a mechanism whereby more than 50,000 state and local government units can issue



securities to raise money for public purposes such as water and sewer systems, schools, highways and public buildings.

Under present federal income tax law, the interest income from municipal securities is exempt from federal income taxes.\* In most states, interest income received from securities issued by governmental units within the investor's own state is also exempt from state and local income taxes (see table on page 16). Interest income from securities issued by U.S. territories and possessions is exempt from federal, state and local income taxes in all 50 states as well.

In addition to offering tax advantages, municipal securities have had an extraordinarily good record of paying interest and principal on time. In the past 50 years, fewer than one percent of the hundreds of thousands of municipal bonds issued have gone into default.

Individual ownership of municipal bonds (purchased directly or through mutual funds, unit investment trusts and/or bank personal trusts) has grown from approximately \$130 billion in 1980 to \$1,200 billion at the end of 2001.

For more detailed information on municipal securities, you may want to ask your account representative for a copy of *An Investor's Guide to Municipal Bonds*, available from The Bond Market Association.

\* If you are subject to the alternative minimum tax (AMT), you must include interest income from certain municipal securities in calculating the tax.

## CHARACTERISTICS OF ZERO COUPON MUNICIPAL BONDS

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Zero coupon municipal bonds combine the benefits of the zero coupon instrument with those of tax-exempt municipal securities and offer the following advantages:

### **Tax Advantages**

Because zero coupon municipal bonds offer the benefit of compound interest free from federal income taxes, they provide returns that are often much higher on a net basis than comparable taxable securities. To see what a difference tax-exempt interest can make, turn to the "Tax-Exempt/Taxable Yield Equivalents" table on pages 14 and 15.

Further, tax-exempt zero coupon municipal bonds earn interest that, in many cases, is also free from state and local taxes. (Certain out-of-state municipal bonds may be taxable at the state level. Check with your tax attorney or advisor.)

In contrast, taxable zero coupon bonds are taxed each year on the amount of interest that has accrued for that year even though the accrued interest is not actually paid to investors in that year.

If an investor buys a zero coupon bond at other than the original offering or if the investor sells the bond before it matures, then, like any other fixed-income investment, there is a possibility of capital gain or loss.

### **Low Minimum Investment**

Zero coupon municipal bonds are typically sold in denominations of \$5,000 face amounts. But because they are sold at a substantial discount from face amount, you can purchase more zero coupon bonds for your money than other types of bonds. The greater the number of years a zero coupon bond has until maturity, the less you have to pay for it. Zeros allow investors to put aside a modest amount of money today and know exactly how much money they will receive on a specified future date.

### **Protection from Reinvestment Risk**

Zero coupon municipal bonds provide investors with the opportunity to lock in a particular rate of return, without having to worry about reinvestment risk or interest rates in the future. Investors in securities that pay interest semiannually may not always achieve a total realized compounded yield which is equal to the quoted yield to maturity they expected when they purchased their holdings. Depending on future prevailing interest rates, their interest payments may be reinvested in lower- or higher-yielding vehicles.

### **A Wide Choice of Bonds**

An investor in zero coupon municipal bonds has a wide choice of investment vehicles. There are zero coupon municipal bonds available with maturities ranging from one to 40 years, with the majority of these bonds having maturities between eight and 20 years. There are also different types and grades of bonds from which to choose. The type you select will depend upon your reward objectives, risk tolerance and investment conditions.



### **Quality**

The majority of zero coupon municipal bonds are rated A or better by the three major rating services: Moody's Investors Service, Standard & Poor's and Fitch Ratings (see "Assessing Risk" on page 8). Many zero coupon municipal bonds carry insurance and are rated triple-A. In short, safety-conscious investors will be able to enjoy a high degree of credit quality, depending on the particular issues they select.

### **Liquidity**

Should you have to sell your zero coupon bonds before they mature, you may do so in a generally active secondary market at prevailing market prices (see "Market Risk" on page 9).

## **VARIATIONS OF ZERO COUPON MUNICIPAL BONDS**

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There have been several innovations in the municipal zero coupon bond market in recent years.

### **Convertible Zero Coupon Municipal Bonds**

These bonds start as zero coupon bonds and then, generally after eight to 15 years, convert to interest-paying bonds. They are ideally suited for individuals planning for retirement. During their working years, individuals can accumulate capital — tax free — so it is ready for them when they retire. Then, upon retirement, they can receive the income stream they need for living expenses.

### **Stripped Municipals**

Municipal bonds which pay interest semiannually can be separated (i.e., stripped) into the corpus and



the coupons. The cash flow of the coupons is repackaged into stripped municipals with a greater variety of maturities — from six months to 30 years. Like zeros, stripped municipals are issued at a deep discount from face value and are available in a wide range of credit quality.

## ASSESSING RISK

### Credit Risk

Assessing credit risk is particularly important for zero coupon bonds since all your return occurs at maturity. For municipal securities, credit risk is determined by the financial and operating stability of the state or local government entity issuing the security.

You should assess the creditworthiness of a zero coupon municipal bond the same way you would any municipal security.

Virtually all new issues of municipal securities are originally offered by means of official statements or offering circulars that describe in detail the financial condition of the issuer or, in the case of bonds such as lease-rental revenue bonds, the financial condition of the user or lessee. From these documents, investors can determine the risks involved in the investment. In assessing the relative quality of zero coupon municipal bonds, many investors place a great deal of reliance on the ratings provided by one or more of the three major rating agencies.

They have established the following classifications:

### CREDIT RATINGS

CREDIT RISK	MOODY'S	STANDARD & POOR'S	FITCH RATINGS
PRIME	Aaa	AAA	AAA
EXCELLENT	Aa	AA	AA
UPPER MEDIUM	A	A	A
LOWER MEDIUM	Baa	BBB	BBB
SPECULATIVE	Ba	BB	BB
VERY SPECULATIVE	B, Caa	B, CCC, CC	B, CCC, CC, C
DEFAULT	Ca, C	D	DDD, DD, D

The rating agencies grade bonds according to their investment qualities but do not intend the rating to be the sole basis for an investment decision. The ratings cannot, for example, forecast market trends. Generally, bonds that are rated at least BBB or Baa by Standard & Poor's and Fitch Ratings or Moody's, respectively, are considered to be "Investment Grade," or suitable for preservation of invested capital. Bonds with lower ratings, however, may also suit certain investment purposes.

### Market Risk

As with all fixed-income securities, the yields or interest rates on zero coupon municipal bonds move up and down, usually in step with general market rates. Although the interest on your particular bond is fixed by the price you paid, newer issues may be offered at higher or lower rates of return depending on prevailing interest rates.

Zero coupon municipal bonds purchased when interest rates were higher may be sold in the secondary market when interest rates are lower to gen-

erate capital gains. However, interest rates move up as well as down, and during periods of rising interest rates, investors selling their securities will incur capital losses.

Zero coupon bonds are more sensitive to interest rate swings than bonds which pay interest semiannually. In fact, depending on the maturity, price fluctuations of a zero coupon bond can be up to three times greater than those of an interest-paying bond. The longer the maturity, the greater the volatility.

The key reason zeros are so volatile is that the interest payments are accumulated and compounded automatically at the bond's stated yield. A bond which pays interest semiannually slowly loses its price volatility as it draws closer to maturity. Its true value to investors — interest — slowly dwindles as the number of interest payments left declines.

### **Call Provisions**

Many municipal bond issues allow the issuer to call — or retire — all or a portion of the bonds at a premium or at par before maturity. When investors purchase bonds, dealers will quote the yield to call if it is less than the yield to maturity.

Zero coupon municipal bonds containing call provisions typically provide that the bonds may be called at the option of the issuer on a specific date not at par but at a price or premium based on the compound accreted value of the security which was established at the time of issuance — known as the original accretion rate.

Many state and local housing finance agency bonds and other bonds which are subject to special redemption provisions, as well as bonds which contain sinking funds, warrant careful attention since they may be called at any time.

Investors purchasing bonds at a premium in the new-issue or secondary market should use care when paying prices in excess of an issue's original accretion rate because a call may result in a lower-than-expected yield or even a loss.

## **HOW TO USE ZERO COUPON MUNICIPAL BONDS IN YOUR FINANCIAL PLANNING**

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Zero coupon municipal bonds are attractive to investors seeking tax advantages and long-term capital accumulation for retirement, education funding or other long-range savings goals. Individuals can time the maturity of their investment to match their future needs. Here are some of the reasons to invest in a zero coupon municipal bond:

- **Retirement planning** — Zero coupon municipal bonds can be used to supplement a retirement savings program. They are not, however, suitable for Individual Retirement Accounts (IRAs) or qualified pension plans because these plans already have tax-advantaged status.
- **Education funding** — A municipal zero portfolio can be structured to mature during a child's or grandchild's college years.

■ **Gifting** — Assets given today under the annual estate and gift-tax exclusion of \$11,000 per person can continue to grow with the tax benefits of zero coupon municipal bonds.

■ **“Kiddie tax”** — Zero coupon municipal bonds are more attractive than ever before for gifting to minor children under age 14. Since passage of the Tax Reform Act of 1986, Uniform Gift to Minors Accounts generating more than \$1,500 in annual income for these children are taxed at the parents’ or guardians’ rates.

■ **Supporting an elderly parent** — In today’s aging society, more people are spending large amounts of money providing care for their aged parents. Zero coupon municipal bonds purchased now can help meet those future needs.

## ARE ZERO COUPON MUNICIPAL BONDS FOR YOU?

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Now that you are acquainted with some of the principal characteristics of zero coupon municipal bonds, you should review your investment portfolio to determine whether it provides the degree of safety and long-term growth potential offered by municipal zeros.

The municipal securities or zero coupon department of your securities dealer or commercial bank can answer your questions about specific zero coupon municipal issues and help you define your investment objectives. These professionals can provide you with information about current offerings in both the new-issue and secondary markets and can assist you in selecting the bonds most suited to your needs.

## TAX - EXEMPT / TAXABLE YIELD EQUIVALENTS

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The table that begins on the following page will help you determine the amount of income you require from a taxable investment to equal the yield on a tax-exempt bond. The table is for illustrative purposes only and is not intended to be representative of any specific security. To use the table most effectively, follow the directions in italics at the left side of the chart. A version of this yield calculator is also available at [www.investinginbonds.com](http://www.investinginbonds.com).

# TAX-EXEMPT/TAXABLE YIELD EQUIVALENTS

## 2003 TAX YEAR

### HOW TO USE THIS CHART

1. Find the appropriate return (single or joint).

2. Determine your tax bracket by locating the taxable income category that you fall into. Taxable income is income after appropriate exemptions and deductions are taken. (The table does not account for special provisions affecting federal tax rates, such as the alternative minimum tax.)

3. The numbers in the column under your tax bracket give you the approximate taxable yield equivalent for each of the tax-exempt yields in the near left column.

*Example: If you are single and have a taxable income of \$70,000 (\$115,000 if married), you would fall into the 30% tax bracket.*

*According to the table, you would need to earn 8.57% on a taxable security to match a 6.0% yield from a tax-exempt security.*

	TAXABLE INCOME*							
SINGLE RETURN	\$0-\$6000	\$6001-\$28,400	\$28,401-\$68,800	\$68,801-\$143,500	\$143,501-\$311,950	\$311,951 & OVER		SAMPLE EFFECTIVE MARGINAL RATE FOR CERTAIN HIGH-INCOME TAXPAYERS
JOINT RETURN	\$0-\$12,000	\$12,001-\$47,450	\$47,451-\$114,650	\$114,651-\$174,750	\$174,751-\$311,950	\$311,951 & OVER		
TAX BRACKET	10%	15%	27%	30%	35%	38.6%		39.6%
TAX-EXEMPT YIELDS (%)	TAXABLE YIELD EQUIVALENTS (%)							
1.0%	1.11%	1.18%	1.37%	1.43%	1.54%	1.63%		1.66%
1.5	1.67	1.76	2.05	2.14	2.31	2.44		2.48
2.0	2.22	2.35	2.74	2.86	3.08	3.26		3.31
2.5	2.78	2.94	3.42	3.57	3.85	4.07		4.14
3.0	3.33	3.53	4.11	4.29	4.62	4.89		4.97
3.5	3.89	4.12	4.79	5.00	5.38	5.70		5.79
4.0	4.44	4.71	5.48	5.71	6.15	6.51		6.62
4.5	5.00	5.29	6.16	6.43	6.92	7.33		7.45
5.0	5.56	5.88	6.85	7.14	7.69	8.14		8.28
5.5	6.11	6.47	7.53	7.86	8.46	8.96		9.11
6.0	6.67	7.06	8.22	8.57	9.23	9.77		9.93
6.5	7.22	7.65	8.90	9.29	10.00	10.59		10.76
7.0	7.78	8.24	9.59	10.00	10.77	11.40		11.59
7.5	8.33	8.82	10.27	10.71	11.54	12.21		12.42

\* The income brackets to which the tax rates apply are adjusted annually for inflation. Those listed above are for 2003.

\*\*The Internal Revenue Code phases out the personal exemption deduction for taxpayers with adjusted gross income in excess of \$209,250 (married, filing jointly) and \$139,500 (single taxpayers). In addition, certain itemized deductions are reduced for taxpayers

with adjusted gross income in excess of \$139,500.

In general, the limit on itemized deductions will increase the effective marginal tax rate by 1%, and the personal exemption phaseout will increase the effective marginal tax rate by 0.8% for each exemption claimed.

## STATE TAXATION OF MUNICIPAL BONDS FOR INDIVIDUALS

STATE	STATE'S OWN BONDS	OTHER STATES' BONDS
Alabama		X
Alaska (no tax)		
Arizona		X
Arkansas		X
California Income		X
Colorado		X
Connecticut		X
Delaware		X
District of Columbia		
Florida		X(1)
Georgia		X
Hawaii		X
Idaho		X
Illinois	X(2)	X(2)
Indiana		
Iowa	X(2)	X
Kansas	X(2)	X
Kentucky		X
Louisiana		X
Maine		X
Maryland		X
Massachusetts		X
Michigan		X
Minnesota		X
Mississippi		X
Missouri		X
Montana		X
Nebraska		X
Nevada (no tax)		
New Hampshire		X
New Jersey		X
New Mexico		X
New York		X
North Carolina		X
North Dakota		X(3)
Ohio		X
Oklahoma	X(4)	X(4)
Oregon		X
Pennsylvania		X
Rhode Island		X
South Carolina		X
South Dakota (no tax)		
Tennessee		X
Texas (no tax)		
Utah		X
Vermont		X
Virginia		X
Washington (no tax)		
West Virginia		X
Wisconsin	X(2)	X(2)
Wyoming (no tax)		

Bonds are designated "X" if taxable. All others are exempt or excluded from tax, or no income taxes are levied by those states. In certain cases, these designations pertain only to general obligation bonds, or to bonds in general. For example, a state may not generally exempt bonds, but some bonds may be specifically exempted by the laws authorizing their issuance.

- (1) Subject to intangible property tax.
- (2) Interest from some obligations is exempt from tax.
- (3) Taxable only if long form is used.
- (4) Some bonds may be exempt by state law.

## STATE TAXATION OF MUNICIPAL BONDS FOR CORPORATIONS

STATE	STATE'S OWN BONDS	OTHER STATES' BONDS
Alabama		X
Alaska (no tax)		
Arizona		X
Arkansas		X
California Franchise	X	X
California Income		X
Colorado		X
Connecticut	X	X(5)
Delaware		X
District of Columbia		X
Florida	X	X(1)
Georgia		X
Hawaii		X
Idaho		X
Illinois	X(6)	X(6)
Indiana		X(7)
Iowa	X(6)	X
Kansas		X
Kentucky		X
Louisiana		X
Maine		X
Maryland		X
Massachusetts	X	X
Michigan		X
Minnesota	X	X
Mississippi		X
Missouri		X
Montana	X(6)	X
Nebraska		X
Nevada (no tax)		
New Hampshire		
New Jersey	X	X
New Mexico		X
New York (8)	X	X
North Carolina		X
North Dakota		X
Ohio		
Oklahoma	X(6)	X
Oregon	X	X
Pennsylvania		
Rhode Island		X
South Carolina		X
South Dakota	X	X
Tennessee	X	X
Texas		
Utah	X	X
Vermont		X
Virginia		X
Washington (no tax)		
West Virginia	X(5)	X
Wisconsin	X(6)	X
Wyoming (no tax)		

- (5) Pro-rata adjustment is allowed.
  - (6) Interest on some obligations is exempt by law.
  - (7) Taxable only for gross income tax purposes.
  - (8) Interest on U.S. obligations and obligations of all states would not be taxable if the investment allocation percentage is zero. Otherwise, the interest is taxable at the investment allocation percentage.
- Source: Reproduced with permission from *State Tax Guide*, published and copyrighted by Commerce Clearing House, Inc., 4025 W. Peterson Ave., Chicago, Illinois 60646. Reflects law through 12/31/01, except (1).

## GLOSSARY

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**Accreted value:**

The current value of your zero coupon municipal bond, taking into account interest that has been accumulating and automatically reinvested in the bond.

**Bond:**

An interest-bearing promise to pay a specified sum of money — the principal amount — due on a specific date.

**Callable bonds:**

Bonds which are redeemable by the issuer prior to the specified maturity date at a specified price at or above par (or at or above their accreted value, for zero coupon bonds).

**Compound accreted value:**

The value of a zero coupon bond at any given time, based on the principal, with interest compounded at a stated rate of return over time.

**Default:**

Failure to pay principal or interest promptly when due.

**Discount:**

The amount by which the purchase price of a security is less than the principal amount or par value. In the case of a zero coupon bond, a discount (or premium) is measured from the compound accreted value based on the original issuance.

**Double and triple tax-exemption:**

Securities that are exempt from state and local as well as federal income taxes are said to have double or triple tax-exemption.

**Interest:**

Compensation paid or to be paid for the use of money. Interest is generally expressed as an annual percentage rate.

**Issuer:**

A state, political subdivision, agency or authority that borrows money through the sale of bonds or notes.

**Marketability:**

A measure of the ease with which a security can be sold in the secondary market.

**Maturity:**

The date when the face amount of a security becomes due and payable.

**Original issue discount bond:**

A bond issued at a dollar price less than par which qualifies for special treatment under federal tax law. Under federal tax law for tax-exempt bonds, the difference between the issue price and par value is treated as tax-exempt interest rather than capital gain.

**Par value:**

The principal amount of a bond or note due at maturity. Also called face amount.

**Principal:**

The face amount of a bond, exclusive of accrued interest and payable at maturity.

**Redemption premium:**

The amount by which the call price of a security exceeds its principal amount. In the case of zero coupon bonds, the amount by which the call price exceeds the accreted value.

**Secondary market:**

Market for issues previously offered or sold. There are more than 2,500 banks and brokerage firms

across the country that are registered to sell municipal bonds. An estimated \$10 billion in municipal bonds are traded daily in the secondary market.

**Zero coupon bond:**

A bond where no periodic interest payments are made. The investor receives one payment — at maturity. The maturity value an investor receives is equal to the principal invested plus interest earned, compounded semiannually, at the original interest rate to maturity.



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