

Chapter 13

Investing in the Bond Market

There are only three ways to invest your money. You can buy real estate or other hard assets and hope that the price moves higher. You can buy a business or a portion of one and participate in the gains of the enterprise. Or, you can let someone borrow your money and collect interest. All other investments are derivatives of these three basic types. This chapter is all about the last choice, letting people borrow your money. Specifically, investing in the bond market.

Most people own bonds at some time or another during their life. If you buy a certificate of deposit at a bank, you own a bond. Investing in high quality bonds can help stabilize an otherwise risky portfolio.

People have two options when investing in bonds. They can buy individual bonds or purchase a bond mutual fund. In a few cases, buying bonds directly can lead to higher returns than investing in mutual funds. On the other hand, it is much simpler to buy a low cost bond mutual fund, especially if the type of bond you are buying is too complex or illiquid to buy directly. When a fund is the best alternative, look for one with the lowest fee and broadest diversification. There are several great bond funds offered through the Vanguard Group.

Bonds and Bond Mutual Funds

The US bond market is the largest in the world. Every day billions of dollars in bonds cross hundreds of trading desks all over the world. Corporations issue bonds to finance various projects or refund maturing issues. States and cities issue tax-free municipal bonds to help build the roads, hospitals, and schools. If you take a mortgage out on your home, your loan will likely become part of a mortgage pool traded in the bond market. All total, the US bond market is worth over twenty-five trillion dollars, of which five trillion dollars is in US Treasury bonds.

I highly recommend using Vanguard bond funds because the fees are low and the assortment of different bond funds is high. However, if you decide to buy individual bonds, they must be purchased through a brokerage firm. That means going to a broker, opening an account, and establishing a relationship. I recommend a large firm because they typically have a large inventory of bonds on hand. In addition, large firms underwrite new bond issues, which is a big advantage to you. The yields on new issue bonds are competitive, and all buyers get the same interest rate regardless of the amount purchased.

So, if you buy five thousand dollars worth of a new issue bond you will get the same rate and pay the same price per bond as a billion dollar mutual fund. Smith Barney, Paine Weber, Merrill Lynch, and Morgan Stanley Dean Witter are all good places to establish a bond account because they are all major underwriters of new bonds.

Some types of bonds are complex and should only be purchased through a mutual fund. GNMA mortgage bonds, foreign bonds, and low quality corporate “junk” bonds are a few examples of investments that should be purchased in a fund. Investing in these markets is best accomplished by someone with experience, and as part of a large, diversified portfolio. That is what a mutual fund is.

While brokerage companies are a good place to shop for individual bonds, they are not a good place to buy bond mutual funds. The commission cost and internal expense of broker sold products is much too high. On the other hand, there are mutual fund companies that cater to bond investors looking for low fees and expenses. The Vanguard Group is a great place to start your research.

Building a Simple Bond Portfolio

Building and managing a bond portfolio is a simple undertaking. Most large brokerage firms have an ample supply of high quality issues such as treasury bonds, municipal bonds, and investment grade corporate debt. With investment grade bonds you don't have to worry about default risk, and the resale market for investment grade bonds is fairly liquid. In addition, you have some control over the commission you pay the broker.

There are several good books on basic bond investing available at the local library. If you decide to build a bond portfolio, it would be a good idea to read one of these books and become familiar with the terminology of bonds such as coupon, yields, par value, and other terms.

The simplest type of portfolio to manage is called a *bond ladder*. A ladder is built by purchasing bonds that have equally staggered maturities from one to five years (or greater). An investor then holds the bonds until maturity while collecting interest along the way. When a bond matures, you buy another five-year bond to continue the ladder.

To initially establish a ladder, take the size of your account and divide it by the number of years in the ladder. For example, using a five-year ladder and a \$100,000 investment, you will buy a \$20,000 bond maturing each year for the next five years. The result is the sample portfolio below:

**Sample 5-Year Treasury Note Ladder
For a \$100,000 Account
2001-2005**

Quantity	Bond	Maturity	Coupon	Price Paid	Yield to Maturity
20	Treasury Note	May 2001	6.25%	102.14	5.00%
20	Treasury Note	Mar 2002	6.63%	104.02	5.12%
20	Treasury Note	Aug 2003	4.25%	96.10	5.14%
20	Treasury Note	Feb 2004	5.38%	97.17	5.24%
20	Treasury Note	Aug 2005	5.25%	99.75	5.30%

Average Yield 5.20%

In a bond ladder, you are looking for a yield to maturity (YTM) or total return. For all practical purposes, the *coupon* on the bond is not a consideration. It does not matter if the bond pays 4% or 6% interest, the *price* of the bond will adjust according to current interest rates.

Once the ladder is established, you simply hold the bonds and collect interest. When a bond matures, you reinvest the \$20,000 principal and \$5,000 accumulated interest into another five-year bond. The result is as follows:

**After the MAY 2001 Bond Matures
2002-2006**

Quantity	Bond	Maturity	Coupon	Price Paid	Yield to Maturity
20	Treasury Note	Mar 2002	6.63%	104.02	5.12%
20	Treasury Note	Aug 2003	4.25%	96.10	5.14%
20	Treasury Note	Feb 2004	5.38%	97.17	5.24%
20	Treasury Note	Aug 2005	5.25%	99.75	5.30%
25	<i>Treasury Note</i>	<i>May 2006</i>	<i>5.31%</i>	<i>100.02</i>	<i>5.30%</i>

Average Yield 5.22%

Notice how the yield to maturity of the portfolio increased from 5.20% to 5.22%. This is because the maturing bond had a 5.0% YTM and the new 2006 bond has a 5.3% YTM. All things being equal, the lowest yielding year in a bond ladder is the first year. If rates remain constant over the next several years, all the new bonds will be purchased at a 5.30% yield, and eventually the yield on the portfolio will also increase to 5.30%.

A bond ladder can be five years, seven years, ten years, or longer. I do not recommend building a ladder greater than ten years for a couple of reasons. First, the longer the length of the ladder, the more the portfolio is subject to interest rate risk. If interest rates move up, a long-term bond ladder will drop in value more than a short-term portfolio. Second, many bonds are callable after ten years, and this can make managing a portfolio confusing. If a bond is callable, you do not know if it will “mature” early.

Most individually managed bond portfolios perform better than bond mutual funds. The reason is the cost of bond funds. The average fee for a bond fund is 1%, which is very high considering a typical mutual fund only makes 6% in interest. There is no justification for paying more than 15% of your profits out in fees. I recommend managing investment grade bond portfolios on your own.

Different Bonds for Different Purposes

The type of bonds to buy for a portfolio depends on the type of account. Tax sheltered accounts such as an IRA, Profit Sharing, or Keogh should hold taxable bonds like Treasuries, government agency, corporate, mortgages, certificates of deposit, and asset backed securities. Personal accounts subject to annual income tax should consider tax-free municipal bonds. Chapter 15 discusses tax-efficient investing in greater detail.

Managing Retirement Accounts

Many retirement accounts are sheltered from current taxation. Income tax is due only when the funds are withdrawn from the account at retirement. As a result, investors should buy only taxable bonds in retirement accounts. An efficient mix of bonds to use in a tax-sheltered portfolio is 50% government bonds and 50% corporate bonds. Using our previous example of a \$100,000 portfolio and a five-year bond ladder, we could build a portfolio that looks like this hypothetical example:

Five Year Tax-Sheltered Bond Ladder For a \$100,000 Account (Illustration only)

Quantity	Bond	Maturity	Coupon	Price Paid	Yield to Maturity
10	Treasury Note	May 2001	6.25%	102.14	5.00%
10	<i>IBM Inc.</i>	Sep 2001	5.70%	100.20	5.50%
10	Federal Home Loan	Mar 2002	6.00%	103.02	5.35%
10	<i>Ford Motor Credit</i>	Jun 2002	5.80%	100.20	5.65%
10	FNMA Note	Mar 2003	4.60%	98.30	5.40%
10	<i>Merrill Lynch Co.</i>	Aug 2003	5.70%	100.00	5.70%
10	Fed. Farm Credit	Feb 2004	4.25%	97.10	5.50%
10	<i>Sears</i>	Oct 2004	5.50%	98.00	5.75%
10	Treasury Note	Aug 2005	5.25%	99.75	5.30%
10	<i>AT&T Inc.</i>	Mar 2005	5.80%	100.00	5.80%

Average Yield 5.50%

Each year an investor buys two \$10,000 bonds. One bond is a government issue and the other is corporate issue. It is important to buy only recognizable, high quality corporate bonds that have an S&P rating of "A" or better. There is no sense speculating on a lower quality bond for the sake of a little more

interest. By using government agency and corporate bonds, the initial yield of the portfolio jumps to 5.50%.

Of course, the easy way to mix corporate and government bonds is with a total bond market index fund, offered through Vanguard, Schwab, or Fidelity. This low cost bond funds do not need any maintenance and can be purchased commission free.

In addition to using government and high quality corporate bonds, you could purchase a small amount of a high yield corporate bond mutual fund to increase the yield. However, I do not recommend putting any more than 20% of your total bond holdings into a riskier high yield funds, and make sure you choose a mutual fund that is well diversified and charges a minimal fee. The Vanguard High-Yield Corporate Fund (VWEHX) is a good example, as is the TIAA-CREF High Yield Bond Fund (TCHYX). They are both low cost and well diversified.

Unfortunately, you will not be able to buy Vanguard or any other low cost bond funds through the same national brokerage firm you are buying your individual bonds from. With rare exceptions, large brokerage firms do not sell low-cost mutual funds. You will need to go directly to the mutual fund company and open a second account, or purchase the no-load fund through a mutual fund supermarket such as Schwab OneSource.

Managing Personal Accounts

Investments held in personal accounts are subject to annual income. In most cases, the best bonds to buy for taxable accounts are tax-free municipal bonds. Municipals bonds can put more money in your pocket than taxable bonds, especially if you are in a high tax bracket. Municipal bonds are not subject to federal or state income tax in the state where they are issued.

When comparing the yield on a muni bond to a taxable bond, you must compute the taxable equivalent yield (TEY). The formula is as follows:

Muni Bond Yield / (1 – tax rate)

For example: A muni bond yields 4.0% and your tax rate is 39.6%
 $0.04 / (1 - 0.396) = 0.066$ or 6.6% tax equivalent yield

A 4.0% municipal bond will give you the same after-tax income as a 6.6% taxable bond if you are in the 39% tax bracket. Chances are you will not find a taxable bond of the same quality and maturity that

yields 6.6% or higher. If you live in a state that has a state income tax, it is a good idea to use municipal bonds specific to the state you pay taxes in.

There are two types of municipal bonds, general obligation (GO) and revenue. GO bonds derive revenue from tax receipts and revenue bonds derive income from fee collection (such as a toll booth). Some bond issuers purchase insurance from private companies to guarantee the principle on their bonds. Insured bonds generally yield less than uninsured bonds of the same issue.

Beware of Alternative Minimum Tax bonds (AMT). If you have many itemized deductions on your tax returns, do not buy bonds whose interest is subject to the AMT. On the other hand, if you are not subject to AMT, the interest on AMT bonds is a little higher than comparable bonds of similar quality. Feel free to pick-up the extra yield.

**Sample Five Year Michigan Municipal Ladder
For a \$100,000 Account
Tax Bracket = 39.5%**

Quantity	Bond	Rating	Maturity	Coupon	Price Paid	YTM
20	City of Troy Schools	AA	Jun 2001	4.40%	101.40	3.25%
20	State of MI GO	AA	Aug 2002	3.60%	100.00	3.60%
20	MI State Highways	AAA Insured	Oct 2003	4.00%	100.80	3.80%
20	Ann Arbor GO	A	Feb 2004	3.90%	100.00	3.90%
20	Henry Ford Hospital	A	Jul 2005	4.50%	102.50	4.00%

Average Yield 3.71% Average Tax Equivalent Yield 6.15%

The tax-free yield on this portfolio is 3.71% and the TEY is 6.15%. Recall the yield on the taxable portfolio for retirement money was 5.50%. This gives high-income municipal investors a 0.65% advantage over the taxable portfolio. That equals \$650 per year in extra income. In the above example, Michigan has a state income tax of 4.4%, and a MI municipal portfolio will save a MI resident another \$100 in state income tax.

Helpful Hints for Bond Buyers

Wall Street's primary function is to issue new securities and create a liquid market for those securities. This includes billions of dollars in bond issues. As a result, large brokerage houses are the best place to shop for bonds, but there are some rules. When opening an account, talk to the office manager. Ask him or her to recommend a broker that does a significant portion of their business in the bond market. If you are building a municipal bond portfolio, ask for an experienced muni bond salesperson. Individual brokers that specialize in bonds have access to larger inventories and are in constant contact with the bond traders.

To ensure you are getting a fair yield on a bond, check a few sources for current interest rates. The Wall Street Journal is a good place to begin. It includes comprehensive bond listings where you can gauge the market. Bonds trade in relation to Treasury yields, so you will want to know what the T-bond yields are. If you are buying a municipal bond and have access to the Internet, check www.bloomberg.com for current yields. They have a web page devoted to the municipal bond market, and the data is free.

The advantage of buying through a large brokerage house is the access to new issues. I recommend buying new issues whenever possible. The yield on new offerings is always competitive, and every investor gets the same rate regardless of size. You do not have to worry about the broker juicing up the commission on a new issue trade. You can also use the rates on new issues to help price older bonds for sale. If a broker offers you a bond that was issued a few years ago, check the yield against new issues of similar quality.

Learn to negotiate commissions. Unless you are offered a new issue, the broker has some flexibility in the commission they charge. You should always ask the commission on a trade. Anything over \$50 per \$10,000 invested is high. Most people have no idea what commission they are paying in a bond since the fee is typically built into the price so it is hidden from the buyer (see Chapter 4).

If you have an account at a large firm such as Smith Barney (SB), it does not mean you are obligated to buy bonds only from that firm. You can buy bonds from other firms and have them automatically delivered into your SB account. This type of trade is called delivery verses payment (DVP). You simply open a DVP account at second firm, buy the bonds you want, and have them delivered into your account at SB. The money is then transferred from SB to the other firm to pay for the bonds. Using the DVP system, you can literally have a large bond account at Smith Barney and never buy a bond from them. DVP is very convenient for people who shop everywhere for deals.

The Index Fund Alternative

If you are not interested in buying individual bonds, the best alternative is to buy bond index funds. They offer immediate diversification into a wide variety of securities at a very low fee. I cannot emphasize enough that one place to shop for low cost bond funds is Vanguard. They have a wide variety of low cost taxable and tax-free funds.

One of the best bond index funds to use for retirement accounts is the Vanguard Intermediate-Term Bond Index Fund. The fund is made up of corporate debt, government agency bonds, and treasury bonds. The portfolio has an average maturity of about 7 years. If you prefer bonds with a shorter maturity,

opt for the Vanguard Short-term Bond Index Fund. The average maturity is only 2.7 years, about the same as a five-year bond ladder described earlier.

For municipal bond investors, Vanguard offers the Intermediate-Term Tax-Exempt Fund with an average maturity of 7 years and a Limited-Term Tax-Exempt Fund with an average maturity of 3 years. Neither fund is an index fund by definition, but the fees are just as low. The funds are not “state specific”, meaning the bonds are from several states. As a result, your state may charge income tax on the interest.

By this time you may be wondering if I work for Vanguard. The answer is no. Due largely to John Bogle’s vision, Vanguard is simply the premier supplier of index funds for individual investors. They offer the largest selection at low cost. The Vanguard Group is a not-for-profit company. By charter, the shareholders in the funds are the owners. That makes their cost structure hard to beat. According to Lipper, Inc., the average expense ratio for all Vanguard funds was 0.28% in 1998, far below the 1.25% average for the rest of the industry.