MARYLAND COOPERATIVE EXTENSION
UNIVERSITY OF MARYLAND
COLLEGE PARK•EASTERN SHORE

Fact Sheet

Fact Sheet 735

Investing in Treasury Securities and Mortgage-backed Securities

U.S. Treasury securities add safety when included as part of a diversified portfolio (collection of investments). Treasury securities are guaranteed by the Federal Government to pay interest in a timely manner and to return the principal when the bond reaches its maturity date. The Federal Government issues four types of interest-paying securities—Treasury bills, Treasury notes, inflation-indexed bonds, and Treasury bonds. Individuals who need a higher rate of return than provided by U.S. Treasury securities might consider mortgaged-backed securities. Commonly called Ginnie Maes, Freddie Macs, and Fannie Maes, they are considered as safe as Treasury securities. This fact sheet discusses these investments and explains how to buy them directly from the Federal Government or through mutual funds.

Bond Basics

Buying a Treasury security or any other type of bond and holding it to maturity yields the face value (purchase price when newly issued and value when bond matures) when redeemed. Be aware that if you should need the money before a bond matures, the price received for these securities might be more or less than the amount you paid for them. This variation in price during the term of ownership is caused by changes in interest rates. As with all bonds, when interest rates go up, the value of the bond goes down. When interest rates drop, the value of the bond rises. After a bond is issued, the price of the bond reflects current interest rates. If the bond did not change price, an investor would not be able to sell the bond once interest rates changed, because the buyer could get a better rate by buying a newly issued bond. It is important to understand this principle before reading any further. Bonds change value with interest rate changes.

Investing Directly in Treasury Securities

Treasury Bills

Treasury bills, also called T-bills, are meant for short-term investing. They mature in 13, 26, or 52 weeks. A minimum purchase is $10,000 with $1,000 increments above that amount. T-bills are sold at a discount and bought by individual investors on a noncompetitive bid. This means that once the institutional investors, including mutual fund and pension managers, make their purchase through the auction process, an average interest rate is calculated. This average rate becomes the rate offered to noncompetitive bidders. The discount is based on the interest rate and is an immediate return of the interest earned over the term of the purchased T-bill. For example, if the interest rate on a T-bill is 5 percent, the investor will receive a rebate of $500 shortly after the auction, and the $10,000 investment is returned at the end of the term. Thirteen- and 26-week T-bills are auctioned weekly and 52-week T-bills are auctioned every 4 weeks.

The interest rate actually earned is not the same as the discount received, because the interest rate is based on the amount actually invested. In the above example, you have $9,500 invested, not $10,000, because $500 was returned. The formula used to figure the interest rate for a 1-year bond is:

$$\frac{\text{Face Value - Price}}{\text{Price}} = \text{“annual interest rate”}$$

$$\frac{\$10{,}000 - \$9{,}500}{\$9{,}500} = 5.26\%$$

In this example, the $9,500 net investment yields a return of 5.26 percent. The actual rate of return will be a little less, because the bondholder must pay Federal taxes (but not state or local taxes) on the $500 in earnings.

To figure the yield on a 3- or 6-month T-bill, modify the formula as follows to account for the shorter time period:

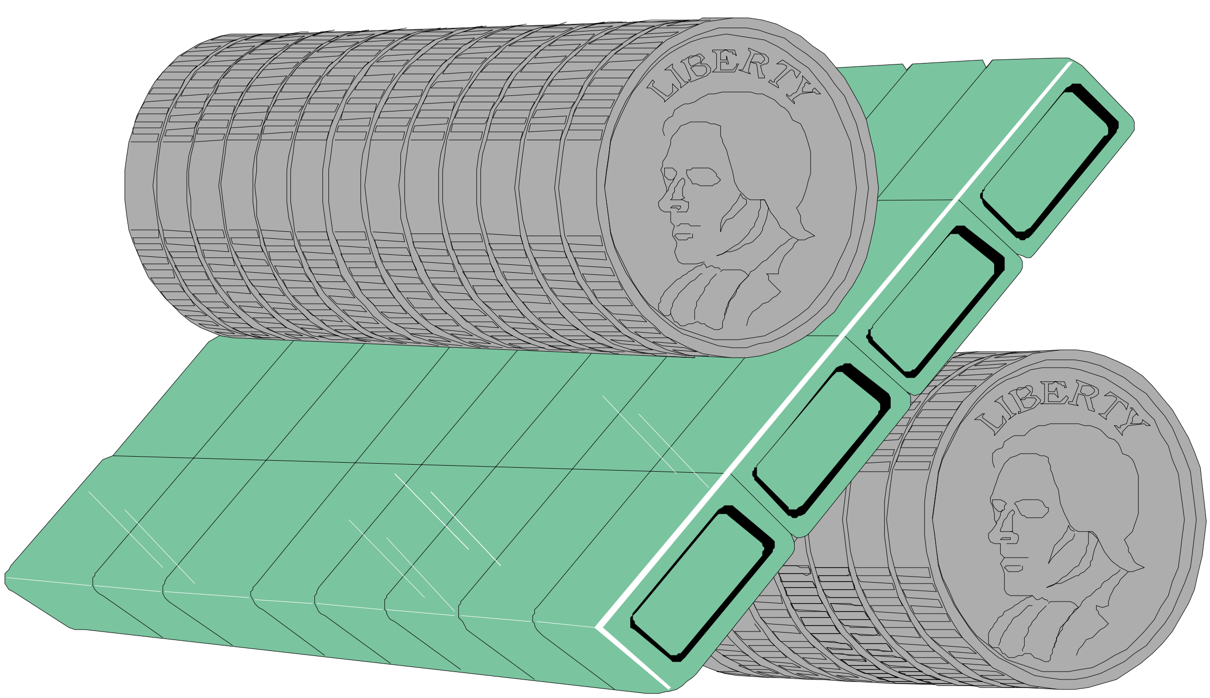
$$\frac{\text{Face Value - Price}}{\text{Price}} \times \frac{365}{\text{Number of days to maturity}}$$

Example: The yield on a T-bill bought for $9,875 for 90 days is calculated as:

$$\frac{\$10{,}000 - \$9{,}875}{\$9{,}875} \times \frac{365}{90}$$

$$0.0127 \quad \times \quad 4.0556 \quad = \quad 5.13\%$$

The yield is 5.13 percent.



Treasury Notes

Treasury notes are issued in 2-, 3-, 5-, and 10-year maturities. Two-year and 5-year Treasury notes are issued monthly and 3-year and 10-year Treasury notes are issued quarterly in February, May, August, and November. Two-year and 3-year notes are issued in $5,000 denominations, while 5- and 10-year notes are issued in $1,000 denominations.

Treasury notes earn a slightly higher interest rate than T-bills, because the term is longer. Interest is fixed and paid to the investor semiannually. Interest is exempt from state and local taxes, but not Federal taxes. Treasury notes cannot be called before maturity (the government cannot redeem them before they mature).

Inflation-indexed Bonds

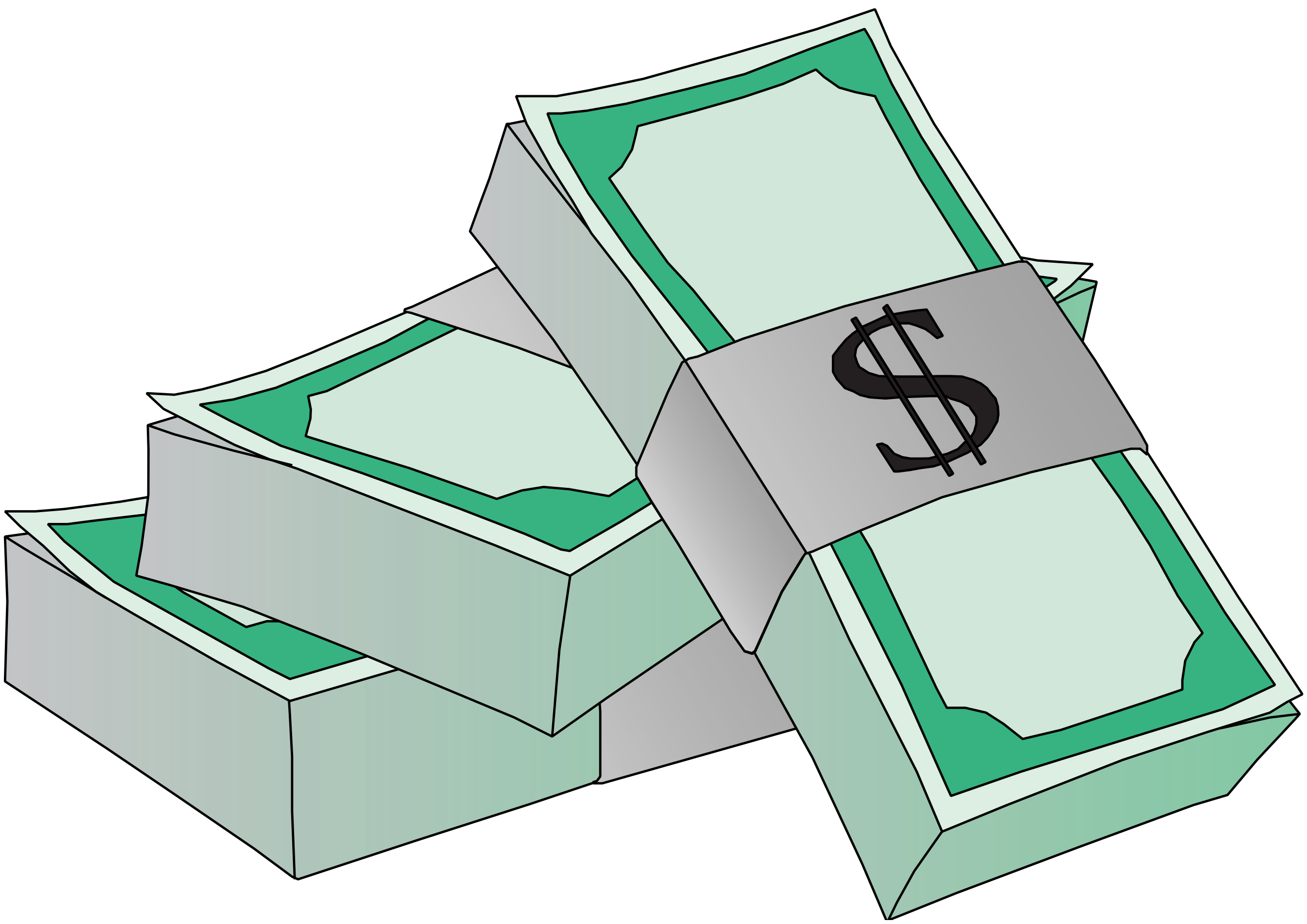
In January 1997, the Federal Government issued its first inflation-indexed bonds. These bonds have a term of 10 years and the principal is indexed to the Urban Consumer Price Index (CPI-U). Interest payments are made semiannually at one-half the annual rate. In 10 years the principal is returned. There is a 3-month lag in inflation adjustments. For example, a bond issued April 1 has an adjustment on October 1, which is based on the CPI-U from January 1 to July 1.

Both the interest and the principal increase on inflation-indexed bonds will be taxable annually. Since the increase in principal is taxed before the bond matures, some of the inflation protection is lost. For this reason, tax-deferred accounts such as 401(k) plans and IRAs are the best places to hold these bonds.

Indexed bonds are auctioned quarterly on the 15th of January, April, July, and October. All bidders pay the same price. They are issued in $1,000 multiples.

Treasury Bonds

Treasury bonds are issued in 30-year maturities. Interest is fixed and payable semiannually. They are sold in $1,000 minimums. Also available are $5,000, $10,000, $50,000, and $100,000 bonds.



Buying New Treasury Securities

Treasury securities (T-bills, Treasury notes, inflation-indexed bonds, and Treasury bonds) can be bought through a stockbroker or bank for a fee that ranges from $25 to $100. Another option is to buy free of charge through Treasury Direct. All Treasury securities are issued in book-entry form, which means the purchase is recorded electronically. Certificates are no longer issued. To buy a Treasury security, contact the Federal Reserve Bank of Baltimore, Box 1378, 502 South Sharp Street, Baltimore, MD 21203 or phone 410-576-3300 or contact the Capital Area Servicing Center, Bureau of the Public Debt, Dept. N, 1200 C Street, SW, Washington, DC 20291-1500. Order forms can also be accessed on the Treasury web site (www.publicdebt.treas.gov).

To get started, request a Treasury Direct Kit. It will contain one form that can be used for Treasury bills, notes, or bonds. Interest is deposited directly into your savings or checking account. You must send your bank routing number and account number (on the bottom of your checks) in order for your interest to be deposited. Additionally, if this is your first purchase, you will need to fill out a W-9 form that states you are not subject to withholding. Starting in September 1997, investors no longer need to send a check. Instead, the Treasury can be authorized to debit the investor's bank account. The investor continues to earn interest until the security is actually issued. Investors must be careful to ascertain that there are sufficient funds in the account to be debited. You can buy notes and bonds with a personal check, while bills require a cashier's check or a check issued directly by a bank or credit union. The check should be made payable to the Federal Reserve Bank of Baltimore if dealing with the Baltimore Federal Reserve Bank or the Bureau of the Public Debt if dealing with the Capital Area Servicing Center.

When you have completed the paperwork and enclosed check or debit account information, mail the forms to the Baltimore Federal Reserve Bank or the Capital Area Servicing Center. Mark on the envelope in large letters: "TENDER FOR TREASURY SECURITIES." To

purchase at the next auction, your tender (offer to purchase) must be postmarked by midnight the day before the auction and be received by the day of the auction.

The Treasury establishes a Master Record when the first tender form is submitted. Request this record be mailed to you. It contains the Treasury Direct number to use for future purchases, your name and address, telephone number, tax information, and payment instructions, as well as a detailed listing of all transactions to the account. Whenever there is any activity in the account, such as a purchase, interest payments, or a bond matures, the Federal Reserve mails an updated record.

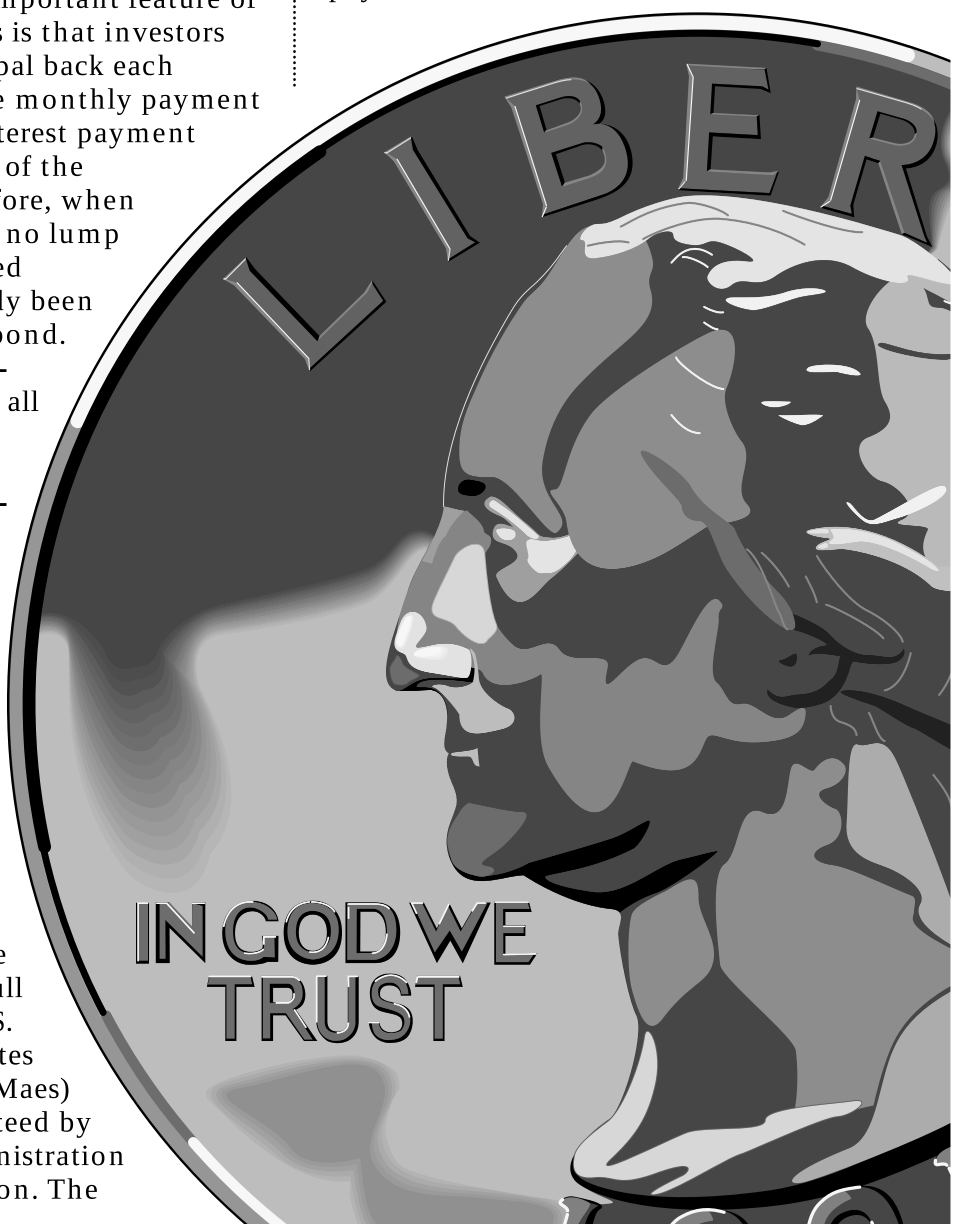
When a Treasury security is about to mature, investors can call toll free to request renewal (1-800-943-6864). Should you wish to sell your securities before they mature, the Chicago Federal Reserve Bank, P.O. Box 834, Chicago, IL 60690, will sell your securities directly for a $34 fee. Request form PD 5179-1, "Security Transfer and Sale Request," from the Bureau of the Public Debt. Once you have completed this form, your signature must be guaranteed by a broker or an insured financial institution. Note: Be sure to keep records and a copy of the original purchase documentation. The Federal Reserve Bank does not send annual statements.

Mortgage-backed Securities

Mortgage-backed securities are also called agency bonds. They include Ginnie Maes, Fannie Maes, and Freddie Macs. They offer the investor high yields, safety, and convenience. Yields are likely to be 1.5 percent or more higher than Treasury yields. This is an advantage for consumers who need higher income. They are called pass-through certificates because they pass the home mortgage interest and principal directly to the investor on a monthly basis. One important feature of mortgage-backed securities is that investors receive part of their principal back each month. For example, if the monthly payment is $100, $8 might be an interest payment and $92 might be a return of the investor's principal. Therefore, when the bond matures, there is no lump sum of the amount invested returned since it has already been paid over the term of the bond. This is important to understand so you do not spend all of your payment each month assuming you will get the amount you invested back.

Ginnie Maes

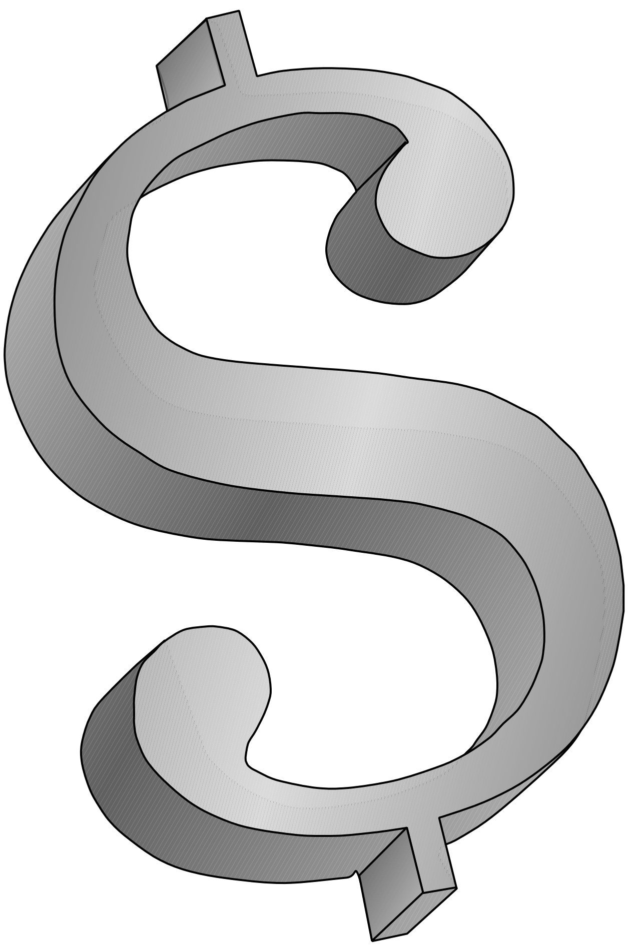
The Government National Mortgage Association (GNMA) is a corporation owned by the Federal Government, operating under the Department of Housing and Urban Development. This ownership allows the interest and principal to be fully guaranteed by the "full faith and credit" of the U.S. Government. The certificates the GNMA offers (Ginnie Maes) contain mortgages guaranteed by the Federal Housing Administration and Veterans Administration. The government guarantee protects against foreclosure on the mortgages and late mortgage payments. The yield is not guaranteed. In fact, when interest rates fall and homeowners refinance their mortgages, the investor's principal is returned sooner and the resulting yield is lower. An advantage of Ginnie Maes is that checks are received monthly, although the amount is not always the same. A disadvantage for small investors is that Ginnie Mae certificates are issued in $25,000 lots with $5,000 increments. They also can be bought in smaller allotments through mutual funds (see below). The monthly interest on Ginnie Maes is taxed, but the principal payment is not. As the certificate matures, the interest payments decrease and the principal payments increase.



Freddie Macs and Fannie Maes

The Federal Home Loan Mortgage Corporation issues Freddie Mac securities. These securities, which are issued in $25,000 units, are called participation certificates. Like Ginnie Maes, they are mortgage-backed certificates; however, they contain both Veterans Administration-insured mortgages and privately insured (nongovernmental) mortgages. The interest is guaranteed with this insurance. However, if a homeowner defaults on a loan, the investor must wait several months for return of the principal. Because of a slightly greater risk, the interest rate is higher for Freddie Macs and Fannie Maes than for Ginnie Maes. Investors with smaller amounts to invest can buy mutual funds.

Fannie Maes are issued in $25,000 units by the Federal National Mortgage Association (FNMA), a private corporation that trades on the New York Stock Exchange. The FNMA invests in conventional mortgages. Fannie Mae securities have both a Standard and Poor's and Moody's AAA rating, so they are as safe as the other mortgage-backed securities.



Investing in Mutual Funds That Hold Treasury Securities and Mortgage-backed Securities

Mutual funds that invest in bonds, including Treasury securities, are different from directly owned bonds. First, funds might pay a monthly income, which can be distributed directly to the investor or be reinvested. Second, the bonds in the fund never mature; therefore, if interest rates rise or fall, there might be a gain or loss. Third, bond fund managers trade bonds continuously to keep the maturity date of the portfolio at a set time, such as 10 or 25 years. Be aware that the price of a bond fund changes continuously due to variation in interest rates of bonds in the portfolio.

U. S. Government-issue Money Market Funds

Government-issue money market funds invest in Treasury bills and notes. The average maturity of investments in money market funds can be no longer than 90 days, according to Federal law. Money market funds keep the cost of one share at $1. Government-issue money market funds are the safest money market funds because the government guarantees the underlying securities. The interest rate will be about 1/2 percentage point less than regular money market funds. These funds are best used as a safe place to keep cash that might be needed on short notice.

Short-term Treasury Mutual Funds

Short-term treasury mutual funds can increase the interest rate on savings. The average maturity in these funds does not exceed 3 years. By extending the term of the notes, the interest rate will increase by at least 1/2 percent. In some years, these funds have earned 2 percent more than money market funds. Short-term treasury mutual funds usually have a positive return, so if you must sell in a hurry you will not lose principal unless short-term bond rates increase very rapidly. When investing in a short-term fund, consider investing in a fund that has a low management fee and no sales fee (load).

Intermediate-term and Long-term Treasury Bond Mutual Funds

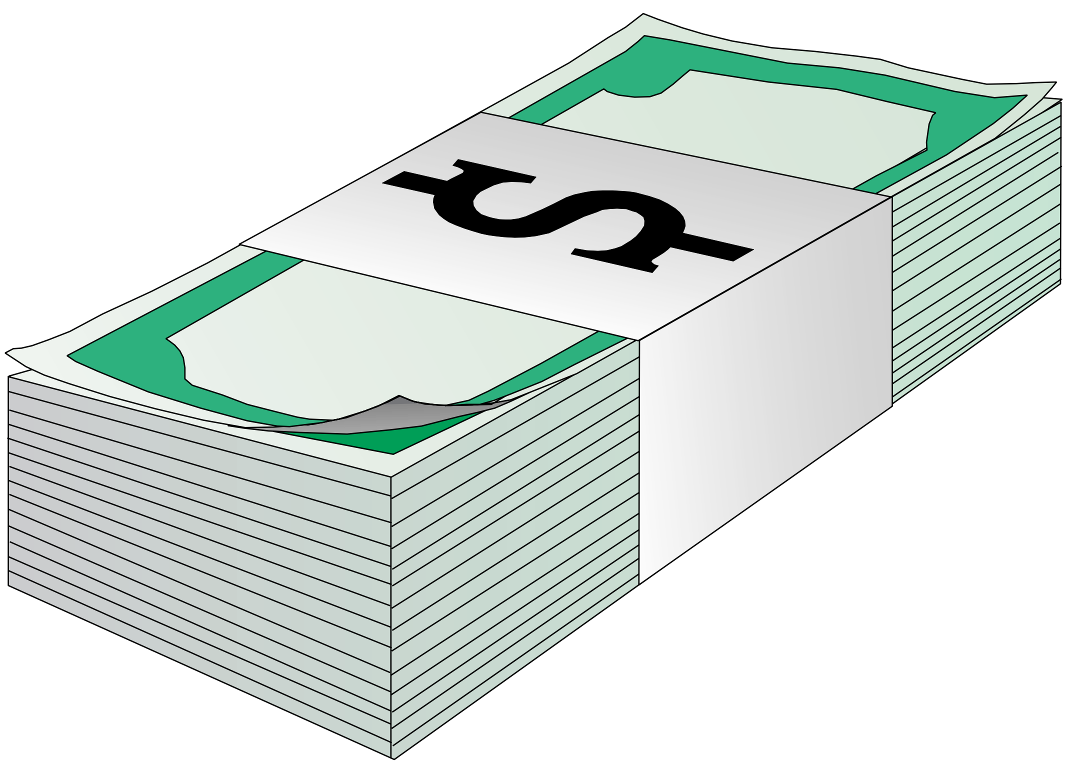
Intermediate-term bond funds have an average maturity of 3 to 10 years, while long-term bond funds have an average maturity of over 10 years, with 18 to 22 years more common. Managers of these funds buy bonds with longer maturities when interest rates are expected to fall. This strategy magnifies the capital gain on the fund because longer term bonds rise and fall to a greater extent whenever interest rates change. When interest rates are expected to rise, the manager sells the longer term bonds and purchases shorter term bonds to reduce the loss. Shorter term bonds do not fall as much in value when interest rates rise.

Because there is a limited pool of government bonds on the market at any one time, all managers buying bonds for mutual funds are buying from the same pool. This means that Treasury bond funds from different mutual fund providers will contain many of the same bond issues. For this reason, searching for a fund with the lowest annual fees and without a sales fee will produce an overall higher return.

Mortgage-backed Mutual Funds

If you cannot invest $25,000 directly in an individual Ginnie Mae, Freddie Mac, or Fannie Mae certificate, consider investing in a mutual fund rather than holding these securities individually. Mutual funds are different from certificates in that they pay only a dividend. The principal is reinvested back into the fund. This causes daily fluctuation of the market value of shares. The value of these funds falls when interest rates drop because homeowners refinance their mortgages. The principal received by the fund must then be reinvested at a lower rate, which causes the value of the fund to fall. Funds containing mortgaged-backed securities are available in many varieties. Some contain all Ginnie Maes and others a combination of the three. Still other funds contain a combination of mortgage-backed securities and Treasury securities. Managers of combination funds are better able to manage the risk of falling and rising interest rates.

It is not always possible to tell by the name of the fund what the fund invests in. Therefore, read the prospectus carefully to know the kinds of securities the fund is investing in and the characteristics of the



fund. The prospectus will also tell you if the fund invests in more risky investments such as puts and calls, options, and futures contracts. While these techniques increase the earnings on the fund, they might also increase the risk if the market goes in the opposite direction. Also be aware that for every 1 percent change in interest rates, the value of these funds changes almost 6 percent either up or down. Investors buy these funds for income rather than capital gains.

In summary, you might not receive your total investment in the Treasury security if you have to sell it before it matures. Treasury securities come in three maturities—Treasury bills have the shortest maturity, Treasury notes are in the middle, and Treasury bonds have the longest maturity. It is easier than ever to purchase and redeem Treasury securities through Treasury Direct. For a slightly higher interest rate, consider mortgage-backed securities. If you choose not to buy individual securities, consider mutual funds.

References and Additional Reading

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by

Patricia M. Tengel

Family Resource Management Specialist

Extension Family and Consumer Sciences

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