Measuring Yield

When comparing bond mutual funds, investors may find themselves confronted by an array of yield metrics. Here, we will look at some of the most common metrics for bond yields and explain what they represent. Then, we will take a look at some additional metrics that apply to bond portfolios.

1. Coupon rate is the rate of interest paid by a bond issuer to the bond owner based on the face value of the bond. This rate is stated at the time of issue. Most bonds are issued in amounts of $1,000, and pay interest semiannually. A 6% coupon rate indicates that the bond owner would receive two payments of $30 ($1000*.06/2 = $30) a year. If a bond is purchased at par value (or $1000, in our example), the coupon rate is equal to the yield to maturity. However, after a bond is issued, it is rare for it to be sold on the open market at par value.

2. Current yield is the annual coupon income divided by the current price. The benefit of current yield is simple. It expands on coupon rate to take into account a bond's market value. However, it only reflects income, with no adjustment for capital gains and losses or the compounding effect of reinvesting income. Moreover, current yield only represents a snapshot in time. Because of these limitations, we advise investors not to use current yield as the only means of comparison when considering fixed income investments.

3. Yield to maturity is a calculation that represents the anticipated total return earned by an investor who: (a) buys a bond at the market price, (b) receives all coupon payments, (c) reinvests those coupon payments at the same rate of return, and (d) holds the bond to maturity. Yield to maturity is a forward looking measure and allows for fair comparison of bonds with different coupon rates, prices, and maturity dates. If a bond trades at a premium to par value, the yield to maturity will be lower than its coupon rate. Conversely, a bond trading at a discount to par value will have a yield to maturity greater than its coupon rate.

4. Yield to call uses the same methodology as yield to maturity, with one additional assumption. A bond with a call feature that is purchased at a premium to par value will be called on the call date. In order to ensure an investor is using the most conservative scenario to evaluate a bond, the term yield to worst is used to describe the lower of yield to maturity and yield to call.

Consider three bonds with identical maturity dates, all issued by a hypothetical company XYZ Corp (Figure 1). The key factor that is different for all three bonds is the coupon rate. Given the credit risk is identical (because all are issued by the same company), and the interest rate risk is similar, all three bonds should have similar prospects for return, which is reflected in the identical yield to maturity.

FIGURE 1. COMPARING COUPON RATE, CURRENT YIELD, AND YIELD TO MATURITY

	Discount Bond, XYZ Corp.		Par-Priced Bond, XYZ Corp.		Premium Bond, XYZ Corp.	
Bond Price						
Coupon Rate		1.00%		4.00%		7.00%
Current Yield		1.06%		4.00%		6.62%
Yield to Maturity		4.00%		4.00%		4.00%
Time Period	Cash Flow	Present Value	Cash Flow	Present Value	Cash Flow	Present Value
0.5	$5	$4.90	$20	$19.61	$35	$34.32
1.0	$5	$4.81	$20	$19.23	$35	$33.65
1.5	$5	$4.71	$20	$18.86	$35	$33.00
2.0	$1,005	$929.18	$1,020	$943.05	$1,035	$956.92
		$943.60 Bond Price		**$1,000.75** Bond Price		**$1,057.89** Bond Price

Investors who looked solely at the coupon yield or current yield to make an investment decision would be expected to favor the premium bond. However, the prospects for total return over the next two-year period are the same because the bond prices reflect the equivalent yields to maturity.

Bond Fund Yields

As we noted earlier, there are additional yield metrics to consider when comparing bond mutual funds. Each tells a slightly different story, and none is a perfect measure. Two of the most common metrics are trailing 12-month distribution yield and 30-day SEC yield.

Trailing 12-month distribution yield provides investors a historical measure by summing the income distributions over the past 12 months and dividing it by the current month-end net asset value (Figure 2). One of the drawbacks of this measure is that it is backward looking. Market conditions are continually changing, impacting the amount of future income distributions. In addition, the net asset value of mutual fund shares fluctuates. If the assets in a mutual fund sell off, and net asset value is calculated lower as a result, the denominator in the distribution yield formula is lower. This would lead to a higher distribution yield, which may be misrepresentative.

30-day SEC yield was introduced in 1988 by the Securities and Exchange Commission to standardize the inputs mutual funds employ to calculate the statistic, allowing for a fairer comparison. The calculation uses the current yields to worst of all fixed income portfolio holdings to estimate how much interest the fund's assets would have earned over the past 30-day period. After deducting the fund's expenses and fees, the income earned is annualized and divided by the net asset value on the day of calculation. While standardized, the 30-day SEC yield is limited in that it is based on a static portfolio as of month-end. However, because 30-day SEC yield is based on the yield to worst methodology introduced earlier, it is more forward looking and can provide a more accurate indication of the income an investor might expect to receive.

Where Is the Distribution Yield Coming From?

A mutual fund manager often has a good deal of latitude in determining what income distributions to make to shareholders. At the low end of the range would be a distribution rate calculated using the yield to maturity of the investment portfolio assets at time of purchase. This is the most conservative methodology. In today's low-rate environment, this method distributes the lowest amount of income as many bonds in the market trade at premium prices to par and have yields to maturity below the coupon rates. This results in an accounting phenomenon

FIGURE 2. DISTRIBUTION YIELD EXAMPLE, XYZ BOND MUTUAL FUND

Consider the hypothetical XYZ Bond Mutual Fund, which makes monthly income distributions. These distributions are an important part of the fund's total return. The trailing 12-month distribution yield can also differ from the 30-day SEC yield. Because the 30-day SEC yield always accounts for expenses, it is typically be lower than the trailing 12-month distribution yield. That's why it's important to make apples-to-apples comparisons when evaluating funds.

TIME	DIST. PER SHARE	MONTH-END NAV
Month 00		$10.50
Month 01	0.0185	$10.53
Month 02	0.0175	$10.56
Month 03	0.0205	$10.58
Month 04	0.0205	$10.55
Month 05	0.0165	$10.30
Month 06	0.0200	$10.35
Month 07	0.0215	$10.50
Month 08	0.0215	$10.65
Month 09	0.0170	$10.70
Month 10	0.0195	$10.55
Month 11	0.0205	$10.50
Month 12	0.0190	$10.65
12 Month Total	0.2325	

YIELD CALCULATIONS

Trailing 12-month distribution yield: 2.18%
Sum of 12 months of distributions per share/Month-end NAV per share
$0.2325/$10.65 = 2.18%

30-day SEC yield: 1.58%
See methodology on page 3

RETURN CALCULATIONS

Price Return: 1.43%
(Ending NAV-Beginning NAV)/Beginning NAV
($10.65-$10.50)/$10.50 = 1.43%

Income Return: 2.18%
Trailing 12-month distribution yield %

Total Return: 3.61%
Price Return % + Income Return %
1.43%+2.18%= 3.61%

called amortization or accretion, so that the tax cost of the bonds in a portfolio change over time as individual bonds' prices approach par at maturity. In this case, a bond's maturity does not create a taxable event.

At the other end of the spectrum, a fund manager may distribute the full coupon income of the investment portfolio. As we discussed earlier, coupon rate can be very different from yield to maturity, driven by bonds trading at market prices far from par value. In the current low interest-rate environment, many bonds have coupon rates and current yields higher than corresponding yields to maturity. If a fund manager distributes the full coupon income of bonds purchased at a premium price to shareholders, it must account for sales or maturities below that price as capital losses. Since capital losses are carried forward into the future, the only place for this activity to be reflected in the total return of the bond mutual fund is in the price, or net asset value.

Total Return

The total return of any investment is reflective of both the income return (interest or dividend payments) and the price return. In the case of an individual bond investment, an investor receives coupon income, and a price return based on the difference between purchase price and either sale price or maturity value. In a bond mutual fund, you still have an income and price component, but the income component is based on the income distribution cash flows, and the price return is a function of purchase and sale net asset value.

Summary

When it comes to fixed income mutual funds, investors are likely to encounter a variety of income, yield and return measures. Each has distinct characteristics, so looking at a single data point in isolation—especially a short-term measure—may not tell give you all the information you need. Keep in mind that:

- Distribution yield, while an important indication of past cash flow, is not necessarily representative of the investment yield of the underlying portfolio of bonds.

- 30-day SEC yield provides a standardized measure for comparing funds across multiple managers or markets, but is based on hypothetical income over a 30-day period.

- Total return (net of fees) as reported in a fact sheet or through third-party data is historical but includes both income and price components.

For the most thorough evaluation of investment options, be sure to discuss and compare all the available data with your financial advisor.

For more information, please visit www.calamos.com or contact us at 800.582.6959.

* The formula for SEC yield is: $2 \times (((a - b) / (c \times d) + 1)^6 - 1)$

  a = interest and dividends earned over last 30 day period
  b = accrued expenses over the last 30 day period, excluding reimbursements
  c = the average number of shares outstanding, on a daily basis, that were entitled to receive distributions
  d = the maximum price per share on the day of calculation (last day of the period)

In this example, we assume the fund earned $1900 in interest and dividends and accrued $500 of expenses during the 30 day period. Further assuming that on each day, the fund 100,000 shares that were entitled to receive distributions, and that the net asset value on the day of calculation was $10.65.

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