

# Defining Yield: A Word of Many Meanings

The term “yield” is thrown about often by the financial press and others. The trouble is that yield has many different meanings and implications for investors. This article will try and sort out some of the major differences. It will not, however, attempt to present mathematically all of the possible yield calculations created by institutions and financial instruments.

The basic dilemma is that yield may or may not be synonymous with total return—the bottom line for investors. Newspaper listings for both stocks and bonds tend to add to the confusion.

## Stock Yields

The stock pages in newspapers list yield, among other statistics. Generally, the yield figure is close to the current annual dividend figure, but many investors may not know how the two are related. For example, **Figure 1** shows a typical listing for several stocks [in 1987]; look in particular at the figures for IBM.

**Figure 1. A typical newspaper listing for stocks and bonds**

Stock Listing										
52-weeks		Stock	Div.	Yield %	P/E Ratio	Sales 100s	Week's			Net Chg.
High	Low						High	Low	Close	
169¾	115¾	IBM	4.40	2.6	23	22634	169¾	166½	168	+½
60¼	43	Lockhd	1.40	2.4	9	31128	58¾	55%	57½	+1%
38¾	14½	USX	1.20	3.1	...	84124	38¾	35%	38¾	+3½

  

Bond Listing										
52-weeks		Bond and Coupon	Cur Yld	Vol.	Week's			Net Chg.		
High	Low				High	Low	Close			
91¾	77%	ATT 7s01	8.5	111	81%	81%	81%	-⅞		
57%	41%	Bkam zr93s	...	171	53¾	52%	52%	...		
128¾	110½	IBM 7% 04	cv	737	128¾	127%	128	-¼		

A considerable amount of information is presented along with the yield figure. Yield in this case is dividend yield, and it is calculated by dividing the annual cash dividend by the closing price of the stock. For IBM, with an annual cash dividend of \$4.40 and a closing price of \$168, the yield is:  $\$4.40 \div \$168 = 0.0262 = 2.6\%$ —the yield quoted in the paper. [Based on its closing price of \$153.96 on February 22, 2018, IBM’s current indicated dividend is \$6.00 per share and its yield is 3.9%.]

If you had purchased IBM at \$140 per share, held the stock for a year, and received quarterly total dividends of \$4.40 without reinvesting the dividends, your total return before taxes would have been 23.1%. This total return would have been composed of a 20% capital gain and a 3.1% dividend yield (based on the purchase price). It was calculated as follows:

$$\frac{\$168 - \$140 + \$4.40}{\$140} = 23.1\%$$

What does the yield in the paper mean? Simply that the historical annual dividend relative to the current market price is 2.6%—a number that may prove to be irrelevant to your return experience.

## Bond Yields

Turning to the corporate bond page, the yield reported is termed current yield. Examples of bond quotations appear in the bottom half of **Figure 1**.

Current yield, which is 8.5% for the ATT 7% coupon bond maturing in 2001, is calculated by dividing the annual interest payment (\$70 or 7% coupon times \$1,000 of maturity value) by the current market price of \$818.75 (81<sup>7</sup>/<sub>8</sub> or 81.875% of a \$1,000 maturity value).

The current yield, much like the dividend yield, only captures one aspect of total return—the income generated by the investment. It ignores any changes in capital value.

The Bank America bond is a zero-coupon bond, sold at a discount to mature in 1993 and paying no annual interest, so no current yield can be calculated. The IBM bond is a convertible bond, convertible into common stock and selling more as a stock than a bond. The ATT and the IBM bonds have similar coupon rates and maturities, yet the IBM bond is selling for 128% of its maturity value and the ATT is selling at a substantial discount. The premium on the IBM indicates that its common stock conversion value is greater than its straight bond value. In the case of convertible bonds, the current yield is not given and may be irrelevant if it were.

The discount on the ATT bond highlights a distinction between the current yield reported in the newspaper and the total return focus that investors should have. The coupon rate on the ATT bond is low relative to the level of current interest rates [in 1987], so the market adjusts the bond price down. If interest rates rise in the market, the prices of existing bonds fall; the bonds with the longest time to maturity and the lowest coupons fall the most in price. A long-term zero-coupon bond would

be the most price-volatile with respect to interest rate changes.

Total return incorporates capital gains and losses, and yield. Using the ATT bond example and assuming a bond price decline due to rising interest rates, the one-year total return on the bond would be calculated as follows:

$$\frac{B_e - B_b + I}{B_b} = \text{Total return}$$

Where:

$B_b$  = Bond price at beginning of year

$B_e$  = Bond price at end of year

I = Annual interest payments

For the ATT bond, assuming a price at the beginning of the year of \$918.75 and an end-year price of \$818.75, the one-year total return would be:

$$\frac{\$818.75 - \$918.75 + \$70}{\$918.75} = -3.27\%$$

This negative return is in contrast to the 8.5% current yield. The calculation does not assume any reinvestment of interest and is a before-tax return. Looking just at current yield masks the impact of capital gains and losses on return.

One other bond yield that is reported in the financial press is the yield to maturity. This concept of yield assumes that the bond is held to maturity and all interest payments are reinvested and compounded at the yield to maturity. In most newspapers, the yield to maturity is only given for U.S. government and agency bonds and sometimes for selected municipal bonds, although municipal bonds are not reported generally.

The precise math for yield to maturity is fairly complex and either requires financial tables, a computer or a sophisticated hand-held calculator. A simple approximation is useful:

$$\frac{I + \frac{B_m - B_t}{\text{Yrs.}}}{0.40(B_m) + 0.60(B_t)} = \text{YTM}$$

Where:

$B_m$  = Bond value at maturity

$B_t$  = Bond price today

Yrs. = Years to maturity

Again, using the ATT bond, the yield to maturity would be:

$$\frac{\$70 + \frac{\$1,000 - \$818.75}{14}}{0.40(\$1,000) + 0.60(\$818.75)} = 9.3\%$$

The calculation adds the annual interest payment to the average annual capital gain to maturity and then relates this total average annual amount to a weighted average of the current price and the maturity value. The unequal weights (40% and 60%) have been found to improve the accuracy of the approximation over an equal-weighting system.

This is very close to the precise yield to maturity and, for most investors, it is sufficient for making investment decisions. Because the yield to maturity assumes that interest payments are reinvested at the same yield to maturity rate each period, if interest rates rise, the realized yield to maturity will be higher and, conversely, if interest rates fall, the realized yield to maturity will fall. Of course, if the bond is sold before maturity, any yield, including a negative one, is possible.

For corporate bonds, Mergent's Bond Record provides yield to maturity figures as well as a number of online calculators.

Yield to maturity is useful for individual investment decisions but makes some rather rigid assumptions. On the other hand, the total return for any period can be calculated by the individual investor and is specific to the individual investor's particular experience (i.e., purchase price,

holding period, end-of-period value).

## Conclusions

The bottom line to an individual investor is total return. Current yield and dividend yield only reflect one part of total return. They ignore capital gains and losses, which can be a significant portion of the total return component. While yield figures are useful in analyzing an investment, investors should understand what yield figures do and do not measure. **Table 1** presents some short definitions of the yields discussed in this article.

### **Table 1. Yield definitions**

**Dividend yield:** The annual cash dividend relative to the current market price of the common or preferred stock.

**Current yield:** The annual interest payment of a bond relative to the current market price of the bond.

**Yield to maturity:** The compound annual return on the bond if held to maturity and if all interest payments are reinvested at the yield to maturity.

**Total return:** For any period, the cash dividends or interest plus the change in value of the stock or bond relative to the beginning value or purchase price.

This article by John Markese is from the September 1987 issue of the *AAll Journal*. At the time, Markese was the director of research at AAll. He is also a former president of AAll and is currently chairman of AAll.