

24. a. The rate of return you expect to earn if you purchase a bond and hold it until maturity is the YTM. The bond price equation for this bond is:

$$P_0 = \$1,140 = \$90(PVIFA_{R\%,10}) + \$1,000(PVIF_{R\%,10})$$

Using a spreadsheet, financial calculator, or trial and error we find:

$$R = YTM = 7.01\%$$

- b. To find our HPY, we need to find the price of the bond in two years. The price of the bond in two years, at the new interest rate, will be:

$$P_2 = \$90(PVIFA_{6.01\%,8}) + \$1,000(PVIF_{6.01\%,8}) = \$1,185.87$$

To calculate the HPY, we need to find the interest rate that equates the price we paid for the bond with the cash flows we received. The cash flows we received were \$90 each year for two years, and the price of the bond when we sold it. The equation to find our HPY is:

$$P_0 = \$1,140 = \$90(PVIFA_{R\%,2}) + \$1,185.87(PVIF_{R\%,2})$$

Solving for R , we get:

$$R = HPY = 9.81\%$$

The realized HPY is greater than the expected YTM when the bond was bought because interest rates dropped by 1 percent; bond prices rise when yields fall.