

The Behavior of Interest Rates
ECON 4673
Dr. Keen

Answers

1. *Explain why you would be more or less willing to buy a share of Microsoft stock in the following situations:*

a. *Your wealth falls.*

Less, because your wealth has declined.

b. *You expect the stock to appreciate in value.*

More, because the relative expected return of Microsoft stock has risen.

c. *The bond market becomes more liquid.*

Less, because Microsoft stock has become less liquid relative to bonds.

d. *You expect gold to appreciate in value.*

Less, because the expected return of Microsoft stock has fallen relative to gold.

e. *Prices in the bond market become more volatile.*

More, because Microsoft stock has become less risky relative to bonds.

2. *Explain why you would be more or less willing to buy long-term AT&T bonds under the following circumstances:*

a. *Trading in these bonds increases, making them easier to sell.*

More, because the bonds have become more liquid.

b. *You expect a bear market in stocks (stock prices are expected to decline).*

More, because their expected return has risen relative to stocks.

c. *Brokerage commissions on stocks fall.*

Less, because they have become less liquid relative to stocks.

d. *You expect interest rates to rise*

Less, because their expected return has fallen.

e. *Brokerage commissions on bonds fall.*

More, because they have become more liquid.

3. *What is the effect of a sudden increase in the volatility of gold prices on bond prices and interest rates?*

Bond prices rise and interest rates fall. The increased volatility of gold prices makes bonds relatively less risky relative to gold which leads to an increase in the demand for bonds. The demand curve, B^d , shifts to the right causing the bond price to rise and the equilibrium interest rate to fall.

4. *Explain how a large federal deficit impacts bond prices and interest rates.*

Bond prices fall and interest rates rise. The large federal deficits require the Treasury to issue more bonds which leads to an increase in the supply of bonds. The supply curve, B^s , shifts to the right causing the bond price to fall and the equilibrium interest rate to rise.

5. *According to the portfolio choice theory, name and briefly explain the four factors that affect the demand for a particular asset.*

- 1) Wealth – An increase in wealth raises the quantity demand of an asset.
- 2) Expected return relative to other assets - An increase in a particular asset's rate of return relative to another asset raises the quantity demanded of that asset.
- 3) Risk - An increase in an asset's risk relative to another asset reduces the quantity demanded of the first asset.
- 4) Liquidity - The more liquid an asset is relative to another asset means the quantity demanded of the first asset will be greater.

6. *The President of the United States announces that he or she will fight a high inflation rate with a new anti-inflation program. Predict what will happen to bond prices and interest rates if the public believes the President.*

If the public believes the President's program will be successful, bond prices will rise and interest rates will fall. The President's announcement will lower expected inflation so that the expected return on goods decreases relative to bonds. The demand for bonds increases and the demand curve, B^d , shifts to the right. For a given nominal interest rate, the lower expected inflation means that the real interest rate has risen, raising the cost of borrowing so that the supply of bonds falls and supply curve, B^s , shifts to the left. The resulting leftward shift of the supply curve, B^s , and the rightward shift of the demand curve, B^d , causes the bond price to rise and the equilibrium interest rate to fall.

7. The demand curve and supply curve for one-year discount bonds with a face value of \$1,000 are represented by the following equations:

$$B^d: \text{Price} = -0.6 \times \text{Quantity} + 1,140$$

$$B^s: \text{Price} = \text{Quantity} + 700$$

- a. What is the expected equilibrium price and quantity of bonds in this market?

Solving for the equilibrium gives:

$$-0.6 \times \text{Quantity} + 1,140 = \text{Quantity} + 700,$$

$$1.6 \times \text{Quantity} = 440,$$

$$\text{Quantity} = 275.$$

Using the bond supply equation:

$$\text{Price} = 275 + 700,$$

$$\text{Price} = 975.$$

- b. Given your answer to part (a), what is the expected interest rate in this market?

The expected interest rate on a one-year discount bond with face value of \$1,000 and current price of \$975 is

$$\$975 = \$1,000 / (1+i)$$

$$1+i = \$1,000 / \$975,$$

$$i = 1.0256 - 1,$$

$$i = 0.0256,$$

$$= 2.56\%.$$