Macroeconomics I

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Problem Set 2

Answer the following questions:

1) What is the role of the financial system? Name and describe two markets that are part of the financial system in our economy. Name and describe two financial intermediaries.

Answer: The financial system's role is to help match one person's saving with another person's investment. Two markets that are part of the financial system are the bond market, through which large corporations, the federal government, or state and local governments borrow, and the stock market, through which corporations sell ownership shares. Two financial intermediaries are banks, which take in deposits and use the deposits to make loans, and mutual funds, which sell shares to the public and use the proceeds to buy a portfolio of financial assets.

2) What is national saving? What is private saving? What is public saving? How are these three variables related?

Answer: National saving is the amount of a nation's income that is not spent on consumption or government purchases. Private saving is the amount of income that households have left after paying their taxes and paying for their consumption. Public saving is the amount of tax revenue that the government has left after paying for its spending. The three variables are related because national saving equals private saving plus public saving.

3) For each of the following pairs, which bond would you expect to pay a higher interest rate? Explain.

a. a bond of the U.S. government or a bond of an eastern European government

Answer: The bond of an eastern European government would pay a higher interest rate than the bond of the U.S. government because there would be a greater risk of default.

b. a bond that repays the principal in 2020 or a bond that repays the principal in 2040

Answer: A bond that repays the principal in 2040 would pay a higher interest rate than a bond that repays the principal in 2020 because it has a longer term to maturity, so there is more risk to the principal.

c. a bond from Coca-Cola or a bond from a software company you run in your garage

Answer: A bond from a software company you run in your garage would pay a higher interest rate than a bond from Coca-Cola because your software company has more credit risk.

4) Suppose GDP is $8 trillion, taxes are $1.5 trillion, private saving is $0.5 trillion, and public saving is $0.2 trillion. Assuming this economy is closed, calculate consumption, government purchases, national saving, and investment.

Answer: Given that Y = 8, T = 1.5, $S_{private}$ = 0.5 = Y –T – C, S_{public} = 0.2 = T – G.

Because $S_{private}$ = Y – T – C, then rearranging gives C = Y – T – $S_{private}$ = 8 – 1.5 – 0.5 = 6.

Because S_{public} = T – G, then rearranging gives G = T – S_{public} = 1.5 – 0.2 = 1.3.

Because S = national saving = $S_{private}$ + S_{public} = 0.5 + 0.2 = 0.7.

Finally, because I = investment = S, I = 0.7.

5) Suppose that Intel is considering building a new chipmaking factory.

a. Assuming that Intel needs to borrow money in the bond market, why would an increase in interest rates affect Intel's decision about whether to build the factory?

Answer: If interest rates increase, the costs of borrowing money to build the factory become higher, so the returns from building the new plant may not be sufficient to cover the costs. Thus, higher interest rates make it less likely that Intel will build the new factory.

b. If Intel has enough of its own funds to finance the new factory without borrowing, would an increase in interest rates still affect Intel's decision about whether to build the factory? Explain.

Answer: Even if Intel uses its own funds to finance the factory, the rise in interest rates still matters. There is an opportunity cost on the use of the funds. Instead of investing in the factory, Intel could use the money to purchase bonds and earn the higher interest rate available there. Intel will compare its potential returns from building the factory to the potential returns from the bond market. If interest rates rise, so that bond market returns rise, Intel is again less likely to invest in the factory.