Chapter 10: Savings, Investment, Spending and the Financial System

Savings-Investment Spending Identity

- Recall that $Y = C + I + G + NX$
- Now suppose that we are in a closed economy (i.e. NX=0)
- Thus, we have $Y = C + I + G$ **(1)**
- We can also think of Savings as $S = Y - C - G$ **(2)**
    - This is because GDP = Spending = Income. Income can be consumed privately, consumed by the government, or saved
- If we substitute our definition of Y from **(1)** into **(2)**, we are thus left with the following:

$$S = Y - C - G = I + (C + G) - (C + G) = I$$

- So **Savings = Investments Spending**. This is an accounting identity: it must always be true
- Further, we can split savings into two components (T = taxes; TR = transfers):
    - $S_{Private} = Y - C - (T - TR)$
    - $S_{Public} = T - G - TR$
    - $S_{National} = S_{Private} + S_{Public}$
- If S_{Public} is positive, we have a **budget surplus**. If negative, then we have a **budget deficit**
- So (if there are no exports or imports), $S_{National}$ = **Investment Spending**

Market for Loanable Funds

Market for Loanable Funds
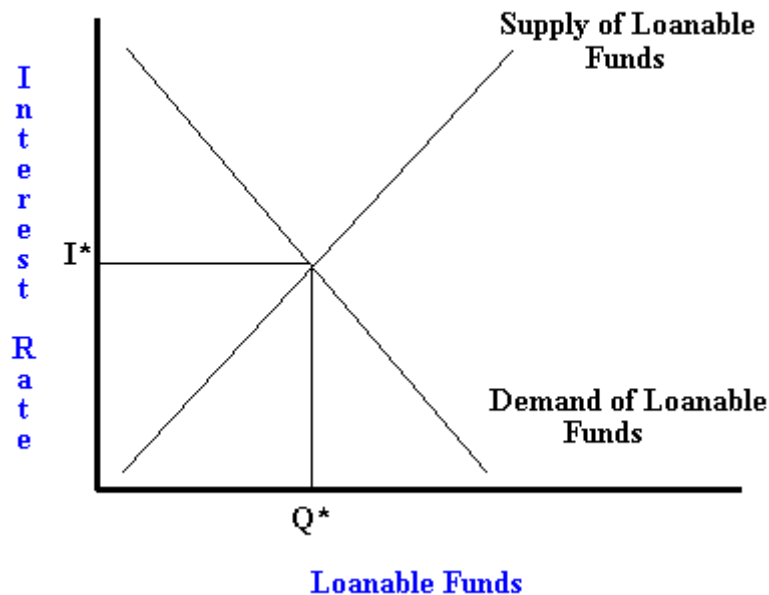
- Suppliers in this market are **households saving money for future consumption**

- Demand comes from **firms looking to make investments**
- The "price" in this market is the **nominal interest rate** (it is the price of money!)
    o The "law of demand" and "law of supply" apply here: as the real interest rate rises firms are less likely to borrow money and households are more likely to save money
- <u>Shifts in Demand</u> include: perceived changes in business opportunities and changes in government spending
- <u>Shifts in Supply</u> include: changes in private behavior and in net capital flows

Net Capital Inflows and Savings in an Open Economy

In an open economy, savings do not need to be spent on investment projects within the same country in which the savings are generated. As a result, a country can now receive an *inflow* of funds—foreign dollars which finance projects in that country. Countries can also generate *outflows* of funds—domestic savings that finance investment spending in a different country. The *net capital inflow* into a country describes the net effect of the international inflows and outflows for a given country

$$Net\ Capital\ Inflows = NCI = IM - X$$

Combining this formula with our earlier savings identity, we get

$$I = GDP - C - G + (IM - X) = S_{National} + NCI$$

Important Effects in the Loanable Funds Market

- **Crowding Out:** An increase in the government deficit in a closed economy leads to an increased demand for loanable funds. This increases the equilibrium interest rate, leading to decreased investment by private businesses
    o An increase in the government deficit in a closed economy leads to an increased demand for loanable funds. This increases the equilibrium interest rate, leading to decreased investment by private businesses

- **The Fisher Effect**: Changes in expected inflation increase the **nominal interest rate** (it has no impact on the equilibrium **quantity** in the loanable funds market)
    o Example: Suppose the nominal interest rate is fixed. If expectations of inflation rise, this increases the demand for loanable funds (as the cost of borrowing in real dollars decreases), while the supply falls (as the real return on savings falls). The Fisher effect states that if expectations are the same from both households and firms, the shifts will counteract each other, leading to no change in the equilibrium quantity

The Financial System

- Financial Markets are where households invest their **wealth** to buy financial assets
- **Financial Assets** are paper claims that that entitle the buyer to future income from the seller
- Households can also purchase **physical assets**, tangible objects used to generate future income (ex: a house)
- If a household takes out a loan, the household and the bank also create a **liability**, an obligation to pay income in the future
- There are three functions of the financial system:
  o Reducing Transaction Costs: reducing the cost of actually putting together and executing a deal
  o Reducing Risk: primarily done through **diversification**, investing in several assets with unrelated risks
  o Providing Liquidity: providing currency to those in need of it

Types of Financial Assets

- **Loans** are lending agreements between a lender and a borrower
- **Bonds** are an IOU between the borrow and lender where the borrower pays a fixed amount over time plus the principal at the end of the specified timeframe
- **Loan-Backed Securities** are assets made by pooling individual loans and selling shares in that pool
- **Stocks** are shares in the ownership of a company

Financial Intermediaries

- A **financial intermediary** is an institution that transforms funds from many individuals into financial assets
  o Example: A **mutual fund** is a financial intermediary that creates a stock portfolio by buying and holding shares in companies and then selling shares of the stock portfolio to individual investors

Practice Problems

1. There is a government budget deficit if
A) T – TR > G.
B) G < T.
C) G < TR.
D) TR + G > T

2. If technological change increases the profitability of new investment for firms, then the _____ curve for loanable funds will shift to the _____ and the equilibrium real interest rate will _____.
A) demand; right; rise
B) supply; left; rise
C) supply; right; fall
D) demand; left; fall

3. In a closed economy, government spending was $30 billion, consumption was $70 billion, taxes were $20 billion, and GDP was $110 billion this year. Investment spending was $10. As a result:
a) The government's budget balance was equal to a surplus of $10 billion
b) Net savings were equal to $0
c) Private savings were equal to $20 billion
d) Private savings were equal to $10 billion

4. In a closed economy,
a) $Y = C + G + NX$
b) $Y = C + I + S$
c) $Y = C + I + T$
d) $Y = C + I + G$

5. A fall in the market interest rate makes any investment project:
a) More profitable whether the funds were borrowed or came from retained earnings
b) More profitable only if the funds were borrowed
c) Less profitable whether the funds were borrowed or came from retained earnings
d) Less profitable of the funds were borrowed and more profitable if it came from retained earnings

6. Interest rates and planned investment spending:
a) Have no relationship, since planned investment is fixed
b) Exhibit a negative relationship
c) Have no relationship if the firm has retained earnings
d) Have a positive relationship

7. An increase in the level of business opportunity will general:
a) Cause a movement either up or down the loanable funds demand curve
b) Not change the loanable funds demand curve
c) Shift the loanable funds demand curve to the left
d) Shift the loanable funds demand curve to the right

8. Which of the following statements are true?

a) In an open economy, the only source of funds for investment spending is domestic savings

b) In a closed economy, the only use of savings is to provide funds to finance government deficits

c) In a closed economy, the only source of funds for investment spending is domestic savings

d) Answers (a) and (b) are both true

e) Answers (b) and (c) are both true