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ECON 312
Intermediate Macroeconomics

Chapter Outline for “Chapter 5—The Open Economy,” N. Gregory Mankiw, *Macroeconomics*, Sixth edition (New York, N.Y.: Worth Publishers, 2007)

5-1 The International Flows of Capital and Goods

See [Figure 5-1](#)

The Role of Net Exports

$$Y = C^d + I^d + G^d + EX$$

$$C = C^d + C^f$$

$$I = I^d + I^f$$

$$G = G^d + G^f$$

$$Y = (C - C^f) + (I - I^f) + (G - G^f) + EX$$

$$Y = C + I + G + EX - (C^f + I^f + G^f)$$

$$Y = C + I + G + EX - IM$$

Net exports

$$Y = C + I + G + NX$$

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

Net Exports = Output – Domestic Spending

If output exceeds domestic spending, we export the difference: net exports are positive. If output falls short of domestic spending, we import the difference: net exports are negative.

International Capital Flows and the Trade Balance

$$Y = C + I + G + NX$$

$$Y - C - G = I + NX$$

$$S = I + NX$$

$$S - I = NX$$

Trade balance

Net capital outflow

Net Capital Outflow = Trade balance

Trade surplus

Trade deficit

Balanced trade

See Table 5-1

The national income accounts identity shows that the international flow of funds to finance capital accumulation and the international flow of goods and services are two sides of the same coin.

International Flows of Goods and Capital: An Example

FYI: The Irrelevance of Bilateral Trade Balances

5-2 Saving and Investment in a Small Open Economy

Capital Mobility and the World Interest Rate

Small open economy

World interest rate

$$r = r^*$$

Why Assume a Small Open Economy?

The Model

$$Y = \bar{Y} = F(\bar{K}, \bar{L})$$

$$C = C(Y - T)$$

$$I = I(r)$$

$$NX = (Y - C - G) - I$$

$$NX = S - I$$

$$NX = [\bar{Y} - C(\bar{Y} - \bar{T}) - \bar{G}] - I(r^*)$$

$$NX = \bar{S} - I(r^*)$$

The trade balance is determined by the difference between saving and investment at the world interest rate.

See Figure 5-2

How Policies Influence the Trade Balance

Fiscal Policy at Home

See Figure 5-3

Starting from balanced trade, a change in fiscal policy that reduces national saving leads to a trade deficit.

Fiscal Policy Abroad

See Figure 5-4

Starting from balanced trade, an increase in the world interest rate due to a fiscal expansion abroad leads to a trade surplus.

Shifts in Investment Demand

See Figure 5-5

Starting from balanced trade, an outward shift in the investment schedule causes a trade deficit.

Evaluating Economic Policy

CASE STUDY: The U.S. Trade Deficit

See [Figure 5-6](#)

CASE STUDY: Why Doesn't Capital Flow to Poor Countries?

5-3 Exchange Rates

Nominal and Real Exchange Rates

The Nominal Exchange Rate

FYI: How Newspapers Report the Exchange Rate

The Real Exchange Rate

Real Exchange Rate = (Nominal Exchange Rate) \times (Ratio of Price Levels)

$$\varepsilon = e \times (P / P^*)$$

If the real exchange rate is high, foreign goods are relatively cheap, and domestic goods are relatively expensive. If the real exchange rate is low, foreign goods are relatively expensive, and domestic goods are relatively cheap.

The Real Exchange Rate and the Trade Balance

$$NX = NX(\varepsilon)$$

See Figure 5-7

The Determinants of the Real Exchange Rate

Real exchange rate is related to net exports

Net exports must equal foreign investment

See Figure 5-8

At the equilibrium real exchange rate, the supply of dollars available for net foreign investment balances the demand for dollars by foreigners buying our exports.

How Policies Influence the Real Exchange Rate

Fiscal Policy at Home

See Figure 5-9

Fiscal Policy Abroad

See Figure 5-10

Shifts in Investment Demand

See Figure 5-11

The Effects of Trade Policies

See Figure 5-12

The Determinants of the Nominal Exchange Rate

Real exchange rate = (Nominal Exchange Rate) \times (Ratio of Price Levels)

$$e = \varepsilon \times (P^* / P)$$

$$\% \text{ Change in } e = \% \text{ Change in } \varepsilon + \% \text{ Change in } P^* - \% \text{ Change in } P$$

$$\% \text{ Change in } e = \% \text{ Change in } \varepsilon + (\pi^* - \pi)$$

Case Study: Inflation and Nominal Exchange Rates

See [Figure 5-13](#)

The Special Case of Purchasing Power Parity

See Figure 5-14

CASE STUDY: The Big Mac Around the World

See Table 5-2

5-4 Conclusion: The United States as a Large Open Economy

Questions for Review: 1, 2, 3, 5

Problems and Applications: 2, 4, 5, 8, 10