

## UNIT 6

# Open Economy — International Trade and Finance

*Balance of payments, exchange rates, the foreign exchange market, and international capital flows*

**10-13%**

EXAM WEIGHTING

**5-7**

CLASS PERIODS

**6**

TOPICS IN UNIT

# What This Unit Covers

## TOPICS IN THIS UNIT

6.1 Balance of Payments Accounts

6.2 Exchange Rates

6.3 The Foreign Exchange Market

6.4 Effect of Policy & Conditions on the Forex Market

6.5 Changes in the Forex Market and Net Exports

6.6 Real Interest Rates and International Capital Flows

## BIG IDEAS

- MEA — Economic Measurements: Why does the balance of payments balance?
- MKT — Markets: Why do currency values change, and how do they affect the economy?

## WHY IT MATTERS

An open economy interacts with the rest of the world through both product and financial markets. Exchange rates link nations: changes in economic activity affect a currency's value, and changes in a currency's value feed back into the economy through net exports and capital flows.

**10-13%** of the AP Exam multiple-choice and free-response score

## TOPIC 6.1

# Balance of Payments Accounts

*Enduring Understanding MEA-4 — Foreign trade accounting measures the flow of goods, services, and financial capital between countries.*

LEARNING OBJECTIVES: MEA-4.A — Define the current account, the capital and financial account, and the balance of payments; calculate each.

# The Current Account

*The current account (CA) records a country's transactions in goods, services, and income with the rest of the world.*

## What the CA Records

The current account records NET EXPORTS (the balance of trade), NET INCOME earned from abroad, and NET UNILATERAL TRANSFERS (such as foreign aid and remittances).

## Surplus or Deficit

The CA is not always balanced — it can show a surplus or a deficit. A country's balance of trade (net exports) is part of the CA and can itself be in surplus or deficit.

## The Balance of Trade

Net exports = exports - imports. When a country imports more goods and services than it exports, its balance of trade — and often its current account — is in deficit.

# The Capital & Financial Account and the BOP

*The capital and financial account tracks asset transactions — and together with the current account it forms the balance of payments.*

## Capital & Financial Account (CFA)

The CFA records financial capital transfers and the purchase and sale of ASSETS between countries — foreign investment, buying foreign stocks and bonds, real estate, and so on.

## CFA Surplus or Deficit

The CFA can also show a surplus — a net financial capital INFLOW — or a deficit — a net financial capital OUTFLOW.

## The Balance of Payments (BOP)

The BOP is the accounting system recording ALL of a country's international transactions for a period. It consists of the current account plus the capital and financial account.

# Why the Balance of Payments Balances

*Credits and debits, and the identity  $CA + CFA = 0$  — the answer to the Big Idea question.*

## Credits and Debits

Any transaction that causes money to flow INTO a country is a CREDIT to its BOP. Any transaction that causes money to flow OUT is a DEBIT. The sum of all credits equals the sum of all debits.

## The Core Identity: $CA + CFA = 0$

The current account and the capital & financial account must offset each other. A current account DEFICIT is matched by a capital & financial account SURPLUS — and vice versa.

## The Intuition

If a country buys more goods than it sells (CA deficit), it must pay with assets or borrowing — so foreign capital flows in (CFA surplus). The money has to come from somewhere.

## TOPIC 6.2

# Exchange Rates

*Enduring Understanding MKT-5 — The exchange of currencies determines the equilibrium exchange rate and influences trade and capital flows.*

LEARNING OBJECTIVES: MKT-5.A — Define the exchange rate, appreciation, and depreciation; calculate currency values.

# Exchange Rates, Appreciation, and Depreciation

## The Exchange Rate

In the foreign exchange market, one currency is traded for another. The exchange rate is the PRICE of one currency in terms of another — for example, dollars per euro.

## Appreciation

A currency APPRECIATES when it becomes more valuable in terms of another currency — it now buys more of that other currency.

## Depreciation

A currency DEPRECIATES when it becomes less valuable in terms of another currency — it now buys less of that other currency.

## They Always Come in Pairs

Currencies are valued relative to each other. If the dollar appreciates against the euro, the euro MUST depreciate against the dollar. One up means the other down.

# Calculating Currency Values

*Exchange rates are reciprocals of each other — flip the ratio to switch perspective.*

## RECIPROCAL RELATIONSHIP

$$\text{\$ per euro} = 1 / (\text{euros per \$})$$

If 1 euro = \$1.25, then \$1 =  $1/1.25 = 0.80$  euros. The two quotes describe the same exchange rate from opposite sides.

## CONVERTING AN AMOUNT

$$\text{Amount in currency B} = \text{Amount in A} \times (\text{B per A})$$

Example: 200 euros at \$1.25 per euro =  $200 \times 1.25 = \$250$ . Multiply by the exchange rate quoted in the currency you want.

## TOPIC 6.3

# The Foreign Exchange Market

*Where the demand for and supply of a currency determine its equilibrium exchange rate.*

LEARNING OBJECTIVES: MKT-5.B — Define the forex market, currency demand, and currency supply. MKT-5.C-D — Equilibrium and adjustment.

# The Foreign Exchange Market

*The foreign exchange market for a currency works like any supply-and-demand market — the 'price' is the exchange rate.*

- DEMAND for a currency comes from foreigners wanting that country's goods, services, and financial assets — it slopes DOWN.
- SUPPLY of a currency comes from that country's residents making payments in other currencies — it slopes UP.
- Equilibrium is the exchange rate at which the quantity of the currency demanded equals the quantity supplied.
- On the foreign exchange model, the vertical axis is the exchange rate — the price of one unit of the currency being analyzed.

## KEY TAKEAWAY

The forex market is just supply and demand. Label the vertical axis carefully — it is the price of one unit of the currency being analyzed.

# Demand, Supply, and Equilibrium in the Forex Market

## Where Demand Comes From

The demand for a currency arises from the demand for that country's goods, services, and financial assets. There is an **INVERSE** relationship between the exchange rate and the quantity of the currency demanded.

## Where Supply Comes From

The supply of a currency arises from residents making payments in other currencies (buying foreign goods and assets). There is a **POSITIVE** relationship between the exchange rate and the quantity supplied.

## How the Rate Adjusts

A disequilibrium exchange rate creates a surplus or shortage of the currency. Market forces then drive the exchange rate toward equilibrium — the same self-correction as any market.

## TOPIC 6.4

# Effects of Policies and Economic Conditions on the Forex Market

*What shifts currency demand and supply — and how policy moves exchange rates.*

LEARNING OBJECTIVES: MKT-5.E — Explain the determinants of currency demand and supply and how shifts change the exchange rate.

# Shifts in the Forex Market: Appreciation and Depreciation

*When demand for or supply of a currency shifts, the equilibrium exchange rate changes — the currency appreciates or depreciates.*

- An INCREASE in demand for a currency raises its exchange rate — the currency APPRECIATES.
- An INCREASE in the supply of a currency lowers its exchange rate — the currency DEPRECIATES.
- Remember the pairing: if one currency appreciates, the other depreciates.
- Always show the shift with an arrow and label the new equilibrium exchange rate.

## KEY TAKEAWAY

More demand for a currency → it appreciates. More supply of a currency → it depreciates. The other currency always moves the opposite way.

# Determinants of Currency Demand and Supply

*Several factors shift the demand for and supply of a currency, changing the equilibrium exchange rate.*

## Tastes & Relative Income

A stronger preference for a country's goods raises demand for its currency. Higher income abroad raises foreign demand for that country's exports and currency.

## Relative Price Levels & Inflation

If a country's price level rises relative to others, its goods become less attractive — demand for its currency falls and it tends to depreciate.

## Relative Interest Rates

Higher real interest rates in a country attract foreign financial investment, raising demand for its currency and causing it to appreciate.

## Speculation & Trade Policy

Expectations of future appreciation raise current demand. Tariffs and quotas on another country's goods reduce the supply of one's own currency reaching that market.

# How Fiscal and Monetary Policy Affect Exchange Rates

## Monetary Policy → Exchange Rates

Monetary policy changes interest rates. EXPANSIONARY monetary policy lowers domestic interest rates → less foreign financial inflow → lower demand for the currency → the currency DEPRECIATES. Contractionary policy does the reverse.

## Fiscal Policy → Exchange Rates

Fiscal policy can influence aggregate demand, real output, the price level, and — through interest rates — exchange rates. Expansionary fiscal policy that raises interest rates can attract capital and cause APPRECIATION.

## The Common Channel: Interest Rates

Both policies reach the exchange rate mainly through their effect on interest rates, which drive international financial flows and the demand for the currency.

## TOPIC 6.5

# Changes in the Forex Market and Net Exports

*How a change in a currency's value feeds back into the domestic economy.*

LEARNING OBJECTIVES: MKT-5.F — Explain how changes in a currency's value change net exports and aggregate demand.

# Appreciation, Depreciation, and Net Exports

*A change in a currency's value changes the relative price of exports and imports — and so changes net exports.*

## CURRENCY APPRECIATES

- **The currency is now stronger / worth more.**
- Domestic goods become MORE expensive for foreigners → exports decrease.
- Foreign goods become CHEAPER for domestic buyers → imports increase.
- **Net exports DECREASE.**
- Lower net exports → aggregate demand shifts left.

## CURRENCY DEPRECIATES

- **The currency is now weaker / worth less.**
- Domestic goods become CHEAPER for foreigners → exports increase.
- Foreign goods become MORE expensive for domestic buyers → imports decrease.
- **Net exports INCREASE.**
- Higher net exports → aggregate demand shifts right.

# From Exchange Rates to Aggregate Demand

*Net exports are a component of AD — so exchange-rate changes ripple all the way to output, employment, and the price level.*

- Recall  $AD = C + I + G + X_n$  — net exports are part of aggregate demand.
- A currency DEPRECIATION raises net exports → AD shifts RIGHT → real output and employment rise, and the price level rises.
- A currency APPRECIATION lowers net exports → AD shifts LEFT → real output and employment fall, and the price level falls.
- **Example chain: expansionary monetary policy → lower interest rates → capital outflow → currency depreciates → net exports rise → AD shifts right.**
- This is why an open economy gives monetary policy an extra channel — the exchange rate — on top of the domestic interest-rate channel.
- On free-response, narrate every link: policy → interest rate → exchange rate → net exports → AD → output and price level.

## TOPIC 6.6

# Real Interest Rates and International Capital Flows

*How interest-rate differences across countries move financial capital — and currencies.*

LEARNING OBJECTIVES: MKT-5.G — Explain how real interest rate differences affect capital flows, the forex market, and loanable funds.

# Real Interest Rates and Capital Flows

*Financial capital chases higher returns — it flows toward the country with the relatively higher real interest rate.*

- Differences in real interest rates across countries change the relative attractiveness of domestic and foreign assets.
- Financial capital flows TOWARD the country with the relatively higher real interest rate.
- That capital inflow raises demand for the country's currency → the currency appreciates.
- Central banks can influence the domestic interest rate in the short run — and thereby affect net capital inflows.

## KEY TAKEAWAY

Higher relative real interest rate → capital flows in → currency demand rises → the currency appreciates → net exports fall.

# Connecting the Markets: Loanable Funds, Forex, and AD

*Unit 6 is a synthesis — interest rates, capital flows, exchange rates, and aggregate demand are all linked.*

## 1 Loanable Funds → Capital Flows

A change in a country's real interest rate (from policy or from changes in saving and borrowing) changes how attractive its assets are, redirecting international capital flows.

## 2 Capital Flows → Forex Market

Capital flowing IN raises demand for the domestic currency and causes APPRECIATION.  
Capital flowing OUT raises supply of the currency and causes DEPRECIATION.

## 3 Forex → Net Exports → AD

The resulting appreciation or depreciation changes net exports, which shifts aggregate demand — affecting output, employment, and the price level.

# Common Pitfalls & Exam Tips

## Label the forex axes

The vertical axis is the exchange rate for ONE unit of the currency being analyzed. State which currency the market is for, and be consistent.

## Currencies move in pairs

If one currency appreciates, the other depreciates. Always state the effect on both currencies.

## Strong currency hurts exports

Appreciation makes exports pricey and imports cheap → net exports fall. Depreciation does the reverse. Don't flip it.

## CA + CFA = 0

The current account and capital & financial account offset. A CA deficit is matched by a CFA surplus.

## Capital chases higher rates

Financial capital flows to the country with the higher relative real interest rate, raising demand for that currency.

## Narrate the full chain

Policy → interest rate → capital flows → exchange rate → net exports → AD. Show every link with arrows and labels.

# Unit 6 — Key Takeaways

1

The balance of payments has two accounts; the current account and the capital & financial account offset:  $CA + CFA = 0$ .

2

The exchange rate is the price of one currency in another; appreciation and depreciation always come in pairs.

3

The foreign exchange market is supply and demand for a currency — it sets the equilibrium exchange rate.

4

Determinants (income, price levels, interest rates, policy, speculation) shift currency demand and supply.

5

Appreciation lowers net exports; depreciation raises net exports — and net exports shift aggregate demand.

6

Financial capital flows toward higher real interest rates, driving currency appreciation and linking all the markets.