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A Macroeconomic Theory of the Open Economy

Open Economies

- An open economy is one that interacts freely with other economies around the world.

Key Macroeconomic Variables in an Open Economy

- The important macroeconomic variables of an open economy include:
 - net exports
 - net foreign investment
 - nominal exchange rates
 - real exchange rates

Basic Assumptions of a Macroeconomic Model of an Open Economy

- The model takes the economy's GDP as given.
- The model takes the economy's price level as given.

SUPPLY AND DEMAND FOR LOANABLE FUNDS AND FOR FOREIGN-CURRENCY EXCHANGE

- The Market for Loanable Funds

$$S = I + NCO$$

- At the equilibrium interest rate, the amount that people want to save exactly balances the desired quantities of investment and net capital outflows.

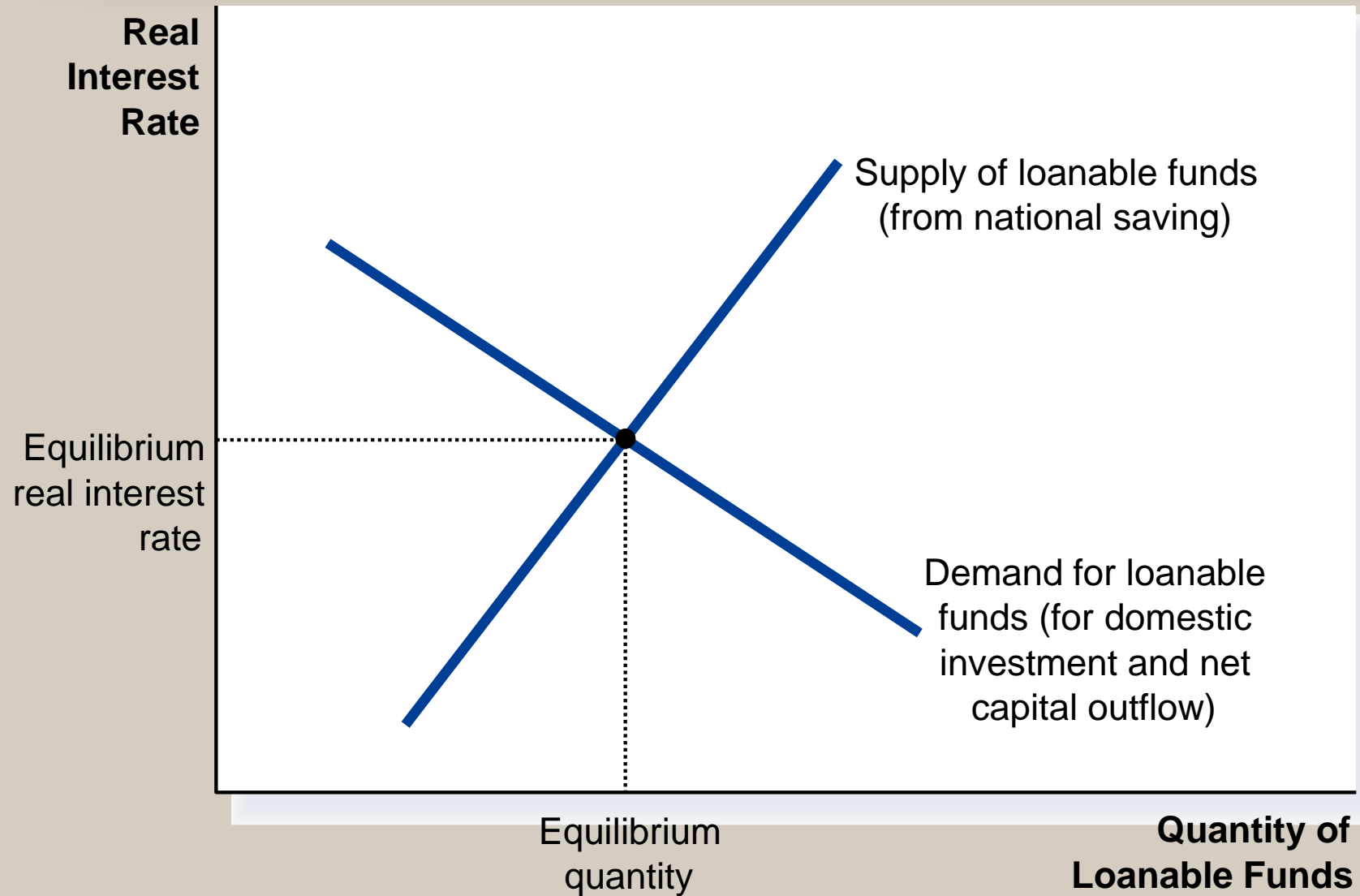
The Market for Loanable Funds

- The supply of loanable funds comes from national saving (S).
- The demand for loanable funds comes from domestic investment (I) and net capital outflows (NCO).

The Market for Loanable Funds

- The supply and demand for loanable funds depend on the real interest rate.
- A higher real interest rate encourages people to save and raises the quantity of loanable funds supplied.
- The interest rate adjusts to bring the supply and demand for loanable funds into balance.

Figure 1 The Market for Loanable Funds



The Market for Loanable Funds

- At the equilibrium interest rate, the amount that people want to save exactly balances the desired quantities of domestic investment and net foreign investment.

The Market for Foreign-Currency Exchange

- The two sides of the foreign-currency exchange market are represented by NCO and NX .
- NCO represents the imbalance between the purchases and sales of capital assets.
- NX represents the imbalance between exports and imports of goods and services.

The Market for Foreign-Currency Exchange

- In the market for foreign-currency exchange, U.S. dollars are traded for foreign currencies.
- For an economy as a whole, NCO and NX must balance each other out, or:

$$NCO = NX$$

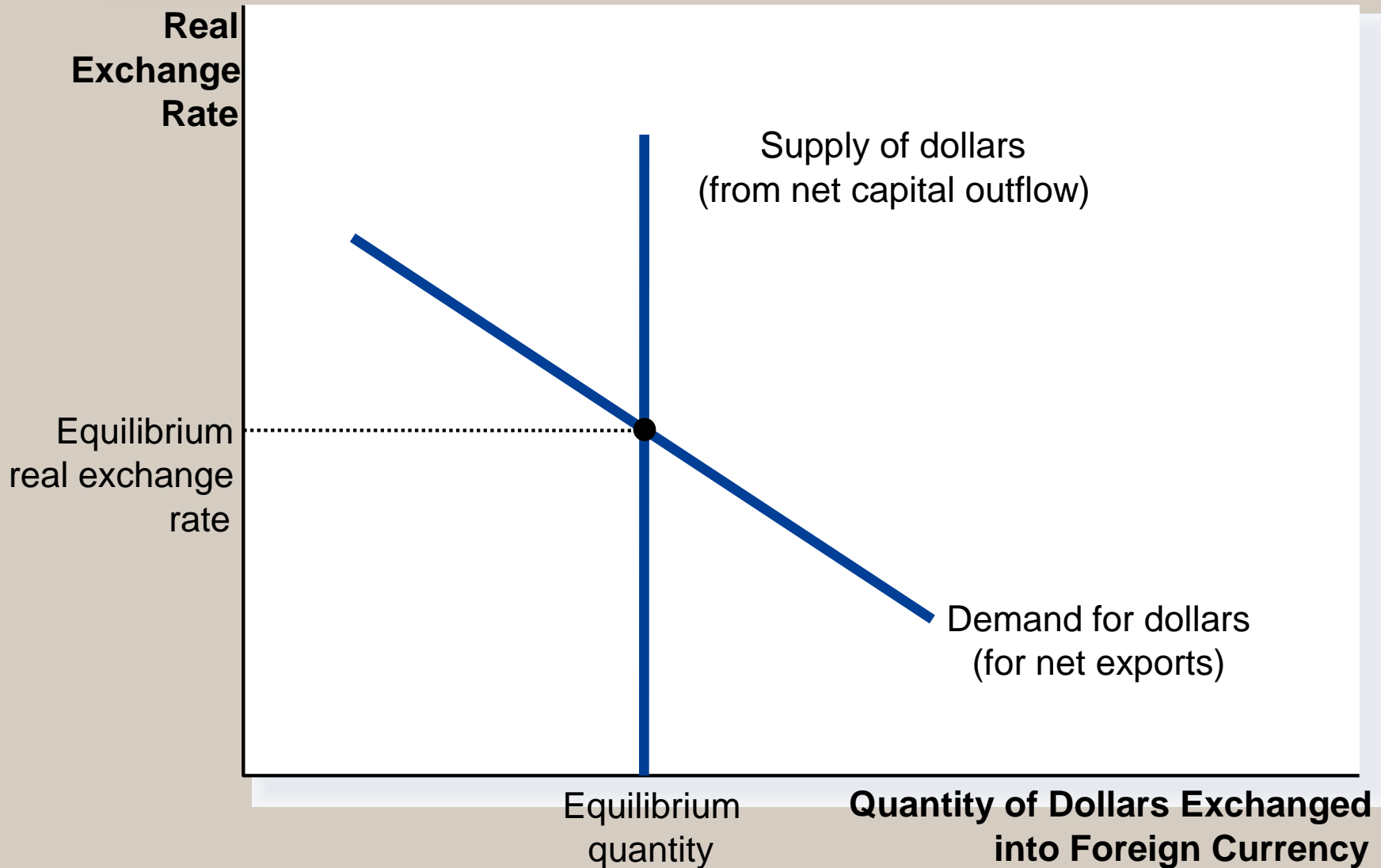
The Market for Foreign-Currency Exchange

- The price that balances the supply and demand for foreign-currency is the real exchange rate.

The Market for Foreign-Currency Exchange

- The demand curve for foreign currency is downward sloping because a higher exchange rate makes domestic goods more expensive.
- The supply curve is vertical because the quantity of dollars supplied for net capital outflow is unrelated to the real exchange rate.

Figure 2 The Market for Foreign-Currency Exchange



The Market for Foreign-Currency Exchange

- The real exchange rate adjusts to balance the supply and demand for dollars.
- At the equilibrium real exchange rate, the demand for dollars to buy net exports exactly balances the supply of dollars to be exchanged into foreign currency to buy assets abroad.

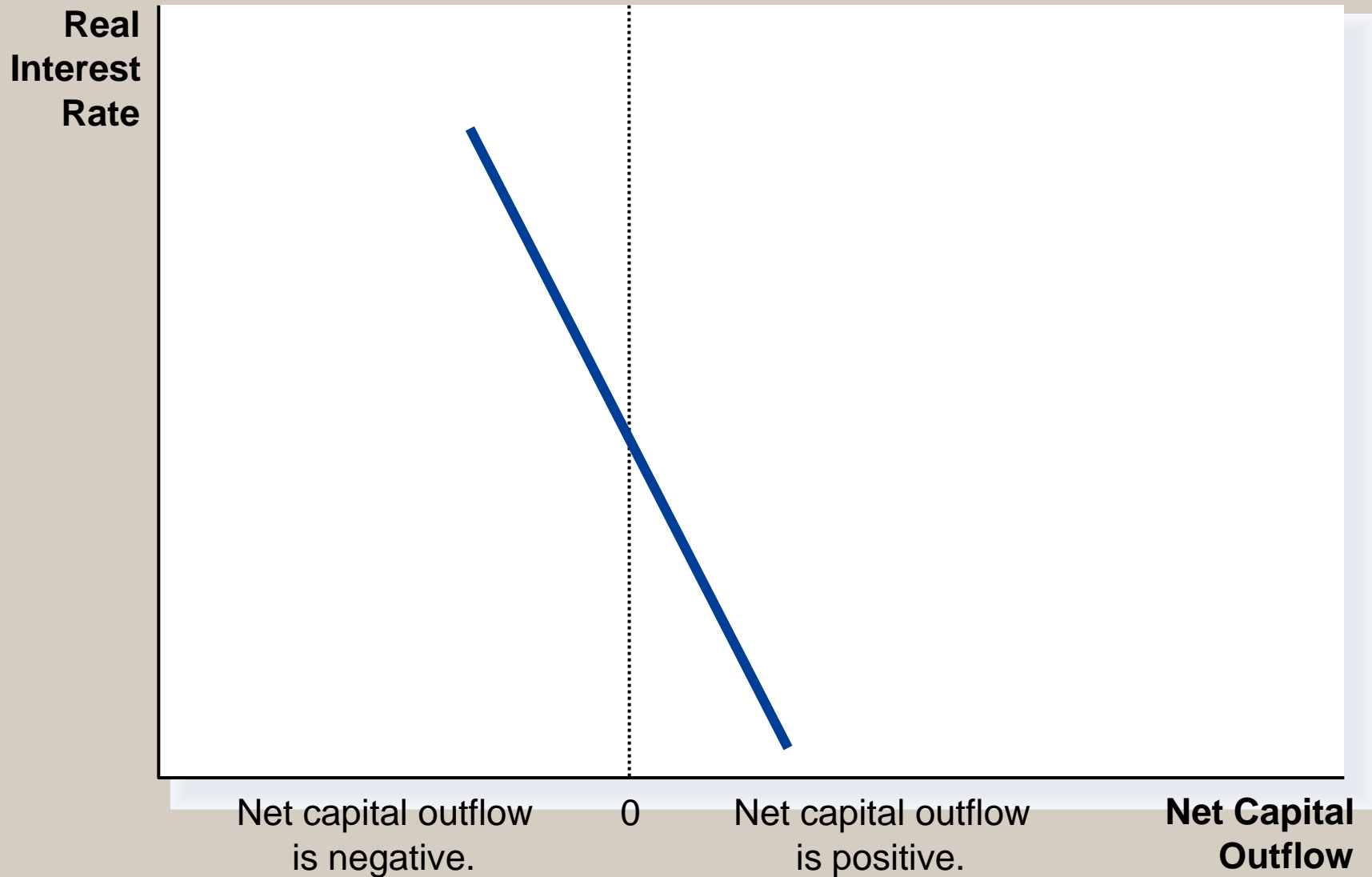
EQUILIBRIUM IN THE OPEN ECONOMY

- In the market for loanable funds, supply comes from national saving and demand comes from domestic investment and net capital outflow.
- In the market for foreign-currency exchange, supply comes from net capital outflow and demand comes from net exports.

EQUILIBRIUM IN THE OPEN ECONOMY

- Net capital outflow links the loanable funds market and the foreign-currency exchange market.
 - The key determinant of net capital outflow is the real interest rate.

Figure 3 How Net Capital Outflow Depends on the Interest Rate

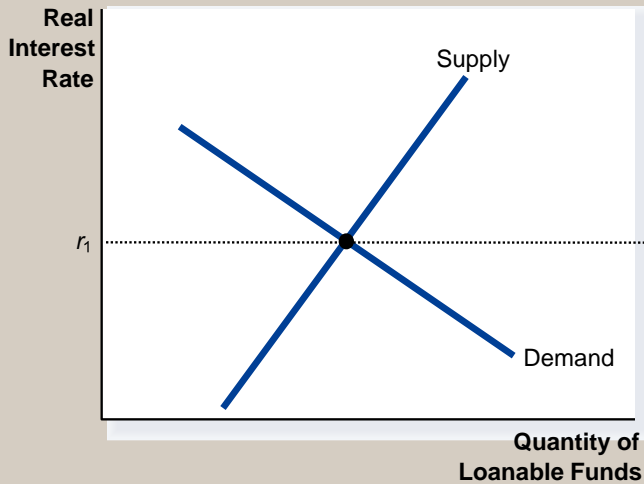


EQUILIBRIUM IN THE OPEN ECONOMY

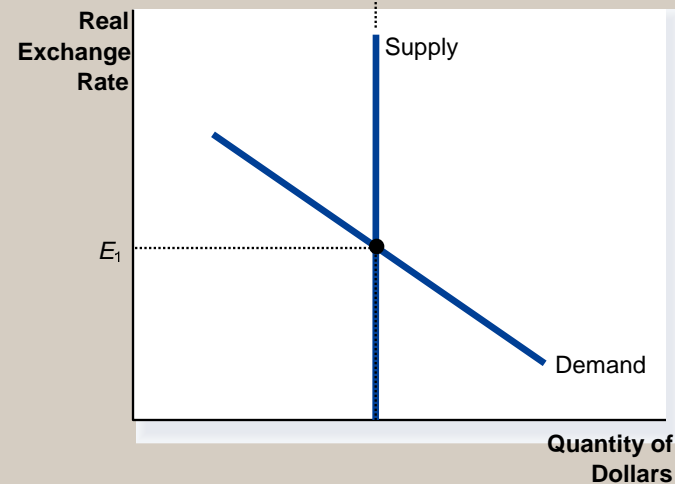
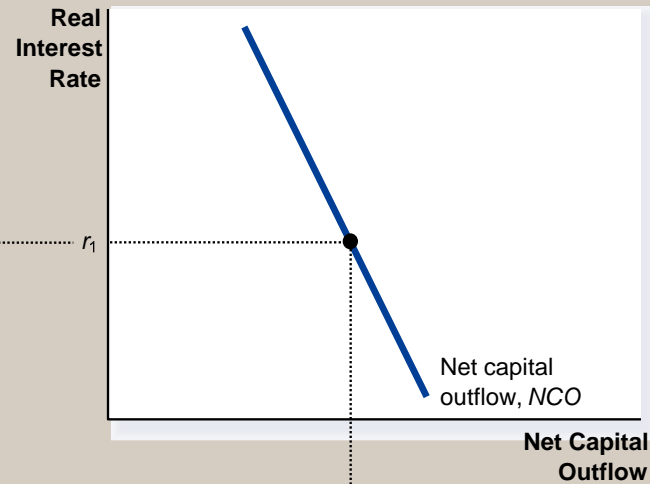
- Prices in the loanable funds market and the foreign-currency exchange market adjust simultaneously to balance supply and demand in these two markets.
- As they do, they determine the macroeconomic variables of national saving, domestic investment, net foreign investment, and net exports.

Figure 4 The Real Equilibrium in an Open Economy

(a) The Market for Loanable Funds



(b) Net Capital Outflow



(c) The Market for Foreign-Currency Exchange

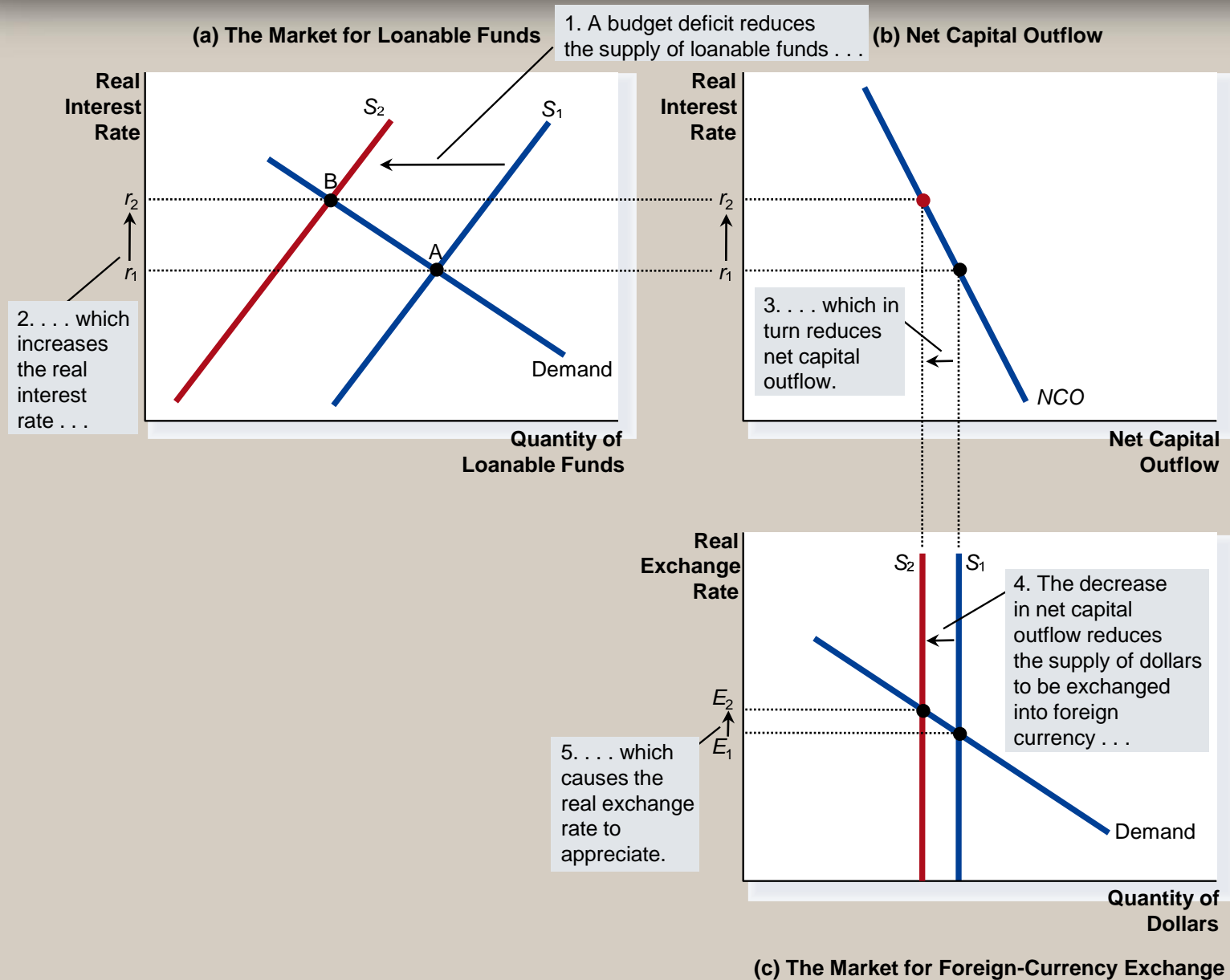
HOW POLICIES AND EVENTS AFFECT AN OPEN ECONOMY

- The magnitude and variation in important macroeconomic variables depend on the following:
 - Government budget deficits
 - Trade policies
 - Political and economic stability

Government Budget Deficits

- In an open economy, government budget deficits . . .
 - reduce the supply of loanable funds,
 - drive up the interest rate,
 - crowd out domestic investment,
 - cause net foreign investment to fall.

Figure 5 The Effects of Government Budget Deficit



Government Budget Deficits

- Effect of Budget Deficits on the Loanable Funds Market
 - A government budget deficit reduces national saving, which . . .
 - shifts the supply curve for loanable funds to the left, which . . .
 - raises interest rates.

Government Budget Deficits

- Effect of Budget Deficits on Net Foreign Investment
 - Higher interest rates reduce net foreign investment.

Government Budget Deficits

- Effect on the Foreign-Currency Exchange Market
 - A decrease in net foreign investment reduces the supply of dollars to be exchanged into foreign currency.
 - This causes the real exchange rate to *appreciate*.

Trade Policy

- A *trade policy* is a government policy that directly influences the quantity of goods and services that a country imports or exports.
 - Tariff: A tax on an imported good.
 - Import quota: A limit on the quantity of a good produced abroad and sold domestically.

Trade Policy

- Because they do not change national saving or domestic investment, trade policies do not affect the trade balance.
 - For a given level of national saving and domestic investment, the real exchange rate adjusts to keep the trade balance the same.
- Trade policies have a greater effect on microeconomic than on macroeconomic markets.

Trade Policy

- Effect of an Import Quota
 - Because foreigners need dollars to buy U.S. net exports, there is an increased demand for dollars in the market for foreign-currency.
 - This leads to an appreciation of the real exchange rate.

Trade Policy

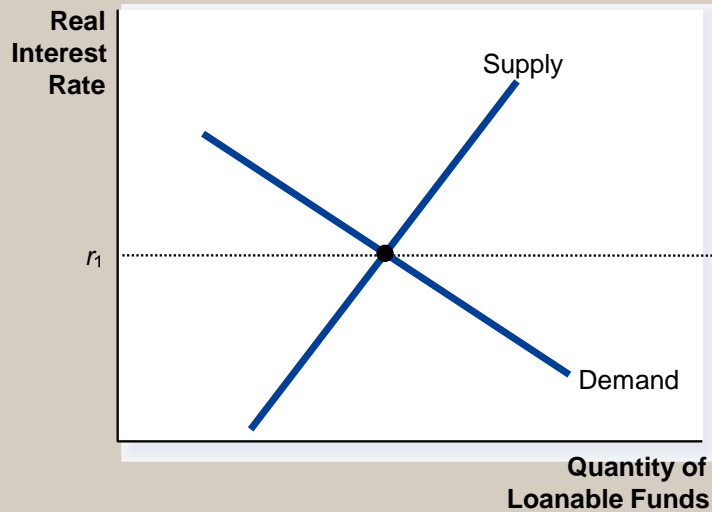
- Effect of an Import Quota
 - There is no change in the interest rate because nothing happens in the loanable funds market.
 - There will be no change in net exports.
 - There is no change in net foreign investment even though an import quota reduces imports.

Trade Policy

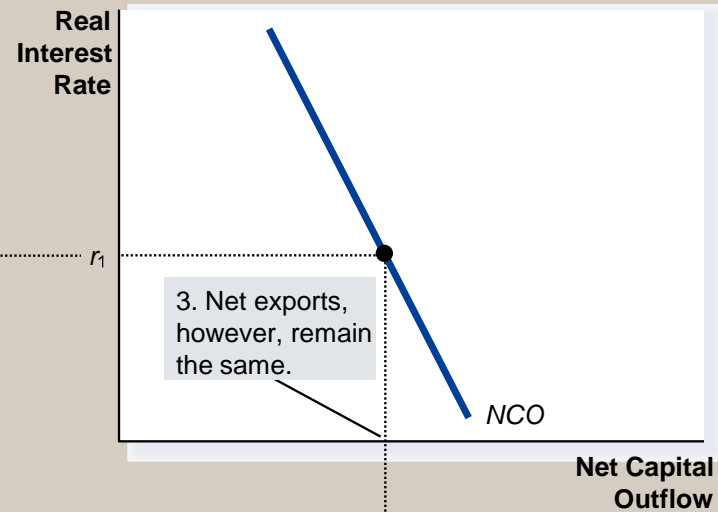
- Effect of an Import Quota
 - An appreciation of the dollar in the foreign exchange market encourages imports and discourages exports.
 - This offsets the initial increase in net exports due to import quota.

Figure 6 The Effects of an Import Quota

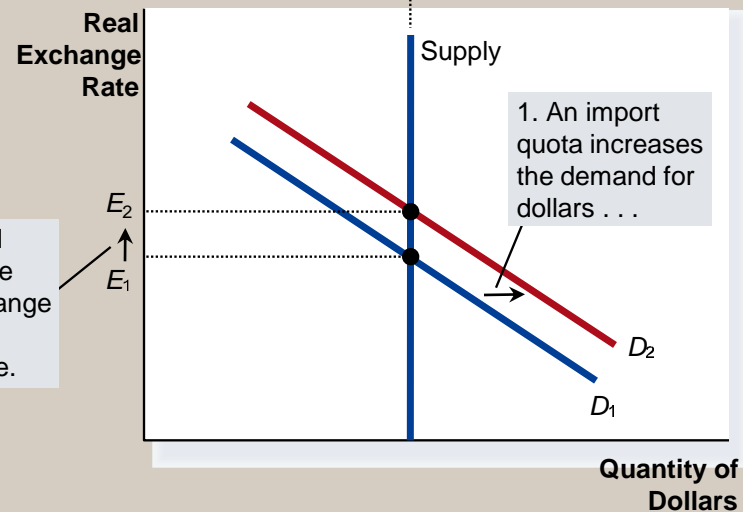
(a) The Market for Loanable Funds



(b) Net Capital Outflow



2. . . . and causes the real exchange rate to appreciate.



(c) The Market for Foreign-Currency Exchange

Trade Policy

- Effect of an Import Quota
 - Trade policies do not affect the trade balance.

Political Instability and Capital Flight

- *Capital flight* is a large and sudden reduction in the demand for assets located in a country.

Political Instability and Capital Flight

- Capital flight has its largest impact on the country from which the capital is fleeing, but it also affects other countries.
- If investors become concerned about the safety of their investments, capital can quickly leave an economy.
- Interest rates increase and the domestic currency depreciates.

Political Instability and Capital Flight

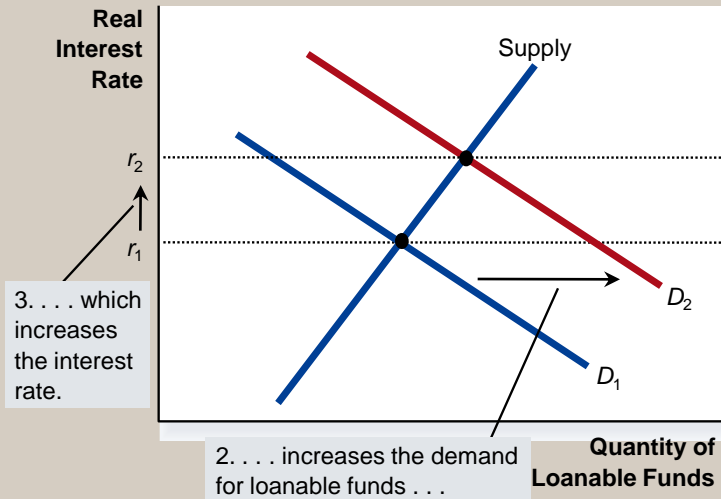
- When investors around the world observed political problems in Mexico in 1994, they sold some of their Mexican assets and used the proceeds to buy assets of other countries.

Political Instability and Capital Flight

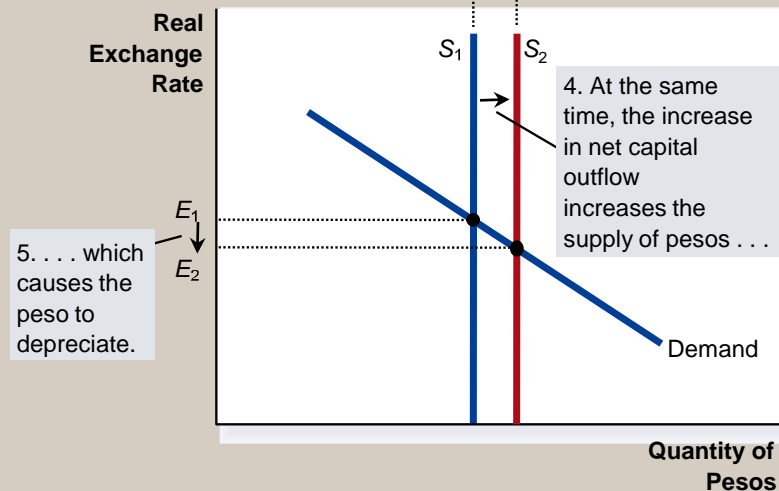
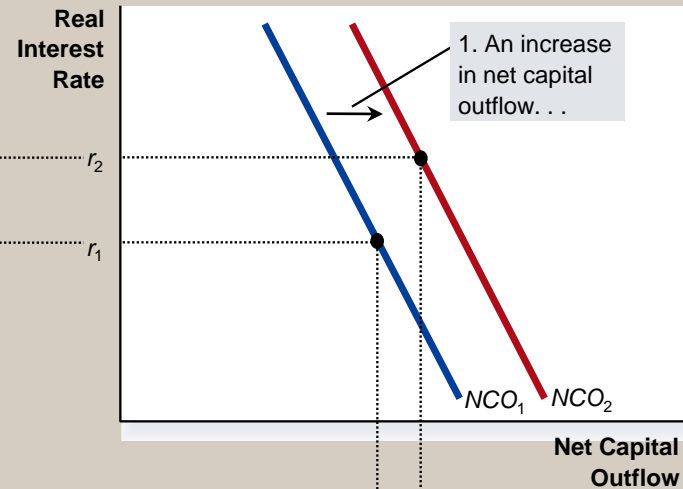
- This increased Mexican net capital outflow.
 - The demand for loanable funds in the loanable funds market increased, which increased the interest rate.
 - This increased the supply of pesos in the foreign-currency exchange market.

Figure 7 The Effects of Capital Flight

(a) The Market for Loanable Funds in Mexico



(b) Mexican Net Capital Outflow



(c) The Market for Foreign-Currency Exchange

Summary

- To analyze the macroeconomics of open economies, two markets are central—the market for loanable funds and the market for foreign-currency exchange.
- In the market for loanable funds, the interest rate adjusts to balance supply for loanable funds (from national saving) and demand for loanable funds (from domestic investment and net capital outflow).

Summary

- In the market for foreign-currency exchange, the real exchange rate adjusts to balance the supply of dollars (for net capital outflow) and the demand for dollars (for net exports).
- Net capital outflow is the variable that connects the two markets.

Summary

- A policy that reduces national saving, such as a government budget deficit, reduces the supply of loanable funds and drives up the interest rate.
- The higher interest rate reduces net capital outflow, reducing the supply of dollars.
- The dollar appreciates, and net exports fall.

Summary

- A trade restriction increases net exports and increases the demand for dollars in the market for foreign-currency exchange.
- As a result, the dollar appreciates in value, making domestic goods more expensive relative to foreign goods.
- This appreciation offsets the initial impact of the trade restrictions on net exports.

Summary

- When investors change their attitudes about holding assets of a country, the ramifications for the country's economy can be profound.
- Political instability in a country can lead to capital flight.
- Capital flight tends to increase interest rates and cause the country's currency to depreciate.