Lecture 8
7.4.2015

A Macroeconomic Theory of the Open Economy

Open Economies

- An open economy is one that interacts freely with other economies around the world.
- An open economy interacts with other countries in world product and financial markets

Copyright © 2004 South-Western

Previous lecture

- The important macroeconomic variables of an open economy include:
  - net exports
  - net capital outflow
    - Foreign direct investment and foreign portfolio investment
  - Identity – NX=NCO, savings = investment + NCO
  - nominal exchange rates
  - real exchange rates

Copyright © 2004 South-Western

Outline

- Macroeconomic model of an Open Economy
  - the market for loanable funds
  - the foreign-currency exchange market

  - EQUILIBRIUM in an Open Economy
  - Policies and events that affect the Open Economy Equilibrium

Copyright © 2004 South-Western

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.

Copyright © 2004 South-Western

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

- The Market for Loanable Funds

$$S = I + NCO$$

Copyright © 2004 South-Western

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*).

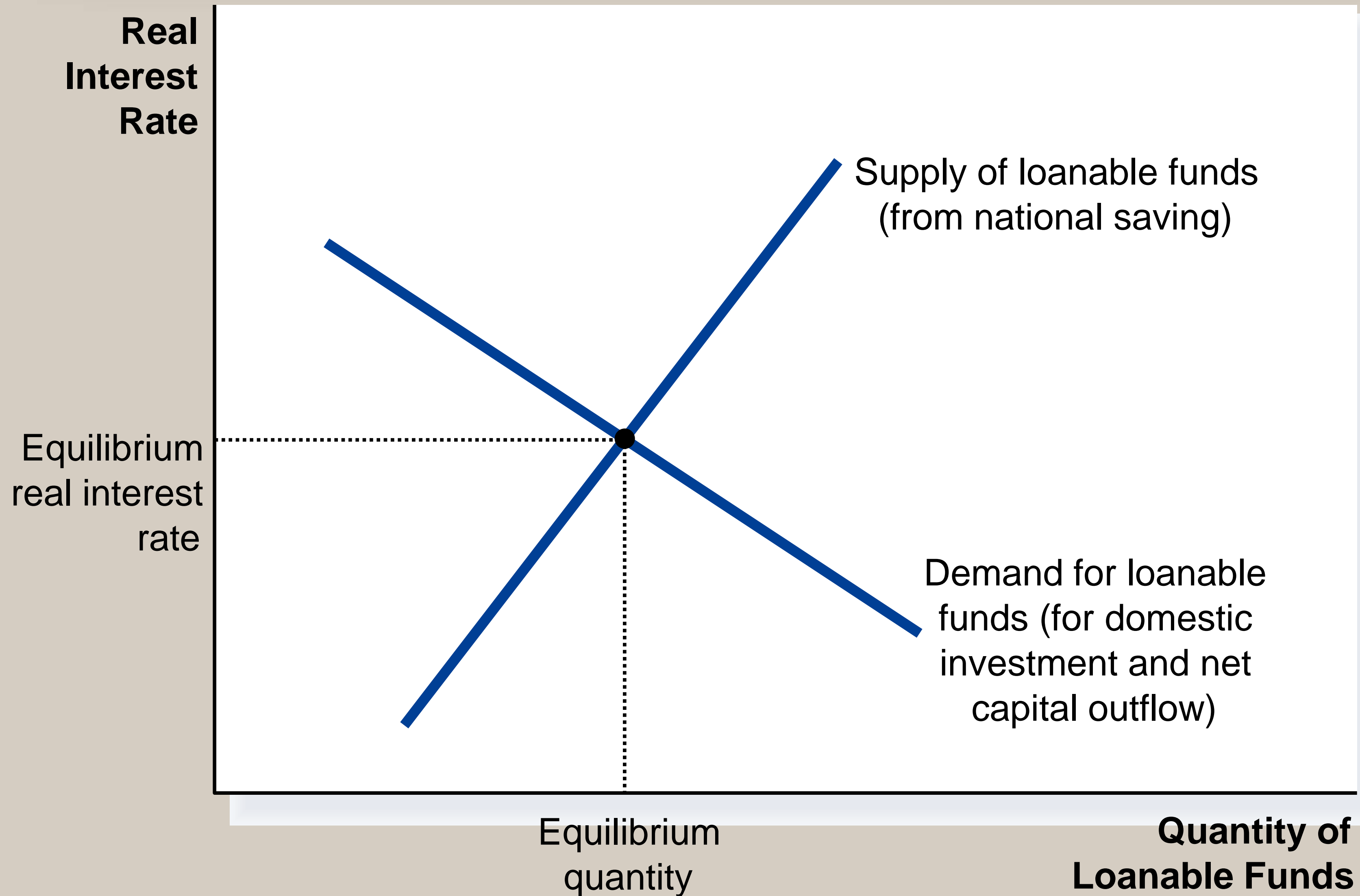
Copyright © 2004 South-Western

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.

Copyright © 2004 South-Western

Figure 1 The Market for Loanable Funds



Copyright©2003 Southwestern/Thomson Learning

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:

$$NCO = NX$$

Copyright © 2004 South-Western

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.

Copyright © 2004 South-Western

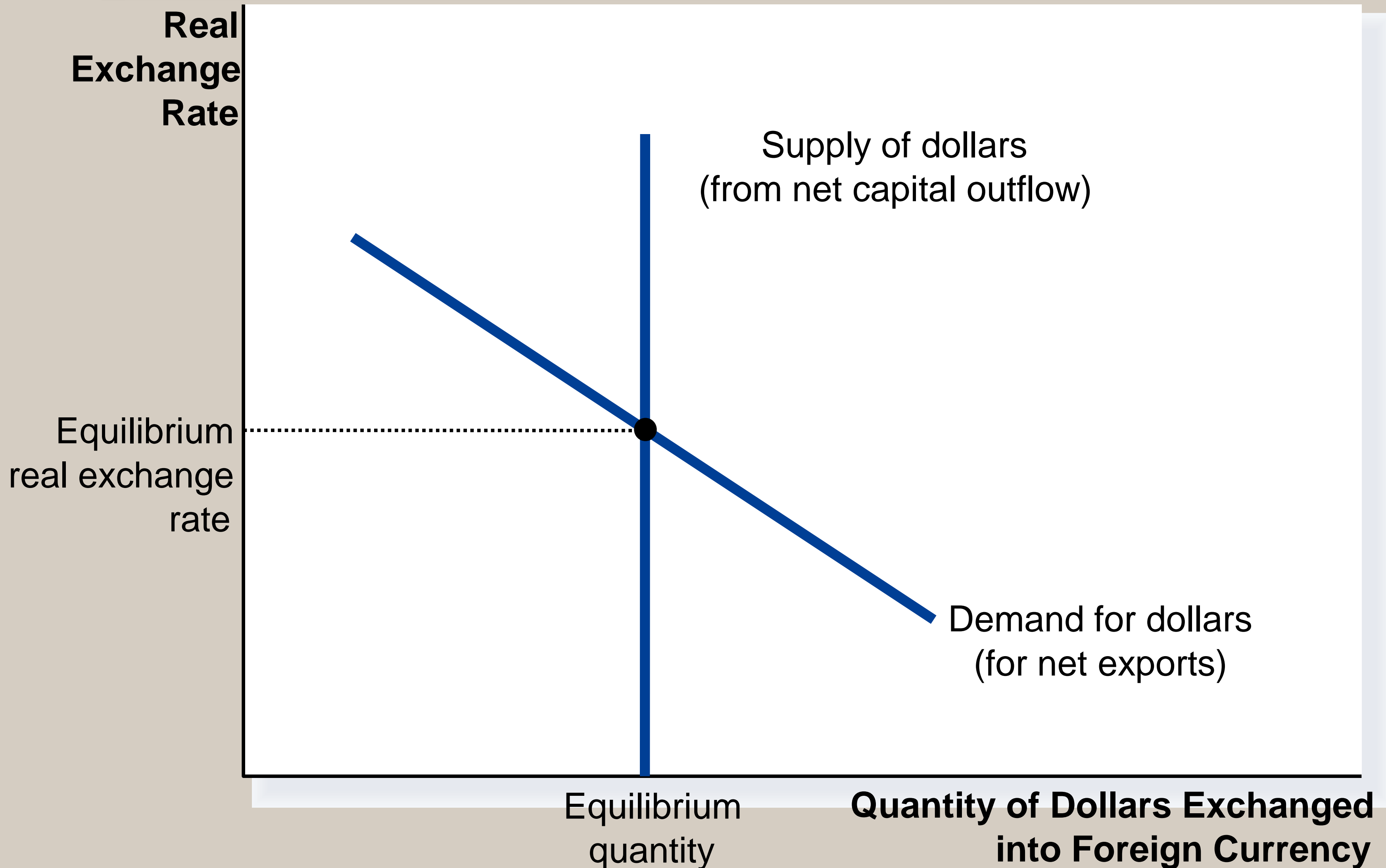
The Market for Foreign-Currency Exchange

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

- 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.

Copyright © 2004 South-Western

Figure 2 The Market for Foreign-Currency Exchange



Copyright©2003 Southwestern/Thomson Learning

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.

Copyright © 2004 South-Western

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.

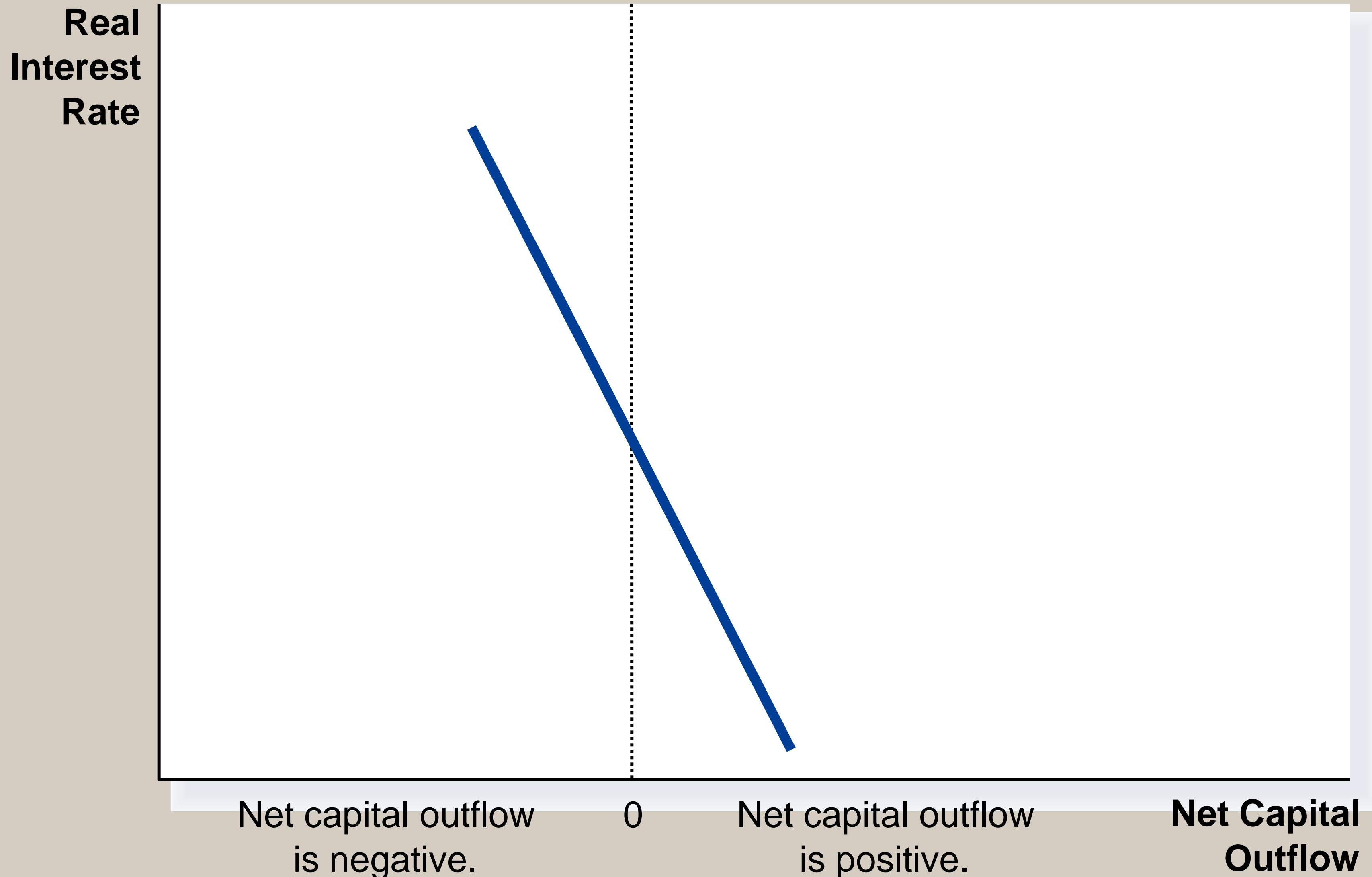
Copyright © 2004 South-Western

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.

Copyright © 2004 South-Western

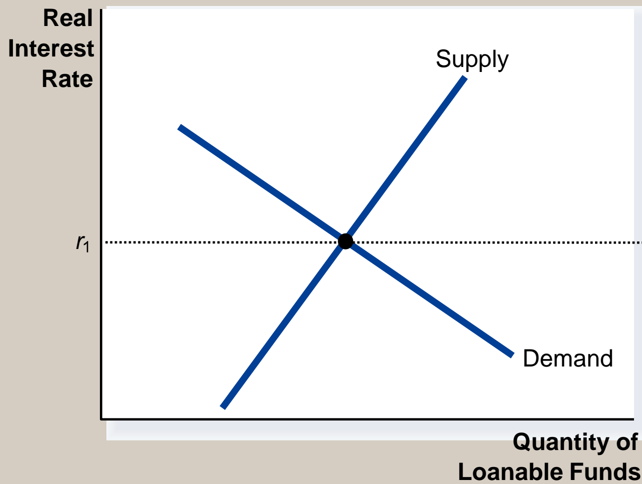
Figure 3 How Net Capital Outflow Depends on the Interest Rate



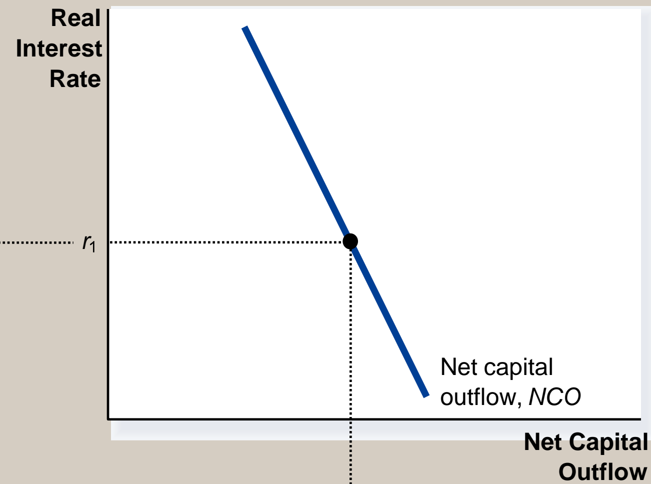
Copyright©2003 Southwestern/Thomson Learning

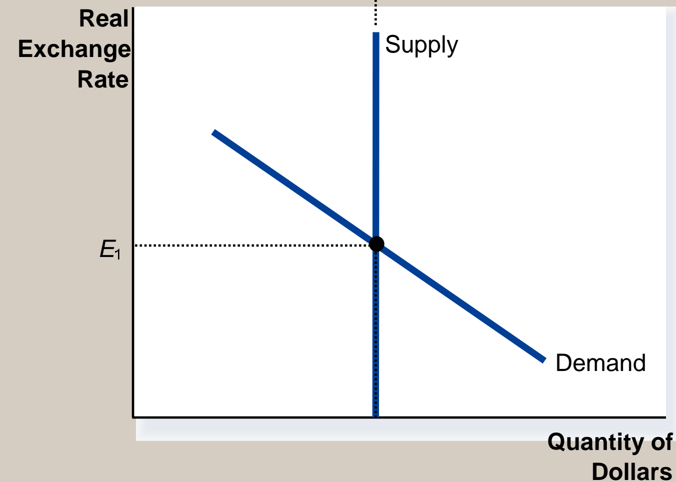
Figure 4 The Real Equilibrium in an Open Economy

(a) The Market for Loanable Funds



(b) Net Capital Outflow





(c) The Market for Foreign-Currency Exchange

Copyright©2003 Southwestern/Thomson Learning

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.

Copyright © 2004 South-Western

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

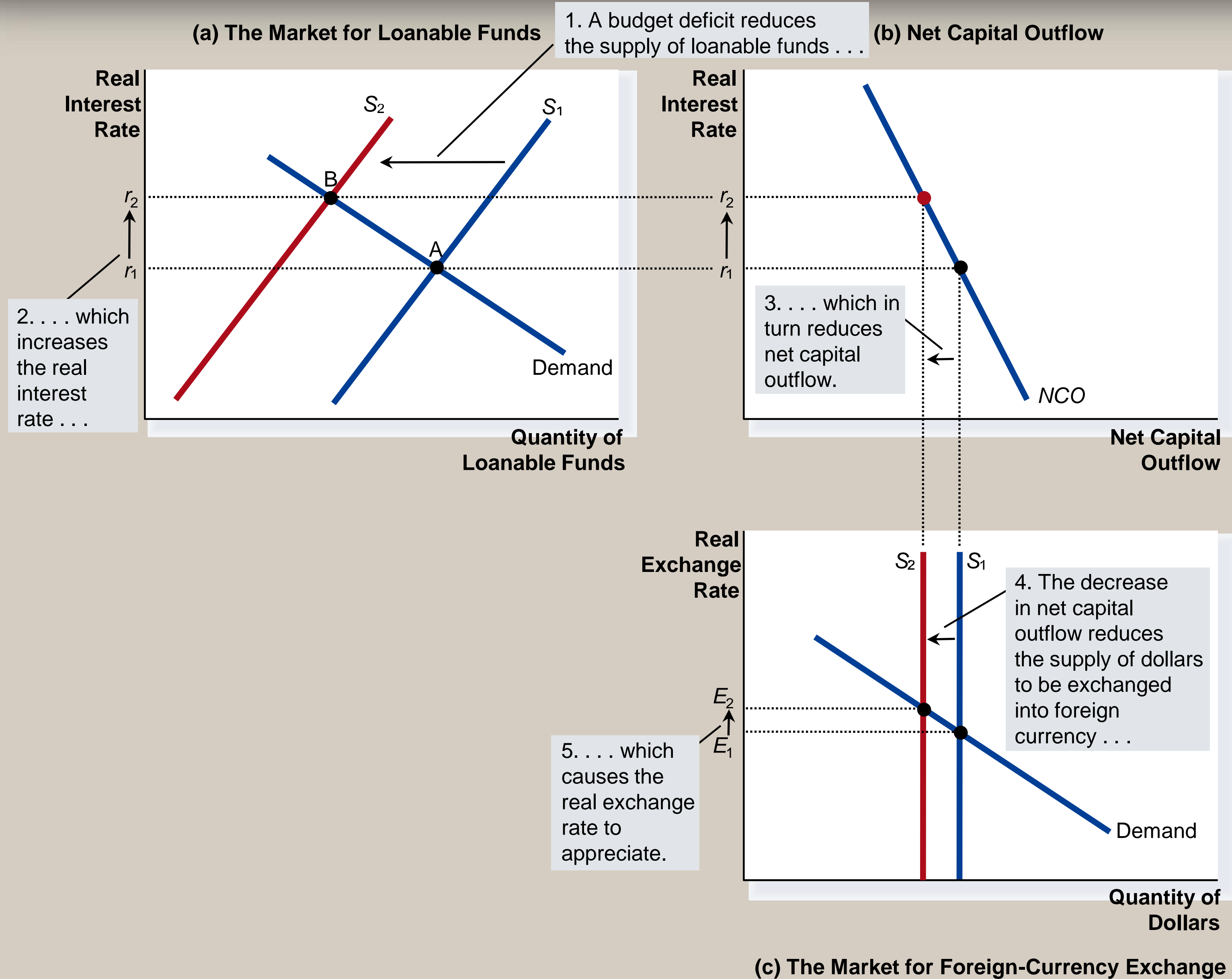
Copyright © 2004 South-Western

Government Budget Deficits

- In an closed economy, government budget deficits . . .
  - reduce the supply of loanable funds,
  - drive up the interest rate,
  - crowd out domestic investment.

Copyright © 2004 South-Western

Figure 5 The Effects of Government Budget Deficit



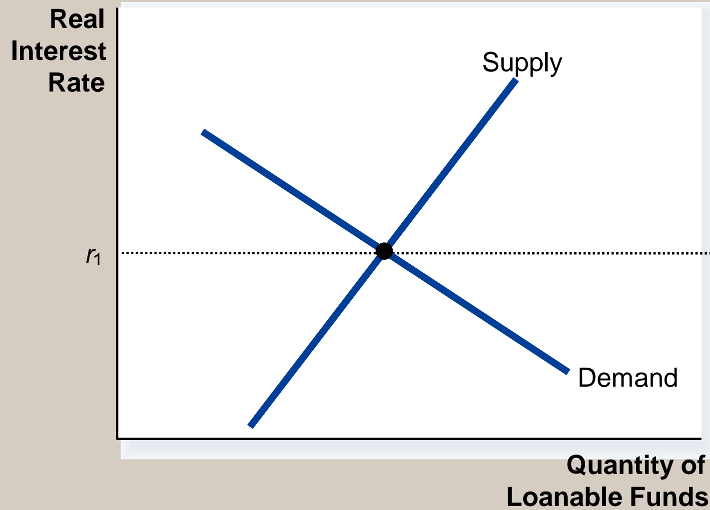
Copyright©2003 Southwestern/Thomson Learning

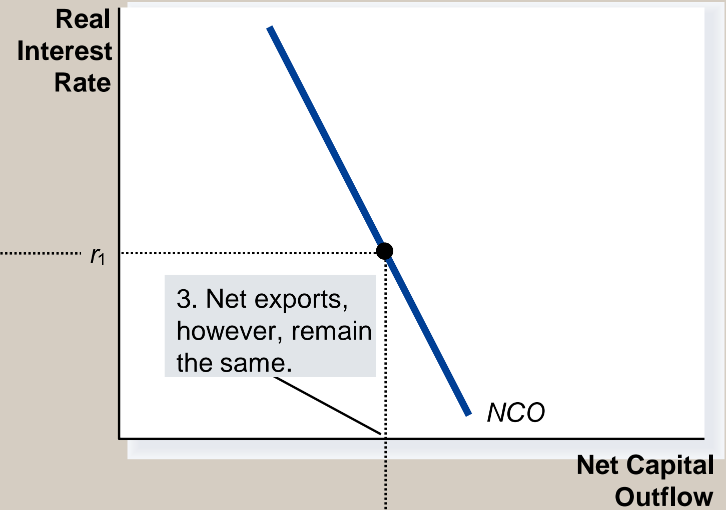
Trade Policy

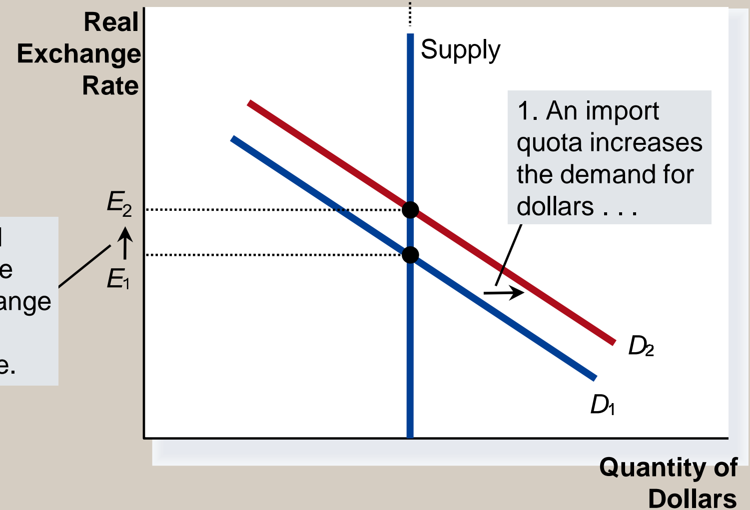
- A *trade policy* is a government policy that directly influences the quantity of goods and services that a country imports or exports.
  - Tariff: A tax on an imported good.
  - Import quota: A limit on the quantity of a good produced abroad and sold domestically.

Copyright © 2004 South-Western

Figure 6 The Effects of an Import Quota







Copyright©2003 Southwestern/Thomson Learning

Trade Policy

- Because they do not change national saving or domestic investment, <u>trade policies do not affect the trade balance</u>.
  - 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.

Copyright © 2004 South-Western

Political Instability and Capital Flight

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

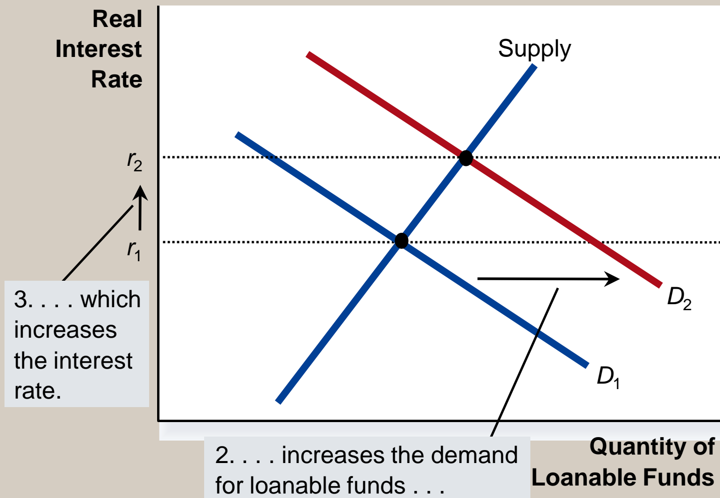
Copyright © 2004 South-Western

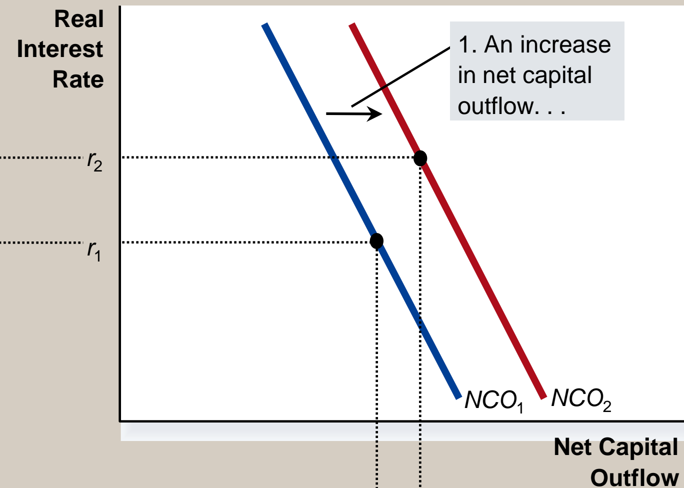
Political Instability and Capital Flight

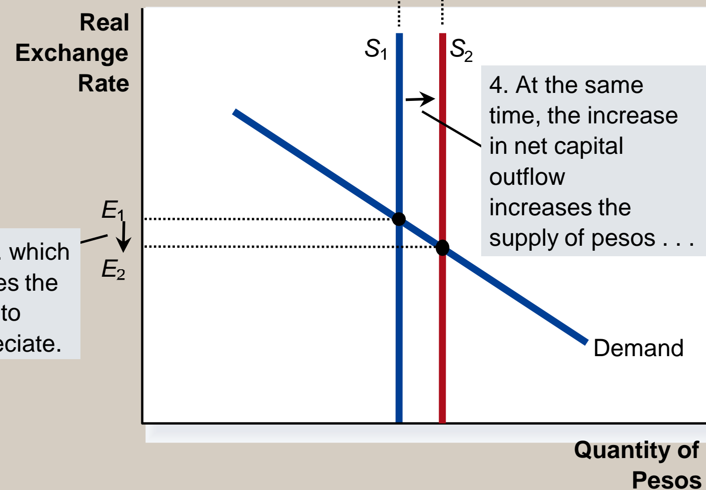
- When investors around the world observed political problems in Mexico in 1994, they sold some of their Mexican assets and used the proceeds to buy assets of other countries.

Copyright © 2004 South-Western

Figure 7 The Effects of Capital Flight







Copyright©2003 Southwestern/Thomson Learning

Summary

- To analyze the macroeconomics of open economies, two markets are central
  - the market for loanable funds
  - the market for foreign-currency exchange.

Copyright © 2004 South-Western

Summary

- In the market for loanable funds
  - the source of supply is _________, and the source of demand is _________.
  - _____________ adjusts to balance supply and demand
- In the market for foreign-currency exchange
  - the supply of dollars comes from _________, and the demand for dollars comes from _________.
  - ____________ adjusts to balance the supply and demand

Copyright © 2004 South-Western

Summary

- ______________ is the variable that connects the two markets.
- If Net Capital Outflow increases, the *demand/supply* of loans will increase, causing the real domestic interest rate to *rise/drop*.
- If the Net Capital Outflow increases, the *demand/supply* of dollars in the Foreign Currency Exchange Market will increase, causing the real exchange rate to *appreciate/depreciate*.

Copyright © 2004 South-Western

Summary

- A government budget deficit
  - policy that *reduces/increases* national saving
  - *reduces/increases* the supply of loanable funds
  - *reduces/increases* the interest rate
- The higher interest rate *reduces/increases* net capital outflow, *reducing/increasing* the supply of dollars.
- The dollar *appreciates/depreciates*, and net exports *fall/rise*.

Copyright © 2004 South-Western

Summary

- A trade restriction (import quota)
  - *Increases/decreases* net exports and *increases/decreases* the demand for dollars in the market for foreign-currency exchange
  - the dollar *appreciates/depreciates* in value (domestic goods *less/more* expensive relative to foreign goods)
  - this appreciation offsets the initial impact of the trade restrictions on net exports.

Copyright © 2004 South-Western

Summary

- Political instability in a country can lead to capital flight.
  - *Increase/decrease* net capital outflow
  - Demand for loanable funds *increases/decreases* and supply for domestic currency *increases/decreases.*
  - This leads to *lower/higher* interest rate and causes the country's currency to *appreciate/depreciate.*

Copyright © 2004 South-Western