31

Open-Economy Macroeconomics: Basic Concepts

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- Open and Closed Economies
  - A *closed economy* is one that does not interact with other economies in the world.
    - There are no exports, no imports, and no capital flows.
  - An *open economy* is one that interacts freely with

Open-Economy Macroeconomics: Basic Concepts

- An Open Economy
  - An open economy interacts with other countries in two ways.
    - It buys and sells goods and services in world product markets.
    - It buys and sells capital assets in world financial markets

The Flow of Goods: Exports, Imports, Net Exports

- A *trade deficit* is a situation in which net exports (*NX*) are negative.
  - Imports > Exports
- A *trade surplus* is a situation in which net exports (*NX*) are positive.
  - Exports > Imports

THE INTERNATIONAL FLOW OF GOODS AND CAPITAL

- An Open Economy
  - The United States is a very large and open economy—it imports and exports huge quantities of goods and services.
  - Over the past four decades, international trade and finance have become increasingly important.

The Flow of Goods: Exports, Imports, Net Exports

- *Exports* are goods and services that are produced domestically and sold abroad.
- *Imports* are goods and services that are produced abroad and sold domestically.

The Flow of Goods: Exports, Imports, Net Exports

- *Net exports (NX)* are the value of a nation's exports minus the value of its imports.
- Net exports are also called the *trade balance*.

The Flow of Goods: Exports, Imports, Net Exports

- Factors That Affect Net Exports
  - The tastes of consumers for domestic and foreign goods.
  - The prices of goods at home and abroad.
  - The exchange rates at which people can use domestic currency to buy foreign currencies.

The Flow of Goods: Exports, Imports, Net Exports

- Factors That Affect Net Exports
  - The incomes of consumers at home and abroad.
  - The costs of transporting goods from country to country.
  - The policies of the government toward internationa trade.

Figure 1 The Internationalization of the U.S. Economy

The Flow of Financial Resources: Net Capita Outflow

- *Net capital outflow* refers to the purchase of foreign assets by domestic residents minus the purchase of domestic assets by foreigners.
  - A U.S. resident buys stock in the Toyota corporation and a Mexican buys stock in the Ford Motor corporation.

The Flow of Financial Resources: Net Capita Outflow

- When a U.S. resident buys stock in Telmex, the Mexican phone company, the purchase *raises* U.S. net capital outflow.
- When a Japanese residents buys a bond issued by the U.S. government, the purchase *reduces* the U.S. net capital outflow.

The Flow of Financial Resources: Net Capita Outflow

- Variables that Influence *Net Capital Outflow*
  - The real interest rates being paid on foreign assets.
  - The real interest rates being paid on domestic assets.
  - The perceived economic and political risks of holding assets abroad.
  - The government policies that affect foreign

The Equality of Net Exports and Net Capital Outflow

- Net exports (NX) and net capital outflow (NCO are closely linked.
- For an economy as a whole, NX and NCO must balance each other so that:

$$NCO = NX$$

  - This holds true because every transaction that

Saving, Investment, and Their Relationship to the International Flows

- Net exports is a component of GDP:

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

- National saving is the income of the nation that is left after paying for current consumption and government purchases:

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

Saving, Investment, and Their Relationship to the International Flows

- National saving (S) equals Y - C - G so:

$$S = I + NX$$

or

$$\text{Saving} = \text{Domestic Investment} + \text{Net Capital Outflow}$$

Figure 2 National Saving, Domestic Investment, and Net Foreign Investment

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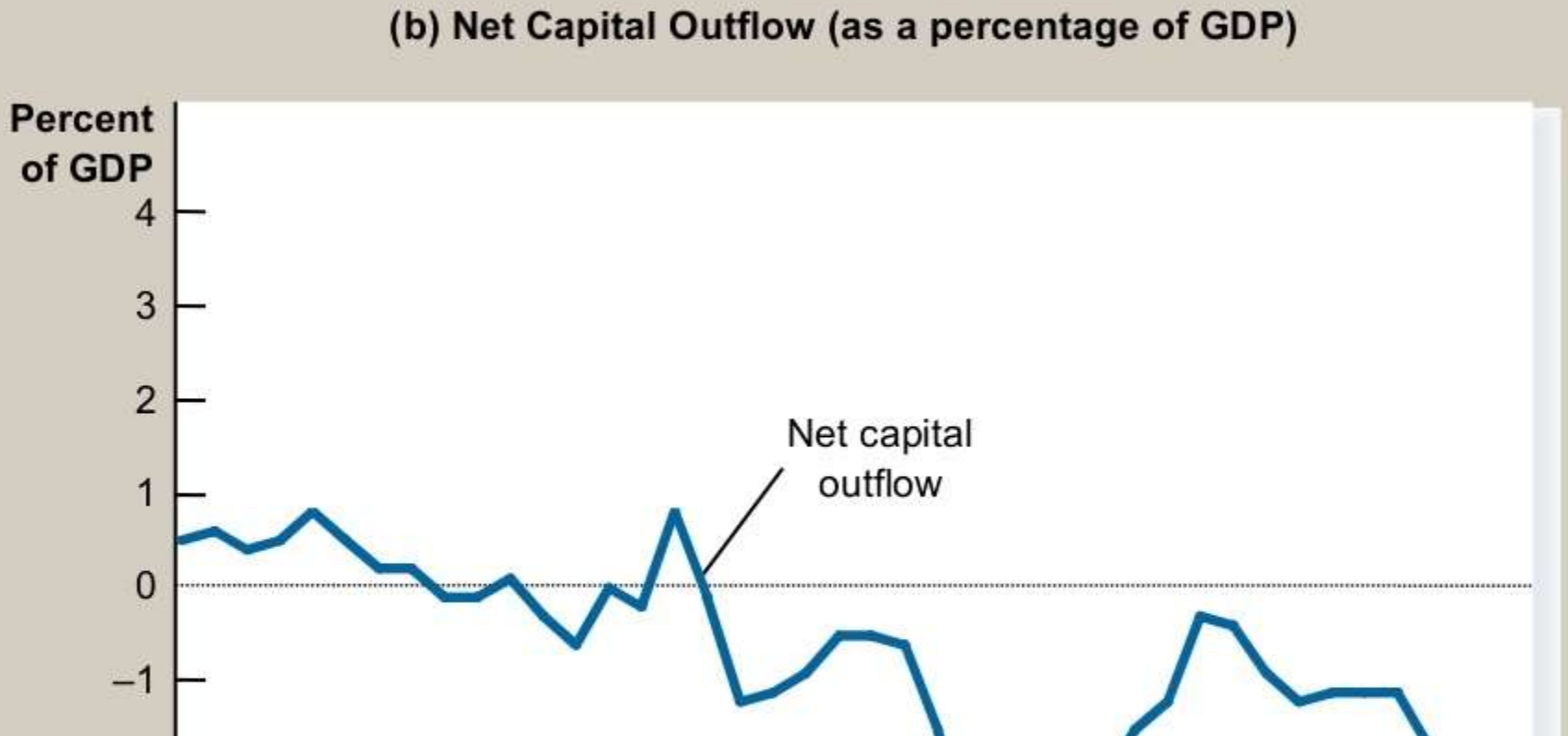


THE PRICES FOR INTERNATIONAL TRANSACTIONS: REAL AND NOMINAL EXCHANGE RATES

- International transactions are influenced by international prices.
- The two most important international prices are the nominal exchange rate and the real exchange rate.

Nominal Exchange Rates

- The nominal exchange rate is expressed in two ways:
  - In units of foreign currency per one U.S. dollar.
  - And in units of U.S. dollars per one unit of the foreign currency.

Nominal Exchange Rates

- The *nominal exchange rate* is the rate at which a person can trade the currency of one country for the currency of another.

Nominal Exchange Rates

- Assume the exchange rate between the Japanese yen and U.S. dollar is 80 yen to one dollar.
  - One U.S. dollar trades for 80 yen.
  - One yen trades for 1/80 (= 0.0125) of a dollar.

Nominal Exchange Rates

- *Appreciation* refers to an increase in the value of a currency as measured by the amount of foreign currency it can buy.
- *Depreciation* refers to a decrease in the value o a currency as measured by the amount of foreign currency it can buy.

Nominal Exchange Rates

- If a dollar buys more foreign currency, there is an appreciation of the dollar.
- If it buys less there is a depreciation of the dollar.

Real Exchange Rates

- The *real exchange rate* is the rate at which a person can trade the goods and services of one country for the goods and services of another.

Real Exchange Rates

- The real exchange rate compares the prices of domestic goods and foreign goods in the domestic economy.
  - If a case of German beer is twice as expensive as American beer, the real exchange rate is 1/2 case of German beer per case of American beer.

Real Exchange Rates

- The real exchange rate depends on the nominal exchange rate and the prices of goods in the two countries measured in local currencies.

Real Exchange Rates

- The real exchange rate is a key determinant of how much a country exports and imports.

$$\text{Real exchange rate} = \frac{\text{Nominal exchange rate} \times \text{Domestic price}}{\text{Foreign price}}$$

Real Exchange Rates

- A depreciation (fall) in the U.S. real exchange rate means that U.S. goods have become cheaper relative to foreign goods.
- This encourages consumers both at home and abroad to buy more U.S. goods and fewer goods from other countries.

Real Exchange Rates

- As a result, U.S. exports rise, and U.S. imports fall, and both of these changes raise U.S. net exports.
- Conversely, an appreciation in the U.S. real exchange rate means that U.S. goods have become more expensive compared to foreign goods, so U.S. net exports fall.

A FIRST THEORY OF EXCHANGE-RATE DETERMINATION: PURCHASING-POWER PARITY

- The *purchasing-power parity theory* is the simplest and most widely accepted theory explaining the variation of currency exchange rates.

The Basic Logic of Purchasing-Power Parity

- Purchasing-power parity is a theory of exchange rates whereby a unit of any given currency should be able to buy the same quantity of goods in all countries.

The Basic Logic of Purchasing-Power Parity

- According to the purchasing-power parity theory, a unit of any given currency should be able to buy the same quantity of goods in all countries.

Basic Logic of Purchasing-Power Parity

- The theory of purchasing-power parity is based on a principle called *the law of one price*.
  - According to the law of one price, a good must sell for the same price in all locations.

Basic Logic of Purchasing-Power Parity

- If the law of one price were not true, unexploited profit opportunities would exist.
- The process of taking advantage of differences in prices in different markets is called *arbitrage*.

Basic Logic of Purchasing-Power Parity

- If arbitrage occurs, eventually prices that differed in two markets would necessarily converge.
- According to the theory of purchasing-power parity, a currency must have the same purchasing power in all countries and exchange rates move to ensure that

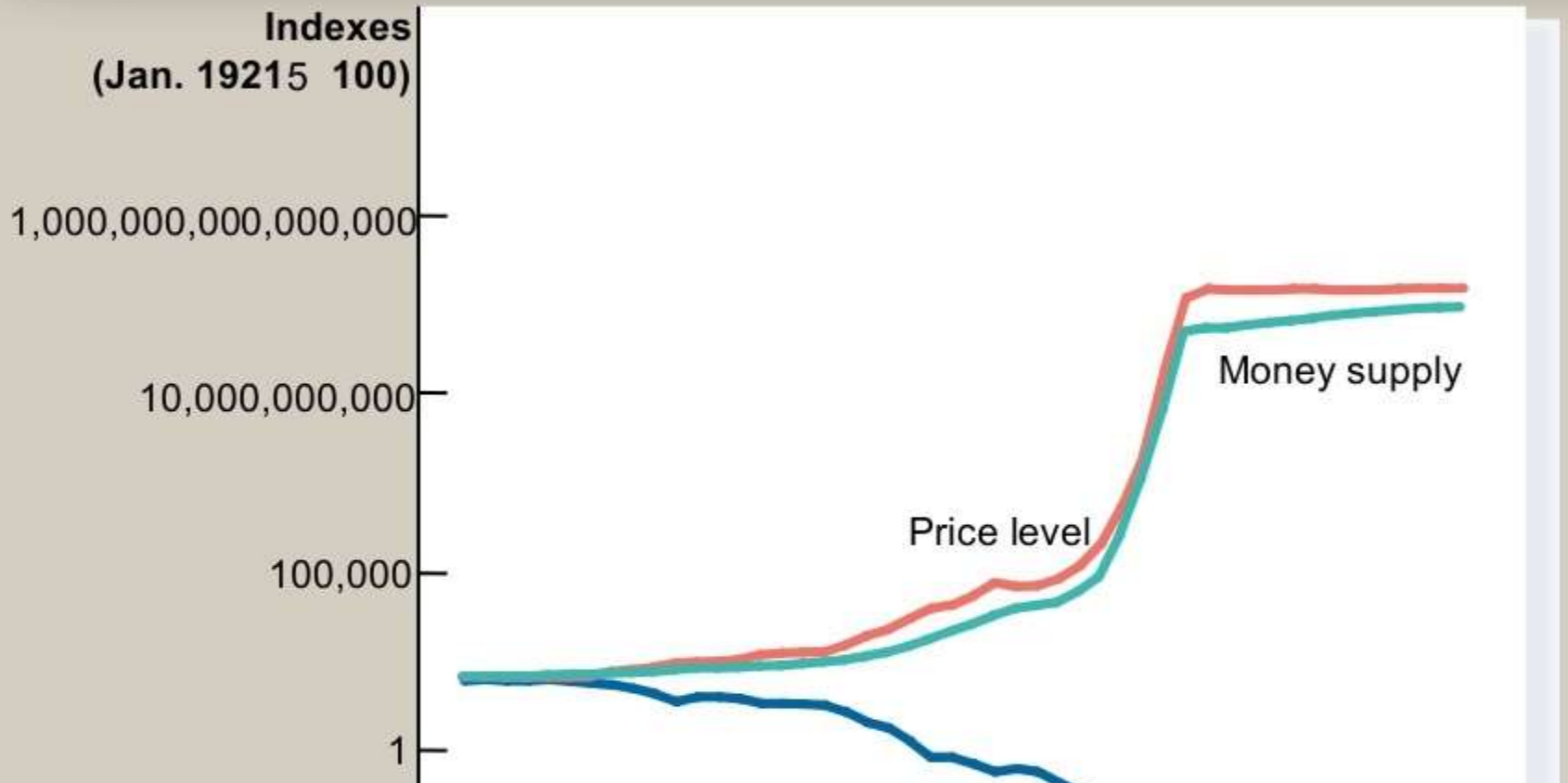
Implications of Purchasing-Power Parity

- If the purchasing power of the dollar is always the same at home and abroad, then the exchange rate cannot change.
- The nominal exchange rate between the currencies of two countries must reflect the different price levels in those countries.

Implications of Purchasing-Power Parity

- When the central bank prints large quantities of money, the money loses value both in terms of the goods and services it can buy and in terms of the amount of other currencies it can buy.

Figure 3 Money, Prices, and the Nominal Exchange Rate During the German Hyperinflation



Limitations of Purchasing-Power Parity

- Many goods are not easily traded or shipped from one country to another.
- Tradable goods are not always perfect substitutes when they are produced in different countries.

Summary

- Net exports are the value of domestic goods and services sold abroad minus the value of foreign goods and services sold domestically.
- Net capital outflow is the acquisition of foreign assets by domestic residents minus the acquisition of domestic assets by foreigners.

Summary

- An economy's net capital outflow always equals its net exports.
- An economy's saving can be used to either finance investment at home or to buy assets abroad.

Summary

- The nominal exchange rate is the relative price of the currency of two countries.
- The real exchange rate is the relative price of the goods and services of two countries.

Summary

- When the nominal exchange rate changes so that each dollar buys more foreign currency, th dollar is said to appreciate or strengthen.
- When the nominal exchange rate changes so that each dollar buys less foreign currency, the dollar is said to depreciate or weaken.

Summary

- According to the theory of purchasing-power parity, a unit of currency should buy the same quantity of goods in all countries.
- The nominal exchange rate between the currencies of two countries should reflect the countries' price levels in those countries.