Foreign exchange rates

Foreign-exchange rates are the relative prices of different national monies or currencies.

Measured as

$$e = \text{foreign currency per unit domestic currency}$$

(e.g., Euros per $).

Recent Examples

- the Japanese yen sold for 123 Yen/$
- the Euro sold for 1.12 Euro/$
Terminology

- An *appreciation* of a currency is when the value of the currency rises (e.g., $e = foreign currency/$ rises).
- A *depreciation* of a currency is when the value of the currency falls (e.g., $e = foreign currency/$ falls)
  - For example, after Mexican peso crisis of 1994/95, rate changed from 3.3 pesos/$ to 5 pesos/$
  - This was a $ appreciation and necessarily a peso depreciation
Bretton Woods fixed-exchange rate period

Dollar bubble

US stock market boom and flight to safety

Foreign-exchange rate of dollar (e)
Exchange Rate on Dollar

Note:
1. Depreciation at end of Bretton Woods
2. Dollar bubble of 1980s
3. Dollar appreciation since 1995 with flight to safety, US prosperity and stock-market boom
Some Background

*Foreign exchange is foreign currency.*

- *Foreign exchange rate* is the price of one country's money in terms of another's.

- *Foreign exchange market* is the market where difference currencies are bought and sold.

- All currencies in the modern world are traded in the *interbank market*, where banks are the intermediaries between buyers and sellers.
Major determinants of exchange rates

Current account: demand and supply of goods
Financial account: demand and supply of assets
Demand for foreign exchange

What are elements of demand for $?
- Heidi comes to Yale (current account)
- Swiss chocolate firm buys $ for new chocolate mixing machine (financial account)

[Graph in class]
Supply of foreign exchange

• What are elements of supply of $?
  – Eli hikes the Matterhorn (current account)
  – Yale buys stock in Swiss chocolate maker (financial account)

[Graph in class]
Equilibrium in foreign exchange mkt

Interaction of supply and demand determine exchange rate

Effect of Heidi coming to Yale
[buys $ and $ appreciation]

Effect of tax evaders’ $ going to Switz.
[invests in franc and $ depreciation]

[Graph in class]
**Real v. nominal exchange rates**

Nominal exchange rate = \( e = \) foreign currency/$

Real exchange rate \((R)\) is the nominal exchange rate corrected for the movements in the prices of the two countries

- Therefore, it is the ratio of domestic to foreign prices (also sometimes called competitiveness)

\[ R = e \times \frac{p^d}{p^f} \]

- Purchasing power parity theory of \( R \):
  - when purchasing power is equalized, \( R \) is constant over time and \( e \) move with \( \frac{p^f}{p^d} \)
Make sure you can explain why U.S. had nominal appreciation with no real appreciation.
PPP in Argentina’s hyperinflation

Relative prices, exchange rate
[log to base 10]

$R = \frac{P(\text{argentina})}{P(\text{US})}$

Nominal exchange rate (Argentina/US)
Major Currency Regimes

Common currency
Fixed exchange rate
Floating exchange rates
1. Currency union: currencies irrevocably fixed
   • U.S. states from 18th century; Europe from 1999

2. Fixed exchange rate
   A. Gold standard (up to 1933)
      • Each currency defined in terms of gold
      • Gold link to money
      • Effectively fixed exchange rates
      • Currencies fixed but adjustable
      • Rates adjusted when there are “fundamental imbalances”
   C. “Hard fix” – Argentina’s currency board

3. Floating exchange rates
   • Currencies market determined
   • Governments use monetary policies to affect exchange rates
   • Major currency blocs (dollar, euro, yen)
Exchange Rates and Adjustment

What is economic role of exchange rates?
Exchange rates are shock absorbers:
they promote adjustment of economy to shocks.

- Recall how economies adjust:
  relative prices of goods in two countries \((R)\) change

Two alternative mechanisms:
exchange rates v. deflation

- Argentina v. Brazil in late 1990s
- The analogy of daylight saving time