

Central Bank Interventions: the market for “loanable” funds and the foreign exchange market

Money & Banking - Econ 301 – Section H1

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Summer 2011

The two markets that CBs intervene

- The market for “loanable” funds; the Fed (CB) intervenes in order to affect the price or cost of funds (interest rates).
- The foreign exchange market: the Fed (CB) intervenes in order to affect the price of foreign currency (exchange rate)

Controlling the “price” of money:
OMO and interest rates

Goal of Monetary Policy

- Regardless of whether the CB has inflation or growth as its main objective the cost of funds –measured by some interest rate– will always be a decisive variable in determining the future path of either variable.
- Thus, CBs usually aim at controlling the cost of funds or some interest rate and therefore try to intervene the market for “loanable” funds.

Tools of Monetary Policy

- Open market operations
 - Affect the quantity of reserves and the monetary base
- Changes in borrowed reserves
 - Affect the monetary base
- Changes in reserve requirements
 - Affect the money multiplier
- Federal funds rate: the interest rate on overnight loans of reserves from one bank to another
 - Primary instrument of monetary policy

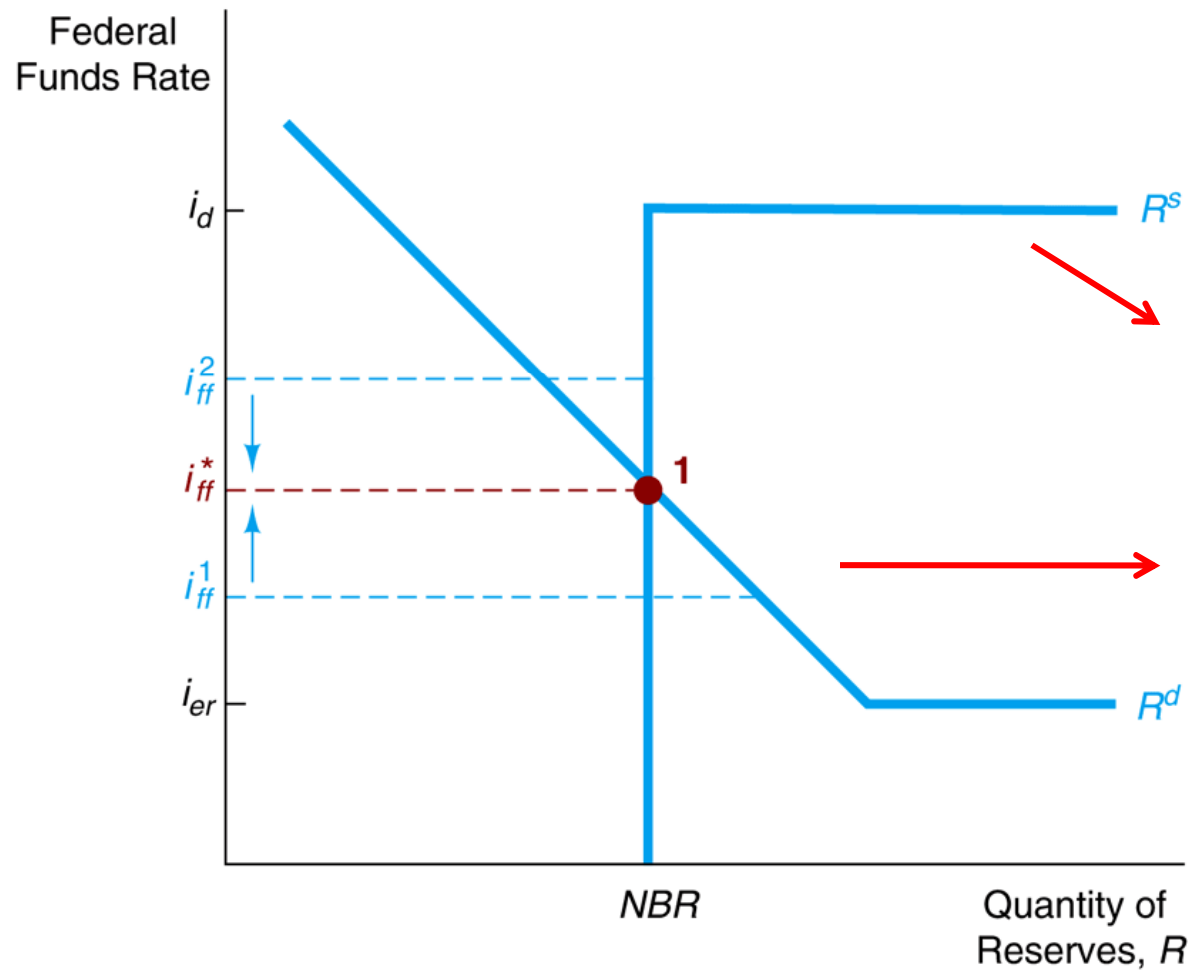
The Market for Reserves

- What happens to the quantity of reserves demanded by banks, holding everything else constant, as the federal funds rate changes?
- Excess reserves are insurance against deposit outflows
 - The cost of holding these is the interest rate that could have been earned minus the interest rate that is paid on these reserves, i_{er}

The Market for Reserves

- Important distinction.
- *Discount rate*: the rate that the Fed charges for overnight loans.
- *Federal Funds Rate*: the rate that banks charge each other for lending reserves.
- The FFR is what the Fed 'targets' as a monetary policy instrument.
- *They are closely linked because loans from the Fed are close substitutes for loans from banks.*

Equilibrium in the Market for Reserves



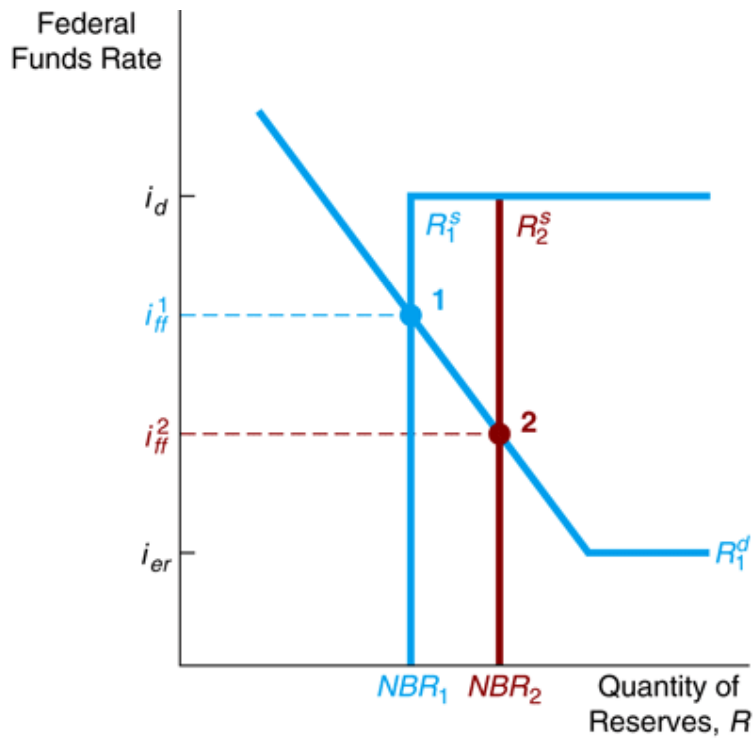
At $i_d = i_{ff}$ there is discount lending (banks are indifferent between borrowing from Fed or from each other).

At $i_d > i_{ff}$ there is no discount lending.

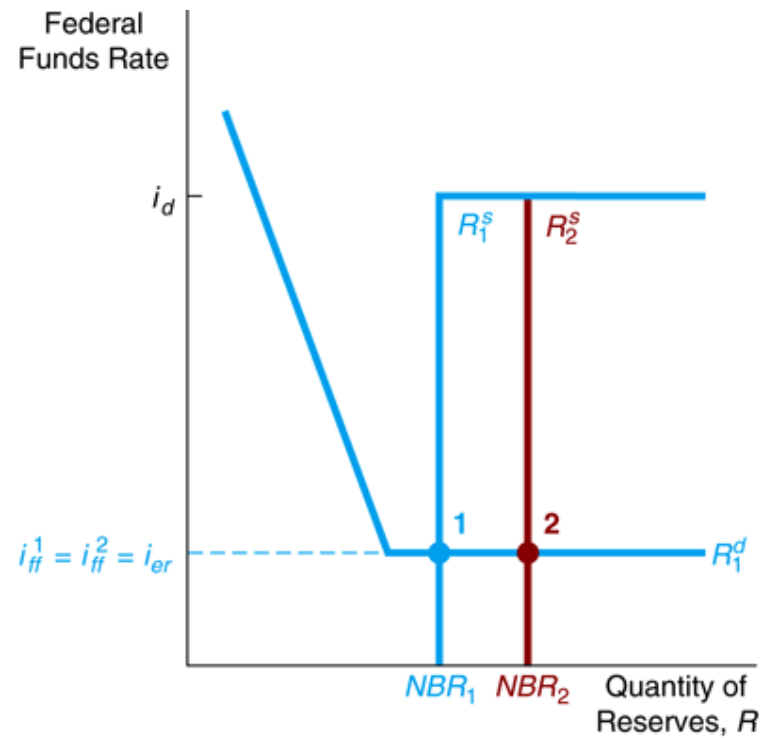
Affecting the FFR: OMOs

- An open market purchase causes the federal funds rate to fall whereas an open market sale causes the federal funds rate to rise (when intersection occurs at the downward sloped section).
- OMOs have no effect on the federal funds rate when intersection occurs at the flat section of the demand curve.

Response to an Open Market Operation



(a) Supply curve initially intersects demand curve in its downward-sloping section



(b) Supply curve initially intersects demand curve in its flat section

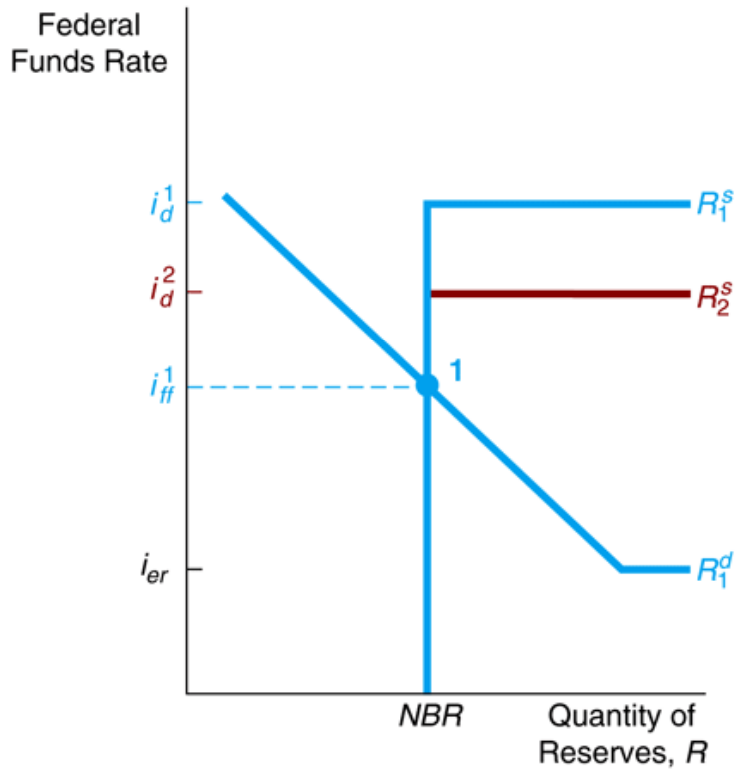
Advantages of Open Market Operations

- The Fed has complete control over the volume
- Flexible and precise
- Easily reversed
- Quickly implemented

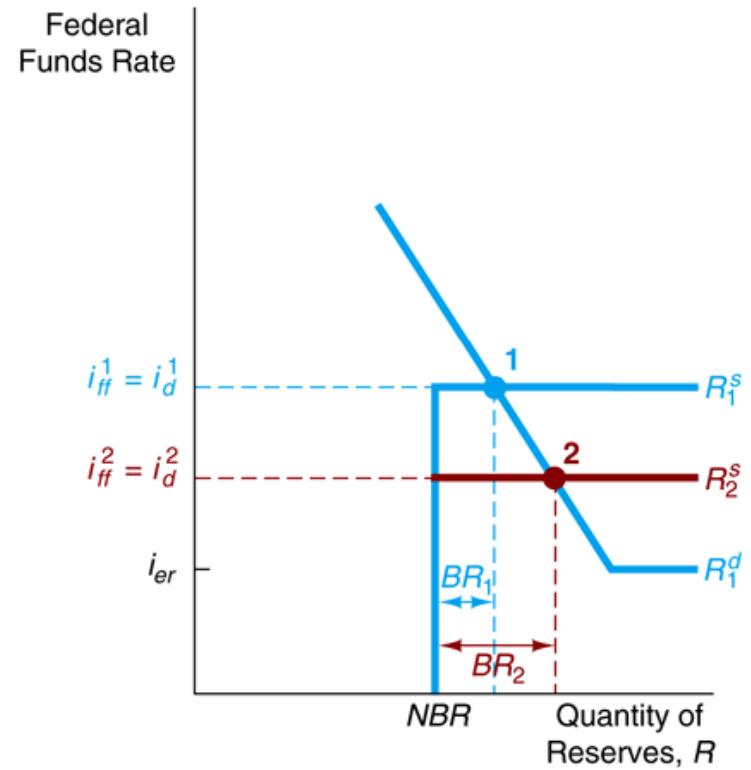
Affecting the FFR: discount rate

- If the intersection of supply and demand occurs on the vertical section of the supply curve, a ***change in the discount rate will have no effect*** on the federal funds rate.
- If the intersection of supply and demand occurs on the horizontal section of the supply curve, a change in the discount rate shifts that portion of the supply curve and the federal funds rate may either rise or fall depending on the change in the discount rate

FIGURE 3 Response to a Change in the Discount Rate



(a) No discount lending ($BR = 0$)

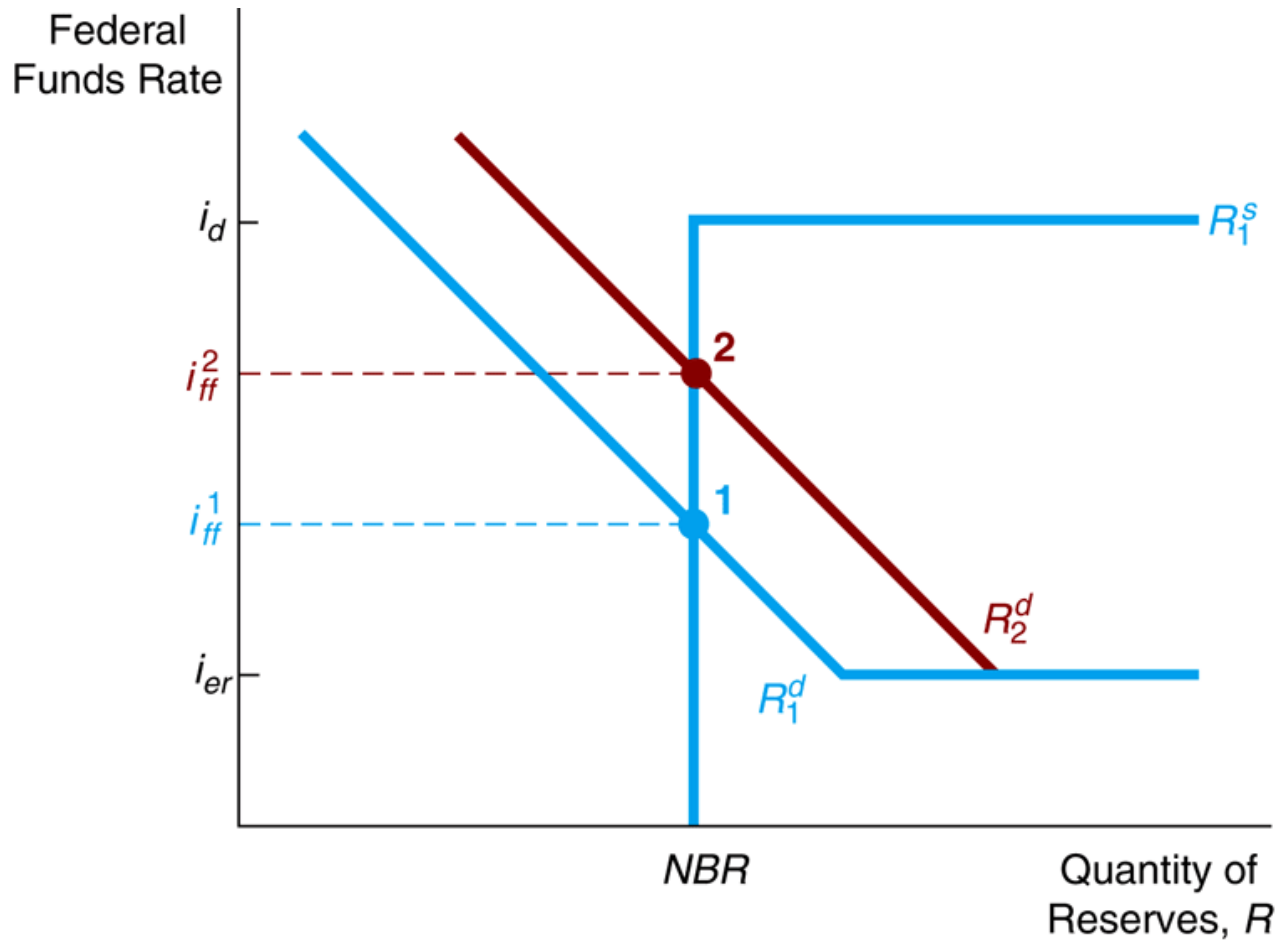


(b) Some discount lending ($BR > 0$)

Affecting the Federal Funds Rate (cont'd)

- When the Fed changes the reserve requirement, the demand curve shifts.
- When the Fed raises reserve requirement, the federal funds rate rises and when the Fed decreases reserve requirement, the federal funds rate falls.

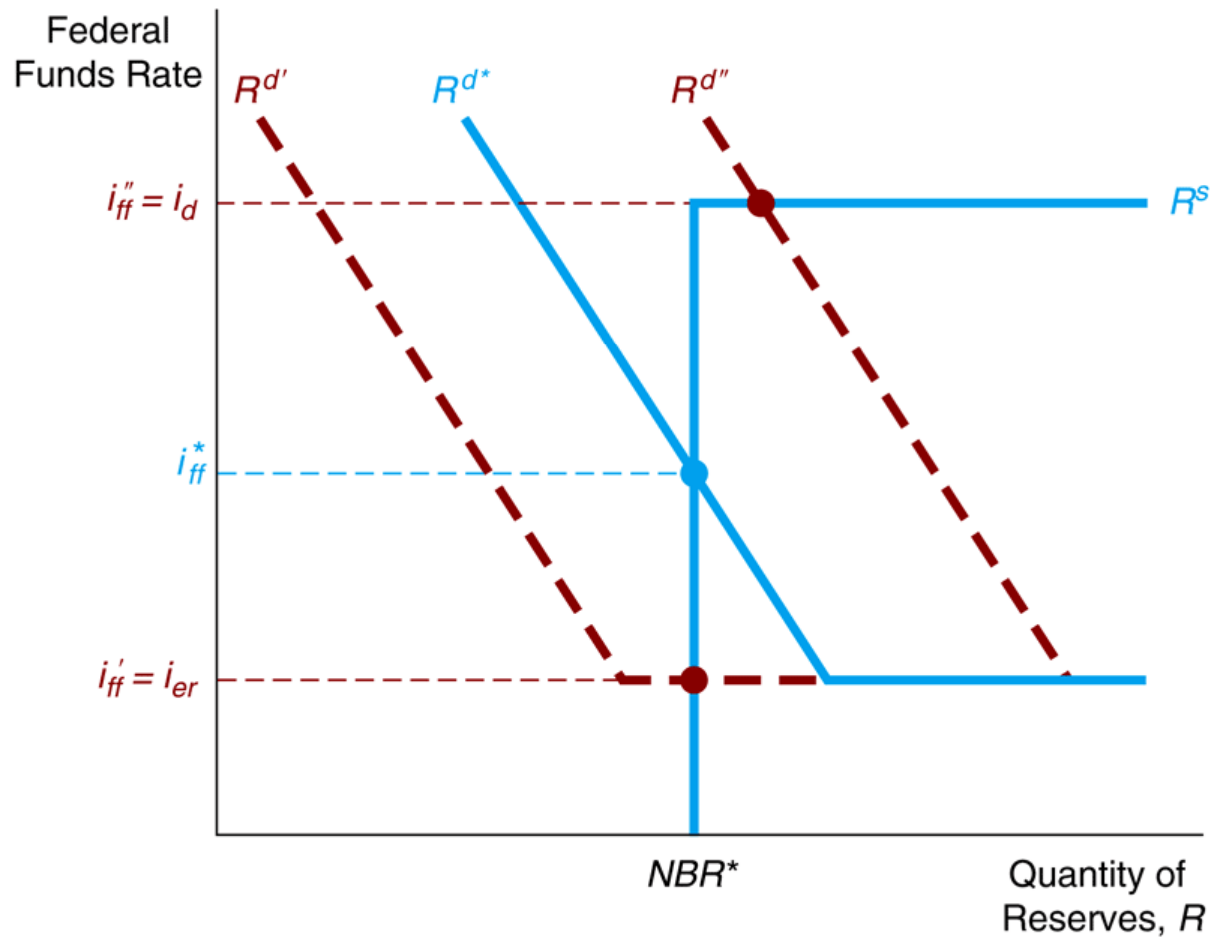
Response to a Change in Required Reserves



Discount Policy

- Discount window
- Primary credit: standing lending facility
 - Lombard facility
- Secondary credit
- Seasonal credit
- Lender of last resort to prevent financial panics
 - Creates moral hazard problem

FIGURE 5 How the Federal Reserve's Operating Procedures Limit Fluctuations in the Federal Funds Rate



Advantages and Disadvantages of Discount Policy

- Used to perform role of lender of last resort
 - Important during the subprime financial crisis of 2007-2008.
- Cannot be controlled by the Fed; the decision maker is the bank
- Discount facility is used as a backup facility to prevent the federal funds rate from rising too far above the target

Reserve Requirements

- Depository Institutions Deregulation and Monetary Control Act of 1980 sets the reserve requirement the same for all depository institutions
- 3% of the first \$48.3 million of checkable deposits; 10% of checkable deposits over \$48.3 million
- The Fed can vary the 10% requirement between 8% to 14%

Disadvantages of Reserve Requirements

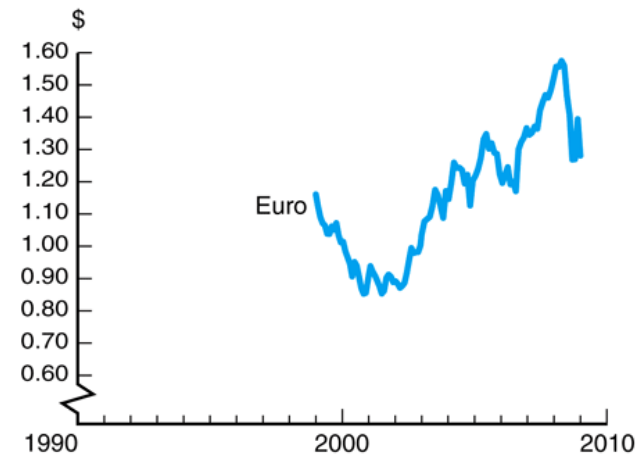
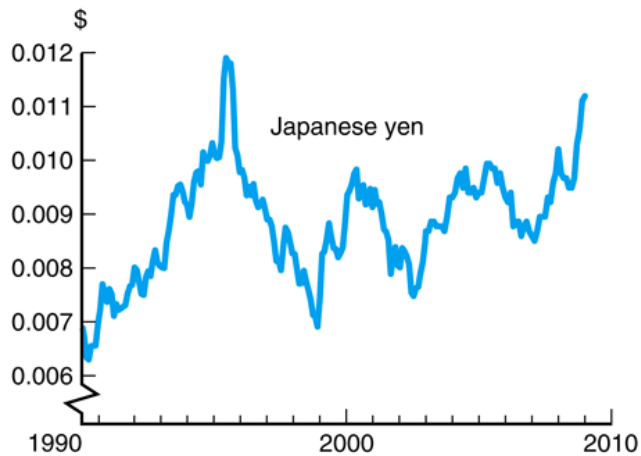
- No longer binding for most banks
- Can cause liquidity problems
- Increases uncertainty for banks

Controlling the “price” of foreign
currency: the exchange rate

Foreign Exchange I

- Exchange rate: price of one currency in terms of another
- Foreign exchange market: the financial market where exchange rates are determined
- Appreciation: a currency rises in value relative to another currency
- Depreciation: a currency falls in value relative to another currency
- When a country's currency appreciates, the country's goods abroad become more expensive and foreign goods in that country become less expensive and vice versa
- Over-the-counter market mainly banks

Exchange Rates, 1990–2008

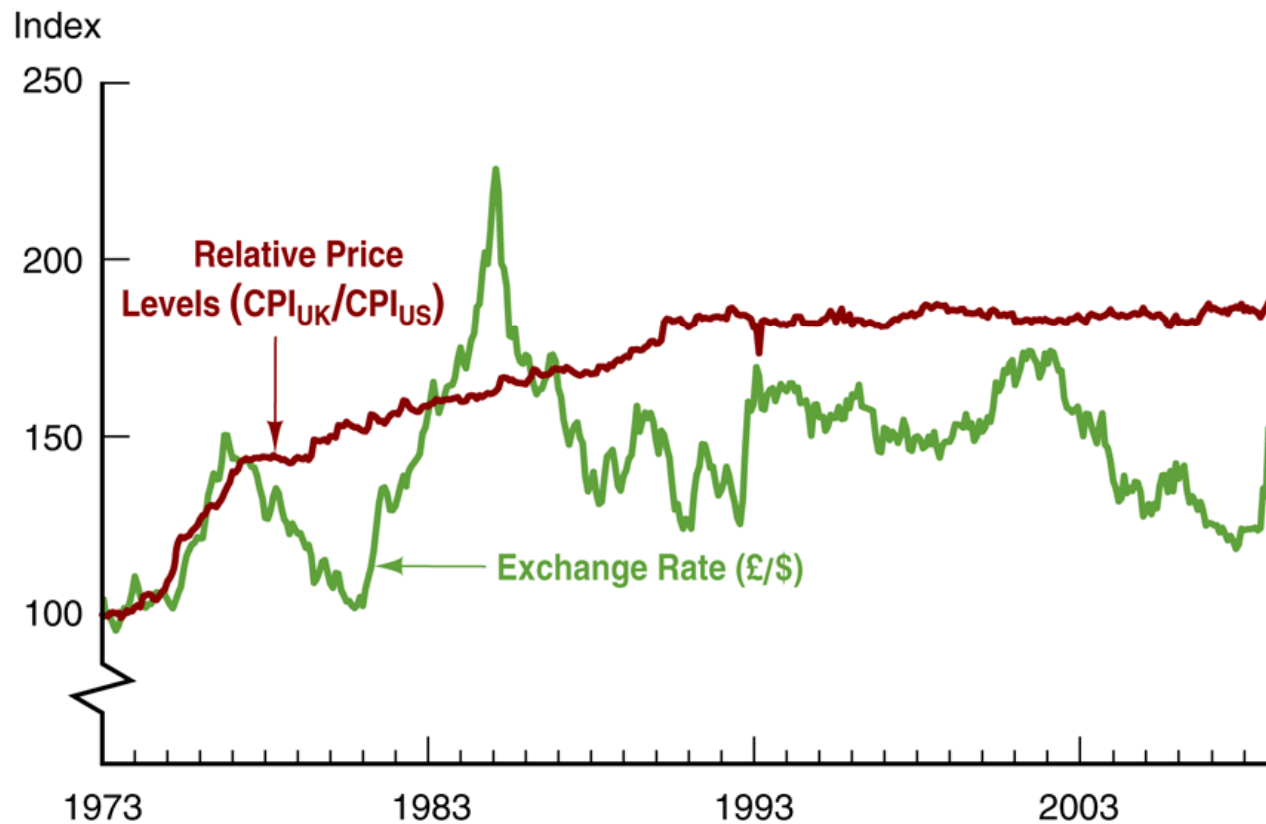


Source: Federal Reserve: www.federalreserve.gov/releases/h10/hist.

Exchange Rates in the Long Run

- Law of one price
- Theory of Purchasing Power Parity
assumptions:
 - All goods are identical in both countries
 - Trade barriers and transportation costs are low
 - But...Many goods and services are not traded across borders
 - And...no identical goods, high barriers, etc..

FIGURE 2 Purchasing Power Parity, United States/United Kingdom, 1973–2008 (Index: March 1973 = 100.)



Source: <ftp.bls.gov/pub/special/requests/cpi/cpiai.txt>.

Exchange Rates in the Short Run: A Supply and Demand Analysis

- An exchange rate is the price of domestic assets in terms of foreign assets
- Supply curve for domestic assets
 - Assume amount of domestic assets is fixed (supply curve is vertical)
- Demand curve for domestic assets
 - Most important determinant is the real relative expected return of domestic assets

Determinants of exchange rates in the short run

- Domestic interest rates (returns): positively related to the value of domestic currency (negatively related to the value of foreign curr.)
- Foreign interest rates (returns): negatively related to the value of domestic currency (positively related to value of foreign curr.)
- Domestic price level relative to foreign price level: negatively related to the value of domestic currency.

Determinants of exchange rates in the short run: CB Intervention

- Central banks can buy and sell foreign currency in the foreign exchange markets.
- Thus, they can influence the exchange rate.
- Two reasons for CBs to affect the XR:
 - Export-led growth (e.g. China)
 - Monetary policy instrument.

CBs Intervention in the Foreign Exchange Market

- Sterilized intervention: the Fed or CB counters the monetary effect of Forex market intervention with OMOs
- Unsterilized intervention: The Fed or CB doesn't.

Exchange Rate as Monetary Policy Target

- By fixing the value of foreign currency in terms of domestic currency CBs can attain certain degree of monetary stability (although loose independence).
- Monetary expansion is constrained by the availability of foreign currency which in turn is constrained by foreign monetary policy or by real and financial transactions (exports, capital flows, et...)
- Thus it helps avoid inflationary monetary policy
- Used by many countries experiencing hyperinflations.
- Extreme case is dollarization.