

# Macroeconomic Policy in the World Economy

This lecture extends our analysis of macroeconomic policy to the world economy. Specific emphasis is paid to the trade offs between flexible and fixed exchange rates and the role exchange rates play in the formation of monetary policy.

## The International Financial and Monetary System

### A. Summarizing the world financial and monetary system

1. Some economies (ex. U.S., E.U., Japan, and U.K.) have sophisticated, integrated financial markets.
2. Many economies (ex. China) are insulated to some degree from the world financial and monetary system.

### 3. Characteristics of integrated financial markets

- a. Anyone can exchange currency at a market-determined price.
- b. Anyone can participate in the capital markets.
- c. Goods and services are permitted to move freely across borders.

### B. How a central bank carries out exchange rate policy

#### 1. Definitions

- a. Domestic Credit is the value of domestic securities held by the central bank.
- b. Foreign Reserves are the value of foreign securities held by a central bank.
- c. Monetary base = domestic credit + foreign reserves

## 2. Central bank's balance sheet

Assets	Liabilities
Domestic credit	Currency
Foreign reserves	Bank reserves

## 3. Central bank increases $M^S$ to stimulate $Y$ .

- Central bank increases  $M^S$  by purchasing domestic securities which raises their domestic credit and the monetary base.
- Higher  $M^S$  shifts the LM curve to the right and  $R$  falls.
- A lower  $R$  causes savings to shift abroad which forces down the exchange rate.

## 4. What if the central bank does not want the exchange rate to fall after an increase in $M^S$ ?

- To prevent it from falling, the central bank increases the supply of foreign securities by selling foreign reserves.

- b. The decline in foreign reserves decreases the monetary base which prevents  $M^S$  from rising and  $R$  from falling.
5. Hence, the central bank can keep the exchange rate fixed, but such a policy prevents that central bank from conducting discretionary monetary policy.

### C. Sterilized foreign exchange intervention

1. The central bank offsets a potential currency depreciation by selling foreign reserves and buying domestic credit at the same time.
2. The sale of foreign reserves, which decreases the monetary base, is offset by the buying of domestic credit, which increases the monetary base.
3. This activity supports a currency's exchange rate without changing the monetary base or impacting the domestic economy.

4. In modern economies, this activity has little effect on exchange rates because of the huge volume of foreign reserves needed to make this policy effective.

#### D. Capital or exchange controls

1. These controls prevent the domestic currency from being freely exchanged with foreign currency.
2. This mechanism can enable a central bank to conduct discretionary monetary policy while simultaneously keeping the exchange rate fixed.
3. A black market for the domestic currency develops in countries with these controls (this market is often illegal).

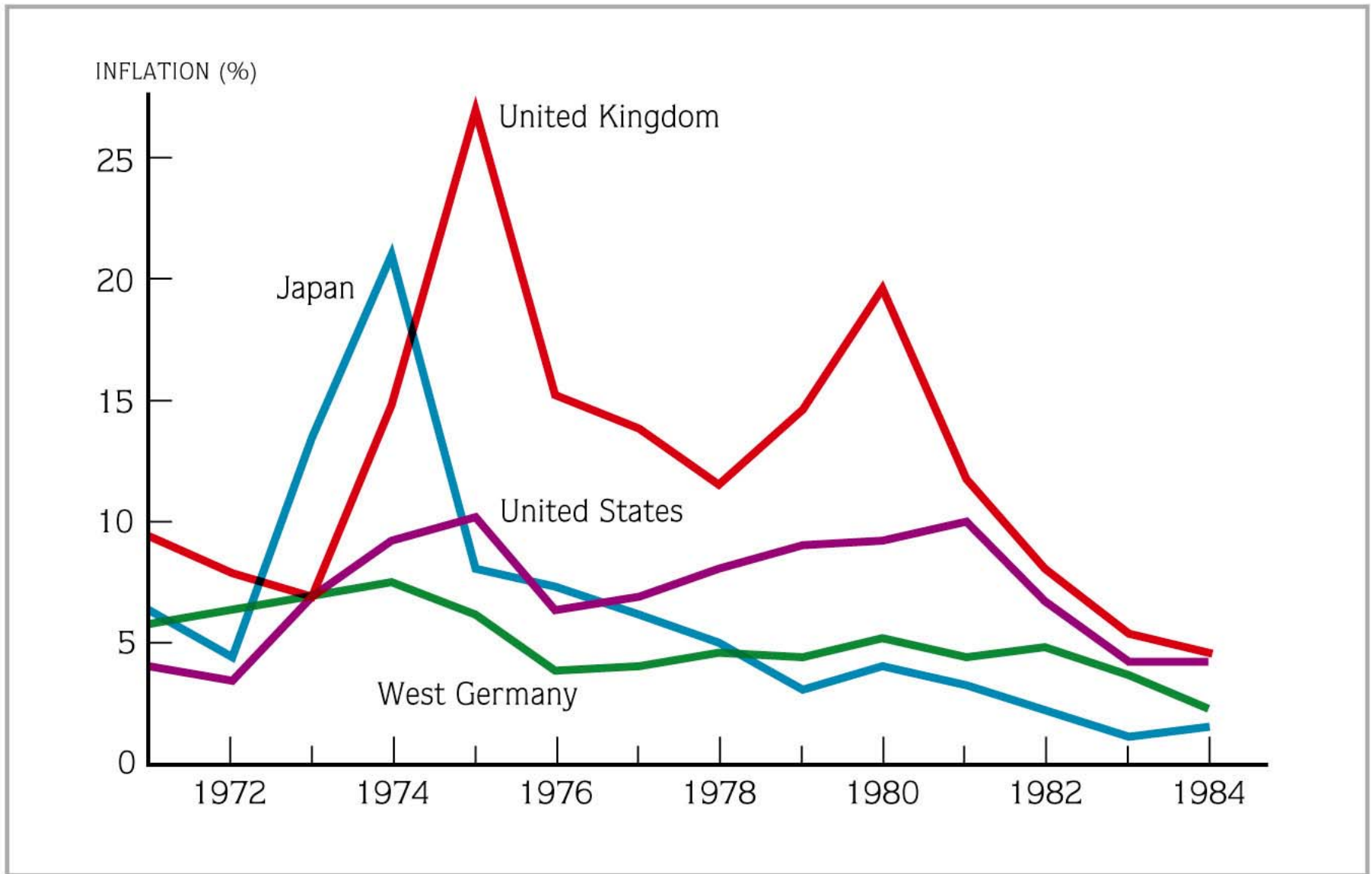
## History of the World Financial and Monetary System

- A. Prior to the early 1900s, monetary units were defined in terms of gold or silver.
- B. From WWI to the Great Depression, currencies began to lose their connection with gold or silver.
- C. At end of WWII, the Bretton Woods system of fixed exchange rates was established.
  - 1. The value of a country's currency was defined in terms of the U.S. dollar.
  - 2. Foreign central banks were required to follow a monetary policy rule that kept the exchange rate fixed.
  - 3. This system had some built-in instability that ultimately led to its collapse.
    - a. The possibility of currency devaluations led to some exchange rate crises.

- b. The system was vulnerable to mistakes in U.S. monetary policy.

#### D. The collapse of the Bretton Woods system

1. In August 1971, the U.S. signaled its intention to eventually devalue the U.S. dollar.
2. In 1973-74, the price of oil increased fourfold and inflation accelerated at widely different rates for different countries (see Figure 18.1).
3. The 1974-75 recession, which hit all countries, put pressure on central banks to conduct their own monetary policy and let exchange rates trade in large ranges.
4. By the end of 1975, the world had in effect established a flexible exchange rate system.



**FIGURE 18.1** The Great Inflation of the 1970s



## E. Exchange rate policies today

1. Three policy choices are often considered desirable.
  - a. Fixed exchange rates (less uncertainty)
  - b. Free movement of capital
  - c. Independent monetary policy
2. The macroeconomic policy trilemma says that countries can only attain two of these three objectives simultaneously.
3. U.S., Canada, U.K., and Australia have free movement capital and independent monetary policy but also have flexible exchange rates.
4. Countries in the European Union formed a single currency and have free capital movements across countries, but each country cannot conduct independent monetary policy.

5. Korea, China, and Singapore either fixed the exchange rate or allow it to trade in a tight range with the U.S. dollar. Some of these countries also have capital controls.

## Monetary Policy Rules in the World Economy

### A. The demise of fixed exchange rates

1. The currency crises of the 1990s and early 2000s are a key reason why countries have moved away from fixed exchange rates.
2. Options besides fixed exchange rates
  - a. Flexible exchange rates
  - b. Connecting monetary policy to other countries via
    - i. Adopting another country's currency as your official currency.
    - ii. Forming a monetary union with other countries.

iii. Setting up a currency board where your currency is backed one-for-one with reserves from a key foreign country.

3. In countries with flexible exchange rates, monetary policy works best when the central bank sets an inflation (or price level) target and follows a monetary policy rule.

B. Stress on a monetary policy regime focused on fixing the exchange rate

1. Stress is defined as the difference between the nominal interest rate ( $R^E$ ) needed to keep the exchange rate fixed and the nominal interest rate ( $R$ ) set as according to a monetary policy rule (ex. Taylor rule).

$$\text{Stress} = R^E - R$$

2. The greater the amount of Stress, the more likely that the central bank will fail to maintain the fixed exchange rate.

C. The role of the exchange rate in monetary policy rules.

1. A monetary policy rule without the exchange rate in it:

$$R = \pi + \beta_{\pi} \times (\pi - \pi^*) + \beta_Y \times [(Y - Y^*)/Y^*] + r^{e*}$$

where

$\pi$  is the actual inflation rate.

$\pi^*$  is the target inflation rate.

$(Y - Y^*)/Y^*$  is the percent deviation of  $Y$  from  $Y^*$ .

$r^{e*}$  is the Fed's belief of the value of the real interest rate when  $Y$  is at  $Y^*$ .

$\beta_{\pi}$  and  $\beta_Y$  are constant coefficients that are greater than zero.

- a. Changes in the exchange rate have an indirect effect on the target  $R$ .

b. When the exchange rate rises, net exports fall which causes  $Y$  to decline. The central bank then responds according to the policy rule by lowering  $R$ .

2. A monetary policy rule with the exchange rate in it:

$$R = \pi + \beta_{\pi} \times (\pi - \pi^*) + \beta_Y \times [(Y - Y^*)/Y^*] + r^{e*} - \beta_E \times E_R$$

where

$E_R$  is the real exchange rate.

$\beta_E$  is a constant coefficient that is greater than zero.

a. Changes in the exchange rate have a direct effect on the target  $R$ .

b. When the exchange rate rises, the central bank responds according to the policy rule by lowering  $R$ .

3. Research on the U.S. economy suggests that
  - a. Exchange rates have had no direct effect the Fed's target  $R$  (i.e.,  $\beta_E$  is zero).
  - b. Including exchanges rates directly in Fed's policy rule will not help the economy. One explanation for this result is that the exchange rate already has an indirect effect the Fed's target  $R$ .