Ευρωπαϊκή Οικονομική Πολιτική

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Outline of the Presentation

- Main Topic: **Macroeconomic Policy in the European Union (Chapter 13, Baldwin and Wyplosz)**
- Basic Macroeconomics of Open Economy
- Pros and Cons of Exchange Rates Regimes
- Monetary and Fiscal Policy

Goods Market in a Closed Economy

- The goods market equilibrium is described by the following macroeconomic identity in a closed economy

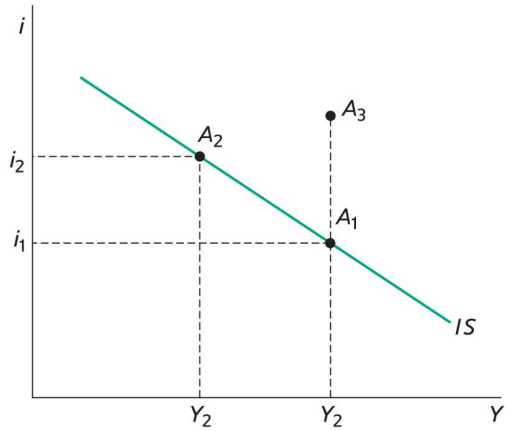
$$Y = C(Y, i) + I(i) + G$$

- Y is income
- C is consumption which is a negative function of the interest rate and a positive function of income
- I is investment which is a negative function of the interest rate.
- G is government spending which is exogenous and determined by the government.

Goods Market Graph

- The IS curve (combination of i and Y that displays goods market equilibrium)

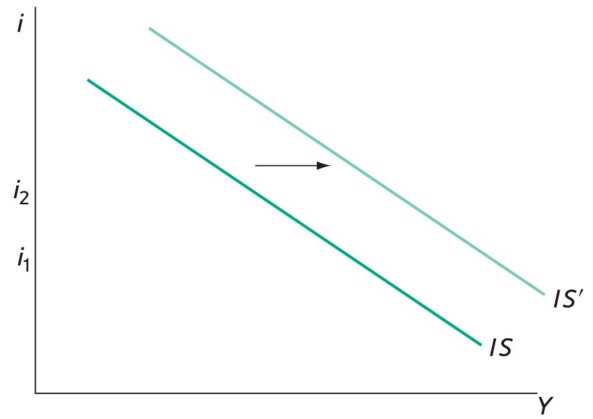
Figure 13.1 Goods market equilibrium: the *IS* curve



The effect of fiscal policy

- Expansionary fiscal policy (tax cut and/or increase in public spending) shifts the IS curve to the right (et vice versa)

Figure 13.2 An expansionary fiscal policy



Basics of Financial Markets

- Financial market features that matter a lot in terms of understanding European integration:
  - finance is a risky business;
  - financial intermediaries continuously deal with one another, borrowing, and lending
  - risk has a price;
  - most people keep their savings in financial institutions, usually banks.
- For these reasons, financial institutions are subject to regulations.

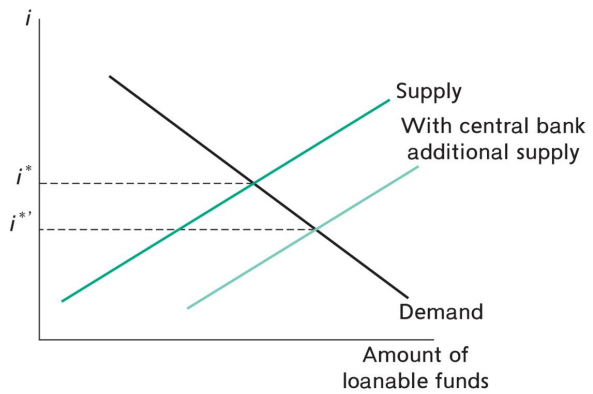
Basics of Financial Markets

- Here these complexities are ignored:
  - Consider the financial market as a whole and imagine that all loans – which we call bonds – are riskless and identical.
  - This means that there is just one interest rate, i, the one that applies to these bonds.
  - It is the interest paid by borrowers and earned by lenders.

Monetary Policy

- The financial market equilibrium:

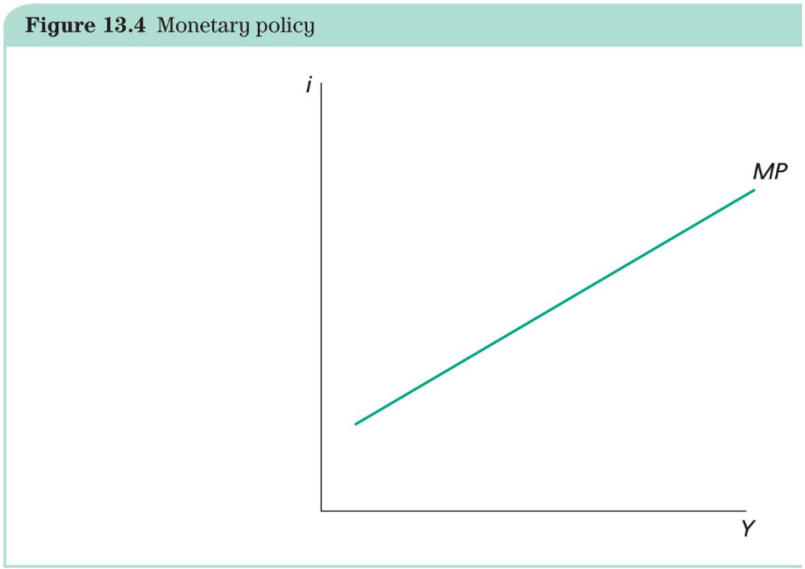
Figure 13.3 Financial market equilibrium



- An injection of money by the central bank shifts the supply curve to the right.
- Lower interest rate, expansionary monetary policy.

Monetary Policy - Taylor Rule

- Monetaty policy principles: $i = f(y, \pi)$



Central bank has two main objectives:

(1) control inflation; and

(2) to stabilize the economy, that is, to avoid large fluctuations in economic activity.

→ The second objective means that monetary policy must be counter-cyclical.

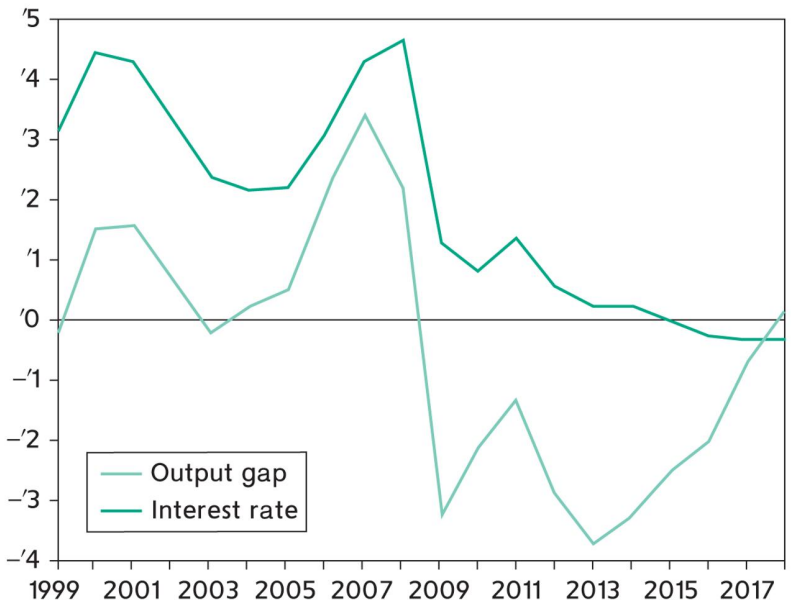
→ Central bank raises interest rate when the economy grows too fast and that it lowers the interest rate when the economy is stalling.

→ MP curve

Basics of Financial Markets

- Interest rate and GDP for the Eurozone:Taylor rule in Practise

Figure 13.5 The interest rate and output in the Eurozone, 1999–2017



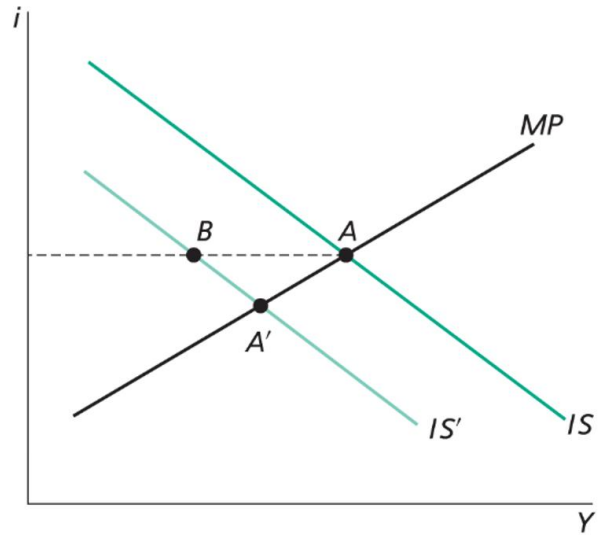
Note: GDP tends to rise continuously following a reasonably stable trend. The figure displays the deviation of actual from trend GDP, which reflects business cycles – precisely what a central bank worries about.

Source: Based on data from *Economic Outlook* Database, OECD, July 2018.

Basics of Financial Markets

The general equilibrium:

Figure 13.6 General equilibrium



Brings together the two schedules that describe the partial equilibria of the good and financial markets.

The intersection point A between IS and MP represents the general equilibrium.

If pending declines (IS curve to IS'): new equilibrium is at point A', where GDP has declined and the central bank has reduced the interest rate.

Had the central bank not reduced the interest rate, the economy would have moved to point B, which corresponds to an even deeper recession.

Balance of Payments

- Account that records all the transactions between a country and the rest of the world.
    1. Current account: records the commercial transactions, exports and imports of goods and services.
    2. Financial account: records the other international transactions, those that do not correspond to buying or selling goods or services (capital flows).
    3. Interventions by central banks as they buy or sell their foreign exchange reserves
- If current account balance is positive, more money has been received than shipped abroad: either it is saved, which means that the financial account is positive, or the central bank buys it and its reserves increase.

Open Economy

- The Goods Market: $Y = C + I + G + X(E_t) - M(E_t)$
- The IRP condition: $i = i^* - \frac{E_{t+1} - E_t}{E_t}$

Interest Rate Parity

- The IRP condition: $i = i^* - \frac{E_{t+1} - E_t}{E_t}$

IRP: A trader deciding on investing anywhere in the world:

- compare interest rates;
- consider exchange rate fluctuations: if foreign currency appreciates, an investment abroad will also lead to capital gain.

Thus, financial markets are in equilibrium when:

$$\text{Domestic interest rate} = \underbrace{\text{Foreign interest rate} + \text{Expected exchange rate depreciation}}_{\text{Return of foreign assets}}$$

Interest Rate Parity

- Thus, the Interest Rate Parity gives as the condition where the returns from investing in Europe and US is equalized.
- Lets assume we have 1000 euros. Shall we invest them in Europe or US
- Assume European interest rate is $i = 5$ and US is $i^* = 2\%$. Also, consider that $E_t = 1.3$.
- **Case 1**. Invest in Europe: $1000 * (1 + i) = 1050$ euros
- **Case 2**. Invest in US: Step 1. 1000 euros become $1000 * 1.3 = 1300$ dollars. Step 2. investment gets $1300 * (1 + i^*) = 1326$ dollars. Step 3. In euros, $1326/E_{t+1}$ euros.
- Compare. 1050 by investing in Europe will be equal that of US when $1050 = 1326/E_{t+1}$ which gives $E_{t+1} = 1.2629$ which means depreciation of euro.

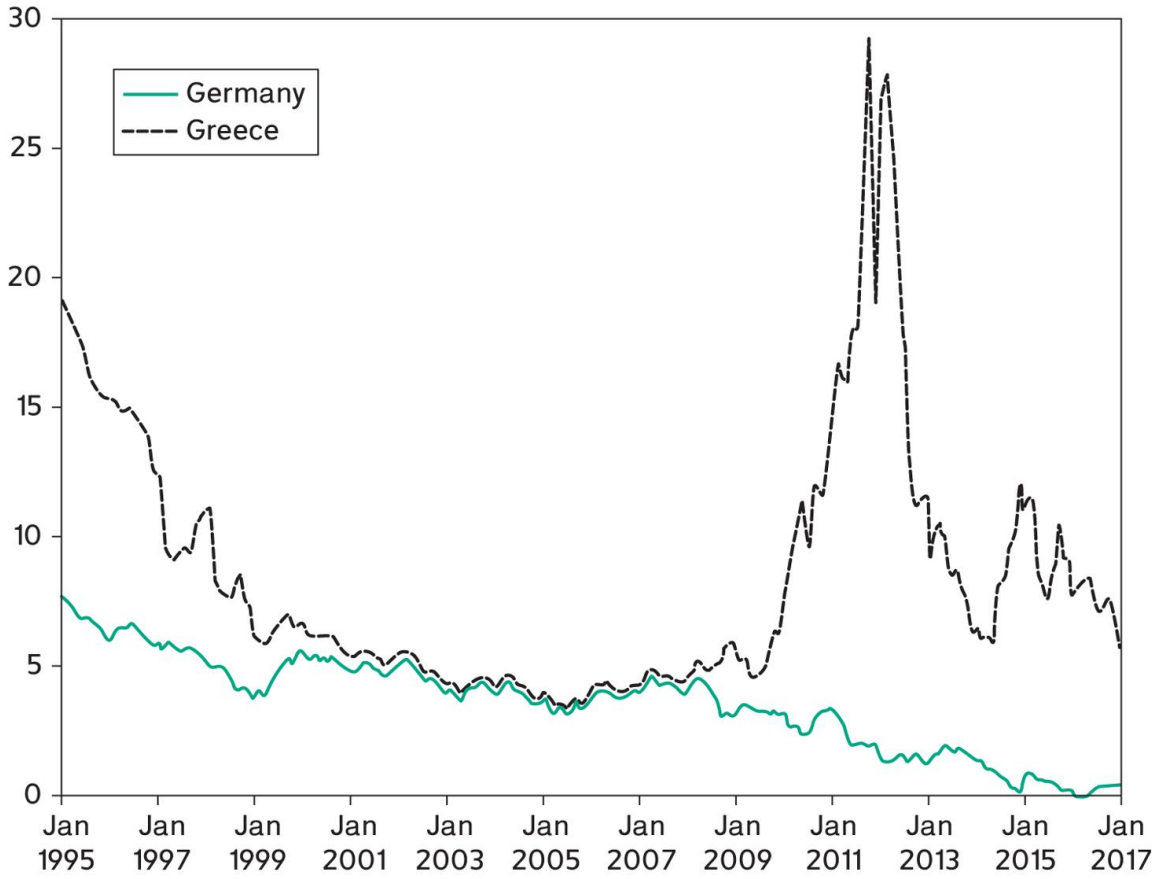
Interest Rate Parity

- Lets see how E_t changes and brings the IRP condition to hold.
- $1000 * (1 + i) = 1000 * E_t * (1 + i^*)/E_{t+1}$
- What happens in exchange rate markets when there is an opportunity where $i > i^*$?
- Today, many foreign investors demand euros to invest in Europe. Thus, those that they hold euros are giving them for more dollars. E_t increases (euro appreciates)
- Tomorrow, many want to get back the gains in dollars and they demand dollars, thus E_{t+1} falls, which mean that euro depreciates.

Example from the Greek Crisis

Lessons from the Greek crisis:

Figure 13.8 Government bond interest rates



Source: Based on data from *International Financial Statistics*, IMF.

Example from the Greek Crisis

- Before joining the Euro, the Greek Drachma was constantly depreciating versus the German Mark.
- From, 2001 until the 2009 the interest rate obtained from Greek and German government bonds was the same.
- But, from 2010 we observe a sharp increase in the interest rate of Greek bonds. This has two explanations
    1. The Greece was expected to exit the EU which would have led to exchange rate depreciation. Thus, accorind to IRP this increases i.
    2. The relation of bond interest rates reflects also a risk premium. Greek bonds have higher premium because the investor carries the risk of not getting his money back :)

Exchange Rates Regimes

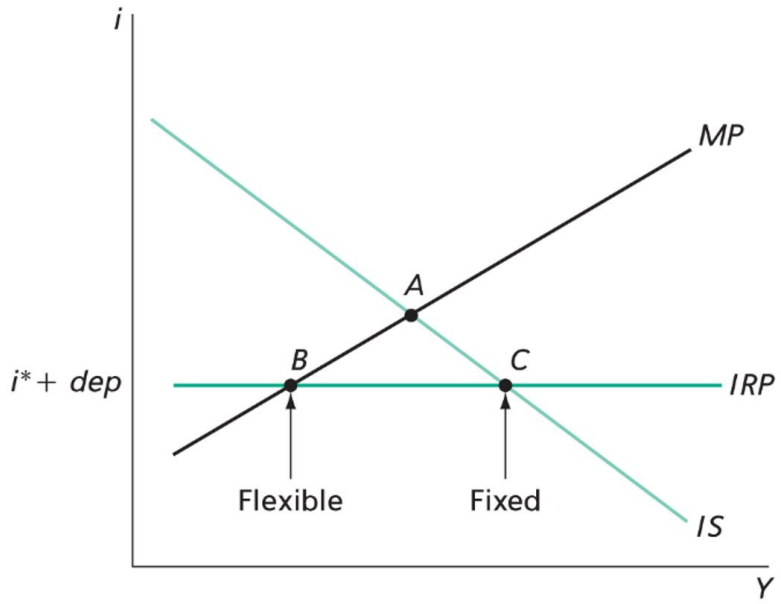
- Exchange rate regime only matters because nominal exchange rate has real effects in the short run. Non-neutrality arises because prices and wages move slowly (i.e., they are 'sticky').

- Regimes:
  - free floating;
  - managed floating: central banks buy their own currency when they consider it too weak, and sell it when they see it as too strong, but they refrain from pursuing any particular exchange rate target;
  - fixed exchange rates or target zones: authorities declare an official parity vis-à-vis another currency or a basket of currencies, with margins of fluctuations around the central parity (i.e., target zone).

Exchange Rates Regimes Implications

IRP does not necessarily go through point A (i.e., interest rate chosen by the central bank): central bank must either accept being at B or 'do something' about the exchange rate.

Figure 13.9 The role of the exchange rate regime



The horizontal line depicts the interest rate parity (*IRP*):

- Financial markets are in equilibrium when the domestic interest rate i is equal to the return expressed in the domestic currency (i.e., foreign interest rate i^* plus the expected rate of depreciation).
- To keep things simple, we ignore expected depreciation (so we assume $dep = 0$).

The Impossible Trinity

- The Impossible trinity principle: only two of the three following features are compatible with each other:
  - full capital mobility, fixed exchange rates and autonomous monetary policy.
  1. Full Capital Mobility + Flexible Exchange Rate -> Autonomous monetary policy (you can choose i)
  2. Full Capital Mobility + Fixed Exchange Rate -> Non-autonomous monetary policy (you follow i^*)
  3. Capital Controls + Fixed Exchange rate -> Autonomous monetary policy

FCM and Flex XR

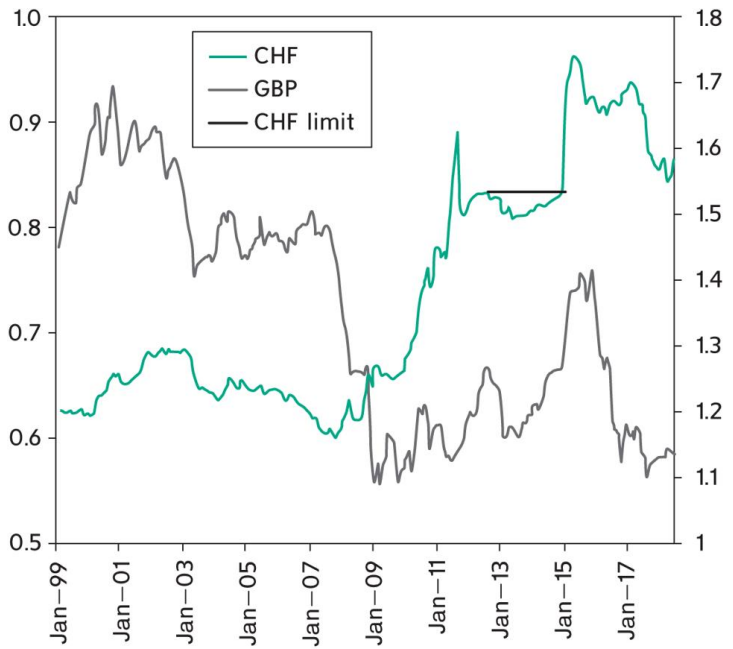
- **Full Capital Mobility and Flexible Exchange Rate**
  1. Monetary policy can choose the interest rate but not the exchange rate. This is the case of the Eurozone as whole, the US, the Japan...
  2. But, exchange rate can be volatile affecting competitiveness. Lets examine in the next slide the case of Swiss and British Experience.

The Impossible Trinity in Practise

Full capital mobility and autonomous monetary policy, flexible exchange rate

- The Eurozone as a whole, the USA, Japan, the UK, Switzerland and Sweden, among many others, follow this approach.

Figure 13.11 Flexible exchange rates: the British and Swiss experience



Note: Exchange rates for sterling and the Swiss franc vis-à-vis the euro (euros per pound or franc).

Source: Based on data from Swiss National Bank.

Swiss vs British

- Experience of Swiss and British when the Euro Launched
    1. Britain asked for exemption to abandon the British pound. Swiss wanted monetary autonomy for the stability of the financial center.
    2. During crisis Pound dropped by 25% increasing competitiveness. a) imports expensive, b) exports cheaper, c) more domestic consumption cured partly the crisis, d) imported inflation.
    3. Swiss Experience Opposite. As a stable financial center attracted capital causing an appreciation of CHF. Fall in exports caused to impose a ceiling with euro by loosing MP. But, when abandoned CHF hugely appreciated.

FCM and Fixed XR

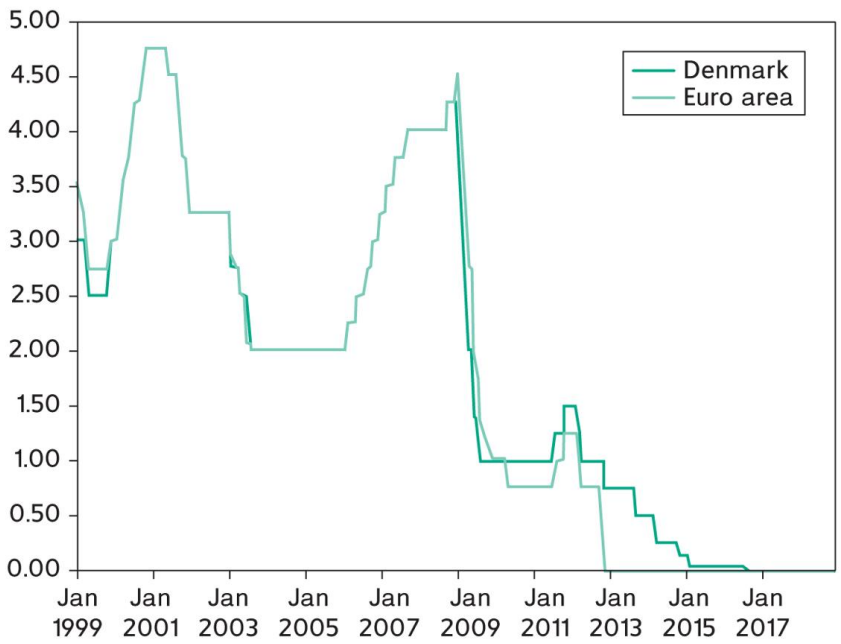
- **Full Capital Mobility and Fixed Exchange Rate**
  1. The central bank dedicates itself to a fixed exchange rate policy versus some anchor country. Examples: Bretton Woods (1944) vis s vis US dollar. In 1973 collapsed and European countries wanted to keep the fixed exchange rate forming the European Monetary System. Some countries fix they currency to the euro, e.g. Denmark.
  2. Good for exchange rate stability and inflation control, but subject to speculative attacks. Lets see the case of Denmark.

The Impossible Trinity in Practise

Full capital mobility and fixed exchange rate:

- This was the worldwide regime adopted at the Bretton Woods conference in 1944.
- Denmark as member of the European Monetary System

Figure 13.12 Central bank interest rates: Denmark and the euro area, 1999–2018



Source: Based on data from *International Financial Statistics*, IMF.

Denmark Case

- Experience of Denmark
  1. Denmark abandoned monetary policy autonomy and adopted the interest rate policy of the ECB. Please see above the interest rates fo the two central banks.
  2. European countries that hold euro, have abandoned the monetary policy but are able to get "involved" in the decisions of the ECB.
  3. Denmark is not involved in ECB decisions.

Capital Controls and Flexible XR

- **Capital Controls and Flexible Exchange Rates**
  1. Capital Controls make the IRP inoperative. This happens as a) forbib transfer of funds , b) taxes on international financial transactions
  2. Examples include emerging countries, early EU monetary integration and China. Capital controls allow for monetary autonomy but there are costs.
  3. People try to evade the restrictions (this imposes strong monitoring cost). Also, it reduced the loanable funds important for investment activities.

The Impossible Trinity

Fixed exchange rate and monetary policy autonomy, with capital controls

- Capital controls make the interest rate parity principle inoperative.
- Forbid the transfer of funds between a country and the rest of the world, or subject these transfers to limits:
  - The result is that traders can no longer take advantage of higher returns abroad or lower borrowing costs. Being restricted, capital flows cannot establish the parity condition.
  - Many developing and some emerging market countries, for instance China, use this type of control.
- Another form of capital control imposes taxes on international financial transactions:
  - The result is that traders must factor in these taxes when they compare domestic and foreign interest rates.
  - If the tax rate is high enough, it will discourage a significant portion of capital flows. Brazil has adopted this mechanism.

Pros and Cons of Exchange Rate Regimes

- **Flexible Exchange Rate - Advantages**
  1. **Monetary policy independence**. Having one more policy instrument to stabilize the economy is always useful. But, is this policy instrument effective? Medium run versus short run. In the medium run, money is neutral (recall the vertical slope of the AS curve). In the short run, monetary and exchange rate policies matter in general, while the particular results depend on the degree of capital mobility, the type of nominal fixity, etc (popular short-run models with nominal fixities are the MundellFleming and Dornbusch's overshooting model). See Blanchard (2002, chapters 20.4-5 and 21.1) and De Grauwe (chapter 2).

Pros and Cons of Exchange Rate Regimes

- **Flexible Exchange Rate - Advantages**

  2. The foreign exchange market clears without costs of intervention policies (e.g. management of nominal interest rates and selling/buying foreign reserves). Note that policy intervention can affect the exchange rate via the portfolio channel and the expectations channel. The former is a direct channel. The latter affects the exchange rate even if intervention does not actually take place (see e.g. the target zone model).

Pros and Cons of Exchange Rate Regimes

- **Flexible Exchange Rate - Advantages**

  3. Under flexible exchange rates, by construction there are no speculative attacks and exchange rate crises. By contrast, exchange rate commitments are always susceptible to speculative attacks and balance of payments crises. See e.g. Blanchard (2002, chapter 21.2). [Note: There are three classes of models that study exchange rate regime collapses (see e.g. Obstfeld and Rogoff (1996, chapters 8-9) and Drazen (2000, 12.3)).

Pros and Cons of Exchange Rate Regimes

- Flexible Exchange Rate

3. There are three classes of models that study exchange rate regime collapses (see e.g. Obstfeld and Rogoff (1996, chapters 8-9) and Drazen (2000, 12.3)).
   - In the first one, fixed exchange rates inevitably collapse simply because the fundamentals are inconsistent with the exchange rate regime. This is mechanical.
   - In the second class of models, it is optimal to abandon the exchange rate commitment when things "get really bad" and stabilization becomes the main issue (this is the debate on credibility versus stabilization).

Pros and Cons of Exchange Rate Regimes

- Flexible Exchange Rate

3. There are three classes of models that study exchange rate regime collapses (see e.g. Obstfeld and Rogoff (1996, chapters 8-9) and Drazen (2000, 12.3)).
   - In the third class of modes, there can be multiple expectations about devaluation. If the high expectations prevail, there is a speculative attack and the crisis becomes self-fulfilling.]

Pros and Cons of Exchange Rate Regimes

- **Flexible Exchange Rate**

Policy-Lesson. the exchange rate commitment or target must be consistent with economic fundamentals or the so-called fundamental equilibrium exchange rate. Defending a disequilibrium exchange rate (because it provides an anchor to private inflation expectations and nominal contracts, because of political prestige, etc) is futile and costly. See Williamson (1993, EJ).

Pros and Cons of Exchange Rate Regimes

- **Fixed Exchange Rate - Advantages**
  1. Fixed exchange rates can help to **avoid competitive devaluations**. This is a prisoner's dilemma problem between national policymakers. In general, if there are cross-country spillovers, decentralized national (monetary and fiscal) policies are inefficient; hence, the arguments for international cooperation of monetary policies.

Pros and Cons of Exchange Rate Regimes

- **Fixed Exchange Rate - Advantages**

  2. Fixed exchange rates can help high-inflation countries to gain antiinflation credibility and break the vicious cycle of inflation-depreciation. The theoretical model behind this argument is the Barro-Gordon (1983) model of stagflation. If this is the case, a regime of fixed exchange rates can offer an institutional resolution to the inefficient outcome of high inflation and low employment.

Pros and Cons of Exchange Rate Regimes

- **Fixed Exchange Rate - Advantages**
  2. **How do fixed exchange rates work?**
     - A high-inflation country can fix its exchange rate against the currency of a low-inflation country.
     - Or, in a more general setup Giavazzi (1988, EER) have shown that with a fixed exchange rate, inflation in excess of the EMS average will lead to a real exchange rate appreciation, which is costly.
     - Whatever the mechanism is, the general result is that high-inflation countries "import the credibility" of low-inflation countries.
     - These arguments become stronger if, in addition to credibility problems, there are also political business cycles (see Alogoskoufis, Lockwood and

Pros and Cons of Exchange Rate Regimes

- **Fixed Exchange Rate - Advantages**

  2. Note that this institutional resolution presupposes that the exchange rate regime is itself credible and sustainable.
     - This is a big assumption since (as we said above) fixed exchange rate regimes cannot be fully credible.
     - In this case, stronger institutional arrangements (e.g. abolishing the domestic currency and adopting the currency of a low-inflation country, or joining a Monetary Union with low-inflation countries) can potentially solve the credibility problem of high inflation countries

Pros and Cons of Exchange Rate Regimes

- **Fixed Exchange Rate - Advantages**
  3. **Excessive exchange rate volatility may be bad for economic activity**. See e.g. Blanchard (2002, chapter 21.3).
     - This is when movements in exchange rates (or asset prices in general) do not reflect movements in fundamentals (this happens when there are rational bubbles or irrational behavior).
     - Actually, there is empirical evidence that economic fundamentals have little explanatory power and forecasting ability at least when we use standard macroeconomic models of exchange rate determination (for technical surveys, see e.g. Frankel and Rose (1995, HIE3)).

Pros and Cons of Exchange Rate Regimes

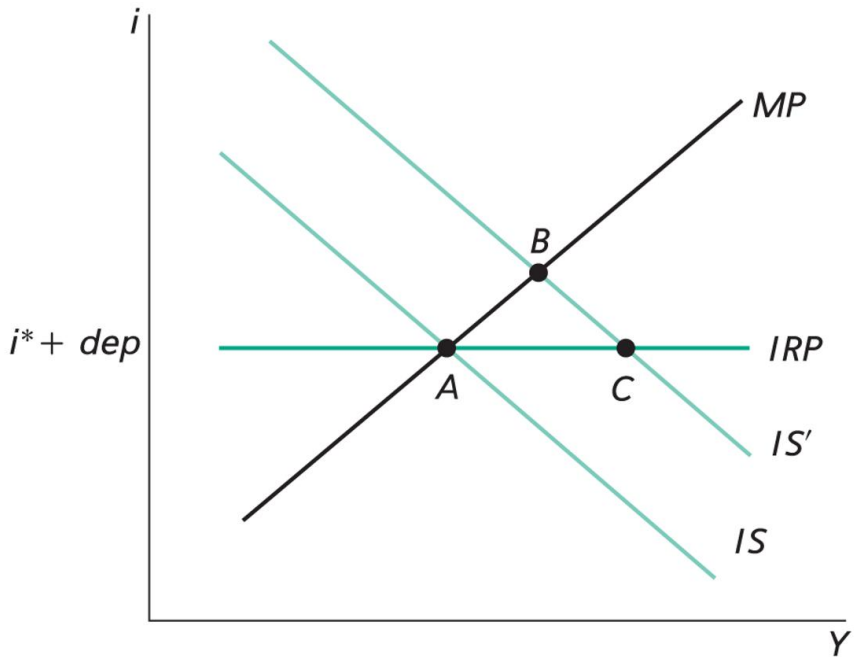
- **Fixed Exchange Rate - Advantages**
    4. If shocks are mainly financial or money-demand, fixed exchange rates can stabilize output and other real variables better than flexible exchange rates (this is Poole's IS-LM model in an open economy).

Fiscal Policy

Fiscal policy:

1. Fixed exchange regime: fiscal expansion results in a higher GDP.
2. Flexible exchange regime: fiscal policy has failed to increase the GDP.

Figure 13.14 Fiscal policy

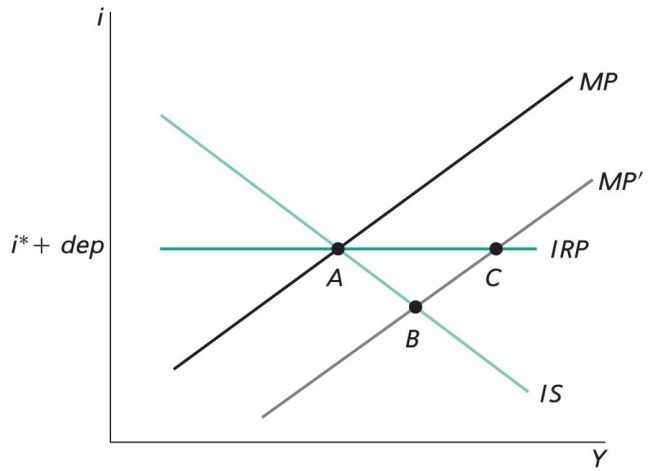


Monetary Policy

Monetary policy:

1. Fixed exchange regime: ineffective.
2. Devaluation: monetary policy works, but not through the interest rate.
3. Flexible exchange regime: monetary policy becomes exchange rate policy and is effective.

Figure 13.15 Monetary policy



Exchange Rate Determination

Exchange rate determination

The *IS*–*MP*–*IRP* framework can also be seen as a way of understanding exchange rate movements.

- The exchange rate appreciates when the *IS* and *MP* schedules intersect above the *IRP* line;
- it depreciates when the *IS* and *MP* schedules intersect below the *IRP* line.

What happens when the foreign central bank raises its interest rate from i^* to i'^* (assuming $dep = 0$)?

- The result is the upward shift of the *IRP* to *IRP*′.
- Point *A* now lies below the new *IRP*′ line.
- Capital flies out and the exchange rate depreciates under a flexible exchange rate regime.
- World demand for our goods increases and the *IS* curve starts shifting to the right.
- Depreciation will go on until the *IS* curve has moved to *IS*′ and the economy has reached point *B*.

Foreign Central Bank

What happens when the foreign central bank raises its interest rate?

Figure 13.17 Foreign monetary policy