CHAPTER TWENTY
Salvatore 20

Flexible versus Fixed Exchange Rates, the European Monetary System, and Macroeconomic Policy Coordination

In this chapter:
• Introduction
• The Case for Flexible Exchange Rates
• The Case for Fixed Exchange Rates
• Optimum Currency Areas, the European Monetary System, and the European Monetary Union
• Currency Boards Arrangements and Dollarization
• Exchange Rate Bands, Adjustable Pegs, Crawling Pegs, and Managed Floating
• International Macroeconomic Policy Coordination

Introduction
• Advocates of a fixed exchange rate system argue for the certainty and stability of fixed rates, while advocates of a flexible rate claim more efficiency in correcting balance of payments disequilibria.
• There is no clear-cut conclusion about whether fixed or flexible exchange rates are superior.

The Case for Flexible Exchange Rates
• A flexible exchange rate system is said to be more efficient than a fixed exchange rate system because:
  1. It relies only on changing exchange rates, not prices, to adjust balance of payments.
  2. It makes adjustments smooth and continuous rather than occasional and large.
  3. It clearly identifies the nation’s degree of comparative advantage and disadvantage in various commodities.

The Case for Flexible Exchange Rates
• The policy advantages of a flexible exchange rate system:
  1. It frees monetary policy for domestic goals.
  2. It enhances the effectiveness of monetary policy.
  3. It allows each nation to pursue its own inflation-unemployment trade-off.
  4. It removes the danger that the government will use the exchange rate to reach goals better achieved by other policies.
  5. It eliminates the cost of official interventions in foreign exchange markets.
The Case for Fixed Exchange Rates

The case for fixed exchange rates rests on:

1. Less uncertainty than flexible rates.
   - Flexible rates do lead to excessive volatility in exchange rates.
2. Speculation likely to be more stabilizing than flexible rates.
   - Empirical evidence suggests that a flexible system does not compare unfavorably with a fixed rate system with respect to whether speculation is stabilizing or destabilizing.
3. Less inflationary than flexible rates.

Optimum Currency Areas, the European Monetary System, and the European Monetary Union

An optimum currency area is a group of nations whose national currencies are tied by permanently fixed exchange rates.

Conditions that make optimum currency area optimum:

- Greater mobility of resources among member nations
- Greater structural similarities
- Greater willingness of the nations to coordinate fiscal, monetary and other policies

Optimum Currency Areas, the European Monetary System, and the European Monetary Union

- Disadvantage of optimum currency area:
  - Member nations cannot pursue independent stabilization and growth policies for their particular circumstances.

Benefits of optimum currency area:

- Eliminates exchange rate uncertainty, stimulating specialization in production and flow of trade and investments.
- Encourages producers to view entire area as single market, benefiting from greater economies of scale.
- Provides greater price stability as price shocks in different regions cancel each other out.
- Saves cost of official interventions in foreign exchange markets, cost of hedging, and cost of currency exchange.

The Maastricht Treaty, 1991, generated the agenda by which full monetary union would be achieved.
Optimum Currency Areas, the European Monetary System, and the European Monetary Union

**Stages to monetary union:**

1. Coordination of macroeconomic policies and removal of barriers to capital movements within nations.
2. Creation of the European Monetary Institute as a forerunner to the European Central Bank.
3. Establishment of a single currency and European Central Bank for foreign exchange market interventions and open market operations.

**Conditions for joining the monetary union:**

1. Inflation no higher than 1.5 percent greater than the average of the three members with the lowest rates of inflation.
2. A budget deficit no greater than 3 percent of GDP.
3. Overall government debt no greater than 60 percent of GDP.
4. Long-term interest rates not to exceed 2 points more than the average interest rates of the three countries with the lowest rates.
5. The average exchange rate not falling by more than 2.25 percent of the average of the EMS for the two years prior to joining.

What Is the EU?

- The European Union is a system of international institutions, the first of which originated in 1957, which now represents 27 European countries through the following bodies:
  - European Parliament: elected by citizens of member countries
  - Council of the European Union: appointed by governments of the member countries
  - European Commission: executive body
  - Court of Justice: interprets EU law
  - European Central Bank, which conducts monetary policy through a system of member country banks called the European System of Central Banks

What Is the EMS?

- The European Monetary System was originally a system of fixed exchange rates implemented in 1979 through an exchange rate mechanism (ERM).
- The EMS has since developed into an economic and monetary union (EMU), a more extensive system of coordinated economic and monetary policies.
  - The EMS has replaced the exchange rate mechanism for most members with a common currency under the economic and monetary union.

Membership of the Economic and Monetary Union

- To be part of the economic and monetary union, EMS members must
  1. adhere to the ERM: exchange rates were fixed in specified bands around a target exchange rate.
  2. follow restrained fiscal and monetary policies as determined by Council of the European Union and the European Central Bank.
  3. replace the national currency with the euro, whose circulation is determined by the European System of Central Banks.
Membership of the EU
To be a member of the EU, a country must, among other things,
1. have low barriers that limit trade and flows of financial assets
2. adopt common rules for emigration and immigration to ease the movement of people
3. establish common workplace safety and consumer protection rules
4. establish certain political and legal institutions that are consistent with the EU's definition of liberal democracy.

Why the EU?
- Countries that established the EU and EMS had several goals
  1. To enhance Europe's power in international affairs: as a union of countries, the EU could represent more economic and political power in the world.
  2. To make Europe a unified market: a large market with free trade, free flows of financial assets, and free migration of people—in addition to fixed exchange rates or a common currency—was believed to foster economic growth and economic well-being.
  3. To make Europe politically stable and peaceful.

Fig. 20-1: Members of the Euro Zone as of January 1, 2011

Fig. 20-2: Inflation Convergence for Six Original EMS Members, 1978–2009

Source: CPI inflation rates from International Monetary Fund, International Financial Statistics.

Table 20-1: A Brief Glossary of Euronyms

<table>
<thead>
<tr>
<th>TABLE 20-1</th>
<th>A Brief Glossary of Euronyms</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECB</td>
<td>European Central Bank</td>
</tr>
<tr>
<td>EFSF</td>
<td>European Financial Stability Facility</td>
</tr>
<tr>
<td>EMS</td>
<td>European Monetary System</td>
</tr>
<tr>
<td>EMU</td>
<td>Economic and Monetary Union</td>
</tr>
<tr>
<td>ERM</td>
<td>Exchange Rate Mechanism</td>
</tr>
<tr>
<td>ESCB</td>
<td>European System of Central Banks</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>SGP</td>
<td>Stability and Growth Pact</td>
</tr>
</tbody>
</table>

Policies of the EU and EMS
  - It also allowed EU policy to be approved with less than unanimous consent among members.
- The Maastricht Treaty, proposed in 1991, required the 3 provisions to transform the EMS into an economic and monetary union.
  - It also required standardizing regulations and centralizing foreign and defense policies among EU countries.
  - Some EU/EMS members have not ratified all of the clauses.
Policies of the EU and EMS (cont.)

- The Maastricht Treaty requires that members that want to remain in the economic and monetary union
  1. attain exchange rate stability defined by the ERM before adopting the euro.
  2. attain price stability: a maximum inflation rate of 1.5% above the average of the three lowest national inflation rates among EU members.
  3. maintain a restrictive fiscal policy:
     - a maximum ratio of government deficit to GDP of 3%.
     - a maximum ratio of government debt to GDP of 60%.

Other types of Policies: Currency Boards Arrangements and Dollarization

- Under a currency board arrangement, a nation rigidly fixes the exchange rate of its currency to a foreign currency, and its central bank ceases to operate as such.
- A currency board is the most extreme form of exchange rate peg short of adopting a common currency.
- Usually done when nation is in deep financial crisis, and to combat inflation.

Policies of the EU and EMS (cont.)

- The Maastricht Treaty requires that members that want to remain in the economic and monetary union
  1. maintain a restrictive fiscal policy:
     - a maximum ratio of government deficit to GDP of 3%.
     - a maximum ratio of government debt to GDP of 60%.
     - Financial penalties are imposed on countries with "excessive" deficits or debt.
     - The Stability and Growth Pact, negotiated in 1997, also allows for financial penalties on countries with "excessive" deficits or debt.

Currency Boards Arrangements and Dollarization

- Advantages:
  - Reduction in exchange rate risk.
  - Reduced domestic inflationary pressure.
- Disadvantages:
  - Complete loss of domestic monetary control.
  - No lender of last resort.
  - Loss of ability to earn seignorage from the creation of money.

Policies of the EU and EMS (cont.)

- The euro was adopted in 1999, and the previous exchange rate mechanism became obsolete.
- But a new exchange rate mechanism—ERM II—was established between the economic and monetary union and outside countries.
  - It allowed countries (either within or outside of the EU) that wanted to enter the economic and monetary union in the future to maintain stable exchange rates before doing so.
  - It allowed EU members outside of the economic and monetary union to maintain fixed exchange rates if desired.

Currency Boards Arrangements and Dollarization

Dollarization is the adoption of another nation’s currency as legal tender.

- Advantages:
  - Elimination of domestic currency exchange rate risk.
  - External determination of inflation and interest rates.
  - External macroeconomic policy discipline.
Currency Boards Arrangements and Dollarization

Dollarization is the adoption of another nation’s currency as legal tender.

Disadvantages:
- Cost of replacing domestic currency with another currency.
- Loss of independence of monetary and exchange rate policies, facing same monetary policy as country whose currency was adopted.
- Loss of central bank as lender of last resort.

Exchange Rate Bands, Adjustable Pegs, Crawling Pegs, and Managed Floating

- Exchange Rate Bands
  - Most fixed exchange rate systems allow the rate to fluctuate within narrowly defined bands above and below par value.
  - The actual exchange rate is determined by supply and demand within the band of fluctuation, and is prevented from moving outside band by official intervention.

- Adjustable Pegs
  - An adjustable peg requires defining the par value and the band of fluctuation, with the stipulation that the currency will be devalued to correct balance of payments deficit, or revalued to correct surpluses.

- Crawling Pegs
  - Under a crawling peg system, par values are changed by small preannounced amounts or percentages at frequent and clearly specified intervals until the equilibrium exchange rate is reached.
  - This is done to avoid relatively large changes in par values and possibly destabilizing speculation.

- Managed Floating
  - Under a managed floating exchange rate system, the nation's monetary authorities are responsible for intervening in foreign exchange markets to smooth out short-run fluctuations without attempting to affect long-run trend in exchange rates.

- Managed Floating
  - A policy of leaning against the wind requires the monetary authority to:
    - Supply (from reserves) a portion of short-run excess demand for foreign exchange, moderating tendency of currency to depreciate.
    - Absorb (add to reserves) a portion of any short-run excess supply, moderating tendency of currency to appreciate.
  - This reduces short-run fluctuations without affecting the long-run trend in exchange rates.
International Macroeconomic Policy Coordination

- Given the interdependence of nations, macroeconomic policies are more effective if coordinated.
- International coordination has proven difficult because of:
  - Lack of consensus about functioning of international monetary system.
  - Disagreement on precise policy mix required.
  - Disagreement on how to distribute gains from successful policy coordination among participants.
  - Disagreement on how to spread cost of negotiating and policy agreements.

Chapter 17

Output and the Exchange Rate in the Short Run

Introduction

- Long-run models are useful when all prices of inputs and outputs have time to adjust.
- In the short run, some prices of inputs and outputs may not have time to adjust, due to labor contracts, costs of adjustment, or imperfect information about willingness of customers to pay at different prices.
- This chapter builds on the short-run and long-run models of exchange rates to explain how output is related to exchange rates in the short run.
- It shows how macroeconomic policies can affect production, employment, and the current account.
Determinants of Aggregate Demand

- Aggregate demand is the aggregate amount of goods and services that individuals and institutions are willing to buy:
  1. consumption expenditure
  2. investment expenditure
  3. government purchases
  4. net expenditure by foreigners: the current account

Determinants of Aggregate Demand

- Determinants of consumption expenditure include:
  - Disposable income: income from production (Y) minus taxes (T).
  - More disposable income means more consumption expenditure, but consumption typically increases less than the amount that disposable income increases.
  - Real interest rates may influence the amount of saving and spending on consumption goods, but we assume that they are relatively unimportant here.
  - Wealth may also influence consumption expenditure, but we assume that it is relatively unimportant here.

How Real Exchange Rate Changes Affect the Current Account

- The current account measures the value of exports relative to the value of imports: \( CA = EX - IM \)
  - When the real exchange rate \( EP^*/P \) rises, the prices of foreign products rise relative to the prices of domestic products.
  - The volume of exports that are bought by foreigners rises.
  - The volume of imports that are bought by domestic residents falls.
  - The value of imports in terms of domestic products rises: the value/price of imports rises, since foreign products are more valuable/expensive.

Determinants of Aggregate Demand (cont.)

- Determinants of the current account include:
  - Real exchange rate: prices of foreign products relative to the prices of domestic products, both measured in domestic currency: \( EP^*/P \)
    - As the prices of foreign products rise relative to those of domestic products, expenditure on foreign products rises, and expenditure on foreign products falls.
  - Disposable income: more disposable income means more expenditure on foreign products (imports).

How Real Exchange Rate Changes Affect the Current Account (cont.)

- If the volumes of imports and exports do not change much, the value effect may dominate the volume effect when the real exchange rate changes.
  - For example, contract obligations to buy fixed amounts of products may cause the volume effect to be small.
  - However, evidence indicates that for most countries the volume effect dominates the value effect after one year or less.
  - Let’s assume for now that a real depreciation leads to an increase in the current account: the volume effect dominates the value effect.
The International Sector and Planned Aggregate Expenditure

Planned aggregate expenditure in an open economy:

\[ AE = C + I + G + (EX - IM) \]

- Determining the Level of Imports
  - When income rises, imports tend to go up. Algebraically,
    \[ IM = mY \]
  - Where \( Y \) is income and \( m \) is some positive number.
- Marginal propensity to import (MPM): The change in imports caused by a $1 change in income.

Determinants of Aggregate Expenditure

- Determinants of the current account include:
  - Real exchange rate: an increase in the real exchange rate increases the current account.
  - Disposable income: an increase in the disposable income decreases the current account.

Determinants of Aggregate Expenditure (cont.)

- For simplicity, we assume that exogenous political factors determine government purchases \( G \) and the level of taxes \( T \).
- For simplicity, we currently assume that investment expenditure \( I \) is determined by exogenous business decisions.
  - A more complicated model shows that investment depends on the cost of spending or borrowing to finance investment: the interest rate.
Determinants of Aggregate Expenditure (cont.)

• Aggregate exp. is therefore expressed as:

\[ AE = C(Y - T) + I + G + CA(EP^*/P, Y - T) \]

Consumption expenditure as a function of disposable income.
Investment expenditure and government purchases, both exogenous.
Current account as a function of the real exchange rate and disposable income.

Or more simply: \[ D = D(EP^*/P, Y - T, I, G) \]

Investment expenditure and government purchases, both exogenous.

Determinants of Aggregate Expenditure (cont.)

• Determinants of aggregate exp. include:
  - Real exchange rate: an increase in the real exchange rate increases the current account, and therefore increases aggregate demand of domestic products.
  - Disposable income: an increase in disposable income increases consumption expenditure, but decreases the current account.
    - Since consumption expenditure is usually greater than expenditure on foreign products, the first effect dominates the second effect.
    - As income increases for a given level of taxes, aggregate consumption expenditure and aggregate demand increase by less than income.

Short-Run Equilibrium for Aggregate expenditure and Output

Equilibrium is achieved when the value of income from production (output) \( Y \) equals the value of aggregate Expenditure \( AE \).

\[ Y = AE(EP^*/P, Y - T, I, G) \]

Value of output and income from production.

Aggregate expenditure as a function of the real exchange rate, disposable income, investment expenditure and government purchases.

Short-Run Equilibrium and the Exchange Rate

• How does the exchange rate affect the short-run equilibrium of aggregate expenditure and output?
• A rise in the nominal wage (depreciation of the currency)
• With fixed domestic and foreign levels of average prices, a rise in the nominal exchange rate makes foreign goods and services more expensive relative to domestic goods and services.
• A rise in the nominal exchange rate (a domestic currency depreciation) increases aggregate expenditure on domestic products.
• In equilibrium, production will increase to match the higher aggregate expenditure.
Salvatore Ch 19:

Prices and Output in an Open Economy: Aggregate Demand and Aggregate Supply

Introduction

- In the real world, prices rise and fall as the economy expands and contracts during business cycles.
- In this chapter, we relax the assumption of constant prices and examine the relationship between price and output in an open economy.

Aggregate Demand, Aggregate Supply, and Equilibrium in a Closed Economy

- **Long-run aggregate supply (LRAS)** does not depend on prices, but on quantity of labor, capital, natural resources and technology.
  - The quantity of inputs available to an economy determines the natural level of output ($Y_N$) in the long run.
  - LRAS is vertical at $Y_N$ when plotted against price.
- **Short-run aggregate supply (SRAS)** does depend on prices, sloping upward because of imperfect information and market imperfections.

FIGURE 19-1 Derivation of the AD Curve from the IS-LM Curves.

FIGURE 19-2 The Long-Run and Short-Run Aggregate Supply Curves.
**Effect of Economic Shocks and Macroeconomic Policies on Aggregate Demand in Open Economies with Flexible Prices**

- Suppose there is an increase in exports and/or reduction in imports with unchanged domestic prices.
- *Under fixed exchange rates*, a balance of payments surplus will lead to an increase in aggregate demand.
- *Under flexible exchange rates*, the potential balance of payments surplus will appreciate the nation's currency, correcting trade balance. Aggregate demand does not change.

**Macroeconomic Policies to Stimulate Growth and Adjustment to Supply Shocks**

- Though fiscal and monetary policies are used primarily to affect aggregate demand, they can also be used to stimulate long-run economic growth.
- If successful in the long run, growth policies can lead to:
  - Increased employment
  - Higher incomes
  - Lower prices
  - An appreciated currency
Macroeconomic Policies to Stimulate Growth and Adjustment to Supply Shocks

- The supply shocks from increases in petroleum prices in the 1970s caused aggregate supply curves in importing nations to shift left, leading to recession and stagflation.
- The impact on aggregate demand is less clear.
- Nations that used expansionary monetary policies to combat stagflation generally faced even more inflation than those that did not.

FIGURE 19-12 Macroeconomic Policies to Adjust to Supply Shocks.