Exchange Rate Systems
The international monetary system can be defined as the *institutional framework within which international payments are made, movements of capital are accommodated, and exchange rates among currencies are determined*.

The exchange rate is a price, i.e., the price of one currency vis-à-vis another.

Since the start of the 19th century, the international monetary system has gone through six distinct stages of evolution.
Evolution of Exchange Rate Systems

- Bimetallism: Prior to 1875
- Classical Gold Standard: 1875-1914 (WWI)
- Interwar Period: 1915-1944 (WWII)
- The Bretton Woods System: 1944-1971
- The Flexible/Floating Exchange Rate System: Since 1971
- The Managed Float System: Since 1973 (Jamaica Agreement)
Chapter Objectives

- To describe the exchange rate systems used during various periods of time;
- To explain how governments can use direct and indirect intervention to influence exchange rates; and
- To explain how government intervention in the foreign exchange market can affect economic conditions.
Bimetallism: Prior to 1875

• Gold and silver used as an international means of payment based on content (weight) and purity
• Official gold/silver price ratio: 15.5
• Used in Britain till 1816, in US till 1873 and France till 1878
• China, India, Germany and The Netherlands were on the silver standard.
The rules of the game:

- Gold would be assured of unrestricted coinage
- Two-way convertibility between gold and national currencies at a stable rate
- Gold would be freely exported and imported to settle trade flows
- Domestic money stock would rise and fall with net gold flow

Shortcomings: (1) scarcity, (2) cyclicality, and (3) abiding by the rules of the game.
Interwar Period: 1915-1944

• Major countries suspended redemption of gold banknotes and gold exports
• U.S. replaced Britain as the dominant financial power in the world
• Countries resorted to myopic economic policies by matching gold outflows with inflows thereby shrinking world trade
• Lack of coherent international monetary policies and failure to follow rules of the game ultimately led to the fall of the Classical Gold Standard.
The Bretton Woods System: 1944-1971

- After WWII, in 1944 representatives of 44 nations signed the Articles of Agreement of the International Monetary Fund (IMF) with European managing director and the U.S. having the largest quota/voting rights.

- “Par value” of all currencies was set in relation to the US dollar, which in turn was the only currency convertible to gold, initially at $35/oz of gold.

- Central banks of nations were required to maintain the value of their currencies within a band of +/- 1% of the par value.
The Bretton Wood System (cont)

- A country’s fundamental disequilibrium could lead to a change in par value in consultation with the IMF.
- US policies over time caused the dollar to move from global shortage to surplus and the downfall of the Bretton Woods system.
- Smithsonian Agreement 1971: $38/oz of gold and band increase to +/- 2 ¼%.
- Loss of confidence in dollar convertibility (official $ vs. private $): De Gaulle.
Floating Exchange Rate System: 1971

- Initiated by European countries that lost faith in the dollar system
- Exchange rates to be determined by free market forces without any governmental intervention
- Governments are not constrained by the need to maintain exchange rates at any particular level when setting economic policies.
Managed Float System: 1973

- As per the Jamaica Agreement of 1973 member country exchange rates were allowed to move freely on a daily basis with no official boundaries.
- However, governments could intervene temporarily to smooth the exchange rate but not fix it (manipulation).
- Unfortunately, governments can manipulate their exchange rates indirectly, e.g., via QE such that their own country benefits at the expense of others.
Pegged Exchange Rate System

- **System:** A currency’s value is pegged to a foreign currency ($, €, £) or to some unit of account, and thus moves in line with that currency or unit against other currencies.

- **Examples:** European Economic Community’s *snake* arrangement (1972), European Monetary System’s exchange rate mechanism (1979), Mexican peso’s crawling peg to the U.S. dollar (till 1994)
Currency Boards

• A currency board is an explicit legislative commitment to exchange domestic currency for a specific foreign currency at a fixed exchange rate.

• The domestic currency issuing authority will need to make sure that it has enough of the foreign currency to fulfill obligations.

Example: HK$7.80 = US$1 (since 1983),

The system is effective only if investors believe that it will last (e.g. Argentine peso).
Currency Boards

- Local interest rates must be aligned with the interest rates of the currency to which the local currency is tied.
  
  Note: The local rates may include a risk premium.

- A currency that is pegged to another currency will have to move in tandem with that currency against all other currencies.
Dollarization

- **Dollarization** refers to the replacement of a foreign currency with U.S. dollars.

- Dollarization goes beyond a currency board, as the country no longer has a local currency or monetary policy.

- For example, Ecuador, El Salvador and Panama have dollarized their economies.
A Single European Currency

• The Treaty of Maastricht in (1991) called for the creation of a single European currency – the euro.

• By June 2015, the national currencies of 19 European countries* had been withdrawn and replaced with the euro.

  * Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Portugal, Slovenia, Slovakia, and Spain

• More European countries are planning to adopt the euro after they meet the “convergence criteria” for Eurozone entry.
Criteria for Joining the euro (2000), Economic & Monetary Union

Growth and Stability Pact (convergence criteria):

- **Inflation**: Not to exceed 1.5% points above the average of the best three Eurozone countries
- **Interest Rates**: Long-term (10-year) sovereign bond rates not to exceed 2% points above the average of the best three Eurozone countries
- **Fiscal Deficit/GDP ratio**: Not to exceed 3%
- **Public Debt/GDP ratio**: Not to exceed 60%.
The European System of Central Banks

• The Frankfurt-based European Central Bank (ECB) is responsible for setting Eurozone monetary policy, which is followed through and implemented by the heads of the 19 national central banks.

• The ECB’s mandate is price stability, i.e., maintaining Eurozone inflation at below but close to 2% per annum to achieve euro’s stability.
The euro’s Structural Weakness

Two major flaws in the design of the euro:

• Lack of an “exit” strategy, i.e., there is no transparent plan of action to remove a country from the Eurozone when it is not living up to its “convergency criteria” obligations

• While each Eurozone country is free to implement its own fiscal policy (taxation and government expenditure) to help manage its economy, countries violating the fiscal criteria have not been punished.
Benefits of the Euro to Business

• Within the Eurozone, there is neither exchange rate risk nor foreign exchange transaction cost.
• This implies increased competition within the region, more comparable product pricing, greater cross-border trade and capital flows.
• It will also be easier to conduct M&A activity and compare firm valuations across Eurozone countries.
Eurozone Money and Capital Markets

- As Eurozone’s largest and best managed economy, the German government treasury “bund” rate is the base rate for the Eurozone.
- The interest rates of other government securities will reflect a premium over the German rate reflecting credit/country risk.
- Stock and bond prices will also be more comparable and there will be more cross-border investments.
- Non-European investors may not achieve as much diversification as in the past.
Government Intervention

• Each country has a central bank that may intervene in the foreign exchange market to control its currency’s value.

• A central bank may also attempt to control the money supply growth in its country.

• The central bank of the United States is the Federal Reserve System (Fed).
Government Intervention

- Central banks could manage exchange rates
  - to smooth exchange rate movements,
  - to establish implicit exchange rate boundaries, and
  - to respond to temporary disturbances.

- Often, intervention is overwhelmed by market forces. However, currency movements may be even more volatile in the absence of intervention.
Government Intervention

• **Direct intervention** refers to the exchange of currencies (that the central bank holds as international reserves) for other currencies in the foreign exchange market.

• Direct intervention is usually most effective when there is a coordinated effort among central banks and when the central banks combined have high levels of reserves that they can use (e.g. 1985 Plaza Accord).
Effects of Direct Central Bank Intervention in the Foreign Exchange Market

Fed sells $ and buys £ to strengthen the £
Fed sells £ and buys $ to weaken the £

Value $/£

Value $/£

Quantity of £

Quantity of £
Government Intervention

• When a central bank intervenes in the foreign exchange market without adjusting for the change in money supply, it is said to engage in nonsterilized intervention.

• In a sterilized intervention, the central bank simultaneously engages in offsetting transactions in the Treasury securities markets to maintain the money supply.
Nonsterilized versus Sterilized Intervention

To Strengthen the C$: Federal Reserve

To Weaken the C$: Federal Reserve

Nonsterilized

Federal Reserve

Banks participating in the foreign exchange market

Sterilized

Financial institutions that invest in Treasury securities

T-securities

Financial institutions that invest in Treasury securities

T-securities

T-securities
Government Intervention

- Some speculators attempt to determine when the central bank is intervening directly, and the extent of the intervention, in order to capitalize on the anticipated results of the intervention effort.

- Central banks can also engage in indirect intervention by influencing the factors* that determine the value of a currency.

  * Inflation, interest rates, income level, government controls, expectations
Government Intervention

- For example, the Fed may attempt to increase interest rates (and hence boost the dollar’s value) by reducing the U.S. money supply.
- Some governments have also used foreign exchange controls (such as restrictions on currency exchange and capital controls) as a form of indirect intervention.
• **Target zones** have been suggested for reducing exchange rate volatility.

⇒ An initial exchange rate will be established with specific boundaries. Ideally, the rates will be able to adjust to economic factors without causing fear in financial markets and wide swings in international trade.

👋 The actual result may be a system no different from that which exists today.
Intervention as a Policy Tool

- Like tax laws (fiscal policy) and the money supply (monetary policy), the exchange rate is a tool that governments can use to achieve their desired economic objectives.

- A weak home currency can stimulate foreign demand for products, and hence reduce trade imbalance and unemployment at home. However, it can also lead to higher inflation.
Intervention as a Policy Tool

- A strong currency may cure high inflation, since it intensifies foreign competition and forces domestic producers to refrain from increasing prices. However, it may also lead to higher unemployment.
Impact of Government Actions on Exchange Rates

Government Monetary and Fiscal Policies

Relative Interest Rates
Relative Inflation Rates
Relative National Income Levels
International Capital Flows
Exchange Rates
International Trade

Government Intervention in Foreign Exchange Market

Government Purchases & Sales of Currencies

Tax Laws, etc.
Quotas, Tariffs, etc.