ECON 212
Elements of Economics II

Session 13 – THE FOREIGN EXCHANGE MARKET

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Session Overview

- This session seeks to introduce the exchange rate and the foreign exchange market. Specifically on exchange rate determination, it is the demand and supply of a currency that determines the price of a currency (rate of exchange). Here, direct and indirect quotations of the exchange are distinguished with emphasis placed on the direct quotation for analysis. The session further discusses the fixed and floating exchange rate regimes but emphasizes most countries use the managed floating regime. The session ends with an illustration of the effects of exchange rate appreciation and depreciation on trade.

Session Outline

- Definition of exchange rate
- Types of exchange rate
  - nominal exchange rate
  - real exchange rate
- The exchange rate regimes
  - fixed exchange rate
  - floating exchange rate
- Equilibrium in the exchange rate market
- Determination of exchange rate
- Effects of exchange rate on the economy

Learning Outcome

- After completing this session, you should be able to;
  - Define the exchange rate
  - Distinguish between nominal exchange rate and real exchange rate
  - Differentiate between direct and indirect quotation in foreign exchange market
  - Understand the various regimes of exchange rate
  - Determine the equilibrium exchange rate in the exchange rate market.
  - Appreciate the effects of exchange rate appreciation/depreciation on international trade and the economy as a whole

Reading List

- Read Chapter 24 of John Sloman; Economics, 8th Edition (2011), Pearson
- Session Slides
- Watch video on session 13 ……………………..
- Any Other Economics text books available to students

Topic One

EXCHANGE RATE.

Exchange Rate

- The main difference between an international transaction and a domestic transaction is the currency exchange.
- International exchange must be managed in a way that allows each partner in the transaction to wind up with his or her own currency.
- The **exchange rate** is the price of one country's currency in terms of another country's currency; thus, the ratio at which two currencies are traded for each other.
- An exchange rate thus has two components, the domestic currency and a foreign currency, and can be quoted either directly or indirectly.

Exchange Rate

- In a direct quotation, the price of a unit of foreign currency is expressed in terms of the domestic currency.
- That is in Ghana, USD 1 = GHC 4 is a direct quotation.
- The direct quotation is also known as price quotation. Countries like United States of America, Ghana, Nigeria, Malawi and other African countries use the direct quotation

The Exchange Rate

- In an indirect quotation, the price of a unit of the domestic currency is expressed in terms of the foreign currency.
- That is in Ghana, GHC 1 = USD O.25 is an indirect quotation.
- Indirect quotation is also known as the volume and quantity quotations. Countries like Britain, Australia, New Zealand and other countries in the Eurozone use the indirect quotation.
- The exchange rate is also known as a currency quotation, the foreign exchange rate or forex rate.
- An exchange rate has a base currency and a counter currency.
  - In a direct quotation, the foreign currency is the base currency and the domestic currency is the counter currency.
  - In an indirect quotation, the domestic currency is the base currency and the foreign currency is the counter currency.

Nominal Exchange Rate

- It is important to distinguish between nominal and real exchange rates;
- The nominal exchange rate refers to the rate at which currencies of two countries are traded.
  - specifically, the nominal exchange rate is the number of units of a foreign currency that can be purchased with a unit of the domestic currency (indirect quotation).

- An alternative quotation (direct quotation) is:
  - The units of domestic currency needed to purchase one unit of the foreign currency example: GHC 3.4 = $1

  - We focus on the direct quotation for this analysis

Appreciation and Depreciation

- Using the direct quotation, an increase in the nominal exchange rate means a depreciation of the domestic currency
- This means more units of the domestic currency is needed to buy the same unit of the foreign currency
  - that is the domestic currency has weakened
- When the value of the nominal exchange rate falls, the domestic currency has appreciated
  - fewer units of the domestic currency are needed to purchase a unit of the foreign currency.

Appreciation and Depreciation

Calculating a Depreciation:

Currency Depreciation

$$= \frac{e_0 - e_1}{e_1}$$

where e_0 = old currency value

e_1 = new currency value

Appreciation and Depreciation

Currency Appreciation

$$= \frac{e_1 - e_0}{e_0}$$

where e_0 = old currency value

e_1 = new currency value

Real Exchange Rate

- Real exchange rates measures the price of domestic goods relative to foreign goods
  - Specifically, it measures the number of domestic goods needed to purchase a unit of foreign goods
- The real exchange rate as a result depends on: the domestic price level, foreign price level and the nominal exchange rate
  - $e_{real} = \frac{P}{eP_{for}}$
  - where e is the nominal exchange rate in direct quotation
- Suppose a bottle of coke sells for GHC 2 in Ghana and CFA100 in Togo. If you need 2 pesewas to buy 1 CFA, then real exchange rate is:
- $e_{real} = \frac{2}{0.02*100}$ or one coke in Ghana equal 1 Coke in Togo

Purchasing Power Parity

- From the example above, a bottle of coke has the same price in both countries
  - This reflects the idea of purchasing power parity (PPP)
- PPP states that exchange rate between currencies are in equilibrium, when their purchasing power is the same in both countries.
- From the expression for real exchange rate above, if the real exchange rate equals unity, then P = eP_{for}
- The concept of PPP is important for international comparisons of standards of living
  - GDP per capita in usually measured in PPP

Topic Two

EXCHANGE RATE REGIMES.

Exchange Rate Regimes

- The processes and institutional arrangements that governments use in the determination of a country's exchange rate is the exchange rate regime.
- There are two major regimes: **fixed exchange rate regime** and **flexible/floating exchange rate regime.**
- In **fixed exchange rate regimes,** the exchange rate is officially determined by the central bank/gov't.
- Under a **flexible (floating exchange rate regime**, the exchange rate is determined by of demand and supply of both the domestic and foreign currencies.
- Many countries practice a form of managed floating system where the exchange rate is largely market-determined (as in a flexible regime) with occasional interventions by central banks to keep the rate within a particular range (band).

Exchange Rate in a Floating System

- The nominal exchange rate in the flexible regime is determined by the forces of demand and supply like any other commodity or financial asset.
- In this market, the equilibrium quantity of domestic currency and the exchange rate are determined.
- To the supply cedis in this market means to offer cedis in exchange for other currencies.
- While floating exchange rates are the norm for most major nations, some nations prefer to fix or peg their domestic currencies to a widely accepted currency like the US dollar.

Topic Three

EQUILIBRIUM IN EXCHANGE RATE MARKET.

The Market for Foreign Exchange

- Her we will assume a simplified world where there are only two countries, Ghana and the United States, the demand for cedis consist of holders of dollars wishing to acquire cedis. The supply of cedis is on the other hand consist of holders of cedis seeking to exchange them for dollars.

- The *Foreign Exchange Market* provides:
  - The physical and institutional structure through which the money of one country is exchanged for that of another country.
  - The determination of exchange rate between currencies

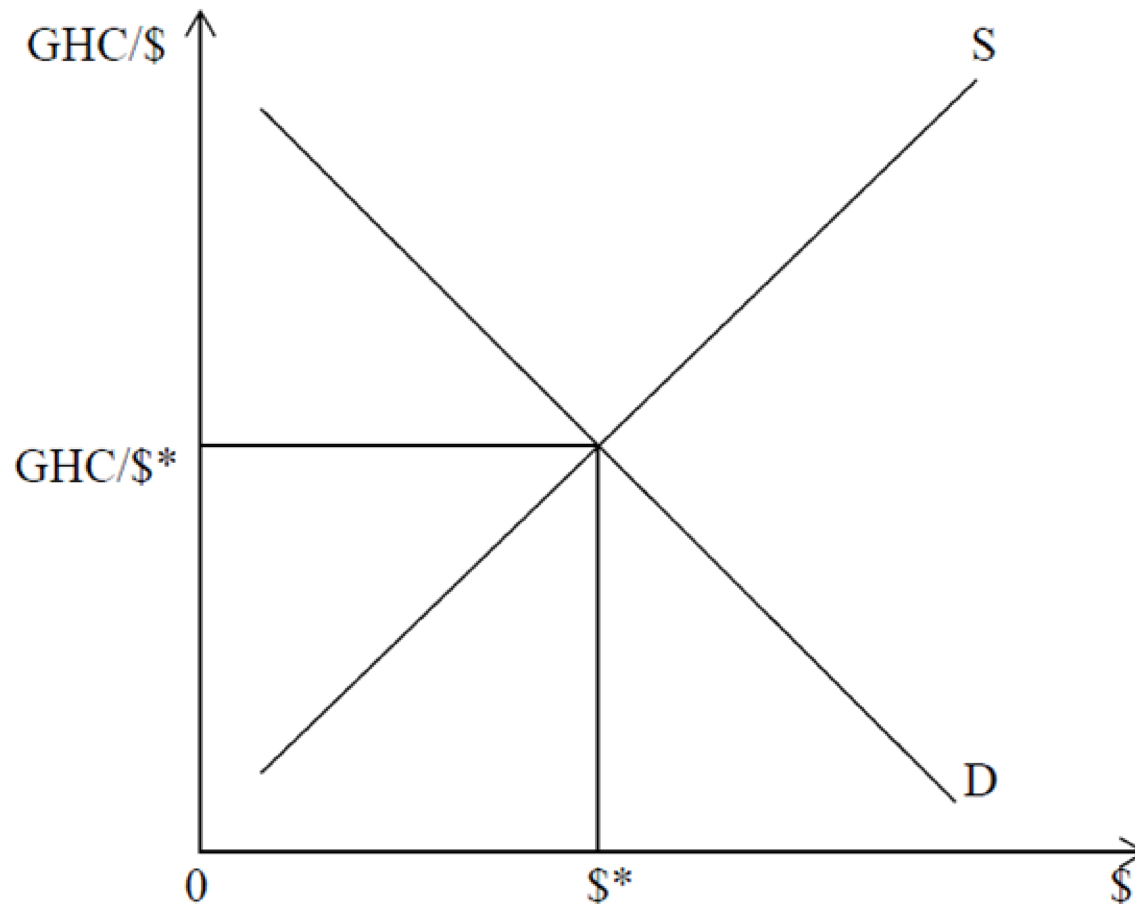
The Market for Foreign Exchange

Some Private Buyers and Sellers in International Exchange Markets: United States and Great Britain

THE SUPPLY OF CEDIS (DEMAND FOR DOLLARS)

1. Firms, households, or governments that import U.S. goods into Ghana or wish to buy U.S.-made goods and services
2. Citizens of Ghana traveling in the United States
3. Holders of cedis who want to buy stocks, bonds, or other financial instruments in the United States
4. Ghanaian companies that want to invest in the United States
5. Speculators who anticipate a rise in the value of the dollar relative to the cedi

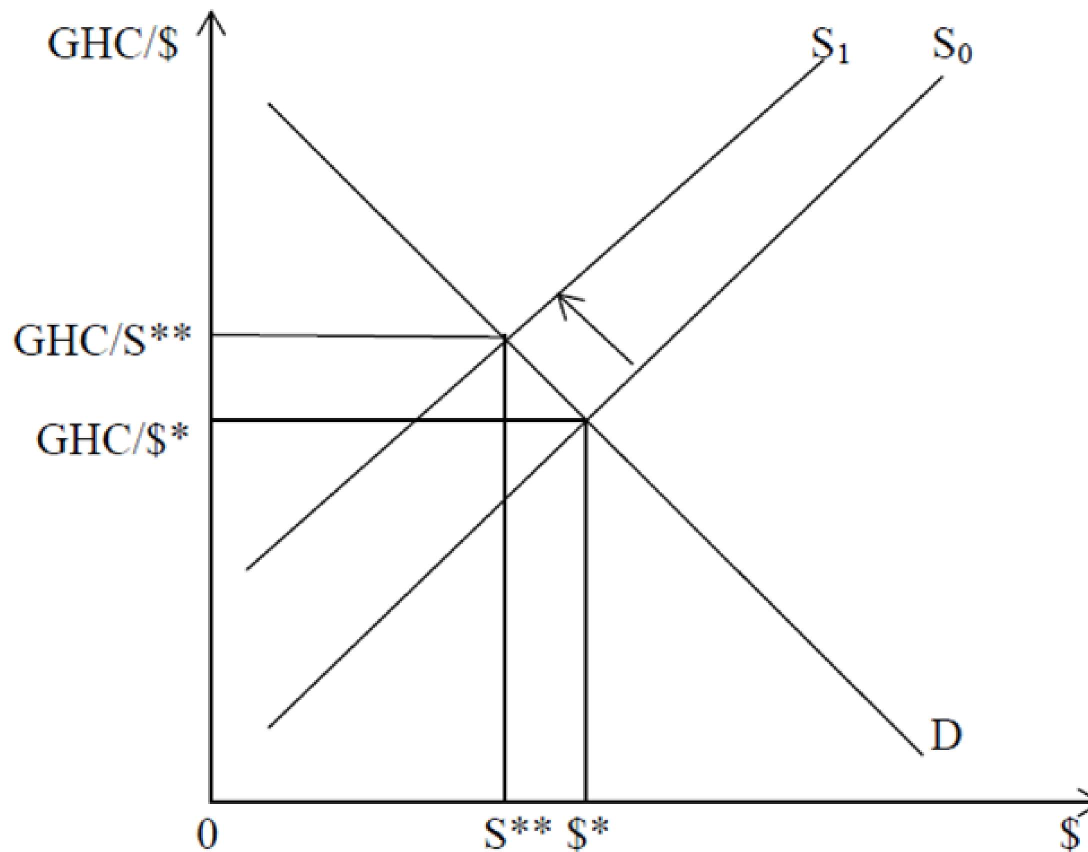
Equilibrium in the Exchange Rate Market



Equilibrium in the Exchange Rate Market

- When the price of the cedi falls, Ghana-made goods and services appear less expensive to U.S. buyers. If prices in Ghana are constant, U.S. buyers will buy more Ghana made goods and services, and the quantity of cedis demanded will rise.
- When the price of the cedi rises, Ghanaians can obtain more dollars for each cedi. This means that U.S.-made goods and services appear less expensive to buyers in Ghana. Thus, the quantity of cedis supplied is likely to rise with the exchange rate.

Effect of Falling Commodity Prices on the Value of the Cedi.



The Equilibrium Exchange Rate

- An excess supply of the cedi will cause the price of cedis to fall—the cedi will ***depreciate*** (fall in value) with respect to the dollar.

- An excess demand for the cedi will cause the price of cedis to rise—the cedi will ***appreciate*** (rise in value) with respect to the dollar.

The effects of exchange rates on the economy

- When a country's currency depreciates (falls in value), its import prices rise and its export prices (in foreign currencies) fall.

- When the U.S. dollar is cheap, U.S. products are more competitive on the world market, and foreign-made goods become expensive to U.S. citizens.

The Effects of Exchange Rates on the Economy

- A depreciation of a country's currency can serve as a stimulus to the economy:
  - Foreign buyers are likely to increase their spending on U.S. goods
  - Domestic buyers substitute U.S.-made goods for imports
  - Aggregate expenditure on domestic output will rise
  - Inventories will fall
  - GDP (*Y*) will increase.

Question

1. Explain how exchange rates are determined
2. Describe how changes in exchange rates affect the prices of imports and exports