**Q#1**

**It would be too ridiculous to go about seriously to prove that wealth does not consist in money, or in gold and silver; but in what money purchases, and is valuable only for purchasing. That’s what Adam Smith says about the concept of purchasing power. Please introduce the concept of purchasing power parity in light of different economists.**

Ans: **Purchasing Power Parity (PPP):**

One popular macroeconomic analysis metric to compare economic productivity and standards of living between countries is purchasing power parity (PPP). PPP is an economic theory that compares different countries' currencies through a "basket of goods" approach.

According to this concept, two currencies are in equilibrium—known as the currencies being at par—when a basket of goods is priced the same in both countries, taking into account the exchange rates.

Purchasing power parity (PPP) is the theory saying that the nominal exchange rate between two currencies should be equal to the ratio of aggregate price levels between the two countries; that is equivalent saying that a unit of currency of one country will have the same purchasing power in a foreign country.

The PPP principle, which was popularized by Gustav Cassell in the 1920s, is most easily explained if we begin by considering the connection between exchange rates and the local currency price of an individual commodity in different countries. This connection between exchange rates and commodity prices is known as the law of one price.

**THE LAW OF ONE PRICE:**

Virtually every opportunity for profit will catch the attention of an attentive individual somewhere in the world. One type of opportunity that will rarely be missed is the chance to buy an item in one place and sell it in another for a profit. For example, if gold or copper was priced at a particular US dollar price in London and the dollar price was simultaneously higher in New York, people would buy the metal in London and ship it to New York for sale. Of course, it takes time to ship physical commodities, and so at any precise moment, dollar prices might differ a little between markets. Transportation costs are also involved in attempts to profit from price differences. However, if there is enough of a price difference between locations, people will take advantage of it by buying commodities in the cheaper market and then selling them in the more expensive market.

**Concept of purchasing power parity in light of different economists:**

The theoretical work suggested that exchange rates should be linked to relative changes in price levels with deviations that might be only minimal or momentary, while empirical work could hardly find evidence in support of purchasing power parity (Abuaf and Jorion 1990).

Dornbusch and Krugman (1976) noted: “Under the skin of any international economist lies a deep-seated belief in some variant of the PPP theory of the exchange rate.”

Rogoff (1996) expressed much the same thought: “While few empirically literate economists take PPP seriously as a short term proposition, most instinctively believe in some variant of purchasing power parity as an anchor for long-run real exchange rates.”

R. Dornbusch stated in 1985 in a famous paper that the Purchasing Power Parity (PPP) is a “theory of exchange rate determination”3 and the change in the relative price levels between two countries would determine changes of the exchange rate. As it´s based on the price levels changes as the main factor of the exchange rate movements, it has been also called the “inflation theory of exchange rate”. However, it is often asserted that the PPP theory of exchange rates will hold at least approximately because of the possibility of international goods arbitrage.

**Q#2**

**While discussing the purchasing power parity what could be the possible two reasons for departure from purchasing power parity, please introduce it in detail.**

**Ans: Reasons for departure from purchasing power parity:**

#### ****Transaction Costs:****

The possibility of two-way arbitrage allows prices to differ between markets by up to the cost of transportation.

For example, if it costs $0.50 per bushel to ship wheat between the United States and Canada, the price difference must exceed $0.50 in either direction before two-way arbitrage occurs. This means a possible substantial deviation from the absolute form of purchasing-power parity for wheat.

#### Political Risks:

Investment in security denominated in a foreign currency can be made in two ways:

a. The direct investment in securities issued in the country to which the currency belongs. For example, a European citizen may invest in T-bills issued by the Government of India.

b. Make invest in deposits denominated in the foreign currency held domestically, or in some third country. For example, a Swiss citizen may hold a dollar deposit with a Germany bank.

In the second case, the investor has to face only the risk relating to changes in the foreign exchange currency rate viz. currency risk; whereas in the first case, he faces the political risk.

The changes in the policies and laws of a country constitute political risk. The political risk results into more risk over and above currency risk. The additional risk which an investor poses needs to be set off through higher rate of interest, which can be warranted by interest rate parity.

#### Taxes:

(a) Through withholding taxes, and

(b) Through differential tax rates on capital gains and interest income.

#### Withholding Taxes:

Generally, As per the relevant rules with regard to taxation policies of the country, a domestic resident has to withhold a part of payment as taxes and deposit the same in the government before making any payment to foreign party. The foreign party would be paid to the extent of lesser amount to the tune of taxes. Thus, the foreign currency earnings of the investor reduce due to withholding of the taxes. Hence, investor would ask for higher return so as to maintain his interest income. But, this factor gets eliminated if the investor gets the withhold tax as rebate or tax credit from his own (Domestic) government.

#### Differential Tax Rate:

Deviations from the interest parity are possible, one of the factors can be, if the earnings on account of transactions in foreign currency are treated as capital gains, in home country or in foreign country, and hence are taxed at rates different from the rates applicable to interest income, though higher or lower.

Various governments offer a number of tax incentives to the exporters on the basis of their performance in international trade. Export income is partly or wholly exempted. Besides, interest rate on export related business finance may be lower than the normal interest rates prevailing in the market. In India, Export oriented units and export processing zones are exempt from excise and customs duties.

#### Liquidity Preference:

An asset’s liquidity indicates the quickness with which it can be converted into cash or cash equivalents, at the least possible cost. If the time taken to liquidate a foreign investment and/or a domestic investment is same, then the costs involved in liquidating the same are different on account of differences in laws and regulations of both the countries. The cost of liquidating an investment is the cost which is to be incurred to make an investment liquid before maturity.

#### Capital Controls:

Capital controls by the governments, result into large deviations in the parity. Capital controls can be sought by governments in various ways, but normally accepted practices include restrictions on investing or borrowing abroad, repatriation of investments made by foreign residents, and restrictions on conversion of currencies. The capital controls sought by the government restrict in bringing parity between interest rates, inflation rate and exchange rates of a country.

#### Pure Expectation Theory:

The direction of the foreign exchange rate is more governed by the variable like market expectations about economic strength and weaknesses of the economy of two countries under consideration. In addition, the future expectation about economy of a country, make the impact on the direction of foreign exchange rates.

**Q#3**

**International finance is the art of borrowing on the strength of what you already owe. That’s the approach of Evan Esar. While considering in view this approach how you can introduce the concept of interest parity. Explain it in detail.**

# Ans: Interest Rate Parity:

Interest rate parity is one of the most important theories in international finance because it is probably the best way to explain how exchange rate values are determined and why they fluctuate as they do. Most of the international currency exchanges occur for investment purposes, and therefore understanding the prime motivations for international investment is critical.

 It states that when steps have been taken to avoid foreign exchange risk by use of forward contracts, rates of return on investments (and costs of borrowing) will be equal irrespective of the currency of denomination of the investment or the currency borrowed.

## Calculation of Interest Rate Parity (IRP):

Forward exchange rates for currencies are exchange rates at a future point in time, as opposed to spot exchange rates, which are current rates. An understanding of forward rates is fundamental to interest rate parity, especially as it pertains to arbitrage (the simultaneous purchase and sale of an asset in order to profit from a difference in the price).

Forward rates are available from banks and currency dealers for periods ranging from less than a week to as far out as five years and beyond. As with spot currency quotations, forwards are quoted with a bid-ask spread.

The difference between the forward rate and spot rate is known as swap points.If this difference (forward rate minus spot rate) is positive, it is known as a forward premium; a negative difference is termed a forward discount.

A currency with lower interest rates will trade at a forward premium in relation to a currency with a higher interest rate. For example, the U.S. dollar typically trades at a forward premium against the Canadian dollar; conversely, the Canadian dollar trades at a forward discount versus the U.S. dollar.

## Overview of Interest Rate Parity

Interest rate parity (IRP) is a theory used to explain the value and movements of exchange rates. It is also known as the asset approach to exchange rate determination. The interest rate parity theory assumes that the actions of international investors—motivated by cross-country differences in rates of return on comparable assets—induce changes in the spot exchange rate. In another vein, IRP suggests that transactions on a country’s financial account affect the value of the exchange rate on the foreign exchange (Forex) market. This contrasts with the purchasing power parity theory, which assumes that the actions of importers and exporters, whose transactions are recorded on the current account, induce changes in the exchange rate.

**Interest Rate Parity Condition:**

Interest rate parity refers to a condition of equality between the rates of return on comparable assets between two countries. The term is somewhat of a misnomer on the basis of how it is being described here, as it should really be called rate of return parity. The term developed in an era when the world was in a system of fixed exchange rates. Under those circumstances, rate of return parity did mean the equalization of interest rates. However, when exchange rates can fluctuate, interest rate parity becomes rate of return parity, but the name was never changed.

In terms of the rates of return formulas developed, interest rate parity holds when the rate of return on dollar deposits is just equal to the expected rate of return on British deposits, that is, when

*RoR*$ = *RoR*£.

Plugging in the above formula yields

This condition is often simplified in many textbooks by dropping the final term in which the British interest rate is multiplied by the exchange rate change. The logic is that the final term is usually very small especially when interest rates are low. The *approximate version* of the IRP condition then is

One should be careful, however. The approximate version would not be a good approximation when interest rates in a country are high. For example, back in 1997, short-term interest rates were 60 percent per year in Russia and 75 percent per year in Turkey. With these interest rates, the approximate formula would not give an accurate representation of rates of return.

**Q#4**

**Introduce the concept of balance of payment. Explain how balance of payment could influence the country currency demand and supply.**

## Ans: Balance of Payments:

The balance of payments (BOP) is a statement of all transactions made between entities in one country and the rest of the world over a defined period of time, such as a quarter or a year.

## Understanding the Balance of Payments (BOP)

The balance of payments (BOP), also known as balance of international payments, summarizes all transactions that a country's individuals, companies, and government bodies complete with individuals, companies, and government bodies outside the country. These transactions consist of imports and exports of goods, services, and capital, as well as transfer payments, such as foreign aid and remittances.

A country's balance of payments and its net international investment position together constitute its international accounts.

The balance of payments divides transactions in two accounts: the current account and the capital account. Sometimes the capital account is called the financial account, with a separate, usually very small, capital account listed separately. The current account includes transactions in goods, services, investment income, and current transfers. The capital account, broadly defined, includes transactions in financial instruments and central bank reserves. Narrowly defined, it includes only transactions in financial instruments. The current account is included in calculations of national output, while the capital account is not.

The sum of all transactions recorded in the balance of payments must be zero, as long as the capital account is defined broadly. The reason is that every credit appearing in the current account has a corresponding debit in the capital account, and vice-versa. If a country exports an item (a current account transaction), it effectively imports foreign capital when that item is paid for (a capital account transaction).

If a country cannot fund its imports through exports of capital, it must do so by running down its reserves. This situation is often referred to as a balance of payments deficit, using the narrow definition of the capital account that excludes central bank reserves. In reality, however, the broadly defined balance of payments must add up to zero by definition. In practice, statistical discrepancies arise due to the difficulty of accurately counting every transaction between an economy and the rest of the world, including discrepancies caused by foreign currency translations.

**Balance of payment could influence the country currency demand and supply**:

Whenever the BOP registers a purchase of a foreign asset or a sale of a domestic commodity abroad, this implicitly indicates that there is a change in the demand for or in the supply of the foreign currency. The international transaction cannot be completed unless one of the parties of the transaction is willing to exchange his domestic currency for foreign currency. Therefore changes in any of the components of the BOP affect the supply of and demand for foreign currency.

The key variable that allows the supply of and demand for foreign currency to be equilibrated is the exchange rate. The exchange rate is defined as relative price of the foreign currency. So if a domestic resident wants to buy the currency of another country, the exchange rate states the price for each unit of foreign currency in terms of the domestic currency. For example, if we assume for the moment that the dollar is the domestic currency, the exchange rate between the dollar ($) and the British pound sterling (£) is E=$/£

One complication is that the definition of the exchange rate is ambiguous, depending on the reference of location. Americans will identify the pound as the foreign currency, while the British identify the dollar as the foreign currency. This means there are two versions of the exchange rate, one based on dollars per pound and one based on pound per dollar. As a result most sources quote both version of exchange rate.

For example, from the point of view of the UK, the exchange rate between the two currencies is E\*=£/$. That is, for British residents the exchange rate indicates how many pounds they have to pay to buy one US dollar. Consequently if E=$1.5 then E\*=1/E=£0.66.