Chapter II

PURCHASING POWER PARITY

According to the principle of Purchasing Power Parity, the same basket of goods should be identically priced across the globe. Thus, if a basket of goods costs R rupees in India and D dollars in USA, the exchange rate between the dollar and the rupee should be : (R/D) Rupees per Dollar.

Let us now assume that inflation in India is i and in USA, i_d.

Then after one year, the same basket of goods will have the following price.

In India : $R \, (\, 1 + i_r \,)$
In USA : $D \, (\, 1 + i_d \,)$

Hence, we can expect the exchange rate after one year to be : $R \, (\, 1 + i_r \,) \, / \, D \, (1 + i_d \,)$

The percentage change in exchange rate is :

$[\, R \, (\, 1 + i_r \,) \, / \, D \, (\, 1 + i_d \,) - R/D \,] \, / \, R \, / \, D$
$= (\, 1 + i_r \,) \, / \, (\, 1 + i_d \,) \, - \, 1$
$= [\, i_r - i_d \,] \, / \, [\, 1 + i_d \,]$

In many books, an assumption is made that $(\, 1 + i_D \,) = 1$. Hence the above relation is simplified to arrive at the conclusion that the percentage change in exchange rates is equal to the inflation differential. This is called the relative form of Purchasing Power Parity. We feel that this assumption is not valid. To take an example, assume that inflation rates are 8% and 3% in India and USA respectively.

Then $i_r - i_d = 8\% \, - \, 3\% \, = \, 5\% \, = \, 0.05$
On the other hand, $(\, i_r \, - \, i_d \,) \, / \, (\, 1 + i_d \,) \, = \, (.08 \, - \, .03) \, / \, (1.\, 03)$
$$= \, .05 \, / \, 1.03 \, = \, .0485.$$

In foreign exchange markets where spreads are often worked out in terms of third and fourth decimal places, the difference between the two figures is quite substantial and the approximation does not make sense.

Thus, while working out problems relating to Purchasing Power Parity, students are always advised to start from first principles rather than use the relative form of PPP based on the approximation given above.