Price Line or Budget Line

This price line shows all those combinations of two goods which the consumer can buy by spending his given money income on the two goods at their given prices. A look at figure 2.8 shows that with Rs. 50 and the prices of X and Y being Rs. 10 and Rs. 5 respectively the consumer can buy 10Y and 0X, or 8Y and 1X; or 6Y and 2X, or 4Y and 3X etc. any combination of goods as H (5Y and 4X) which lies above and outside the given price line will be beyond the reach of the consumer. But any combination lying within the price line such as K (2X and 2Y) will be well within the reach of the consumer, but if he buys any such combination he will not be spending all his income of Rs. 50.

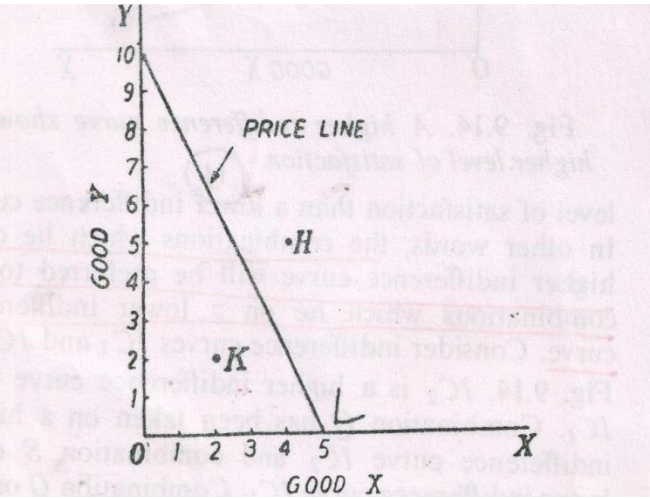

Figure 2.8: Price Line

Effect of Change in Price of Goods on Budget Line

With the fall in the price of good X the consumer's income and the price of Y remaining constant, the price line will take the new position PL′ (Figure 2.9). Now, with the rise in price of X the price line will assume the new position PL″.

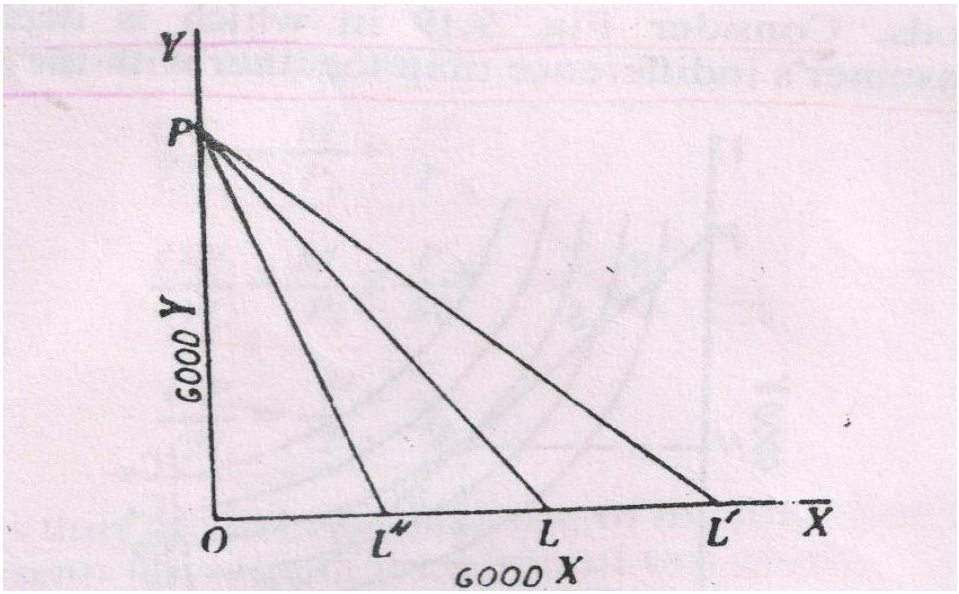

Figure 2.9: Changes in Price Line with Change in price of Good X

With the fall in price of good Y, other things remaining unchanged, price line will shift to LP′ (figure 2.10). Similarly, with the rise in price of Y, other things being constant, the price line will shift to LP″.

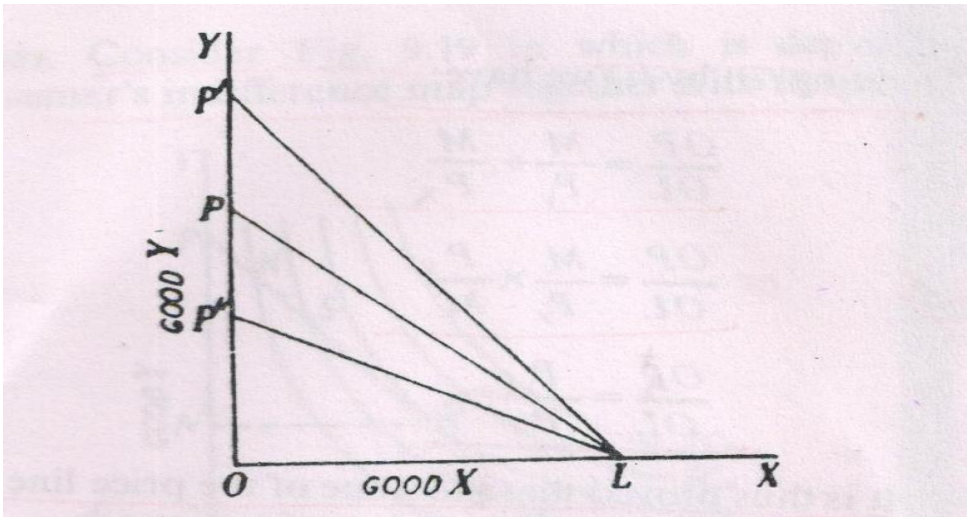

Figure 2.10: Changes in Price Line with Change in price of Good Y

Effect of Change I Money Income on Budget Line

The price line shifts upward (say, to P′L′) and is parallel to the original price line PL when income of the consumer increases while the prices remain constant, and, shifts to P″L″ when the consumer's income decreases (figure 2.11).

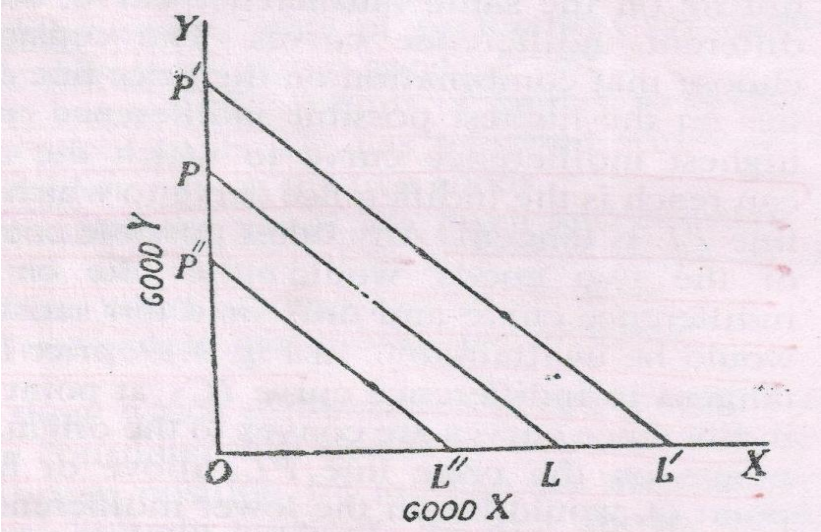

Figure 2.11: Effect of Change in Income on Price Line

It is also important to remember that the slope of price line is equal to the ratio of the prices of two goods. This can be proved with the aid of figure 2.8. Suppose the given income of the consumer is M, the given prices of goods X and Y are P_x and P_y respectively. The slope of the price line PL is $\frac{OP}{OL}$. We intend to prove that the slope $\frac{OP}{OL}$ is equal to the ratio of the prices of goods X and Y.

The quantity of good X purchased if whole of the given income M is spent on it is OL. Therefore,

$$OL \times P_x = M$$

$$OL = \frac{M}{Px} \qquad \text{…….. (i)}$$

Now, the quantity of good Y purchased if whole of the given income M is spent in it is OP_v.

Therefore,

$$OP \times P_y = M$$

$$OP = \frac{M}{Py} \qquad \text{…….. (ii)}$$

Dividing (ii) by (i) we have:

$$\frac{OP}{OL} = \frac{M}{Py} \div \frac{M}{Px}$$

$$\frac{OP}{OL} = \frac{M}{Py} \times \frac{Px}{M}$$

$$\frac{OP}{OL} = \frac{Px}{Py}$$

It is thus proved that the slope of the price line PL represents the ratio of the prices of two goods.

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