

BERTRAND MODEL

The Oligopoly model in which firms choose prices simultaneously, treating prices of its rivals as fixed, was developed by one French economist, Joseph Bertrand. Let us assume there are two firms in the market producing a homogeneous product. The market demand curve is assumed to be,

$$P = 30 - Q$$

where Q is the total production of homogeneous product. We also assume that both the firms have a fixed marginal cost of Rs. 3.

$$MC_1 = MC_2 = 3$$

It is to be noted here that as the good is homogeneous, consumers will purchase the good only from that seller who charges the lowest price. Thus, if the two firms charge the same price, the lowest-price firm will charge the entire market and the higher price firm will not be able to sell any amount. Now if both the firms charge the same price, then the consumers will be indifferent as to which firm they buy from and then each firm will supply half the market.

In Bertrand model, the Nash equilibrium is the competitive outcome i.e. both the firms charge the price equal to the marginal cost: $P_1 = P_2 = 3$. So, both the firms earn zero profit at equilibrium. Total output in the market, $Q = 27$ units where each firm produces 13.5 units.