LECTURE 3.8

OLIGOPOLY - BERTRAND MODELS WITH DIFFERENTIATED PRODUCTS

BERTRAND MODELS WITH DIFFERENTIATED PRODUCTS

If both firms are producing identical products the price chosen must be the same.

What happens when there is Bertrand Price competition when firms produce differentiated products?

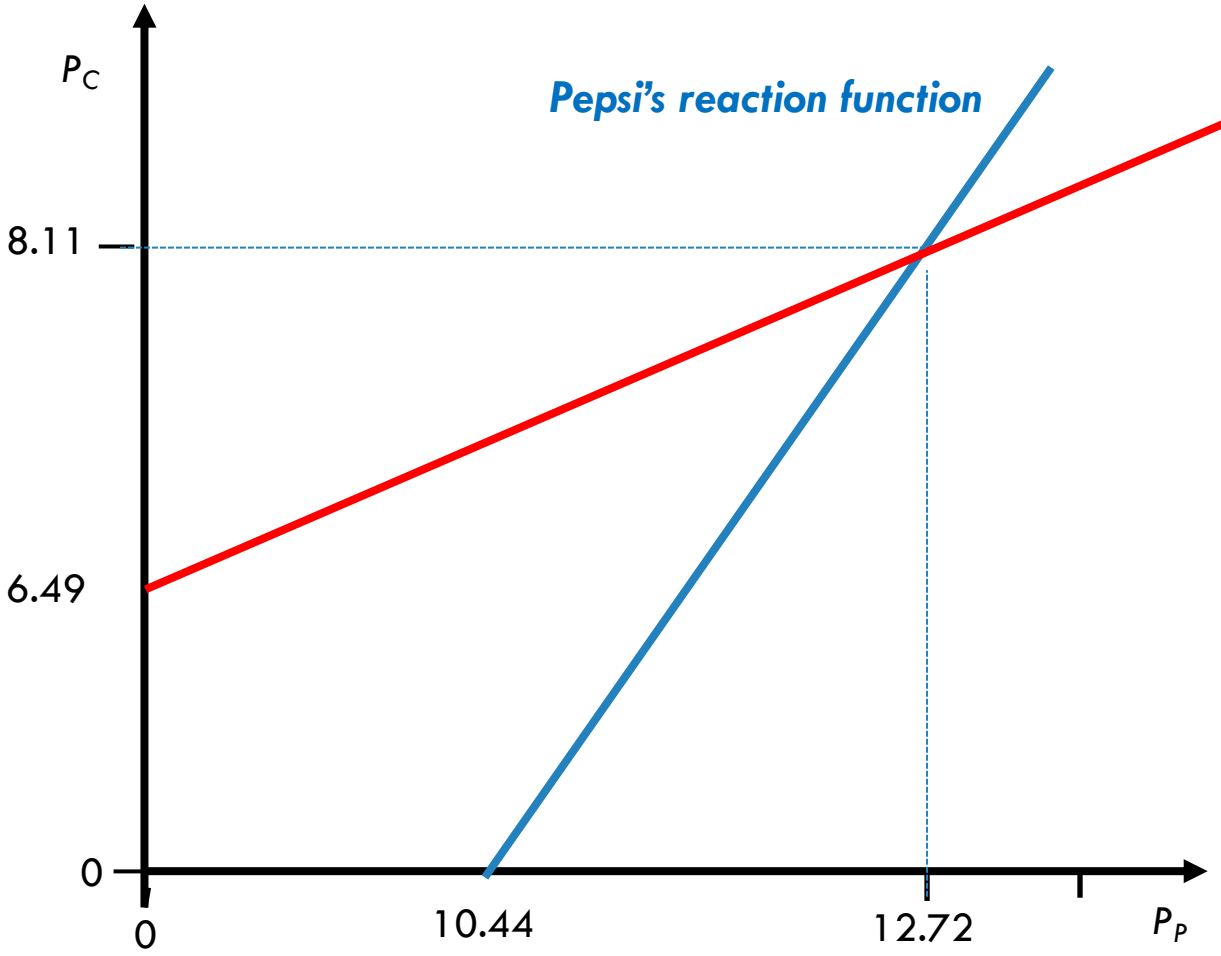
Think about Coca Cola and Pepsi for example and assume:

$$Q_P = 64.32 - 3.98P_P + 2.25P_c$$
$$Q_c = 49.52 - 5.48P_c + 1.40P_P$$

- Further, assume that:

$$MC_P = 3.96$$
$$MC_c = 4.96$$

BERTRAND MODELS WITH DIFFERENTIATED PRODUCTS



The reaction functions or best response curves look like this.

The lower the price their rival charges, the lower the price they want to charge.

Unlike Cournot equilibrium, they respond aggressively to aggressive behaviour by their rival.

OLIGOPOLY – SUMMARY

Market outcomes are very sensitive to whether firms compete in prices or quantities.

- There is a close relationship between the Bertrand and Cournot models if firms also get to choose their capacity.

Which is more realistic in a particular industry depends on

- if capacity and output can be easily adjusted: the Bertrand model may be a better approximation. Bertrand competition might be thought of as a situation where firms are not capacity constrained and can meet demand at whatever price emerges.
- if output and capacity are difficult to adjust: then the Cournot model may be a better approximation. Think about Cournot oligopolists competing as ‘capacity constrained price setters’. That is, they choose a price to sell all after having chosen a capacity.

In general, to model firm interaction, we may wish to have firms

- choose the least flexible (hardest or slowest to adjust) action first
- choose the most flexible action last