Game theory in practice: Supply oligopoly

The "supply oligopoly" market is characterised by the fact that there are only a few large suppliers and lots, usually millions, of consumers. A prime example of this is the petrol market, where there are just a few large mineral oil companies and millions of drivers who need petrol to run their cars.

Supply oligopolists' considerations are as follows:

- If I lower the price of petrol, competitors will follow suit. Then there will be the same market shares but lower sales and profits for everyone.

- If I increase the price and competitors follow suit, there will be the same market shares and higher sales and profits for everyone.

- However, if I increase the price and competitors do not follow suit, then my customers will go with the competitors to refuel; I lose market shares, sales and profits. This means that I will immediately have to lower prices to prevent customers from migrating. I will suffer losses in any case.

This dilemma leads to relative immobility of prices on oligopolistic markets: all big providers charge the same price. Price changes happen very rarely. In practice, in recent decades it has been observed that one company often takes "price leadership" in order to test upward or downward price changes.

French economist Jean Tirole was awarded the Nobel Prize for Economics in 2014 as the last of eight "game theorists" for his studies on oligopolistic markets. His so-called "Edgeworth cycles" describe the different phases of price wars on oligopolistic markets and the phenomenon of price leadership.

Exercises:

1. In your own words, describe why the operational dilemma of a supply oligopolist usually leads to the fact that he does not change his prices.

2. Can you imagine two exceptional situations in which a supply oligopolist risks lowering the price?

3. Game theory is often criticised for the fact that it only works with unrealistic models and very simple assumptions about human behaviour and therefore inevitably leads to misleading results. Discuss this criticism.