M.A Economics Semester II
Paper V (A) Agricultural Economics
Unit - II Topic - Cobweb Theorem

Cobweb model -

Cobweb model is an economic model which clearly indicates that in various distinct type of markets how and why prices go through the periodic fluctuations or ups and downs. This model also describes about the cyclical changes in the demand and supply of a market where there is the prior fixation of the quantity which is to be produced before any observation made to the prices concerned. Every producer desires about the expected changes in the prices on the basis of the previous observation of the prices in market.

Cobweb model was analysed and developed by Nicholas Kaldor. In 1934 Nicholas Kaldor after going through the analysis done by Henry Schultz and Umberto Ricci coined the term "Cobweb theorem" and further elaborated this model; though the historic development of this model indicates that in 1930 this theory was advanced by the three economists in Italy, Netherlands and United States, apparently independently of eachother almost at the same time. What we find that the names of Henery Schultz (USA), Jan Tinbergen (Netherland) and Arthur Hanau (Italy) are primarily associated with this theory. Name of this theory was coined by Kaldor as Cobweb because the pattern traced by the prices and output movements resembled a Cobweb. Basically Cobweb theory of trade cycle is based upon the foundation of 'Lag' concept.

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↳ It can be quoted that in a cobweb model, it is assumed that there is an agricultural market where supply can vary due to variable factors, such as wheather.

↳ <u>Various assumptions of cobweb theory.</u>

* Agriculture market is as such that agriculturist is suppose to take decision about what to produce in how much quanity in the upcoming sowing season – though the market price for the upcoming agricultural crop is also not clear. (It can be quoted that supply is price inelastic in short-term).

* It is also assumed that the key determinant of supply will be the price fixed during previous year.

* It is also assumed that the low price of the Agricultural ~~price~~ produce will lead to a condition that some Agriculturist will incurr loss and they may not go for the cultivation of that crop in the next year.

* It is also assumed and clear that Agricultural goods are generally price inelastic (a fall in price only causes meagre rise in demand of agricultural products).

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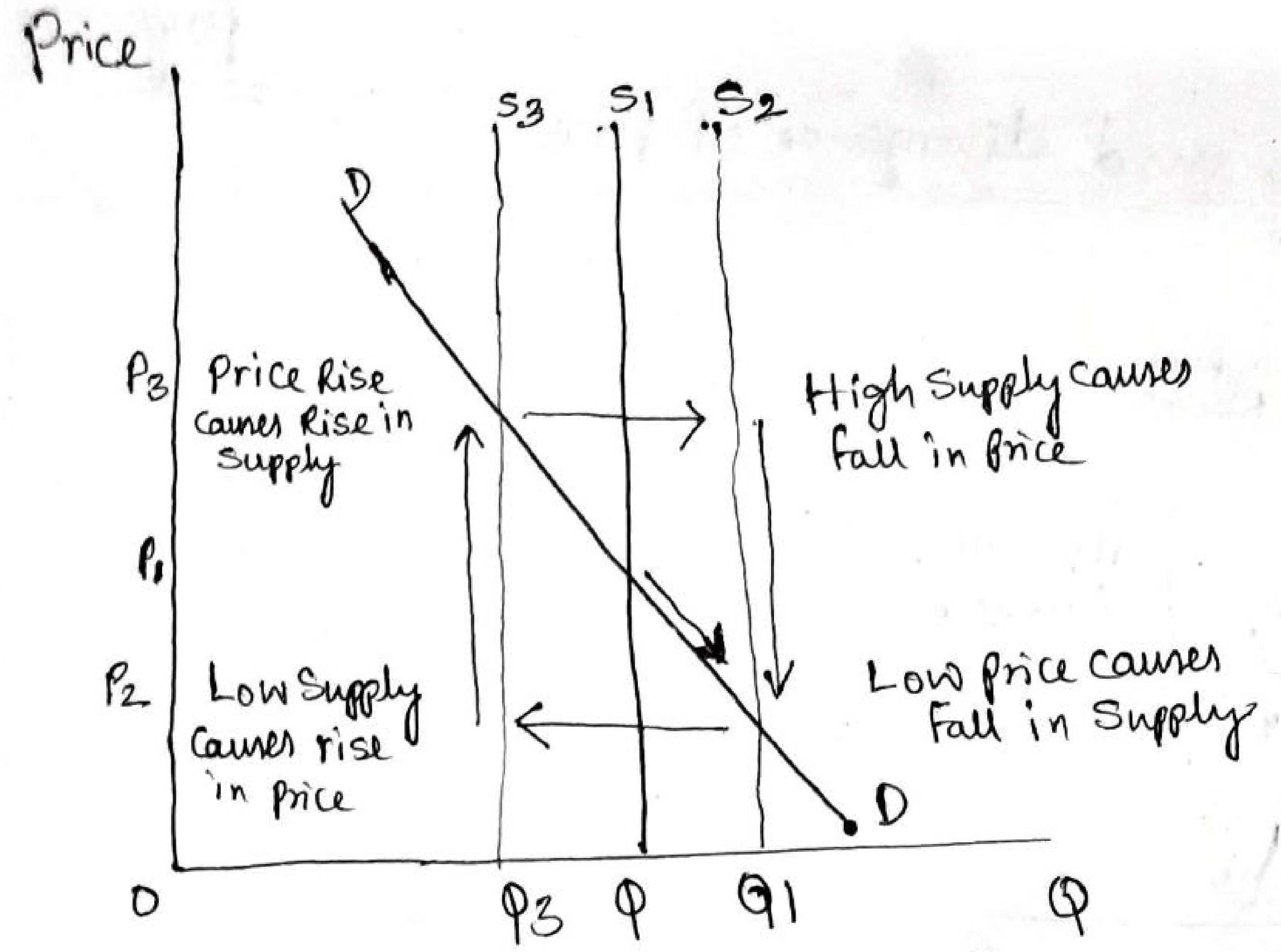

Figure-1.1

- When there is good harvest, then supply of Agricultural Produce is more than expectations and it will lead to the fall in price in the market.

- This fall in price may lead to a condition that some farmers may go out of this business and some Farmers may reduce the supply in the upcoming year.

- Reduced supply of Agricultural produce will cause the price rise of the product.

- Again, the price rise of the Agricultural produce will provoke Agriculturists to go for that crop and that will increase the supply in market.

- This theory Explains that market could fluctuate between high price and low price as suppliers respond to past prices.

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Cobweb theory and divergence of Price

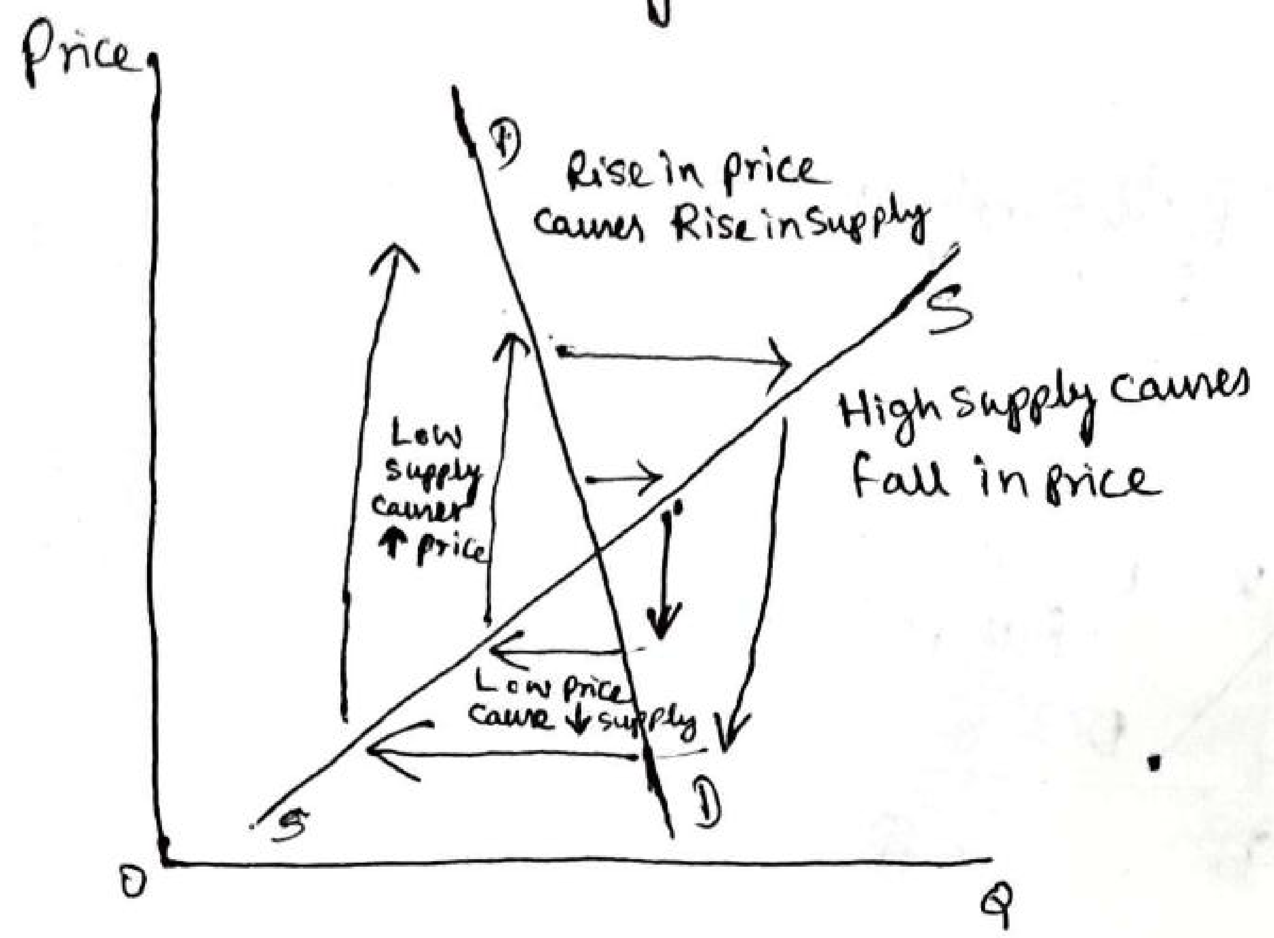

Figure-1.2

↳ It is clear from the fig-1.2 that when price rises then the supply of Agricultural produce increases and we find that price will diverge from the equilibrium when supply curve is more elastic than the demand curve, (at the equilibrium point).

↳ It is also clear that when the slope of the supply curve is less than the demand curve, then the price changes could become magnified and the market becomes more unstable.

Cobweb theory and convergence of Price

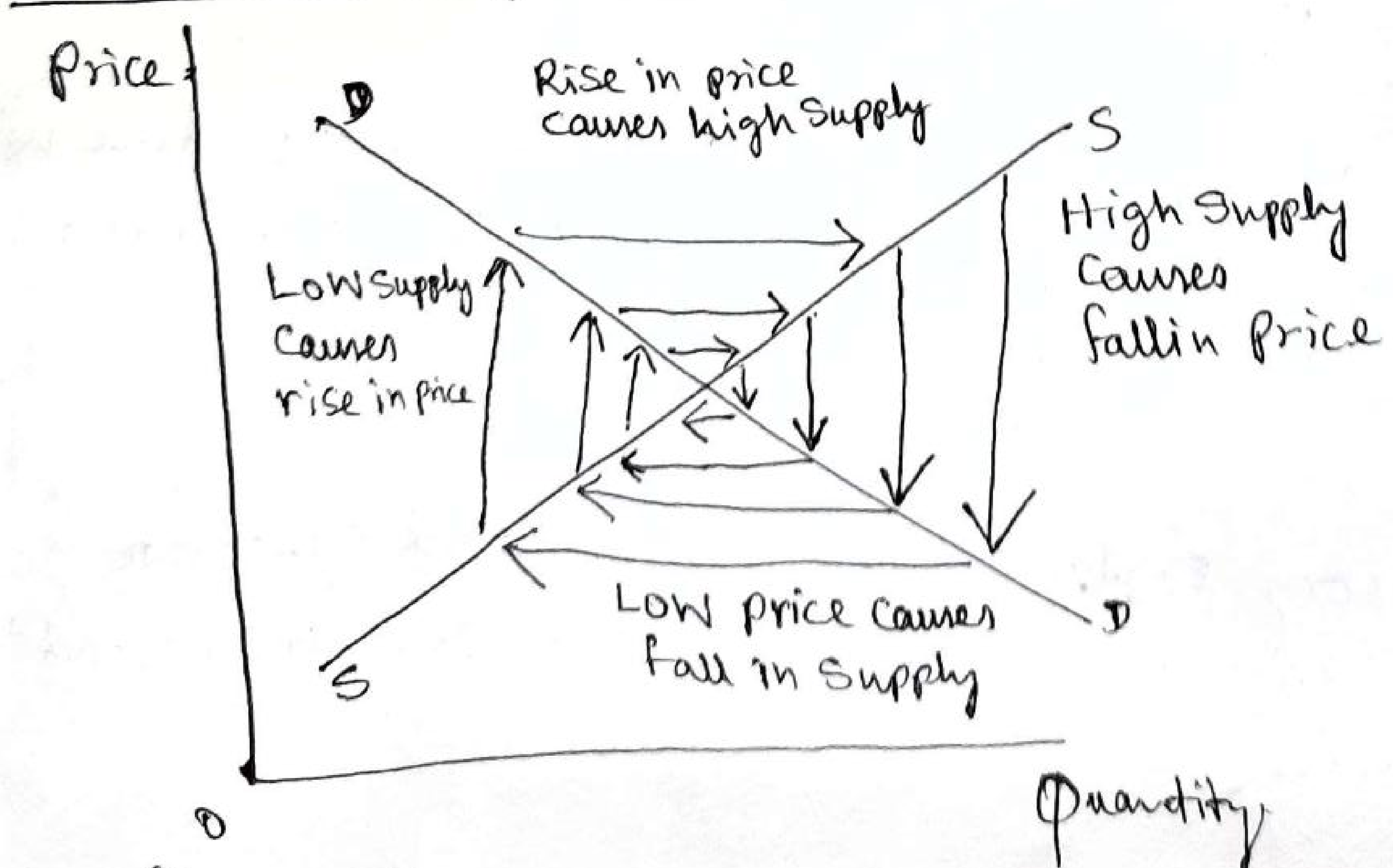

Figure - 1.3

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↳ It is clear from figure-1.3 that at the equilibrium point, if the demand curve is more elastic than the supply curve, we get the price volatility falling, and the price will converge on the equilibrium.

Criticism of Cobweb Theory

* This is not strictly a trad cycle theorem for it is concerned only with the farming sector. It does not covers up other areas.

* This theorem has false assumption that farm output primarily is based on price. There are various factors which also affect the farm output like - Climatic Conditions, Prices of Agricultural inputs.

* This theory is based on the false assumption that the current year sowing of crop depends on the previous year prices. Agriculturist also insists on future expectations from market analysis.

* This theory explains that divergence of price equilibrium it continues but in practical world continued divergence is impossible.

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