

Topic 1. Introduction

1. 1.- Let us consider an industry with just six firms. The market shares of these six firms are $s_1 > s_2 > s_3 > s_4 > s_5 > s_6$.

- Calculate the concentration ratio of the four largest firms of the industry. Calculate the Herfindahl index.
- Let us assume that firms 5 and 6 merger. Would this merger affect the concentration ratio of the four largest firms in the industry? Would it affect to the Herfindahl index?
- Let us assume that firm 6 sell 40% of its business.. Would it affect to the concentration ratio of the four largest firms in the industry? Would it affect to the Herfindahl index?
- The Herfindahl index can be expressed as a function of the variation coefficient and the number of firms. Use this formulation to analyse the effect of the entry of a large firm in the industry.

1.2.- Let us consider a six firm industry. The market shares of these six firms are:

F_1	F_2	F_3	F_4	F_5	F_6
0.28	0.25	0.22	0.10	0.08	0.07

- Calculate the concentration ratio of the three largest firms of the industry. Calculate the concentration ratio of the four largest firms in the industry. Calculate the Herfindahl index.
- Let us assume that firms 4,5 and 6 merger. Would it affect the concentration ratio of the four largest firms in the market? Would it affect to the concentration ratio of the three largest firms in the market? Would it affect the Herfindahl index?
- Let us assume that firm 5 sells 60% of its business to firm. How would it affect the concentration ratio of the four largest firms in the industry? How would it affect the concentration ratio of the three largest firms in the market? How would it affect the Herfindahl index?

1.3.- A monopolist inverse demand function is $p(Q) = 100 - 2Q$. The monopolist marginal cost is 20.

a) Which is the monopolist optimal level of production? Which is the price set by the monopolist?

b) Which is the efficient price (price that maximizes social welfare, i.e. sum of consumer surplus and firm profit)? Which is the efficient level of production?

c) Calculate and draw the social welfare loss due to the monopoly.

1.4.- In the basic monopoly model, the existence of a monopoly implies a net loss of social welfare (in comparison to the perfect competition situation). The graphical representation of this net loss is called Harberger's triangle. However, whereas according to Williamson an industry monopolization does not necessarily imply a loss of social welfare, for Leibenstein the loss of social welfare associated to the monopolization of an industry is larger than the one calculated by the Harberger index.

a) Which are assumptions explaining the different results obtained in the basic model and the Williamson's and Liebenstein's extension?

b) Analyse using graphics the former assertions. Explain in each case the effects of the monopolization of an industry on consumer surplus, firm profits and social welfare.

1.5.- An industry inverse demand function is $p(Q) = 200 - 4Q$. Explain in each one of the following cases the social costs associated to industry monopolization (use graphics to carry out the analysis)

a) Basic model: $CMg = 20$

b) Leibenstein's extension: $CMg = 25$

c) Williamson's extension: $CMg = 15$