Toulouse School of Economics
École d'économie de Toulouse

UNIVERSITÉ TOULOUSE 1 CAPITOLE

Université Toulouse 1 Capitole
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Session 1

Semestre 1

Master 1 Econometrics, Statistics, Economics & Economié Droit

Epreuve: Understanding Real World Organisations

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ANSWER TWO QUESTIONS

1) What is a "hold-up problem"? Can the wish to avoid hold-up problems help to explain why some firms are large while others are small?

2) Can the theory of platforms explain why some religions emphasize the high cost of membership for their adherents?

3) In what ways is competition between rival armies, gangs or mafia organizations similar to competition between firms, and in what ways is it different?

4) Do we have a satisfactory way to explain why voters elect politicians they know are lying to them?

5) Two firms are in a duopoly position on a market. Each is trying to choose between setting a high or a low price for its product. Prices are set simultaneously once per year and cannot be changed until the following year. If both set low prices they will each make annual profits of €200m, while if they both set high prices they will each make annual profits of €400m. If one of them, however, sets a low price while the other sets a high price, the firm with the low price will capture a large market share and make €600m. The profit for the firm with the lower market share in this case would be €100m if it is firm 1 and zero if it is firm 2. The two firms have discount factors of G1 and G2, which are not necessarily the same.

   a) Calculate the lowest values of the discount factors which would enable the outcome in which both firms set a high price to be sustained as a sub-game perfect equilibrium of an infinitely repeated game by the threat that if either firm sets a low price, its rival will set low prices for ever, starting in the following year.

   b) Would your answers be different if, each year, firm 1 first set its price and then firm 2 could observe this price before deciding which price of its own to set?

   c) Suppose that each firm has a subjective probability equal to p that its rival will set a high price in the current year, and (1-p) that it will set a low price. Calculate, as a function of p, the values of G1 and G2 at which the two firms will be just indifferent between setting a high price and setting a low price. You should assume that, if both firms set a high price this year, they will do so for ever in the future.

   d) Why do you think the two firms might have different discount factors?