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Ecole d'économie de Toulouse

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Semestre 1

Master 1 Econometrics, Statistics, Economics & Economie Droit
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UNIVERSITÉ TOULOUSE 1 CAPITOLE

ANSWER TWO QUESTIONS

1) Why are tax havens almost always small countries? And why do other countries tolerate their presence?

Answers receive 5/10 for noting that small countries often have problems financing the costs of defense and the basic infrastructure of statehood, which are subject to large scale economies. They therefore find it particularly interesting to attract mobile capital for which they do not have to provide much physical and social infrastructure. Extra marks for
a) giving examples,
b) noting that other countries tolerate their existence (rather than, say, invading and occupying them) because it is useful to the political elites of those countries to have the option, either for corrupt purposes or to distribute political favors,
c) considering why it is preferable for those who support preferential tax breaks for special interest groups to do so via offshore rather than onshore arrangements
d) noting that the state of Delaware is a small state but the US is not a small country.

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

Answers receive 5/10 for noting that the attractiveness of a platform to its adherents depends on the quantity and quality of other people who use the platform, and that this is often true of religions which offer not just particular services but also access to other members of good character and trustworthiness. Platform competition is thus characterized by network externalities. Extra marks for noting that:

a) network externalities can be one-sided (each person values the total quantity or quality of members on the platform) or two-sided (members of one type – eg men – value the quantity and quality of members of another type – eg women). Some religions also function as marriage markets for example or can connect some members (eg warriors or martyrs) to others who provide financial donations.
b) The "price" of membership of religious organizations can be financial (eg paying tithes) or in kind, due to restrictions on diet or behavior.
c) The price of membership can be high for two separate reasons – first because it reflects the network benefits of membership, and secondly because a high price serves to screen committed (therefore high-quality) members.

3) In what way can a firm communicate or embody values?

Answers receive 5/10 for BOTH a) defining values (for instance as a commitment to certain objectives in spite of short-term temptations to deviate from those objectives) AND b) explaining why it may be in a firm's interests to commit to such values vis-à-vis its employees or shareholders. Extra marks for a) giving examples; b)

distinguishing between functions within a firm according to how well they embody commitment to the firm's values (eg HR versus technical support); c) noting that it is difficult credibly to outsource functions that embody a firm's core values.

4) 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?

A hold-up problem may occur when two or more parties are in an economic relationship in which a) one or more of them make relationship-specific investments (defined as investments whose payoff is higher when that relationship continues than when it does not), and b) the division of the returns to the investments cannot be contractually determined in advance but must be negotiated after the investment costs have been sunk. The other party can threaten to pay only a return that does not cover the full costs of the investment but which the investing party cannot credibly threaten to refuse.

Answers receive 5/10 for correctly defining hold-up problems, an extra mark or two for giving real-world examples, and an extra 2 or maximum 3 points for explaining (with an example) that when two independent firms merge the incentive for engaging in hold-up behavior diminishes (but does not completely disappear if there remain some differences in objectives between subsidiary divisions of the merged firm).

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

Answers receive 5/10 for noting that although most voters would prefer to elect politicians who do not tell lies, the willingness to tell lies may be an observable signal that is positively correlated with an unobservable characteristic that voters value – such as being an outsider who does not belong to the establishment. Extra marks for a) giving good examples of relevant unobservable characteristics, b) specifying a simple model with two characteristics, one observable and one unobservable, that explains this intuition, c) explaining why voters might be willing to value the benefit of the unobservable characteristic above the cost of the observable signal at some times but not at others (eg because at some times but not others the establishment's prosperity benefits the rest).

6) Two traders are trying to decide whether to cheat each other or to behave honestly by supplying high-quality goods. They undertake a simultaneous exchange once per year. Each is trying to choose between setting a high or a low quality for its product. Qualities are set simultaneously once per year and cannot be changed until the following year. If both set low qualities they will each make annual profits of €20m, while if they both set high qualities they will each make annual profits of €40m. If one of them, however, sets a low quality while the other sets a high quality, the trader with the low quality will make €60m. The profit for the trader with the high quality in this case would be €10m if it is trader 1 and zero if it is traders 2. The two traders 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 traders set high quality to be sustained as a sub-game perfect equilibrium of an infinitely repeated game by the threat that if either trader chooses low quality, its rival will choose low quality for ever, starting in the following year.

G1,G2 ≥ ½ (calculated because 200 ≤ G1.(400-200)/(1-G1).

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

Yes because trader 1 could not gain at all from deviating to a low quality since trader 2 would set a low price in the same period.

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

If trader 1 chooses high quality the expected payoff V1 = p(4+ 4*G1/(1-G1)) + (1-p)(1+2*G1/(1-G1)).

If trader 1 chooses low quality V1 = p*(6 + 2*G1/(1-G1)) + (1-p)(2+2*G1/(1-G1)).

from which, by subtracting the top expression from the bottom one, we have that (6p-4p) - 2p*G1/(1-G1) + (1-p)(2 - 1) = 0

which yields G1 = (1+p)/(1+3p)

The equivalent calculation for trader 2 is different just in the expression for a payoff from high quality, which is V2 = p(4+ 4*G2/(1-G2)) + (1-p)(0 + 2*G2/(1-G2))

The low quality expression is the same as for trader 1:

V2 = p*(6 + 2*G2/(1-G2)) + (1-p)(2+2*G2/(1-G2)).

Subtracting the high quality expression from the low quality expression yields (1-G2)(2p) - 2p*G2 + 2(1-p)(1-G2) = 0

G2 = 1/(1+p)

When p=1 (the case for part a of the question), G1=G2=1/2.

To summarize:

G1 = (1+p)/(1+3p)

G2 = 1/(1+p)

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

They might be of different sizes, one might be owner-managed while the other is run by managers who have different goals from the owners, they might make products with different life-cycles.