3E1 - BUSINESS ECONOMICS 2016 - CRIBS

1   *(a)   Explain and illustrate by means of an appropriate diagram how a firm's cost minimisation problem differs in the long run relative to the short run.*   *[20%]*

The question requires an analysis of the best way for a firm to produce a given level of output. This can be explained by means of an isocosts and isoquants map and the goal is to identify the point on an isoquant that is tangential to the lowest possible isocost line. This point, representing the optimal choice of output, is characterised by marginal rate of substitution $MRTS = -(w/r)$ where w is the cost of labour and r is the rental rate of capital. In the short run capital may be fixed at the 'wrong' level therefore the optimal choice of production technique in the SR is not necessarily the optimal choice in the long run, when all costs can vary and therefore adjust both labour and capital inputs to optimal levels. The best students will be able to notice that cost minimisation is a necessary (but not sufficient) condition for profit maximisation.

(b)   Illustrate a game of strategy representing a market where one player has a first mover advantage. Provide two empirical examples of market outcomes that may reflect first mover advantages.   *[25%]*

A good answer requires the use of a sequential game with payoffs organised in a decision tree where one player can force the initial decision on the second player by having the advantage of moving first. The students should show solid understanding of first principles as well as the capacity to generate original empirical examples drawn from sectors of their own choice. Full marks will be given to answers that present both the correct theoretical instruments and plausible evidence.

(c)   The Coase Theorem states that if property rights are well defined and there are no transaction costs, bargaining over externalities will achieve an efficient outcome. Explain the theorem and discuss two empirical examples of inefficient market outcomes due to externalities.   *[25%]*

Externalities arise from situations where the actions taken by some economic agent affect the welfare of another without this impact being reflected in market prices. Externality problems can occur because of the lack of well-defined property rights (the power of residual control over an economic good) for certain resources. Ill-defined property rights result in 'missing markets'. If property rights are well defined and economic agents can trade absent transaction costs (the costs of search and bargaining), the market process will allocate all resources efficiently on the basis on the traders' preferences (indifference curves) and incomes. The students can illustrate the theorem with reference to a variety of real cases, including mis-priced natural resources, pollution, knowledge, etc… The best students will be able to discuss original examples that show independent reading and thinking.

(d)   Explain in detail the role of the interest rate in the macroeconomy.   *[30%]*

The interest rate has a crucial role in the macroeconomy as the factor that simultaneously equilibrates the goods market and the market for loanable funds. In the goods market:

- Aggregate demand: $C(\overline{Y} - \overline{T}) + I(r) + \overline{G}$
- Aggregate supply: $\overline{Y} = F(\overline{K}, \overline{L})$
- Equilibrium: $\overline{Y} = C(\overline{Y} - \overline{T}) + I(r) + \overline{G}$

The real interest rate is the only endogenous variable and adjusts to equate demand with supply. In the loanable funds market, the demand for funds is investment and the supply of funds is saving. The real rate of interest r is the 'price' of funds and adjusts to equilibrate investments and savings. If the loanable funds market is in equilibrium, then $Y - C - G = I$. This implies $Y = C + I + G$. i.e. the goods market equilibrium, where the national output (production) is equal to aggregate demand.

2 (a) What are the main determinants of market structure? [20%]

The students should be able to identify and explain the role of the number of buyers and sellers, the nature of the product (substitutability and differentiation), the state of information, the presence of transactions costs and free entry and exit in the long run as defining characteristics of market structure. These will be co-determined by the presence of entry barriers (especially strategic), economies of scale, control over key inputs (e.g. some materials or specialised labour), high levels of sunk costs, patents/copyright for products or processes, other legal barriers such as market franchises.

(b) Define a 'Giffen good' and illustrate your definition by means of an appropriate diagram. [20%]

A Giffen good is a good for which quantity demanded falls as its own price falls (in violation of the standard 'law of demand'). It is an extremely inferior good whose income effect more than outweighs the substitution effect. The student should include a graph representing changes in income and changes in the relative prices of two goods, and identify precisely the magnitude and direction of income and substitution effects.

(c) Compare and contrast the Cournot and the Stackelberg models of oligopoly. Discuss the implications of their market outcomes for producers and consumers. [30%]

Both the Cournot and the Stackelberg model assume a small number of firms, producing similar (identical or differentiated) goods, some barriers to entry (which imply no possible threat from firms outside the industry, and therefore an opportunity for positive profits in the long run), choices about output levels as opposed to price, with the market determining the price at which this output sells. While in a Cournot oligopoly decisions about output are simultaneous, in a Stackelberg oligopoly (with perfect information) one firm has a first mover advantage and decisions about output are sequential. Under Cournot the price is greater than the marginal cost of either firm (i.e. Cournot price exceeds competitive price). Under Stackelberg the first mover (or market leader) will produce more than the Cournot equilibrium output and will have larger market share and higher profits; the follower will produce less than the Cournot equilibrium output, will have a smaller market share and lower profits. The best students will be able to comment on the models' outputs and prices.

(d) Identify and discuss the advantages and disadvantages of the euro. [30%]

Start from the definition of optimum currency area (OCA) as a geographical region in which a single currency would maximize economic efficiency. A single currency requires a common interest rate for the Euro Zone (i.e. a common monetary policy) and one Central

Bank (the European Central Bank, ECB) setting base interest rates across the member nations of the euro zone. An optimum currency area requires the lack of large asymmetric shocks (i.e. shocks that only affect some members of a group of trading countries). It requires: high intensity of internal trade without the possibility of competitive devaluations by members; similarity of economic and industrial structures; synchronous business cycles. If these conditions are met it is possible to design a single currency area. The benefits of a single currency within an OCA are (microeconomic) that it reduces the cost of trade and improves price transparency and (macroeconomic) that it leads to lower and more stable inflation and to a lower 'sacrifice ratio'. However it may also need a degree of shared political and cultural identity and a readiness to make at least some fiscal transfers to partner countries (Europe is not fiscally integrated). Clear disadvantages emerge when the underlying fundamentals of the constituent parts of the macro region experience divergent (i.e. two-speed Europe), lack of flexibility (decreased efficiency) and slow growth.

3   (a)   Demonstrate that firm profits are optimised at the level of production where marginal costs are equal to marginal revenues.   [20%]

The students can provide a diagrammatic and/or qualitative answer by defining the nature of the firm's decision 'at the margin'. However, the best answers will provide the following synthetic answer. The firm maximises profit by producing at the level of output where $MC = MR$ because the first order condition that characterises the solution to the profit maximisation problem (*max TR(Q) – TC(Q)*) is *MR(Q) – MC(Q) = 0* (the derivative of the profit function is set to *0*). This is equivalent to stating that for the first order condition to be satisfied *MC(Q)* has to be equal to *MR(Q)*. The best students will not forget to note that the second derivative is negative of the profit function has to be negative.

(b)   What factors would you take into consideration if you were making a decision to ban or allow a proposed merger? Explain your answer.   [25%]

This question tests the students on their understanding of the positive and negative implications of increased market power. A good answer should identify pros and cons on the side of producers and consumers, and compare the prospect of losses in economic efficiency with the possible positive effects of monopoly power on innovation and international competitiveness.

(c)   Discuss the problem of intertemporal choice in the macroeconomic theory of consumption. Present two ways in which this problem can be addressed to explain and predict aggregate consumption.   [25%]

While in Keynes' theory of consumption current consumption depends on current income, later theories established that the rational consumer is forward looking and makes consumption choices for the present and future to maximize lifetime satisfaction. Consumption choices are subject to an intertemporal budget constraint (a measure of the total resources available for present and future consumption). Provided that consumers are able to borrow between periods, the consumer will make decisions based on expectations about her 'normal' or 'permanent' income. The students are asked to compare and contrast two different versions of this hypothesis, including Fisher's, Modigliani's, Friedman's and Hall's. The inclusion of correct formal models will be awarded extra marks.

(d)   Identify three policy measures a government might introduce to increase exports. Discuss their relative advantages and disadvantages.   [30%]

Trade policy is the set of policy instruments that regulate trade to maximise benefits or minimise risks. In order to increase exports a government might consider the introduction of subsidies, compliance with technical/legal/language standards, increases in productive capacity on the supply side, changes in the sources of comparative advantage and the generation of competitive advantage through targeted investments (e.g. procurement). The government may also try to boost exports by devaluing (under fixed exchange rates) or depreciating (under flexible exchange rates) the country's currency. The best students will be able to note that success will be contingent on exporting firms' pricing strategies, price elasticities of demand and supply and trading partners' reactions.