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OLLSCOIL NA hÉIREANN, GAILLIMH
NATIONAL UNIVERSITY OF IRELAND, GALWAY

SUMMER 2000

PAPER 2

ECONOMICS
EC100, EC101 AND EC102

1st BA; 1st BComm; 1st BA, Public and Social Policy; 1st BComm w/ French; 1st
BComm w/ Spanish; 1st BComm w/ German; 1st BSc in Financial Mathematics and
Economics; 1st B. Corp. Law

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Time Allowed: Three Hours

Directions: There are three sections for this exam. Read all the directions for each section. Write your answers in a separate booklet for each section. You may use a calculator for some problems, but show all your work. Good luck and enjoy your summer.

Section A: Macroeconomics (125 marks)

Short Problems: (25 marks) *Answer the following questions by using the data in the table provided.*

Gross Domestic Product	1998	1999
Consumption	38,967	43,304
Investment	18,013	21,484
Government Spending	10,136	10,889
Exports	63,874	72,360
Imports	-55,013	-62,505
Total GDP	75,977	85,532
Consumer Price Index(1990 = 100)	119.6	122.9

All figures except the Consumer Price Index are in millions of Euros.

- 1) What was the inflation rate from 1998 to 1999?
- 2) Based on the numbers above what is an estimate of the Marginal Propensity to Consume and the Marginal Propensity for Imports in 1999?
- 3) Assume that the tax rate is 30% of income, based on the data provided, what is the multiplier in 1999?
- 4) Using the multiplier you found in question (3), what would be the effect on total GDP of an increase in Government Spending of 2 million euros?

Essay: (100 marks) *Answer only ONE of the following two questions.*

1. Discuss the role of the Central Bank in an economy. List first its tools and characteristics. Then address each of the following points.
 - a) How do Keynesian economists and Neo-classical economists differ in their opinions of the role of a Central Bank?
 - b) What are the differences in policies followed by a central bank which engages in inflation-targeting versus a central bank which engages in growth-targeting?
 - c) What are the economic effects of any actions taken by the central bank?
 - d) What are some of the problems faced by the Irish Central Bank and the European Central Bank?

– OR –

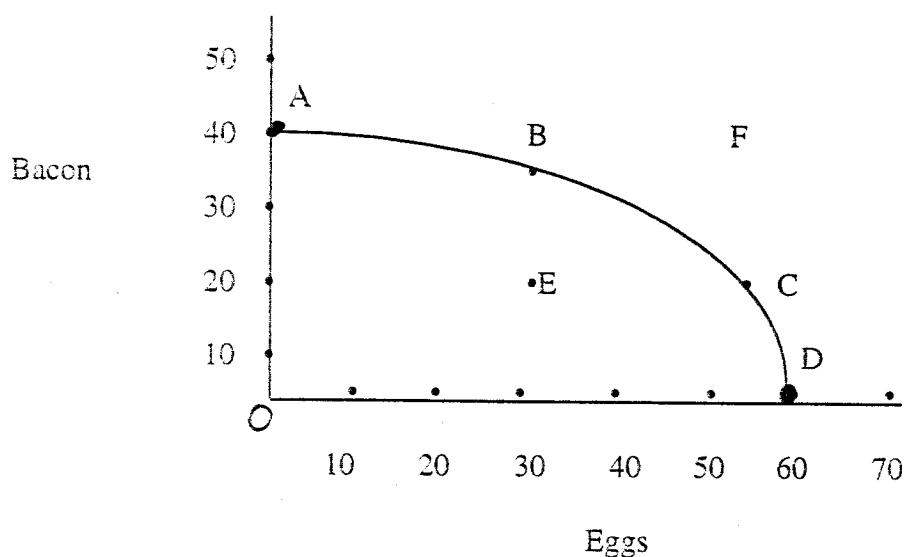
2. Discuss the differences between economic policies which focus on demand management and economic policies which focus on the supply-side. Be sure to include the major monetary and fiscal policy approaches of both. And be sure to include some of the historical background of both demand management and supply-side economics. In your own opinion, is the European Union following a demand management or a supply-side approach in its economic policies? Explain.

SECTION B
Microeconomics
(70 Marks)

Multiple Choice questions and diagram

For each multiple choice question indicate clearly in your answer book which answer (if any) you have chosen. Only one answer per question can be chosen. Negative marking will be used for the multiple choice questions. For each question you will receive a score of 3.0 for a correct answer, a score of -0.2 for an incorrect answer, and a score of 0 if the question is not answered.

Use the following graph to answer Question 1.



1. As we move from Point A to point D
- (a) the opportunity cost of eggs in terms of bacon is constant
 - (b) the opportunity cost of eggs in terms of bacon falls
 - (c) the opportunity cost of eggs in terms of bacon rises
 - (d) the economy becomes more efficient
 - (e) the economy becomes less efficient

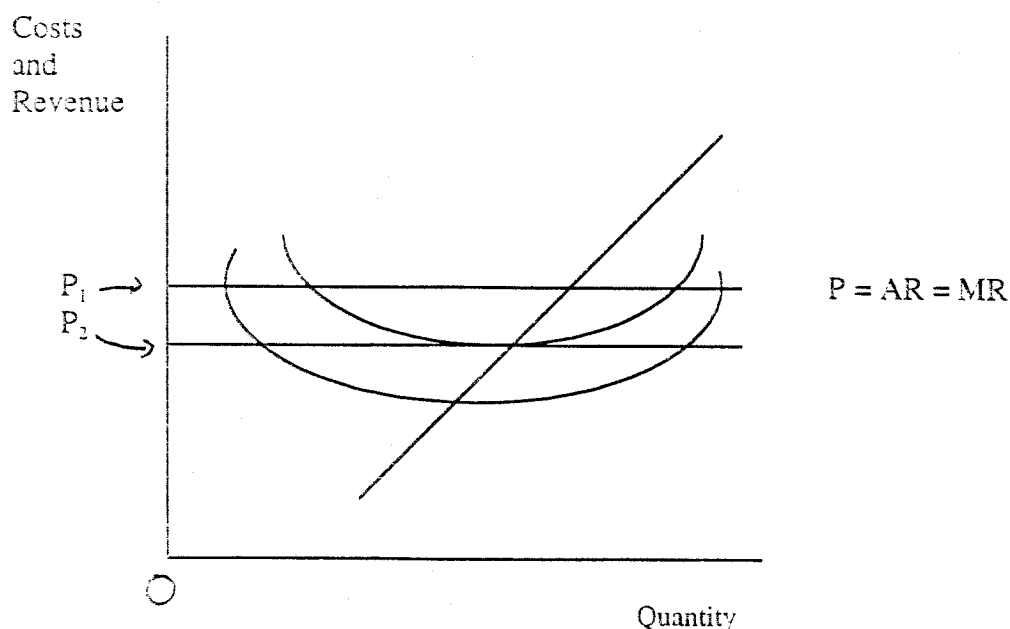
2. According to the principle of comparative advantage
- (a) countries with a comparative advantage in the production of every good need not specialize
 - (b) countries should specialize in the production of goods which they enjoy consuming more than other countries
 - (c) countries should specialize in the production of goods for which they use fewer resources in production than their trading partners
 - (d) countries should specialize in the production of goods for which they have a lower opportunity cost of production than their trading partners

3. Use the following information to answer Question 3. A city is considering a fare hike for its city bus service. At the current fare of £0.50, 1,000 people use the service. The city estimates that if it raises fares to £1.00, the number using the service will decline to 600.

Using the midpoint method of calculating elasticity, the price elasticity of demand is

- (a) 0
 - (b) 0.75
 - (c) 1.00
 - (d) 6.00
 - (e) 800
4. A positive externality in production leads to:
- (a) overproduction relative to the socially optimal level
 - (b) underproduction relative to the socially optimal level
 - (c) an imbalance between quantity supplied and quantity demanded
 - (d) a demand curve that is not at the socially optimal level
 - (e) a supply curve that fails to include all of the benefits to society
5. An increase in demand in a competitive industry leads to:
- (a) higher prices and profit in the short run only
 - (b) higher prices and profit in the long run only
 - (c) higher prices and profit as long as demand remains high
 - (d) no change in either price or profit
 - (e) none of the above
6. A price-discriminating monopolist would be likely to charge a:
- (a) higher price to those with inelastic demand than to those whose demand is elastic
 - (b) lower price to those with inelastic demand than to those whose demand is elastic
 - (c) high price to those with both elastic and inelastic demand
 - (d) higher price than a nondiscriminating monopolist
 - (e) higher price in the short run than in the long run
7. The monopolistic competitor differs from the competitive firm in that it:
- (a) has no demand curve in the traditional sense
 - (b) can earn economic profit for long periods of time
 - (c) charges a price greater than marginal cost
 - (d) exists in an industry without free entry
 - (e) none of the above

3. Which of the following would decrease the demand for petrol (i.e. shift the demand curve to the left)?
- (a) an increase in the prices of petrol-guzzling cars
 - (b) improvements in the road system that make cars more attractive relative to other modes of travel
 - (c) an increase in the price of crude oil that causes the price of petrol to rise
 - (d) a decrease in the prices of petrol-guzzling cars
9. When the price of a good falls, the substitution effect
- (a) encourages the individual to consume more of the good
 - (b) encourages the individual to consume less of the good
 - (c) leads to more consumption if the good is an inferior good, but less if it is a normal good
 - (d) leads to less consumption if the good is an inferior good, but more if it is a normal good
10. The marginal product of an input is
- (a) the cost of producing one more unit of output
 - (b) the cost required to hire one more unit of the input
 - (c) output divided by the number of inputs used in the production process
 - (d) the extra output that results from hiring one more unit of input
11. (40 marks)
- The graph below shows a firm in perfect competition maximizing profits. However, some of the curves are not labelled. Assume that the firm is initially in equilibrium earning a positive economic profit. Copy this diagram into the answer book and answer the following questions. Be very careful to copy the diagram exactly as you find it here.



- (a) Label the following: MC (Marginal Cost), ATC (Average Total Cost) and AVC (Average Variable Cost). Show the equilibrium quantity and price as Q_e and P_e . Label the short-run shutdown point as point A and the breakeven point as point B.
- (b) Why is it rational for the firm to produce at Q_e ? Should it continue to produce temporarily if the price falls below point B but stays above point A? Why or why not? Would your answer be different in the long run? Explain.
- (c) Is the firm in short-run equilibrium? Long-run equilibrium? How can you tell?
- (d) What is likely to happen to the price in the long run? Why? Show the new price line on the graph and explain what happened in the market to cause this shift.
- (e) Is this firm earning positive economic profits in the initial equilibrium? If Yes, indicate clearly on the diagram the level of profits that it is earning. If No, explain why economic profits are zero.

SECTION C
Microeconomics
(130 marks)

Answer four of the following questions. Each question is worth 45 marks. Use a separate answer book(s) for this section.

1. The demand for cable TV subscriptions in Galway is given in the following table. The marginal cost, including payments to cable programming providers, is £6. One firm, Galway Cable, has a monopoly in this industry.

Price (£)	Quantity ('000)
>10	0
10	1
9	2
8	3
7	4
6	5
5	6
4	7

- (a) Calculate total revenue and marginal revenue at each price
- (b) Find the profit maximizing quantity and price
- (c) Draw a diagram with the demand, marginal revenue and marginal cost curves to illustrate your answer in parts (b) and (c)
- (d) What is price discrimination? What are the conditions necessary for successful price discrimination?
- (e) Use the diagram in part (c) to illustrate the gain in efficiency that could be made under price discrimination

2. Consider a market with two firms, A and B. Each firm is making a decision about whether to advertise or not. The choices they face and the payoffs under each outcome are indicated in the following matrix. The first number in each case is the payoff for firm B.

		FIRM A	
		Advertise	Don't Advertise
FIRM B	Advertise	3, 3	5, 2
	Don't Advertise	2, 5	4, 4

- Define clearly what is meant by a dominant strategy
- Does Firm A have a dominant strategy? Does Firm B? Explain your reasoning clearly
- What is the equilibrium outcome of this game? Explain what we mean by a Prisoner's Dilemma Game. Is this game an example of a Prisoner's Dilemma game?

Suppose instead that the payoffs are as follows: The first number in each case is the payoff for firm B.

		FIRM A	
		Advertise	Don't Advertise
FIRM B	Advertise	3, 3	4, 2
	Don't Advertise	2, 5	5, 4

- Does Firm A have a dominant strategy? Does Firm B? Explain your reasoning clearly.
- What is the equilibrium outcome of this game?

- 3(A) Explain clearly what is meant by non rivalry and non exclusion. For each of the following goods explain whether they are (i) non rival and (ii) non excludable. Explain your reasoning in each case.

- Hiking on an isolated mountain in Connemara
- The pedestrianized area of Galway on a busy Saturday afternoon in July (assume that work in the area has finished)
- Medical research on the relationship between lifestyle and heart disease
- An uncongested toll road

- 3(B) Given an example of a negative production externality. Using a diagram show why a private market will not result in the efficient quantity of a good being produced if production involves a negative externality. Indicate on the diagram the size of the deadweight loss from the externality.
4. Suppose a worker in the United States can produce a maximum of 50 computers or 100 shirts in a month while a worker in Brazil can produce a maximum of 2 computers or 50 shirts per month. For simplicity assume that each country has only one worker.
- Graph the Production Possibilities frontier for each country
 - What is the opportunity cost of a computer in Brazil and in the US?
 - What is the opportunity cost of a shirt in Brazil and in the US?
 - Which country has the absolute advantage in shirts and in computers?
 - Which country has the comparative advantage in shirts and in computers?

Suppose initially there is no trade between these countries. In this situation the American worker produces 41 computers and 18 shirts while the Brazilian worker produces 1 computer and 25 shirts. The Brazilian worker suggests the following trade: he will concentrate on producing shirts and will trade 20 shirts in return for 2 computers. Show that this trade will benefit both countries. Assume that after the trade the American worker will produce 50 computers.

Suppose the Brazilian worker had suggested a trade of 20 shirts in return for 14 computers. Would this trade have benefited both countries? Explain your answer.

5. (a) For each of the following scenarios, draw the budget constraints before and after the change. Plot 'expenditures on other goods' on the vertical axis.
- Income = £400; price of potatoes = £1 per bag; price of potatoes rises to £2 per bag
 - Income = £100; price of pizzas = £10; price of pizzas falls to £4.
- (b) Consider the rent allowance programme. Assume that the typical rent allowance recipient has an income of £100 a week. He/she also receives a rent allowance of £30 a week but this must be spent on rent. The government has asked you for advice on whether this scheme should be abolished in favour of one where every recipient is given an extra £30 a week in cash.
- Draw the budget constraint for the typical recipient under the present situation and under the new proposal from the government. Label the axes 'expenditure on other goods' and 'expenditure on rent'.

- (ii) What advice would you give to the government? Explain your answer clearly.
- (c) Suppose the government cuts income tax rates in order to increase the supply of labour in the economy. Explain the difference between the income effect and substitution effect of such a reduction in tax rates. Will the cut in tax rates necessarily lead to an increase in the supply of labour? Explain briefly.
- 6(A) In June 1999, it was revealed that a cancer causing dioxin had been fed to chickens in Belgium. Answer the following questions on the effect of this announcement using a clearly labelled diagram for each part of the answer. For simplicity assume that Belgium is a closed economy (i.e. assume imports and exports are zero). Ignore any actions that the Belgian government actually took in response to the revelation.
- (i) What effect will this have on the market for chickens?
- (ii) What effect will this have on the market for fish in the very short run (i.e. in the 48 hours following the announcement).
- (iii) What effect will this have on the market for fish in the long run?
- 6(B) Consider the following demand curve: $Q = 400 - 0.5P$
- (a) Calculate the quantity demanded when price is 370, 390, 400, 410 and 430.
- (b) Using the midpoint method (also known as the average or arc method), calculate the price elasticity of demand (a) when price falls from 430 to 410, (b) when price falls from 410 to 390 and (c) when price falls from 390 to 370.
- (c) In general, what happens to elasticity as quantity increases along a straight-line demand curve? Which part of the demand curve is elastic? Which part is inelastic?