Department of Economics
University of California, Berkeley

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Econ 1, Fall 2002

ECONOMICS 1
FINAL EXAM

Good Luck!!

DO NOT OPEN THIS EXAM BOOKLET UNTIL YOU ARE INSTRUCTED TO DO SO!

1) **You must do all questions. Be clear, complete & concise in your explanations. Use formulas & properly labeled graphs with explanations, as needed.**
2) **This is a closed-book, closed-notes, no-calculator exam.**
3) **CHEATING IS NOT TOLERATED.**
4) **Write answers in the space provided.**
5) **DO NOT write on the backs of pages.**
6) **If you get stuck on a question, move on & return to it later.**
7) **At end of exam, STOP writing when instructed to do so. PASS EXAMS TO CENTER AISLE.**
8) **When finished, you may leave until 7:45PM. AFTER 7:45, YOU MUST WAIT UNTIL THE END OF THE EXAM TO LEAVE**

	Grader	Points received	
1			10
2			10
3			14
4			8
5			15
6			5
7			5
8			12
9			8
10			6
11			14
12			8
13			7
14			8
TOTAL			130

NAME & SID:
GSI's NAME:

1) Currency Markets (10 Points)

You are planning a trip to Paris for the Christmas holiday. You hope the Federal Reserve changes interest rates so the Euro/dollar exchange rate will change and make your trip cheaper.

a) (2 points) What do you want the Fed to do to interest rates?
b) (8 points) On a graph of the foreign exchange market for dollars, show the effect of this change in r on the Euro/dolar exchange rate. Explain.

2) **Savings, Capital Inflows & Investment (10 Points)**

a) (2 points) Define **capital inflows.**
b) (2 points) What is the algebraic relationship between KI and investment?
c) (6 points) If the Government deficit increases by $200B next year and investment and business and household savings are the same (ie, unchanged), how much do capital inflows (KI) change? Explain.

3) AD-AS Analysis (14 Points)

Assume the U.S. economy is in equilibrium. Then Congress declares war against Iraq, and increases spending (G) and taxes (T) by $100B so the government deficit is unchanged.

a) (6 points) If the MPC is .8, what is the impact of this balanced budget increase on Y? (Hint: calculate multiplier impact of increased G and increased T, and add together.) Explain.

b) (8 points) Using an AD-AS graph, show and answer the following:

i) Initial equilibrium position (marked A). Explain.
ii) The position after the balanced budget increase (marked B). Explain.
iii) The final equilibrium (marked C). Explain.
iv) Without any further stabilization policies by the Government or Fed, what will happen to the inflation rate π? Explain.

4) Utility Maximization (8 Points)

You are a rational decision maker.

a) (2 points) What is the economic rule for maximizing your personal welfare? Explain.

b) (3 points) You are willing to pay $1 for a cup of coffee or a cup of tea, and coffee costs $.95 and tea costs $.75. Calculate the consumer surplus of each as part of your answer. Which do you buy?

c) (3 points) If pizza costs $2.50 per slice and the benefits for eating pizza slices is as below, how many pieces do you purchase? Show your work.

Number of Pieces	**Total Benefit**	
1	$5.00	
2	$9.00	
3	$11.00	
4	$12.00	
5	$12.00	

5) Trade, Exports & Quotas (15 Points)

Your roommate wants to help the sugar farmers in Brazil and claims that trade has hurt the farmers.

a) (2 points) Draw S & D curves for the sugar market in Brazil, and show the equilibrium that occurs in a closed economy (marked A).
b) (4 points) Now assume that in an open economy, Brazil exports sugar. Draw the world price P_w and show the new equilibrium for domestic output, domestic consumption, and exports.
c) (2 points) How are consumers and producers/workers in Brazil affected by trade?
d) (7 points) Now assume the U. S. imposes a quota on sugar from Brazil, so Brazilian exports are decreased by the amount QQ. Show on your graph the new equilibrium for domestic output, domestic consumption and exports. How does this affect consumers and producers in Brazil? (Assume the world price for sugar does not change.)

6) Fall 2002 Macro News Statistics (5 Points)

Fill in the blanks (do **5** of the following **6**):

a) Unemployment rate (Oct) _____
b) GDP growth (3rd Q, revised) _____
c) Fed's latest reduction in targeted Federal Funds rate: from ____ to _____
d) Federal Government deficit for last fiscal year (FY2002) ______
e) Trade deficit (Sept) ______
f) Inflation rate (increase in CPI over last 12 months) _____ **or** in Oct _____

7) **Perfect Competition & Monopoly (5 points)**

a) (2 points) What is the profit maximizing rule for a firm in a perfectly competitive market? For the firm in a monopoly market?

b) (3 points) In the long-run, why can a monopolist earn a positive rate of profit and a perfectly competitive firm cannot?

8) Supply Shocks & Price Controls (12 Points)

Draw S and D curves for "goodnuts", where the supply is highly price inelastic and demand is highly price elastic. Label market equilibrium A.

a) (3 points) Define **price elasticity of demand** and **price elastic demand.**
b) (6 points) Now assume the supply of "goodnuts", which are very popular in New York City, has been sharply reduced because of a recent storm. Show the new equilibrium position (marked B). Show how producer and consumer surplus has changed on your graph (carefully mark changes).
c) (3 points) The New York City Council wants to put price controls on "goodnuts" to keep the price constant (at the equilibrium market P before the storm) for three months, which is how long it will take producers to grow more "goodnuts". Who are the winners, and who are the losers with this price control?

9) Open Economy & Monetary Policy (8 Points)

In an **open** economy, when the Federal Reserve uses monetary policy to decrease interest rates:

a) (2 points) What open market operations does the Fed undertake to decrease r? Explain.
b) (6 points) What components of AD are affected, how are they affected and why?

10) Limits of Perfect Competition (6 Points)

Explain what outcome competitive markets provide in the following cases. And, explain why this outcome does not maximize social welfare.

a) (3 points) production of good with positive externality
b) (3 points) production of public good

11) Game Theory (14 Points, continued next page)

Paradiso Resort (R) is located down-wind from Polluto Chemical Co. (C). Polluto emits smelly gases as part of its production process. Although harmless, these gases are a nuisance to guests at Paradiso Resort; when atmospheric concentration of the gases is high, some guests are willing to stay at Paradiso for a reduced rate.

		Paradiso Resort (R)	
		Charge Full Rate	**Charge Half Rate**
Polluto Chemical Co. (C)	**1 Thousand PPM**	**10 for C** **20 for R**	**10 for C** **10 for R**
	2 Thousand PPM	**15 for C** **0 for R**	**15 for C** **5 for R**

(Payoff in $1000s per day. PPM means parts per million.)

a) (2 points) Explain how this payoff matrix reflects the presence of a negative externality.

b) (3 points) Does each player have a dominant strategy? Is this a Prisoner's Dilemma game? Define Prisoner's Dilemma.

c) (2 points) What is the equilibrium outcome of this game? Show your work (either separately or in the diagram above) and explain.

11) Game Theory (continued)

d) (4 points) Now, suppose Polluto has the right to pollute. Paradiso is willing to bribe Polluto 7 (i.e. $7000) to reduce pollution from 2 units to 1 unit.
   1) Show the new payoff matrix (for 1 unit pollution with 7 bribe and for 2 unit pollution).
   2) Find the equilibrium outcome of this game.

e) (3 points) Define the Coase theorem. Explain how the difference in equilibrium outcomes in parts c and d is an example of the Coase theorem at work.

12) Stocks & Interest Rates (8 Points)

Your roomate has a share of XYZ stock. When she bought it for $100, annual interest rate was 5%, and she expected to sell it for $100 in one year and get a dividend payment of $5. Then interest rates fall to 4% and announcements of war make you raise your risk premium from 0% to 2%.

She wants to sell the share to you for $100. (Assume no time has passed).

i) (4 points) Explain two essential roles of the stock market as an institution that allocates savings
ii) (4 points) State how much you would be willing to pay for your roommate's share of XYZ stock and why.

Use as necessary:

X	(1+r)	X(1+r)
100.00	1.05	105
100.00	1.04	104
100.00	1.06	106
100.96	1.04	105
99.06	1.06	105
96.15	1.04	100
94.34	1.06	100

13) Micro News Analysis (7 Points)

Read the following edited excerpt from Business Week article "For Chipmakers, Less of Moore?" and answer the questions that follow. Key sentences are highlighted.

Moore's Law is **the dictum that the computing power of chips will double every 18 months or so, at no increase in cost,** first stated in 1965 by Gordon E. Moore, co-founder of Intel.

For four decades, advances in technology have steadily fulfilled his vision, and the chip industry has experienced growth of 16.5% a year on average. Recently, Sanders, chairman of Advanced Micro Devices (AMD) predicted that average annual growth rates in the range of 8% to 10% will be the norm.

Sanders gave the following explanation: The industry has become too big. **No new gizmos on the horizon can be popular enough to sustain the 16.5% surge in demand that was triggered by the PC, video games, and other consumer electronics products. To survive, many chipmakers will be forced to hatch new strategies, such as specializing in niche markets**.

1) (2 points) Show using a S&D diagram for semiconductor chips (standardized for computing performance), what effect Moore's law has on the supply curve over time. Explain.
2) (2 points) Using the diagram from part 1, show what the effect of *popular* "new gizmos" has on equilibrium. Explain.
3) (3 points) Answer separately from parts 1 and 2. If such new gizmos are not available, give one example of how a semiconductor firm that is the sole producer of a particular chip could use price discrimination (which is one way of creating niche markets) to increase revenues. (Hint: first distinguish two different groups of consumers. Then explain how the firm can price discriminate.)

14) Macro News Analysis (8 Points)

Read the following edited excerpt from the November 7 *Economist* article "Alan cuts, Wim refuses to follow?" and answer the questions that follow. Key sentences are highlighted. (Note: Recent EU interest rate cuts in December do not affect the answer to questions asked here.)

On November 6th, America's Federal Reserve cut interest rates to the lowest level since 1961. On the following day, the **European Central Bank (ECB)—in charge of monetary policy for the 12 countries of the Euro area, which share a currency and interest rates—left rates unchanged at a much higher relative interest rate.**

ECB President Wim Duisenberg noted that the **ECB is not legally-required to use monetary policy to stimulate economic growth.**

That view is clearly not shared by the Fed, which is legally-required to promote growth and employment while maintaining price stability. The Fed's decision came after a run of bad economic news.

Unemployment in Germany (the largest EU country) is now at a four-year high. And, analysts predict it will not get better any time soon.

On the face of it, then, the ECB's stance is hard to understand. Partly it reflects the ECB's single-minded focus on inflation—which is, after all, what its mandate requires.

1) (5 points) How does the reaction function of the Fed differ from that of the ECB?
2) (3 points) Suppose the output gap in Germany is twice as large as in another EU country, say France. Is it possible to use a *common monetary stabilization tool* (ie, a change in the common ECB interest rate target) to reach full employment (potential) output in both Germany and France? [Note: EU laws impose severe limits on an individual country's use of fiscal policy as a stabilization tool, so it is not under consideration as an option.]

Congratulations, You've completed Econ 1!!
Have a Great Semester Break!!