

ECO 150, Winter 2022, Exam #2

Name:

Key

Instructions:

1. This exam consists of thirteen questions and a bonus. Answer them all. You are encouraged to use the models from class when formulating your answers.
2. Some questions are open ended. You will be graded more on the quality of your explanation than your specific answers. On “true/false” questions, for example, answering only “true” or “false” will receive no credit, even if correct.
3. Do not just copy from the course materials. Doing so will receive no credit.
4. This is an open note exam. You may use your notes, the textbook, and all course materials from the website. You may use electronic versions of these materials as well. You may not, however, use other materials, access the internet for any reason besides obtaining the allowed materials, or solicit help from any other person while taking this exam.

Please sign the following statement:

In completing this exam, I did not access any online resources besides the approved course materials, the textbook, and my own notes, nor did I communicate with any other student or person about this exam. I understand that doing so would be a violation of the Student Conduct Policy.

Sign:

Printed Name:

1. Why is the depreciation of the Russian ruble likely to reduce the performance of the Russian economy?

A weaker ruble has several adverse effects

i.) It makes imports more expensive. This includes many foreign supplied intermediate goods (e.g. spare parts for aircraft)

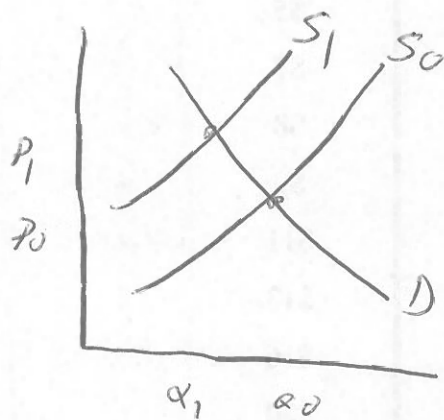
ii.) It makes it harder for Russian firms and the government to pay debts denominated in foreign currencies.

2. Explain how freezing the Russian Central Bank's foreign reserves could impact the Russian economy.

The Central Bank has \$646 billion in reserves. Ordinarily it might sell these in order to prop up the ruble. These sanctions work to prevent this, making the effects from # 1 worse.

4. Suppose that the price of musical instruments increases. What will happen to the equilibrium price and quantity under perfect competition?

- Although other interpretations are possible, the most plausible is that this is an increase in marginal cost.



$Q \downarrow$ $P \uparrow$

5. Now suppose that the supplier is a monopolist. Solve for the monopolist's price and quantity.

Monopolists maximize producer surplus.

$$P = \$24 \text{ (MU, not MC)} \quad Q = 3$$

For questions #3-6, consider the following data:

Table 1: Market for Concerts			Rev = $Q \times MU$	Total Var cost	PS
Units	Marginal Utility	Marginal Cost			
1	\$30	\$1	30	1	29
2	\$27	\$4	54	5	49
3	\$24	\$5	72	10	62
4	\$18	\$7	72	17	55
5	\$12	\$8	60	25	35
6	\$9	\$9	54	34	20
7	\$6	\$11	42	45	
8	\$3	\$13	24	58	
9	\$2	\$16	18	74	
10	\$1	\$20	10	94	

3. Assume perfect competition. Solve for the equilibrium price and quantity.

$$P = \$9, Q = 6$$

[Note: Because households and firms are indifferent at $Q=6$, $Q=5$ with an ambiguous price between \$8-12 is also correct]

6. Calculate deadweight loss from the existence of a monopoly. Explain why a monopolist generally reduces efficiency.

- \$11 ~~of~~ of surplus are lost from unit 4 not being sold ($18-7$) and \$4 of surplus are lost from unit 5 not being sold ($12-8$).

$$DWL = \$15$$

Monopoly

$$PS = 62$$

$$CS = 9 (30 + 27 + 24 - 3 \times 24)$$

$$Total = 71$$

Perfect Comp

$$PS = 20$$

$$CS = 66 (30 + 27 + 24$$

$$+ 18 + 12 + 9 - 9 \times 6)$$

$$Total = 86$$

Monopolists create deadweight loss by restricting quantity in order to raise prices.

7. Why might the makers of novel pharmaceuticals be able to make significant economic profits on their products.

- For them to make economic profits there must be a barrier to entry. Examples may be:

- i) Patents prevent other firms from legally producing the good.
- ii) Expertise prevent other firms from entering.
- iii) Fixed costs do so.

8. Consider the example, discussed in class, of lawsuit to prevent the merger of Penguin and Simon & Schuster. Explain how scarcity applies to this example.

this is a case of a possible monopsony. there are many ways to answer. one is that the possible sum of consumer and producer surplus is finite. A monopsony attempts to capture more CS, but this must come from PS.

9. What risk does the Federal Reserve take if it raises interest rates too rapidly?

Higher interest rates reduce the demand for many goods and services by incentivizing savings and making it more expensive to finance them (e.g. cars, houses) this reduces inflation. But too much can also reduce output. Lower output requires less labor, possibly creating excess unemployment.

10. What are some possible reasons for why U.S. inflation has reached its highest level in decades?

- 1.) Supply chain issues have made it costlier for firms to produce.
- 2.) Labor shortages have had the same effect.
- 3.) "Pent up demand" from the pandemic has boosted demand.
- 4.) Policy has boosted demand (e.g. low interest rates, stimulus, etc.)

For questions #11-12, consider the following data:

Melmack has 50 hours of labor. It takes 5 hours to produce a movie and 2 hours to produce a milkshake.

Gulla has 100 hours of labor. It takes 10 hours to produce a movie and 10 hours to produce a milkshake.

11. Which country has a comparative advantage in which good? Does either country have an absolute advantage?

For milkshakes.

Melmack : OC of 1 milkshake is .4 movies.

Gulla : OC of 1 milkshake is 1 movie.

Melmack has the comparative advantage.

For movies:

Melmack : OC of 1 movie is 2.5 milkshakes.

Gulla : OC of 1 movie is 1 milkshake.

Gulla has the comparative advantage in movies.

- Melmack has an absolute advantage because it takes less labor to produce both goods.

12. Design a trade that would benefit each country.

- This is just one example:

Autarky: Melmack : 6 movies, 10 milkshakes

Gulla : 2 movies, 8 milkshakes

- Let both fully specialize in the good where they have a comparative advantage.

Melmack : 25 milkshakes

Gulla : 10 movies.

Gulla trades 7 movies for 10 milkshakes leaving:

Melmack : 7 movies, 15 milkshakes

Gulla : 3 movies, 10 milkshakes

Two firms, A and B, are competing in a one-time game. They can each charge a price of \$1 or a price of \$2. The following payoff matrix shows their profits if they choose each price

Table 2: Payoffs for (A, B)

	B chooses \$1	B Chooses \$2
A Chooses \$1	(10,20)	(5, 30)
A Chooses \$2	(20, 10)	(0,25)

13. What prices would you expect each firm to choose? Explain.

B is better off choosing \$2 regardless of what A chooses.

Knowing B will choose \$2, A will choose \$1 to obtain profits of 5 instead of 0.

Bonus: True or False? The formation of a monopoly (or monopsony) always increases deadweight loss. If false, provide an example.

False. A monopoly can improve efficiency if it offsets another market failure;

i) Suppose that there is a negative externality (e.g. pollution) where, uncorrected, firms overproduce.

By restricting quantity, a monopolist could possibly correct the externality.

ii) Suppose the demand side has monopsony power and is restricting quantity to lower the price.

Monopoly power might offset this (e.g. a labor union in a market with a single employer).

