

ECO 150, Winter 2022, Exam #1

Name:

Instructions:

1. This exam consists of thirteen questions and a bonus. The bonus is harder than the other question but keep in mind that points on the bonus count the same as for any other question. 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 any printed course materials. You may not use any electronic devices, you do not need a calculator.
5. All questions will be graded out of ten points. To maximize the potential for partial credit, craft clear and concise responses. If you making assumptions, state them clearly. Use graphs as appropriate.

1. What are the trade-offs (i.e. who wins and who loses) from increased unionization?

Unionization allows workers to acquire market power in order to increase their compensation (wages, benefits, etc.). Workers who remain employed benefit.

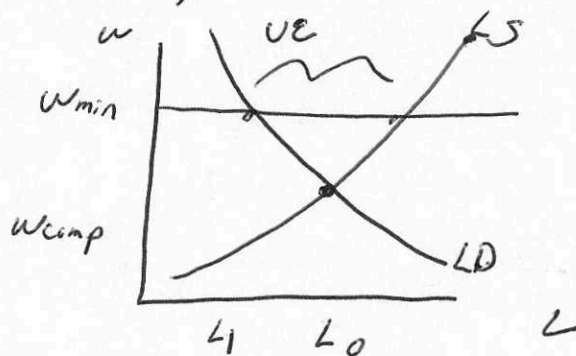
Potential ~~win~~ losers include workers who become unemployed, firms which earn lower profits, and consumers who may pay higher prices.

2. What does it mean for an opinion on economic policy to be falsifiable?

It does not mean the opinion is wrong. It means there is some hypothetical evidence that could prove that it is wrong. Falsifiability is often considered a requirement for an idea to be scientific.

3. What conditions (or assumptions in our model) make it more likely that a minimum wage will lead to major declines in employment?

If the labor market is otherwise competitive, if labor demand is not ^{too} inelastic, and if the minimum wage is above the competitive price, then it may reduce employment.



4. Consider one of the causes for lower crime rates discussed in class or in a related reading. Describe how this explanation could have reduced the incentives to commit crime.

There are many possibilities. Here is a non-exhaustive list:

- ① Better video games are a substitute ~~for~~ for actual crimes. This reduces the benefits of crime.
- ② People carrying less cash has reduced the benefits of theft...

5. True or False? Society dislikes inflation because higher prices mean that almost all households can afford fewer goods and services.

False. Wages are also a price. If wages rise faster than goods and service prices, workers will be able to afford more goods and services. Likewise, households who own firms may see greater profits (if real wages do fall) and may also have more purchasing power.

6. Why do most economists believe that higher interest rates reduce inflation?

Higher interest rates raise borrowing costs. This increases the payment on goods purchased on credit (e.g. houses, cars), which reduces demand.

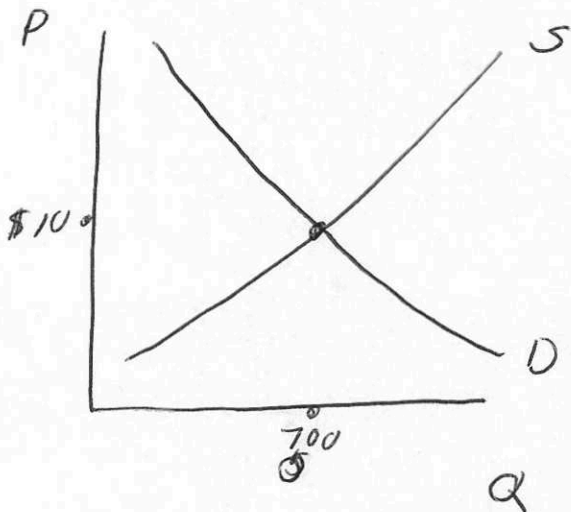
Higher interest rates also provide households an incentive to save instead of consume.

For questions #7-11 consider the following data on the market for cigarettes.

Table 1: Market for Cigarettes

Cartons	Marginal Utility	Marginal Cost	MU _{net}	MC + tax	Profit (in $\times 100$)
100	\$20	\$0.50	10	10.5	19.5
200	\$19	\$0.50	9	10.5	37
300	\$18	\$1	8	11	52
400	\$17	\$3	7	13	63
500	\$15	\$5	5	15	65
600	\$13	\$7	3	17	61
700	\$10	\$10	0	20	43
800	\$7	\$13	-3	23	...
900	\$4	\$20	-6	23	...
1000	\$1	\$25	-9	25	...

7. Solve for the equilibrium price, quantity, and price elasticity of demand.



$$P^E = \$10$$

$$Q^E = 700$$

e^d depends on where we are on the demand curve.

I will estimate it for a switch from 700 to 800 units.

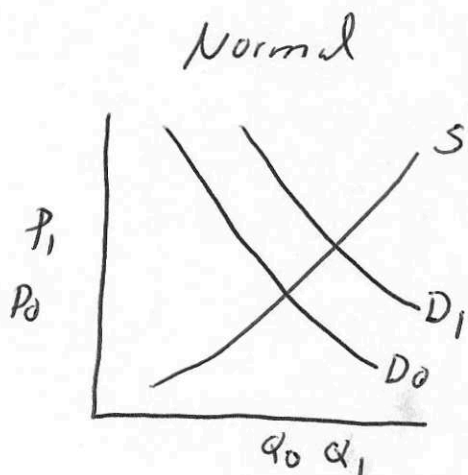
$$\Delta Q = \frac{100}{700}$$

$$\Delta P = \frac{-3}{10}$$

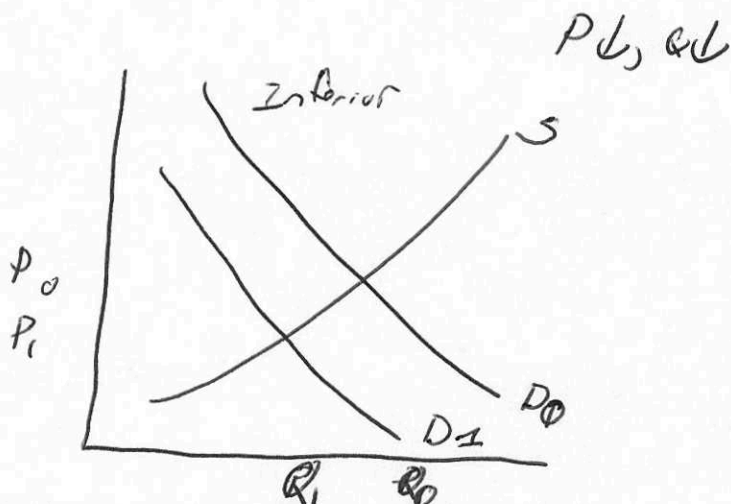
$$e^d = \frac{-1/7}{3/10} = -10/21$$

8. Suppose that average household income increases by 10%. Using our basic model of supply and demand, show and explain what happens to the equilibrium price and quantity of cigarettes.

It depends on whether cigarettes are a normal or inferior good.



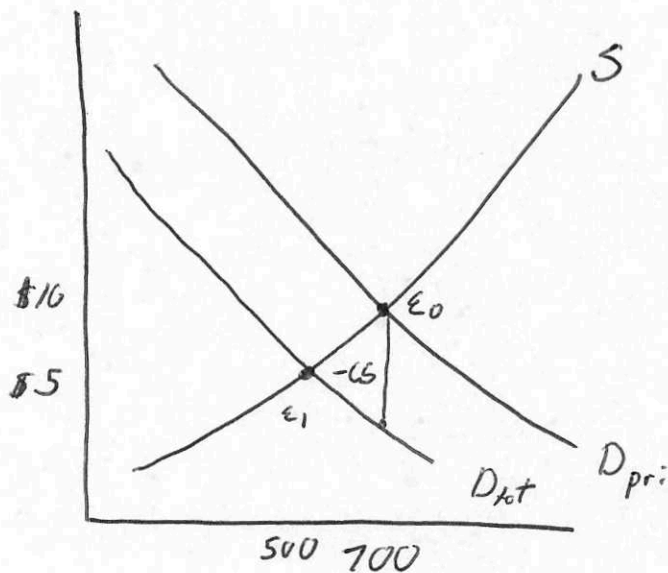
$P \uparrow, Q \uparrow$



9. How well do you think the assumptions of our basic supply and demand model fit this example?

- Firms and households are price takers. Probably a good assumption, the market seems competitive with few barriers to entry
- Rationality, seems valid for firms, who are also profit maximizers. Less clear for consumers, is addiction rational? (Not obvious)
- Full information. Are consumers aware of the health risks
- No market failures \rightarrow is there an externality?

10. Suppose that each 100 cartons of cigarettes reduces the utility of third-parties (people who neither sell nor buy the cigarettes) by \$10. Using the model of supply and demand, show how this externality may reduce efficiency.



D_{pri} is the private demand curve that does not consider the harm to 3rd parties

D_{tot} does include this we end up at E_0 which creates a region of negative consumer surplus.

11. Propose a policy that could fix the externality from #9.

Suppose we tax suppliers (we could also tax consumers) \$10. See $MC+tax$ on page.

we now end up at $Q=500$, P (pre-tax) = \$5, which is E_1 from #10.

12. Does the internet meet the criteria for a public good?

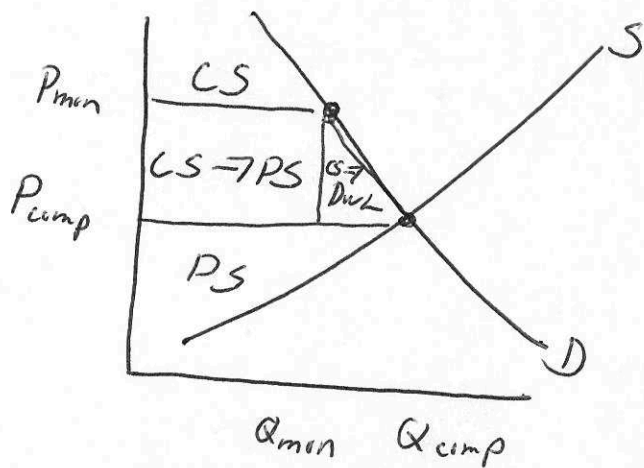
This question calls for a discussion of whether it is non-rivalrous and non-excludable. The answer is not obvious.

- Specific websites may be excludable (e.g. passwords) but is the internet itself.

- It usually is non-rivalrous, but there may be cases where it is (periods of heavy traffic).

13. Suppose that a market (not necessarily the one from #7-11) switches from perfect competition to monopoly. Explain what will happen to the equilibrium price, quantity, consumer surplus, and producer surplus.

A monopolist exploits market power by moving up the demand curve to obtain a higher price and maximize producer surplus. Quantity and consumer surplus fall.



Bonus. Go back to the example of cigarettes from #7. Suppose that the supplier is a monopolist. Show how this market power can be used to make additional profits.

See the table on page 4.) Producer surplus
is maximized at 65 when $P = \$15$ &

$$Q = 500$$