

EXAM #1

Economics 412, Fall 2020

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| Instructions |
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The pages of this exam are numbered 1 through 6. The exam will last for one hour and 15 minutes. Each question is worth one point, there are a total of 40 questions.

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| Tips for Getting a Good Exam Score |
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- **MANAGE YOUR TIME WISELY** – if you are banging your head against a wall on a question, move on! Do the easy questions first. “Go for the low-hanging fruit!”
- Select your answers on the google form (link will be shared by proctor at the time of the test)

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| Honor Regulations and Honor Pledge |
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- You must not discuss the exam with anyone who has not yet taken it.
- You must not share this exam with future students.
- You must write your name here and turn your copy of the exam in.
- You may use a simple calculator, but they shouldn't be necessary.
- You must work alone on the exam.

True/False:

a) True

b) False

1. High levels of inequality are a result of a market failure
2. Tax incidence is about who bears the true burden of a tax
3. Empirical public finance is the use of theoretical methods to determine optimal policies
4. Two variables are causally related if they move together
5. A key concern in interpreting the effect of a treatment in observational data is that we do not know what caused an individual to receive treatment
6. If treatment is endogenously determined, we don't have to worry about omitted variable bias.
7. A valid counterfactual is provided by the outcome of an individual prior to treatment
8. Difference-in-differences approach compare the change in an outcome for treated individuals against the change for untreated individuals who are otherwise similar
9. If taxicab drivers work each day until they reach a specific income target, their labor supply is downward sloping.
10. Graphically, consumer surplus is the area below the demand curve and above the price.
11. Intuitively, producer surplus is the difference between the price of a good and the consumers' willingness to pay.
12. A horizontal demand curve is perfectly elastic.
13. Dead weight loss always exists if the private market equilibrium is different from the socially optimal equilibrium.
14. Extreme congestion and traffic occur because roads are a pure public good.
15. One solution to the free riding problem is to have the government supply public goods using tax revenue.
16. As discussed in class, "crowd out" refers to government sponsored monopolies competing against private businesses.
17. The Coase theorem requires that property rights be given to the party who values them the most.
18. Goods that cause negative externalities are overprovided by the private market.
19. The average gas tax in the United States is roughly equal to the estimated negative externalities from gas consumption.
20. One externality of driving is that exposure to vehicle exhaust results in more low-birthweight children.

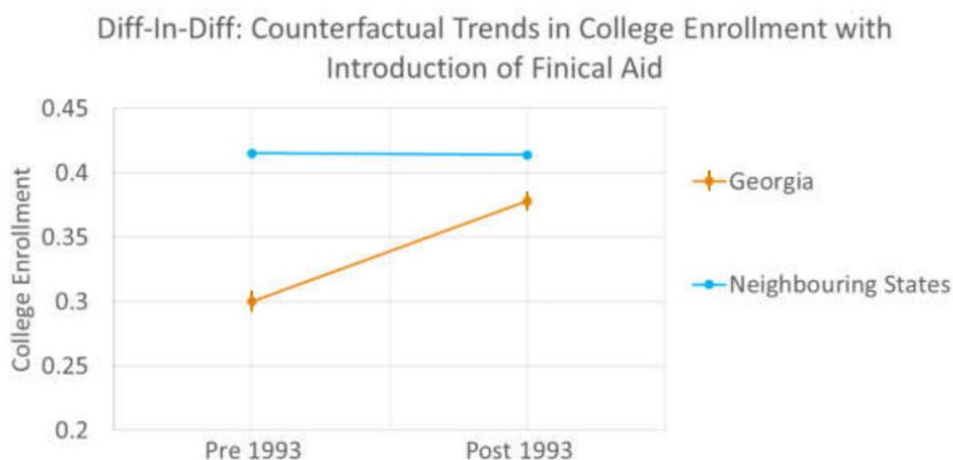
Multiple Choice

21. Which of the following is not a question of public finance?
- a. When should the government intervene in society?
 - b. How might the government intervene?
 - c. How elected officials are appointed?
 - d. Why do governments choose to intervene in the way they do?
 - e. These are all questions of public finance
22. Which of the following are or cause market failures?
- a. Externalities
 - b. Low prices
 - c. High prices
 - d. High costs of production
 - e. All of the above
23. Which of the following does not account for >10% share of federal spending:
- a. National defense
 - b. Social security
 - c. Healthcare
 - d. Welfare Programs
 - e. Interest on the debt
24. In examining the relationship between education and earnings, one might be worried that those with greater ability are more likely to pursue education and have higher earnings. In this case, ability causes:
- a. Exogenous variation
 - b. Omitted variable bias
 - c. Large standard errors
 - d. Natural variation
 - e. No problems
25. Which of the following is/are not a quasi-experimental method:
- a. Difference-in-differences
 - b. Regression discontinuity
 - c. Instrumental variables
 - d. Condition on observables
 - e. All of the above are quasi-experimental methods
26. If a good becomes less valuable as a result of one consumer's use of the good but does not become worthless to other consumers, that good is:
- a. purely excludable
 - b. partially excludable
 - c. purely rival
 - d. partially rival

27. The under provision of public goods by a private market is characterized by the:
- holdout problem
 - assignment problem
 - free rider problem
 - irrationality problem
28. In a market that produces pollution as a negative externality, a tax will result in the social equilibrium quantity if the tax is:
- greater than externality
 - levied on producers
 - slightly less than externality
 - equal to the externality
29. In the market for cigarettes Price=5 and Quantity=1000 packs. There is a negative externality of \$2 per pack and the Socially Optimal Quantity=700. Assuming that cigarettes are unregulated (and curves are all linear), what is the Dead Weight Loss in this market?
- 0
 - 600
 - 275
 - 300
 - None of the Above
30. The three problems facing a government trying to determine the optimal quantity of a public good include all of the following EXCEPT:
- preference revelation because individuals may not tell the government their true valuation of the public good.
 - preference knowledge because individuals may not know their true valuation of the public good.
 - preference implementation because it is hard to produce public goods in practice.
 - preference aggregation because it is difficult to add up the preferences of millions of citizens.
31. Which factor is likely to enable private market forces to provide more of a public good than it might otherwise provide?
- the existence of free riders who enjoy benefits but refuse to pay
 - little to no difference among individuals in their demand for the public good D
 - the existence of altruistic members of society
 - the fact that the benefits of the public good are available to everyone
32. According to part II of the Coase theorem, to achieve the efficient solution to an externality:
- the party imposing the externality must be assigned the property rights.
 - property rights must be periodically switched between the parties.
 - the government must impose taxes or subsidies.
 - property rights can be assigned to either party.

Multipart Questions:

For questions 33-35: In 1993, the state of Georgia instituted a merit aid program providing free tuition at Georgia public colleges to students with a high school GPA above 3.5. As discussed in class, researchers attempted to determine whether this program increased college enrollment in Georgia using a difference-in-differences strategy.



33. The figure above suggests that
 - a. The policy had no effect on enrollment
 - b. The policy reduced enrollment
 - c. The policy increased enrollment
 - d. We cannot learn anything from this approach

34. Given the figure above, which of the following is a concern with the difference-in-difference approach?
 - a. Georgia has lower overall enrollment rates than neighboring states
 - b. Georgia has higher overall enrollment rates than neighboring states
 - c. Georgia may have had an upward trend in enrollment prior to 1993
 - d. Georgia may have had a downward trend in enrollment prior to 1993

35. A separate pair of researchers suggest show that the composition of Georgia high school students changed dramatically relative to that of neighboring states from prior to 1993 to after 1993. This is a serious concern for interpretation of the difference-in-differences estimates as causal
 - a. True
 - b. False

For questions 36-38: The Once-ler produces Thneeds (which everyone needs) in a factory that also produces pollution. The more pollution the Once-ler produces, the lower his production costs, with the marginal benefit of x to the Once-ler equal to $MB_x = 50 - 2x$, where x is the amount of pollution produced. This pollution harms the local population of Brown Bar-Ba-Loots according to the following marginal cost function: $MC_x = 20 + 3x$.

36. How much pollution will the Once-ler produce if left to his own devices?
 - a. 17
 - b. 25
 - c. 50
 - d. 6
 - e. None of the above

37. In a landslide, The Lorax is elected president. What is the optimal quantity regulation that The Lorax would set?
 - a. 50
 - b. 6
 - c. 25
 - d. 17
 - e. None of the above

38. What is the deadweight loss caused by allowing the Once-ler to produce one extra unit? i.e. one more than the optimal quantity?
 - a. 5
 - b. 14
 - c. 36
 - d. 41

The implementation of E-ZPass in Pennsylvania and New Jersey allowed drivers to pay for toll roads electronically without using cash or card. This decreased average commute times, and reduced both traffic and pollution near the toll booths. In the assigned paper, the authors compared the difference between the treated and control group before E-ZPass to the difference between the two groups after E-ZPass.

39. The assigned paper focuses on the negative externalities of toll booths that were reduced by E-ZPass. Which externality is the main focus of their paper?
 - a. Low birthweight caused by pollution
 - b. Value of time lost due to traffic
 - c. Poor adult respiratory health from breathing vehicle exhaust
 - d. High noise levels from busy roadway

40. Which of the following would give you reason to doubt their research results
- a. People who lived near toll plazas have lower income and education levels than those living far from toll plazas.
 - b. Many highly educated individuals moved to locations near toll plazas after E-ZPass was implemented.
 - c. Even drivers who did not enroll in E-ZPass experienced faster commute times as a result of the policy
 - d. Most toll booths were located near fast food restaurant chains
 - e. None of the above.