

Final Exam  
Intermediate Microeconomics  
Fall 2016  
December 6, 2016

Name: \_\_\_\_\_

Instructions

1. If you, for any reason, undo the staple on this exam, write your name or initials on each page.
2. Answer all questions.
3. The exam will be graded out of 100 points. Points for each section and points for each question are indicated on the exam.
4. Write legibly. Illegible exams cannot be graded.
5. Do your best to fit all your answers on the front side of the exam. If you need to use the back of a page, indicate that clearly.
6. Label all figures as needed.
7. Make sure you **explain** your answers as needed. When appropriate, you should also explain any assumptions that you make to arrive at your answer. Explanations may yield partial credit.
8. Be concise.
9. The final page is intentionally left blank for extra work. If you do extra work on this page (or in any other non-standard location) that you would like to be counted, you must note it clearly near the question you are answering.
10. You are allowed a calculator and no other aids. Please leave everything else in your bag for the duration of the exam.

For marking purposes only

Part A \_\_\_\_\_

Part B \_\_\_\_\_

Part C \_\_\_\_\_

total \_\_\_\_\_

**A. Ripped From the Headlines** (6 points, 2 each part)

Read the article from the *Wall Street Journal* at the end of the exam.

1. Is there asymmetric information between Obamacare insurers and the Obamacare insured? Explain using the definition of asymmetric information.

2. If a Obamacare market now has only one insurer, how should we expect premiums to change relative to the case of multiple insurers? Why?

3. Near the end of the article, there is a description of how the government automatically re-selects a plan for participants whose plan disappears and who have not selected a new one. How could this help mitigate problems of adverse selection? Explain using the definition of adverse selection.

**B. Short Answer Questions** (5 points each, 40 points total)

1. Give an example of a positive externality. Explain why (and to whom) this is a positive externality.

2. Give two examples of factors that could shift the supply curve for a particular market. Explain whether each factor shifts the curve inward or outward.

3. If  $MC > MR$  should the firm produce additional units? Why?

4. Give an example of a moral hazard problem caused by insurance coverage and explain why it is a moral hazard problem.

5. Name two potential sources of market power, and give an example of each.

6. Suppose students in a course would like to supplement the instructor and TA with an additional tutor to be used by all students. Draw on theory from this course that would help you understand whether we anticipate that students would be likely to organize to problem the group with this benefit.

7. Draw a picture of the long run supply curve. Why does it look this way?

8. Suppose that a firm operates with marginal product of capital is  $MP_K = 5K$ , and marginal product of labor is  $MP_L = 3L$ . The firm faces a wage rate of 3 and a capital rental rate of 2. The firm is currently consuming 2 units of capital, and 3 units of labor. Is the firm optimizing its purchases of capital and labor? If it is not, which should it purchase more of: capital or labor?

**C. Medium Answer Questions** (54 points, 18 points question)

1 ((a)-(b), 3 points; (c)-(e) 4 points) Market Demand

Suppose that there are only two people in the world: Anne and Betsy. Anne's demand is given by  $Q = 200 - 2P$  and Betsy's demand is given by  $Q = 100 - P/2$ .

(a) Do these demand curves slope upward or downward? Why?

(b) Draw separate graphs of Anne's and Betsy's individual demand curves. Label all intercepts and axes.

(c) Find an expression for total market demand, assuming that the demand curves are for private goods. Draw the market demand curve in a graph, labeling axes and intercepts.

(d) Find an expression for total market demand, assuming that the demand curves are for public goods. Draw the market demand curve in a graph, labeling axes and intercepts.

(e) Explain why your pictures for (c) and (d) have different  $y$  intercepts. To do so, it may be helpful to explain the intuition for both  $y$  intercepts.

2 ((a) & (b), 3 points; (c)-(e), 4 points) Pigouvian Taxes, Externalities, and Tax Incidence

Suppose that the market demand for chocolate is equal to  $Q = 200 - (4/3)P$ . The private marginal cost of chocolate production is  $= (1/4)Q + 50$ . Chocolate production uses cocoa beans as an input. Sadly, cocoa bean producers use some terrible spray on the beans that harms chickens. Therefore, the social marginal cost of chocolate production is  $= (1/4)Q + 75$ .

(a) What is the external marginal cost of chocolate production?

(b) What is a fixed cost? And what is the fixed cost for chocolate producers?

(c) Suppose that the government levies a Pigouvian tax on \$25 per unit on chocolate producers. What are the equilibrium price and quantity in this case?

(d) Quantify the relative burden of this tax on consumers and producers of chocolate. Give exact numbers. A picture may be very helpful to figure out the tax burden.

(e) Explain why you get the relative distribution of burdens that you find in (d)

3 ((a)-(c), 4 points; (d)-(e), 3 points). Competition

Answers in this question are sequential. If you don't find the answer to a given sub-question but have some ideas about how to solve the next one, write down as much as is helpful to earn partial credit.

(a) Suppose that a perfectly competitive firm's average variable cost is  $AVC = (3/4)Q + 30$ , and the firm's marginal cost is  $MC = (1/4)Q + 40$ . Would the firm produce in the short run if the market price is 40? if the market price is 45? if it is 50? Explain why. (A picture may be helpful in finding the answer.)

(b) Find the total industry supply curve if there are 100 firms. Use that curve to find the market equilibrium price and quantity, given the demand curve is  $P = 60 - (3/400)Q$ .

(c) Now suppose that there is only one firm and it is a monopolist; this firm has the supply curve you found in part (b) and produces at all prices. Demand is unchanged from part (b). What is the new equilibrium price and quantity?

(d) Indicate producer and consumer surplus in a picture where axes, intercepts and key points are labeled. (You do not need to calculate specific values.)

(e) Characterize (not quantify; just describe) the likely change in producer and consumer surplus from the case in (b) to (d). Why do you see the changes you do?

Blank – for extra work

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POLITICS | HEALTH POLICY

## ACA Premiums Jump 25%; Administration Acknowledges Extended Enrollment

Rising costs, fewer choices in President Obama's signature domestic program

By **STEPHANIE ARMOUR**

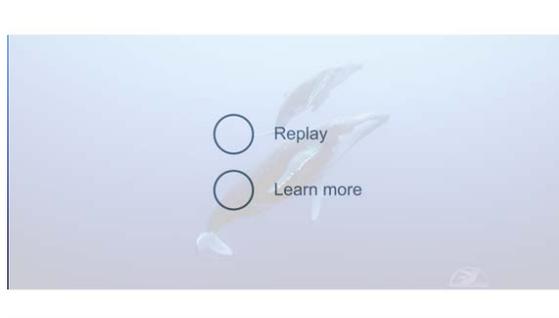
Updated Oct. 25, 2016 10:37 a.m. ET

WASHINGTON—The Obama administration Monday confirmed a 25% average jump in premiums for the Affordable Care Act's benchmark health plans and acknowledged later sign-up deadlines for hundreds of thousands of people whose insurers are dropping their plans because of rising costs.

Sharper increases had already been posted in states around the country. Market-leader insurers that are continuing to sell coverage through HealthCare.gov or a state equivalent have been granted average premium increases of 30% or more in Alabama, Delaware, Hawaii, Kansas, Mississippi and Texas. In states including Arizona, Illinois, Montana, Oklahoma, Pennsylvania and Tennessee, the approved rate increases for the market leader top 50%.

And in another blow to President Barack Obama's signature domestic program, consumers in many areas will also have few plans to pick from.

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Most of the 10 million people who currently get coverage through an insurance exchange such as HealthCare.gov don't pay the full premiums because they receive subsidies from the federal government that are pegged to insurance prices in their area. As many as nine million people currently buy individual coverage without using the site, but at similar prices, and most of them aren't eligible for subsidies.

Hundreds of thousands of consumers whose health insurance plans are being discontinued for 2017 will get some flexibility when signing up for a new plan during the Affordable Care Act's open enrollment, a sign of continued turmoil in the exchange markets.

Open enrollment for 2017 begins Nov. 1. The Obama administration wants consumers with discontinued plans on the health law's exchanges to select a new plan by Dec. 15.

<http://www.wsj.com/articles/aca-deadline-extended-for-those-who-lost-their-health-plans-1477349583>

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That is the main deadline most will have to abide by to get health coverage starting Jan.

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alize the deadline too late, there is some breathing room. Individuals whose plans are being discontinued next year because their insurer is leaving the exchange will be eligible for a special enrollment period, according to officials with the Centers for Medicare and Medicaid Services. That means later deadlines and the ability to sign up for coverage outside the regular sign up season that runs from Nov. 1 through Jan. 31.

Individuals who lost coverage can attest to their situation and sign up as late as Dec. 31 and request coverage to begin on Jan. 1. If they miss that deadline, they may be able to wait until as late as March 1 to sign up for 2017 coverage under the special enrollment rules—although that would mean a lapse in coverage.

The flexibility is necessary because of the unprecedented number of consumers who are seeing their current health plans canceled as insurers curtail their exchange participation. It means many returning consumers could conceivably wait until the last minute to sign up—a scenario the Obama administration is trying to avoid—or even enroll weeks after the official end of the open enrollment season. The flexibility may delay ability to assess the success of sign-ups for 2017, and could create headaches for some insurers if they have to process an influx of applications just before the start of the year.

Major insurers such as United Health Group Inc., Humana Inc., and Aetna Inc. are withdrawing from some exchanges, and scores of consumers have gotten notices informing them their policies will be discontinued as a result. Premiums are also rising in many states by double digits, and other consumers are losing their coverage because smaller insurers have shut down.

Despite the challenges, the Obama administration expects 13.8 million people to select a health plan on the exchanges by the end of open enrollment—an increase of 1.1 million over the end of 2016's sign up season.

Consumers will see other changes this year. People with discontinued coverage who don't pick a new plan by Dec. 15 will get assigned to a new plan that most closely matches their old policy. They will be informed of the new plan by the administration. Their new insurers will then send them a letter that includes the estimated amount of subsidy they are eligible for.

These consumers are under no obligation and still have to pay their premiums to be enrolled in the new plan.

"This year for the first time there will be a process where the marketplace will try to match them to the most similar plan," said Karen Pollitz, a senior fellow at the Kaiser Family Foundation. "It may or may not be the one you want."

Insurers are staffing up for the extra work it will take to process the new applications from people in discontinued plans because of concerns the influx could pose customer-service challenges. Hiccups are more likely in areas with only one or two insurers to pick from because other carriers are leaving the exchange.

More than 70% of consumers in states using the federal exchange will be able to find a premium that is less than \$75 a month once financial assistance is factored in, according

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ACA Premiums Jump 25%; Administration Acknowledges Extended Enrollment - WSJ

to Health and Human Services. About 20% of consumers on HealthCare.gov will only have one issuer to choose from, they said.

Consumers had the ability starting Monday Oct. 24 to begin browsing plans and policies on the federal site. All but 12 states now use the federal exchange.

“Our nation has made historic progress under the ACA, and now we want to build on that progress to further improve affordability, access, and quality,” said HHS Secretary Sylvia Mathews Burwell.

The higher premiums brought a rebuke from Republicans, however.

“When the president’s allies in Washington will try to spin the numbers, families across the country will be forced to figure out how to pay for such unaffordable insurance,” said Sen. Orrin Hatch, (R., Utah).

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