ECONOMICS IN ONE VIRUS: CHAPTER 2

Should I be free to risk infecting your grandma with a deadly virus?

BY STACI GARBER

GRADE LEVEL: 6-8 (INTRODUCTORY)
TIME ESTIMATE: 45-60 MINUTES

Lesson Overview

Students will describe externalities in their day-to-day lives and those associated with illness, especially COVID-19. Students will use the circular flow to demonstrate the effect of COVID-19 infections on the overall economy using hypothetical headlines. Students will generate solutions to internalizing externalities to achieve positive social goals. Students will evaluate different public policy options based on how well they internalized the economic externalities of COVID-19 infection.

Objectives

- Students will be able to describe positive and negative externalities.
- Students will be able to explain how public policy can help internalize externalities to achieve positive social outcomes.

Vocabulary

- Collective action problem
- Externalities
- Fine
- Negative externalities
- Positive externalities
- Subsidy
- Tax

Materials

- Warm-up hypothetical
- Vocabulary Preview Activity
- COVID-19 Externality Excerpt 1
- Internalize the Externalities
- COVID-19 Externality Excerpt 2
- COVID-19 Policy Evaluation worksheet
- Positive Externality Exit Ticket

Prework (if applicable)

None

Warm-Up

- Post or hand out warm-up hypotheticals. Ask students to reflect on how they feel about each of the hypothetical situations.
  - You are walking down the hallway to your class, and a large group of students stops to talk right in the middle of the hall.
  - You are at a concert you have been very excited about, but the drive to the concert venue was long, and you are tired. As the headliner takes the stage, the people in front of you immediately stand up. They remain standing for the entire concert.
  - You have homework that you didn't finish last night, and you are trying to finish it in homeroom. The group of kids beside you is loudly telling stories about their weekend activities.
  - Your teacher told you that you could have free time if the lesson was done early. A group of kids in class wastes time misbehaving. Your class will not have free time.
  - You used to be able to use notes on the test, but on the last unit test, someone cheated. Now no one is allowed to use notes.

- Have students discuss how they feel about each hypothetical and why they feel that way. Guide them toward the answer that they incurred a cost for someone else's behavior.

Lesson Activities

- **Vocabulary preview activity**
  - Split the class into seven relatively equal groups.
  - Hand all students the vocabulary preview sheet.
  - Have each group study one word and come up with a short skit to illustrate the meaning of the word.
  - Every group not performing should draw a one-panel cartoon for each word.
    - Externalities: instances where the overall social costs or social benefits of the activity exceed the private costs and benefits but where it is infeasible to set compensation within markets to account for this
    - Negative externality: costs on third parties that cannot be compensated for within markets
    - Positive externality: benefits to third parties that cannot be compensated for within markets
    - Collective action problem: situations where economic actors would be better off cooperating but fail to do so because of individual incentives
    - Fine: a government-imposed fee meant to discourage a certain behavior
    - Subsidy: a government payment or benefit meant to encourage a specific behavior
    - Tax: a government-imposed cost added to a financial transaction; sometimes used to discourage certain economic behaviors (e.g., Philadelphia's tax on sugary drinks to discourage their consumption)
- **Externality reading and brainstorm example**
  - Have students read the excerpt defining the externality problem with COVID-19.
  - Have students answer the questions:
    - According to the author, why is COVID-19 an externality problem?
      i. *One person's actions might make a different person very sick.*
    - According to the author, what would most likely happen if individuals were allowed to freely choose their own behaviors during a global pandemic?
      i. *Individuals might account for their own personal risk but not adequately include the risk they are causing others.*
    - According to the author, why was it especially difficult for individuals to calculate risks in the early days of the COVID-19 pandemic. Provide evidence from the excerpt.
      i. *Answers may vary.*

Some people didn't know they were infected and therefore behaved as if they weren't. This caused the virus to spread more rapidly.

- **Internalizing the externalities from the warm-up**
  - Discuss the concept that externalities impose costs on others that often cannot be captured within a transaction price. Have students brainstorm ways to capture the cost of anti-social behavior in a transaction.
  - Encourage students to think of ways to punish anti-social behavior or to reward social behavior.
  - Revisit the examples from the warm-up:
    - Have students try to think of ways to punish those who are causing harm to others.
    - Have students try to think of ways to reward people who are doing the right thing.
    - Have students share ideas and examples.
    - Ask students what was difficult about trying to discourage anti-social behavior and encourage pro-social behavior.
- **Externality Excerpt 2**
  - Pass out the Externality Excerpt 2 handout.
  - Have students read the excerpt and respond to the questions:
    - According to the author, why is contracting the virus at a shared family gathering not considered an externality?
      i. *An externality is a cost or benefit imposed on others for which it is impossible to charge compensation.*
      ii. *The people at the Thanksgiving dinner knew and accepted the risks of gathering with people outside of their own households.*
    - Identify three major externalities associated with COVID-19.
      i. *Passing on infections to third parties*
      ii. *Potential congestion of large numbers of cases in hospitals*
      iii. *Knocking out of essential industries through a major spike in infections*
    - According to the author, why is it difficult to internalize these externalities?
      i. *It is difficult to charge people who put the health of others at risk.*
- **Policy analysis activity**
  - Review the concepts of fines, taxes, and subsidies.
  - Explain to students that these are tools that governments can use to encourage certain behaviors or discourage others.
  - Distribute the policy analysis sheet.
  - Have students work in pairs to analyze the various public policies suggested at the height of the COVID-19 pandemic. For ease of understanding, the first five are

punishments of anti-social behavior, and the last two are rewarding pro-social behavior.

- Students may decide for themselves whether the policies seem effective. Some suggestions are listed below.
  - Taxes on public transportation may encourage people to socially distance on the way to work but may also be punishing essential workers who have to expose themselves to the virus as a condition of employment.
  - Fines for failing to wear face masks may reduce transmission of the virus but may punish people who are medically sensitive, not be clear enough about which masks reduce transmission, or may not provide flexibility to account for social distancing. Additionally, this may be difficult to enforce.
  - Fines for restaurants that put tables too close together may reduce spread between households, but it might not protect employees or people waiting in the lobby. Restaurants may not have an incentive to open if they can only seat a limited number of people.
  - Taxes for travel to high-risk areas might be a disincentive for people traveling to those areas and returning with infections, but these taxes might have an oversized impact on the health of the travel and tourism industry. They do not take into account the personal safety precautions people may or may not take in traveling to these areas.
  - Fines for people who fail to quarantine might cut down on transmission of the virus, but these are very difficult to enforce.
  - Subsidies for companies that can provide work-from-home options will cut down on transmission, but these subsidies will be concentrated in industries that rely on knowledge workers and will not benefit or reduce transmission among essential service workers who are often paid less generously.
  - Subsidies for sick leave might encourage people to stay home if they have been exposed to the virus, but companies might find it very difficult to continue to operate while offering generous sick leave policies because they may have trouble staffing their businesses during operating hours.
- Students should take a position on which policy they expect to be most effective.
- Have pairs report their answers to this last question. Encourage students to collaboratively and constructively challenge each other's answers.

- **Positive externality excerpt and exit ticket**
  - Distribute the excerpt and exit ticket.
  - Have students read the excerpt and respond to the prompt.
  - Score students on their ability to take and support a position with economic concepts.

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Warm-Up

Situation	How do you feel?	Why do you feel that way?
You are walking down the hallway to your class, and a large group of students stops to talk right in the middle of the hall.		
You are at a concert you have been very excited about, but the drive to the concert venue was long, and you are tired. As the headliner takes the stage, the people in front of you immediately stand up. They remain standing for the entire concert.		
You have homework that you didn't finish last night, and you are trying to finish it in homeroom. The group of kids beside you is loudly telling stories about their weekend activities.		

Your teacher told you that you could have free time if the lesson was done early. A group of kids in class wastes time misbehaving. Your class will not have free time.		
You used to be able to use notes on the test, but on the last unit test, someone cheated. Now no one is allowed to use notes.		

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Vocabulary Activity

Word and Definition	Single-Panel Cartoon
Externalities: instances where the overall social costs or social benefits of the activity exceed the private costs and benefits but where it is infeasible to set compensation within markets to account for this	
Negative externality: costs on third parties that cannot be compensated for within markets	
Positive externality: benefits to third parties that cannot be compensated for within markets	
Collective action problem: situations where economic actors would be better off cooperating but fail to do so because of individual incentives	
Fine: a government-imposed fee meant to discourage a certain behavior	

Subsidy: a government payment or benefit meant to encourage a specific behavior	
Tax: a government-imposed cost added to a financial transaction; sometimes used to discourage certain economic behaviors (e.g., Philadelphia's tax on sugary drinks to discourage their consumption)	

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COVID-19 Excerpt #1

> This is perhaps the most extreme example imaginable of what an economist would call an *externality*. The basic concept is that some purchases we make or some activities we engage in impose costs or provide benefits to other people outside of that transaction for which no appropriate compensation can be paid. For a *negative externality*, like the activity that propelled the virus into the community in Wuhan, the individuals involved did not face anywhere near the full societal costs of their actions. The implication of a genuine negative externality is that market activity, left alone, may generate too much of the consumption or interaction than is ideal for society overall.
>
> Just like with pollution, the idea here is that when choosing the extent of our social activity, private individuals acting alone will consider their own risks and benefits but take insufficient consideration of the risk of affecting others, not least because they will not know whether they themselves are infected. They will consider the private costs of their actions but take insufficient account of the external costs of their behavior. As a result, too much human interaction will occur relative to what is best for society. The outcome, in economic terms, will be inefficient.
>
> —*Economics in One Virus,* pp. 18–20

- According to the author, why is COVID-19 an externality problem?
  a. One person's action might make a different person very sick.
  b. If one person is behaving badly, only that person will incur the cost.
  c. The person who started the pandemic will eventually have to pay the total cost.

- According to the author, what would be most likely to happen if individuals were allowed to freely choose their own behaviors during a global pandemic?
  a. Individuals would overestimate their personal risk and stop interacting with others to protect themselves.
  b. Individuals might account for their own personal risk but not adequately include the risk they are causing to others.
  c. Individuals will underestimate their own personal risk and overestimate their risk to others.

- According to the author, why was it especially difficult for individuals to calculate risks in the early days of the COVID-19 pandemic. Provide evidence from the excerpt.

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Internalize the Externalities

Situation	How can you punish people who are causing harm to others?	How can you reward people who are doing the right thing?
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You are at a concert you have been very excited about, but the drive to the concert venue was long, and you are tired. As the headliner takes the stage, the people in front of you immediately stand up. They remain standing for the entire concert.		
You have homework that you didn't finish last night, and you are trying to finish it in homeroom. The group of kids beside you is loudly telling stories about their weekend activities.		

Your teacher told you that you could have free time if the lesson was done early. A group of kids in class wastes time misbehaving. Your class will not have free time.		
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COVID-19 Excerpt #2

> Now it's worth being crystal clear here about what the externality is and isn't. An externality, to reiterate, is a cost or benefit imposed on others for which it is impossible to charge compensation. It is nothing to do with the risk judgments of individuals. Two households might have decided to bear the risks of COVID-19 infections by getting together to share Thanksgiving. If a member of one household then infected a member of the other household, this wouldn't be an externality—it was a risk the individuals bore willingly and knowingly. The externality is the risk to other people outside of these households resulting from their meet-up: their colleagues at work, the staff who served them in hotels en route home, or the congestion at hospitals if any of those household members subsequently required medical treatment.
>
> So, the primary externalities with this virus are passing on of the disease to third parties, the potential congestion of large numbers of cases in hospitals, or the knocking out of essential industries through a major spike in infections. There is no way to charge people who put others' health at risk in these ways.
>
> —*Economics in One Virus,* p. 23

- According to the author, why is contracting the virus at a shared family gathering not considered an externality?

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- Underline the three major externalities in the text.
- According to the author, why is it difficult to internalize these externalities?

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COVID-19 Policy Evaluation

Directions: For each of the following policies, identify whether it punishes someone who is behaving dangerously or rewarding someone who is behaving safely. Determine whether you think the policy would be effective and explain why or why not. The first answers from the first boxes are already done for you. All examples can be found on page 28.

Policy	Intended Outcome	Punishes someone who is behaving dangerously?	Punishes someone who is behaving safely?	Do you think this policy is effective? Why or why not?
Taxing public transportation	Keep people out of crowded and enclosed spaces			
Fines for not wearing face masks				
Fines for restaurants that put tables too close together				
Taxes for travel to high-risk areas				

Fines for failing to quarantine				
Subsidies for companies with work-from-home policies				
Subsidies for offering sick pay				

- Which of the above policies would be most effective in preventing the spread of the virus? Why?

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Positive Externalities Excerpt and Exit Ticket

Directions: Read the excerpt below and answer the questions on the bottom.

> There is also a *positive externality* that arises from someone having contracted and recovered from the disease. That's because, once someone has recovered, they have immunity to being reinfected (at least for a time) and so are unable to spread the disease to those who are susceptible to infection. This, of course, reduces the risk to others, as well as providing a source of labor and support to those yet to be infected.
>
> —*Economics in One Virus,* p. 31

- Given both the positive and negative externalities associated with COVID-19 infection, should the government encourage low-risk individuals to become infected? Why or why not?

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Rubric:

Criteria	Exceeds Expectations (3)	Meets Expectations (2)	Needs Improvement (1)
Clear and valid response	Response takes a clear position and supports the answer with valid economic reasoning using terms and referencing the text	Response takes a clear position and supports the answer with some economic reasoning while attempting to use economic terminology	Response fails to take a clear position or inappropriately applies economic reasoning and vocabulary