

Benefits

Class 3

April 7, 2025

Logistics

- Programming language of choice
 - Make sure to complete the Lieber and Lockwood reading quiz by tomorrow at midnight
 - Finkelstein et al. (2012) quiz due Wednesday before class
 - Will have insurance programs and groups assigned by Wednesday
-

What programming language are you planning on using?

Stata

0%

R

0%

Python

0%

Other

0%

Benefits of Social Insurance

Is All This Spending Worth it?

- It's easy to see the costs; it's hard to know the benefits
 - In typical markets, prices signal the value of a good
 - People will only buy if the value they receive is at least as much as the price
 - We have no prices for social insurance
 - How do we think about the value of social insurance?
-

What do you think are the benefits of social insurance?

Nobody has responded yet.

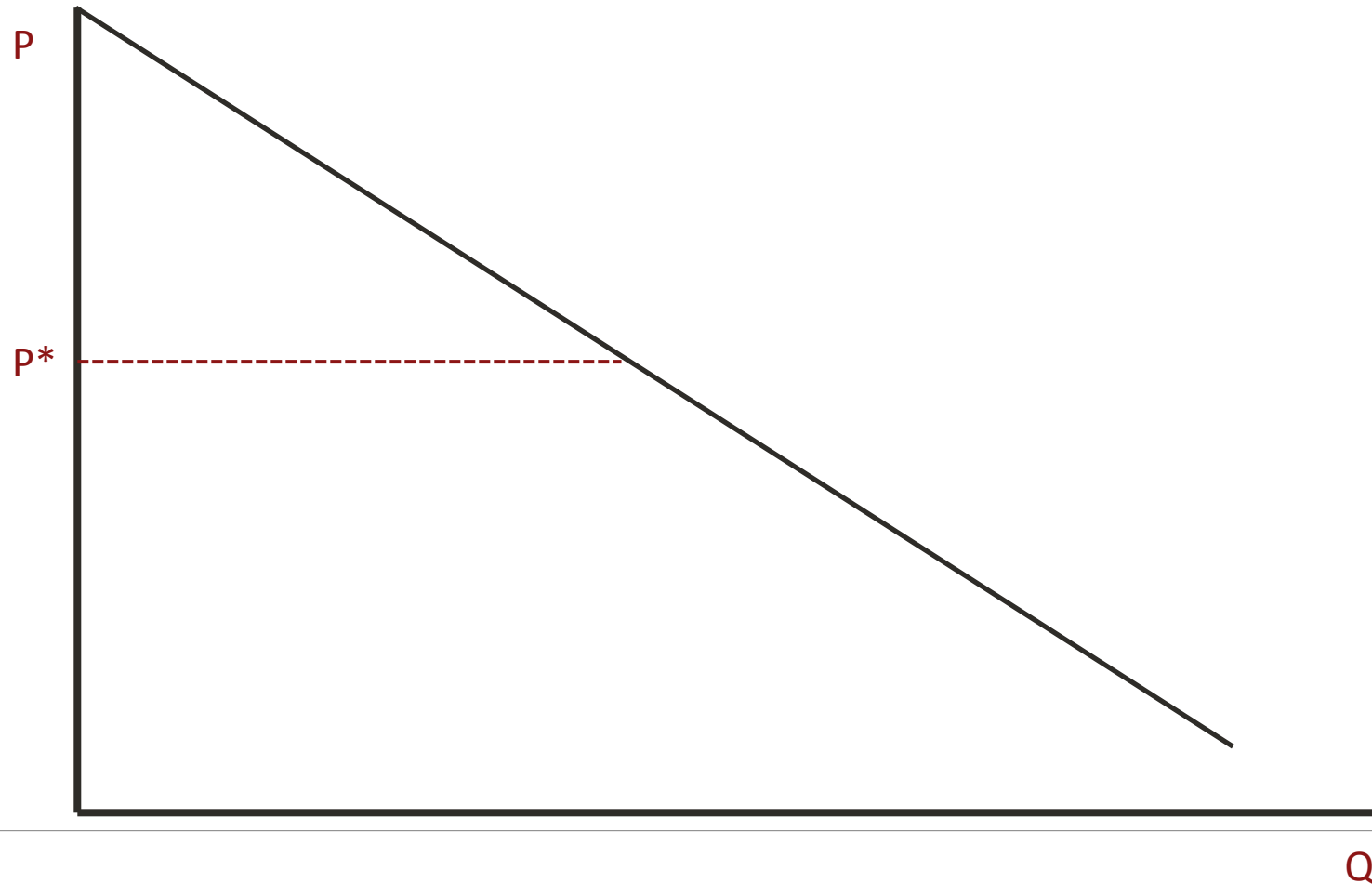
Hang tight! Responses are coming in.

People who Receive Social Insurance

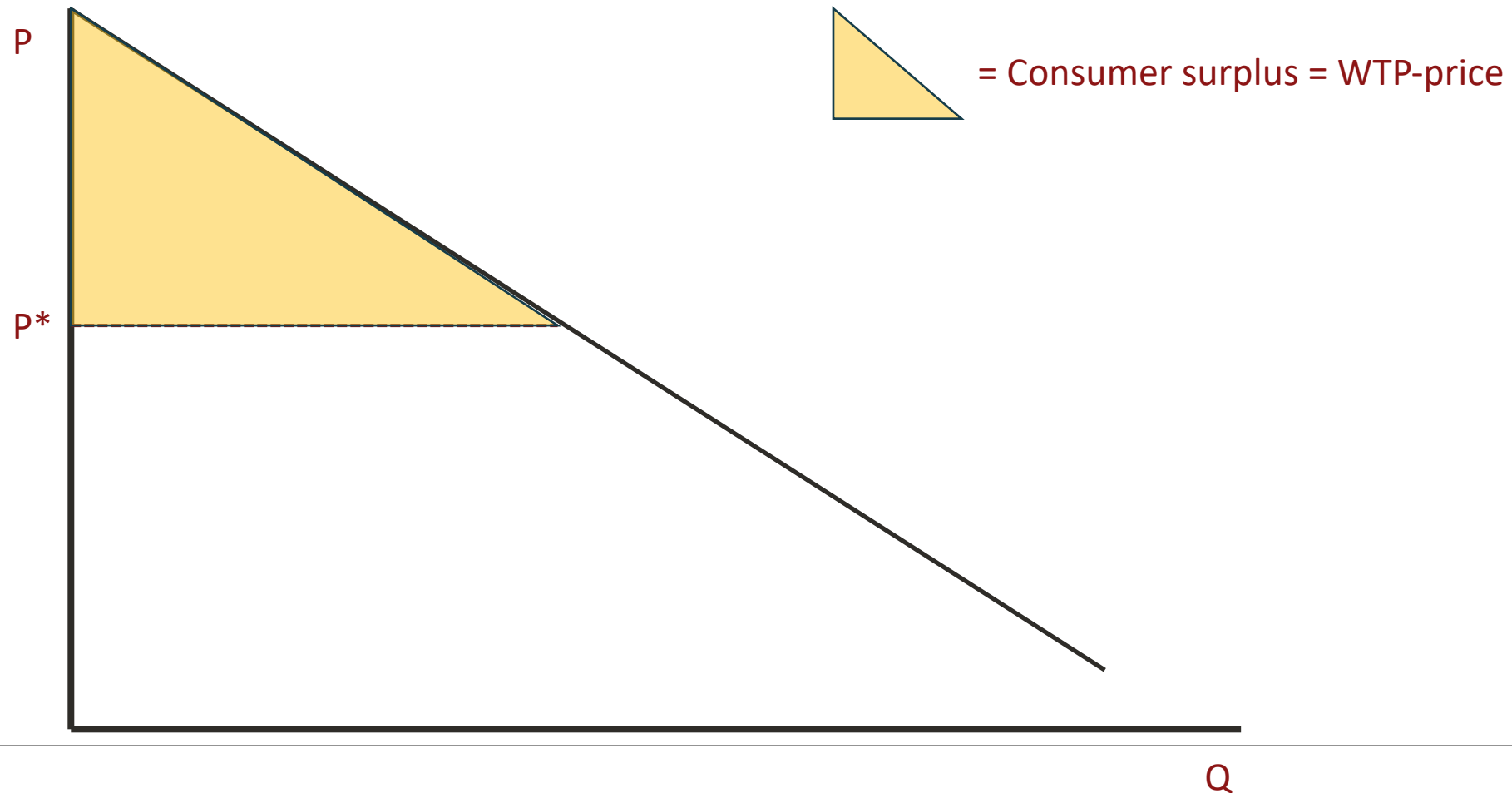
- 9 in 10 elderly receive social security (51.8 million)
- 7.2 million disabled workers receive disability insurance
- 1 in 4 working age adults and 1 in 2 children participated in a safety net program

Many of these people are economically vulnerable and probably benefit from more money

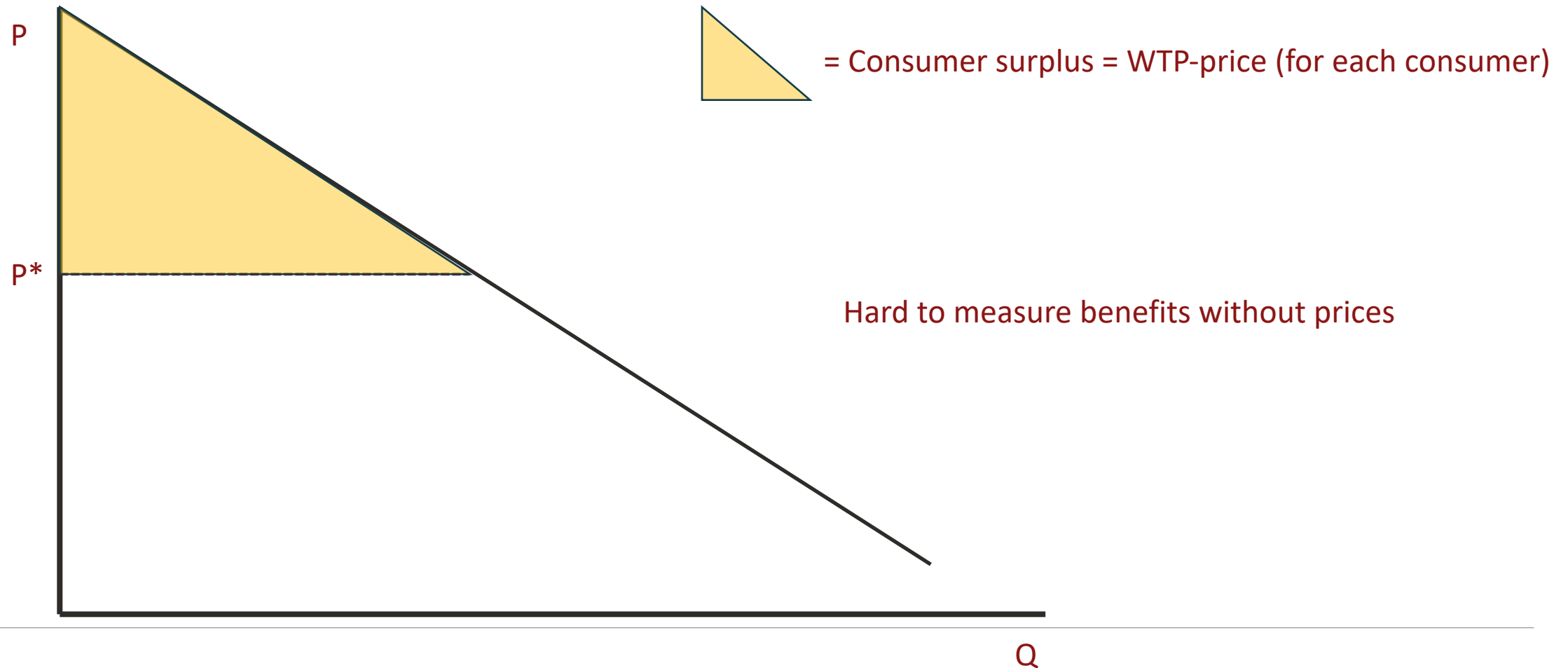
Typical Way to Measure Benefits



Typical Way to Measure Benefits



Typical Way to Measure Benefits

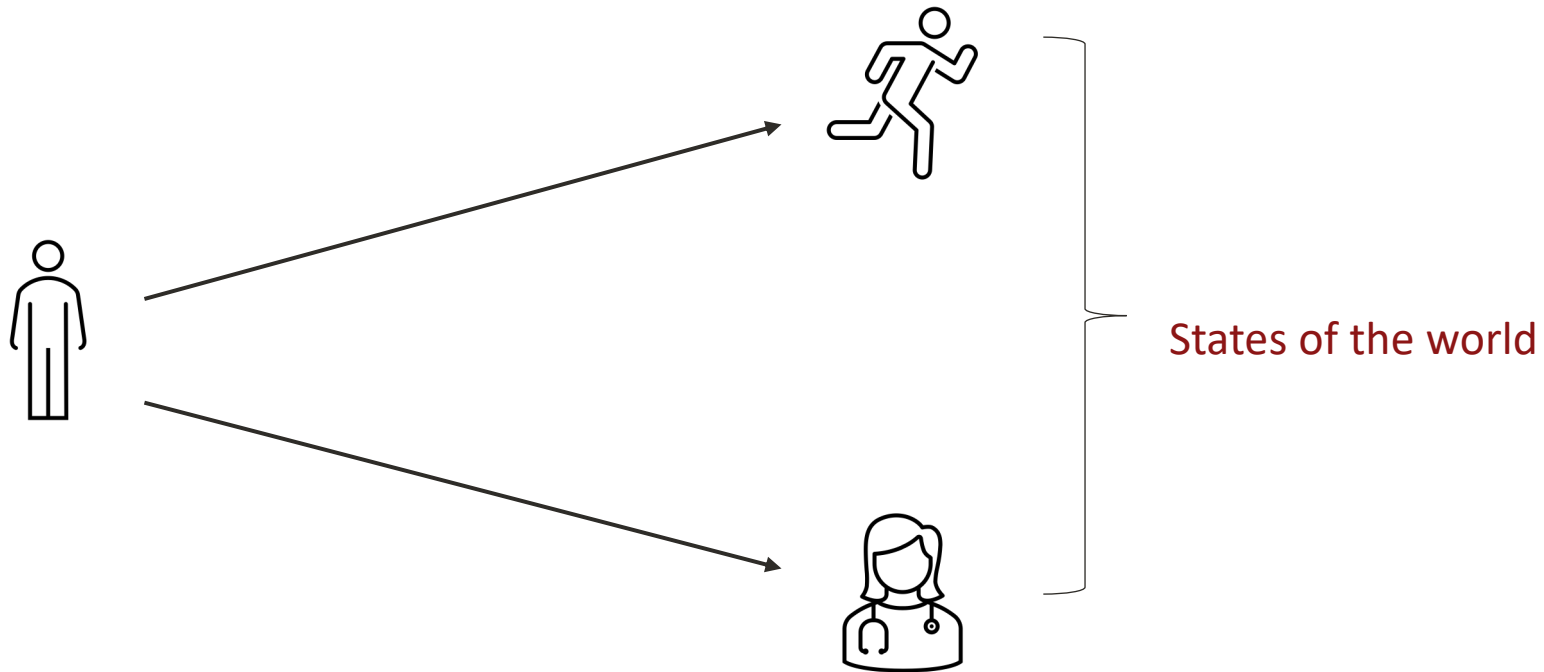


Insurance Value

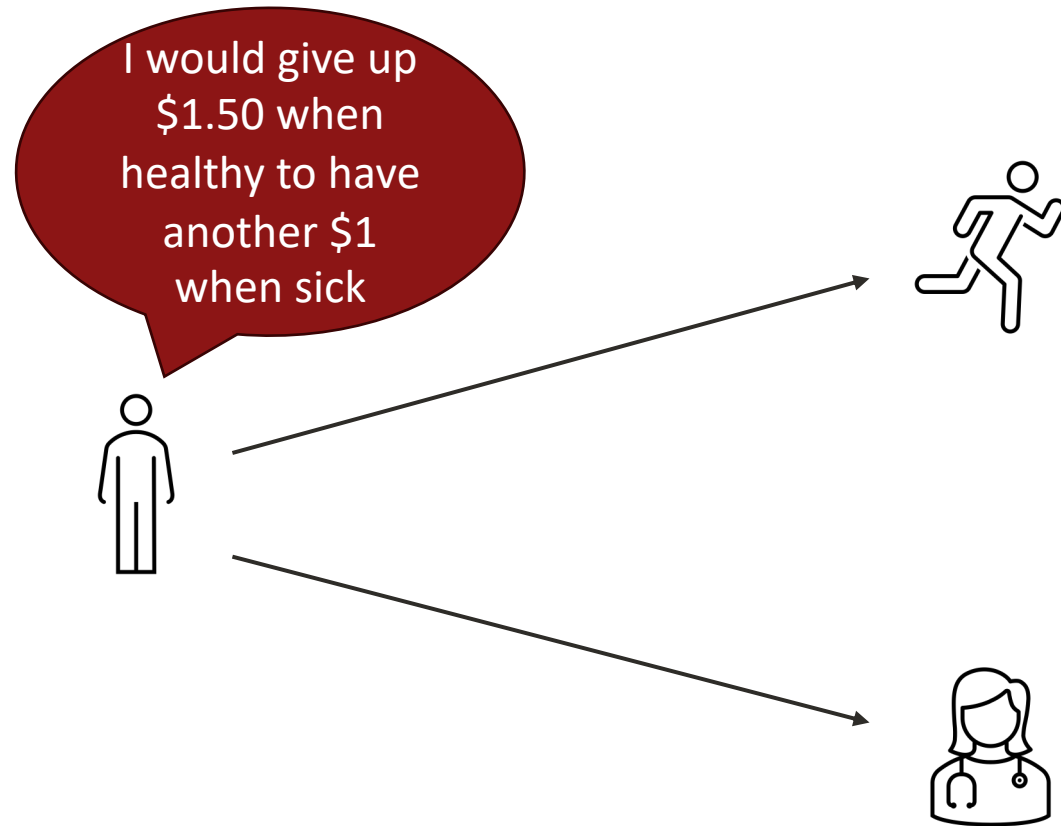
The "Insurance" of Social Insurance

- Most people value a dollar more when bad things happen than when good things happen
 - Example: A dollar is likely more valuable when you are unemployed than when you are earning \$1 million per year
 - We can create value by moving dollars from good outcomes to bad outcomes
 - The insurance value is how much I benefit from moving resources between states—or outcomes—of the world
-

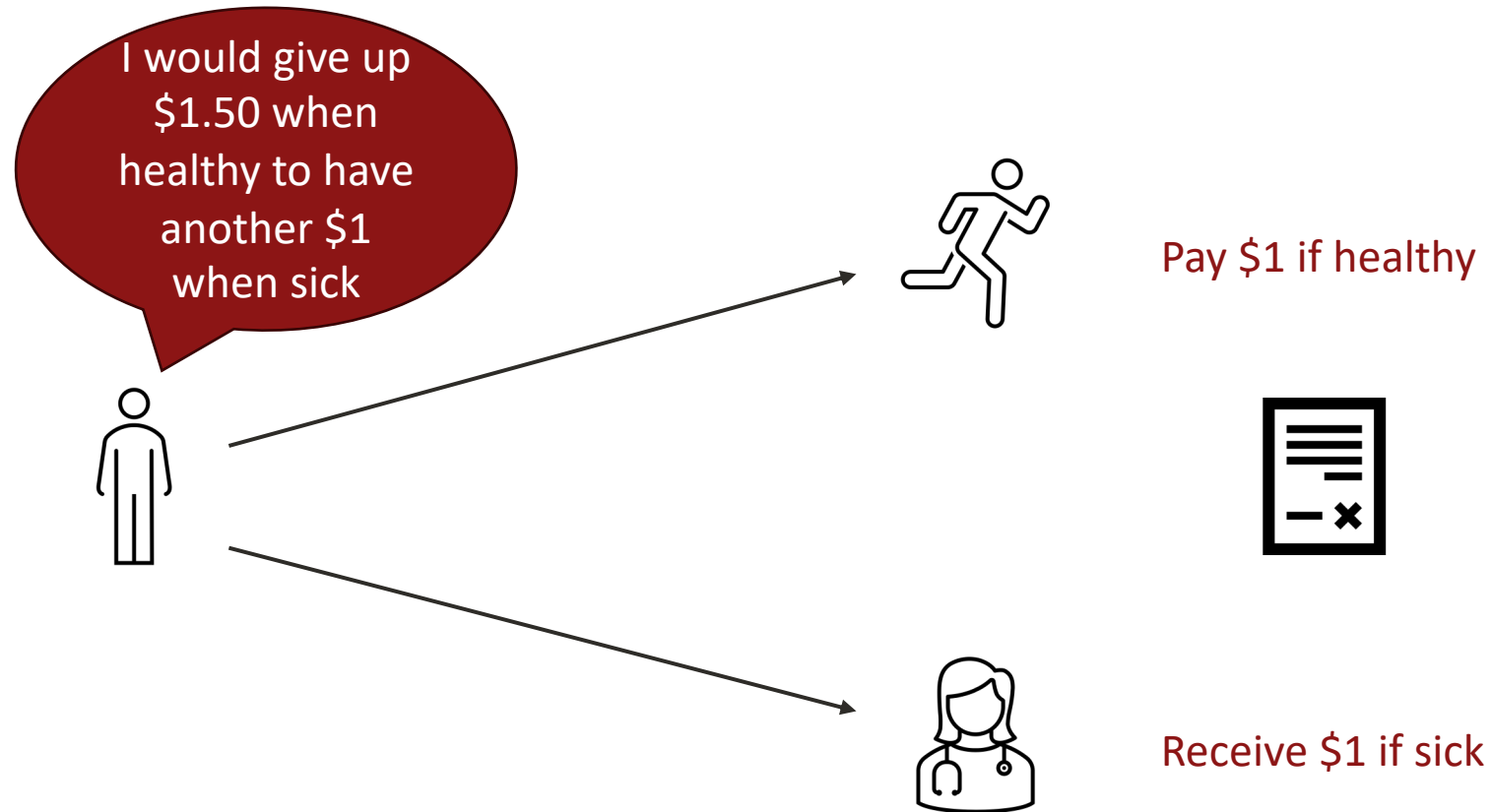
The “Insurance” of Social Insurance



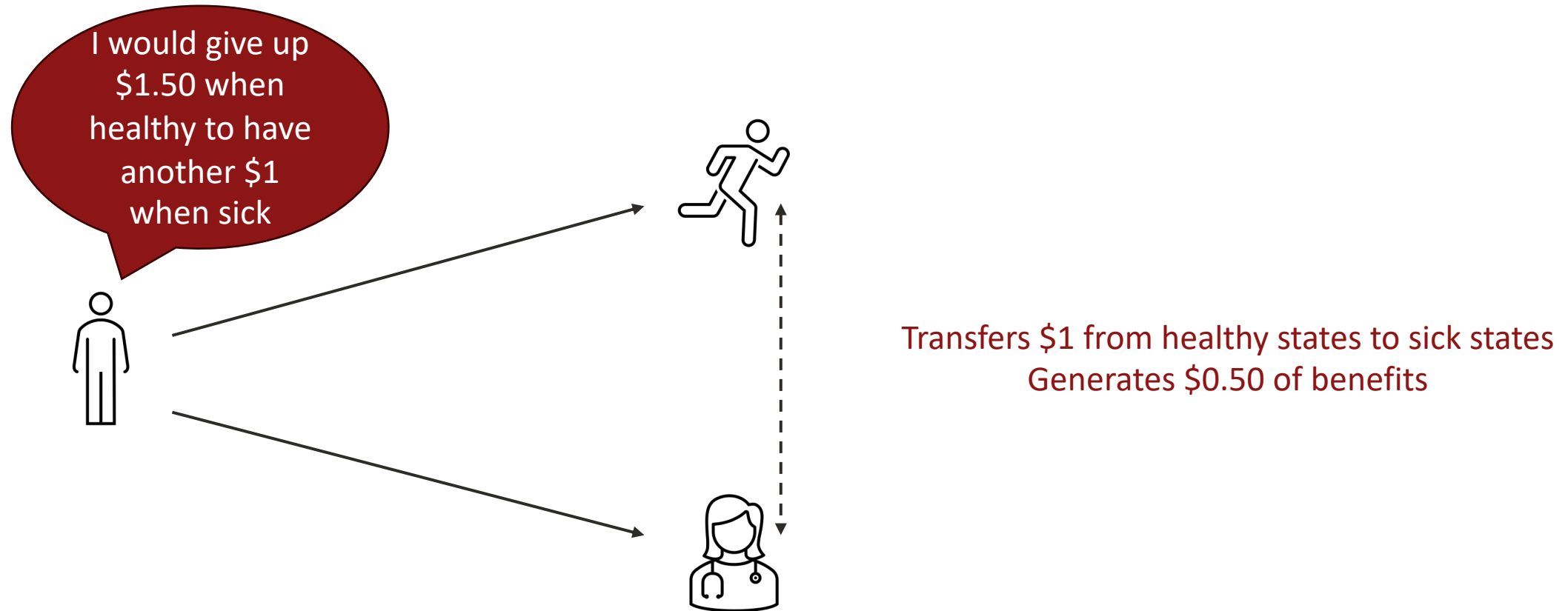
The “Insurance” of Social Insurance



The “Insurance” of Social Insurance



The “Insurance” of Social Insurance



The “Insurance” of Social Insurance

- The math behind this. Let's look at the Lagrangian of an individual:

$$V(y) = U(c) + \lambda_{state}(y - c)$$

- Let's find the marginal utility of an extra dollar of income:

$$\frac{\partial V}{\partial y} = \lambda_{state}$$

- The maximum the individual would pay to transfer a dollar from healthy to sick is

$$\frac{\lambda_{sick}}{\lambda_{healthy}}$$

The “Insurance” of Social Insurance

- Now for a more general social insurance expression
 - Suppose you marginally expand the program. The value is
$$MB = E[b] + Cov(\hat{\lambda}, b)$$
 - The parameter b is the marginal increase in benefits (in terms of your utility)
 - $\hat{\lambda}$ is normalized marginal utility. It's your marginal utility relative to the other states
 - The first term is the *transfer value*
 - The second term is the *insurance value*
 - In words
 1. You benefit from extra resources regardless of the state
 2. You benefit from how much these resources are concentrated in high marginal utility states
-

Insurance Examples

- Health insurance – how much you would pay to transfer money from healthy to sick
 - Disability insurance?
 - Unemployment insurance?
 - Social security?
-

Measuring Insurance Value

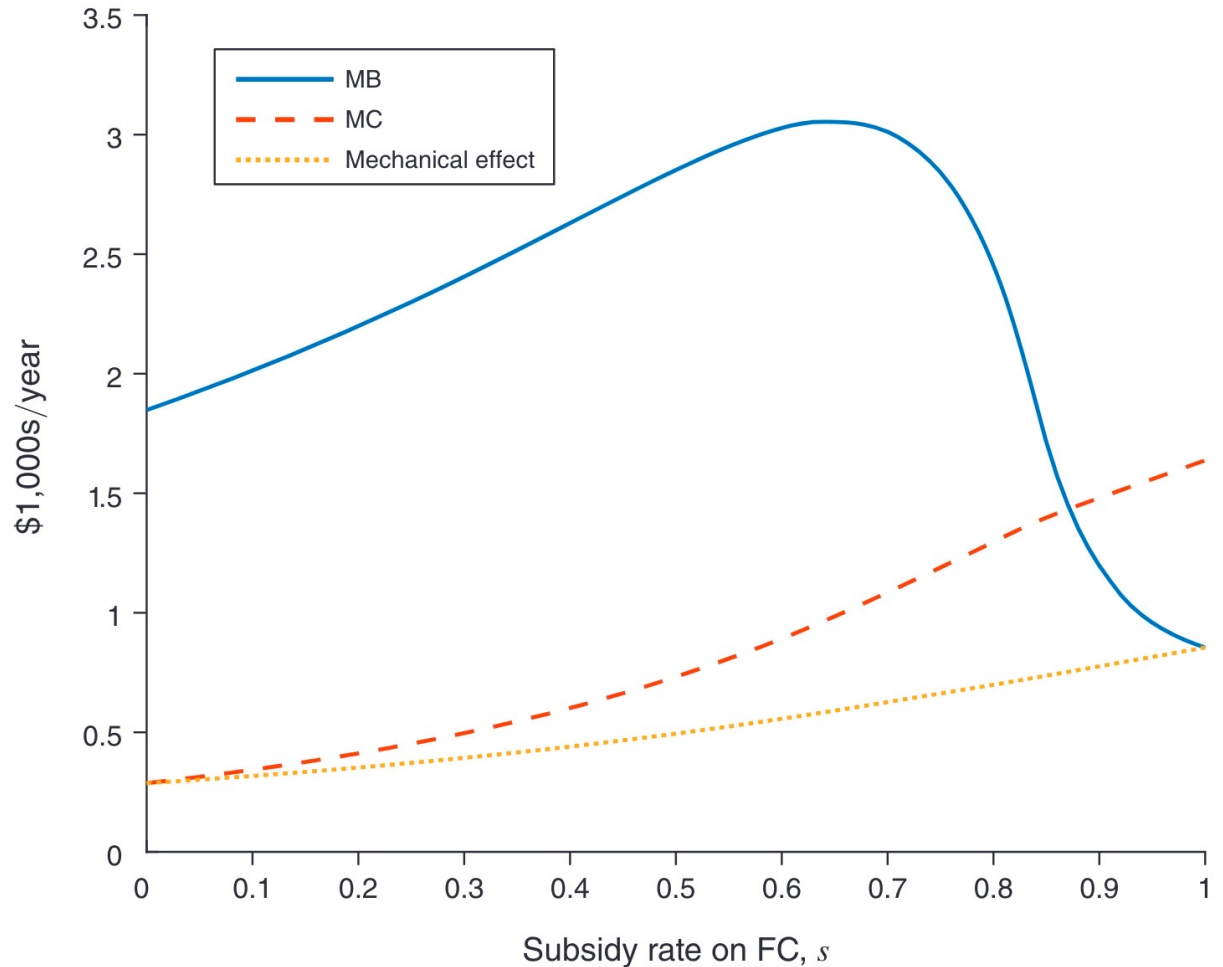
Remember ingredients from Lieber and Lockwood:

1. Measure distribution of benefits across states of the world
 - Use distribution of benefits across people/time
2. Measure link between marginal utility and benefits
 - Often do so with model; assumes what marginal utility is
 - Typically, marginal utility is $c^{-\gamma}$, where c is consumption and γ creates decreasing MU (CRRA)
 - Therefore, need to measure distribution of consumption and its correlation with benefits

$$Cov(\hat{\lambda}, b) = Cov\left(\frac{c^{-\gamma}}{E[c^{-\gamma}]}, b\right) = \sigma_b \sigma_{\hat{\lambda}} Corr\left(\frac{c^{-\gamma}}{E[c^{-\gamma}]}, b\right)$$

Lieber and Lockwood

- The distance between the blue line and yellow line is the insurance value
- What might lead to a mis-estimation of the insurance value?



Insurance Benefits in Policy Memos

- You can potentially estimate the insurance benefit in your policy memo
 - You need:
 1. Joint distribution of consumption and the social insurance benefit
 - Potential data sources are PSID, CEX, HRS...
 2. A measurement of the ex post value of the social insurance benefit
 - You can find a paper that estimates this or estimate it yourself
 - If you want to do this, come talk to teaching team about your specific policy
-

Social Value

The “Social” of Social Insurance

- The insurance value is only a piece of the puzzle of the benefits
 - Example: suppose you are born with a disability. What is your insurance value?
 - We also have *social preferences* for who deserves more or less resources
-

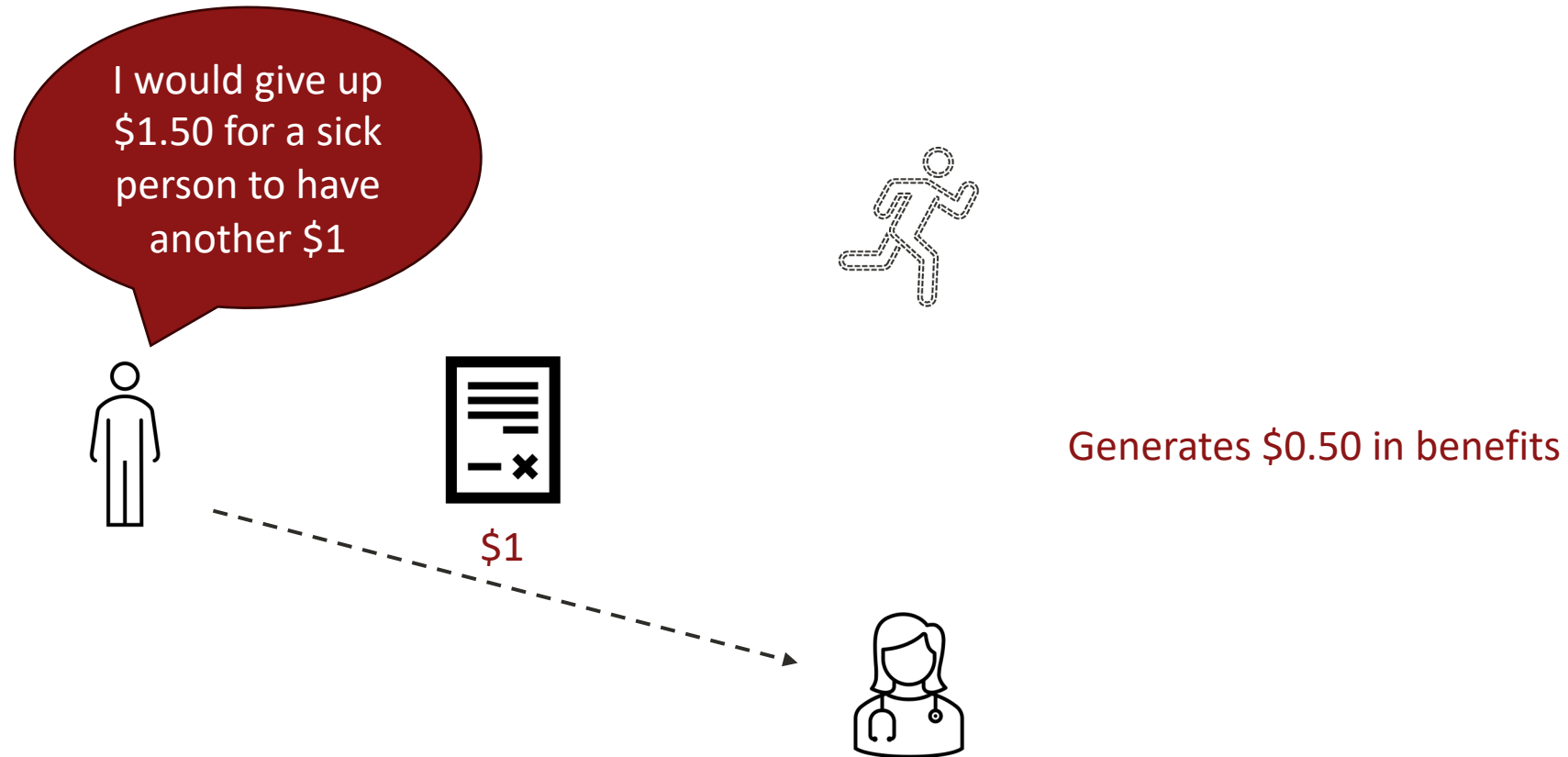
What are some of these social preferences?

The “Insurance” of Social Insurance

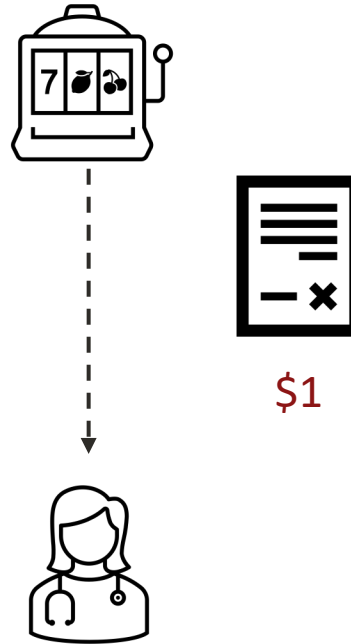
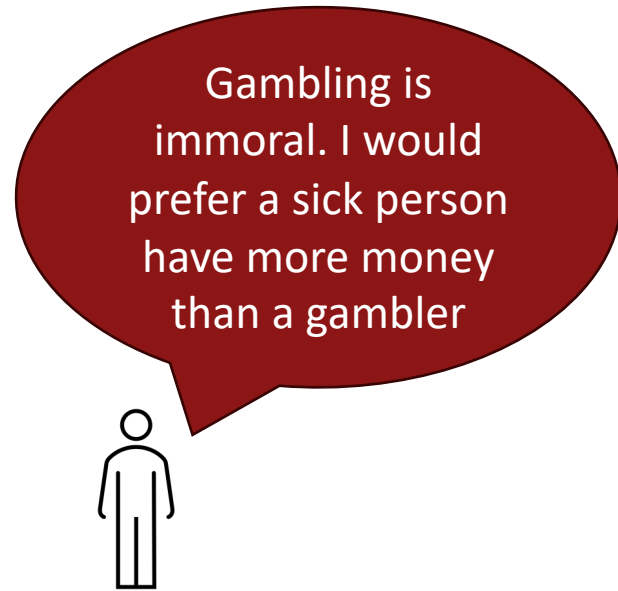
I would give up
\$1.50 for a sick
person to have
another \$1



The “Insurance” of Social Insurance



The “Insurance” of Social Insurance



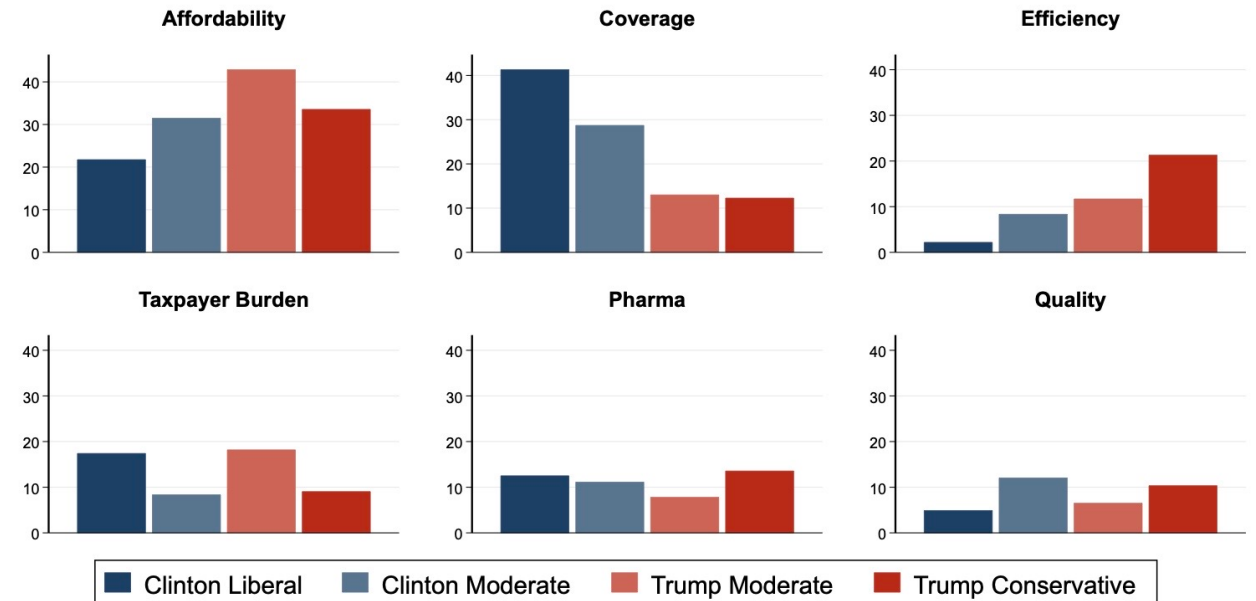
The “Social” of Social Insurance

- How do we modify the insurance value when considering social preferences?
 - Instead of considering marginal utility λ , you use social marginal utility λ_g
 - The final expression changes, but we won't cover it here
 - Why do economists care about λ if the true social value is λ_g ?
-

Measuring Social Value

- We don't need to simply assume what social preferences should be
- We can measure how people think
- What might bias people's social preferences away from what they truly care about?

(B) WHAT WOULD BE THE GOALS OF GOOD HEALTH INSURANCE SYSTEM? TOPICS BY POLITICAL AFFILIATION



Other Benefits – Externalities and Internalities

- Some of the benefits of social insurance might not be from the insurance itself
 - Externalities
 - Does government health insurance for children reduce future healthcare costs?
 - Does long-term care insurance help family work more?
 - Internalities – behavioral biases
 - Do people save too little for retirement?
 - Do people underestimate the health benefits of going to the doctor?
-

Putting Benefits and Costs Together

- We want the policy p to maximize the net benefits

$$B(p) - C(p)$$

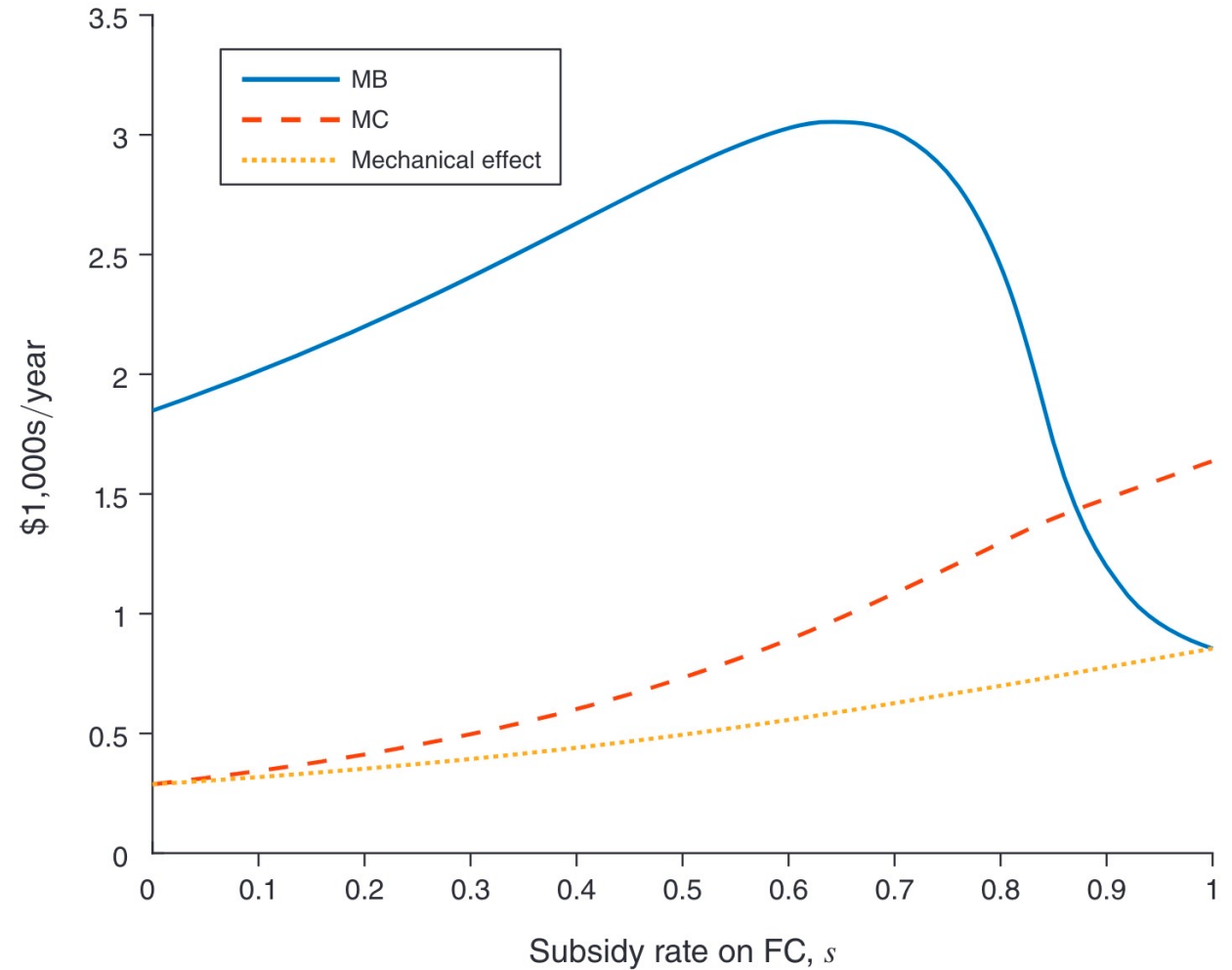
- We can take derivatives with respect to p and set to zero to get max:

$$\frac{\partial B}{\partial p} - \frac{\partial C}{\partial p} = 0$$

In other words, the marginal benefits equal the marginal costs

Lieber and Lockwood

- The intersection of the MC curve and the MB curve is the optimal level of benefits



Brainstorming Benefits and Costs

- We have talked a lot theoretically about benefits and costs
 - Now, we will brainstorm some benefits and costs for various social insurance programs
 - We divide into groups based on social insurance programs and for 10 minutes discuss
 - Primary costs of program
 - Primary benefits of program
 - How policies may trade off these benefits and costs
 - After the 10 minutes, we will reconvene and each group will share what they found
-

Lieber and Lockwood (2019)
