



PA 4010

Public Affairs

Decision Making

SESSION 10: INTRODUCTION TO BEHAVIORAL DECISION
MAKING

MONDAY SEPTEMBER 19

Reminders and Updates

- ▶ Homework 2 is due this evening at 11:59pm.
 - ▶ If you've already submitted it, please make sure you review Question 3 and re-submit if needed.
 - ▶ Questions? Any that we should review together today?
- ▶ Part 1 of Behavioral Insights Paper is going to be moved by at least 1 week.
 - ▶ Information is now published on Carmen.
- ▶ Last class of this current section (Rational behavior)
 - ▶ Moving into Behavioral (non-rational) decision making



Behavioral Insights Paper General Instructions

General Instructions for the Behavioral Insights Paper

******Note: These are general instructions to help you start thinking about this assignment and what it entails. More details will be discussed in class, and a grading rubric will also be provided.******

For the behavior insights paper, you will first identify a policy implementation or management context where behavioral or cognitive limitations to rational decision-making may create a barrier to achieving the policy or program's intended outcomes. You will then apply the insights learned throughout the course to complete a decision analysis and proposal to improve decision outcomes in the decision context.

The paper should be divided into three sections corresponding to the main components of the course:

- (1) describe the decision-making process in this context, including implications of mistakes;
- (2) identify cognitive and behavioral limitations to rational decision-making in this context, including specific heuristics or biases that may affect decisions; and
- (3) propose an intervention to address the limitations and improve the decision process.

You will work on the paper in stages throughout the semester. You will turn in a draft that includes Part #1 and Part #2 of the paper and then, during finals week, you will turn in your revised Parts #1 and #2 along with Part #3.

The full final paper should be about 2,000 words, though this is just a loose guideline.



Part #1: Describe the Decision Context

Decision Identification

First, describe the decision context, including the policy or management area that you will use for your decision analysis, and who is making the decision. Second, identify the components of a rational decision in this context, including the problem to be solved, the decision maker's objectives, the alternatives available to the decision-maker, the potential consequences of the decision, and tradeoffs that may be encountered.

Behavioral Map

What does the decision-making process look like in this context? Diagram the decision process using a behavioral map, indicating the decision steps and action steps.

You do not need to identify barriers to the decision process at this point, but simply provide an overall diagram of the decision process. For examples, see [“Irrational Labs” for an example related to FAFSA \(page 7\)](#) ↓ and [“Practitioner’s Playbook” \(Figure A1, page 28\)](#) ↓ for an example applied to retirement savings (note: only the “decision steps” and “action steps”).

Provide a summary of your behavioral map in the text, as well as a draft of your Behavioral Map as an Appendix. You will revise your Behavioral Map in Part #2 of this assignment and will revise turn in one final revised Behavioral Map as an Appendix to your final assignment.

Implications of Mistakes

What types of mistakes or “suboptimal” decisions are common in this context? Why are mistakes or suboptimal decisions in this context problematic for individuals and/or for general public welfare? Make sure to draw from relevant external sources about your decision context and include citations.

This section should be about 2-3 pages double-spaced, excluding figures and references

Agenda for Today

- ▶ Moving into Part II of Class
- ▶ Rational Decision Making Meets Human Behavior
 - ▶ When observed preferences might not actually be equal to true preferences
 - ▶ People make decisions that are suboptimal for themselves, and often, suboptimal for social welfare
 - ▶ Diagnose these situations so that we can improve social welfare more efficiently than more costly policy interventions

→ Quick return to the intuition of Bayes Theorem

- ▶ The heart of Bayes Theorem is that people at their core make updates to their beliefs based on new information.
 - ▶ I hope that was at least partially clear from the example in Workshop 2.
- ▶ Supposedly the story of how Bayes began to think through this is that he imagined a big flat table and a ball that randomly stopped rolling somewhere on the table.

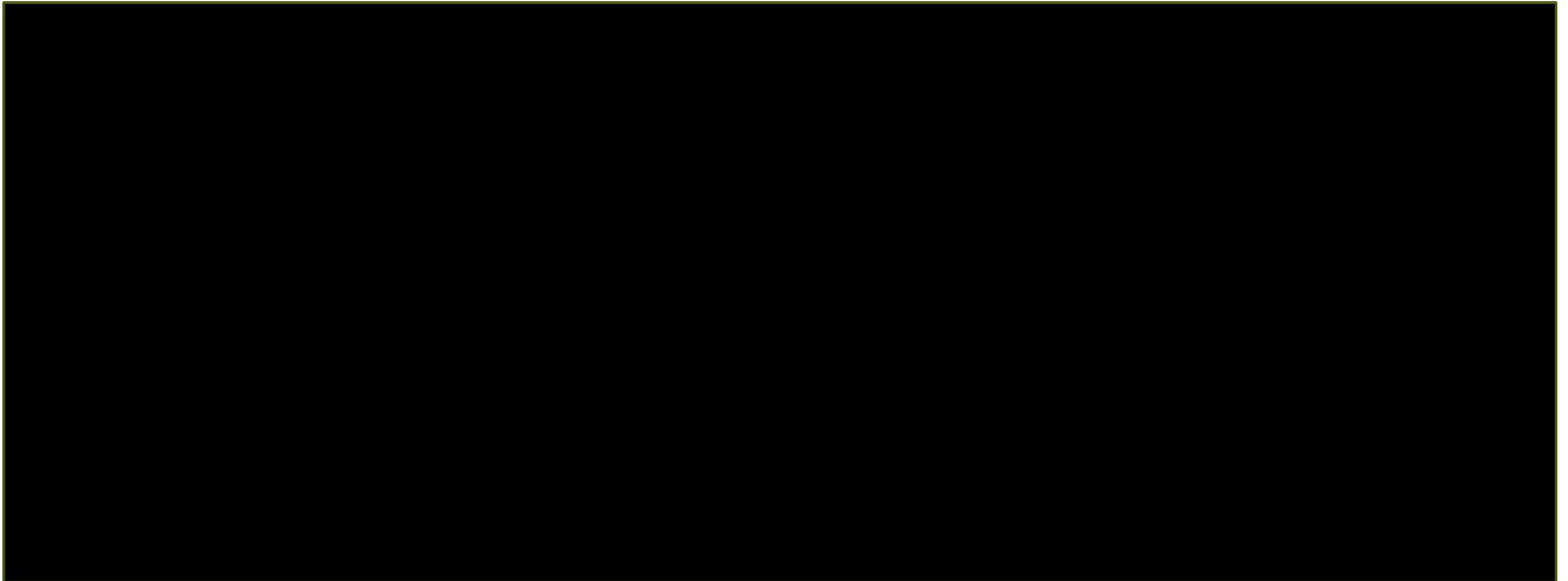
Quick return to the intuition of Bayes Theorem

There are something like 80 squares on this table.

Initially our belief that the ball is in any of these squares in $1/80$.

Quick return to the intuition of Bayes Theorem



Quick return to the intuition of Bayes Theorem

Is it the ball on the right?

... Apparently not.

(Let's incorporate this into our guess of where the ball is)

Quick return to the intuition of Bayes Theorem



Quick return to the intuition of Bayes Theorem

Now, we have had much more information, and so our guess of where the ball should be is much more informed.

Quick return to the intuition of Bayes Theorem



We can guess with pretty good certainty now where the ball is (knowing that it is somewhere in the un-explored area).

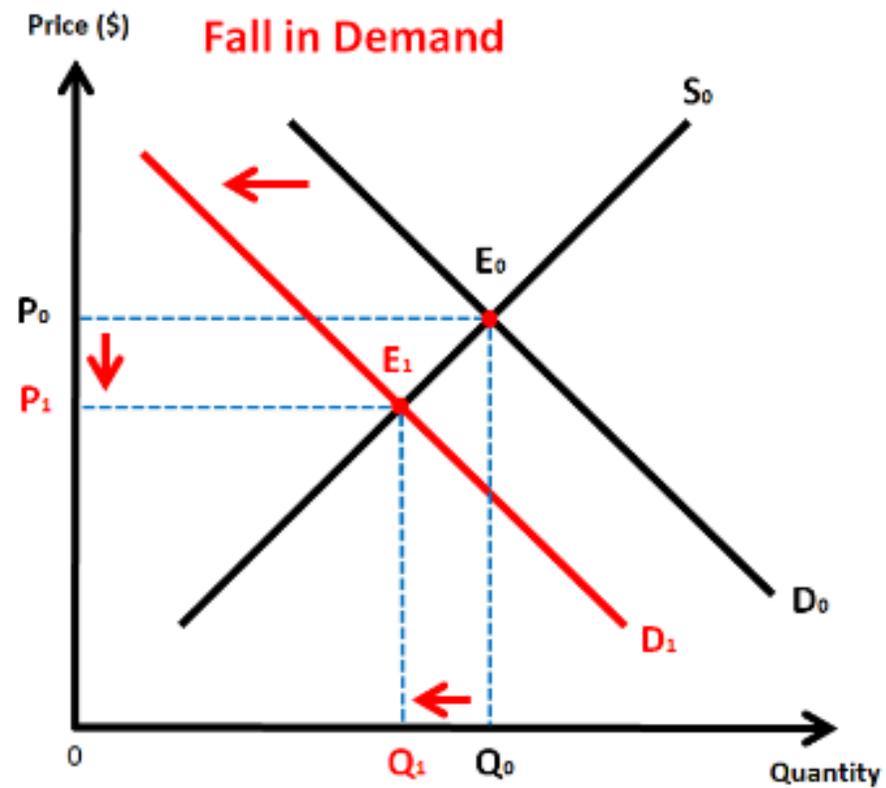
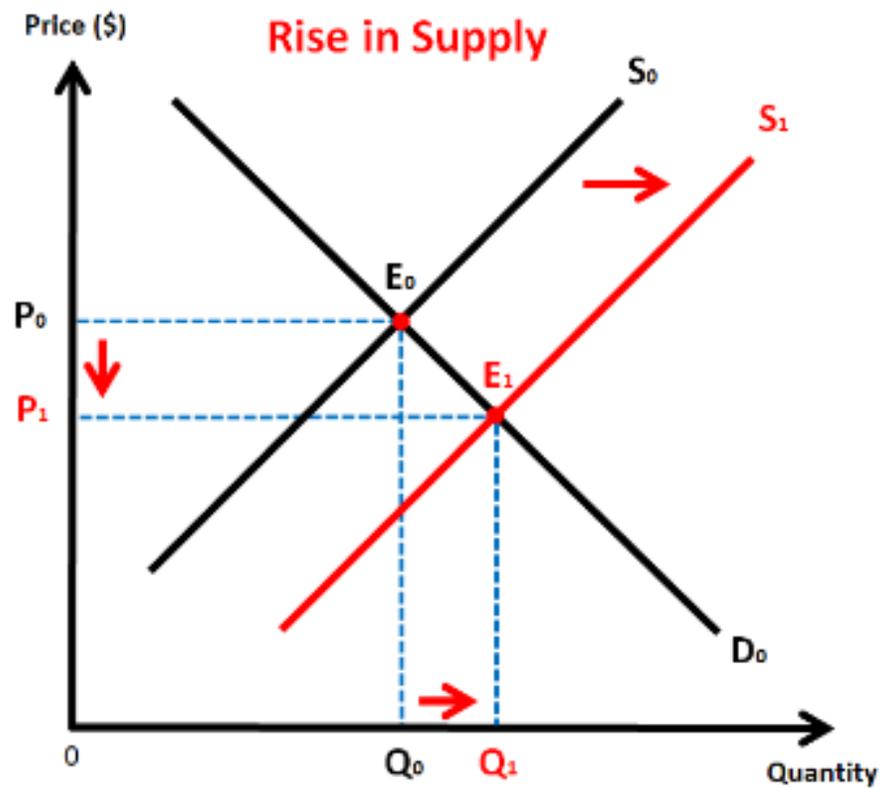
Introduction to Behavioral Economics and Policy

→ Note: Most of this information will come from Brigitte Madrian reading

Why do we have policy?

- ▶ At the very beginning of class, we asked this same question, and one answer that we came to is because policy can potentially help markets achieve efficiency when they do not function as they should.

Why do we have policy? (Properly functioning market)

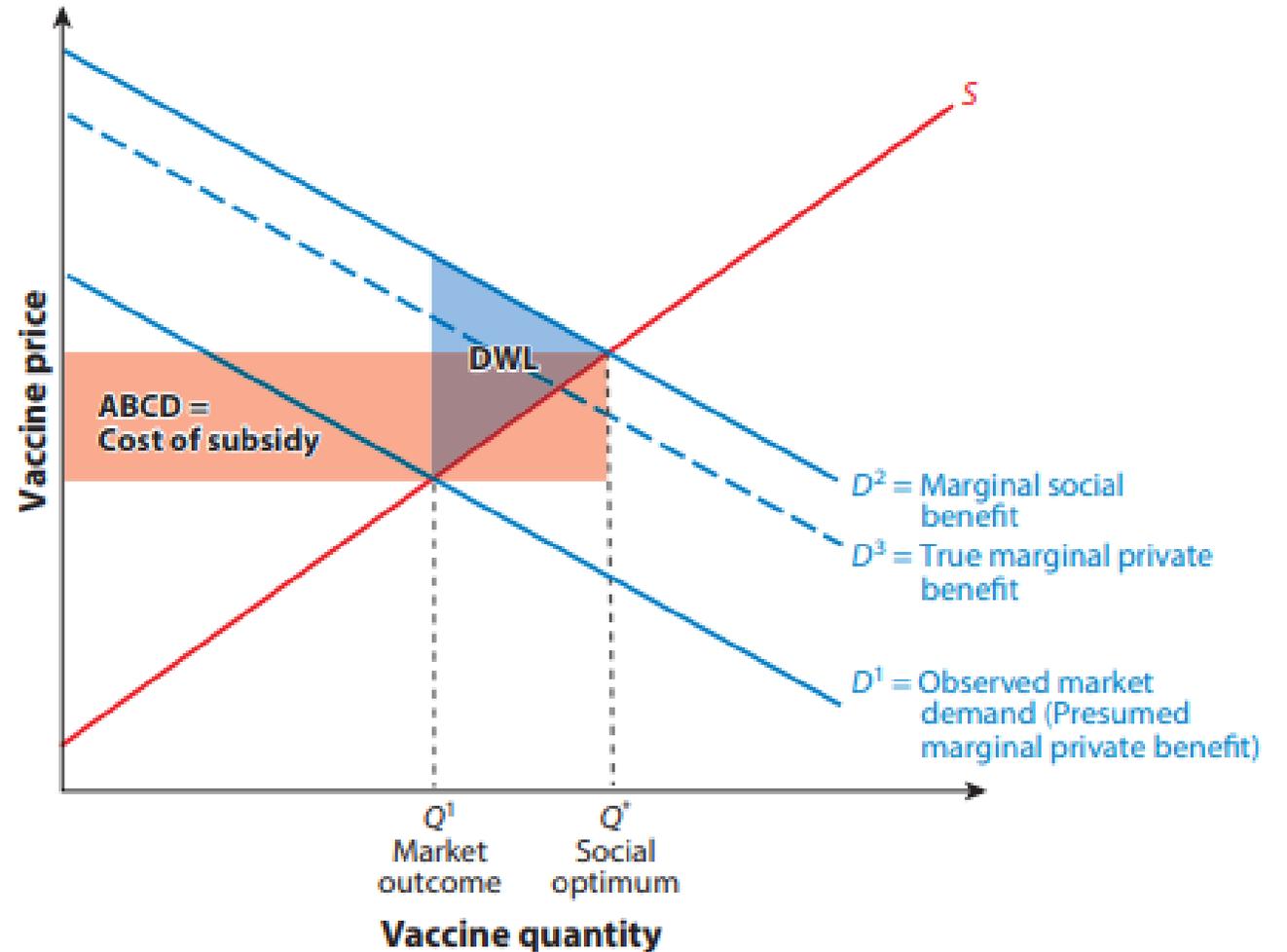


Common sources of market failures

- ▶ **Monopolistic power:** Free entry in to and out of the market is limited, and so monopolies may (and do) set the price above marginal cost to maximize profits. As a result, the equilibrium quantity supplied is artificially lower and price is artificially greater.
- ▶ **Information asymmetries** (e.g. Adverse selection): When there is not complete information in the market, then buyers must weigh the possibility that they will purchase a low quality good, thinking it's high quality. As a result, occasionally this can lead to an equilibrium where the price that can be sustained in the market is too low to support the possibility of a high quality good and so the high-quality goods disappear. (e.g. Insurance premiums and death spiral)
- ▶ **Externalities:** Goods where the marginal private benefit differs from the social benefit.

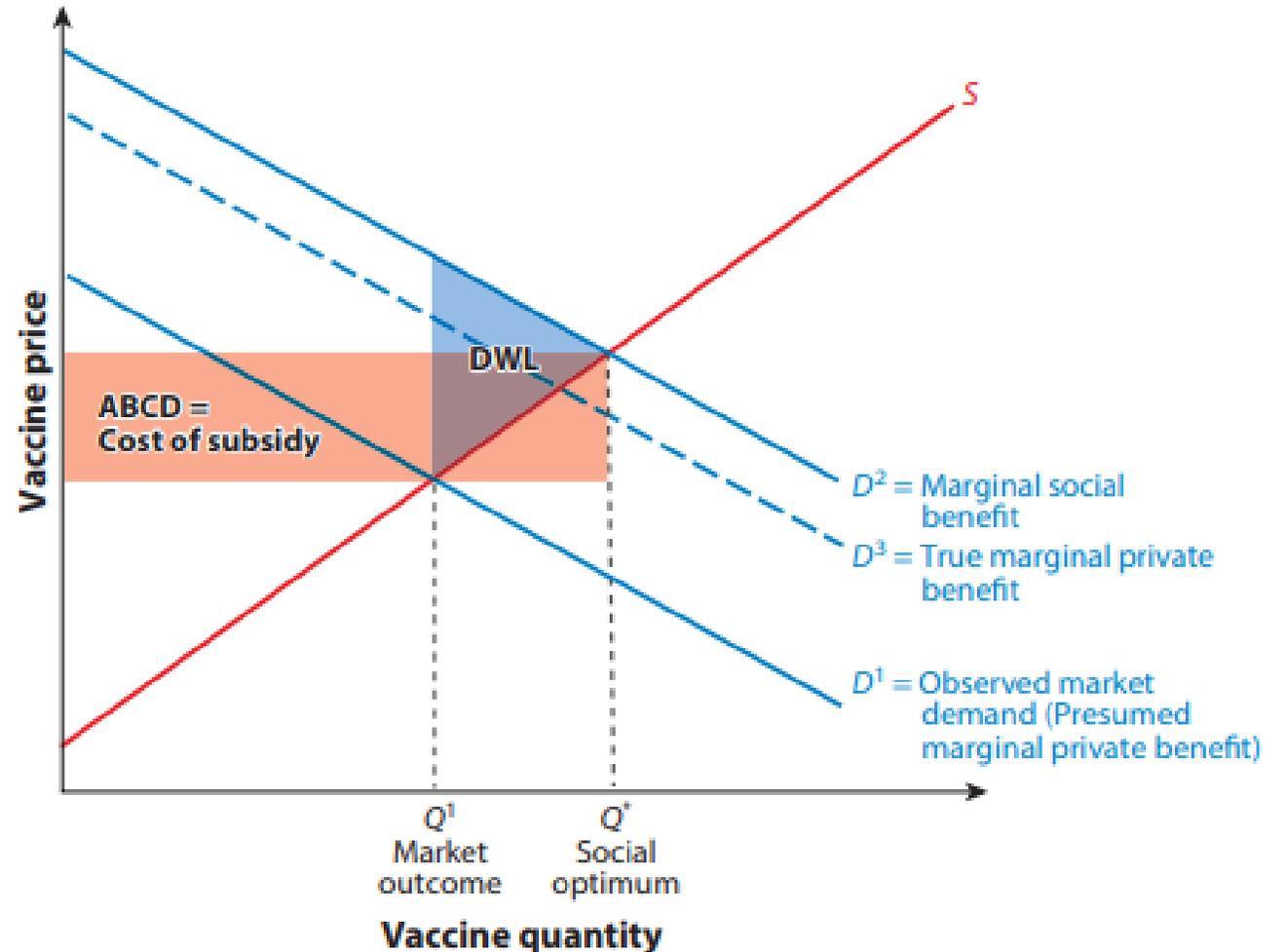
Externalities as motivation

- ▶ Madrian uses the example of the Flu vaccine.



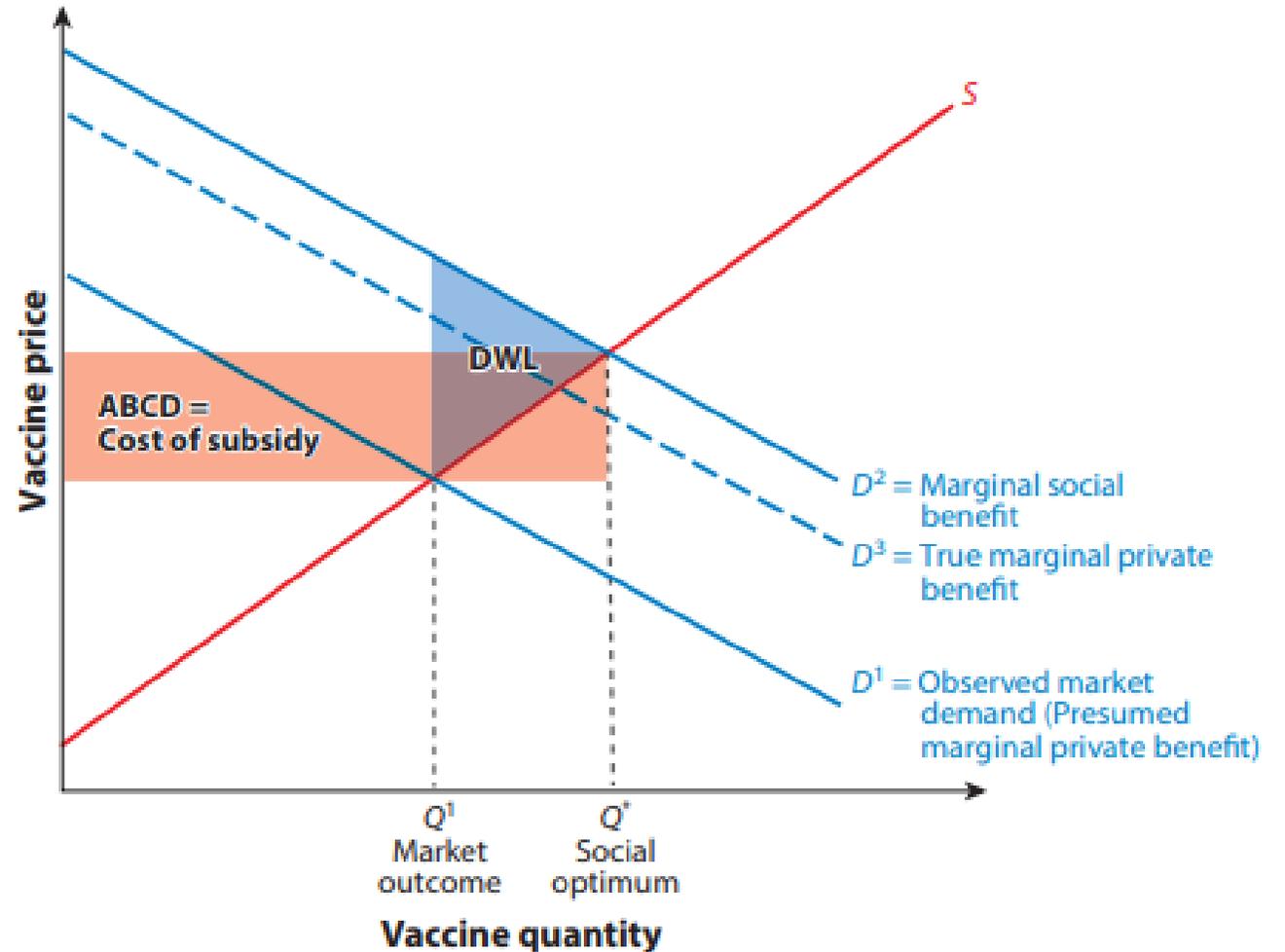
Externalities as motivation

- ▶ In this example, the market (or observed) quantity of vaccines Q_1 is too low compared to the socially optimal quantity Q^* .
- ▶ How can you do that? One way is that you could subsidize vaccine use by either driving demand or supply up.



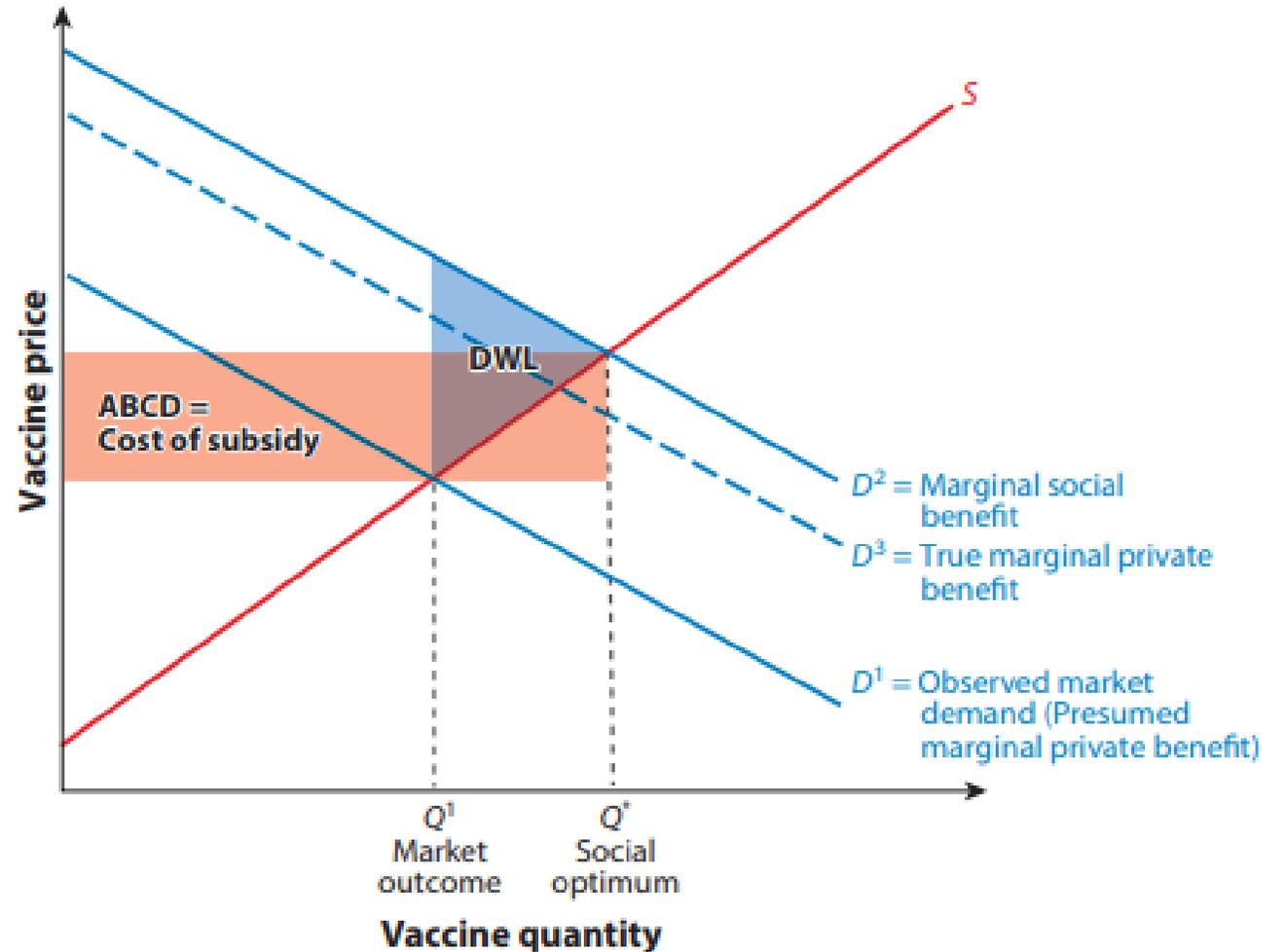
Externalities as motivation

- ▶ If there were the case, then you would need to weigh the cost (the red box) to the benefit (the blue triangle) in order to determine whether this is a worthwhile policy.



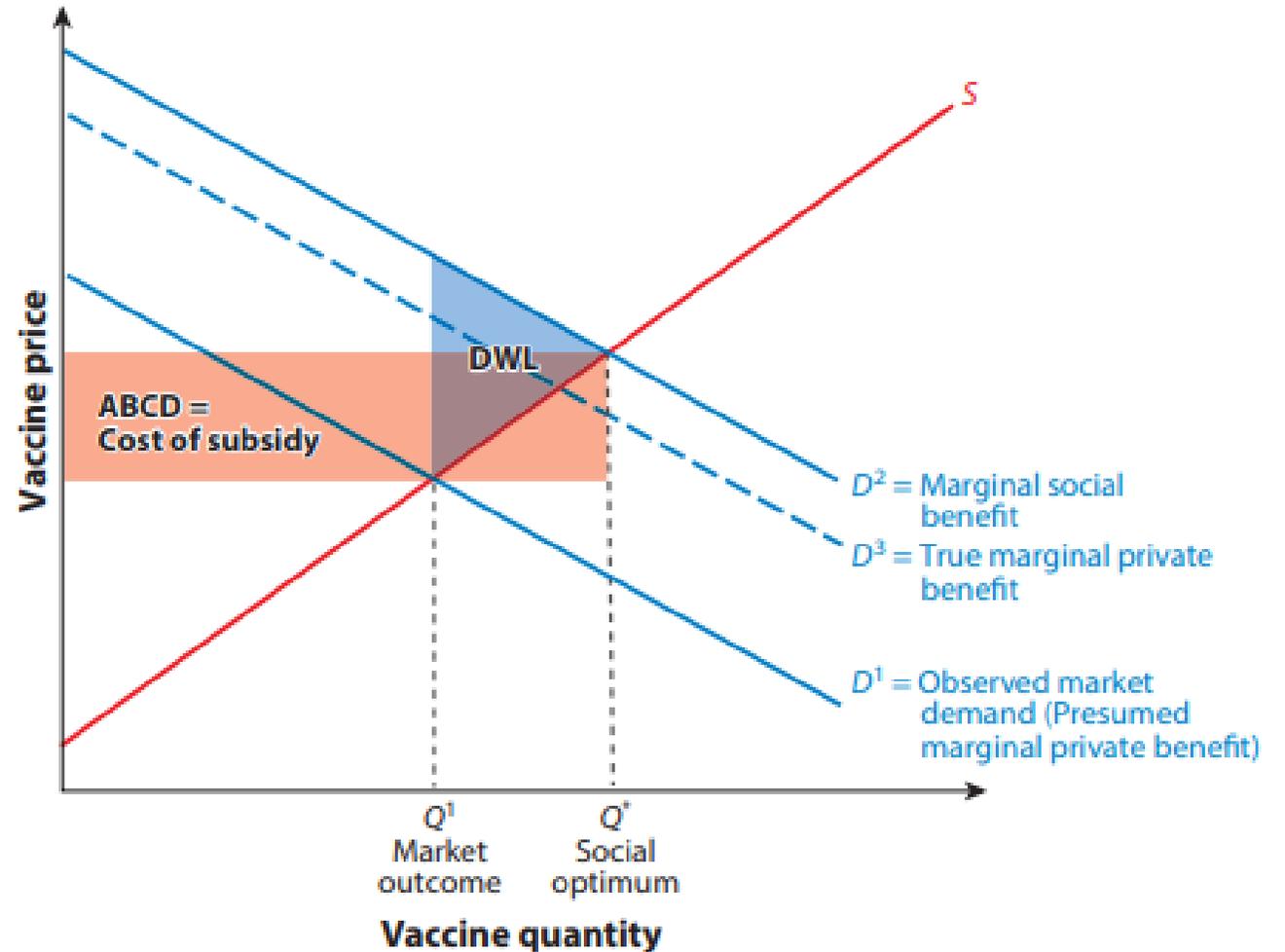
Externalities as motivation

- ▶ But Madrian posits that maybe what we are observing is not reflective of reality.
- ▶ Maybe consumers still undervalue vaccines relative to what's socially optimal but not nearly as much what's observed.



Externalities as motivation

- ▶ Maybe consumers still undervalue vaccines relative to what's socially optimal but not nearly as much what's observed.
 - ▶ How? Well maybe the net benefit of a vaccine is negative (i.e. the costs are too high).



Externalities as motivation

▶ What are costs?

- ▶ Just as we considered in the previous classes, costs are not *just* the price that a consumer pays in the market. Instead, the total cost that someone incurs also includes a bunch of smaller costs that are often overlooked but might be practically important.
- ▶ Search costs, transaction costs, bootstrap costs – these are some examples of costs that people may refer to when talking about this. Essentially, these are costs that are associated with the purchase of a good.
- ▶ E.g. I like to look on Facebook marketplace for bikes. Sometimes I see a bike that looks like a great deal, but when I factor in the cost of driving there (gas, time in the car), the price of the bike is actually more than the benefit (so I don't get it).

Externalities as motivation

- ▶ What are costs?
 - ▶ Returning to the vaccine example: It's hard to actually estimate the benefit of the flu vaccine. There's a chance that it will prevent you from the flu (benefit), but it's not certain that you'll get the flu at all; and moreover, the flu vaccine doesn't protect against all strands, so you could still actually get the flu.
 - ▶ When might a rational person decide not to get the flu vaccine?
 - ▶ What policies could assist in increasing vaccine uptake (in this example)?

→ Short aside: Administrative burden

- ▶ Sometimes people, organizations, or agencies may actually use this to their advantage.
- ▶ Administrative burden:
 - ▶ Here's a pessimistic example: When you applied to college (and when you apply to a job and/or to graduate school), you are almost always required to write a statement that is tailored to that school or job. Do people read these?
 - ▶ Paycheck Protection Program during Covid: Benefit for companies could be large, but the paperwork that was apparently required to apply for the funds was substantial.
 - ▶ Hypothetically: one way to deter voter turnout can be to enforce a bunch of extra costs necessary to actual cast your vote. Like what?

Cognitive Limitations and Psych Biases

- ▶ Potential reasons why individuals might not actuate what they perceive as best?
 - ▶ Cognitive limitations
 - ▶ Imperfect optimizations – people may use heuristics instead of rational thinking due to time or cognitive constraints (see K&T, Chapter 7)
 - ▶ Bounded self-control – people may act differently than they planned to, or desire to. “I do not understand my own actions; for I do not what I want to do, but I do the very thing that I hate to do”
 - ▶ Context dependent – people may evaluate outcomes relative to a reference point rather than some absolute calculation (e.g. fairness).

Cognitive Limitations and Psych Biases

- ▶ Examples of Context Dependence:
 - ▶ You are on a diet that reduces the number of calories that you eat every day. You are at a conference where there is a spread of food for lunch. You probably find it a lot easier to stick to your diet if that room is full of people who are eating a similar diet to what you should be eating than when you're in a room of people who eat all the things that you (really) want to eat.
 - ▶ I give JoJo a stack of \$20 bills. I say to JoJo, "divide these between you and Caleb".
 - ▶ What does JoJo choose?
 - ▶ Now I tell Caleb that he can accept this distribution or he can refuse the money both for him and for JoJo. What does Caleb do?

Opt-out Approaches

- ▶ We discussed this already a few weeks ago. The idea is that individuals are more likely to stick with the status quo than they are to be different.
 - ▶ This could be an example of context dependence or an example of search costs.
- ▶ Businesses already use this...
 - ▶ Netflix (and others) do this already... instead of forcing you to purchase its services every month, you are billed until you opt-out.
 - ▶ What's the effect? How many of us pay for services every month that we don't use?

Simplification and Reminders

- ▶ FAFSA (Federal student aid): Observed that a low proportion of eligible students did not even apply. By simplifying the application process, increased applications by 16% and raised college attendance by 7%.
- ▶ School choice: in some school districts, parents can choose public school or charter schools. An experiment was done to reduce the amount of information that was provided to the parents about the school to the most relevant information, and found increases in parents choosing to move to better-performing schools.
- ▶ Reverse mortgage payment reminders (Stephanie Moulton et al.): RCT of older adults where some sent reminders in the mail about upcoming payments. Decreased missed payments by 1/3.

“The paradox of choice” / choice overload



Framing and Choice Architecture

- ▶ Until now, we've been discussing cognitive limitations to optimal decision making.
- ▶ But what if people's preferences are just not aligned with what's socially optimal?
- ▶ **Choice architecture** refers to a strategy whereby individuals may change preferences based on the way this information is framed.

Examples of Framing

- ▶ **Loss aversion:** People dislike losing something more than they like gaining something of equal magnitude:
 - ▶ Cited study in Sweden found that people were more aggressive about claiming deductions when they owed money than they were when they expected a refund (refund = paid too much already).
- ▶ **Flypaper effects:** Money tends to stay where it is allocated:
 - ▶ Cited study found that individuals were 10x more likely to buy children's clothes when the money was designated as "child benefit". Perhaps creates a moral obligation in parents to spend money on children.
- ▶ **Choice ordering:** People often default to first thing they read.
 - ▶ Voting may randomize the position of the candidates.

Examples of Framing

- ▶ **Product diversification:** People exhibit a bias towards diversification when presented with several options.
 - ▶ Cited study finds that individuals are more likely to choose healthy food when presented with multiple health and unhealthy options, rather than multiple healthy and just a single unhealthy option.
- ▶ **Social Context:** People may alter their decisions based on how they perceive their behavior relative to their peers.
 - ▶ Providing customers with the usage of neighbors (especially when individual usage is higher) reduces energy consumption.

So what?

- ▶ While what we saw today seems like a long list of cognitive and psychological biases, what is the importance of studying these in the context of public policy?
- ▶ How does this relate to last 10 sessions of class?

So what?

- ▶ While what we saw today seems like a long list of cognitive and psychological biases, what is the importance of studying these in the context of public policy?
 - ▶ Psychological biases can drive market inefficiencies / failures in a similar way to what is traditionally considered in Econ 101-world.
 - ▶ The effectiveness of policies probably depends a great deal on what psychological biases are most pronounced, and what is driving the market inefficiency.
 - ▶ Behavioral tools can often be a cheap, easy way to make markets more efficient or outcomes more desirable. We can view these either as alternative tools or as supplements to existing taxes and subsidies.
- ▶ How does this relate to last 10 sessions of class?

So what?

- ▶ While what we saw today seems like a long list of cognitive and psychological biases, what is the importance of studying these in the context of public policy?
- ▶ How does this relate to last 10 sessions of class?
 - ▶ Some of these biases might be fundamental limitations to believing that people can act rationally.
 - ▶ Some of these biases demonstrate that individuals might be acting rationally within their own context, but that policies can be used to change the cost-benefit analysis for individuals.
 - ▶ Studying these heuristics and biases can sometimes actually help us recognize when we might be using them, and allow us to make better rational choices to begin with.