

Chapter 6: Supply, Demand, and Government Policies

Discussion section 4

September 2023

Outline

Chapter 6 will focus on government policies, which often can have unintended consequences. First we look at price controls:

- What happens when the government imposes price floors and ceilings?
- When are these policies binding?
- Short-run vs long-run impacts

And then at taxes:

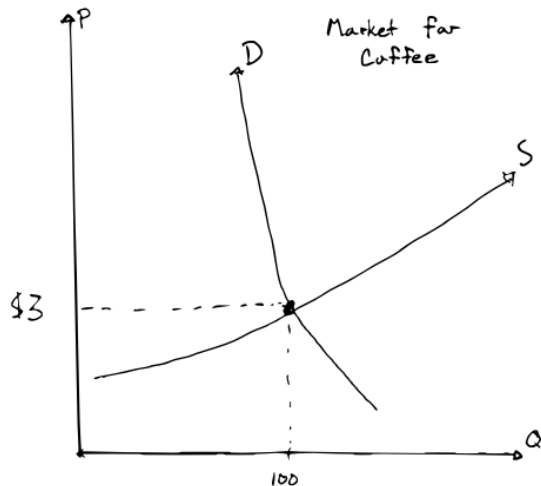
- Who pays the cost of a tax?
- How do elasticities determine the incidence?

Market for coffee

Let's consider the market for coffee.

In the free-market equilibrium, $Q = 100$ and $P = \$3$.

Free-market equilibrium



Market for coffee

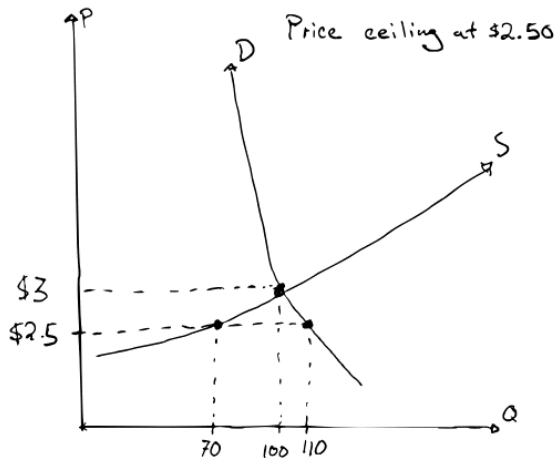
First let's think about price ceilings. Suppose the government imposes:

- A price ceiling at \$2.5
- A price ceiling at \$3.5

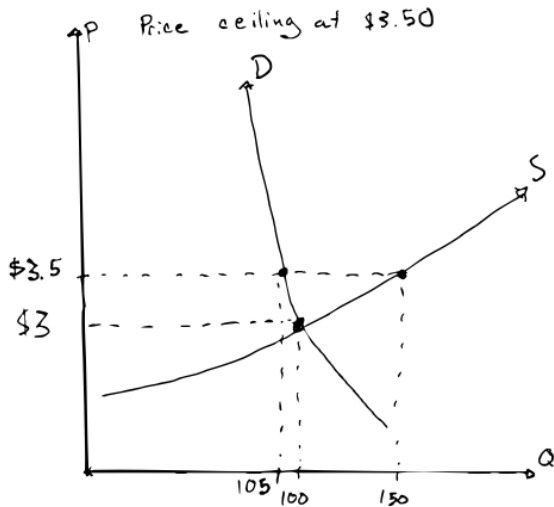
In both of these cases:

- ① What will the quantity demanded and supplied be?
- ② Does the policy cause a shortage or a surplus?
- ③ Is the policy binding?

Price ceiling at \$2.5



Price ceiling at \$3.5



Market for coffee

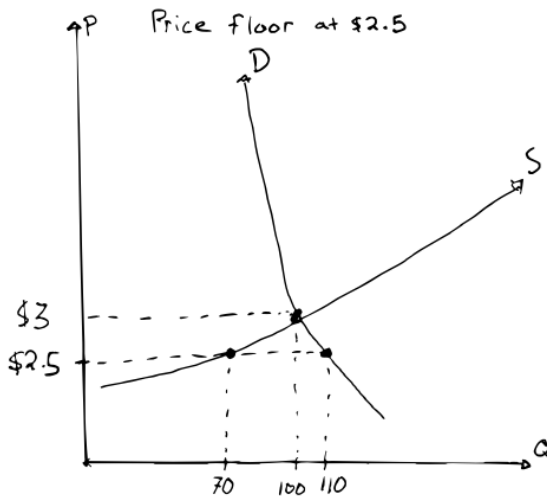
Now let's think about price floors. Suppose the government imposes:

- A price floor at \$2.5
- A price floor at \$3.5

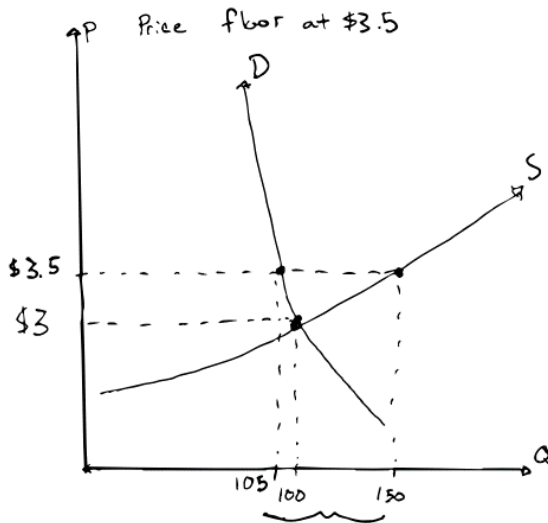
Same questions as before:

- 1 What will the quantity demanded and supplied be?
- 2 Does the policy cause a shortage or a surplus?
- 3 Is the policy binding?

Price floor at \$2.5



Price floor at \$3.5



Market for stadium seats

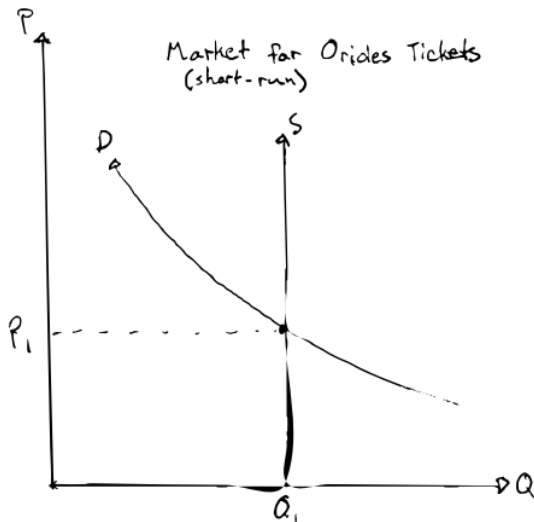
Is it possible that the short- and long-run effects might be different?

Yes! Let's return to our market for Orioles tickets. As a reminder:

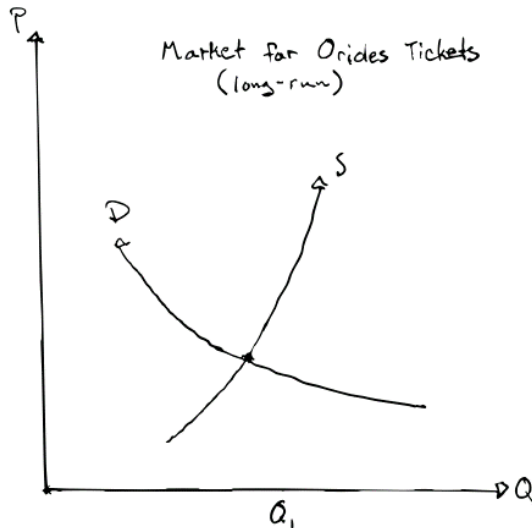
- Which side is elastic?
- Which side is inelastic?
- What did we say might happen in the long run?

Go ahead and draw a short-run and long-run market.

Short-run market for Orioles tickets



Long-run market for Orioles tickets



Market for stadium seats

In the short-run:

- Supply is fixed (perfectly inelastic)
- Demand is probably elastic (sporting events are entertainment, a luxury)

In the long-run:

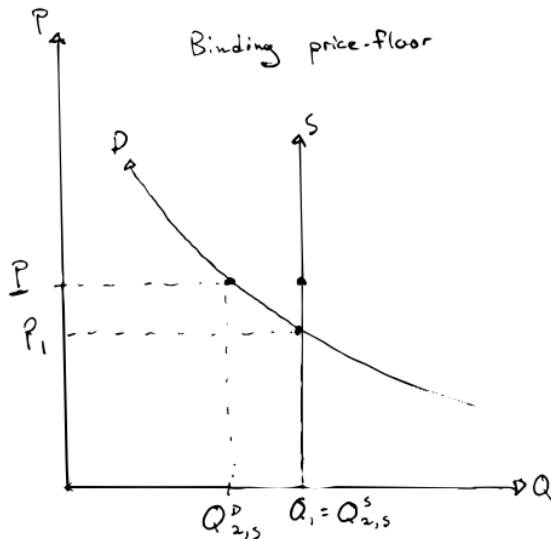
- Supply is probably still inelastic, but more elastic than before
- Demand is probably similar

Price-floor for tickets

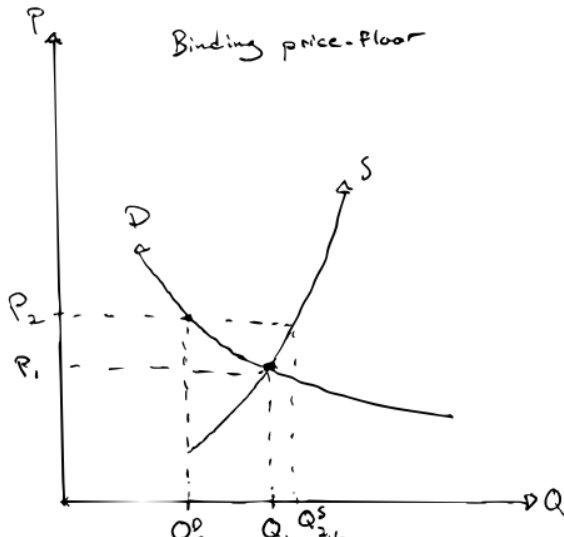
Now suppose Baltimore City imposes a *binding* price floor.

- 1 What is the impact in the short-run?
- 2 What is the impact in the long-run?
- 3 Is the impact larger in the short-run or long-run?

Short-run market for Orioles tix



Long-run market for Orioles tix



Time-frame matters

There will be a surplus in either case, as there must be with a binding price floor.

But the magnitude will be greater when considering the long-run! The time-frame is very important.

Other important examples (see book):

- Rent-control (market for apartments)
- Minimum-wage (market for labor)

Taxes

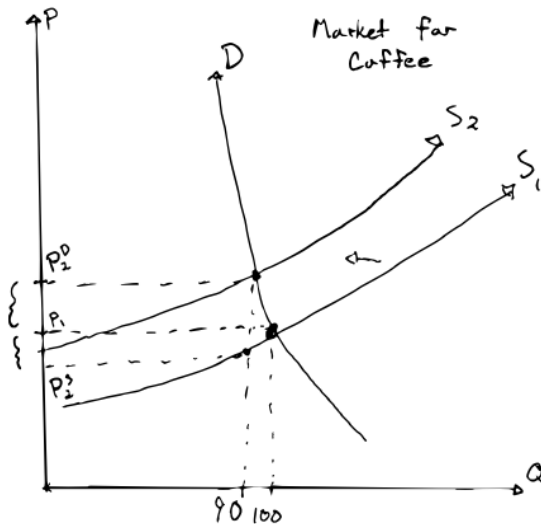
In the US (though not in other countries!) direct price controls are relatively rare.

Taxes are much more common.

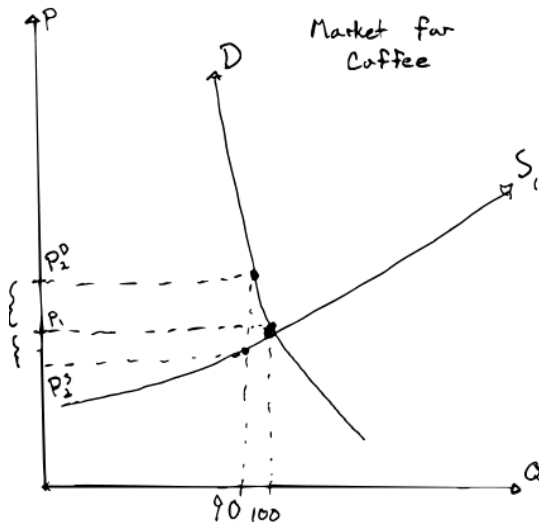
Let's return to the market for coffee, and consider a tax of \$0.5 on each cup of coffee.

- Does this shift supply or demand curves?
- What will happen to equilibrium price and quantity?
- What portion falls on consumers and what falls on suppliers?

Coffee market with \$0.5 tax



Coffee market with \$0.5 tax

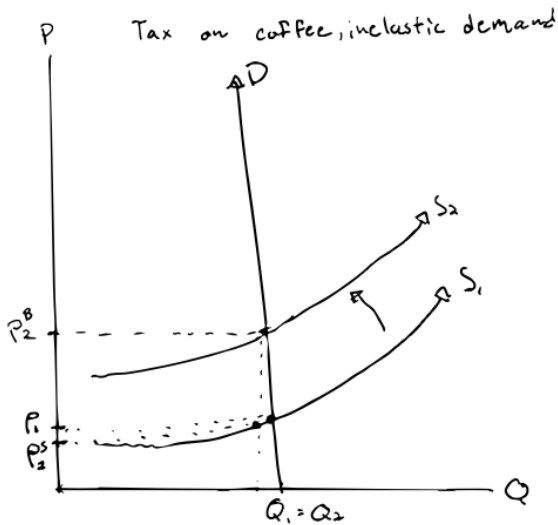


In our example, suppliers and consumers share the burden of the tax.

Let's consider the same questions, with two extreme examples:

- Demand is perfectly inelastic
- Supply is perfectly inelastic

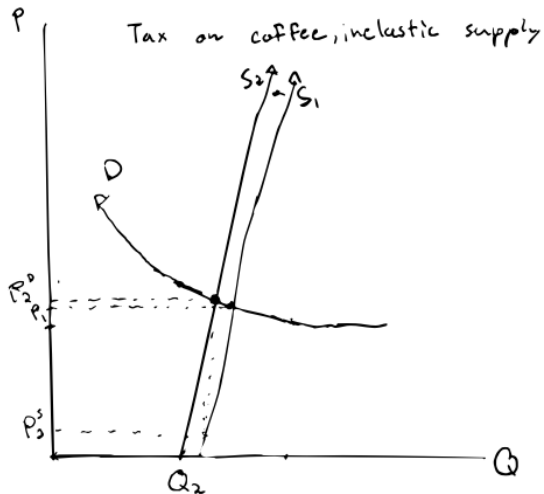
Coffee market with \$0.5 tax, inelastic demand



Inelastic demand

Consumers will buy the same amount of coffee no matter what the price is, so suppliers are able to pass the entire tax onto consumers.

Coffee market with \$0.5 tax, inelastic supply

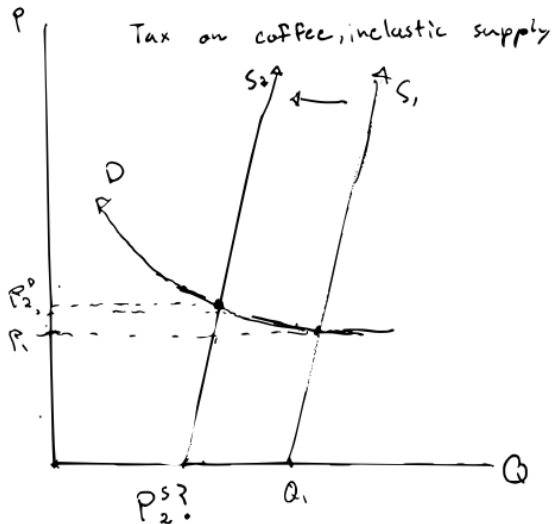


Inelastic supply

Suppliers will provide the same amount of coffee no matter what the price is, so suppliers absorb the entire impact of the tax.

What if the tax is large – that is the shift in supply curves is big?

Coffee market with \$0.5 tax, inelastic supply



Relative elasticities

With a large enough tax, our graph implies that quantity supplied is negative! Of course, this means no coffee will change hands.

So the relative elasticities determine the “tax wedge”, which tells us which side of the market pays what portion of the tax. In general:

- Supply is inelastic, demand is elastic \rightarrow suppliers bear more of the burden
- Demand is inelastic, supply is elastic \rightarrow consumers bear more of the burden

Really it is the *relative* elasticities which determine the wedge.

Tax on buyers

We have considered a tax on consumers and shown how it is shared between two sides of the market.

We can consider a tax on *buyers* in the same way: the demand curve will now shift, but the tax burden will be determined using the exact same logic.

Repeat the same exercise in the market for coffee when:

- Supply and demand have similar elasticities
- Supply is perfectly inelastic, demand is elastic
- Demand is perfectly inelastic, supply is elastic

Is the tax incidence similar as when the tax is on suppliers?