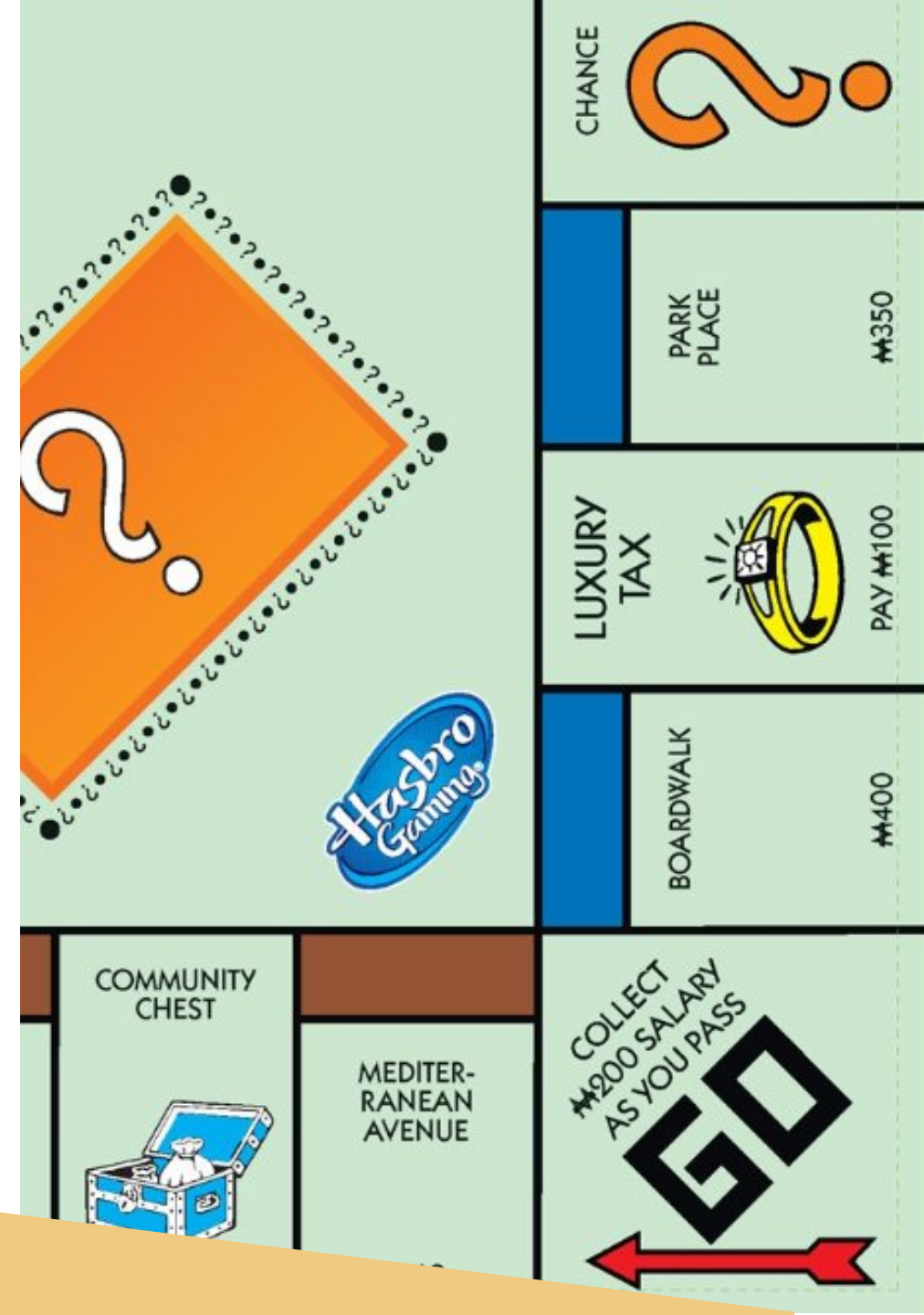


Firms and customers III

MPA 612: Public Management Economics
February 20, 2018

Fill out your reading report on Learning Suite!



Current events

Now expanded to take advantage of your new vocabulary!

Plan for today

elasticities of demand

Market power

elasticities of demand

What happens to quantities as prices change?

Responsiveness to price changes

$$\epsilon = -\frac{\% \text{ change in demand}}{\% \text{ change in price}} \quad \epsilon = -\frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

% change in demand that follows a 1% change in price

Q ↑ P ↓
or
Q ↓ P ↑

$\epsilon = 2$: "If price increases by 10%, quantity decreases by 20%"

$\epsilon = 0.5$: "If price increases by 10%, quantity decreases by 5%"

$\epsilon = \infty =$ Perfectly elastic

Any change in price
moves quantity to 0

Identical goods
Two vending machines

$\epsilon > 1 =$ Elastic

Changes in price change
the quantity a lot

Goods with substitutes
Diet Coke

$\epsilon = 1 =$ Unit elastic

Changes in price change
the quantity the same

$\epsilon < 1 =$ Inelastic

Changes in price change
the quantity a little

Goods with few substitutes
AIDS medicine

$\epsilon = 0 =$ Perfectly inelastic

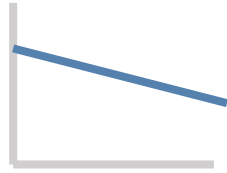
Changes in price do
nothing to the quantity

Survival goods
Water in the desert

$\epsilon = \infty =$ Perfectly elastic



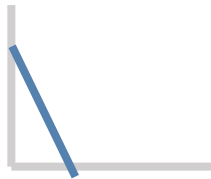
$\epsilon > 1 =$ Elastic



$\epsilon = 1 =$ Unit elastic



$\epsilon < 1 =$ Inelastic



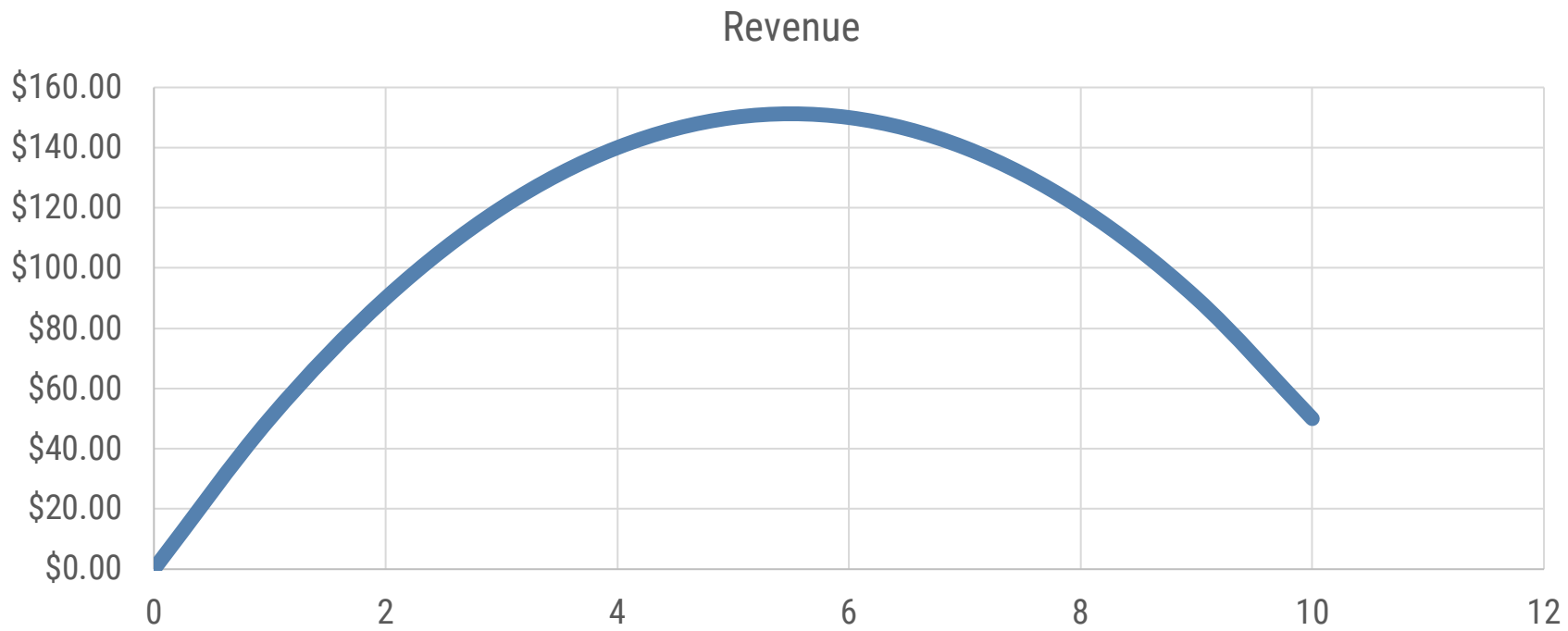
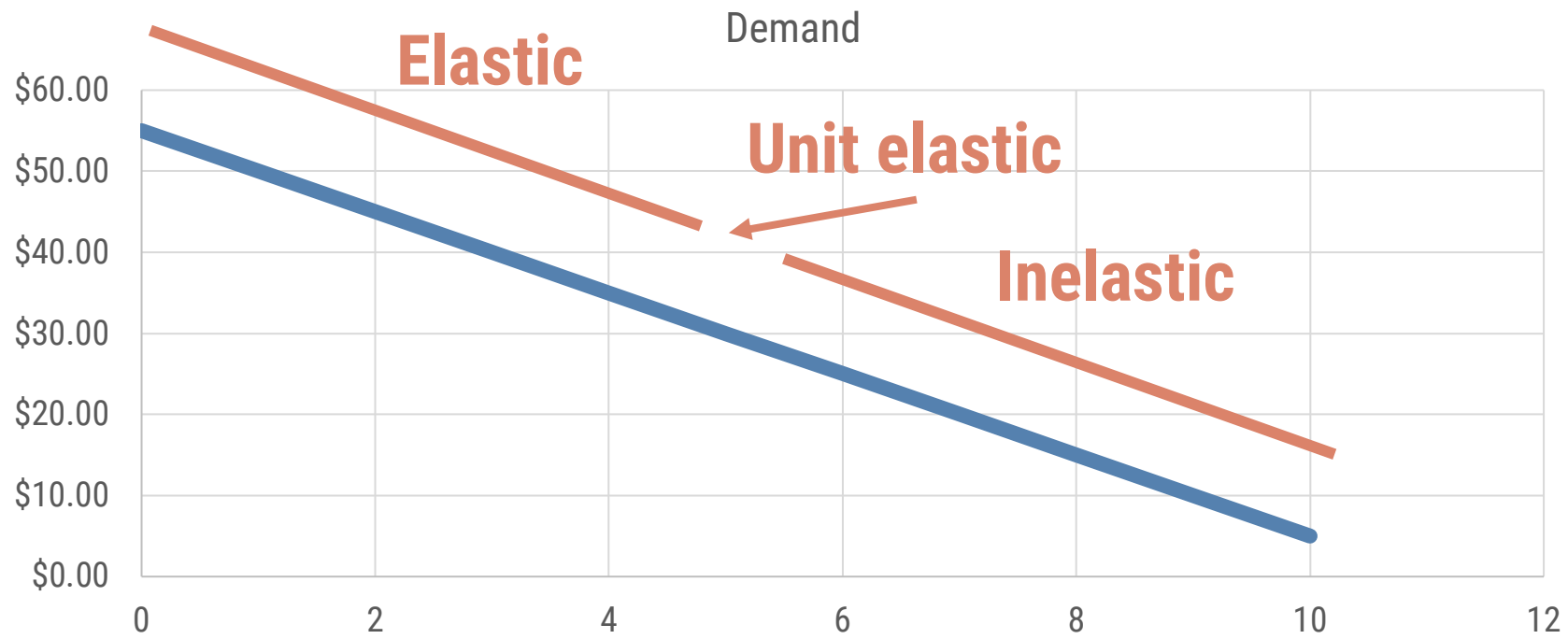
$\epsilon = 0 =$ Perfectly inelastic



Warning though!

Elasticities are not the same as
the demand curve

A linear demand curve has lots of elasticities!



Excel time!

Go back to the Raspberry Cordial worksheet

Why do elasticities matter in public policy?

Taxing things changes their prices

Changing prices changes quantities

Taxing elastic goods will make quantities go down a lot and decrease tax revenues

Taxing inelastic goods will make quantities go down slightly and not hurt revenues

Category	Type	Calories per serving	Price per 100 g (\$)	Typical spending per week (\$)	Price elasticity of demand
1	Fruit and vegetables	660	0.38	2.00	1.128
2	Fruit and vegetables	140	0.36	3.44	0.830
15	Grain, pasta, bread	1,540	0.38	2.96	0.854
17	Grain, pasta, bread	960	0.53	2.64	0.292
28	Snacks, candy	433	1.13	4.88	0.270
29	Snacks, candy	1,727	0.68	7.60	0.295
30	Milk	2,052	0.09	2.32	1.1793
31	Milk	874	0.15	1.44	1.972

If $P \uparrow$ by 10%, $Q \downarrow \dots$

8.3%

2.7%

19.72%

General guidance

Tax products with inelastic demand unless you're trying to change consumption

Soda?

Cigarettes?

Alcohol?

Property?

Market power

Who gets to set the price?

Max π

MC = MR

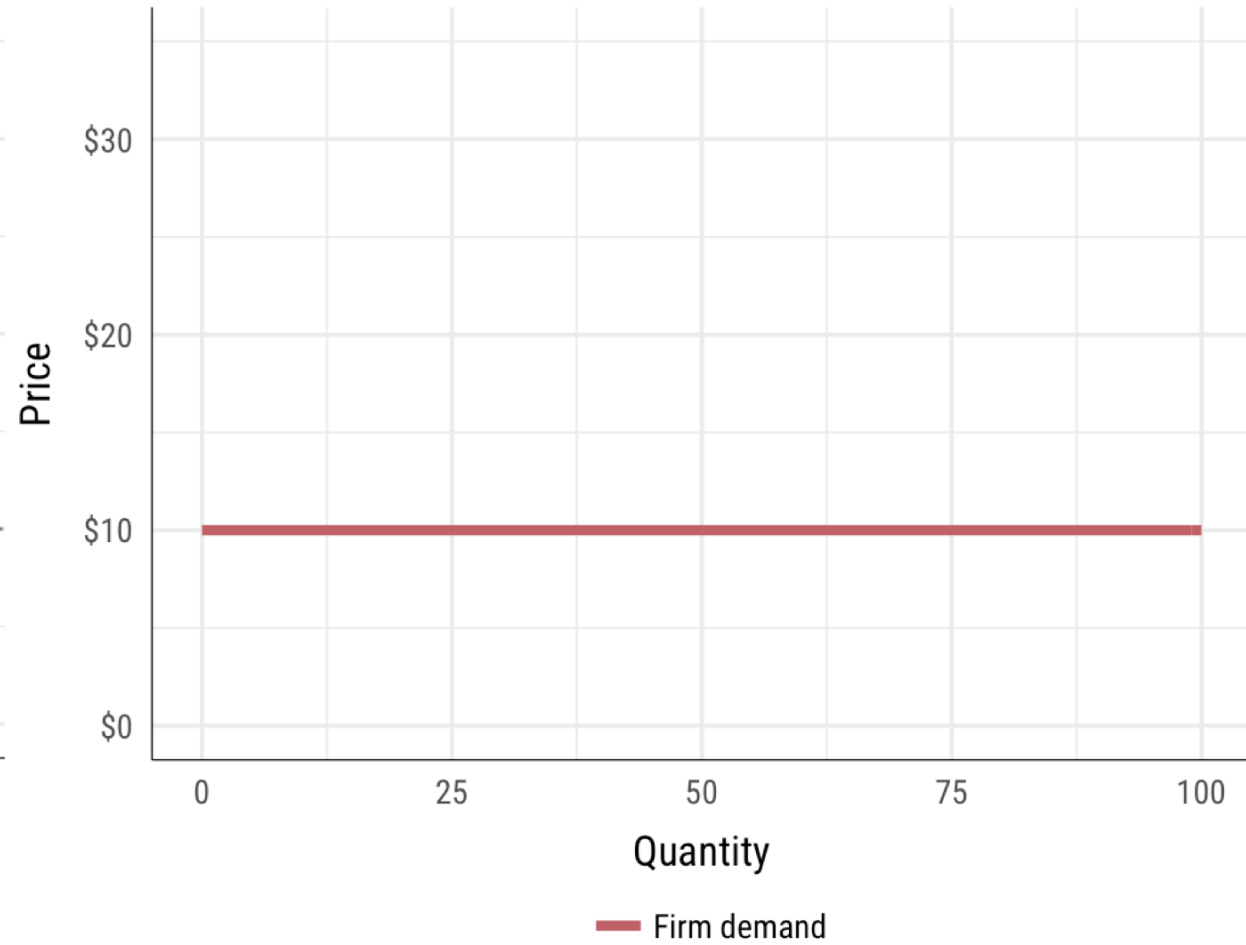
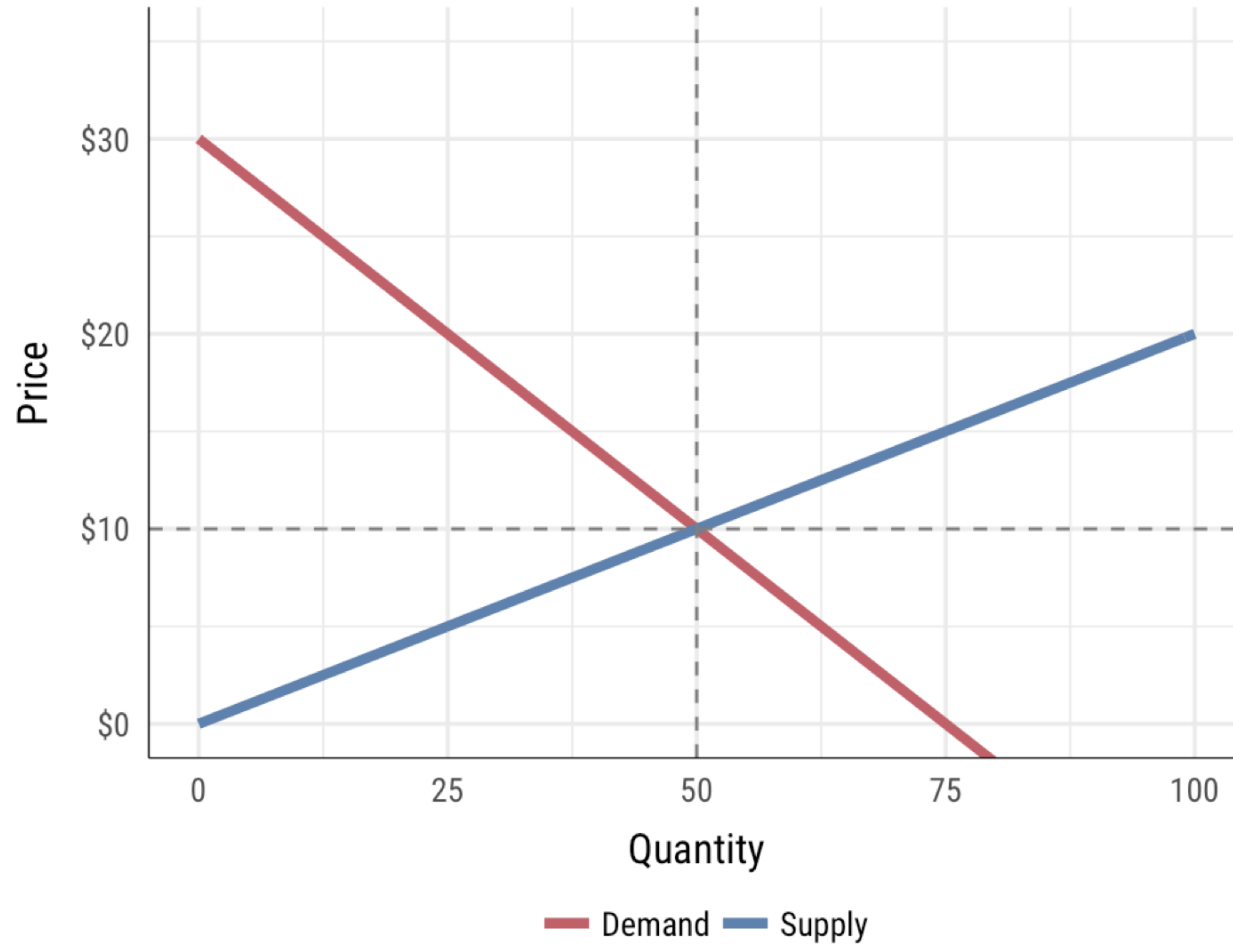
Best Q

Demand = MC

Normal competition

Demand = MC = MR = P

Where does price come from in perfect competition?



Price discrimination

With perfect information, firms can set individualized demand curves for customers

Price = WTP

Lyft/Uber

Airplane tickets

Amazon

Price taking

Firm decisions have no impact on the price of a good

Perfect competition

You're stuck with whatever the prevailing market price is

		PRICE
FORD FIESTA		£11,917
VAUXHALL CORSA		£11,283
PEUGEOT 208		£10,384
TOYOTA IQ		£11,254

But what if you *could* affect the price?

Would you want to? Why or why not?

Costs matter. Set price to *your* MC, maximize *your* profit.

Market power

Ability to influence market prices

This is why people get MBAs;
move market away from
perfect competition

Monopolies

Switching costs

Branding and differentiation

Cost or input controls

Government regulation

Price discrimination

Monopolies

Market = 1 firm

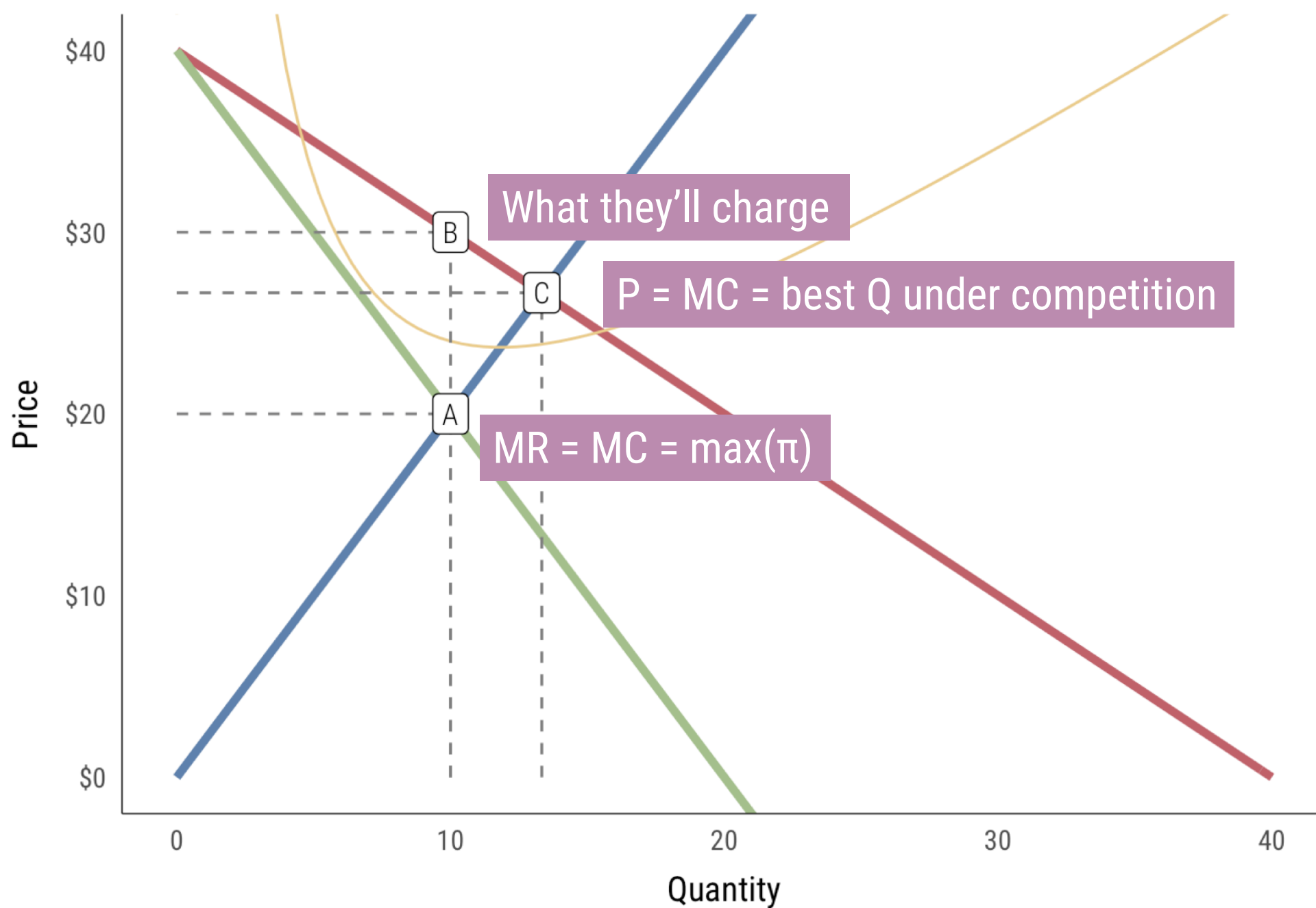
Monopolists will naturally produce less quantity at higher prices than firms in competitive markets

Creates deadweight loss

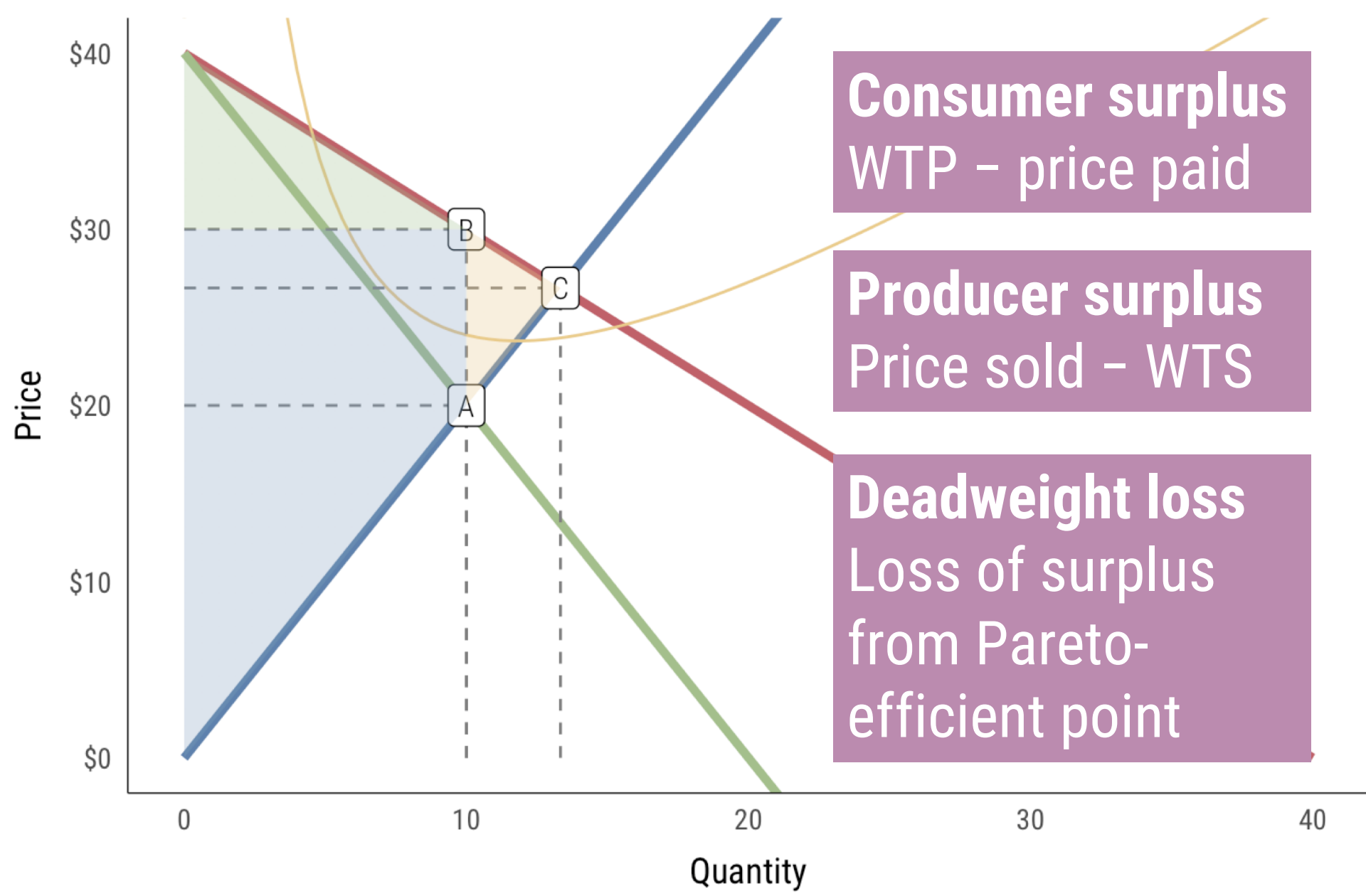
Math time!

$$P = -Q + 40$$

$$TC = Q^2 + 140$$



— Average total cost
 — Demand
 — Marginal cost
 — Marginal revenue



Consumer surplus
WTP – price paid

Producer surplus
Price sold – WTS

Deadweight loss
Loss of surplus from Pareto-efficient point

- Average total cost
- Marginal cost
- Consumer surplus
- Producer surplus
- Demand
- Marginal revenue
- Deadweight loss

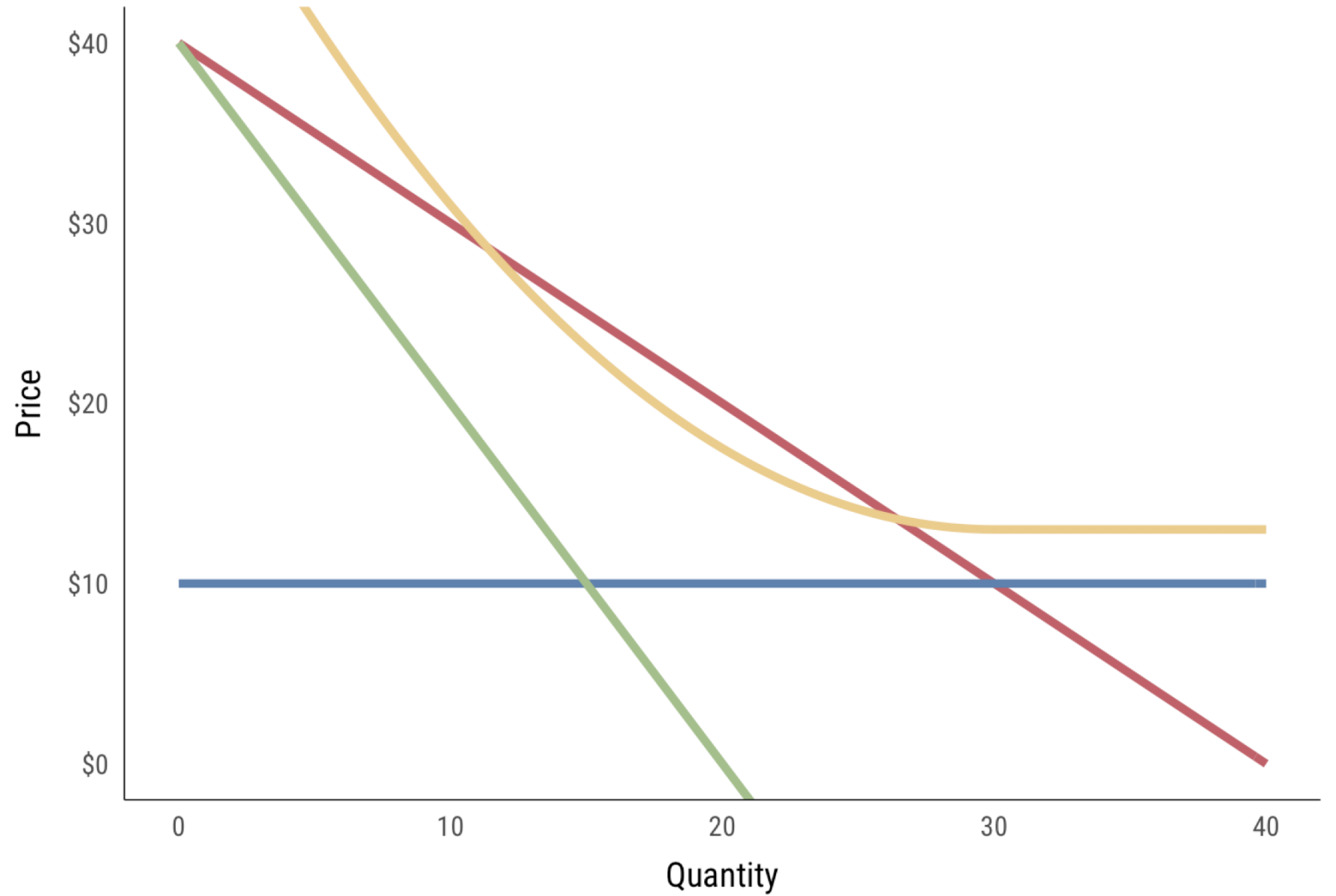
Natural monopolies

Big expensive things with large capital outlays and low marginal cost

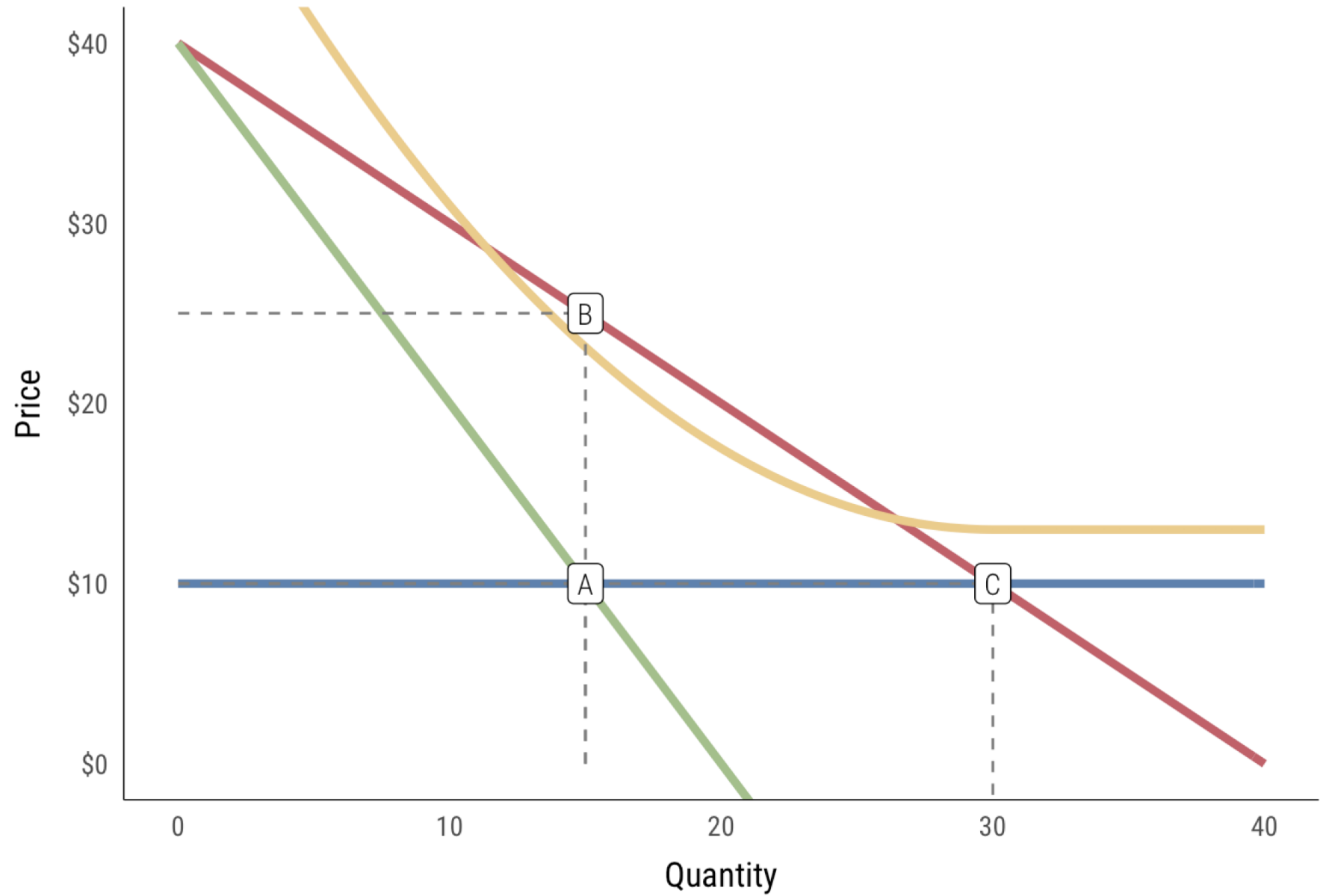
Generally more efficient to just have one firm handle it

Utilities

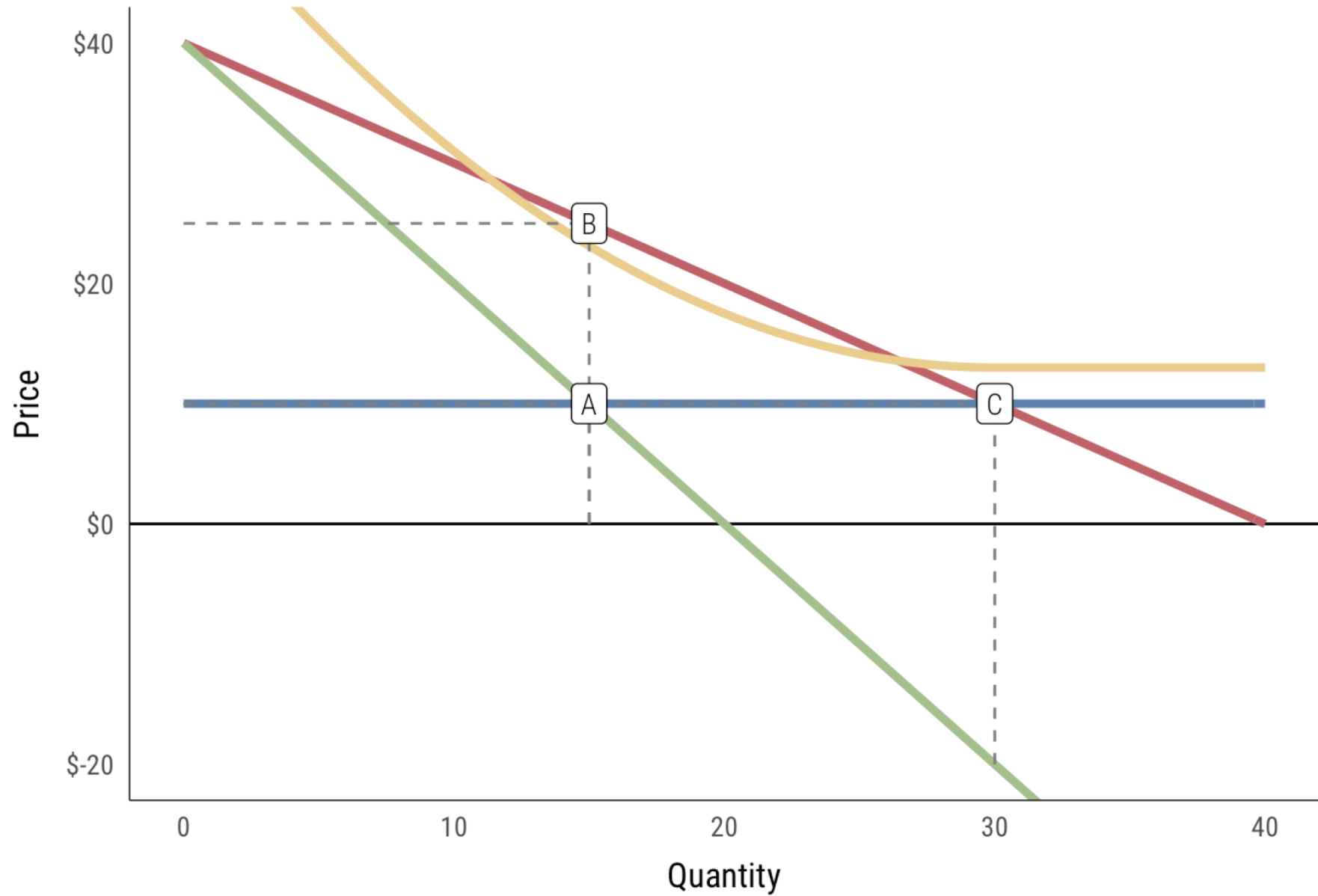
Public transportation



— Average total cost — Demand — Marginal cost — Marginal revenue



— Average total cost — Demand — Marginal cost — Marginal revenue



— Average total cost — Demand — Marginal cost — Marginal revenue

How do you fix monopolies?

State ownership

Pro: Better Q

Con: Waste (x-inefficiency)

Regulated monopolies

Pro: Incentive to be efficient

Con: Incentive to maximize capital
(gold-plated water coolers)

How do you fix monopolies?

Competitive bids

Pro: Incentive to be efficient

Con: Incomplete contracts

Antitrust laws

Pro: Increases competition

Con: Bad for natural monopolies

How do you fix monopolies?

Let the market go wild

Pro: If monopolist can price discriminate, probably okay

Con: Perfect price discrimination not possible + raises equity concerns

Switching costs

Make it harder for consumers to switch away from you

Brand-exclusive benefits

Technology constraints

Search costs

Network costs

Branding and differentiation

Make your stuff nonsubstitutatable

Advertising

Brand loyalty

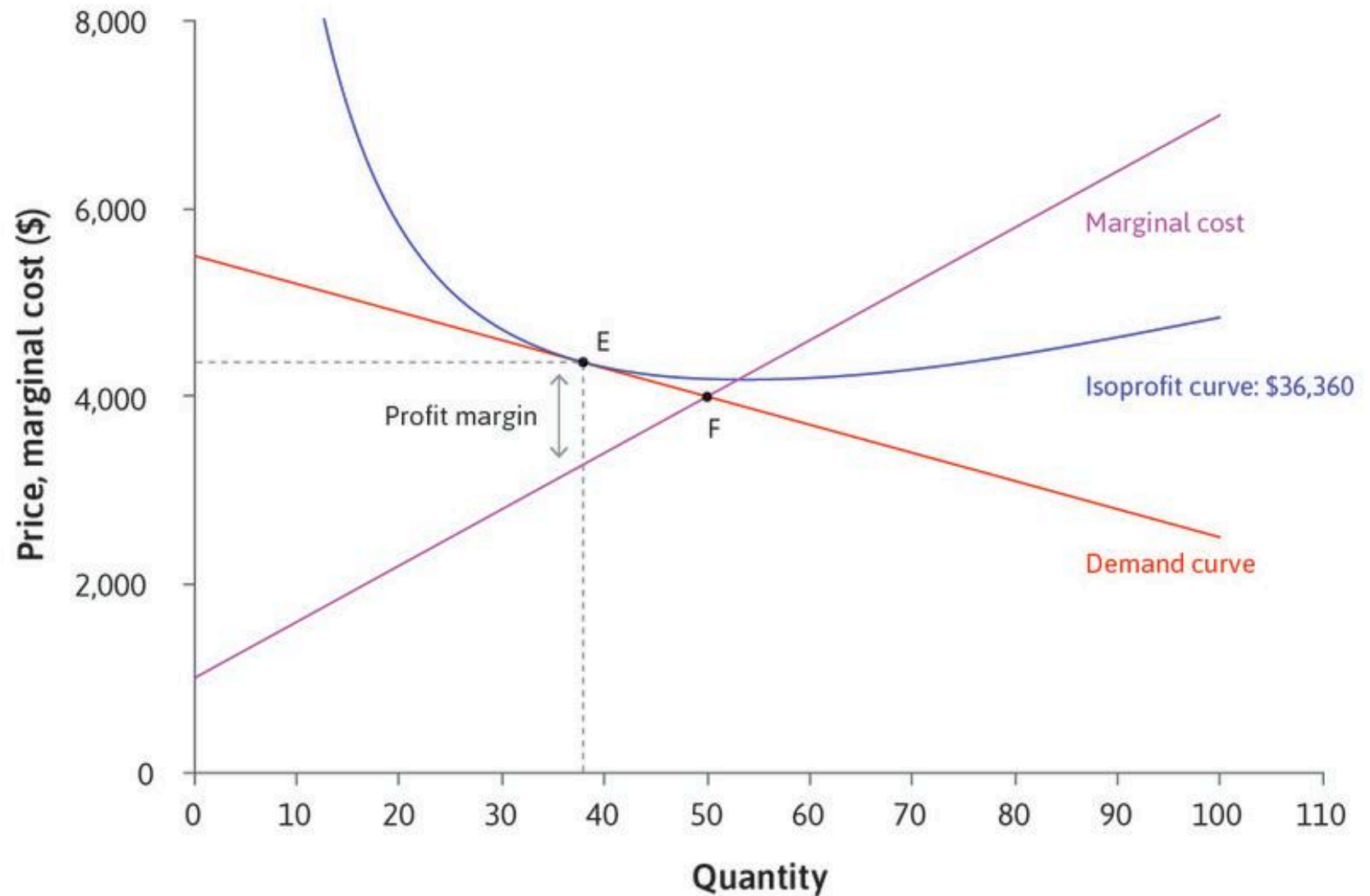
If people are stuck with you
(or like you a lot, or believe in your product,
or if your stuff generally isn't substitutable)
you can charge them more

How much more?

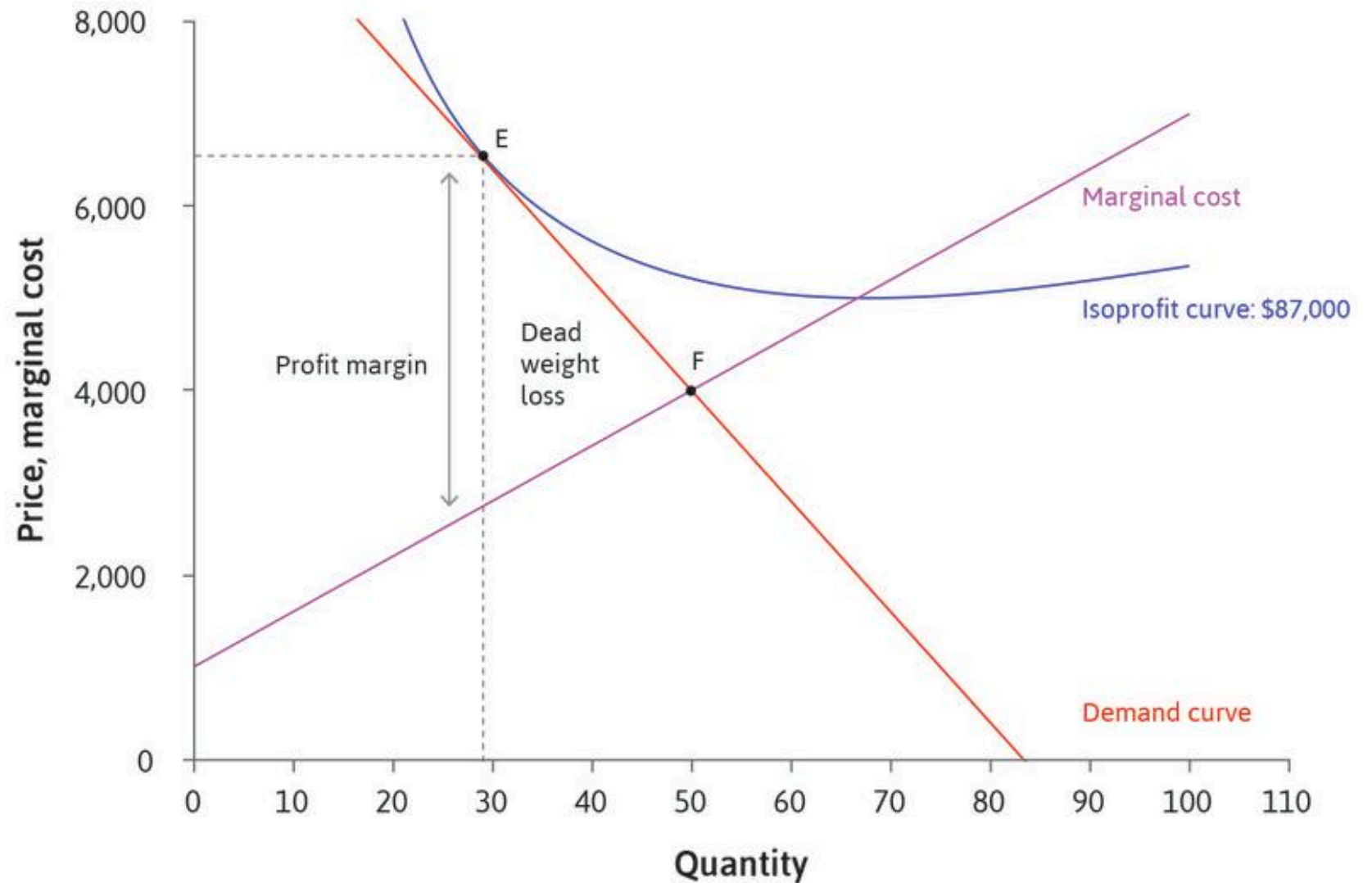
Markup depends on elasticity

$$\frac{P - MC}{P} = \frac{1}{\varepsilon}$$

Elastic demand



Inelastic demand



Cost and input controls

Own the means of production

Control scarce inputs

Control cheap supply chains

Government regulation

Make the government stop others from competing with you

Patents and intellectual property

Licensing

Prohibition of competition