PRINCIPLES OF MICROECONOMICS · LECTURE 14

Price-Searchers and How They Price

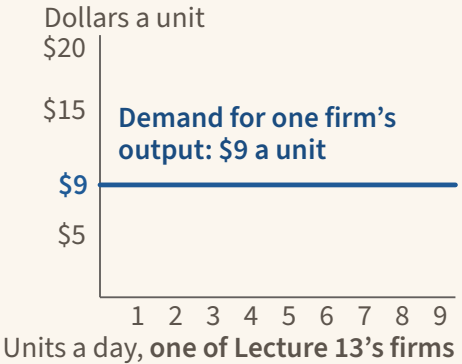
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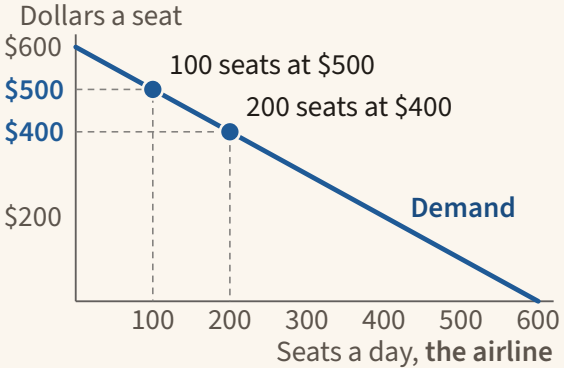
HOW TO READ THE CHARTS

- **Blue**: demand and fares; shaded, the riders' gain
- **Orange**: the cost of one more seat
- **Teal**: the airline's profit
- **Gray**: value lost; hatched, revenue given up

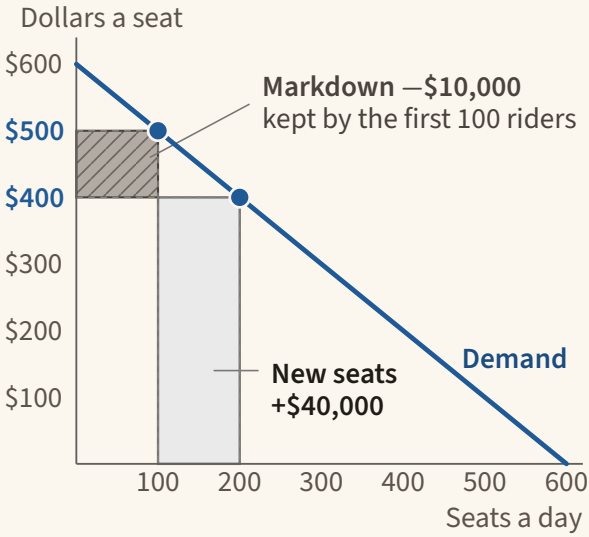
To Fill More Seats, the Airline Must Cut Its Fare

Each of Lecture 13's firms could sell all it wanted at the market price, $9: a *price-taker*. Suppose one airline flies the only nonstop route between two cities and charges one fare to everyone. To fill more seats it must cut that fare for every rider: it is a *price-searcher*, and it must pick its fare.





A Fare Cut Costs Money on Seats Already Sold



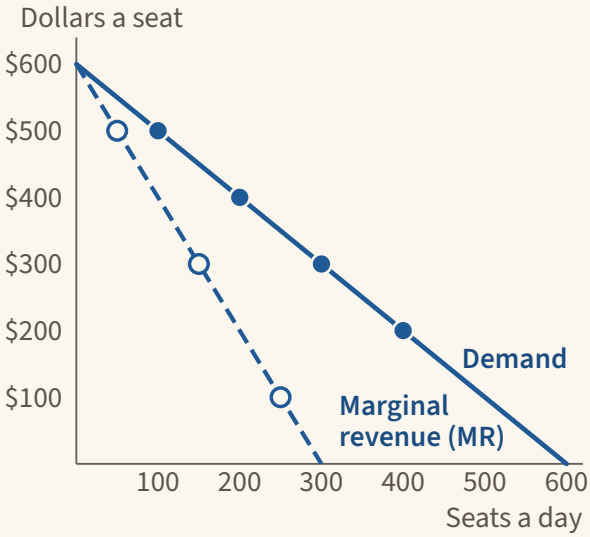
Cut the fare from $500 to $400, and sales go from 100 seats to 200.

New seats: 100 × $400 = +$40,000.

Markdown: the first 100 riders now pay $100 less: —$10,000. That money stays with them.

Revenue rises by $30,000, or $300 a new seat on average. The new seats sell for $400, but they add only $300 each on average.

Marginal Revenue Is Less Than the Fare

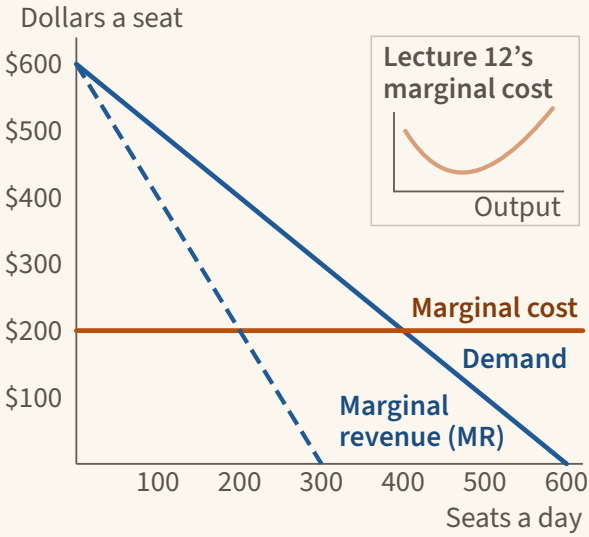


Marginal revenue is the extra revenue from one more seat.

Fare	Seats	Revenue	Extra revenue a seat, from the row above
$500	100	$50,000	$500
$400	200	$80,000	$300
$300	300	$90,000	$100
$200	400	$80,000	—$100

Each value is an average over 100 seats, so it matches the line halfway between rows (open dots). The line hits zero at 300 seats, where revenue peaks.

Each Extra Seat Costs the Airline $200

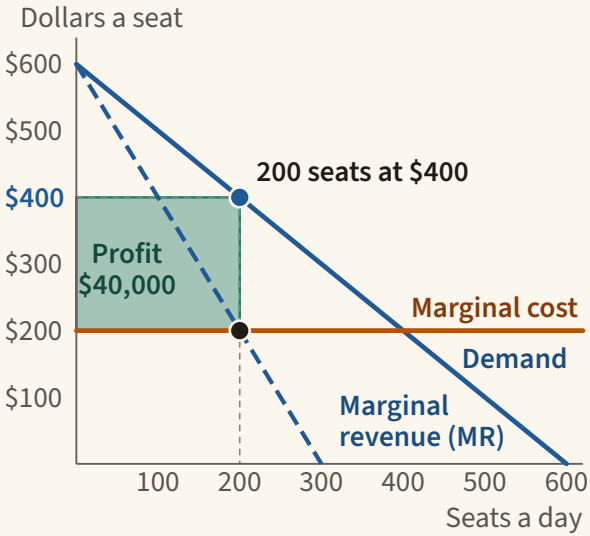


Suppose each seat costs the airline $200 to provide, and there are no other costs. Lecture 12's marginal cost rose (inset). With a flat one, the only reason to stop adding seats is the markdown on seats already sold.

The airline adds seats as long as each brings in more revenue than it costs, and stops when the next seat would bring in less than $200.

Then it charges the highest fare at which those seats sell.

The Airline Flies 200 Seats a Day at $400

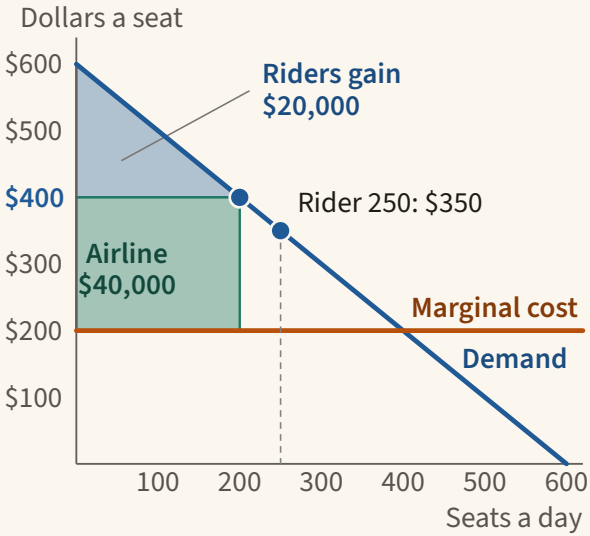


From 100 to 200 seats, each seat adds $300 of revenue on average and costs $200: fly them. From 200 to 300, each adds $100 on average: do not.

The lines cross at 200 seats: marginal revenue = marginal cost = $200. The fare comes from demand: 200 seats sell at **$400**.

Profit: 200 × ($400 − $200) = $40,000 a day.

Riders Gain $20,000; the Airline, $40,000

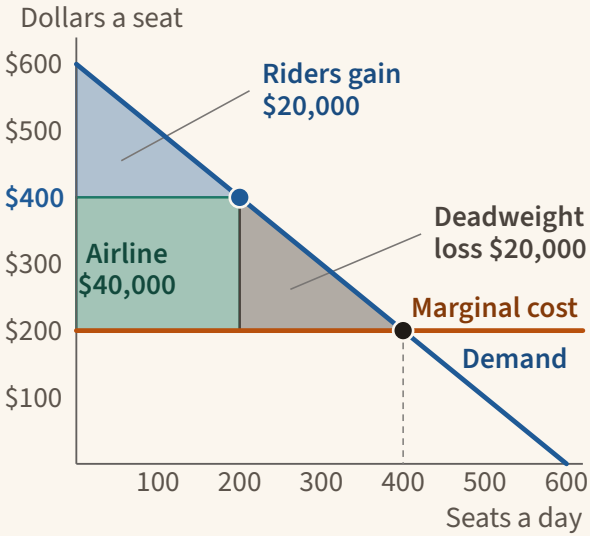


Riders' gain (consumer surplus): the first rider would pay $600, the 200th $400, and each pays $400. ½ × 200 × ($600 — $400) = **$20,000**.

The airline's gain (producer surplus, here its profit): 200 × ($400 — $200) = **$40,000**.

The 250th rider would pay $350 for a seat that costs $200 to provide. The airline does not sell it.

Seats Worth More Than They Cost Go Unsold

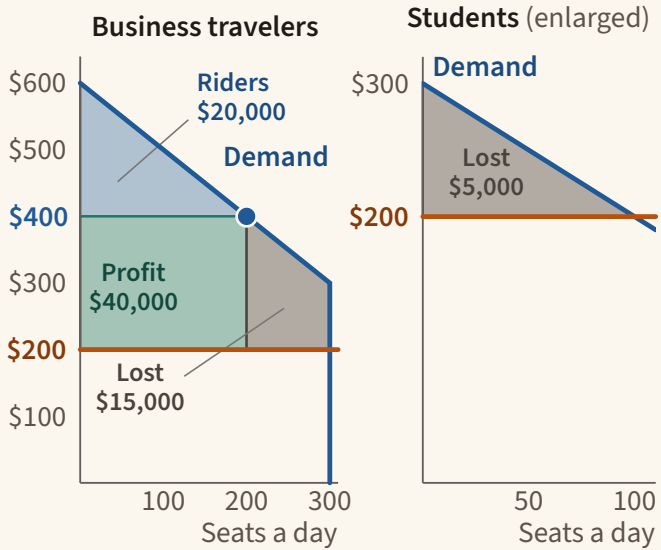


Riders between 200 and 400 would pay more than the $200 a seat costs. A seat for any of them would add value, but selling it means a lower fare for all 200 riders, so the airline stops.

Deadweight loss: ½ × 200 × ($400 − $200) = **$20,000 a day**.

Together, riders and airline gain $60,000. If the fare were $200, 400 seats would fly, and riders would gain $80,000.

Suppose Students Can Get Their Own Fare

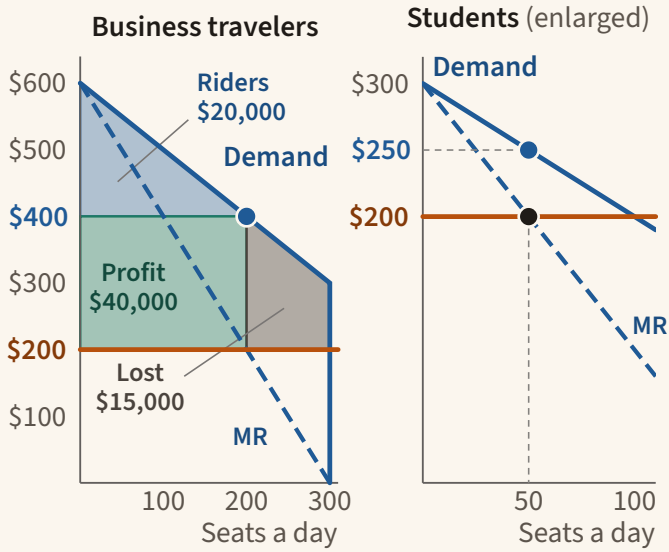


Suppose riders are of two kinds. Business travelers would pay $300 to $600 a seat; students, less than $300. At one fare of $400, only business travelers fly.

With a student ID check, it can give students their own fare. Students would buy:

Student fare	Seats
$300	0
$275	25
$250	50
$225	75
$200	100

Each Group's Last Seat Brings In $200

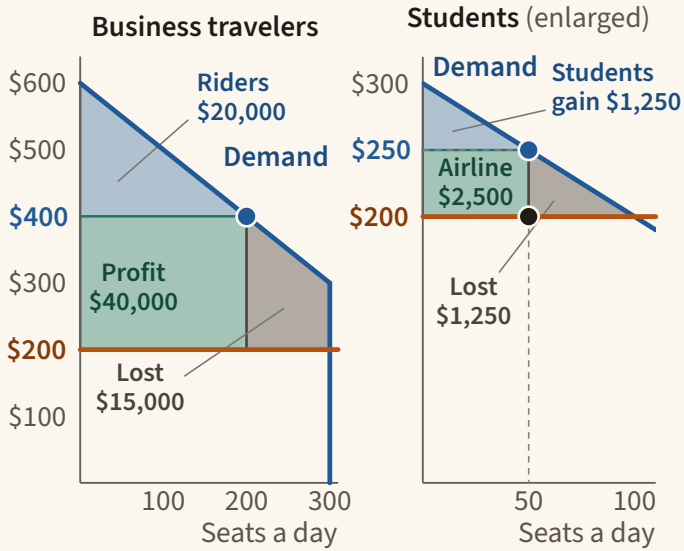


A lower student fare goes to every student, so students' marginal revenue (MR) is below their fare. From 25 to 50 seats, each adds $225 on average; from 50 to 75, only $175. So students get 50 seats at **$250**.

Business travelers keep the $400 fare: their MR is already $200 at 200 seats.

Each group gets seats until its last seat brings in $200, the cost of a seat.

New Student Seats Shrink the Deadweight Loss



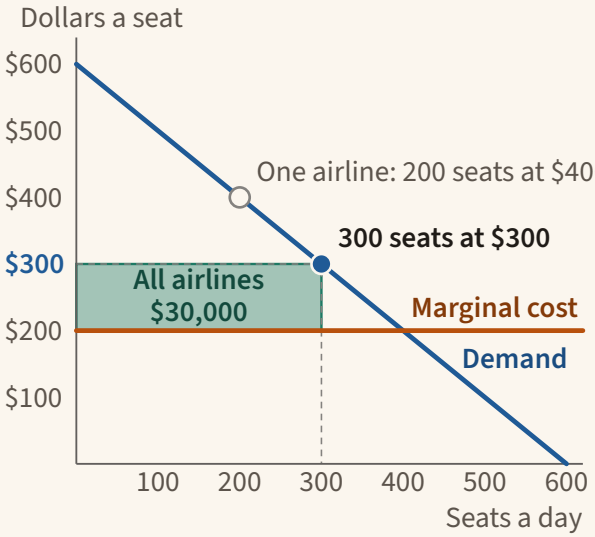
Seats sold: 200 business + 50 students = 250. **Airline +$2,500 a day; students +$1,250;** business travelers, no change.

Deadweight loss: $15,000 + $1,250 = $16,250, down from $20,000.

Here each student seat is a new sale. A price gap that only moves riders from one fare to another adds no value.

It works only if students cannot resell their tickets.

Rivals' Seats Push the Fare Down

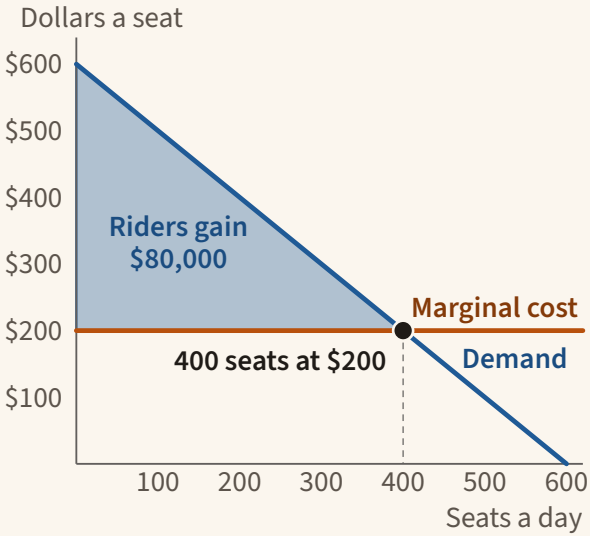


Back to one fare for everyone. Suppose any airline may fly the route on the same terms, at the same $200 cost a seat.

The $40,000 draws rivals. Their seats add to the route's seats, and more seats sell only at a lower fare.

At 300 seats the fare is $300. **All the airlines together earn 300 × ($300 − $200) = $30,000 a day,** so still more come in.

Entry Stops When the Fare Reaches $200



As in Lecture 13, entry goes on while there is profit to win. It stops when the fare reaches $200, the cost of a seat.

400 seats fly. **Riders gain ½ × 400 × ($600 − $200) = $80,000 a day.** The airlines earn zero profit: just an ordinary return.

The $20,000 deadweight loss is gone: every rider who would pay more than a seat costs gets a seat.

The $40,000 Lasts If Rivals Are Kept Out

A closed route

The FAA limits scheduled takeoffs and landings at JFK, LaGuardia, and Reagan National: an airline needs a *slot* for each.

Suppose slots keep rivals off our route. Then no new seats push the fare down, and the $40,000 can last.

A monopoly rent

The $40,000 is a *monopoly rent*: it exists because entry is blocked. Like Lecture 13's medallions, it goes to whoever holds the slots.

So one airline today is not proof of lasting power. What matters is whether others can come in; scale, brand, or switching costs can slow them.

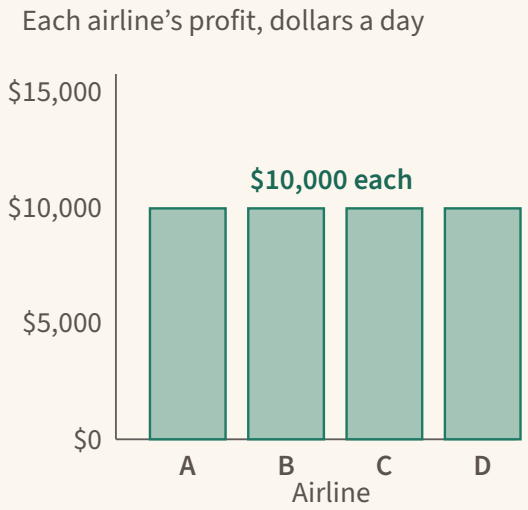
Not every lasting profit is a monopoly rent: it can pay for a new idea, a risk, or a scarce input. A fare rise caused by higher fuel costs is not market power.

Suppose Four Airlines Agree to Act as One

Suppose four airlines fly the route at one common fare, each with the same $200 cost a seat. They form a *cartel*: they agree to act as one airline.

Together they fly 200 seats a day at $400, 50 seats each. Each earns 50 × ($400 — $200) = **$10,000 a day**, a quarter of the one airline's $40,000.

Suppose Airline A breaks the deal and flies 100 seats.



Each Member Is Tempted to Cheat

A flies 100 seats, so 250 seats must sell, at $350. A earns 100 × $150 = **$15,000**; the others, 50 × $150 = $7,500 each.

Each member is tempted the same way. If all four fly 100 seats, 400 seats sell at $200: $0 each.

To hold, a cartel must find every seller, keep new ones out, and catch cheaters. Monitoring, penalties, or laws that keep sellers out can help it hold.

