

## ECON 5103 Unit 11 video 2

Benefits of first degree price discrimination: numerical example

(In which we compare revenue using first degree price discrimination with revenue using no price discrimination)

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List of all potential buyers for your pizza, and their reservation prices:

<u>Potential buyer</u>	<u>Buyer's Reservation Price</u>
Grumpy	\$20
Sneezy	\$15
Angry	\$10
Skinny	\$7

It cost you \$8 to produce and sell each pizza.  
You are also a **psychic**, so you know each buyer's reservation price.

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Suppose government lets you charge any price to anyone for your pizza. (First degree price discrimination)

Your profit-maximizing strategy:

Produce a pizza for Grumpy and charge him \$20 for it.

Produce a pizza for Sneezzy and charge her \$15 for it.

Produce a pizza for Angry and charge him \$10 for it.

Your total revenue:  $\$20 + \$15 + \$10 = \$45.00$

Your total cost:  $\$8 \times 3 = \$24.00$

Your total profit:  $\$45 - \$24 = \$21.00$

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Suppose that government forces you to charge the same price per pizza to all buyers of pizza. What is your best option from the following?

Option 1: Charge \$20 per pizza. Grumpy will buy it.

Your profit:  $\$20 - \$8 = \$12.00$

Option 2: Charge \$15 per pizza. Grumpy will buy one for \$15 and Sneezzy will buy one for \$15.

Your profit:  $\$15 + \$15 - \$8 - \$8 = \$14.00$  <--best option

Option 3: Charge \$10 per pizza. Grumpy will buy one for \$10 and Sneezzy will buy one for \$10 and Angry will buy one for \$10.

Your profit:  $\$10 + \$10 + \$10 - \$8 - \$8 - \$8 = \$6.00$

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Compare:

Under first degree price discrimination, you sold 3 pizzas, took in \$45 of revenue and made \$21 of profit.

With no price discrimination, you sold 2 pizzas, took in \$30 of revenue and made \$14 of profit.

So first degree price discrimination resulted a \$7 gain in profit (when compared to no price discrimination).