Lecture 11(ii)

- Look at Reading 6 at Canvas for next week.
- There is also a practice problem at week 12 on Canvas related to Reading 6

Lecture

1. Natural Monopoly

2. Perfect Price Discrimination

3. Imperfect Price Discrimination

Natural Monopoly

If economies of scale are important, there may only be room for one firm.

Go back to S4 widget monopoly and assume suppose a fixed cost of $6.

Even if there is free entry and lots of people just like S4, only one will enter.

Remember without the fixed cost monopoly profit is $9.
With fixed cost, a monopolist earns $3 = $9 - $6.
If two firms enter, even if they act like monopoly, the $9 can't cover paying fixed cost twice.

profit = 3
when have
FC = 6

P^m

ATC

MC = AVC

D

MR

Q^m
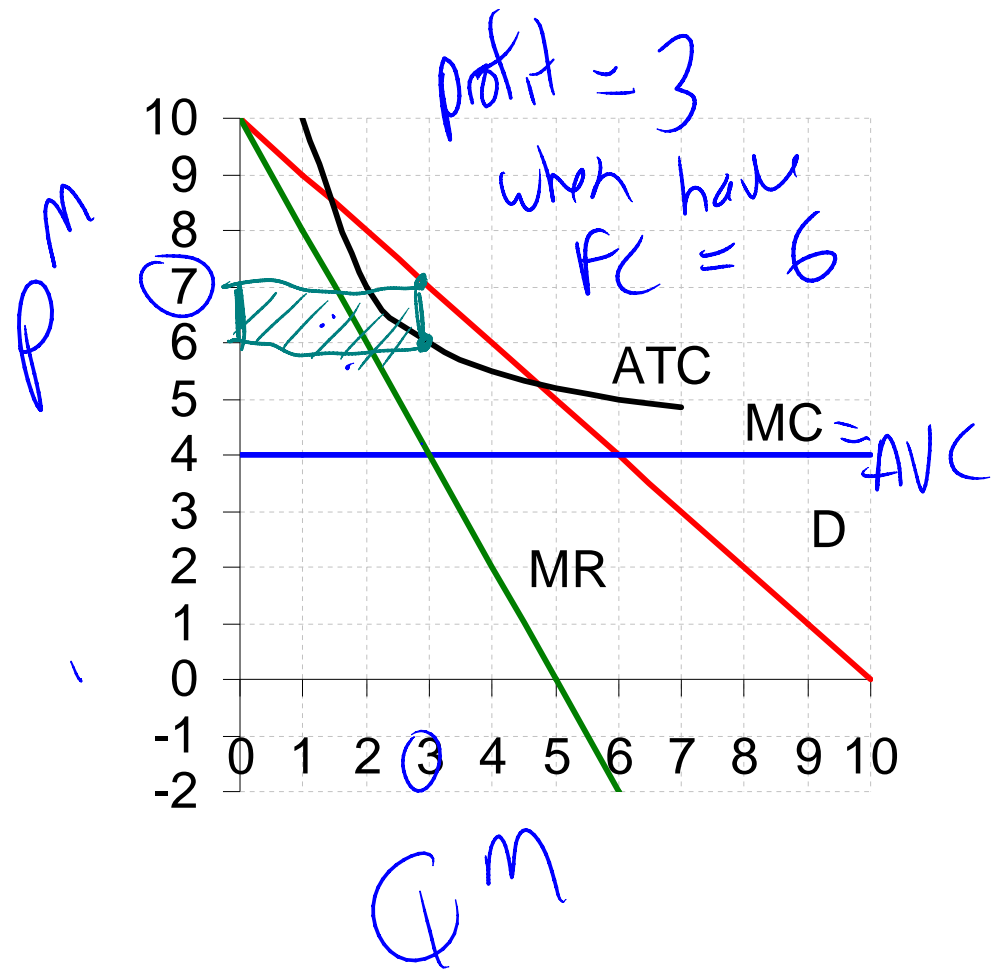
Discuss: add fixed cost, price stays the same. Why?

Can use the table to see ths.

Q	P	Rev	FC = 0		FC = 6	
			Cost	Profit	Cost	Profit
1	9	9	4	5	10	−1
2	8	16	8	8	14	2
3	7	21	12	9	18	3
4	6	24	16	8	22	2
5	5	25	20	5	26	−1

How change?

Adding FC does not change MC.
It doesn't change MR, since MC
and MR stay the say, the place
where they intersect stays the
same, so the monopoly quantity
doesn't change.

Examples of Natural Monopoly

Distribution of residential electric power.

Water

Gas station in very small town.

Above is all cost-side driven. What about demand-side? Network benefits for uses potentially create a natural monopoly.
        Maybe Facebook?
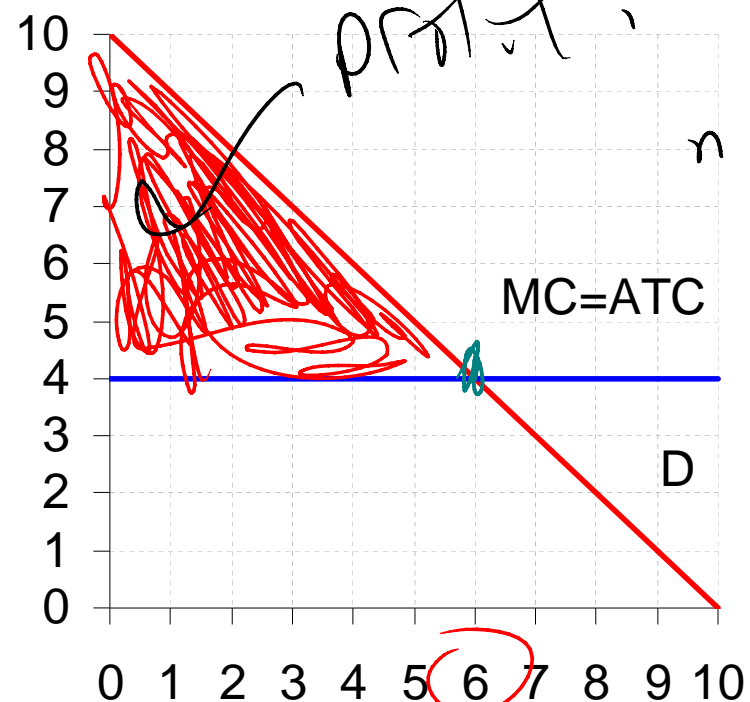
Price Discrimination

Uniform pricing: all pay the same price per unit.

Perfect Price Discrimination: monopolist charges everyone their reservation price.

In Econland, D1 would pay 9
D2 would pay 8, etc.

Now marginal revenue is the price paid (since keep the price high on the first units).

Perfect price discrimination on graph:

MC=ATC

D

profit

Extracts all surplus!
S4 maximizes total pie and takes whole thing for herself!

Q with perfect price disc

What about efficiency with perfect price discrimination

Since monopolist gets all the surplus, it maximizes the surplus!

Compare quantity to quantity with competition.

Quantity if monopoly perfect price discrimination of 6 is the same as with perfect competition.

More likely case:
Imperfect Price Discrimination

With uniform pricing, S4
- sets P = 7
- Q = 3 (sells to D1, D2, D3)

One day S4 notices:
- D1, D2, D3 all happen to be 30 years old
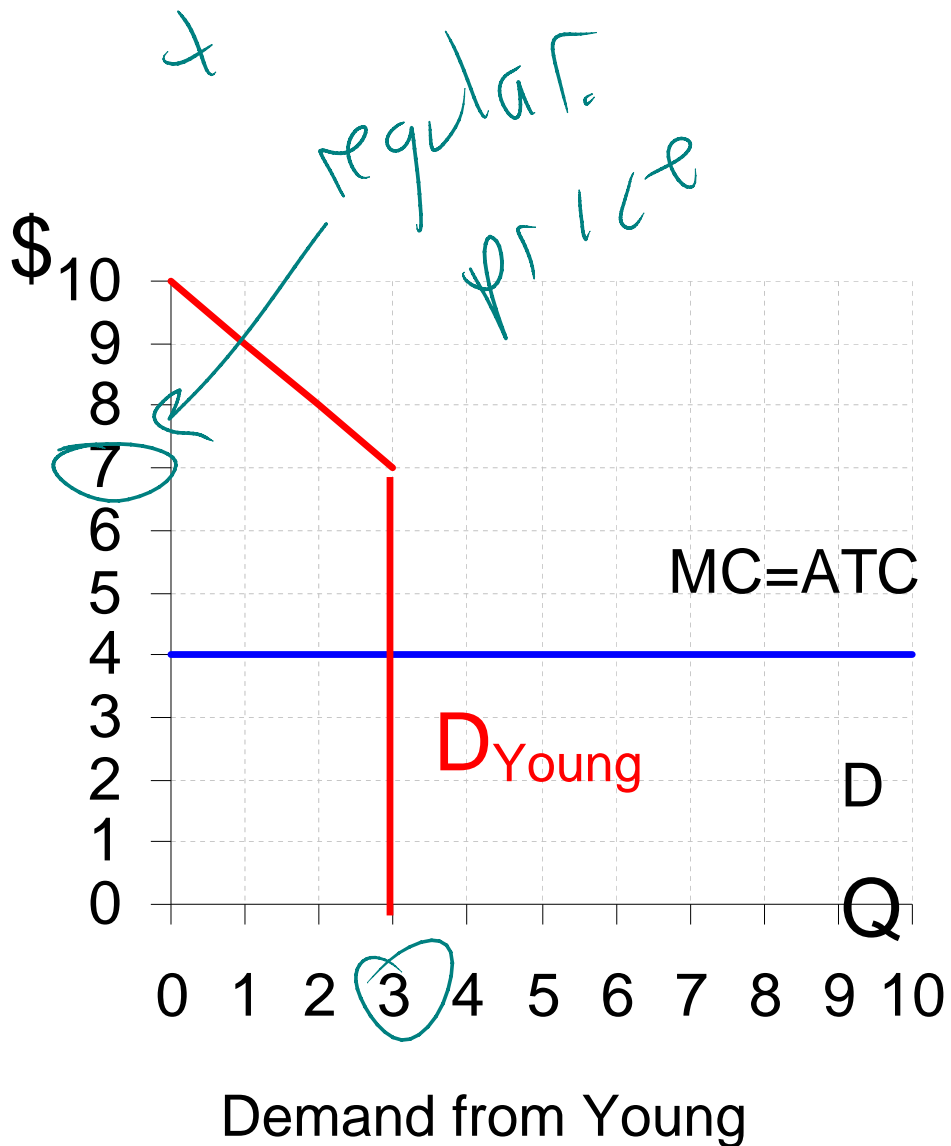- D4, D5, D6, all senior citizens.

Brilliant idea!
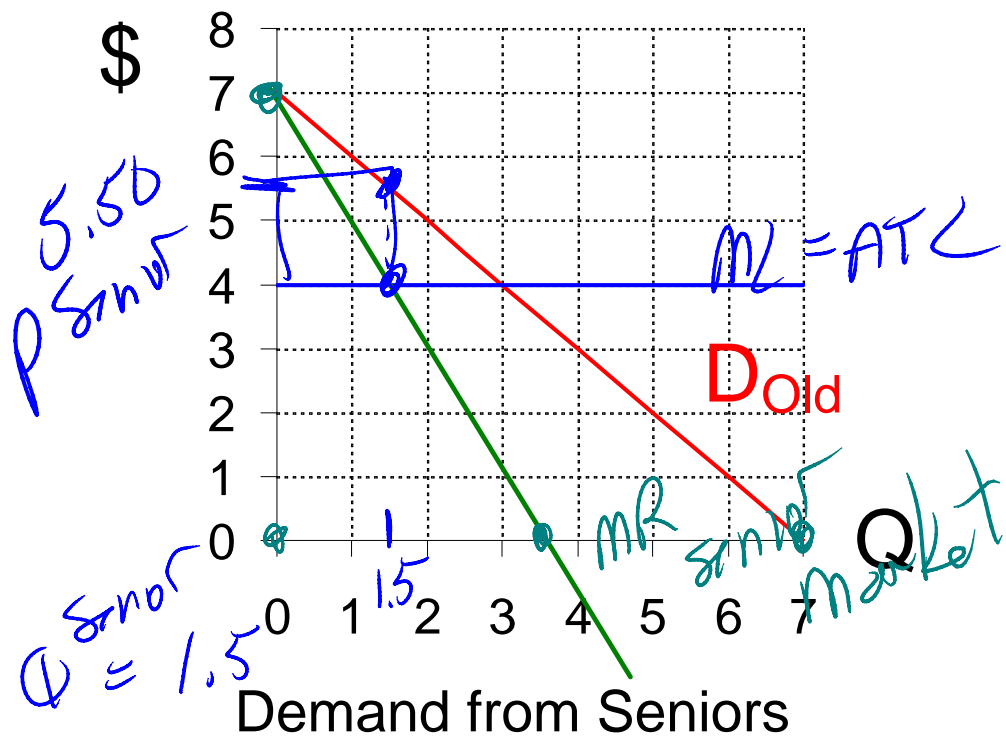Senior citizen discount

How work?
Set P = 7 as regular price.
Sell Q = 3 at regular price.

Price Discrimination

regular price

MC=ATC

D_{Young}

D

Q

Demand from Young

To get demand in senior market, chop off first three units of the demand curve (these are the 30 year olds)

$5.50 P_{senior}$

MC=ATC

D_{Old}

MR senior market

Q market

Q senior = 1.5

Demand from Seniors

Quantity is 1.5
(Where MR in senior market equals
MC)

Price to seniors: 5.5

Profit on seniors:
$$= (P - ATC)*Q$$
$$= (5.5 - 4)*1.5 = 2.25$$

Profit in regular market
$$= 9 \text{ (just like before)}$$

Total profit (adding profit on seniors)
is
$$9 + 2.25 = 11.25$$

Who wins, who loses when firm can
price discriminate?

1. Firm wins.

2. Seniors win.

3. Here 30 year olds don't care. Pay
$7 either way.
But can change the numbers so they
pay more.

So possible they are worse off.

But possible they are better off?

The people paying high price can benefit from price discrim. if the product would not exist otherwise.

Suppose have a fixed cost of $10.

Uniform pricing:
    Profit is $9 with no fixed cost
        = -$1 with fixed cost. A loss

So exit

Price Discrimination
    Profit is 11.25 with no fixed cost
    = 11.25 − 10 = 1.25 with fixed cost.

So stay in.

Major issue Firms Practicing Price Discrimination Need to Deal With:

How to keep the markets separate?

People paying the high price will try to figure out how to pay the low price.

Example: Americans buying drugs in Canada.

How do airlines do it?

Ability to practice price discrimination can make the allocation more efficient:

Expansion of output in markets where marginal benefit > marginal cost

Can possibly even benefit people who pay the high prices if the product would not exist without price discrimination (because the firm might otherwise not be able to capture enough revenue to pay fixed cost).

But….

Can lead to inefficiencies as firms add restrictions to keep markets separate.

For example, airlines sometimes require a Saturday stayover to get a cheap fare. Of course a traveler staying over a Saturday does nothing to reduce the cost to the airline of serving the customer. What this restriction can do is help separate the business travel market from the personal travel market.