

# Monopolistic Markets



Monopoly Power and Added  
Value

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# What is a monopoly?



- A monopoly is a market with a single producer.
  - All of the substitutable products are controlled by the same player.
  - We look at the extreme case of monopoly first in order to examine pricing decisions in the absence of other concerns -- such as competition
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# Examples



- Trains
  - Water service
  - Australia Post?
  - Large employer in a small town
  - Quality monopolies: Sony Trinitron, Nintendo Entertainment System, Nike
  - Microsoft ...
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# Discussion Point



Is Microsoft a monopoly?

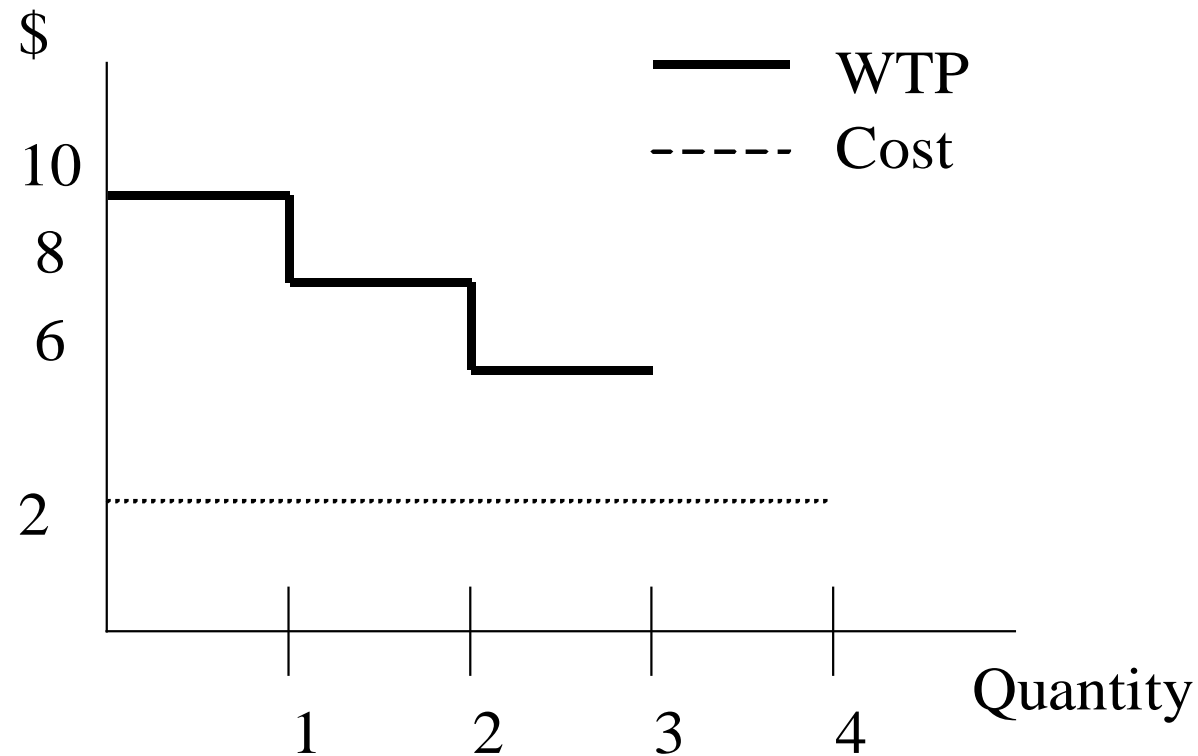
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# Several Customers



- Assume that there is one seller and three buyers.
  - Also assume that there is sufficient supply to cover all three customers.
  - Seller's costs are \$2 per unit.
  - Each buyer values at most one unit
    - the three buyers have WTPs of \$10, \$8 and \$6 respectively.
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# Market Demand and Supply




# Value Created



- What is total value in this market?  
 $(10 - 2) + (8 - 2) + (6 - 2) = 18$  (= Seller AV)
  - Will the monopolist capture all of this?
    - Depends on Added Value:  
Buyer 1: \$8, Buyer 2: \$6, Buyer 3: \$4
    - Buyers add some value so will expect them to capture some this
  - No monopoly power (like Card
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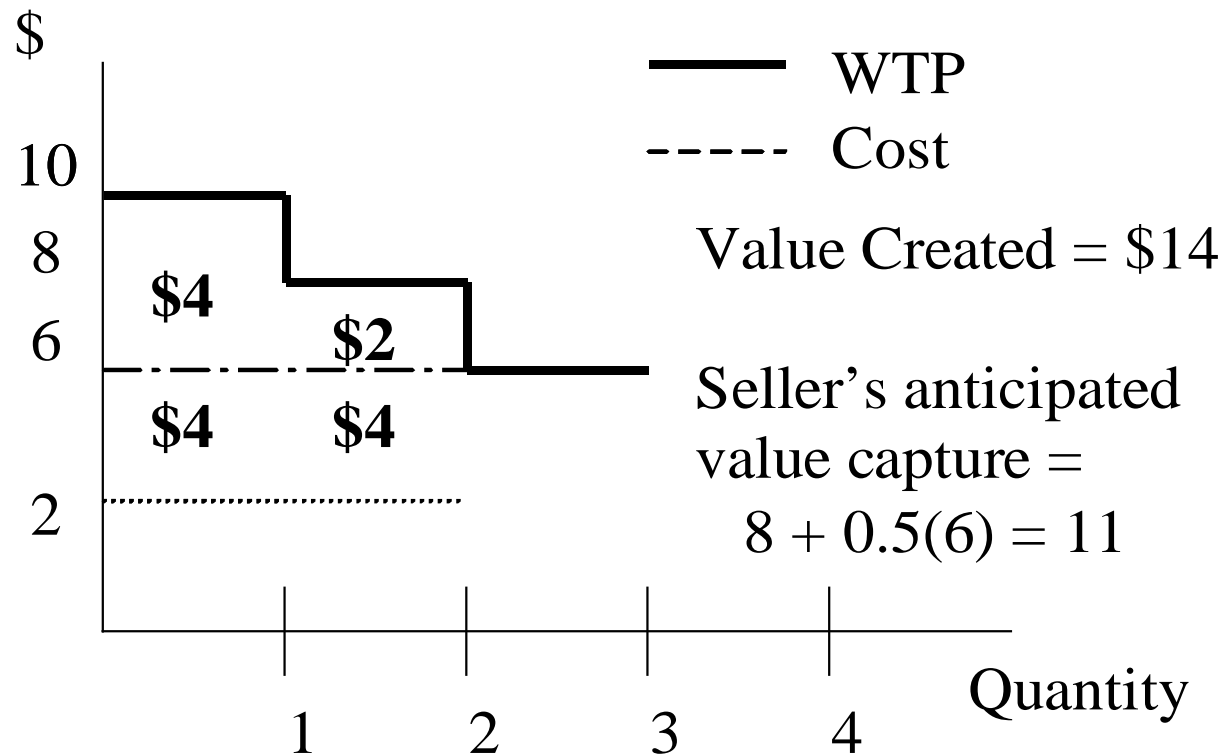
# Limited Supply



- Suppose that the monopolist has only two units to sell. Cost per unit is still \$2.
  - What is total value in this market?
    - Sell units to those who value it the most
    - $(10 - 2) + (8 - 2) = 14$  (= Seller Added Value)
  - Always better off selling to high WTP buyers. If sells to buyer 3, both seller
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# Added Values



# Competition Among Buyers



- Added Value

- Buyer 1: \$4

- Buyer 2: \$2

- Why the drop?

- Potential competition from buyer 3

- If either 1 or 2 leave the game, the seller can still earn up to \$6 from buyer 3

- 3 is the 'just excluded buyer'

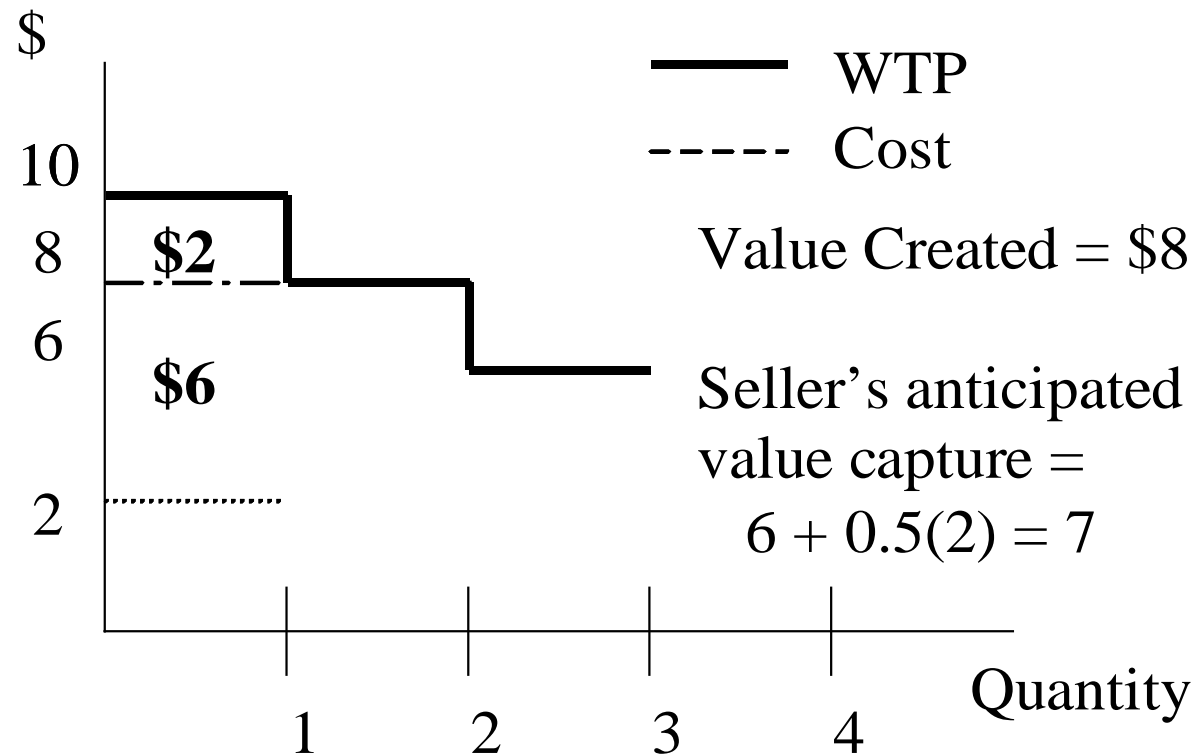
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# Comparing Sufficient and Insufficient Supply



- Which situation does the seller prefer?
    - Seller prefers insufficient supply in our example
    - Lower total value but captures a larger proportion of the pie
  - But is it always good to limit supply?
    - ...
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# Too Little Supply



# How much capacity?



- Usual trade-off
    - Underbuild - lose sales
    - Overbuild - pay for unused capacity
  
  - Added-value trade-off
    - Underbuild - limit customer's added value
    - Overbuild - every customer is powerful
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# Social Consequences



- The monopolist must trade off greater capture with lower value created.
  - If the monopolist seller can choose supply in our example, it chooses to have a quantity of 2.
  - This involves a social loss in that buyer 3 valued a unit at 6 while its cost of production would be 2.
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# Good vs Bad Monopoly



- A firm might be a monopolist but not be able exercise monopoly power.
- *Monopoly power* refers to the practice of firms restricting output (or otherwise destroying value) in order to diminish buyers' added value.

*Name some 'good' and 'bad' monopolies*

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# Exercising Monopoly Power



- Take action to limit others' added value
    - Reduce output: But is it a credible commitment?
    - What happens if not credible?
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# Conditions for Monopoly Power



- When can a firm exercise monopoly power?
    - Credibly restrict output (DeBeers)
    - Reputation for output reductions (Disney)
    - Insufficient plant (Nintendo)
  - When can't a firm exercise monopoly power?
    - Banking, APRA, unions
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# Water and Diamonds




“Nothing is more useful than water; but it will purchase scarce anything; scarce anything can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it.”

■ Adam Smith, *Wealth of Nations*, 1776.

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# Why are diamonds so expensive?



- Relative scarcity caused high value
- Created incentives to find new deposits. This was done over the next two centuries.
- There is now an abundance of diamonds.
- Why do they cost so much? DeBeers

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# The DeBeers Monopoly



- Almost all of the world's diamonds sold through DeBeers' distribution system or Central Selling Organization (including Russia).
  - DeBeers restricts supply: invites a selected number of dealers. If they try and speculate they are not invited back.
  - DeBeers manages demand through marketing.
  - How much longer will the monopoly persist?
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# Some Surprising Facts ...

## ■ 1991 Average Market Value

|          |                  |
|----------|------------------|
| Nissan   | 2.0 Trillion Yen |
| Sony     | 2.2 Trillion Yen |
| Nintendo | 2.4 Trillion Yen |



## ■ Why is this so?

Added value ...

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# Nintendo's Strategy



- Bargain hardware
  - Great software (games)
    - revitalised the video game business (which had died after Atari)
    - created a *virtuous cycle*: increased sales lead to more software houses lining up to be part of Nintendo.
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# A Key Component



- Exclusivity clause in licensing agreement
    - increased demand drives down manufacturing costs
    - growing base of machines attracts more outside game developers
    - increases demand further
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# Restricting Supply



As demand increased Nintendo was careful about flooding the market.

- Controlled the number of copies of games produced and retailed
  - 1988 Christmas season saw a massive shortfall in supply
  - paradoxically, the shortfall lead to increased demand. Why?
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# Shortages and Demand



Shortages ...

1. made the cartridges more desirable in the eyes of consumers.
2. made headlines (free advertising)
3. helped retailers move slower-selling Nintendo games

Are there other examples of this?

(Cabbage Patch Kids, Tamagochi, Classic Coke)

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# The Result



- Nintendo had rebuilt home video games to a \$5 billion worldwide business
  - 90% share of US and Japanese 8-bit video game market
  - Nintendo products accounted for over 20% of the entire US toy industry
  - Mario was more popular than Mickey
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# Potential Competition



- Could a challenger breach Nintendo's virtual cycle?
  - At the time, no alternative in kids' minds to a video game.
- Had to compete on same platform
  - software: prevented by exclusivity
  - hardware: leapfrog Nintendo with new technology

... Sega

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# Power?



- Nintendo's monopoly in 8-bit video machines meant its added value equalled the entire home video game pie
    - no threat from competitors
  - Which other players had a claim on the pie?
    - retailers: Toys R' Us, Walmart
    - complementors: Acclaim, Electronic Arts
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# Limit others value added



- Combat buying power of retailers by keeping cartridges in short supply.
  - Software: security chip allowed them to manage licensing; restrict to 5 titles; develop games in-house and by multiple independents.
  - Suppliers: Mario was a hit and reduced the power of Mickey Mouse.
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# Key Question



If there is money lying on the side of the road, why isn't it picked up?

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# Durable Good Monopoly



- When a monopolist sells a durable good, after some customers have purchased the good, the monopolist might wish to offer discounts.
    - They can do this as only new customers will purchase the product.
  - However, if initial customers anticipate this temptation, they might choose to wait.
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# IBM's Solution



- A monopolist selling durable goods, therefore, competes with its future self, reducing its ability to monopoly price.
  - To regain its monopoly profits, it needs to commit not to lower prices in the future.
  - IBM chose to lease rather than sell its mainframes. One effect of this was to reduce its temptation to lower prices in the future. Price reductions must be passed on to all.
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# The National Football League



- A monopsony (single buyer)
- Limits the supply of teams
- Limits its demand for players (more people who wish to play than there are slots)
- Reduces the added value of suppliers

Is 'Super League' a good or bad thing?

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# Olympic Bidding



|                         | <i>Actual Dollars</i> | <i>1960 Dollars</i>            |
|-------------------------|-----------------------|--------------------------------|
| 1960 (Rome, CBS)        | \$0.4 million         | \$0.4 million                  |
| 1968 (Mexico City, ABC) | \$4.5 million         | \$3.8 million                  |
| 1976 (Montreal, ABC)    | \$25 million          | \$13.0 million                 |
| 1980 (Moscow, NBC)      | \$87 million          | \$31.2 million                 |
| 1984 (Los Angeles, ABC) | \$300 million         | \$85.7 million                 |
| 1988 (Seoul, NBC)       | \$300-500 million     | \$76.4 million - 127.3 million |
| 1992 (Barcelona, NBC)   | \$401 million         | \$90 million                   |
| 2000 (Sydney)           | \$1 billion +         |                                |

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# Competitive Bidding



- How did the Soviet Union pull off the large price increase?
  - ABC won Montreal without competition. Allegations of bribes here. ABC receive \$25 million in advertising revenue.
  - Soviets ensured all three networks bid. Continued rounds of sealed bids. Promised to keep bids secret but didn't. Kept re-opening bidding.
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# Competing for the Grand Prix



- Competition improves outcomes for sellers.
  - Reduce competition improves outcomes for buyers.
  - If buyers can collude and reduce competition, why don't they do so?
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# Discussion Point



Is Microsoft a 'Bad'  
Monopolist?



# Constraining Monopolies



1. Introduce a competitor
  2. Withdraw from the game ('bypass')
  3. Collective bargaining
    - E.g., mercata.com
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