

Oligopoly

Rob Hayward

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Imperfect competition

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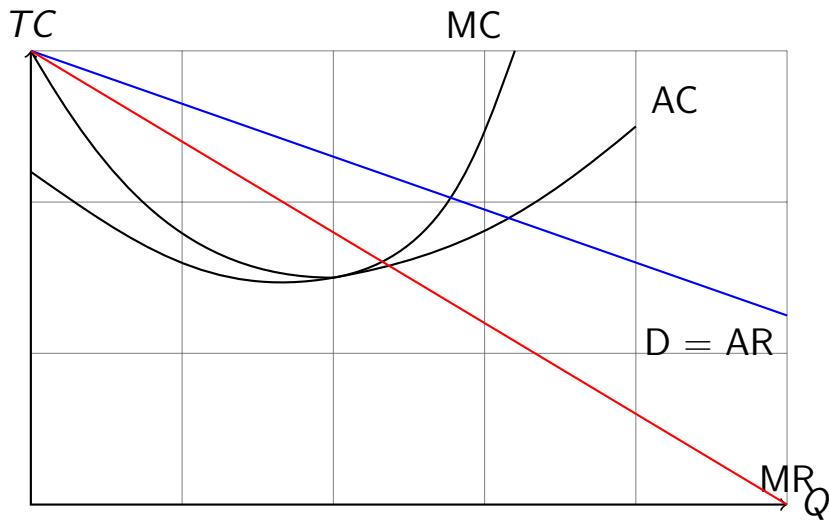
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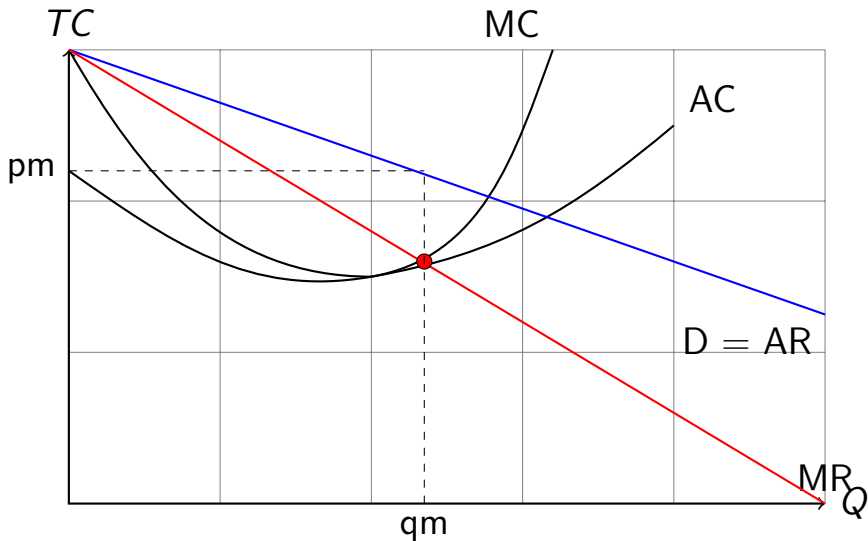
There are two broad categories of *imperfect competition*

- Monopolistic competition: where there is *product differentiation*. There tend to be lots of small companies because there are no barriers to entry
- Oligopoly: where there are some barriers to entry. There tend to be a few large companies

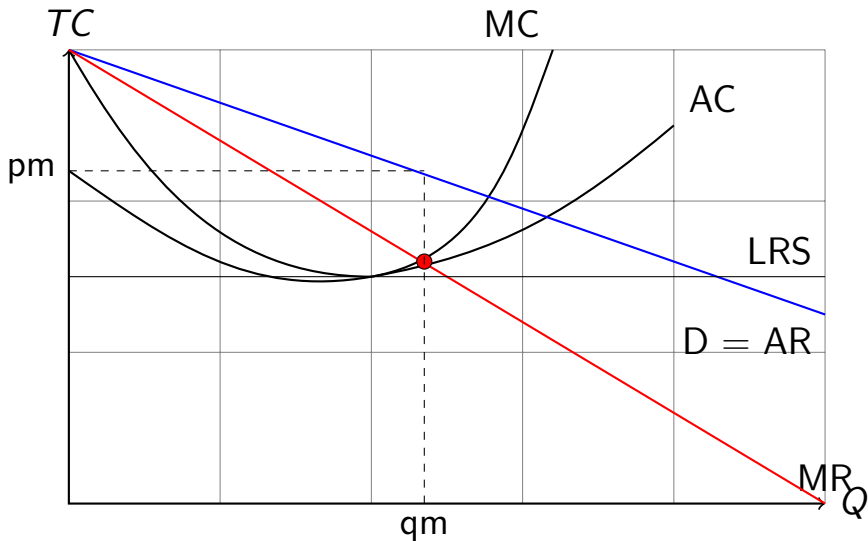
Competition vs monopoly



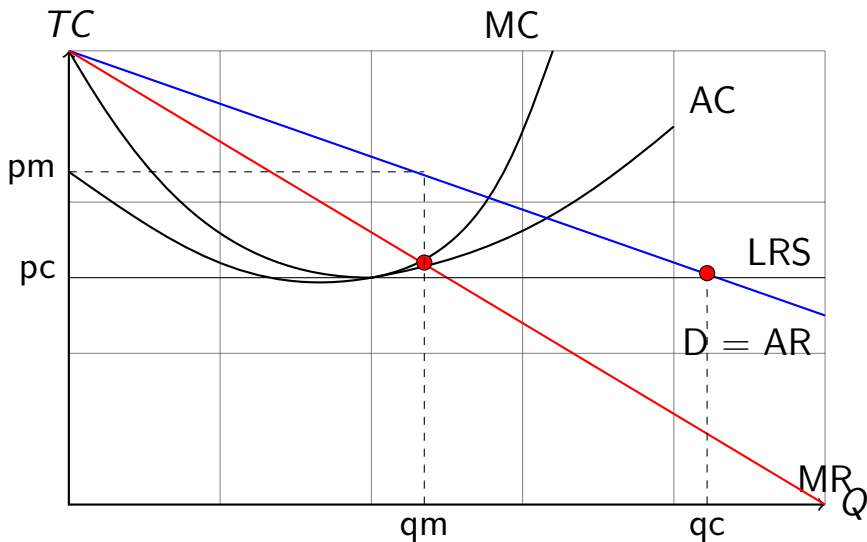
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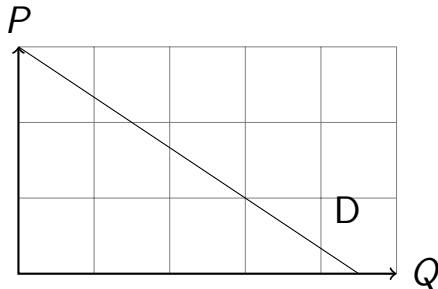
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- More complicated analysis.
- Use of *game theory*

Duopoly

| Q | P | TR ($P \times Q$) |
|-----|-----|---------------------|
| 0 | 120 | 0 |
| 20 | 100 | 2000 |
| 40 | 80 | 3200 |
| 60 | 60 | 3600 |
| 80 | 40 | 3200 |
| 100 | 20 | 2000 |
| 120 | 0 | 0 |



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- LCD display

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- Or, total output 80, price 40, profit 3200 (1600 each)

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- Total output of 70, price 50, profit 3500 (2000-1500 split)
- Or, total output 80, price 40, profit 3200 (1600 each)
- *Nash equilibrium*
- Total output 90, price 30, profit 2700 (1500 1200 split)

Number of firms

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At the extreme as number of firms tends to infinity, output effect dominates and there is perfect competition.

Game theory

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- These are portrayed in a *payoff matrix*

Prisoners' dilemma 1

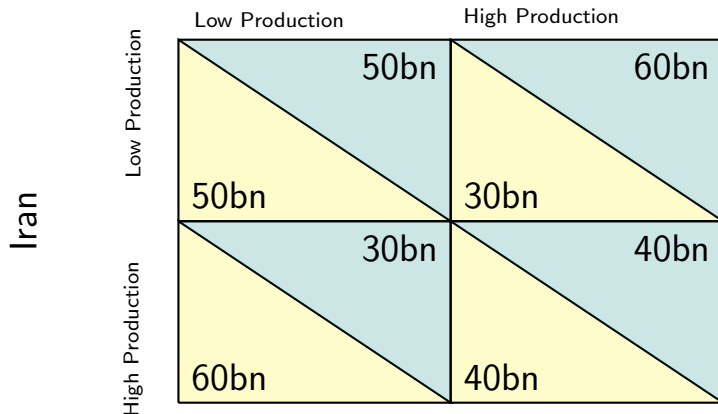
Prisoner B

Prisoner A

| | | Keep Quiet | Confess |
|------------|------------|------------|---------|
| Prisoner A | Keep Quiet | 1 / 1 | 0 / 20 |
| | Confess | 20 / 0 | 8 / 8 |

Prisoners' dilemma 2

Saudi Arabia



Prisoners' dilemma 3

| | | Firm B | |
|--------|----------------|-------------------------------|-------------------------------|
| | | No Advertising | Advertising |
| Firm A | No Advertising | <div>4bn</div> <div>4bn</div> | <div>5bn</div> <div>2bn</div> |
| | Advertising | <div>2bn</div> <div>5bn</div> | <div>3bn</div> <div>3bn</div> |

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- The auction of G3 networks

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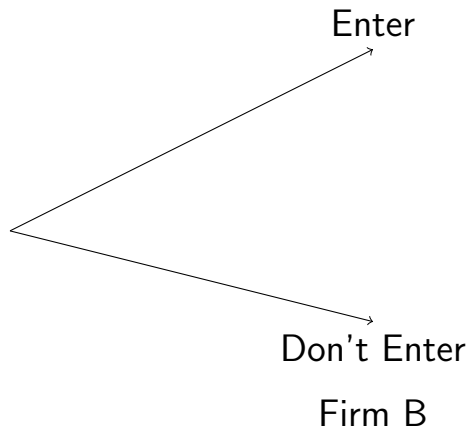
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 - *Contestible markets*

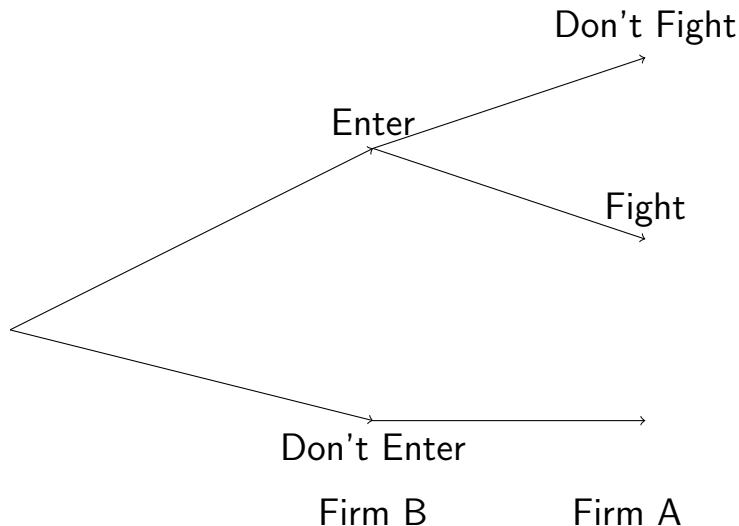
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 - *Contestible markets*
 - Credible threats

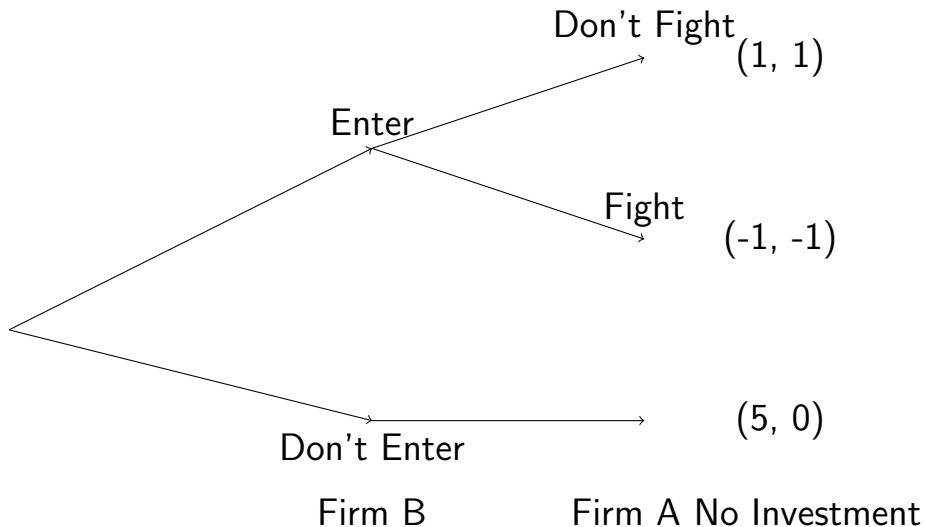
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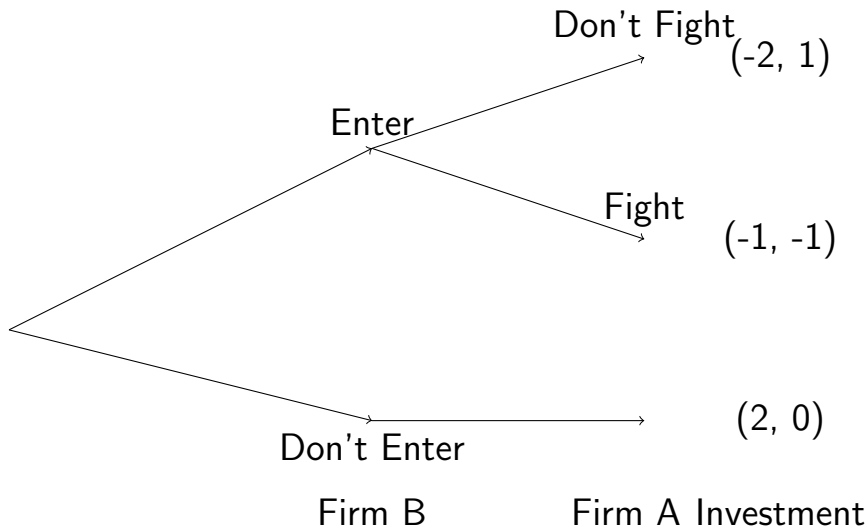
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Credible Threats: Investment



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- Retail price maintenance
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 - Gillet-printers