Context and concepts

- **Context**: In many businesses, firms increase revenue by charging different prices to different market segments. What are the challenges? Do firms benefit? Do consumers benefit?
- **Concepts**: market segmentation, two-part tariffs, elasticity rule.
- **Examples**: airline fares, drug prices, cell phone plans.

**Example: laptop pricing**

- Production cost is $1,200
- Three types of buyers:

<table>
<thead>
<tr>
<th>Type</th>
<th>Will. to Pay ($)</th>
<th>No. (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3000</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>2000</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>1000</td>
<td>30</td>
</tr>
</tbody>
</table>

**Example (cont.)**

- **Strategy 1**: Price at $3000
  Profit = ($3000-$1200) x 10K = $18m
- **Strategy 2**: Price at $2000
  Profit = ($2000-$1200) x 30K = $24m
- **Strategy 3**: Price at $3000 for Type 1
  Price at $2000 for Type 2
  Profit = ($3000-$1200) x 10K
  + ($2000-$1200) x 20K = $34m

- If price discrimination is possible, it pays (absent competitive effects)

**“Perfect” price discrimination**

- Each customer is charged a different price—exactly his/her willingness to pay ("from each, according to his/her willingness")
- Examples: plumber, lawyer, piano teacher

**Effects of price discrimination**

- Normally increases size of market (or creates a new one!)
- Normally increases firm profits and decreases total consumer surplus.
- Total surplus could go up or down
- Implies that different consumers pay different prices.
**Who gains and loses?**

- The seller gains: revenue and profits go up.
- The low-price buyer often gains: the product would not be affordable if a uniform price were charged. Unless discrimination is perfect, the low-price buyer gains.
- The high-price buyer often loses: much of the consumer surplus is absorbed by the seller. However, if the product would not exist otherwise, the high-price buyer can benefit, too.
- Net effect: not clear whether this is good or bad for society as a whole. It depends!

**Practical difficulties**

- Identifying groups:  
  - age (senior and student discounts), country, past buying patterns  
- Avoiding arbitrage: 
  - Resale, grey markets, Microsoft NT  
- Legal limits, US:  
  - Injury to competition: Robinson-Patman  
  - Examples: Budweiser, pharmaceuticals  
  - Privacy protection  
- Legal limits, EU:  
  - Single market  
  - Examples: United Brands, Silhouette  

... Coming next. All approaches to PD are approximations to PPD. We'll talk about some possible strategies.

**Two-part tariffs**

- Two-part tariff = entry fee + marginal price  
- Examples: amusement parks, telephone service  
- If all consumers are the same, set marginal price = marginal cost entry fee = consumer surplus  
- Result: perfect price discrimination  

**Discrimination among groups**

- When different segments can be identified directly (i.e., it's easy to know who is who)  
- Examples: senior citizens, children, students  
- Another example: geographical segments  
  - European car market  
- Different elasticities ⇒ different prices  
  - Recall "elasticity rule": set higher prices in less elastic market segments

**Markups on European cars**

<table>
<thead>
<tr>
<th>Model</th>
<th>Blgm</th>
<th>France</th>
<th>Ger'y</th>
<th>Italy</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiat Uno</td>
<td>7.6</td>
<td>8.7</td>
<td>9.8</td>
<td>21.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Nissan Micra</td>
<td>8.1</td>
<td>23.1</td>
<td>8.9</td>
<td>36.1</td>
<td>12.5</td>
</tr>
<tr>
<td>Ford Escort</td>
<td>8.5</td>
<td>9.5</td>
<td>8.9</td>
<td>8.9</td>
<td>11.5</td>
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<tr>
<td>Peugeot 405</td>
<td>9.9</td>
<td>13.4</td>
<td>10.2</td>
<td>9.9</td>
<td>11.6</td>
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<tr>
<td>Mercedes 190</td>
<td>14.3</td>
<td>14.4</td>
<td>17.2</td>
<td>15.6</td>
<td>12.3</td>
</tr>
</tbody>
</table>

Data from early 1990s.

What's going on here?
**Takeaways**

- Key issues are:
  - Identifying market segments
  - Avoiding “arbitrage”
  Each raises practical difficulties (more soon)
- “Perfect” price discrimination: charge each customer what he/she is willing to pay (take all the consumer surplus!).
- Discrimination typically benefits the seller. Some buyers gain, other lose. Overall impact ambiguous.

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**Example 1 from notes**

Xamoff pricing in US and EU

(Inverse) demand curves:

\[ p_i = \alpha_i - \beta_i q_i \]

US: \( \alpha_1 = 6, \beta_1 = 1/2 \)

EU: \( \alpha_2 = 4, \beta_2 = 1 \)

Production cost is \( c = 1 \)

What prices? This is two monopoly problems. Answers are \((p_1, q_1) = (3.5, 5)\), \((p_2, q_2) = (2.5, 1.5)\). Uniform price is 3.17, with quantities \( q_1 = 3.17, q_2 = 0.83 \).

Consumer surplus? EU better off, US worse off.