### Agenda

- Rationale
- Non-Linear Pricing
- Multi-part Tariffs
- Peak-Load Pricing

### Rationale

- Efficient Prices

### Rationale

- Efficient Prices
  - Welfare Highest
  - Sum of PS & CS

### Rationale

- Efficient Prices
- Winners Compensate Losers

### Rationale

- Efficient Prices
- Winners Compensate Losers
- Break-even Constraint Lowers Welfare
Rationale

- Efficient Prices
- Winners Compensate Losers
- Break-even Constraint Lowers Welfare
- Peak-load pricing example

Two-Part Pricing

- Economic Profits = 0
- Uniform Price

Price

\[ P \]

\[ Q_1 \]

Quantity

Two-Part Pricing

- Entrance Fee + Usage Charge

Price

\[ P \]

\[ Q_1 \]

Quantity

Two-Part Pricing

- Entrance Fee + Usage Charge
- Declining Block Tariff

Price

\[ P \]

\[ Q_1 \]

Quantity
Declining-Block Pricing

Demand
Quantity
Price
MC
P
P
P
Q₁

Two-Part Pricing
- Entrance Fee + Usage Charge
- Declining Block Tariff
- Volume Discount Tariff

Volume Discount Pricing

Demand
Quantity
Price
Discount
MC
P
P
Q₁

Two-Part Pricing
- Entrance Fee + Usage Charge
- Declining Block Tariff
- Volume Discount Tariff

Two-Part Pricing

Revenues
P₁
P₂
E
Q₁
Quantity

Self Selecting Two-Part Pricing

Revenues
P₁
P₂
E₁
E₂
Q₁
Quantity
Two-part Tariffs

- Self-selecting Two-part Prices
- Pareto Dominating
- Equivalent to Declining Block Prices

Rationale

- Efficient Prices are the highest level of welfare -- the sum of PS & CS.
- Moving from one set of prices to another, allows winner to compensate losers.
- When a regulated firm has to break-even, in general, the welfare is lower.
- Peak load-pricing example.

Peak-Load Pricing

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<tr>
<th>Price</th>
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Economic Profits = 0

Uniform Price: MCop

Peak-Load Pricing

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Economic Profit

MCp + MCop

Uniform Price: MCop

Peak-Load Pricing

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Economic Loss

AC = MCp

Uniform Price: AC = MCop

Peak-Load Pricing

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Economic Loss = Economic Profit

AC = MCp

Uniform Price: AC = MCop

Peak-Load Pricing

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AC = MCop

Demand
Peak-Load Pricing

**Demand**

\[ AC = MC_{op} \]

**Total Economic Profits = 0**

or Economic Loss = Economic Profit

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**Peak-Load Pricing**

- Cost on the Cost Causers
- Peak Users Cover Peak Investments
- Valid even if Peak Demand not repressed

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**Multi-part Tariffs**

- Non-linear
- Entrance Fee & Usage Charge
- Improve Efficiency
- Big/Little Example
Multi-part Tariffs

- Mr. Little Excluded
- Mr. Big Covers "Fixed" Costs
- Can Improve Welfare?
- Yes! -- with a Two Part Tariff

Multi-part Tariffs

- Charge Mr. Big the "Fixed" Costs & the Marginal Costs
- Mr. Little the Marginal Costs
- No Profit Change, but Welfare increase for both

Telecommunications Economics

Non-Linear Pricing

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