

# Penalty Pricing

Optimal Price Posting Regulation with Inattentive Consumers

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## Motivation 3 - Recent Regulatory Attention

- Cellular charges: Bill Shock regulation under consideration by the FCC would alert consumers of rapidly accruing charges by text message
- Overdraft Fees: Effective July 1st, 2010 the Fed requires opt-in for overdraft protection on ATM and debit card transactions.

Motivation

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Benchmark Model

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Price Discrimination Model

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Biased Beliefs Model

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Conclusion

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# Talk Outline

- Inattentive Consumption: constant threshold strategies
- Model (1) - Benchmark
  - No substantive market impact of inattention or PPR
- Model (2) - Price Discrimination
  - Application: cell phone pricing (FCC bill shock regulation)
  - Surprise penalty fees for excessive usage
  - PPR: counter productive in fairly competitive markets
- Model (3) - Biased Beliefs

Motivation

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# Talk Outline







# Inattention

- A game of imperfect recall: An inattentive consumer cannot condition her purchase decision in period  $t$  on past usage  $q^{t-1}$  because she does not keep track of usage.
- Optimal Strategy: Buy if and only if  $v_t \geq v$  :

$$v = p + Pr$$





# Equivalence Result

## Proposition



# Price Discrimination (Model 2)

## Revised Time Line:

- 1 Time  $t = 0$ : Differentiated firms each offer a menu of two contracts, indexed  $s \in \{L, H\}$

$$P_s = M_s + p_s(q_1 + q_2) + \text{penalty}_s \cdot q_1 q_2$$

Consumers privately receive a signal  $s \in \{L, H\}$ .

Consumers sign a contract or choose their outside option.

- 2 Time  $t \in \{1, 2\}$ : Consumer learns her taste shock  $v_t$  distributed iid conditional on  $s$ :  $v_t | s \sim F_s(v)$  and chooses quantity  $q_t \in \{0, 1\}$ .

$F_H$  first order stochastically dominates  $F_L$ .

# Duopoly Pricing

Let duopolists compete on a uniform Hotelling line with transport costs  $H = H > L = L > 0$ , and  $c > 0$ .







## Duopoly Pricing (2)

### PPR Result

*Given sufficient competition: PPR would strictly decrease welfare. Firms and low types are losers but high types are winners.*



# Interpretation

- Surprise penalty fees and consumer inattention can be socially valuable by relaxing incentive constraints in price discrimination problems.



Motivation  
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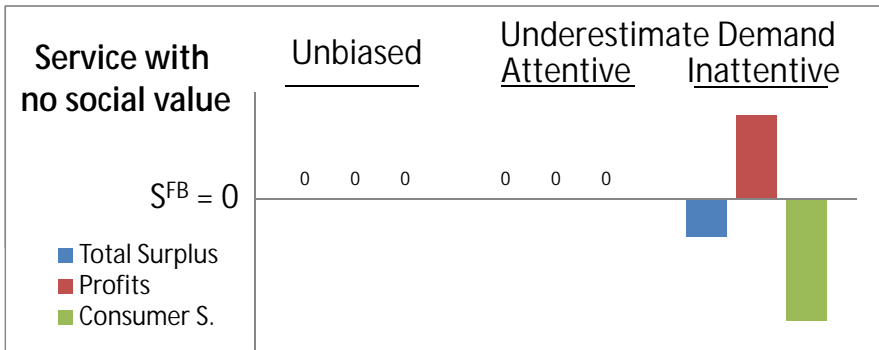
Benchmark Model  
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Price Discrimination Model  
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# Interaction of Inattention and Biased Beliefs

## Monopoly Case









# Conclusion

When consumers are inattentive

- Homogeneous & unbiased beliefs: inattention & PPR have no substantive effect on market outcomes.
- Heterogeneous & unbiased beliefs: inattention increases welfare in competitive markets, and PPR is counterproductive. Results are ambiguous with market power.
  - Penalty fees can be socially valuable by relaxing IC constraints
  - Focal application: cellular phone pricing.
- Homogenous & biased beliefs: PPR may increase or decrease welfare. PPR's largest effect may be reducing consumer exploitation, even in competitive markets.
  - Focal application: bank overdraft charges.