Strategic Implications of Competing For Consumers with Time Inconsistent Preferences

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Summer 2009 Econometric Society
Time-Inconsistency

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- When you sign up, you think you’ll go to the gym every day, but then you end up not going
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- Issue: how do consumers like these affect strategic competition?
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2. If so, does it go all the way to the rational equilibrium?
3. If some consumers realize that they are irrational, does that help?
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- Naive vs. Sophisticated
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3. I am interested in symmetric Nash
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5. No outside option
Structure

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Important: differentiation happens before the attendance decision
N symmetric firms
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Simultaneously set Fs and ps before the game starts
Firms

- $N$ symmetric firms
- Simultaneously set $F_s$ and $p_s$ before the game starts
- It costs a firm $c$ if a consumer attends after signing up
Consumer Attendance Choice

$t\theta_i - F_i - \beta p_i + \beta B$ if the consumer attends
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Consumer Attendance Choice

- $t \theta_i - F_i - \beta p_i + \beta B$ if the consumer attends
- $t \theta_i - F_i$ if the consumer does not attend
- Is $p_i < B$? (are the benefits of attendance more than the price)
 Actual Choice

- In period 2, the fixed fee had been paid already, the brand benefits had been received, and the only question is do I attend the gym today and pay p to get the (discounted!) benefits tomorrow?
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- Is $p_i < \beta B$? (are the discounted benefits of attendance more than the price)
- Firms: not clear whether they want to dupe the consumers
- If the consumers are deceived, the firms save $c$, but forego $p$
Rational Equilibrium

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Same as with fully rational consumers
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Deceiving Equilibrium

- Suppose the firms DO want to deceive, then...
- \[ p^* = \beta B \]
- \[ F^* = \frac{t}{M(N)} \]
- Consumers think that they will attend, but do not, and do not pay \( p \)
- Fixed sign-up fee is the same as in the same game with only the sign up period (since the firms know that consumers do not attend)
When does which equilibrium happen?

**Figure**: Equilibria of the investment good competition with naive time inconsistent consumers.
Suppose $\sigma$ of the consumers are sophisticated
Sophisticated Consumers

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- No problem in the rational eq
Sophisticated Consumers – Deceiving Eq

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- The firm loses money from consumer attendance, but can make it up in the fixed fee
- But if everyone does it, not profitable – no symmetric eq, just mixed with some firms catering to sophisticates
When do the firms play what?

Figure: Equilibria of the investment good competition with some sophisticated consumers.
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4. Mixed equilibria with sophisticates