

# Exclusive vs. Overlapping Viewers: Two-Sided Multi-Homing in Media Markets

Attila Ambrus & Markus Reisinger  
Harvard University University of Munich

Conference on "Competition Policy in Two-Sided Markets"  
June 29th - July 1st 2006,  
IDEI, Toulouse

## Motivation

- TV advertising expenditures have grown sharply in almost all western countries in the last years
- European Union: advertising ceiling of 12 minutes per hour; Till recently media commission of the EU was discussing to abolish this law
- Widely used framework for analysing this question:  
Advertisers can multi-home; viewers can only watch one channel

## Aim of this paper

- Provide a model in which viewers can connect to multiple platforms
- This changes the nature of competition substantially
- The model emphasizes on the value of exclusive viewerships ('indirect' competition for exclusive viewers)
- In contrast to previous models it can explain recent developments in media markets (ITV premium puzzle)

## Structure of the Talk

1. Introduction
2. The Model
3. Equilibrium and Results
4. Model Predictions and Recent Developments
5. Conclusion

## Existing literature

- Anderson & Coate (2005):  
Seminal paper
- Dukes & Gal-Or (2003), Peitz & Valletti (2004):  
Stations can choose their programme content
- Crampes, Haritchabalet, & Jullien (2005):  
Comparison between price and quantity competition
- Rochet & Tirole (2003), Armstrong (2005), Armstrong & Wright (2006):  
Point out the distinction between single - and multi-homing

## The Model

### *Platforms*

- Two horizontally differentiated platforms, indexed by  $i \in 0, 1$
- Platforms set advertising levels  $a_0$  and  $a_1$
- 3 different regimes:  
monopoly, discriminating monopoly, and duopoly
- For simplicity, costs are assumed to be zero
- Profit of platform  $i$ :  $\Pi_i = a_i p_i$

## Viewers

- Continuum of viewers with mass  $M$  uniformly distributed on  $[0, 1]$
- Viewers can watch both channels.
- Viewing benefit of a viewer on  $x_j$ :
  - $\beta - \gamma a_0 - \tau x_j$  from watching station 0
  - $\beta - \gamma a_1 - \tau(1 - x_j)$  from watching station 1with  $\beta$ : gross utility from watching  
 $\gamma$ : nuisance cost of advertising

## *Producers*

- Continuum of  $N$  homogeneous advertisers
- Advertising is informative and every producer is a monopolist in its product market
- Advertisers can multi-home
- Value of an advertisement slot depends on the number of viewers and if the viewer watches one or more channels  
Viewers who only watch one channel are more valuable



*Producers (ctd.)*

- Profit of an advertiser who only advertises on platform  $i$ :

$$(n_i + n_{01})\omega - p_i,$$

with  $n_i$ : viewers who only watch channel  $i$

$n_{01}$ : viewers who watch both channels

$\omega$ : per viewer value of an advertising slot

- If advertising on both channels:

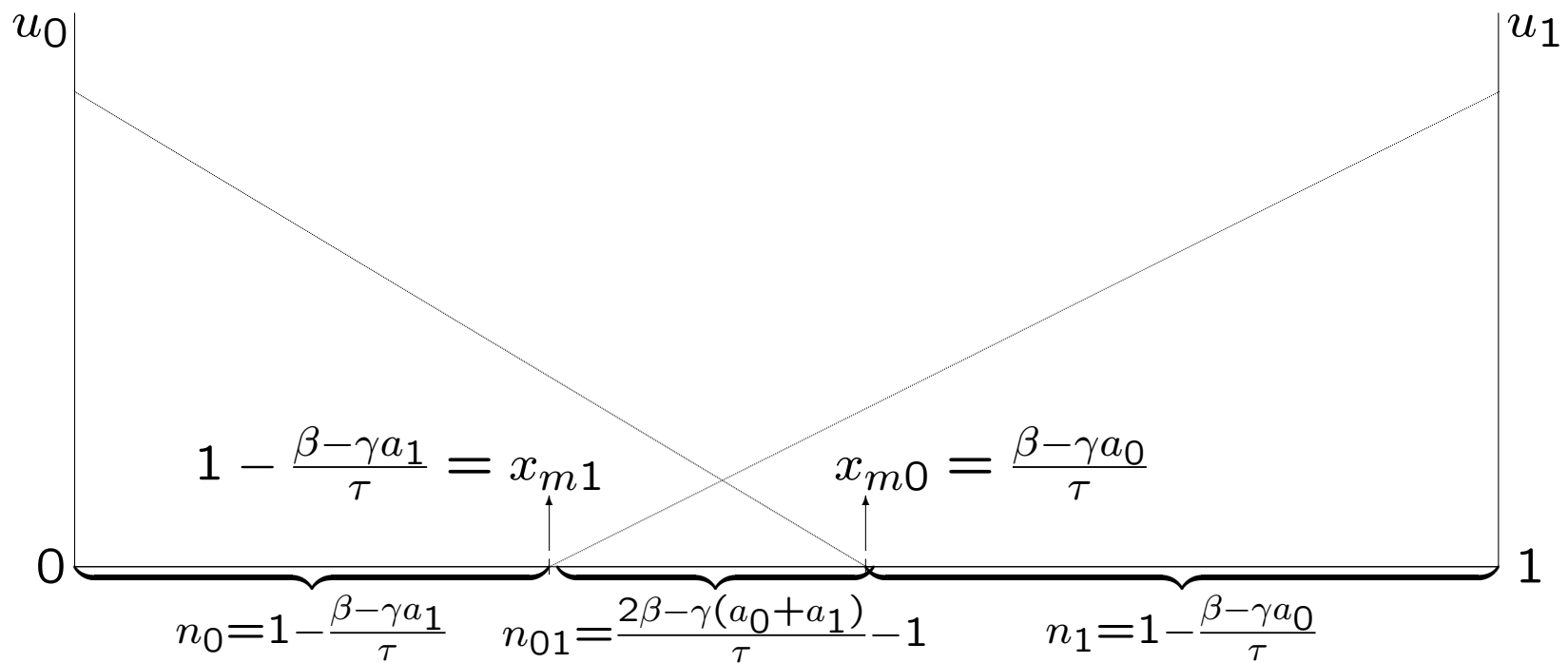
$$(n_0 + n_1 + n_{01})\omega + n_{01}\omega' - p_0 - p_1,$$

with  $\omega' \leq \omega$ .

- $\omega' \leq \omega$  because there is a positive probability that viewer has seen the advertisement already on the other channel

# Equilibrium Levels of Advertising

## Viewerships



## Equilibrium Levels of Advertising (ctd.)

If  $\beta < \tau$  then there is no viewer overlap and stations are local monopolists:

$$a_i = \frac{\beta}{2\gamma} \text{ in all regimes}$$

If  $\beta \geq \tau$  then three different possibilities:

- Two-sided multi-homing:

- Occurs if  $\omega'$  is high

- $a_{ND} = \frac{\omega'(2\beta-\tau)-\omega(\beta-\tau)}{2\gamma(2\omega'-\omega)}$ ,  $a_{dis} = \frac{\omega'(2\beta-\tau)-\omega(\beta-\tau)-N(\omega-\omega')}{2\gamma(2\omega'-\omega)}$ , and  $a_{duo} = \frac{\omega'(2\beta-\tau)-\omega(\beta-\tau)}{\gamma(3\omega'-\omega)}$

## Equilibrium Levels of Advertising (ctd.)

- Viewers single-home, advertisers multi-home
  - Occurs if  $\omega'$  is low and  $N$  is low
  - $a_i = \frac{2\beta - \gamma}{2\tau}$
  
- Viewers multi-home, advertisers single-home
  - Occurs if  $\omega'$  is low and  $N$  is high
  - $a_i = \frac{N}{2}$

## Equilibrium Levels of Advertising (ctd.)

- In duopoly advertising levels are strategic complements
- For some parameter values two of the above equilibria can exist at the same time

## Results

No general welfare conclusion possible but

### **Proposition 1:**

If there is overlap on both sides in equilibrium, then advertising levels are too high in all three regimes compared to the socially optimal level. The order of welfare levels is  $a_{WF} < a_{dis} < a_{duo} < a_{ND}$ .

- Stations do not care about direct utility loss of viewers
- Discriminating monopolist is most efficient because in this regime an additional viewer is most valuable

## Results (ctd.)

**Proposition 2:** The entrance of a competitor often increases the level of advertising on the incumbent platform.

Intuition:

Nature of advertising levels as strategic complements

Incumbent station avoids overlapping of viewers

## Results (ctd.)

### **Proposition 3:**

There is a parameter range in duopoly in which profits are strictly decreasing in the attractiveness of stations.

Intuition:

- If  $\tau$  is decreasing stations become more attractive and so more viewers watch
- But also viewer overlap increases and some viewers are less valuable
- This effect can dominate the effect of an increased viewer base.



## Results (ctd.)

### **Proposition 4:**

There exist asymmetric equilibria in which station  $i$  gets most, or even all, of its revenues from advertising while station  $j$  gets most of its revenue via viewer fees.

Intuition:

- Multi-homing viewers are not very valuable
- Station  $i$  advertises a lot
- Then it is optimal for station  $j$  to serve only the remaining advertisers and charge viewer fees

## Model Predictions and Recent Developments

### *ITV Premium Puzzle*

- ITV enjoys a premium in its advertising price per eye ball over smaller channels
- Premium increased lately after entry of new channels
- Possible explanation: ITV has many mass audience programmes and is good at reaching 'light' viewers  
⇒ Reaching million eye balls on ITV means reaching almost a million viewers while for smaller channels its likely that a viewer has seen the ad already somewhere else

## Model Predictions and Recent Developments(ctd.)

- German government is currently discussing to abolish the regulation of no commercials after 8:00 p.m. for public stations
- Private stations are strictly against this abolishment
- Leaving quality issues aside previous models cannot explain this behaviour
- But behaviour is in line with predictions of our model: Private stations want to stay monopolists in the provision of their viewers to advertisers

## Conclusion

- Possibility if multi-homing of viewers changes the nature of competition substantially
- Exclusive viewers are more valuable
- In case of two-sided multi-homing there is a clear cut welfare result, namely too much advertising
- Model can explain recent developments in media markets