Market segmentation in two-sided markets: TV rights for Premier League

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Bogota, October 19 2012
10th workshop on media economics

Motivation: TV rights for Premier League

- Soccer on TV a two-sided market
  - Payment from advertisers and end-users
- Market segmented into national markets
  - Viewers purchase rights from a national distributor
- EU Court of Justice ruled that a person could purchase from another country
  - Karen Murphy in UK could lower the price from £ 7000 to £ 800 by shifting to Nova in Greece
- What if the market is no longer segmented and all of viewers can do as Karen Murphy?
  - Any problems for the two-sidedness of the market?

AN IMPORTANT UPDATE ON THE USE OF FOREIGN SATELLITE SYSTEMS TO BROADCAST PREMIER LEAGUE FOOTBALL IN UK PUBS AND CLUBS

Following the ECJ's judgment on the use of foreign satellite systems to screen live Premier League football in pubs, the UK courts have now ruled on the issue.

In response to this clarification by the UK courts, the Premier League has now confirmed that it is able to prevent the unauthorised use of its copyright. It said:

"*Lord Justice Kitchin's judgment is consistent with the ECJ ruling. It is clear that the law gives us the right to prevent the unauthorised use of our copyrights in pubs and clubs when they are communicated to the public without our authority.*

We will now resume actions against publicans who are using European Economic Area foreign satellite systems to show Premier League football on their premises unlawfully and without our authority."

The Premier League has stated that no broadcasters other than Sky and ESPN are authorised to broadcast copyrighted material within Premier League matches to the public in the UK.

PREMIER LEAGUE

For more information on the Premier League's response, please visit: www.premierleague.com

And any pub wishing to discuss how it could benefit from live Premier League football should visit: www.sky.com/business

sky

- Premier League announcement
  - Prior to the high court decision in UK on February 24 2012
- Karen Murphy won in high court in UK

Pub landlady Karen Murphy wins Premier League TV battle

High court quashes conviction for using cut-price Greek satellite decoder to bypass Sky's official satellite feed

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Mark Sweney
guardian.co.uk, Friday 24 February 2012 18.24 GMT

Article history

Great result: Karen Murphy hails her victory over the Premier League. Photograph: Matthew Lloyd/Getty Images

Pub landlady Karen Murphy has won a legal battle at the high court in London to overturn her conviction for using a cut-price Greek satellite decoder to air Premier League football matches.

Murphy has spent six years fighting a prosecution involving £8,000 in fines and costs for bypassing BSkyB's official Premier League satellite feed to

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4 Oct 2011
Premier League fans can buy cheap foreign TV coverage, EU rules

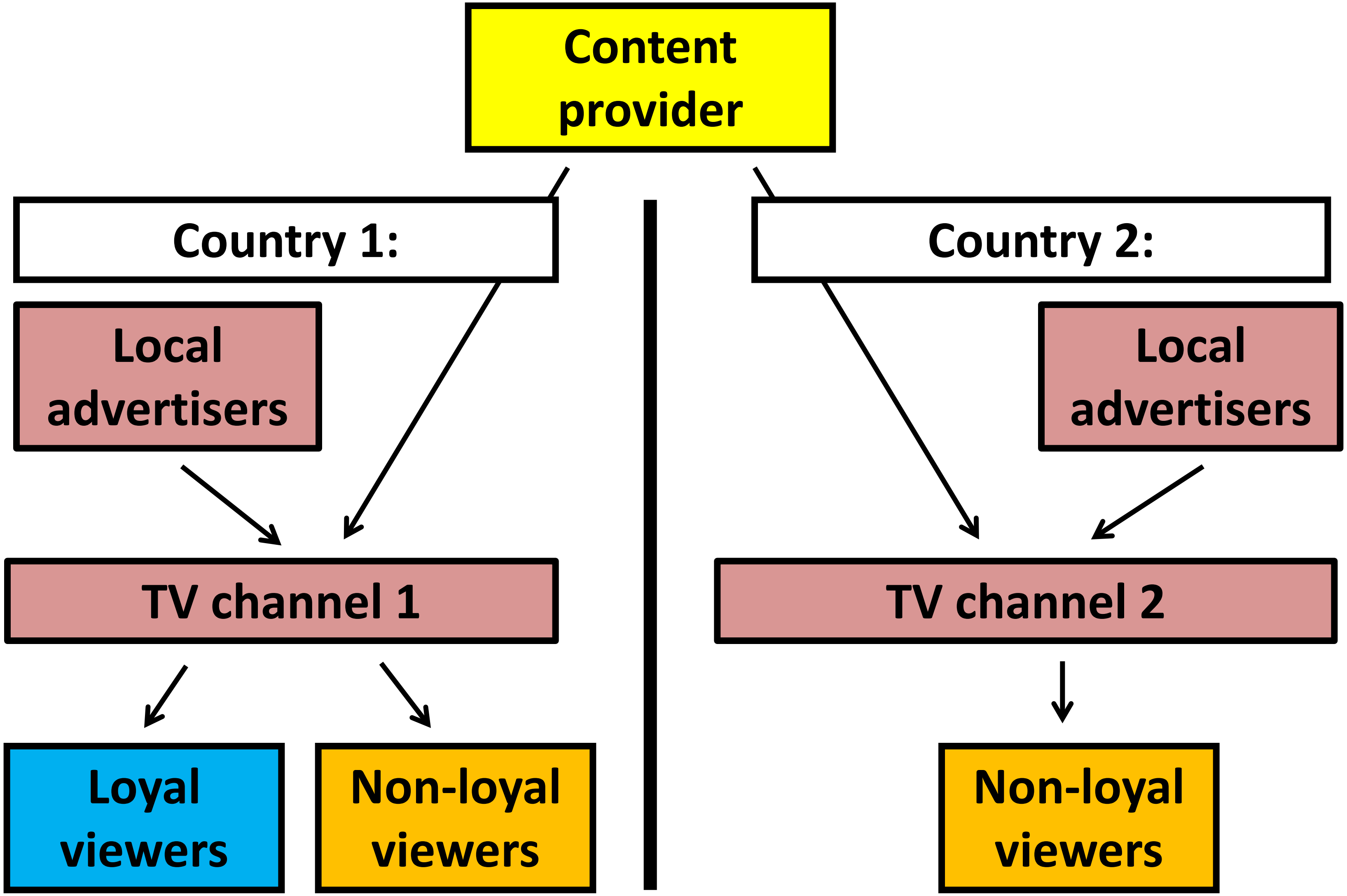
3 Feb 2011
EC official's court advice in TV rights case worries Premier League

31 Jan 2011
Rights holders alliance to defend Digital Economy Act

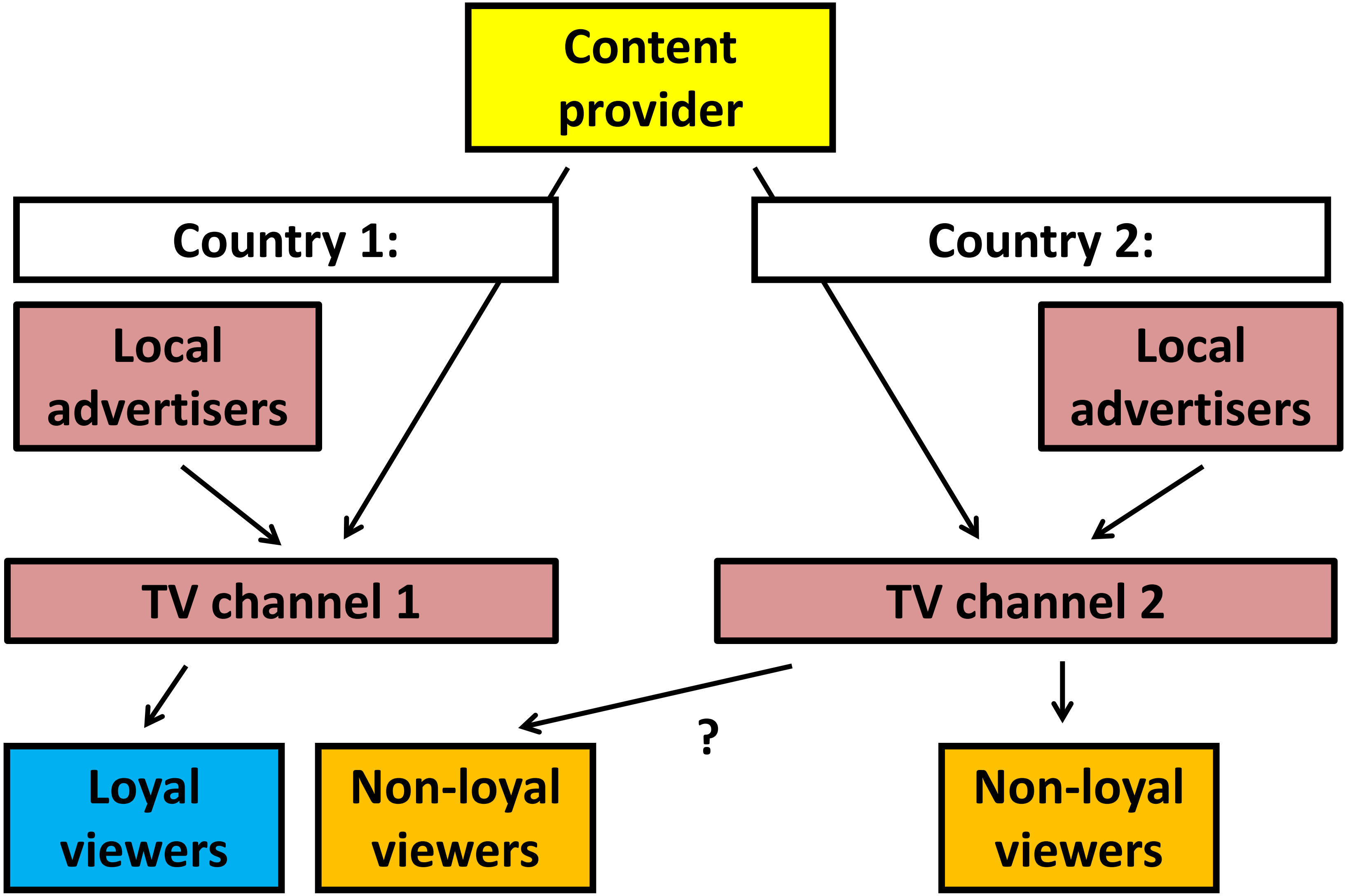
Market segmentation – a blessing?

- In many of the two-sided markets both end-users and advertisers are on board
- Often we see that the two-sided market is targeted towards each country
  - Complete market segmentation, as with Premier League?
- Should society allow for such market segmentation?
  - Allow end-users to purchase from the other country
- More concerned in a two-sided market?
  - Other price effects than in a one-sided market
  - Interrupting the functioning of the ad market

Our modelling approach



If shift to no segmentation



A stylized model

- Country 1 and 2, and monopoly setting ads and end-user prices
- Two-sided market
  - *C*: consumption by end-users at price *p*
  - *A*: advertising by advertisers at price *r*
- Advertising is tailored to each country
- End-users generalised price in country *i*: $g_i = p_i + f(A_i)$
- Profits if complete segmentation:

$$\sum_{i=1}^{2} \Pi = p_i C_i(p_i, A_i) + r_i A_i(r_i, C_i) - \phi(A_i, C_i)$$

- Symmetry/asymmetry between the countries
  - Loyals (low price el.) and not loyals in country 1
  - Only not loyals in country 2 (those identical to country 1)

Complete market segmentation

- First order conditions:

$$\frac{\partial \Pi}{\partial r_i} = \left[A_i + r_i \frac{\partial A_i}{\partial r_i} - \frac{d\phi_i}{dr_i} \right] + p_i \frac{\partial C_i}{\partial A_i} \frac{\partial A_i}{\partial r_i} = 0 \qquad \frac{\partial \Pi}{\partial p_i} = \left[C_i + p_i \frac{\partial C_i}{\partial p_i} - \frac{d\phi_i}{dp_i} \right] + r_i \frac{\partial A_i}{\partial C_i} \frac{\partial C_i}{\partial p_i} = 0$$

Two-sidedness in each country

- Advertising volume and prices tailored to characteristics in each country
  - Low end-user prices to expand the ad market
- Higher end-user prices in country 1 than country 2
- A shift to no segmentation:
  - Some or all non-loyals shift from country 1 to country 2

No market segmentation

- Change in country 2 (low end-user prices init.)

$$\frac{\partial \Pi}{\partial p_2} = \left[C_2 + p_2 \frac{\partial C_2}{\partial p_2} - \frac{d\phi_2}{dp_2} \right] + r_i \frac{\partial A_2}{\partial C_2} \frac{\partial C_2}{\partial p_2} = 0$$

Indirect negative effect on A_2?

Direct positive effect on C_2

- Higher end-user prices
  - An identical consumer that shifts will lead to higher prices, because low price initially to expand the ad market
  - Differs from the result in a corresponding one-sided market
- Lower advertising volume
  - A fraction of the consumers will have no value for the advertisers
- What happens to the generalised price?

No market segmentation

- Change in country 1 (high prices initially)

$$\frac{\partial \Pi}{\partial r_i} = \left[A_i + r_i \frac{\partial A_i}{\partial r_i} - \frac{d\phi_i}{dr_i} \right] + p_i \frac{\partial C_i}{\partial A_i} \frac{\partial A_i}{\partial r_i} = 0 \qquad \frac{\partial \Pi}{\partial p_i} = \left[C_i + p_i \frac{\partial C_i}{\partial p_i} - \frac{d\phi_i}{dp_i} \right] + r_i \frac{\partial A_i}{\partial C_i} \frac{\partial C_i}{\partial p_i} = 0$$

Those most price sensitive have left, and effect on both prices

- The most price sensitive viewers have left, and it responds by increasing generalised price *g*
  - Higher end-user price *p,* but will advertising volume *A* increase?
- Must apply a specific model to learn more

Applying a specific model

$$C_1 = \underbrace{(1 - p_1 - A_1)}_{Non-loyals} + \underbrace{(\beta - p_1 - A_i)}_{Loyals}, \quad where \quad \beta > 1$$

$$C_2 = (1 - p_2 - A_2)$$

- Derives the ad demand from advertiser's FOC:

$$A_1 = \frac{(\beta + 1) - 2p_1}{4} - \frac{r_1}{4\gamma} \qquad and \qquad A_2 = \frac{1 - p_2}{2} - \frac{r_2}{2\gamma}$$

- γ is scaling the gain from advertising
- If $1 < \gamma < 3$ and complete segmentation
  – Two-sided market in both countries
  – Higher end-user price and more ads in country 1

A shift to no segmentation

- Each non-loyal will shift as long as $g_1 > g_2$
- s = share of non-loyals that shift

$$C_1 = \underbrace{(1-s)(1-p_1-A_1)}_{Non-loyals} + \underbrace{(\beta - p_1 - A_1)}_{Loyals}, \quad where \quad \beta > 1$$

$$C_2 = (1+s)(1-p_2-A_2)$$

- Switching non-loyals of no value for advertisers
- A prisoner’s dilemma for the non-loyals?
  - Individual incentives to shift if $g_1 > g_2$
  - But could that lead to higher prices in both countries?

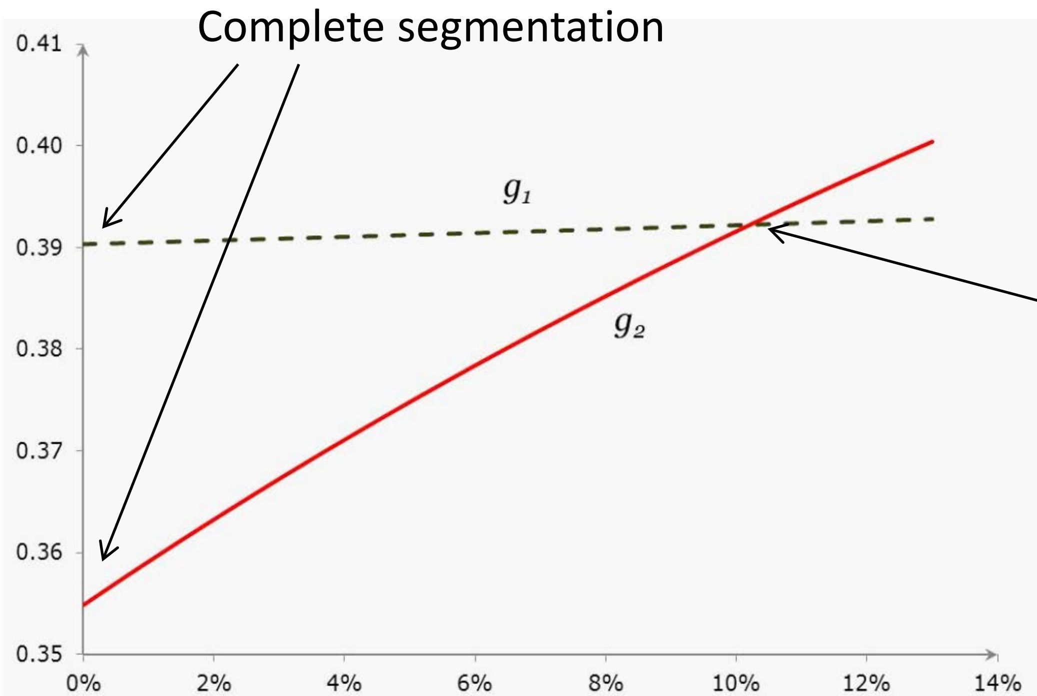
If a shift to no segmentation

- It leads to
  - Higher end-user and generalised prices in both countries
  - More advertising volume in country 1 and less in country 2
- Confirms the results from the general model, and some additional results
  - Higher g_2 and higher A_1
- Note the contrast with a one-sided market

Price effects of a shift to no segm.

- Can have that only some non-loyals switch
  - Example: $\beta = 1.2$ and $\gamma = 2.5$

Gene-
ralised
prices



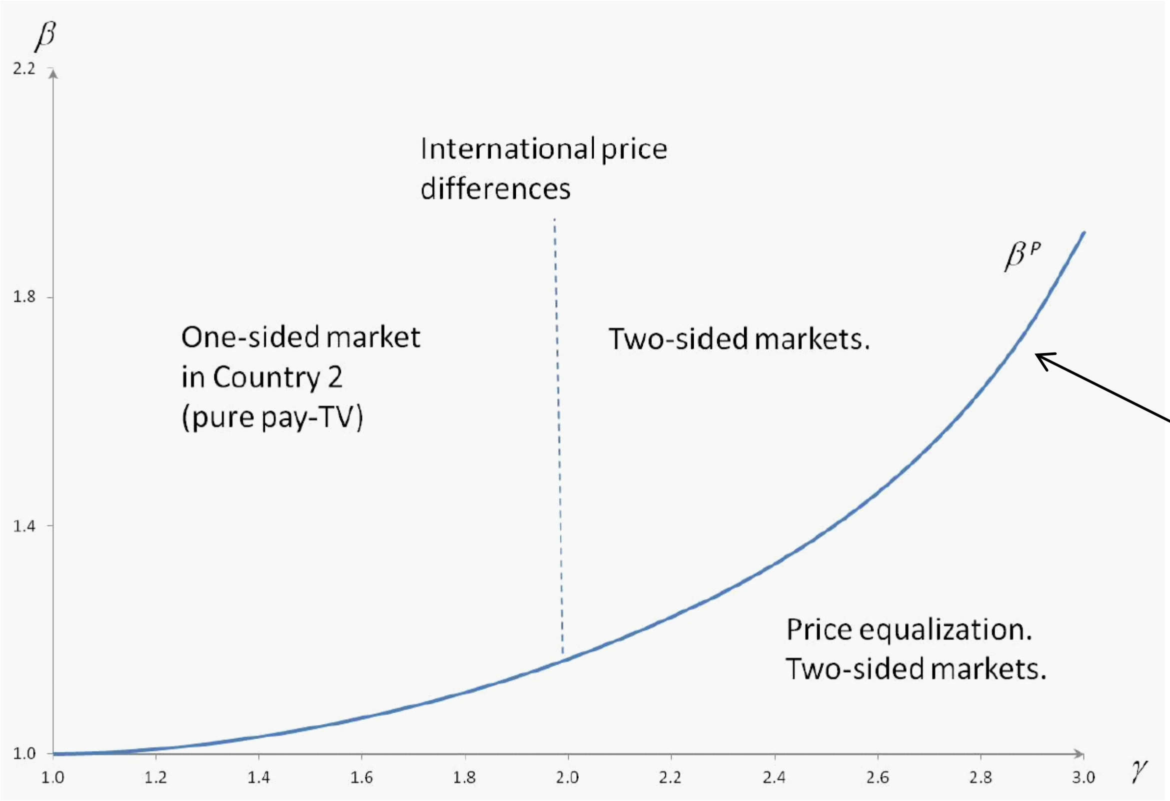
Share of non-loyals switching

No segmentation:

- Equal prices
- Higher prices in both countries

Switchers worse off

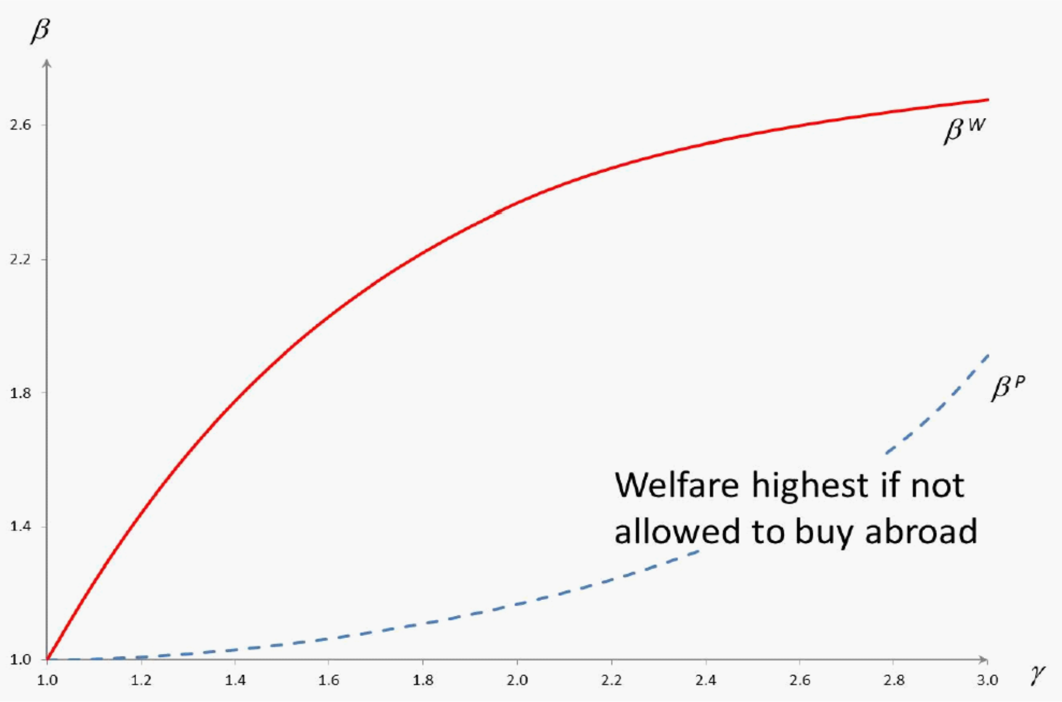
A shift to no segmentation



β^P = The last non-loyal is indifferent to switching

- All non-loyals do switch to country 2 if
  - The loyals in country 1 are sufficiently price inelastic
  - The advertiser's gain is sufficiently limited

Welfare effects



- Along β^P switchers lose from no segmentation
  - *g* will increase in both countries
- But switchers (and welfare) will increase if loyals are sufficiently price inelastic

Foreclosing the small country?

- Switching a problem for the firms, since it undermines the advertising market
- If country 2 sufficiently small, the TV right owner should sell its rights only to country 1
  - No revenues in country 2 outweighed by the revenues from the (potential) switchers in country 1
- Then some consumers switching from country 2 to country 1
  - Those from country 2 with the highest WTP
  - But mismatch in the ad market in country 1

If foreclosure of country 2

- End-user prices – two opposing forces
  - Higher price: Fraction of viewers of no value for advertisers
  - Lower price: Much higher price in country 1 than in country 2 initially
- Higher generalized price if $\beta < \beta^F$
  - Higher end-user price, and it outweighs the reduction in advertising volume
- More detrimental than foreclosure in a corresponding one-sided market

Some concluding remarks

- A shift to no market segmentation can be detrimental to the two-sidedness of the market
  - Less scope for ad tailored to each country
  - Can indirectly lead to higher end-user prices, and also higher generalised prices in both countries
  - Can have larger consumer harm than in a one-sided market
- Even non-loyal switchers might be worse off from no market segmentation
- If rights owner responds by foreclosing, it might lead to a higher generalised price
  - While no effect in a corresponding one-sided market