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BANNING ADS FROM PRIME-TIME STATE TELEVISION: LESSONS FROM FRANCE

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Abstract⁴

We analyse the effects of the advertising ban on French public television, which came into effect on the 5th of January 2009. The ban forbids commercial advertising on public TV in the time slot 20.00-6.00. By using a difference-in-difference approach we show that advertising which was previously broadcasted on public TV in the time slot 20.00-6.00 did not switch to private channels in the same time slot (nor did the price per second in that time slot on private channels rise). Rather advertising partly switched to public TV in the time slot 6.00-20.00. The trend away from aerial towards non-aerial TV channels continued but was not increased. The common expectation that the ban would favour private TV channels at the expense of public ones was therefore wrong. Interestingly, the relative audience of public to private TV did not tilt in favour of public TV. This suggests that advertising aversion is not the driving parameter at work. More likely, for advertisers, viewers of public TV in the slot 6.00-20.00 are closer substitutes for viewers of public TV in the slot 20.00-6.00 than are viewers of private TV channels in the slot 20.00-6.00.

JEL Classification: L82, D18, M7.

Keywords: two-sided markets, media, advertising regulation, television, public service broadcasting

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1. Introduction

Whether public TV should be financed by licence fees and public transfers only or also by commercial advertising is a long lasting debate in many countries. Supporters of a public TV financed only by licence fees and public transfers claim that this would guarantee a higher quality of the programs by freeing public TV stations from the interests of advertisers. It would also allow public TV stations to pursue a different and nobler objective than audience maximization, as for instance education. Those against a ban on advertising on public TV claim on the contrary that the resulting loss in advertising revenues will lower the ability of public TV stations to invest in quality and thus lead to programs of lower quality. Moreover, a complete dependence on public funding would facilitate political control of media.

Whereas the BBC is a well-known and successful example of a public TV financed only by licence fees and public transfers, whose quality is often taken as an example of success, in most other European countries commercial advertising revenues constitute a substantial part of the budget of public TVs. Another exception has however been Germany, where advertising on public TV after 20.00 has been forbidden since 1991.⁵

We do not address here the debate of whether public TV should or should not be financed by advertising. First, addressing that question would require at least data on vertical and horizontal program differentiation. Second,

We focus instead on the impact of a regulatory intervention banning ads on public TV on competition between TV stations, starting from a situation in which public TV was financing itself also through advertising and was therefore potentially competing with private commercial TV not only on the audience side but also on the advertising side of the market.

Following the earlier German example, the French government decided to ban commercial advertisements on State controlled TV stations starting from January 5,

⁵ The ban was confirmed also in 2010. See Rundfunkstaatsvertrag, 1991, and Rundfunkstaatsvertrag, 2010. Note however that it is still allowed to sponsor programs broadcasted after 20h. Recently proposals have been put forward to ban also sponsoring after 20h on public TV stations except for sport events, and to ban advertising from public TV stations even before 20h.

2009. The ban initially applies to programs broadcasted between 20.00 and 6.00 and it was planned that it will be gradually extended to all broadcasting time.⁶

The ban, announced by President Sarkozy in a press conference held on 8 January 2008, came completely as a surprise to both the French government and the management of French public TV⁷ and the general perception was that President Sarkozy was doing a favour to private TV channels at the expense of public ones. For example the Economist stated “the new plan was unexpectedly proposed by President Nicolas Sarkozy”. The Economist also raised the question of who would gain from the ban: “If the beneficiaries of the ban on advertising are not necessarily the viewers, who gains? Unsurprisingly, France's commercial channels are delighted at the prospect of extra ad revenue coming their way.” “TF1's biggest shareholder is Bouygues, a conglomerate, whose boss, Martin Bouygues, just happens to be a close friend of Mr Sarkozy's and godfather to one of his sons.” “Another bigwig who will benefit is Vincent Bolloré, a media magnate who launched a television channel, Direct 8, in 2005. Mr Sarkozy has borrowed Mr Bolloré's yacht and private jet for two holidays since his election last May.” “His opponents grumble that his new plan will mainly benefit his friends.” (all citations from The Economist, *A fuzzy picture*, February 21, 2008).

The Guardian shared the Economist's opinion by stating that “Sarkozy, who moves in a circle of wealthy television owners and press barons and counts "Téléprésident" among his numerous nicknames, surprised even his own culture minister this week when he announced that adverts should be eliminated from France's five state TV stations”. According to the Guardian, “[s]crapping adverts from state TV would mean €800m (£600m) in advertising revenues immediately transferring to private stations” and “[t]he Socialist party fumed that the immediate beneficiaries of the shift in advertising would be Sarkozy's own media tycoon friends.” (all citations from The Guardian, Sarkozy to ban advertizing from state television, January 10, 2008).

⁶ Ministère de la culture et de la communication, 2009

⁷ According to Le Monde Diplomatique (2008), the announcement of President Sarkozy was completely unexpected. Neither the prime minister Francois Fillon, Mrs Christine Albanel (ministre de l'audiovisuel public) nor Patrick de Carolis (president of France Télévisions) knew anything about this decision. According to the article only Henri Guaino (who apparently writes the TV speeches for Sarkozy) and Alain Minc (consultant of the industrialist Vincent Bolloré) were informed about Sarkozy's plans. The last one is supposed to be involved in the development of Sarkozy's plan. Also according to Le Canard enchaîné (2008) and The Economist (2008) the announcement of the advertising ban on public television was unexpected. According to the Guardian (2008) the announcement was unexpected and even the culture minister did not know anything about the plan.

The current paper will use this “natural experiment” to estimate the impact of the regulatory change on the advertising and the audience market, by analysing how advertising quantity, price and revenues and the number of viewers have changed on both public and private TV channels. The first objective is to analyse the impact of such an advertising ban on competition between public and private TV channels. Since theoretically the impact of such a regulatory intervention is likely to depend on the features of competition in the market, the analysis is also likely to shed some light also on these features. As such it might provide some guidance on the most appropriate methods of financing the vanishing of advertising revenues for State-controlled channels. More generally, it might have policy implications for regulatory interventions on the media market which aim at setting limits to advertising concentration in a given media product (e.g. the EU Audiovisual Media services directive) or aim at defending pluralism by setting limits to concentration in the advertising market.

The regulation of the maximum amount of advertising during television programming in the EU is decided by the European Commission through the Directive “Television without Frontiers”, implemented by each Member State. The Directive⁸ imposes advertising floors of 12 minutes per hour and 3 hours per day.⁹ However, single Member States are free to adopt stricter rules. In this context, even before President Sarkozy’s decision, France had one of the most restrictive legislations in Europe. Probably in order to prepare the advertising ban on public TV stations, the decree approved on December 19th, 2008 and coming into force on the 1st of January 2009, established the extension of the average daily length of advertising from 6 to 9 minutes per hour for the most important private channels TF1 and M6 (however, the rule regarded also cable, satellite and DTT stations).¹⁰ As of 1st of January 2009, the average length of advertising decreased from 8 to 6 minutes per hour for the public television channels (France 2, France 3, France 5).¹¹ Furthermore, the decree established the shift from the “glissante” to the “exact” hour as the reference to calculate the maximum advertising time permitted in an hour, which remained at 12 minutes.¹² These new

⁸ See http://ec.europa.eu/avpolicy/reg/tvwf/index_en.htm

⁹ Ministère de la culture et de la communication, 2008

¹⁰ Légifrance, 2010

¹¹ SNPTV, 2010

¹² SNPTV, 2010

constraints conformed to the new European Directive, “Audiovisual Media Services”¹³, which had partially modified the previous one. It abolished in particular the daily limit of 3 hours of advertising but kept the established hourly limit of 12 minutes for advertising and teleshopping spots.¹⁴ These hourly advertising caps

As already mentioned above, the first step of the French reform consisted of banning commercial advertisements on public TV stations (France 2, France 3, France 4, France 5 and others, all controlled by France Televisions) between 20pm and 6am starting from January 5th, 2009.¹⁵ The very same reform planned to abolish advertising in all time slots of France Télévisions by the end of 2011.

Also the Spanish government decided to follow the German and French examples announcing a drastic reduction in advertising on public TV (RTVE) on April 14, 2009 and on May 8 proposing the complete ban of advertising. The law banning ads from public TV on all time slots was approved by the Spanish parliament on July 29 of 2009. This law came into effect as of September 1, 2009 but allowed Spanish public TV to broadcast until the end of 2009 the advertising contracted before this date. As from the first of January of 2010, advertising is banned, except for self-promotion advertising, corporate communications campaigns and informational campaigns with social purposes. Moreover, RTVE is not allowed to charge for these exceptional ads. To finance its operations, the public corporation would continue receiving state subsidies, in addition to proceeds from new specific taxes to private television stations and telecommunications companies, and an important percentage of the revenues from the fee on airwaves usage.

The modalities of the gradual phase out of advertising on France Télévisions are laid out in the new law on the reform of French public television adopted in March 2009.¹⁶

From a strictly arithmetical viewpoint and considering only the daily average duration of advertising interruptions, private stations (TF1 and M6) could take up completely the advertisers’ demand in the 20pm-6am time slot, because of the increase of advertising time from 6 to 9 minutes per hour mentioned above¹⁷. However, taking into account the

¹³ See http://eur-lex.europa.eu/LexUriServ/site/fr/oj/2007/l_332/l_33220071218fr00270045.pdf

¹⁴ European Commission, 2008.

¹⁵ SNPTV, 2010.

¹⁶ Ministère de la culture et de la communication, 2009 and Journal Officiel de la République Française, 2009.

¹⁷ Conseil Supérieur de l’Audiovisuel, 2009.

advertising time across different slots, the slots 12am-14pm and 19pm-22pm show that the advertising time on private stations was close to the maximum allowed (12 minutes), because of the consumption habits of French viewers.¹⁸

These informal observations can be combined with theoretical predictions based on previous analytical work on the theme. This will be done in Section 3, while the next section briefly reviews those studies that deal with advertising caps in media markets. Section 4 describes the data while Section 5 shows the results of the empirical analysis. Section 6 concludes discussing the policy implications of our main results.

2. Related literature

Following the seminal works of Steiner (1952), Corden (1953) and Reddaway (1963), quite a rich theoretical literature developed on the media markets, e.g. Spence and Owen (1977) and Beebe (1977). These studies have in the recent years merged into the wider literature on two-sided markets, as first defined by Parker & Van Alstyne (2002), Rochet & Tirole (2003, 2006) and Armstrong (2006). As discussed in detail in Anderson and Gabszewicz (2005), in a two-sided market a media firm typically sells content to readers/viewers/listeners and advertising space to advertisers and it knows that the number (and possibly the characteristics) of viewers/readers/listeners influences the demand for advertising space/time while, on the other hand, the quantity (or concentration) of advertising slots affects the demand from readers/viewers/listeners. In other words, a media firm recognises and internalizes the existence of indirect network effects between the two-sides of the market as it knows that in such a market the viable business strategy requires bringing “both sides on board”. Whereas clearly the higher the number of readers/listeners/viewers the higher the demand for ads all else equal, vice versa it is not clearly established what is the attitude of readers/listeners/viewers towards advertising.

Most advanced countries regulate the maximum amount (e.g., minutes per hour of programming) of TV advertising. In addition, policy makers believe that some (de)merit goods must not be advertised and paternalistic considerations suggest advertising bans

¹⁸ Conseil Supérieur de l’Audiovisuel, 2009.

on specific products. Rather surprisingly, economic scholars focused the second point, while the economic analysis on advertising ceilings is extremely thin¹⁹.

Anderson (2007) uses a two-sided market model to investigate the effects of advertising caps on social welfare. The disutility that consumers as readers or viewers derive from advertising may be particularly high with respect to the benefits accruing to advertisers. With high ad aversion the level of advertising in equilibrium may be excessive with respect to the social optimum. The opposite circumstance of over provision of advertising takes place if the advertising nuisance for consumers is lower than the return for advertisers. Therefore, an advertising cap is socially beneficial in the first case and harmful in the second. Anderson (2007) studies the advertising choice of a monopolist platform. With low advertising nuisance, the monopolist determines a level of advertising which is below the optimal level. Under this circumstance, the effect of an advertising cap is a further reduction of social welfare. If we consider the opposite scenario with high advertising nuisance, the level of advertising is over the social optimum. This means that an advertising cap will increase social welfare. However, the monopolist profits will fall as well, and this may reduce the incentives for other firms to enter the market and increase the variety of programming.

Although these results are quite reasonable, they assume to a monopolist platform/editor. In case of more than one firm in the market, strategic considerations play a major role in shaping the equilibrium outcome. In addition, the equilibrium changes according the assumptions on viewers' behaviour, profit functions of media outlets and advertising demand function. Anderson (2007) also studies the effects of advertising caps on the quality of programming and on the degree of diversity between competing platforms. The results in terms of content quality and variety are mixed.

In Australia television advertising was deregulated in September 1987 (with the aim of reducing the rate of interruption to programs) by allowing stations more flexibility in their scheduling of ad time. Wright (1994) claims that deregulation caused an increase in the amount of non-program content and puts forward a duopoly model where commercial TV stations compete. Wright (1994) shows that the regulation of the number of advertisements per unit of time both below the joint profit maximizing level

¹⁹ A correct and complete evaluation of the effects of advertising caps on producers, consumers and media should include a broad discussion about the role of advertising in modern economies. See Anderson (2007).

(for appropriate parameters) and below the Nash equilibrium level (for different appropriate parameters) can reduce program quality. Therefore, depending on the parameters of the model, fostering competition may be preferable to regulating the amount of advertisements per unit of time.

Finally, Stuhmeier and Wenzel (2012) analyse the effects of advertising bans. The main assumptions of their theoretical model are the following: two TV channels, horizontal program differentiation, a continuum of TV viewers. They assume a continuum of advertisers with measure 1, with a utility function given by

$$U = A(a_1 + a_2) - \frac{1}{2}(a_1^2 + a_2^2 + 2ba_1a_2)$$

where A is the size of the advertising market and a_i is the demand of advertising on channel i . This assumption leads to an indirect demand of advertising given by

$$p_i = A - a_i - ba_j$$

where p_i is the price of an advertising unit and b measures the differentiation of the channels in the eyes of the advertisers. Stuhmeier and Wenzel (2012) stress that this approach allows for a correct description of “pecuniary externalities”, that is, the effect on the advertising price caused by the advertising decisions of each media outlet²⁰. The main objective of Stuhmeier and Wenzel (2012) is to explore the effect of an asymmetric advertising cap, that is, an upper bound imposed only to the advertising time of a single broadcaster. The model of Stuhmeier and Wenzel (2012) predicts that an advertising cap will have the following effects: i) the unregulated channel will increase its advertising level if advertising is a strategic substitute and decreases its advertising level if advertising is a strategic complement; ii) strengthening the cap will make the price of advertising rise on both TV channels; iii) after the introduction of the advertising cap, the unregulated TV station gain higher profits if the degree of differentiation in the eye of advertisers is over a given level; otherwise, the profits of the unregulated private channel decrease; iv) for moderate levels of regulation, the profit of the regulated channel may increase after the introduction of advertising caps.

Bourreau and Grece (2011) consider the French advertising ban explicitly and put forward a mixed oligopoly model. A private TV channel is financed only by

²⁰ However, the utility of advertisers is not affected by the number or characteristics of each channel’s viewers; in other words, they abstract from indirect network effects that typically characterize two sided markets.

advertising, while the public channel derives its revenues from advertising and public support. The public TV maximizes the viewers' surplus under a budget constraint. Both channels choose the investment in program quality and select the advertising intensity. With advertising revenues, the program quality and the audience of public TV are higher than its' private competitor, while advertising intensity is not necessarily lower. Introducing an advertising cap on public programs lessens the incentives to invest in quality; at the same time, the cap reduces the degree of competition on advertising intensity. If the advertising cap is more binding, both channels reduce program quality and advertising intensity, while the audience and profits of the private channel tend to fall. Therefore, the adoption of an advertising cap for the public TV does not necessarily benefit the private channel.

3. Theoretical background

Although this paper deals with two-sided markets, the theoretical and empirical analysis will focus on the advertising side. In fact, broadcasting televisions derive the bulk of their revenues from selling advertising time, given the nature of public good of TV programs on the viewers' side²¹. We first formalize a theoretical argument in general terms, then we apply the very same argument to the total suppression of advertising on a single TV station. In particular, we study the effects produced by a change of the level of advertising of a single TV station. To do so, the rest of the section assumes a duopoly market, with a public station competing with a private station. In particular, we assume that public TV reduces its level of advertising because of an advertising cap; in other words, we have a "regulated" public station competing with an "unregulated" private station. The reduction of advertising of the public TV station may produce diverging effects.

- 1) The first effect derives from cross network externalities. If viewers are adverse to advertising, the audience of the public station raises and, *ceteris paribus*, the audience of the private station decreases²². This effect increases the demand for advertising of the public station as well as the the price of ad slots on public TV.

²¹ In many countries a possession fee is levied to finance the TV channels controlled by the State.

²² Most contributions of media economics, for example Mangani (2003), Crampes et al. (2004), Gabszewicz et al. (2004), Kohlschein (2004), Anderson (2005), Anderson and Coate (2005), Ambrus and

- 2) The second effect is occasionally called “pecuniary externalities” (Reisinger et al., 2009) and goes in the opposite direction, at least partially: the reduction of advertising on the public station determines a reduction of total supply of advertising. If we assume an inverse demand function for advertising taking the form of $p_A=f(W)$ with $f'<0$, where p_A is the price per viewer-time and W is the total supply of viewers-time units, the price of advertising will increase after an advertising ban.²³

The pecuniary externalities argument presents two crucial points. First, the price of advertising needs to be unique. This contrasts with the causal observations of frequent price differentiation in the advertising market. Second, the economic rationale of pecuniary externalities may not hold when a TV station *decreases* its advertising level. Here, the competitor has no interest in stabilizing the increasing advertising price.

Broadly speaking, the reduction of advertising quantity determines ambiguous effects on the price of advertising. These effects depend on the structure of the market (namely, the number of broadcasting firms), the degree of product differentiation across media outlets (Reisinger et al., 2009), etc.

The relative importance of network and/or pecuniary effects shapes the definition of advertising levels as strategic substitutes or strategic complements. Since advertising is an implicit price for viewers, the levels of advertising can be seen as strategic complements: when a TV station increases the advertising quantity, the other does the same, and the other way round. However, if we consider pecuniary externalities, the picture is more complex. In fact, when a (public) TV station increases the level of advertising, the price of advertising decreases. As a reaction, the competitor has an incentive to reduce its level of advertising to stabilize the price; from this perspective, the advertising levels may be seen as strategic substitutes.

Reisinger (2005), Choi (2006), Kremhelmer and Zenger (2008), Peitz and Valetti (2008), Kind et al. (2009) assume that consumers dislike advertising. Exceptions are Hackner and Nyberg (2000), who assume that readers like advertising in print media, and Sonnac (2000), who considers feedbacks from advertising to circulation under the two alternative assumptions of consumer advertising aversion and advertising appreciation. Also Armstrong (2005), considers alternative scenarios, characterized by aversion, love or indifference towards advertising.

²³ Among the “modern” studies on media markets, only Reisinger et al (2009) and Stuhmeier and Wenzel (2010) treat explicitly the pecuniary externalities. In reality, Masson et al. (1990) analyzed the direct effect of “advertising supply” on price and, at the same time, showed the importance of advertising aversion and network externalities for the market equilibrium.

The decision to ban advertising completely in a given time slot is an extreme case of this theoretical framework. In fact, when a broadcaster eliminates advertising in a given time slot it substantially exits the market, because the “effective” market of broadcasting television is on the side of advertisers. The competitor becomes a monopolist on the advertisers’ side, although it may find itself without a relevant audience that has shifted to the station without advertising. Potentially, this circumstance creates a large inefficiency. The market outcome is therefore ambiguous. For example, if the degree of program differentiation is relatively large with respect to advertising aversion, the absence of advertising on a single TV station will not shift the audience from its competitor. If the pecuniary effect prevails upon the cross network effects, the private/monopolist/unregulated broadcaster keeps positive levels of advertising and increases its revenues. Conversely, if advertising aversion prevails upon program differentiation, viewers may abandon the private and unregulated TV channel which, although monopolist on the advertisers’ side, cannot exploit its market power. Advertising aversion of TV viewers and product differentiation between media outlets are difficult to estimate directly. Therefore, the empirical analysis regarding the French experience has the objective to explore the consequences of the ban in the advertising and audience market.

4. Data

The dataset contains data on quantity of advertising (number of spots and seconds) and advertising revenues per channel (aerial, satellite, cable and terrestrial digital) for each week in the seasons 2007-2008 and 2008-2009 (excluding the summer months, i.e. July and August)²⁴. We are therefore able to calculate the average price per spot and price per second, in addition to the length of a spot. As already mentioned, starting from the 6th of January 2009, advertising was banned on public aerial television (“hertziennes channels”) in the time period 20.00-6.00, which includes prime-time. We have data for both the time-slot 6.00-20.00 and the time-slot 20.00-6.00. In addition, in the season 2008-2009, we have data both before and after the ban

²⁴ The data were obtained from TNS France, now KantarMedia-France.

Figure 1 reports summary statistics. Note that we have data on 42 weeks for 2 time slots during the day for 2 seasons for 91 channels, which implies a maximum number of observations equal to 15288.

Table 1 – Descriptive statistics

| Variable | Observations | Mean | Standard deviaton |
|-----------------|---------------------|-------------|--------------------------|
| revenues | 14165 | 807027.6 | 3574208 |
| spots | 14165 | 515.6939 | 522.1669 |
| seconds | 14165 | 10791.83 | 10608.26 |
| night time | 15288 | 0.5054945 | 0.4999862 |
| bann | 15288 | 0.297619 | 0.457226 |

In addition for the same time periods we have also data on shares of audience over the whole day for the aerial channels and for the whole of the non-aerial channels (cable, satellite and terrestrial digital). These data were obtained from the weekly press releases of Mediametrie.

Finally, we also have data on the number of viewers in the night time-slot for the aerial channels and for the whole of the non-aerial channels. These data were instead acquired from Eurodata TV, that sells the on behalf of Mediametrie.

Given the audience data do not distinguish between the different non-aerial channels, for the analysis that follows we group all the non-aerial channels together. We thus consider data from the following channels: a) Private aerial (TF1, M6 and CanalPlus) 2) Public aerial (France2, France 3 and Canal 5²⁵) c) Non aerial-channels.

5. Empirical Analysis

²⁵ This includes France 5 and Arte.

We use a difference in difference approach and compare for each aerial channel and for each week between September and June the season 2008-2009 (the treated group, in which the ban was introduced) and the season to the season 2007-2008 (the control group, in which there was no ban) and check whether the difference between the two changed in the weeks after the ban (the follow-up period) compared to the weeks before the ban (the pre-treatment period).

We compare separately the slots 20.00-6.00 and 6.00-20.00 because we cannot rule out a priori that there is substitution between the two slots.

Given that the market is two-sided, we look at each side of the market, first separately, then jointly.

5.1 The advertising market

Advertising quantity

As shown in Figure 1, advertising quantity on public TV dropped almost to zero in the slot 20.00-6.00 after the introduction of the ban, the reason for the remaining advertising being that advertising campaigns on social issues were still allowed (and paid for). Figure 2 shows instead that advertising quantity on private TV channels in the slot 20.00-6.00 did not change significantly. Indeed, as shown in the second column of Table 2, a difference in difference approach estimates a non-significant decline in the difference between the 2008-2009 season and the 2007-2008 season. Column seven to nine give the details for the three private channels: TF1, M6 and CanalPlus. Figure 3 shows instead that advertising quantity on public TV channels in the slot 6.00-20.00 increased substantially. Column three to six show the difference across the three public channels: France 2, France 3 and Canal5. Indeed, as shown in the first column Table 3, a difference in difference approach estimates a significant increase in the difference between the 2008-2009 season and the 2007-2008 season. With regard instead to advertising on private TV channels in the time slot 6.00-20.00, Figure 4 shows an initial decline after the ban followed by an increase. Overall, as shown in the second column

Figure 1

Ad Seconds Public 20.00-6.00

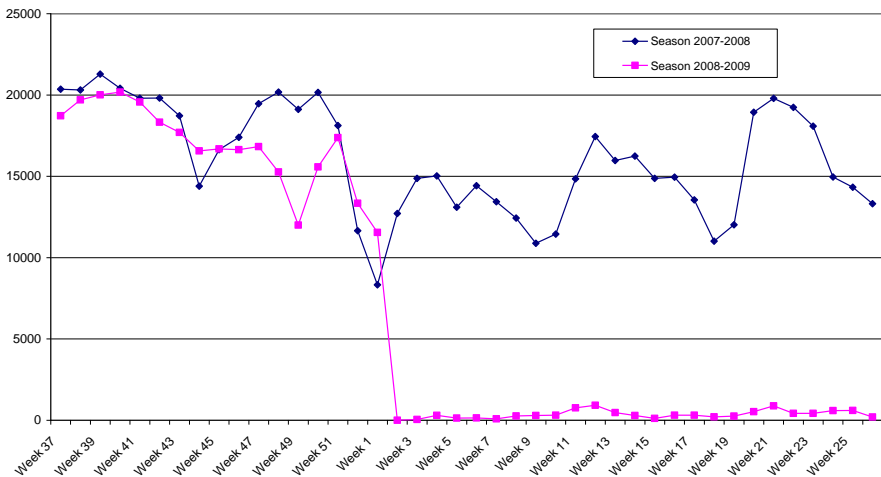


Figure 3

Ad Seconds Public 6.00-20.00

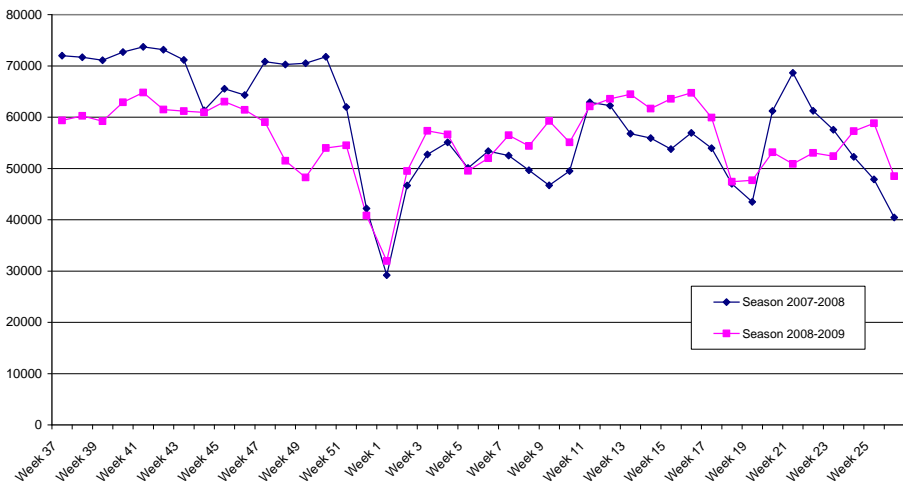


Figure 2

Ad Seconds Private 20.00-6.00

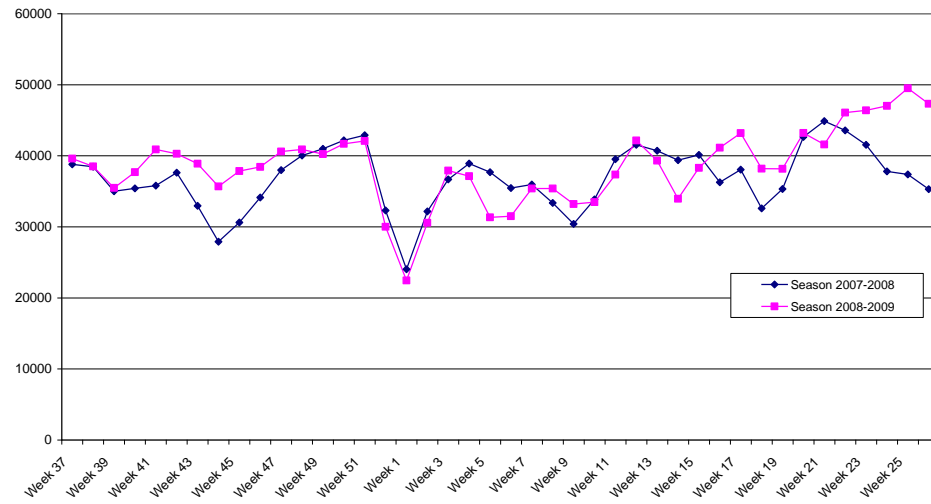


Figure 4

Ad Private Seconds 6.00-20.00

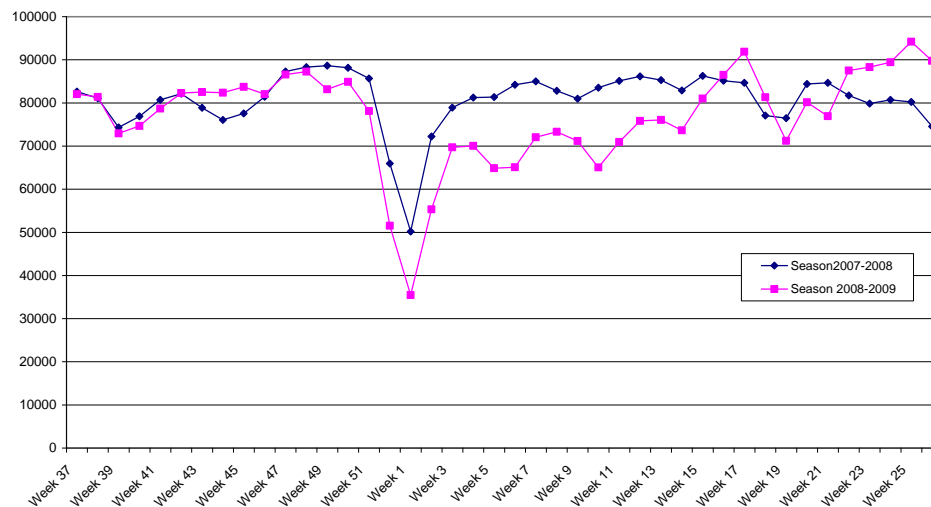


Table 2
advertising seconds night-slot

| VARIABLES | (1) public_night | (2) private_night | (3) aerial_night | (4) France2_night | (5) France3_night | (6) Canal5_night | (7) TF1_night | (8) M6_night | (9) CanalPlus_night | (10) Others_night |
|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|--------------------|------------------|------------------------|-----------------------|
| bann | -627.4*** (74.26) | -24.00 (51.23) | -325.7*** (58.88) | -986.4*** (65.69) | -894.8*** (46.87) | -1.155 (1.499) | -119.7 (111.6) | 45.18 (102.0) | 2.549 (17.16) | -11,685*** (1,688) |
| Constant | -56.33 (57.29) | 95.64** (39.52) | 19.65 (45.43) | -131.0** (50.68) | -39.45 (36.16) | 1.412 (1.157) | 226.8** (86.10) | 5.059 (78.69) | 55.03*** (13.24) | 11,031*** (1,303) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.365 | 0.002 | 0.109 | 0.849 | 0.901 | 0.015 | 0.028 | 0.005 | 0.001 | 0.545 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3
advertising seconds day-slot

| VARIABLES | (1) public_day | (2) private_day | (3) aerial_day | (4) France2_day | (5) France3_day | (6) Canal5_day | (7) TF1_day | (8) M6_day | (9) CanalPlus_day | (10) Others_day |
|--------------|----------------------|--------------------|----------------------|---------------------|----------------------|----------------------|-------------------|---------------------|----------------------|-----------------------|
| bann | 560.8*** (75.99) | -134.9 (110.0) | 212.9*** (70.26) | 637.1*** (127.5) | 377.0*** (105.4) | 668.1*** (98.31) | -329.0 (201.4) | -149.2 (209.2) | 73.61 (45.57) | -26,041*** (3,354) |
| Constant | -445.0*** (58.63) | -101.5 (84.85) | -273.2*** (54.20) | -197.3* (98.33) | -383.2*** (81.32) | -754.5*** (75.85) | -12.80 (155.4) | -419.2** (161.4) | 127.5*** (35.16) | 20,418*** (2,588) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.305 | 0.012 | 0.035 | 0.385 | 0.242 | 0.536 | 0.063 | 0.013 | 0.061 | 0.601 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4
advertising seconds whole day

| VARIABLES | (1) public | (2) private | (3) Aerial | (4) France2 | (5) France3 | (6) Canal5 | (7) TF1 | (8) M6 | (9) CanalPlus | (10) Others |
|--------------|----------------------|-------------------|----------------------|---------------------|----------------------|----------------------|-------------------|--------------------|---------------------|-----------------------|
| bann | -66.69 (98.56) | -158.9 (150.0) | -112.8 (93.83) | -349.3* (180.7) | -517.8*** (142.2) | 667.0*** (98.06) | -448.7 (299.9) | -104.0 (293.7) | 76.16 (58.73) | -37,727*** (4,945) |
| Constant | -501.3*** (76.04) | -5.894 (115.7) | -253.6*** (72.39) | -328.2** (139.4) | -422.6*** (109.7) | -753.0*** (75.65) | 214.0 (231.4) | -414.2* (226.6) | 182.5*** (45.31) | 31,449*** (3,815) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.004 | 0.009 | 0.006 | 0.085 | 0.249 | 0.536 | 0.053 | 0.003 | 0.040 | 0.593 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

of Table 3, a difference in difference approach estimates an insignificant decline in the difference between the 2008-2009 season and the 2007-2008 season. As shown in columns seven to nine there is not difference to this regard across private TV stations. Finally, as shown in the first and second column of Table 4, when taking into consideration the whole day, an insignificant decline in advertising quantity is estimated for both public and private TV channels.

Having established that advertising quantity did not shift to private TV in the slot 20.00-6.00 nor in the slot 6.00-20.00 but rather partly shifted to public TV in the slot which was not subject to the ban, we now check whether this is due to an increase in the price of advertising on private TV.

Advertising prices

Figure 6 shows that advertising price per second in the time slot 20.00-6.00 on private TV channels dropped after the ban. Indeed, as shown in the second column of Table 6, a difference in difference approach estimates a decline, albeit insignificant, in the difference between the 2008-2009 season and the 2007-2008 season. From column seven and eight the channels TF1 and M6 seem however to have significantly dropped their price. Figure 7 shows instead that advertising price per second in the time slot 20.00-6.00 on private TV channels did not change substantially after the ban. Indeed, as shown in the second column of Table 8, a difference in difference approach estimates an insignificant increase in the difference between the 2008-2009 season and the 2007-2008 season. Column seven shows however that the price of advertising on TF1 significantly increased.

From the first columns of Table 5 and 6 one can see that the price of advertising on public TV channels increased not only during the day but, for the remaining advertising, also during the night. Columns four to six show that the increase in prices was significant for each of the three public channels.

Figure 6

Price per Second Private 20.00-6.00

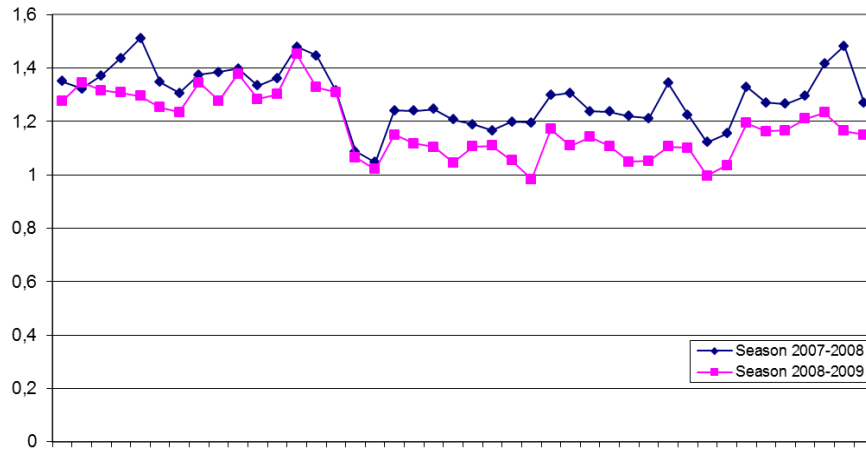
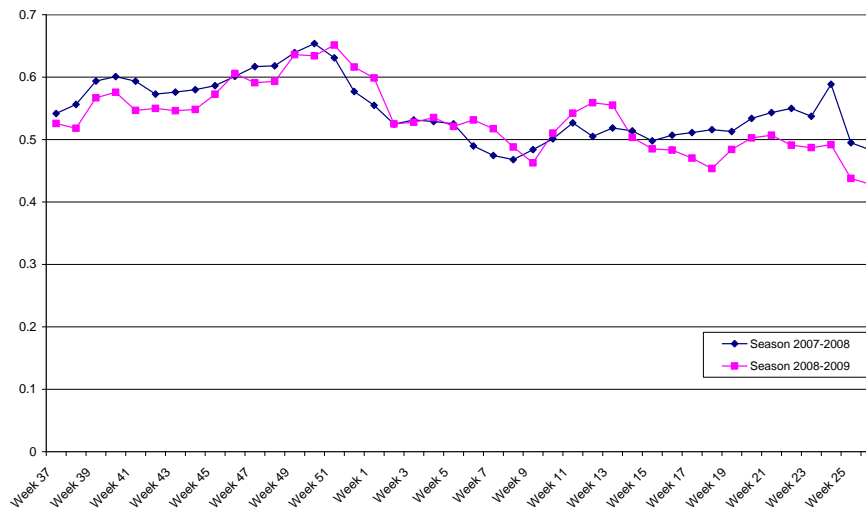


Figure 7

Price per Second Private 6.00-20.00



Having established that advertising prices per second dropped on private TV channels in the slot 20.00-6.00 and did not change in the slot 6.00-20.00 while ad prices on public TV in the slot 6.00-20.00 might even have risen, the consequences for advertising revenues are easily derived.

Table 5
price per second night-slot

| VARIABLES | (1) public_night | (2) private_night | (3) aerial_night | (4) France2 | (5) France3 | (6) TF1 | (7) M6 | (8) CanalPlus | (9) Others |
|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|
| bann | 90.06*** (30.32) | -25.17 (24.59) | 20.73 (19.50) | 86.89* (47.94) | 93.24** (35.71) | -148.0*** (37.80) | 76.46*** (27.80) | -3.934 (12.27) | 3.456*** (0.354) |
| Constant | -160.3*** (23.20) | -64.84*** (18.97) | -103.0*** (14.99) | -189.0*** (36.68) | -131.6*** (27.32) | -97.41*** (29.17) | -137.7*** (21.45) | 40.63*** (9.468) | 3.906*** (0.273) |
| Observations | 82 | 126 | 208 | 41 | 41 | 42 | 42 | 42 | 42 |
| R-squared | 0.099 | 0.008 | 0.005 | 0.078 | 0.149 | 0.277 | 0.159 | 0.003 | 0.705 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6
price per second day-slot

| VARIABLES | (1) public_day | (2) private_day | (3) aerial_day | (4) France2 | (5) France3 | (6) Canal5 | (7) TF1 | (8) M6 | (9) CanalPlus | (10) Others |
|--------------|----------------------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|--------------------|---------------------|
| bann | 70.32*** (4.723) | 10.38 (12.49) | 40.35*** (7.056) | 94.49*** (7.734) | 90.10*** (5.513) | 26.37*** (2.069) | 54.47*** (14.14) | -24.71 (18.11) | 1.384 (7.270) | 3.749*** (0.225) |
| Constant | -69.34*** (3.644) | -11.91 (9.637) | -40.63*** (5.444) | -96.91*** (5.967) | -82.50*** (4.253) | -28.60*** (1.596) | -107.7*** (10.91) | 56.86*** (13.97) | 15.13** (5.609) | 1.211*** (0.174) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.641 | 0.006 | 0.116 | 0.789 | 0.870 | 0.802 | 0.271 | 0.044 | 0.001 | 0.874 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7
price per second whole day

| VARIABLES | (1) public | (2) Private | (3) aerial | (4) France2 | (5) France3 | (6) Canal5 | (7) TF1 | (8) M6 | (9) CanalPlus | (10) Others |
|--------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------------------|---------------------|---------------------|
| bann | 46.00*** (7.712) | 0.206 (12.13) | 23.10*** (7.661) | 48.03*** (10.45) | 63.59*** (7.097) | 26.38*** (2.098) | -8.611 (18.66) | 13.32 (14.98) | -4.093 (7.307) | 3.712*** (0.239) |
| Constant | -82.63*** (5.950) | -19.39** (9.355) | -51.01*** (5.910) | -126.2*** (8.059) | -93.13*** (5.475) | -28.61*** (1.619) | -82.42*** (14.40) | 0.413 (11.56) | 23.84*** (5.637) | 2.046*** (0.185) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.223 | 0.000 | 0.035 | 0.346 | 0.667 | 0.798 | 0.005 | 0.019 | 0.008 | 0.857 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Advertising revenues

Figure 7 and the second column in Table 8 shows that advertising revenues in the time slot 20.00-6.00 for private TV channels dropped significantly after the ban. Interestingly from column seven and eight it appears that while TF1 lost substantial advertising revenues, M6 instead increased its advertising revenues, albeit not enough to offset the loss of TF1. Figure 8 and the second column of Table 9 show instead that advertising revenues in the time slot 20.00-6.00 on private TV channels only insignificantly declined after the ban. Interestingly, as shown in column 8 of Table 9 advertising revenues on M6 significantly declined.

From the first columns of Table 9 and 10 one can see that advertising revenues on public TV channels increased after the ban in the slot 6.00-20.00, enough to more than offset the loss in advertising revenues in the slot 20.00-6.00. Columns four to six show that the increase advertising revenues was significant for each of the three public channels.

Figures 11 and 12 together with the tenth columns of Tables 8 and 9 suggest that, while advertising on digital television continued to grow, its growth in the slot 20.00-6.00 was not affected by the ban coming into effect on January 6th. Similarly, advertising does not seem to have switched to cable and satellite.

All this seems to suggest that advertising which was previously broadcasted on public TV in the time slot 20.00-6.00 did not switch to private channels in the same time slot (nor was the price in that time slot on private channels increased). Rather advertising switched to public TV in the time slot 6.00-20.00.

All in all, the evidence shown so far is already sufficient to establish that the common expectation that the ban would favor private TV channels at the expense of public ones was not fulfilled.²⁶

In the next section we turn to the other side of the market, the audience side, to look for an explanation for this surprising finding.

²⁶ Incidentally, if the claims in the press reported in the introduction were true, this surprising findings might explain why the plan to extend the ban to the whole day was indefinitely postponed.

Figure 7

Ad Revenues Private 20.00-6.00

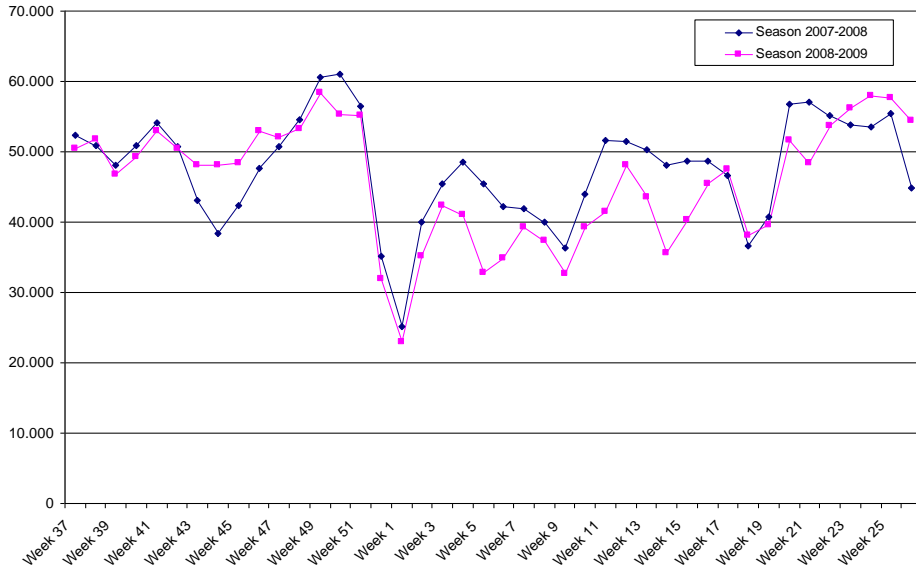


Figure 8

Ad Revenues Private 6.00-20.00

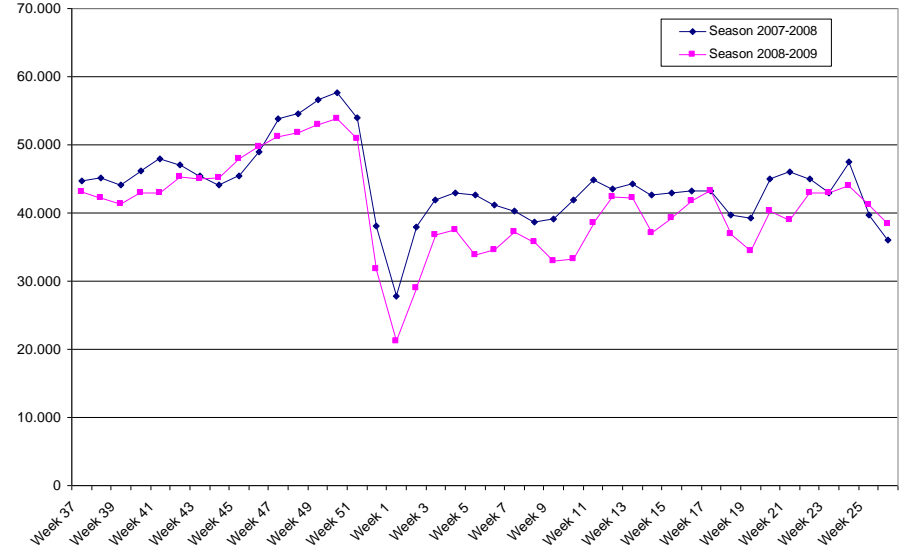


Figure 9

Ad Revenues Public 20.00-6.00

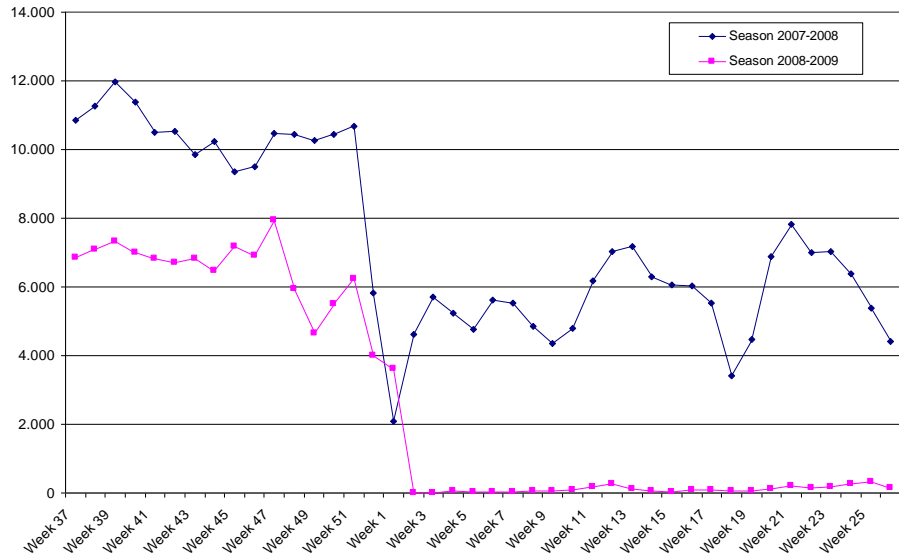


Figure 10

Ad Revenues Public 6.00-20.00

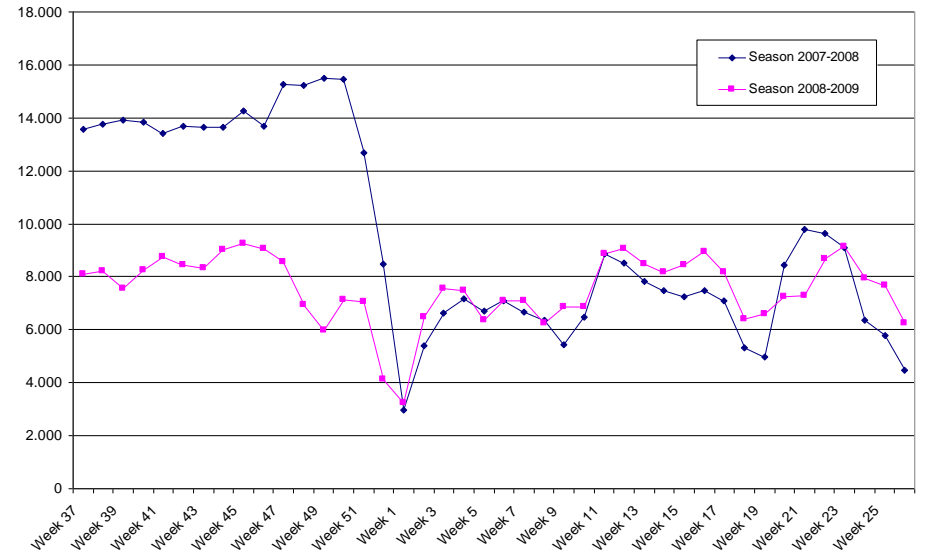


Table 8
advertising revenues night-slot

| VARIABLES | (1) public | (2) Private | (3) Aerial | (4) France2 | (5) France3 | (6) Canal5 | (7) TF1 | (8) M6 | (9) CanalPlus | (10) Others |
|--------------|-------------------------|-----------------------|-------------------------|-------------------------|-------------------------|---------------------|--------------------------|-------------------------|----------------------|------------------------|
| bann | -91,004** (37,195) | -137,723* (71,592) | -114,363*** (40,835) | -174,103*** (41,102) | -98,894*** (21,745) | -14.37** (6.967) | -631,680*** (168,438) | 219,173*** (74,869) | -661.6 (7,474) | -49,619 (39,289) |
| Constant | -169,954*** (28,696) | -31,191 (55,234) | -100,573*** (31,505) | -342,381*** (31,711) | -167,511*** (16,777) | 29.02*** (5.375) | 188,522 (129,953) | -327,106*** (57,763) | 45,011*** (5,766) | 548,079*** (30,312) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.046 | 0.029 | 0.030 | 0.310 | 0.341 | 0.096 | 0.260 | 0.176 | 0.000 | 0.038 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9
advertising revenues day-slot

| VARIABLES | (1) public | (2) Private | (3) Aerial | (4) France2 | (5) France3 | (6) Canal5 | (7) TF1 | (8) M6 | (9) CanalPlus | (10) Others |
|--------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------------------|----------------------|------------------------|
| bann | 296,254*** (21,238) | -22,062 (69,709) | 137,096*** (38,003) | 445,874*** (39,969) | 341,314*** (25,169) | 101,575*** (8,284) | 109,829 (117,061) | -185,561*** (60,128) | 9,545 (10,716) | 125,986** (57,501) |
| Constant | -272,337*** (16,386) | -161,842*** (53,782) | -217,090*** (29,320) | -383,801*** (30,837) | -323,305*** (19,418) | -109,906*** (6,391) | -653,201*** (90,314) | 119,820** (46,390) | 47,855*** (8,267) | 549,956*** (44,363) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.611 | 0.001 | 0.049 | 0.757 | 0.821 | 0.790 | 0.022 | 0.192 | 0.019 | 0.107 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10
advertising revenues whole day

| VARIABLES | (1) public | (2) private | (3) aerial | (4) France2 | (5) France3 | (6) Canal5 | (7) TF1 | (8) M6 | (9) CanalPlus | (10) Others |
|--------------|-------------------------|------------------------|-------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------------------|-----------------------|--------------------------|
| bann | 205,251*** (48,060) | -159,786 (115,532) | 22,733 (63,408) | 271,771*** (73,532) | 242,420*** (41,511) | 101,561*** (8,282) | -521,852* (264,160) | 33,612 (89,362) | 8,883 (16,641) | 76,367 (92,651) |
| Constant | -442,292*** (37,079) | -193,033** (89,135) | -317,662*** (48,920) | -726,182*** (56,731) | -490,816*** (32,026) | -109,877*** (6,389) | -464,679** (203,804) | -207,286*** (68,944) | 92,866*** (12,839) | 1.098e+06*** (71,482) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.128 | 0.015 | 0.001 | 0.255 | 0.460 | 0.790 | 0.089 | 0.004 | 0.007 | 0.017 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 11

Ad Revenues Digital + Cable & Satellite 20.00-6.00

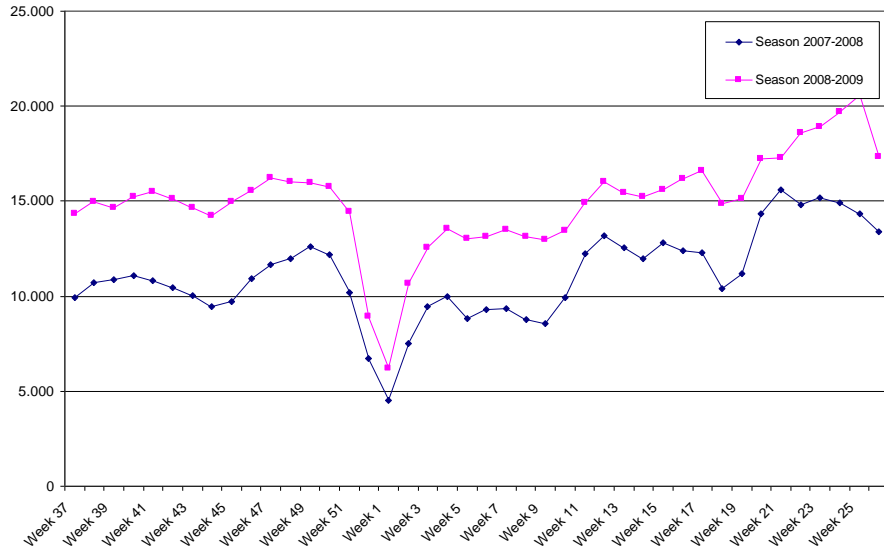


Figure 13

Ad Revenues 20.00-6.00

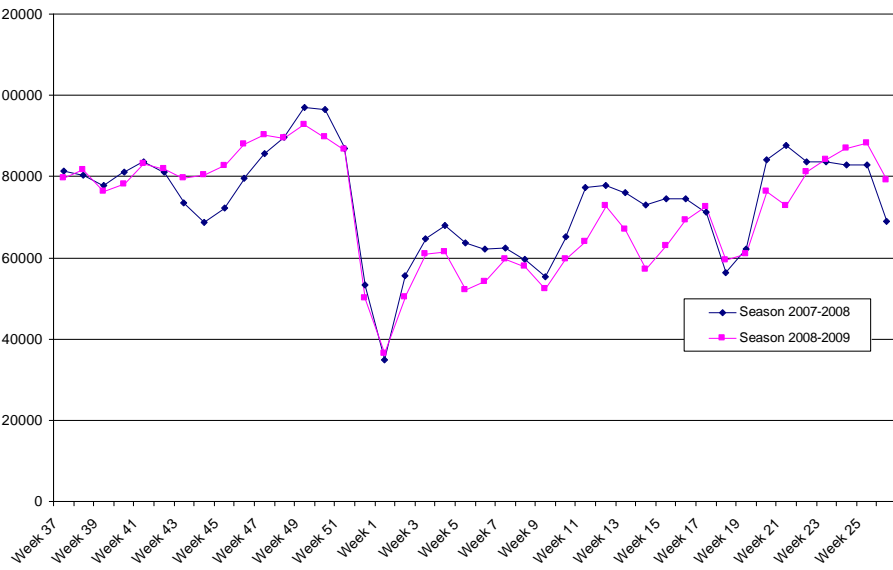


Figure 12

Ad Revenues Digital + Cable & Satellite 6.00-20.00

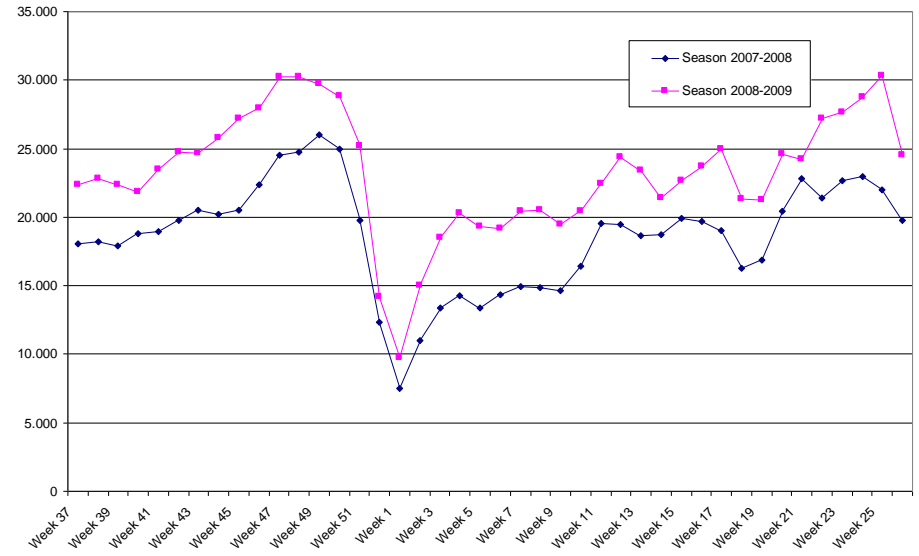


Figure 14

Ad Revenues 6.00-20.00

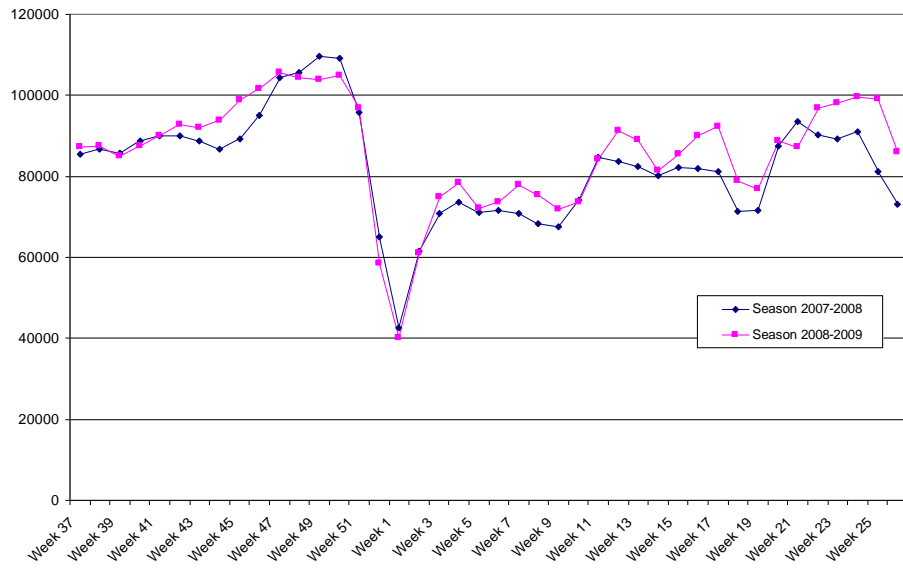
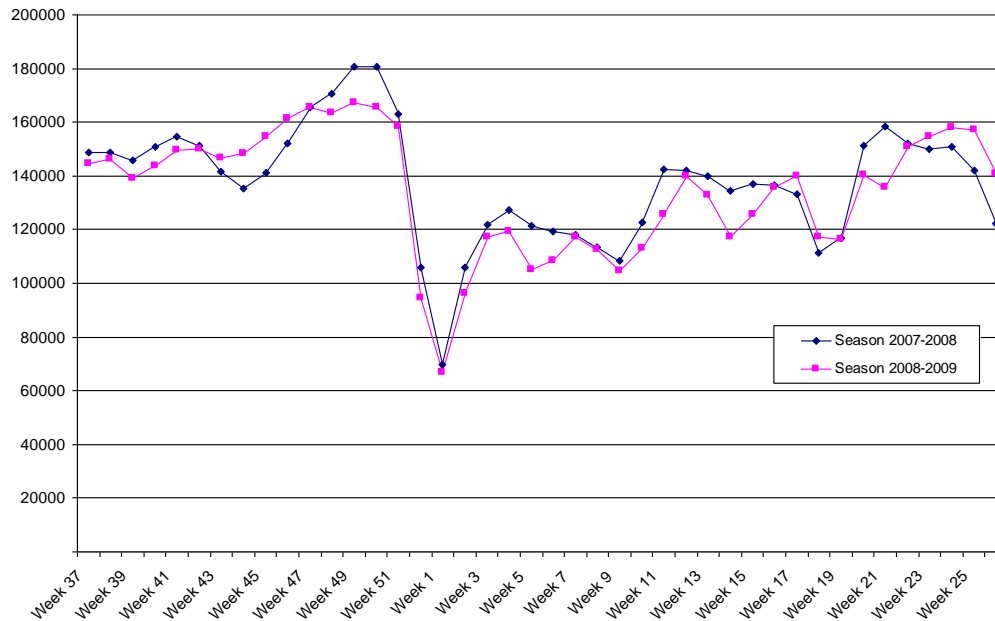


Figure 15

Ad Revenues



5.2 The audience market

The fact that advertising which was previously broadcasted on public TV in the time slot 20.00-6.00 did not switch to private channels in the same time slot (nor was the price in that time slot on private channels increased) may be due to the two-sided nature of the market.

It might be the case for instance that viewers dislike advertising²⁷ and that, as advertising disappeared from public TV, programs became more attractive, viewers switched from private TV to public TV and private TV got less attractive for advertisers. Hence private TV channels would have lost revenues because it lost audience.

Also the fact that advertising switched to public TV in the time slot 6.00-20.00 has a two-sided market explanation. It might be the case that from the point of view of advertisers viewers are more differentiated between public and private channels than they are across time slots: a person watching public TV in the 6.00-20.00 time slot is a better substitute for one who watches public TV in the time slot 20-00-6.00 than one who watches TV on a private channel. An extreme case of this would be if viewers single-homed (i.e. watched just one channel or, at least, type of channel). Then TV

²⁷ See Wilbur(2008)

channels would be monopolists over access to these viewers. Once advertisers cannot reach the viewers of public TV on the (type of) channel they watch, they stop advertising²⁸. If so, private TV channels would have lost revenues because advertisers preferred to change the time of their ad rather than the TV channel.

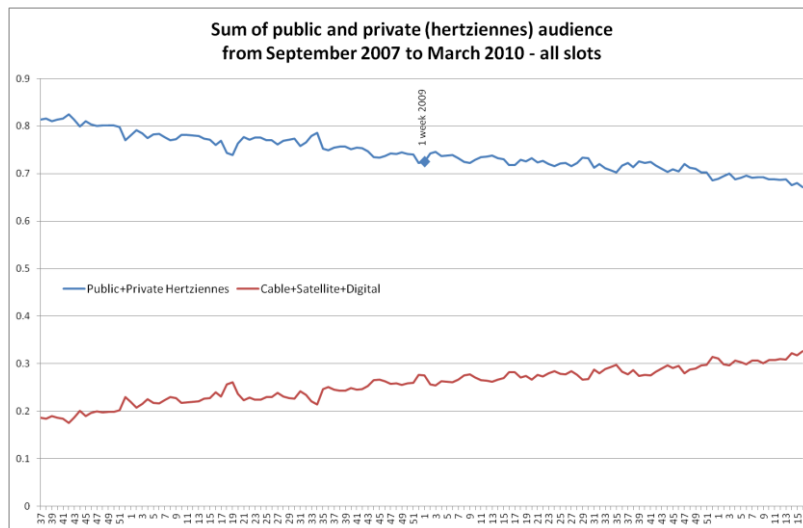
Clearly, only an analysis of the audience market can establish whether one or both of the above explanations may be true.

Also, since the empirical evidence above showed that it was not the case that advertising switched from public TV to non-aerial TV as a consequence of the ban, then would seem justified to focus our attention on the competition between public and private aerial TV channels when approaching the audience side of the two-sided market

We start by analyzing the effect of the ban on the shares of audience (with respect to all TV viewers) in a day.

The audience of free-to-air channels appears to have been declining, while that of cable, satellite and digital TV channels has been increasing. This is shown in Figure 18 which reports the audience share of aerial TV over all TV audiences.

Figure 16



²⁸ See Armstrong(2006).

Consistently, the price per second per audience percentage point has been declining on average on aerial (public and private) channels, while it has been increasing on other channels (cable, digital and satellite). This can be seen in Figures 17 and 18.

Figure 17

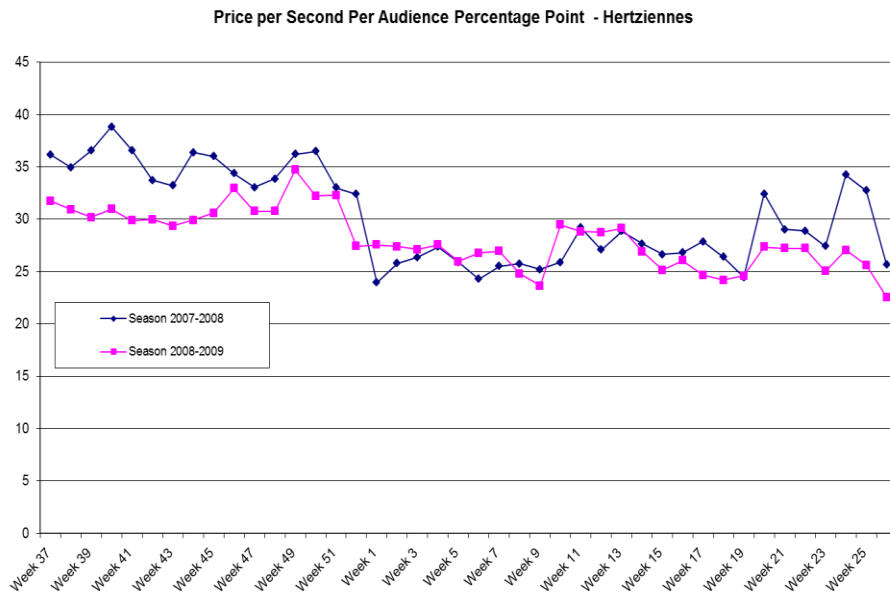
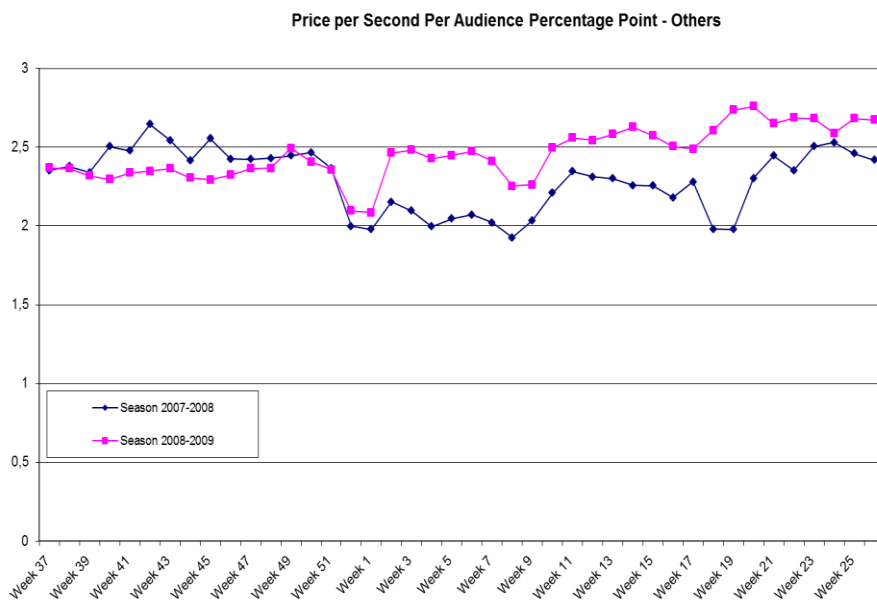


Figure 18



The decline in the share of audience of aerial channels is due to a decline in audience shares of both private and public channels, as shown respectively on Figure 19 and Figure 20.

Figure 19

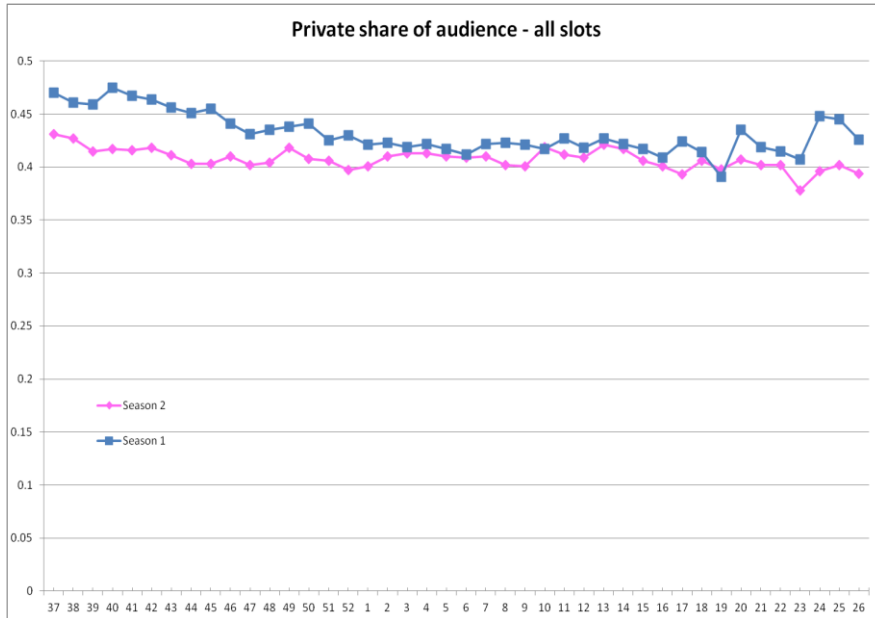
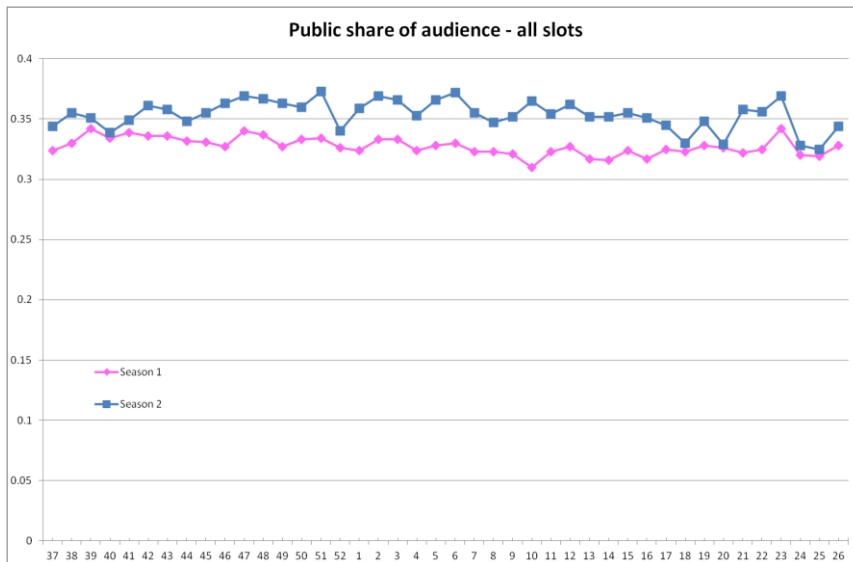


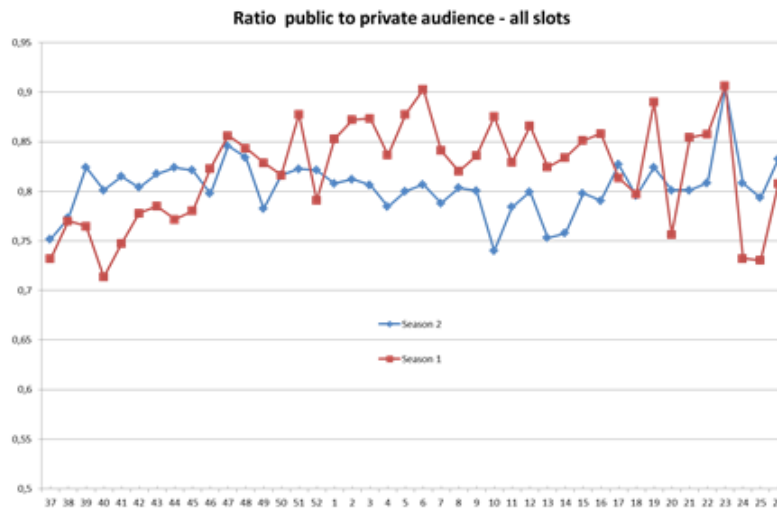
Figure 20



However, our difference in difference estimates show that declining trend has slowed down for private TV channels after the ban. The first and second columns of Table 11 respectively show that the share of audience of public TV channels has insignificantly declined, while the share of audience of private TV channels has significantly increased.

Consistently, Figure 21 shows that surprisingly audience share of public TV appears to have dropped with respect to that of private TV.

Figure 21



This finding is surprising. The share of audience is a measure of intensity of use of an average. If viewers dislike advertising one would expect them to watch private TV less and public TV more following the disappearance of ads from public TV. We do not have the share of audience for the slot 20.00-6.00 only. Hence, we do not know whether the decline in the audience share of public TV channels over the whole day is due to the increase in advertising in the slot 6.00 to 20.00 and a corresponding decline in the audience share in that slot. This may be possible if intensity of use and number of viewers are correlated. Indeed, in the slot 20.00-6.00 the number of viewers appears to have declined insignificantly on public TV and increased insignificantly on private TV, as shown in the first two columns of Table 12. Still we do not have information on the number of viewers in the slot 6.00-20.00. And it would be surprising if viewers did not switch from public to private TV when advertising on public TV disappeared in the night-slot but did switch away from public TV when public TV increased its advertising in the day-slot. Unless viewers of private TV channels were much less advertising averse than viewers of public channels. Once again it would seem that, as the second explanation for the surprising findings on the advertising market postulates, viewers heterogeneity may play a role.

All in all, however, we find no evidence of viewers switching to public TV as a result of the ban. Hence, this cannot be the reason behind the loss in revenues of private TV channels. We are thus left with the possibility that for advertisers differentiation between channels is stronger than differentiation across time slots. Preliminary evidence shows that this might be the case, in that for instance private TV channels have in both time slots a younger audience than public TV stations

5.3 Bringing together the two-sides of the market

Having analysed the advertising and the audience side of the market separately, we now turn to the interaction between the two sides. We thus calculate the price per advertising second per audience percentage point over the whole day and the price per advertising second per viewer in the night-slot. Columns 1 in Tables 13 and 14 show that indeed both prices have increased on public TV.

It is also possible to calculate the relative price per second per audience percentage point on public TV with respect to private TV, by simply multiplying the ratio of prices per second with the reciprocal of the ratio of the audience shares. Figure 22 shows that indeed the price per second per viewer has declined on private TV with respect to public TV.

These findings are not surprising given the previous finding on prices per seconds, audience shares and number of viewers.

Figure 22

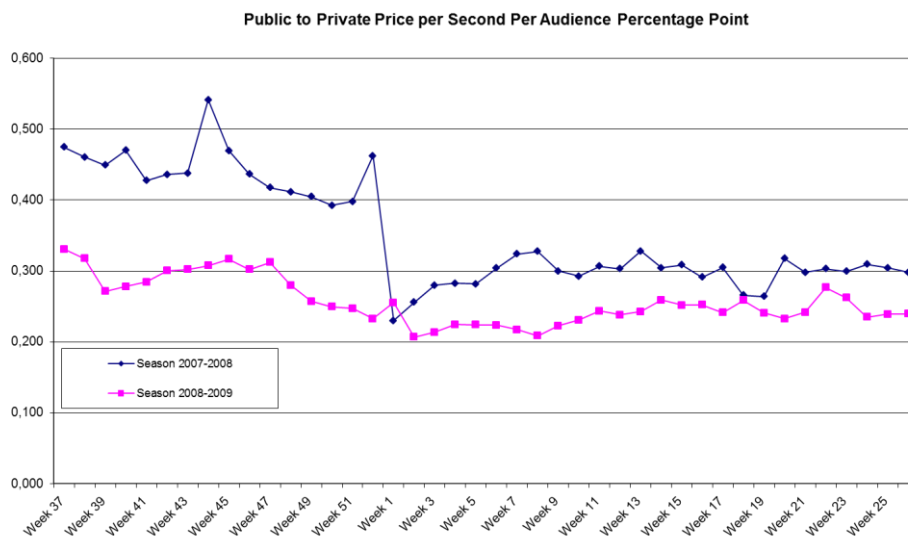


Table 11
percentage share of audience

| VARIABLES | (1) public | (2) private | (3) aerial | (4) France2 | (5) France3 | (6) Canal5 | (7) TF1 | (8) M6 | (9) CanalPlus | (10) Others |
|--------------|--------------------------|-------------------------|-------------------------|-------------------------|--------------------------|------------------------|-------------------------|---------------------------|-------------------------|-------------------------|
| bann | -0.00206 (0.00161) | 0.00789*** (0.00236) | 0.00291** (0.00146) | -0.00101 (0.00253) | -0.00480** (0.00201) | -0.000358 (0.00307) | 0.0236*** (0.00325) | 0.00162** (0.000711) | -0.00156 (0.00118) | -0.0175*** (0.00296) |
| Constant | -0.00690*** (0.00124) | -0.0134*** (0.00182) | -0.0101*** (0.00113) | -0.0106*** (0.00195) | -0.00724*** (0.00155) | -0.00288 (0.00237) | -0.0362*** (0.00251) | -0.00582*** (0.000548) | 0.00188** (0.000908) | 0.0609*** (0.00228) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.013 | 0.082 | 0.016 | 0.004 | 0.125 | 0.000 | 0.568 | 0.115 | 0.042 | 0.466 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 12
number of viewers night-slot

| VARIABLES | (1) public | (2) private | (3) aerial | (4) France2 | (5) France3 | (6) Canal5 | (7) TF1 | (8) M6 | (9) CanalPlus | (10) Others |
|--------------|----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|----------------------|---------------------|----------------------|
| bann | -23.33 (18.61) | 27.10 (29.64) | 1.884 (17.54) | -28.31 (35.78) | -45.53 (32.95) | 3.842 (11.55) | 98.00 (60.63) | 21.23 (41.93) | -37.92** (15.37) | -340.7*** (31.31) |
| Constant | -47.92*** (14.36) | -94.23*** (22.87) | -71.08*** (13.53) | -111.6*** (27.61) | -1.076 (25.42) | -31.11*** (8.911) | -242.2*** (46.78) | -88.33*** (32.35) | 47.83*** (11.86) | 511.7*** (24.16) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.013 | 0.007 | 0.000 | 0.015 | 0.046 | 0.003 | 0.061 | 0.006 | 0.132 | 0.748 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 13
price per second per audience % point whole-day

| VARIABLES | (1) public | (2) private | (3) aerial | (4) France2 | (5) France3 | (6) Canal5 | (7) TF1 | (8) M6 | (9) CanalPlus | (10) Others |
|--------------|----------------------|---------------------|------------------|----------------------|----------------------|----------------------|----------------------|---------------------|------------------|-----------------------|
| bann | 3.303*** (0.413) | -0.678 (2.486) | 1.313 (1.418) | 2.651*** (0.634) | 4.930*** (0.551) | 2.329*** (0.220) | -3.873*** (0.625) | -0.932 (4.624) | 2.771 (4.153) | 0.216*** (0.0155) |
| Constant | -4.971*** (0.319) | 7.464*** (1.918) | 1.247 (1.094) | -6.394*** (0.489) | -6.068*** (0.425) | -2.450*** (0.170) | 2.205*** (0.482) | 18.12*** (3.567) | 2.067 (3.204) | -0.131*** (0.0120) |
| Observations | 126 | 126 | 252 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| R-squared | 0.340 | 0.001 | 0.003 | 0.304 | 0.667 | 0.737 | 0.490 | 0.001 | 0.011 | 0.829 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 14
price per second per viewer night-slot

| VARIABLES | (1) public | (2) private | (3) Aerial | (4) France2 | (5) France3 | (6) TF1 | (7) M6 | (8) CanalPlus | (9) Others |
|--------------|-----------------------|---------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|---------------------|---------------------------|
| bann | 0.0763*** (0.0232) | 0.0377 (0.0311) | 0.0535** (0.0212) | 0.0571* (0.0320) | 0.0956*** (0.0343) | -0.0814*** (0.0146) | 0.0411* (0.0217) | 0.153* (0.0865) | 0.00393*** (0.000269) |
| Constant | -0.109*** (0.0178) | -0.0364 (0.0240) | -0.0654*** (0.0163) | -0.0987*** (0.0245) | -0.119*** (0.0262) | 0.0227* (0.0113) | -0.0544*** (0.0167) | -0.0777 (0.0667) | -0.00132*** (0.000207) |
| Observations | 82 | 126 | 208 | 41 | 41 | 42 | 42 | 42 | 42 |
| R-squared | 0.119 | 0.012 | 0.030 | 0.076 | 0.166 | 0.437 | 0.083 | 0.073 | 0.842 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

7. Conclusions

We have analysed the effects of the advertising ban on French public television, which came into effect on the 5th of January 2009 and forbid commercial advertising on public TV in the time slot 20.00-6.00.

By using a difference-in-difference approach we show that advertising which was previously broadcasted on public TV in the time slot 20.00-6.00 did not switch to private channels in the same time slot nor did the price per second or the price per second per viewer in that time slot on private channels rise.

Rather advertising partly switched to public TV in the time slot 6.00-20.00, while the trend of advertising to move away from aerial towards non-aerial TV channels continued, following the relative change in audience, but was not increased by the advertising ban, contrary to some claims in the business press at the time.

The ex-ante common expectation that the ban would favour private TV channels at the expense of public ones was therefore wrong, as was the ex-post common claim in the business press that advertising had switched from aerial TV to digital TV as a result of the ban.

Interestingly, the relative audience of public to private TV did not tilt in favour of public TV. This suggests that advertising aversion is not the driver of the post-ban effects. More likely such a driver is consumers' heterogeneity. For advertisers, TV channels are differentiated not only in the number but also in the type of viewers. It would seem that for advertisers viewers of public TV during the day are closer substitutes for viewers of public TV in prime time than are viewers of private TV channels in prime time. For instance, private TV channels have in both time slots a younger audience than public TV stations.

The lesson is that disregarding the two-sided nature of the market may lead to unintended consequences of regulatory interventions.

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