Attitudes toward Advertising and Price Competition in the Press Industry

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Abstract

We consider a situation of duopolistic competition in the press industry, involving two editors competing in both the newspapers' and advertising markets. The population of readers in this market is differentiated in terms of their attitudes toward advertising; some of them are assumed to be advertising-lovers, while the remaining ones are assumed to be advertising-averse. We analyse a two-period sequential game whose players are the editors each selling a magazine of different political content. The editors also sell some proportion of their newspaper's surface as advertising support for the products sold by the advertisers. In the first stage of the game, editors select the newsstand price of their magazine and, in the second stage, the advertising tariff they oppose to the advertisers. We identify the equilibrium of this sequential game and examine how it depends on the proportion of ad-lovers and ad-avoiders' readers and on the intensity of their attraction-repulsion feelings for advertising.

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1 Introduction

In a recent paper, Sonnac (2000) has studied the influence of readers' attitudes toward press advertising on the pricing behavior of a newspaper's editor who is a monopolist both in the press industry and in the advertising market. She starts from the observation that the editor sells, in fact, two different products to the readers. On the one hand he provides them with the *editorial content* (news, entertainment, TV-programs...) of the newspaper and, on the other hand, he delivers them simultaneously its *advertising* content. The basic assumption underlying her analysis is that, while the editorial content is perceived as a good by the readership, the advertising content is viewed as a bad : the larger the newspaper's surface devoted to advertising, the higher the number of potential readers who prefer, at a given price, to refrain from buying the newspaper. Consequently, when the monopolist increases his sales in the advertising market, increasing thereby his advertising revenue, he reduces simultaneously his sales at the newsstand, decreasing thereby his editorial revenue. Sonnac identifies the optimal pricing policy in each of the two markets, taking into account the above interaction. In the present paper we extend her approach in two directions. First we consider a situation of duopolistic competition, with two editors competing in both the newspapers' and advertising markets. Second, we allow the population of readers to be differentiated in terms of their attitudes toward advertising; some of them are assumed to be *advertising-lovers*, while the remaining ones are assumed to be *advertising-averse*.

It is generally recognised that the attitude of media consumers toward advertising cannot be clearly ascertained. While it is widely accepted that TV-viewers are reluctant to advertising [1], judgements about readers' attitudes toward *press* advertising seem to be more ambiguous. Some scholars think that advertising could foster the circulation of newspapers while others believe that it slows it down. Furthermore, it seems that consumers' feelings about press advertising are country specific. Some American scholars insist on the positive effect of press advertising on circulation because "to the extent that this information is valuable to consumers, increases in advertising

[1]The hypothesis of advertising aversion has been empirically studied, among others, by Brown and Rothschild,1993,Danaher,1995,Dukes,2000,Ha,1996,Kent, 1993, Ray and Webb, 1986, Solomon, 1997,and Zhou, 2000. This assumption has also been used in theoretical models (see, for instance, Anderson and Coate, 2000, Gabszewicz, Laussel and Sonnac, 1999 and Nielsen and Sörgard, 2000).

will increase the demand for the newspaper at any given price" (Blair and Romano, 1993, p. 722). This view is supported by empirical analysis of the American press industry (see Rosse, 1980, Bogart, 1989). This viewpoint is also confirmed when applied to retail advertising whose content is purely informational (Lorimor, 1977 and Ferguson, 1983). On the contrary, in Europe, the newspapers' readership seems to be more reluctant to commercial advertising. Advertising is often regarded as polluting the main *raison d'être*of the press which is to inform its readers about news, and not about commercial matters. A study performed by the Gfk institute, refered to by Musnick (1999), about consumers' reactions to advertising reveals that among 15 EC countries, for all media supports, most consumers are ad-avoiders. This study shows that, with the exception of British citizens, who seem to accept advertising without reluctance, 80 % of Germans and Spaniards are averse to advertising, whereas French citizens are openly hostile. Another study, refered to by Musnick (1999) again, examines ad-avoidance for six media in five different European countries (see Table 1). This study confirms that advertising avoidance affects each of these countries and each of these media, even if this avoidance differs from country to country.

Table 1: Ad-avoidance intensity among the media, ranked from high to low

France	United Kingdom	Italy	Germany	Spain
Television	Newspapers	Television	Television	Television
Billboard	Billboard	Newspapers	Billboard	Billboard
Newspapers	Magazines	Billboard	Magazines	Newspapers
Magazines	Television	Magazines	Newspapers	Magazines
Radio	Radio	Radio	Radio	Radio
Film	Film	Film	Film	Film

source: Musnick, 1999.

Table 2 refers to the percentage of persons among the five countries represented in the panel who have answered positively to the question : "When you read a newspaper and/or a magazine, do you avoid advertising pages?"

Table 2: Percentage of ad-avoiders in daily-newspapers and magazines

	Newspapers (%)	Magazines (%)
France	51	50
Italy	51	46
Spain	48	43
Germany	54	43
United Kingdom	62	53

source: Musnick, 1999.

There are various reasons which can be evoked to explain the diversity of consumers' behavior toward advertising. Undoubtedly, the diversity across regions, like between the United States and Europe, finds its origin in basic cultural discrepancies : while it is often viewed as a significant sign of materialism on the Old Continent, the promotion of consumption products by advertisers is generally perceived more positively on the other side of the Atlantic. But, even in the same country, individuals disagree on the virtues and defects of advertising. Some argue that it should be viewed as a good since it allows consumers to be better informed about the existence of the products, their prices and respective qualities. Sometimes also persuasive advertising is praised up since it would generate more consumption willingness in the population, promoting thereby industrial and commercial activities at the macroeconomic level. Furthermore, advertising is often viewed as an art on its own, so much talentuous the artists who invest in its creation. Yet, for others, advertising is a bad. It is perceived as harmful because, even if it may provide useful information on products, nothing guarantees that this information is not untrue or illusory. For the supporters of this view, advertising is perceived as particularly noxious when its objective is mainly persuasive. Persuasive advertisers would deprive individuals of their freedom of judgment, by using tricks and artefacts in order to convince them that they could not live without consuming the goods which advertisers are praising up. Moreover, being spread in the population through the media supports, advertising is likely to alter their content and the conditions under which these media are consumed (see Gabszewicz, Laussel and Sonnac (2000)).

In conclusion, it seems that the effective readership of the press industry is made of a mixture of consumers who, for some of them, share a positive

perception of press advertising while the remaining ones support the opposite view. Of course, the proportion of ad-lovers and ad-averse readers varies from country to country, as revealed for instance by table 2 provided above. Most probably, psychological introspection would also reveal that the intensity of the attraction, or repulsion feelings of readers is also influenced by the particular cultural habits of each specific country. This is the reason why we have developed the ensuing model of press competition around two main parameters. The first one describes the proportion of ad-lovers and ad-avoiders existing in the population of readers. The second parameter represents the intensity of ad-repulsion or ad-attraction feelings of these readers.

We analyse a two-stage game whose players are the editors each selling a magazine of different political content. They face a population of readers which differ from each other by their political opinions and by their feelings about commercial advertising. The editors also sell some proportion of their magazine's surface as advertising support for the products sold by the advertisers. In the first stage of the game, they select the price for their magazine and, in the second stage, the advertising tariff they oppose to the advertisers. We identify the equilibria of this sequential game and examine how they depend on the main parameters of the analysis identified above: the proportion of ad-lovers and ad-avoiders' readers and the intensity of their attraction-repulsion feelings for advertising. The model and the equilibrium analysis are developed in section 2. A short conclusion discusses the similarities between our approach of the media market and the literature on network externalities.[2]

2 Equilibrium analysis

Consider two editors producing differentiated magazines(for instance, magazines of different political opinion) to a population of readers ranked, between the political opinions expressed in the news from the left to the right on the political spectrum $[0, 1]$. News magazine 1 is located on this spectrum at point 0, while editor 2 is located at point 1. Editors also sell some proportion of their news's surface to advertisers who buy it to promote the sales of their products. At each point t of the unit interval $[0, 1]$,there corresponds

[2]While writing this paper, we became aware that two Swedish scholars, Häckner and Nyberg (2000) where working on a problem which is closely related to the present one. These authors reach very similar results in a different setup.

a continuum $[0,1]$ of readers, with a proportion γ of them being *advertising-avoiders* and a proportion $1-\gamma$ being *advertising-lovers*. By this we mean that the advertising-avoiders (resp. lovers) loose (resp. gain) in utility when the surface devoted to advertising spots increases : the larger the surface of a magazine sold to advertisers, the larger the loss (resp. gain) in utility incurred when reading that news. More precisely, for a reader located at a distance t (resp. $1-t$) of the left magazine who belongs to the proportion γ of advertising-avoiders, total loss in utility when buying this news is measured by

$$t^2 + \beta x_1 + p_1, \beta > 0$$

(total loss in utility when buying magazine 2 : $(1-t)^2 + \beta x_2 + p_2$), when editor 1 (resp. editor 2) quotes a price p_1 (resp. p_2) for his magazine and sells a proportion x_1 (resp. x_2) of it to advertisers. Similarly, for a reader located at a distance t (resp. $1-t$) of the left news who belongs to the proportion $1-\gamma$ of advertising-lovers, total loss in utility when buying this news is now measured by

$$t^2 - \beta x_1 + p_1$$

(total loss in utility when buying magazine 2 : $(1-t)^2 - \beta x_2 + p_2$), when editor 1 (resp. editor 2) quotes a price p_1 (resp. p_2) and sells a proportion x_1 (resp. x_2) of the news' s surface to advertisers. Consequently, the reader t_α for which the equality

$$t^2 + \beta x_1 + p_1 = (1-t)^2 + \beta x_2 + p_2$$

holds, ie

$$t_\alpha = \frac{1}{2} - \frac{\beta}{2}(x_1 - x_2) + \frac{1}{2}(p_2 - p_1),$$

separates those types of ad-avoiders who buy their magazine from editor 1 from those who buy it from editor 2. Similarly, the reader t_λ for which the equality

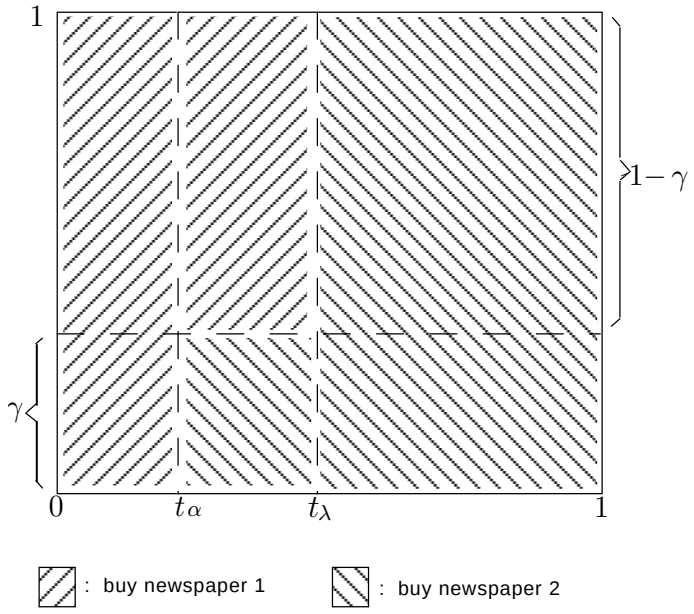
$$t^2 - \beta x_1 + p_1 = (1-t)^2 - \beta x_2 + p_2$$

holds, i.e.

$$t_\lambda = \frac{1}{2} + \frac{\beta}{2}(x_1 - x_2) + \frac{1}{2}(p_2 - p_1)$$

separates those types of ad-lovers who buy their news from editor 1 from those who buy it from editor 2. We observe that

$$\begin{aligned} t_\alpha &\leq t_\lambda \Leftrightarrow x_1 \geq x_2 \\ t_\lambda - t_\alpha &= \beta(x_1 - x_2). \end{aligned}$$



The parameter β measures the intensity of *ad-attraction* when a reader is ad-lover while it measures his intensity of *ad-repulsion* when he is ad-averse.[3].

Assume $x_1 > x_2$. Then $t_\alpha \leq t_\lambda$: all readers at the left of t_α buy news 1, whether being ad-avoiders or ad-lovers; all those at the right of $1 - t_\lambda$ buy from editor 2, while those between t_α and t_λ who are ad-lovers buy news 1

[3]In order to limit the number of parameters, we have assumed that the intensities of ad-attraction and ad-repulsion feelings are the same.There would be no difficulty to extend the analysis by assuming different intensity feelings for ad-lovers and ad-avoiders. Similarly, we have assumed that no fraction of the population of readers is *ad-neutral,* which would imply that $\beta = O$ for such readers. Introducing such a fraction of ad-neutral readers should not complicate the analysis either.

and those who are ad-avoiders buy in this sub-interval magazine 2. Accordingly, the corresponding demand functions in the newsstand sales market are, respectively, for editor 1

$$\begin{aligned} D_1(p_1,p_2) &= t_\alpha + (1-\gamma)(t_\lambda - t_\alpha) \\ &= \frac{1}{2} + \frac{1}{2}(p_2 - p_1) + \beta(\frac{1}{2} - \gamma)(x_1 - x_2) \end{aligned} \tag{1}$$

and

$$\begin{aligned} D_2(p_1,p_2) &= 1 - t_\lambda + \gamma(t_\lambda - t_\alpha) \\ &= \frac{1}{2} + \frac{1}{2}(p_1 - p_2) - \beta(\frac{1}{2} - \gamma)(x_1 - x_2) \end{aligned} \tag{2}$$

for editor 2. When $x_2 > x_1$, we have $t_\alpha \gtreqless t_\lambda$ and we obtain, similarly

$$\begin{aligned} D_1(p_1,p_2) &= t_\lambda + \gamma(t_\alpha - t_\lambda) \\ &= \frac{1}{2} + \frac{1}{2}(p_1 - p_2) - \beta(\frac{1}{2} - \gamma)(x_2 - x_1) \end{aligned}$$

and

$$\begin{aligned} D_2(p_1,p_2) &= 1 - t_\alpha + (1-\gamma)(t_\alpha - t_\lambda) \\ &= \frac{1}{2} + \frac{1}{2}(p_2 - p_1) + \beta(\frac{1}{2} - \gamma)(x_2 - x_1) \end{aligned}$$

The difference $(x_1 - x_2)$ in the advertising volume, whether positive or negative, plays a crucial role in the determination of demand in the newsstand sales market : at equal prices, the editor with the larger advertising volume benefits from a larger demand in the market if, and only if, $\frac{1}{2} > \gamma$, that is, if and only if, the majority of the readership's population is ad-lover.

We denote by s_1 and s_2 the unit price of an inset opposed to advertisers by editor 1 and editor 2, respectively. The population of advertisers is represented by the unit interval $[0,1]$; they are ranked in this interval by order of increasing willingness to pay for an inset. Each advertiser θ, $\theta \in [0,1]$, buys an inset in one of the two news magazines, at the exclusion of the other (insets are indivisible). We assume that the utility of advertiser θ depends on the size of the readership of each news: the utility of the inset in magazine i increases proportionately with the size of the readership. More precisely, we suppose that the utility of buying an inset in magazine i at a tariff s_i is given by

$$U_i(\theta) = U^\circ + D_i\theta - s_i,$$

where D_i corresponds to the total readership of editor i, as it follows from the market share $D_i = D_i(p_1, p_2)$ obtained in the newsstand sales market. The constant U° is assumed to be sufficiently large to guarantee that, for all advertising tariffs $s_i, i = 1, 2$, the advertising market is covered. Consequently, if a proportion x_1 of the advertisers' population buys the insets in the left magazine and x_2 in the right one, with $x_1 > x_2$ and $x_1 + x_2 = 1$, editors' revenues write as

$$\Pi_1(p_1, p_2, s_1, s_2) = p_1 \left[\frac{1}{2} + \frac{1}{2}(p_2 - p_1) + \beta(\frac{1}{2} - \gamma)(x_1 - x_2)\right] + s_1 x_1 \qquad (3)$$

for editor 1, and

$$\Pi_2(p_1, p_2, s_1, s_2) = p_2 \left[\frac{1}{2} + \frac{1}{2}(p_1 - p_2) - \beta(\frac{1}{2} - \gamma)(x_1 - x_2)\right] + s_2 x_2,$$

for editor 2, respectively. Similarly, when $x_2 > x_1$, we obtain

$$\Pi_1(p_1, p_2, s_1, s_2) = p_1 \left[\frac{1}{2} + \frac{1}{2}(p_1 - p_2) - \beta(\frac{1}{2} - \gamma)(x_2 - x_1)\right] + s_1 x_1 \qquad (4)$$

for editor 1, and

$$\Pi_2(p_1, p_2, s_1, s_2) = p_2 \left[\frac{1}{2} + \frac{1}{2}(p_2 - p_1) + \beta(\frac{1}{2} - \gamma)(x_2 - x_1)\right] + s_2 x_2$$

for editor 2.

In order to solve the problem of determining magazines' prices at the newsstand, as well as advertising prices, we consider a two-period sequential game played between the editors. In period 1, they select newsstand prices $p_1\,(x_1^a, x_2^a)$and $p_2\ (x_1^a, x_2^a)$ conditional on the expected volumes x_1^a and $x_2^a$of advertising which will be determined in period 2. Payoffs in the first period game depend on the expectations of the editors and the readers about the difference $x_1^a - x_2^a$ between the advertising volumes obtained by the editors. If both editors and readers anticipate that this difference will be positive, then payoffs are given by (3) with $x_1 - x_2 = x_1^a - x_2^a$. If, on the contrary, they anticipate $x_1^a - x_2^a < 0$, payoffs are given by (4) with $x_1 - x_2 = x_1^a - x_2^a$

In period 2, strategies are the advertising prices s_1 and s_2[4]. Entering in this second period, newsstand prices p_1 and p_2 have been selected in period s1

[4]We have assumed this sequentiality in the strategic interaction between the editors because advertisers cannot decide from which editor to buy advertising space without knowing the size of their respective readerships. Since this size is determined through newspapers' prices, these have to be selected before the advertising tariffs.

determining total readerships' sizes $D_i(p_1, p_2) = D_i$. Then the advertiser $\theta(s_1, s_2)$ who is indifferent between buying an inset in magazine 1 or magazine 2 at inset prices s_1 and s_2 is identified by the condition

$$U^\circ + D_1\theta - s_1 = U^\circ + D_2\theta - s_2$$

or

$$\theta(s_1, s_2) = \frac{s_1 - s_2}{D_1 - D_2}.$$

First assume that $D_1 > D_2$.Taking into account the fact that the market is covered, the advertising demand functions in the second period are then given by

$$R_1(s_{1,}s_2) = 1 - \frac{s_1 - s_2}{D_1 - D_2}$$

for editor 1,and by

$$R_2(s_{1,}s_2) = \frac{s_1 - s_2}{D_1 - D_2}.$$

for editor 2. When $D_2 > D_1$, these demand functions have to be reversed since editor 2 is now market leader in the advertising market, namely

$$R_1(s_{1,}s_2) = \frac{s_2 - s_1}{D_2 - D1}$$

for editor 1 and

$$R_2(s_{1,}s_2) = 1 - \frac{s_2 - s_1}{D_2 - D1}.$$

for editor 2.

The resulting payoffs $V_i$in the second-period game are accordingly

$$V_1(s_{1,}s_2) = s_1(1 - \frac{s_1 - s_2}{D_1 - D_2})$$

$$V_2(s_{1,}s_2) = s_2(\frac{s_1 - s_2}{D_1 - D_2}) \tag{5}$$

when $D_1 > D_2$, and

$$V_1(s_{1,}s_2) = s_1(\frac{s_2 - s_1}{D_2 - D1})$$

$$V_2(s_{1,}s_2) = s_2(1 - \frac{s_2 - s_1}{D_2 - D1}) \tag{6}$$

when $D_2 > D_1$.

We define an equilibrium for the above two-period game in the following way. An *equilibrium* is a pair of strategies $[p_1^*(x_1^a, x_2^a), p_2^*(x_1^a, x_2^a)]$ in period 1 and a pair of strategies $[s_1^*, s_2^*]$ in period 2 such that

(i) $p_1^*(x_1^a, x_2^a)$and $p_2^*(x_1^a, x_2^a)$ are mutual best replies, conditional on expectations about the difference $x_1^a - x_2^a$,with payoffs given by (3) with $x_1 - x_2 = x_1^a - x_2^a$ when $x_1^a - x_2^a > 0$, and by (4) with $x_1 - x_2 = x_1^a - x_2^a$ when $x_1^a - x_2^a < 0$;

(ii) $[s_1^*, s_2^*]$ is an equilibrium in the second-period game with payoffs given by (5) or (6) according as $D_1(p_1^*(x_1^a, x_2^a), p_2^*(x_1^a, x_2^a)) \gtrless D_2(p_1^*(x_1^a, x_2^a), p_2^*(x_1^a, x_2^a))$;

(iii) $R_1(s_1^*, s_2^*) \gtrless R_2(s_1^*, s_2^*)$ according as $x_1^a - x_2^a \gtrless 0$ (first-period expectations are fulfilled at equilibrium in the second period).

To describe the equilibria of the above two-period game, assume first that $x_1^a - x_2^a > 0$ (a similar description could be carried out when $x_1^a - x_2^a < 0$). This assumption implies that editors' payoffs in the first period game are given by (3) with $x_1 - x_2 = .x_1^a - x_2^a$. To be an equilibrium, first order conditions require

$$\begin{aligned} \frac{1}{2} + \frac{1}{2}(p_2 - 2p_1) + \beta(1-2\gamma)(x_1^a - x_2^a) &= 0 \\ \frac{1}{2} + \frac{1}{2}(p_1 - 2p_2) + \beta(1-2\gamma)(x_2^a - x_2^a) &= 0 \end{aligned}$$

which hold if, and only if

$$\begin{aligned} p_1^*(x_1^a, x_2^a) &= 1 + \frac{2\beta}{3}(1-2\gamma)(x_1^a - x_2^a) \\ p_2^*(x_1^a, x_2^a) &= 1 + \frac{2\beta}{3}(1-2\gamma)(x_2^a - x_1^a). \end{aligned} \tag{7}$$

Substituting these values in (3) we get

$$\begin{aligned} D_1(p_1^*(x_1^a, x_2^a), p_2^*(x_1^a, x_2^a)) &= \frac{1}{2} + \frac{\beta}{3}(1-2\gamma)(x_1^a - x_2^a) \\ D_2(p_1^*(x_1^a, x_2^a), p_2^*(x_1^a, x_2^a)) &= \frac{1}{2} - \frac{\beta}{3}(1-2\gamma)(x_1^a - x_2^a). \end{aligned}$$

Accordingly, given expectations $x_1^a > x_2^a$, we get

$$D_1(p_1^*(x_1^a, x_2^a), p_2^*(x_1^a, x_2^a)) > D_2(p_1^*(x_1^a, x_2^a), p_2^*(x_1^a, x_2^a)) \Leftrightarrow \gamma < \frac{1}{2}. \tag{8}$$

In that case, entering in period 2, advertisers observe $D_1 > D_2$. Consequently, editors' payoffs in the advertising market opening in period 2 are given by (5). For an equilibrium, first-order conditions require

$$\begin{aligned} \frac{\partial V_1}{\partial s_1} &= 1 - \frac{1}{D_1 - D_2}(2s_1 - s_2) = 0 \\ \frac{\partial V_2}{\partial s_2} &= \frac{1}{D_1 - D_2}(s_1 - 2s_2) = 0, \end{aligned}$$

leading to equilibrium advertising prices in the second-stage game

$$\begin{aligned} s_1^* &= \frac{2(D_1 - D_2)}{3} \\ s_2^* &= \frac{D_1 - D_2}{3}, \end{aligned} \tag{9}$$

to which correspond market shares

$$x_1^* = 1 - \frac{s_1^* - s_2^*}{D_1 - D_2} = \frac{2}{3}$$

and

$$x_2^* = \frac{s_1^* - s_2^*}{D_1 - D_2} = \frac{1}{3}.$$

Since $x_1^* - x_2^* > 0$, the payoffs in the first stage game obtain from expressions (1) and (2). Substituting the above values for x_i in (7) we obtain

$$\begin{aligned} p_1^* &= 1 + \frac{2\beta}{9}(1 - 2\gamma) \\ p_2^* &= 1 - \frac{2\beta}{9}(1 - 2\gamma). \end{aligned} \tag{10}$$

Accordingly, when expectations about advertising volumes satisfy $x_1^a - x_2^a > 0$, taking (8) into account, the strategies defined by (10) and (9) form an equilibrium if, and only if, $\gamma < \frac{1}{2}$, that is, *when the majority of the population is ad-lover.* A similar analysis carried out under the assumption that $x_1^a - x_2^a < 0$ would yield to identify another equilibrium which "mirrors" the above one, with editor 2 becoming market leader in the advertising market at period 2. Finally, when $x_1^a - x_2^a = 0$, the first period game has an equilibrium with $p_1^*(x_1^a, x_2^a) = p_2^*(x_1^a, x_2^a) = 1$, leading to market shares

$$D_1(p_1^*(x_1^a, x_2^a), p_1^*(x_1^a, x_2^a) = D_2(p_1^*(x_1^a, x_2^a), p_1^*(x_1^a, x_2^a) = \frac{1}{2}$$

in the newsstand sales market. Then, in the advertising market, all advertisers are indifferent between buying an inset from editor 1 or from editor 2. This entails Bertrand competition in the advertising market which, in turn, yields equilibrium advertising tariffs $s_1^* = s_2^* = 0$. This argument is also valid when $\gamma > \frac{1}{2}$. Thus we conclude:

Proposition 1 *Under ad-attraction ($\gamma < \frac{1}{2}$), there exist three equilibria, one symmetric and two asymmetric; under ad-repulsion ($\gamma > \frac{1}{2}$), only the symmetric equilibrium survives.*

3 Conclusion

This article has raised the question of how readers' feelings about press advertising affects price competition between newspapers' editors when they are rivals both in the press and the advertising markets. It appears that the nature of their rivalry is significantly influenced by these feelings : when there is a majority of ad-lovers, two asymmetric equilibria exist, which mirror each other, with one of the rivals being leader on the advertising market. When the population is in majority ad-averse, these asymmetric equilibria disappear and only the symmetric one survives.

There are close similarities between the problem which we study in this paper and the questions which are at the heart of the literature which deals with goods for which consumers' preferences depends on the clientele size There is a wide body of literature on network goods (see Katz and Shapiro (1994) for a recent survey) but also a strand of literature on situations when consumer behavior is characterized by conformity or vanity (see for instance the recent paper by Grilo, Shy and Thisse (2001)). In our framework the utility which readers derive from reading their favorite newspaper depends, positively or negatively, on the number of advertisers which choose this specific media for advertising purposes while, on the other hand, the profit which advertisers may reach by putting an ad in a given journal is increasing in the number of readers. Things are here more complicated than in the literature we referred above since there are two distinct clienteles and accordingly each media has to set two prices instead of one. However the problems and the techniques for solving them are quite similar since, given the prices set by

the firms, the decisions of the consumers are interdependent, i.e. the decision of a particular reader of buying some newspaper (resp. the decision of a particular advertiser of placing an ad in some journal) depends on (is a best reply to) the decisions which are taken by the advertisers (resp. by the readers).

Similarities are quite obvious when one looks at the assumption which we make in this paper according to which firms' pricing decisions in the readers' market are based upon *expected advertising market shares.* This assumption basically means that newspapers' prices are revised infinitely faster than expectations and is the counterpart in our framework of the assumption encountered in the literature on networks that firms' strategic decisions are made for given expectations on the firms' clienteles. It allows to avoid the difficulties encountered with the opposite assumption and which we have already outlined. Not surprisingly there is also some similarities between the results. For instance in the case of "conformity", i.e. positive network externalities, Grilo, Shy and Thisse (2001) obtain fiercer competition and asymmetric equilibria with the possible eviction of the small firm while under "vanity", i.e. negative network externalities, price competition is relaxed and the equilibria are more symmetric.

References

[1] Anderson S.P. and S. Coate (2000). Market provision of public goods: the case of broadcasting, Working paper 7513, National Bureau of Economic Research.

[2] Blair, R-D. and R-E. Romano (1993). Pricing Decisions of the Newspaper Monopolist, *Southern Economic Journal*, 59(4), April, p. 723-32.

[3] Bogart, L. (1989). *Press and Public, who reads what, when, where, and why in American newspapers*, Hillsdale, N.J., Erlbaum Associates.

[4] Brown T.J. and Rothshild (1993). Reassessing the impact of television advertising clutter, *Journal of consumer Research*, June, p. 138-146.

[5] Bucklin, R. and R-E. Caves (1989). Games of Survival in the U.S. Newspaper Industry, *Applied Economics*, 21(5), May, p. 631-49.

[6] Danaher P.J. (1995). What happens to television ratings during commercial breaks, *Journal of Advertising Research*, January/February, 37.

[7] Dukes A. (2000). The advertising market in a product oligopoly, unpublished manuscript, University of Pittsburg.

[8] Ferguson, J. (1983). Daily Newspaper Advertising Rates, Local Media Cross-Ownership, Newspaper Chains, and Media Competition, *Journal of Law & Economics*, vol XXVI, October.

[9] Gabszewicz J.J., D. Laussel and N. Sonnac, (2000). Press Advertising and the Ascent of the "Pensée Unique"?. *Papers and Proceedings*, *European Economic Review,* 45, p.641-651.

[10] Gabszewicz J.J., D. Laussel and N. Sonnac (1999). TV-broadcasting Competition and Advertising. Lucarnes bleues n° 9972, CREST/LEI.

[11] Grilo, I., O. Shy and J. Thisse (2001). Price Competition when Consumer Behavior is characterised by conformity or vanity, *Journal of Public Economics*, 30, 385-408.

[12] Gustafsson, K.E. (1978). The Circulation Spiral and the Principle of Houshold Coverage, *The Scandinavian Economic History Review*, vol XXVI, n°1, p.1-14.

[13] Ha L. (1996). Advertising clutter in consumer magazines : dimensions and effects, *Journal of Advertising Research*, July/august, 76.

[14] Häckner, J. and S. Nyberg (2001). Advertising and Media Market Competition. Department of Economics, Stockholm University, Mimeo.

[15] Katz, M. and C. Shapiro (1994), Competiton and Network Effects, *Journal of Economic Perspectives*, 8(2), 93-115.

[16] Kent R.J. (1993). Competitive versus non competitive clutter in television advertising, *Journal of Advertising Research*, March/April, 40.

[17] Lorimor, E.S. (1977). Classified advertising: a neglected medium, *Journal of Advertising*, vol. 17, p. 17-25

[18] Musnik, I. (1999). Le coeur de cible ne porte pas la pub dans son coeur, *CB News*, n°585,11-17 Octobre.

[19] Nilssen T. and Sörgard L. (2001). The TV industry: advertising and programming. unpublished manuscript, Department of Economics, Norwegian School of Economics and Business Administration.

[20] Ray M.L. and Webb P.H. (1986).Three prescriptions for clutter, *Journal of Advertising Research*, February/ March, p. 69-77.

[21] Rosse, J.N (1980).The decline of direct newspaper competition, *Journal of Competition*, vol. 30, Spring, p. 65-71.

[22] Solomon D. (1997). Does clutter degrade the media environment?, *Esomar*, p. 201-212.

[23] Sonnac N. (2000). Readers' attitudes toward press advertising : are they ad-lovers or ad-averse?, *Journal of Media Economics*, n° 13, vol 4.

[24] Zhou, W., 2000. The Choice of Commercial Breaks in Television Programs : the number, length and timing, manuscript, Department of Economics, Hong-Kong University of Science and Technology : available at http//www.bm.ust.hk/econ/paper/zhoubreak.pdf.