MORE NEWS, GOOD NEWS? BIAS IN MEDIA COVERAGE OF COMPETITION POLICY

Juan Luis Jiménez
Jordi Perdiguero
Inmaculada Gutiérrez

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Abstract

One of the reasons why antitrust decisions are made public is to reinforce the deterrence effect by affecting firms' reputations. We study this relationship by using a self-elaborated database containing 1,305 items of news published in Spain. Our analysis produced three key conclusions about how the media deals with positive and negative news on the reputation of listed and non-listed companies. On average, the difference in size between positive and negative news for listed firms is greater than the difference present in the cases referring to non-listed firms. Secondly, positive news about listed companies are more widely disseminated in the specialised economic press. Finally, newspapers concede greater visibility to them by positioning more favourably. These results suggest that the deterrence effect that competition authorities seek by making their decisions public may be weakened by the presence of bias in media.

*Keywords***:** Competition policy; Deterrence effect; News; Listed firms.

*J.E.L. Codes***:** K21; L14; L82

* **Corresponding author:** Universidad de Las Palmas de Gran Canaria. Facultad de Economía, Empresa y Turismo. Despacho D.2-12. 35017. Las Palmas de Gran Canaria. Tlf: +34928458191. juanluis.jimenez@ulpgc.es
** Universitat Autònoma de Barcelona. Departament d'Economia Aplicada. Research Group of Applied Economics (GEAP). jordi.perdiguero@uab.cat
*** Ex Consejera de la Comisión Nacional de la Competencia. igcarrizos@gmail.com

1. Introduction

The impact of the mass media on public opinion is beyond doubt. This relationship has been supported by academic research in a variety of fields such as sociology, communication theory and, recently, economics. As McCombs (1997) states, "(…) the news media literally create in our heads the pictures of many public issues". In fact many contributions in the academic literature in the previously mentioned fields put into different words the arguments that showcase what a powerful instrument the media is (Andina-Díaz, 2011).

Furthermore some academic articles have demonstrated the effects that the media has on voting (Della Vigna and Kaplan, 2007; Enikolopov et al, 2011), turnout (Gentzkow, 2006; Gentzkow and Shapiro, 2008), public expenditure (Besley and Burguess, 2002; Strömberg, 2004) and consumption (Baker and George, 2010), among others.

Media may also have an impact on individuals' and business' reputation. As reputation is a valuable asset for firms, they have an incentive to influence and even control their image in the media, which is known as *reputation management*. Therefore firms may be tempted to manage media content in a way that benefits their own image or, at least, prevents any harm. Expenditure on advertising can clearly be used as a powerful instrument when trying to influence the messages that mass media provide to the public. For example, Baker (1995) describes how Coca-Cola tried to force the US television channel NBC not to show a documentary that negatively affected the image of their labour policy. Herman and Chomsky (1988) explain how the public television station WNET lost its corporate funding from "Gulf + Western" in 1985 after the station broadcast a critical documentary about their multinational corporate activities in the Third World.

As Andina-Díaz (2011) argues, this endogenous relationship is due to the fact that the media industry is still strongly dependent on advertising as one of its main sources of revenue. Specifically Herman and Chomsky (1988) have demonstrated that advertising is the primary income source of the mass media, and Baker (1995) and Gabsewicz et al (2001) show that 30-80% of European

media industry revenues come from advertisers; while this range is close to 50-80% for US media.

Some empirical studies demonstrating how information serves the goals of publishers can be found in papers by Herman and Chomsky (1988), Baker (1995) and Bagdikian (2000).[1] Reuter and Zitzewitz (2006) detail the relationship between the (non-) independence of editorial content and advertising. Perhaps one of the best documented examples is the pressure exerted by the tobacco industry on the media when they sought to prevent news items related to diseases allegedly caused by the consumption of such products (Baker, 1995; and Bagdikian, 2000). Warner and Glodenhar (1989) provide empirical evidence of how the print media that received tobacco advertising revenues decreased by 65% the coverage of news related to diseases generated by tobacco. On the other hand Boykoff and Boykoff (2004) have demonstrated how the US media balance the number of 'good' and 'bad' news items on climate change, mainly due to the influence of the money spent by car wholesalers on advertising.

Sutter (2001) first proposed media bias as a "supply- or demand-side argument". The former argument is related to the ownership or advertising dependency of media firms. The latter relates to reputation or like-minded readers, assuming that they hold beliefs they need to confirm.

Regarding the demand-side arguments, recent literature accounts for the consumers' preferences. Mullainathan and Shleifer (2005) argued that readers hold preferences that they need to see confirmed, and this question affects media reports inducing a bias towards confirmatory news. More support along these lines has been provided by Gabszewicz et al. (2004), Andina-Díaz (2007) and Gentzkow and Shapiro (2008).

Precisely because reputation matters to firms, sanctions and legal decisions that impose fines or penalties on a particular offender are made public. The risk

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[1] Seminal papers on this topic are those by Steiner (1952), Beebe (1977) and Spence and Owen (1977). See also Baldasty (1992) and Curran and Seaton (2003) for historical evidence.

of being cited in mass media as "guilty" is part of the deterrence effect that legal systems look for in order to increase their effectiveness.

However, as we suggested above, firms might be able to manage the echo that those condemnatory decisions may have in the media and thus, on their reputation. If that were the case, the deterrence effect of punitive systems could be undermined and their effectiveness lessened.

In this paper we seek to explore whether there is bias in Spanish newspapers concerning a very specific field: the decisions of antitrust authorities.[2] As far as we know, this topic has not been analysed in competition policy to date and it is a cornerstone issue: reputational damage for companies appear to be one of the most if not the biggest deterrent for most businesses (OFT, 2011).[3]

In order to meet this aim, we use a novel database built from all news items and articles published in Spanish newspapers in the period 2007-2010 (30 months) relating to 204 cases issued by the national antitrust authority. This database includes 1,305 news items. Specifically we analyse three key factors: the size of news items (number of words); press coverage (dissemination of the news); and visibility of the news (economic value in the newspaper and position in the newspaper).

Our estimations show that the media enhances *positive* cases with respect to *negative* ones for listed firms compared to how it deals with those news for not-listed firms: they take up more space; are subject to greater coverage by economic newspapers; and are located in those parts of the newspaper where advertising costs are higher.

Following this introduction and brief literature review, the article is organised as follows: section 2 provides details about database and descriptive analysis; section 3 presents the methods used in the evaluation and econometrical results; and finally, section 4 concludes.

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[2] There is a recent growing literature on biased news in politics. See papers by Larcinese et al (2011) and Lott and Hassett (2014).

[3] Van der Broek et al (2012) estimate the impact of antitrust sanctions on the stock market value of Dutch listed firms. They conclude that close to 1/3 of economic losses are explained by reputational factors. The authors recommend that cartel offenders should be disciplined largely through market-induced reputational penalties.

2. Database

As mentioned above, our database contains 204 cases issued by the Spanish Antitrust Authority (*Comisión Nacional de la Competencia,* hereafter, *CNC*) from September 2007 to July 2010. For the purposes of this article, a '*case*' is defined as an event relating to one of the three areas in which the Spanish Antitrust Authority may act: sanctions, mergers & acquisitions, and advocacy. The press department of the *CNC* has provided all the cases analysed in this paper, as they collect all the information published in the media relating to their activities on a daily basis.

We have counted all the news items published in various newspapers about each specific case in order to control the number of times it was disseminated. Consequently we have 1,305 observations (news items) on our database. Moreover, we define the following variables:

i) *Numberofwords$_{ip}$.-* Number of words for news items *i* published in newspaper *p*. This variable allows us to control for the size of the news items published. Source: own elaboration by counting all the words in the 1,305 observations included in the database.

ii) *Event$_c$-* We differentiate each news item according to the related core competence of the Antitrust Authority (event *c*): *sanctions, mergers and acquisitions* or *promotion*.[4] Binary variables have been considered for each of these three categories.

iii) *Dissemination$_c$.-* the number of times that the case *c* was published in different newspapers. This is included as a proxy of the importance of the news.

iv) *Digitalpress$_i$.-* binary variable that takes value 1 if the news *i* was published in a digital media.

v) *Economicpress$_{ip}$.-* binary variable that takes value 1 if the news *i* was published in a newspaper *p* considered to be a specialised economic press.

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[4] Promotion or advocacy refers to the publication of white papers or reports by the Spanish Antitrust Authority aimed at recommending to Public Administrations or other institutions the removal of obstacles to competition or public aids.

In our case, the newspapers considered are: *Expansión, Cinco Días, El Economista* and *La Gaceta de los Negocios.*

vi) *Toppress$_{ip}$.-* binary variable that takes value 1 if the news *i* was published in a newspaper *p* considered to be one of the top press in Spain, according to sales statistics. Specifically these newspapers had more than 40 per cent of reader share in this period. They are *El País, El Mundo, ABC, La Razón, La Vanguardia* and *Público*[5].

vii) *Firmiscited$_i$.-* binary variable that takes value 1 if the name of at least one firm is specifically cited in the news item *i.* This variable seeks to control for news items related to specific firms and to differentiate for other 'general' or 'ambiguous' news for firms.

viii) *Listedfirm$_c$.-* binary variable that takes value 1 if the case *c* is related to a listed firm[6]. We only use firms listed on the IBEX-35 index, the most important financial index in Spain. This variable seeks to control for the size and public relevance of the firm. Our hypothesis is that listed firms are more likely to have reputational management problems and that it is also positively related to the size of the firm. Moreover we suppose that the higher the firm on the list, the greater the expenditure of these firms on publicity.

ix) Other variables considered - we also take into account for fixed effect by case; NACE at 1 digit; day of the week (Monday, Tuesday, etc.); newspaper and newspaper periodicity.

Our empirical strategy focused on two issues beyond the 'physical' attributes of the news. Firstly, we read all 204 cases and categorised them into negative for reputation, positive for reputation and neutral cases. *Negative-for-reputation* cases are those that condemn anticompetitive strategies and are supposed to exert a deterrent effect on firms by negatively affecting a firm's reputation:

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[5] This newspaper became digital in 2012.

[6] Firm whose shares are listed (quoted) on a stock exchange for public trading. Also known as a quoted company.

mainly sanctions imposed on firms, rejected mergers and CNC's files against competition restrictions in specific markets.

Positive-for-reputation cases are those that declare the absence of restrictions on competition, affect in any positive way a firm's reputation, or 'clean' previous *negative-for-reputation* cases: for example, a rejected sanction by High Courts, approved mergers, administrative appeals by firms, etc. *Neutral* cases are those that do not affect a particular firm directly: general advocacy activities by CNC, general policy statements, new regulations and others.

And secondly, we considered the economic valuation of the news, in order to control for its potential influence. For this reason, we have analysed two different (and complementary) variables:

a. *Economic value of the news$_{ip}$.-* for some news items (512 of 1305) the source of information has provided us with the economic value of the news *i* in newspaper *p*. This value has been obtained as the opportunity cost of the news in terms of advertising not being published and depends on the size of the news item and also its position. Source: CNC's press news.

b. *Right$_{ip}$.-* binary variable that takes value 1 if the news item *i* in newspaper *p* was published on the right-hand side of the paper. As is known, news on the right-hand side of the paper has greater visibility and costs more to advertise. In Spain, advertisings costs in top newspapers are 20% higher on the right-hand side than on the left. [7]

Table 1 shows some descriptive statistics from the database. It contains 1,305 news (observations) related to 204 cases. The average dissemination of each case is 17.8, but with a high standard deviation (14.5). About three quarters of the news items are *negative-for-reputation* cases, whilst 13.9% are *positive-for-reputation,* and the rest are neutral. Listed firms were identified in 37.8% of news items. Regarding the nature of the case, more than 65% of news items are related to a sanction question (857 observations).

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[7]. See for example: www.oblicua.es/publicidad/publicidad-prensa.htm

Table 1: Descriptive statistics

Event	Obs.	Dissemination	Positive for reputation	Negative for reputation	Listed firms
M&A	131	15.4 (12.3)	45.5%	2.2%	43.3%
Promotion	317	16.7 (11.3)	10.8%	53.6%	6.5%
Sanctions	857	18.6 (15.8)	10.2%	88.4%	48.7%
All sample	1,305	17.8 (14.5)	13.9%	71.2%	37.8%

Note: M&A= Mergers & Acquisitions; Obs.=Observations.
Source: own elaboration.

Figure 1 compares news items in three types of cases: *positive-for-reputation*, *negative-for-reputation* and *neutral* cases. Figure 1a shows how these cases are disseminated (i.e., the number of times that the case is published in a newspaper); Figure 1b illustrates the number of words by type of case. The graphs show no apparent differences among these three categories.

Figure 1: Kernel density. Positive-for-reputation, negative-for-reputation

and neutral cases. Dissemination (left) and number of words (right)

(a)   **(b)**
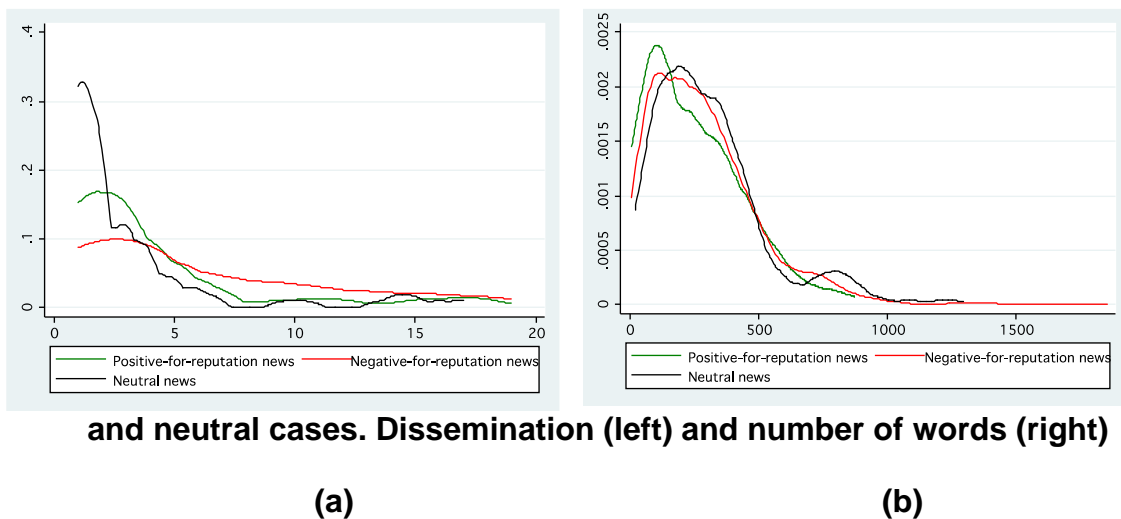
Source: Own elaboration.

If we consider only *positive-for-reputation* cases for listed or non-listed companies, both markers appear to be slightly different, as Figures 2a and 2b show. However, data analysis does not support that graphic appearance.

Positive-for-reputation cases for listed firms are disseminated five times, while non listed firms reach 4.3, although the *t-test* does not show statistical significance (*t*=-0.31). Regarding the size of the news items, the former includes on average 272 words and the latter 241, but the *t-test* also rejects the existence of mean differences in this case (*t*=-1.01).

Figure 2: Kernel density. Only positive-for-reputation news for listed (or non-listed) companies. Dissemination (left) and number of words (right)

(a)	(b)
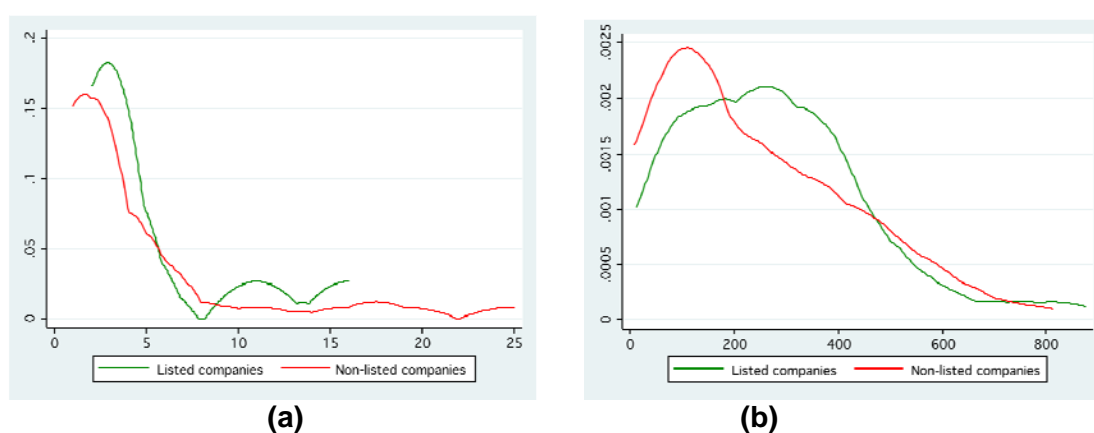
Source: Own elaboration.

However, these descriptive statistics do not focus on the potential causal relationship between the variables under study. In the next chapter we will analyse causality among some of the dependent variables we have considered.

3. Empirical strategy and results

As we have detailed in the introduction, our main aim is to determine the drivers of the size of the news items, their dissemination, and their position in the newspaper. We focus on news items that affect listed firms, depending on the type of case (*negative-for-reputation* or *positive*), due to its consequence on the firms' reputation.

In order to capture the differential effect on how media published *positive* or *negative-for-reputation* news, the following empirical strategy is based on the hypothesis previously described: the relevance of advertising expenditure on

the press. For this reason we split these two types on news items affecting listed companies and those for non-listed ones.

Equation [1] shows the basic model we will estimate.

$$Endogenous = \beta_0 + \beta_1 Positiveforreputation + \beta_2 Listed +$$
$$+ \beta_3 Positiveforreputation * Listed \text{ (Interaction)} \quad [1]$$

Estimations simultaneously control three binary variables: *positive-for-reputation*, listed company, and the interaction of these two covariates (the coefficient β_3). The latter attempts to assess whether the media treats *positive-for-reputation* and *negative-for-reputation* news items differently for listed companies compared to non-listed ones. Empirically, this effect is summarised in Table 2.

Table 2: Explanation of coefficients for equation [1] and subsequents

		Positive-for-reputation new		Difference
		No	**Yes**	**(Yes-No)**
Listed company	**No**	β_0	$\beta_0 + \beta_1$	β_1
	Yes	$\beta_0 + \beta_2$	$\beta_0 + \beta_1 + \beta_2 + \beta_3$	$\beta_1 + \beta_3$
Difference (Listed-Not listed)		β_2	$\beta_2 + \beta_3$	β_3

Taking into account the explanation of the base model described in equation [1], our empirical strategy focuses on three aims. The first question is: are *positive-for-reputation* news items bigger than *negative-for-reputation* ones for listed companies in contrast with non-listed companies? In order to answer this question, equation [2] is estimated:

$$Numberofwords_{ipt} = \beta_0 + \beta_1 Positiveforreputation_i + \beta_2 Listedfirmcase_i + \beta_3 Interaction_i +$$
$$+ \beta_4 Disciplinarycase_i + \beta_5 Promotioncase_i + \beta_6 DigitalPress_p + \beta_7 Neutralcase_i +$$
$$+ \beta_8 Dissemination_i + \beta_9 Economicpress_p + \beta_{10} Toppress_p + \beta_{11} Firmiscited_i +$$
$$+ \sum \beta NACE_i + \sum \beta Dayoftheweek_t + \sum \beta Fixedeffectbycase_i + \varepsilon_{ipt}$$

$[2]$

In this case ordinary least squares methodology is applied, using robust option to minimise heteroscedasticity problems. We also use different fixed effects in order to control for potential variables that affect the number of words in the news items (models 1 and 2 in Table 3).

Table 3: Factors that affect the number of words in the news items. OLS

Covariates	Model 1	Model 2
Positive-for-reputation news	-66.8 (29.2)**	-258.2 (105.6)**
Listed company	-26.6 (25.3)	32.4 (49.8)
Interaction: Positive-for-reputation news on listed company	80.0 (45.6)*	115.5 (66.5)*
Sanction news	18.1 (27.2)	-74.5 (66.8)
Promotion news	29.2 (42.7)	-111.3 (55.3)**
Digital press	-85.9 (51.8)*	-30.9 (57.2)
Neutral news	-15.9 (30.7)	135.9 (63.9)**
Dissemination	0.09 (0.64)	-1.4 (4.2)
Economic press	13.3 (18.6)	19.9 (18.4)
Top press	8.9 (19.6)	2.4 (21.0)
Firm is cited	-152.0 (51.8)***	179.2 (150.6)
NACE fixed effect	Yes	Yes
Newspaper periodicity	Yes	Yes
Fixed effect by day of the week	Yes	Yes
Fixed effect by case	No	Yes
Intercept	486.2 (102.9)***	214.9 (113.7)*
Observations	1,161	1,161
R^2	0.09	0.35

Note: Standard deviation in brackets. Significance: *<10%, **<5%, ***<1%.

The overall explanatory power of model 2 is reasonably good with an R^2 of 0.35. The most relevant is the interaction variable. This binary variable controls for the variation between the different treatment of *positive-for-reputation* and *negative-for-reputation* cases for listed firms in contrast with non-listed firms. In both models, the interaction variable shows statistical significance and a positive sign.

This outcome gives us a preliminary idea: *positive-for-reputation* cases are smaller than the rest (see coefficients variable in Table 3). This result suggests that the media tends to emphasise news items that reflect legal actions condemning anticompetitive strategies and allegedly protect consumers and general interest. That is, those articles which are supposed to exert a deterrent effect on firms. At the end of the day, this is the reason why competition authorities make their decisions public.

Having said this, when it comes to listed firms, the size of these kinds of cases is greater than those *negative-for-reputation* cases in comparison with the difference for non-listed companies. There are two remaining equations that control for fixed effects by day of the week and case. Therefore this outcome suggests that the media treated differently those news items related to listed firms, comparatively enhancing positiveness in this case.

The second aim of this paper is to answer the following question: are *positive-for-reputation* news items more widely disseminated than *negative* ones for listed firms than for non-listed firms? For this purpose we have collapsed our database into a new one by case (204 observations). The dependent variable in this estimation is the number of times that the considered case *c* was disseminated (equation [3]).

$$\text{Dissemination}_c = \beta_0 + \beta_1 \text{Positiveforreputation}_c + \beta_2 \text{Listedfirmcase}_c + \beta_3 \text{Interaction}_c +$$
$$+\beta_4 \text{Disseminationinothers}_c + \beta_5 \text{Neutralcase}_c + \beta_6 \text{Disciplinary}_c + \beta_7 \text{Promotioncase}_c + \quad [3]$$
$$+\beta_8 \text{Firmiscited}_c + \varepsilon_c$$

We split the estimations into three groups: all press, top press,[8] and economic press,[9] following previous explanations. Due to the structure of count data, a negative binomial regression was applied.

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[8] *El País, El Mundo, ABC, La Vanguardia, Público, La Razón.*

[9] *Cinco Días, Expansión, El Economista, La Gaceta.*

Table 4: Dissemination of events. Negative binomial.

Covariates	All press	Top press	Economic press
Positive-for-reputation case	-0.47 (0.26)*	0.28 (0.29)	-0.54 (0.25)**
Listed company	0.43 (0.24)*	0.39 (0.26)	0.21 (0.20)
Interaction: Positive-for-reputation on listed company	-0.51 (0.40)	-0.68 (0.69)	0.60 (0.35)*
Dissemination in other newspapers		0.12 (0.03)***	0.05 (0.01)***
Neutral news	-0.85 (0.27)***	-0.82 (0.37)**	-0.23 (0.24)
Sanction	-0.11 (0.34)	0.71 (0.41)*	0.03 (0.27)
Promotion	0.64 (0.39)	1.14 (0.50)**	0.41 (0.30)
Firm is cited	0.56 (0.23)**	0.46 (0.35)	-0.06 (0.23)
Intercept	1.5 (0.4)***	-1.73 (0.58)***	0.11 (0.37)
Observations	204	204	204
Wald chi	34.1***	38.2***	42.6***

Note: Standard deviation in brackets. Significance: *<10%, **<5%, ***<1%.

We highlight two results from these estimations: firstly, a relevant case for other newspapers positively affects the number of times that both top and economic press publish the events, i.e., there is a 'contagion effect' of being published.

However the most important result is the positive and significant coefficient of the interaction in the last column (although its significance is at 10 per cent). This value highlights the fact that those cases that positively affect the listed firms' reputations are relatively more disseminated in the specialised economic press than the negative ones for listed firms relative to non-listed firms, even though positive cases are less disseminated (see coefficient of variable *positive-for-reputation case*).

Despite these outcomes, the next question is: where are *positive-for-reputation* cases published within a newspaper in relation to negative ones? For this aim we established two complementary approaches.

The first employs information drawn from raw data about the economic value of the news item published. Although we have a sample that includes 512 observations (see above for a detailed explanation about the variables), the estimation for the next equation [4] shows us some of the drivers of the visibility of the news items:

$$Ln\left(EconomicValue_{ipt}\right) = \beta_0 + \beta_1 Positiveforreputation_i + \beta_2 Listedfirmcase_i + \beta_3 Interaction_i +$$
$$+ \beta_4 Neutralcase_i + \beta_5 Ln\left(Disseminationinothers_i\right) + \beta_6 Economicpress_p + \beta_7 Toppress_p + \quad [4]$$
$$+ \beta_8 Firmiscited_i + \sum \beta Newspapereffect_p + \sum \beta Fixedeffectbydate_t + \varepsilon_{ipt}$$

Using Ordinary Least Squares estimations with robust option to heteroscedasticity, Table 5 includes estimations for two models (including or not the newspaper effect).

Table 5: Ln of economic value of news

Covariates	Model 1	Model 2
Positive-for-reputation news	-0.64 (0.17)***	-0.71 (0.19)***
Listed company	-0.15 (0.13)	-0.09 (0.15)
Interaction: Positive-for-reputation news on listed	0.56 (0.29)*	0.58 (0.33)*
Neutral news	-0.06 (0.15)	-0.13 (0.18)
ln (Dissemination)	0.002 (0.07)	0.06 (0.07)
Economic press	1.15 (0.14)***	-0.70 (0.27)**
Top press	1.49 (0.15)***	1.64 (0.27)***
Firm is cited	-0.04 (0.19)	0.08 (0.20)
Newspaper effect	No	Yes
Intercept	6.33 (0.29)***	6.69 (0.19)***
Observations	515	515
R^2	0.25	0.47

Note: Standard deviation in brackets. Significance: *<10%, **<5%, ***<1%.

Goodness of fit ranges from 0.25 to 0.47. The most significant result is again the interaction term as it shows statistical significance and a positive sign in both models. This outcome implies again that news that positively affects listed firms' reputations are published in a better place in newspapers than *negative-for-reputation* news, relative to non-listed firms.

In fact, the coefficient of the interaction implies that this news has a 56-58% better valuation than *negative-for-reputation* news regarding this difference for non-listed companies. However this greater visibility of the news is affected by the size of the news items, so this may point to a causal relationship from the equation [1].

But the exact position in the paper is not a random question and may reduce the potential endogeneity problem mentioned above. As we noted previously, news items published on the right-hand side of the newspaper are more expensive than those on the left-hand side. For this reason we estimate the equation [5]:

$$\text{Right-hand side}_{ip} = \beta_0 + \beta_1 \text{Positive-for-reputation}_i + \beta_2 \text{Listedfirmcase}_i + \beta_3 \text{Interaction}_i +$$
$$+\beta_4 \text{Disciplinary}_i + \beta_5 \text{M\&A}_i + \beta_6 \text{Neutralcase}_i + \beta_7 \text{Dissemination}_i + \qquad [5]$$
$$\beta_8 \text{Economicpress}_p + \beta_9 \text{Toppress}_p + \beta_{10} \text{Firmiscited}_i + \sum \beta \text{Fixedeffectbycase}_i + \varepsilon_{ip}$$

Where the endogenous variable is a binary one that takes value 1 if the news is published on the right-hand side of the paper. Logit estimation was applied, including fixed effect by case.

Table 6: Right-hand side of the newspaper. Logit estimation

Covariates	Model
Positive-for-reputation news	-8.97 (1.39)***
Listed company	-1.01 (0.96)
Interaction: Positive-for-reputation news on listed company	18.94 (1.77)***
Sanction news	-9.45 (1.44)***
M&A news	8.97 (1.44)***
Neutral news	-9.37 (1.41)***
Dissemination	0.19 (0.03)***
Economic press	0.38 (0.28)
Top press	0.09 (0.24)
Firm is cited	-7.39 (1.38)***
Fixed effect by case	Yes
Intercept	6.62 (1.36)***
Observations	643
Pseudo R^2	0.06

Note: Standard deviation in brackets. Significance: *<10%, **<5%, ***<1%

This final estimation yields a conclusive outcome: those news items that positively affect listed firms' reputations are more likely to be printed in the most expensive position of the paper, i.e., the right hand-side.

This positive relationship between better placement and *positive-for-reputation* cases are related to some conclusions of Ellman and Germano (2009), Blasco and Sobbrio (2012) and Germano and Meier (2013).

These results suggest the existence of potential bias in the dissemination of Spanish Antitrust Authority´s cases favouring listed companies. Our estimations show that the media enhances those positive cases with respect to negative ones for listed firms in contrast with how it deals with those news items for non-listed firms: they take up more space, are subject to greater coverage in economic newspapers, and are located in those parts of the newspaper where advertisement costs are higher.

Therefore, such bias may weaken to some extent the deterrence effect of the Competition Authority and, ultimately, the effectiveness of antitrust system enforcement.

4. Policy considerations

Making competition policy decisions public is certainly a way to increase awareness about how important competition law compliance is. That is the reason why former Spanish competition law[10] included a provision about publicising the previous *Tribunal de Defensa de la Competencia*´s decisions. Those decisions imposing sanctions had to be published in the Official Gazette as well as in two relevant newspapers at the cost of the offender.[11]

Profound changes in the media panorama and the internet boom are probably two reasons why legislators did not include a similar provision in modern Spanish Competition Policy Law[12]. At the end of the day, the competition authority can publish resolutions on its website at no cost and disseminate the press release to many agencies, press and electronic media.

However, dissemination may not be neutral. The results of our analysis suggest that listed companies might be better positioned to neutralise the deterrent effect that competition authorities seek to deploy through media.

Because this effect may weaken the effectiveness of competition policy, several measures should be considered. Perhaps, for example, the competition authority has to exert greater influence on how its decisions are published and the news interpreted. This may imply devoting a larger budget to "marketing" its decisions. But other solutions could also be considered, such as those contemplated in Law 16/1989: offenders could be obliged to more widely publicise the decision -or better the competition policy news release- at their own expense.

However these measures would not erode the root of the real problem, i.e., the extent to which press dependence on advertising income that comes from a restricted number of companies is affecting content. But this is of course a debate that not only affects competition policy and goes far beyond the scope of this article.

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[10] Law 16/1989, July 17th, for the Protection of Competition (BOE nº 170, July 18th 1989).

[11] Article 46.5, Law 16/1989.

[12] Lay 15/2007, July 3rd, for the Protection of Competition

5. Conclusions

The impact of the mass media on public opinion is beyond doubt. Several articles have demonstrated that the media affects voting, turnout, public expenditure and consumption, among other issues. Media may also have an impact on an individual's and business' reputation(s). Precisely because reputation matters to firms, sanctions and legal decisions that impose fines or penalties on a particular offender are made public. The risk of being cited in mass media as 'guilty' is part of the deterrence effect that legal systems look for in order to increase their effectiveness. However, as we mentioned above, firms might be able to manage the echo that those condemnatory decisions may have in the media and thus, on its reputation. If that were the case, the deterrence effect of punitive systems could be undermined and their effectiveness lessened.

In this paper we have sought to explore this potential bias in favour of listed firms in Spanish newspapers concerning a very specific field: antitrust authority' activities. As far as we know, this topic has not been analysed in competition policy to date and it is a cornerstone issue: reputational damages for the companies appear to be one of the most if not the biggest deterrent for most businesses (OFT, 2011).

We use a novel database built from all news items and articles published in Spanish newspapers in the period 2007-2010 related to 204 cases issued by the national antitrust authority. It includes 1,305 news items and analyses three key factors: the size of news items, press coverage, and the visibility of the news in the paper.

First, the role of the media as an "instrument for deterrence" is confirmed by the fact that three quarters of the news of our database are *negative-for-reputation* cases and they have a bigger size than the rest. This means that the media tends to emphasise news that reflects legal actions condemning anticompetitive strategies and that allegedly protect consumers and the general interest.

Having said this, our estimations show that there is a bias that benefits listed companies. Those *positive-for-reputation* cases related to listed firms take up more space in the Spanish media, are subject to greater coverage in economic

newspapers and are located in those parts of the newspaper where advertisement costs are higher (i.e., on the right-hand side of the newspaper; the most expensive part) than those *negative-for-reputation* news items for listed firms in contrast with non-listed firms.

As this bias may weaken the deterrent effect of competition policy, several legal measures could be considered. Revisiting Law 16/1989 and imposing publishing obligations on offenders could be one alternative. Of course, the legislator should bear in mind when designing new provisions that times have changed and that the media is not the same as it once was.

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