

Corporate Control in The Market for News, Tunneling Problems and Corruption *

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Abstract

This paper analyzes the relationship between corruption in the public sector and concentration of media firms' ownership structures. In doing so, it brings into the analysis corporate governance theory. The paper provides novel theoretical and empirical results that identify the channels through which ownership concentration affects corruption. It also shows that the relation between concentration and corruption is non-monotonic i.e. increasing for low values of concentration and decreasing for high ones. In this respect, cases of intermediate concentration are the worst to promote accountability in the media and in the public sector.

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1 Introduction

In the last decade, the media industry of many countries around the world has experienced remarkable changes, and even though these changes have been affected by each country's idiosyncratic factors, most of the transformations in the industry have been characterized by two worldwide trends: ownership and market concentration. In the U.S the dominant trend has been the conglomeration of media ownership. To some extent, this trend has been fueled by a desire to create lucrative vertical and horizontal integrations. As a result, the press industry has experienced a spectacular consolidation, which has left half a dozen major chains and a handful of shareholders to rule the market.¹

Similar trends have also been observed in Europe, where there has been a constant push towards the consolidation of the sector. Concentration has taken place not only in the market, but also in the ownership of publishing firms. This process leaves few outlets and shareholders controlling the industry. Some Western European media firms have been acquired by large American media groups, while other Western European media groups have bought old Eastern European media companies.² The same process has also been evidenced in Latin America, even though at a smaller scale. During the 90s, the media industry of many countries has become rather less dispersed. Concentration takes place at the hands of domestic pre-existing media groups, which expand their holdings in the industry. Thus, what has been clear during these years, is that what every the country around the world, the option of being a small or middle-sized media firm is hardly viable at present. Furthermore, despite the fact that there are-literally speaking-thousands of titles across the world, in each country these titles are controlled by a small number of shareholders.

Inspired by this evidence, a new and growing literature has emerged, with the purpose of studying the consequences of these changes on political ac-

¹..."At the end of the World War II, 80 percent of the daily newspapers in U.S were independently owned by chains. In 1981, twenty corporations controlled most of the business of the country's 11.000 magazines, but only seven years later, that number had shrunk to three corporations." Bagdikian, *The Media Monopoly*, p.4.

²..." There is a clear issue of concern about the high levels of local, regional and national ownership concentration of newspapers in CEE countries. For example, the German media giant WAZ has an European empire, with more than 130 newspapers." European Federation of Journalists, *Eastern Empires*, p.8.

accountability and economic performance. While most of the previous works in this literature focus their analysis on the impact of market concentration, little has been said about the impact of ownership concentration. The only paper that addresses this question (see Besley and Prat[7]) emphasizes, relying on transaction cost arguments, that ownership concentration is harmful, because it makes the capture of the industry less expensive, and thereby enhances corrupt governments' incentives to steal public funds.

Although conventional wisdom and several scholars in the literature agree with this view, the framework has two important drawbacks. The first one, is that it disregards from the analysis corporate governance theory. In other words, it considers firms as if they were "black-boxes". Therefore, it does not analyze how the interaction among shareholders, and their incentives to seize corporate control, affect the ability of the government to capture the media, and to control political and economic outcomes. The second drawback relies on the fact that the framework is not able to explain many observed cases where the ownership structure of media firms become more (less) concentrated and corruption decreases (increases). Therefore, the purpose of this paper is to fill these gaps, as well as to provide new theoretical and empirical insights on the channels through which ownership concentration in the industry affects corruption. The findings bring new insights to promote accountability in the media and in the public sector.

The theoretical analysis rests on a two-period moral hazard voting model, which adds to the standard framework a media sector, that provides endogenously information about the incumbent to the electorate. As an innovation, the model opens media firms, and introduces a contest for corporate control among media shareholders, which figures out the channel through which ownership concentration affects corruption. In the model, the control of each media firm is determined in a shareholders' meeting, where large media shareholders submit competing proposals in order to capture the votes of minority owners. The proposals are binding commitments about a monetary payment that each large shareholder promises to distribute, as dividend of the firm, in case he wins the control of the outlet and there is no written story exposing the corrupt politician. This payment serves to compensate minority owners for the profits they lose when the controlling shareholder accepts a bribe in exchange for the suppression of the news.

A key determinant of corruption in equilibrium is how much the politician must pay to silence the media. Higher bribes decrease the return to corrup-

tion and consequently the amount of public funds stolen. The bribe has to compensate the amount of money that the controlling shareholder loses when he accepts to make the firm uninformative. This amount depends on both, the money he loses as a shareholder of the firm, and the compensation he has to pay to minority owners. Thus, the effect of ownership concentration on corruption can be decomposed into two different effects: a negative *owner effect*, that discourages corruption, and a non-negative *contest-for-control effect*, that enhances it.

Specifically, when the ownership structure of media outlets is concentrated, there is a majority block-holder, shareholders inside a firm do not compete for corporate control. Instead, the main shareholder runs the company and he pays nothing to minority owners under misreporting. Hence, the *contest-for-control effect* vanishes, and since the bribe that the incumbent has to pay to silence the media firm increases with the size of the controlling shareholder's stock, corruption decreases as ownership concentrates.

By contrast, when the ownership structure is widely held, large shareholders of each media company compete for corporate control. In equilibrium, the largest owner wins the contest, promising to the smaller ones a compensation for misreporting that decreases with the size of his stock. This introduces a new tunneling problem, where the benefits implicitly expropriated to minority owners are transferred indirectly to the bad politician, which reduces the burden he has to pay to win the re-election. Under this situation, the *owner* and the *contest-for-control effects* co-exist. However, since the latter effect dominates, corruption increases as ownership concentrates.

Thus, the paper shows that the relationship between ownership concentration and corruption is non-monotonic i.e. increasing for low levels concentration and decreasing for high ones. In this respect, cases of intermediate concentration are the worst to curb corruption and to promote accountability in the media, while extreme situations in which ownership is exceptionally concentrated, or widely held, are the most appropriate for these purposes. This of course, contradicts previous findings in the literature and constitutes, above all, one of the main contributions of this work.

To test the model, the paper focuses the analysis on the press industry, and explores if there is evidence about the existence of a negative *owner effect* and a positive *contest-for-control effect*. The empirical analysis is conducted over a panel of 37 countries. For each country, the paper uses information regarding the ownership structure of the top-three newspapers in the years

1999 and 2003. The paper provides robust evidence in support of the model.

The paper is organized as follows: section 2 presents the literature review, section 3 introduces the model and some extensions, section 4 provides the empirical analysis, and section 5 concludes.

2 Literature Review

This paper is related to different strands of the literature. First, it is part of the literature on media and economic and political performance. A common theme of some of these works is how media affect governments' accountability and responsiveness to citizens' needs. The present paper relates to the work of Besley and Prat[7]. The authors develop a model of democratic politics in which the actual freedom of the media is endogenous and depends on the degree of competition among media firms. They find that pluralism provides an effective protection against media capture. Since the existence of a large number of independent media organizations make less likely that the government controls news provision. Even though the main focus of the analysis is on the impact of market concentration on corruption, the authors study some aspects related to the effect of ownership concentration. They find that less transaction costs i.e. more concentrated media firms, increases the probability that the industry be captured. The authors provide some empirical but not causal support for this fact.

From an empirical point of view, the most important paper this work relates to is the one provided by Djankov et al.[11]. The authors present an extensive and very rich cross-country empirical analysis of the impact of different types of media ownership structures on social, political and economic outcomes. They find that state ownership has a negative impact on these issues.

In a different approach, Stromberg[26], [25] analyzes how media affect the allocation of public resources. The main idea of his work is that if better informed voters receive favorable policies, then the existence of mass media or the invention of a new medium will affect government policies because mass media not only provide most of the information people use in voting, but also determine who is informed and who is not. The author conducts an empirical investigation of a major New Deal relief program, that was implemented in the middle of the expansion period of radio, and he finds that in U.S. counties with many radio listeners received more relief funds.

In the same vein, Besley and Burgess[6] study the importance of media in determining how responsive governments are to citizens' needs. They show that having a more informed and politically active electorate strengthens incentives for governments to be responsive. This idea is tested on panel data from India. The authors find that governments are more responsive to falls in food production and crop flood damage where newspaper circulation is higher and electoral accountability greater.

Second, the paper relates to the line of research that study the determinants of corruption at country level. In this regard, Ades and Di Tella[1] present the first empirical study of the causes of corruption across countries. The authors find that corruption is higher in countries where domestic firms are sheltered from foreign competition, by natural or policy induced barriers to trade, and where the antitrust regulations are not effective in preventing anticompetitive practices. In addition, La Porta et al.[19] show that countries with Protestant traditions and more developed economies, have higher quality governments and lower levels of perceived corruption. Lastly, Triesman[27] finds that federal states are more corrupt than unitary ones, and that long periods of exposure to democracy delivers lower corruption.

Finally, the paper relates to the literature on the balance of power in corporations with multiple (single) large shareholders and its effect on firms' performance and minority expropriation. Thus, this paper relates to the works of Berle and Means[5], Jensen and Meckling[16], Grossman and Hart[13], Shleifer and Vishny[23], Agrawal and Mandelke[2], Chen[9], and Gutierrez and Tribo[14] and Bloch and Ulrich[8]. It takes some of the results in this literature, and see how they affect the ability of the government to capture the media industry.

3 The Model

The model considers some ingredients of the retrospective voting model of Besley and Prat[7], but it departs from that model into two directions. First, because the focus of this paper is on the relationship between ownership concentration and corruption, the model considers the opposite case to Besley and Prat [7], the one in which there is only one firm in the market. As I explain later, this assumption is not crucial for the main result of the paper, but its inclusion in the model is twice useful. On the one hand, it states clearly the differences between this work and previous ones. On the

other, it helps to focus the analysis on the main topic of the paper. Second, the model opens media firms and incorporates corporate governance considerations into the analysis, through a contest for corporate control among large shareholders, which figures out the theoretical channel through which ownership concentration affects corruption.

3.1 Set-up:

The set-up consists of two periods. In the first period, an incumbent is exogenously in power. There are two possible types $\theta \in \{b, g\}$, with $\Pr(\theta = g) = \gamma$, where g stands for good and b for bad. A good incumbent delivers a benefit of 1 to voters. A bad incumbent extracts $y \in [0, 1]$ from the public funds, obtains benefits $v(y)$, with $v'(y) > 0$ and $v''(y) < 0$, and delivers the remainder, $1 - y$, to voters. Implicit in the assumption that $v''(y) < 0$, is the fact that it is increasingly difficult for the incumbent to convert public funds into private resources as he steals more money.

Voters choose whether to re-elect the incumbent or a randomly selected challenger, i.e. one that is good with probability γ . Voters do not know the incumbent's type, and they can not observe y before the election. However, they can get information about the incumbent through the media in order to update their beliefs. Voters buy news when media is informative. Before buying news, voters know whether or not media report about the incumbent, but they ignore the content of the news.

There is one media outlet. When the incumbent is bad, with probability $\varphi(y)$, the manager receives a signal. Then, if the signal is reported, the outlet makes profits $\pi_r = mks_r \Pi$, where mks_r stands for the maximum share of the industry's benefits that the firm can obtain when reporting the bad signal. Parameter Π refers to the size of the industry i.e. readers or audience.³ I assume that $0 < mks_r \leq 1$, and that $\varphi(y)' > 0$, $\varphi(y)'' \geq 0$, $\varphi(0) = 0$, $\varphi(1) = 1$.⁴

³Notice that in a model with only one firm mks_r depends on the elasticity of the demand for news with respect to the publishing of the corruption story. In a context with more than one firm mks_r depends in addition on the market share of rival firms, that is, those that cover the same market.

⁴I assume that $0 < mks_r \leq 1$ instead of $mks_r = 1$ because it helps to make the match between the theory and the empirical evidence. It is possible to rationalize this assumption by assuming that there is one large company in the market and many tiny firms that play no role in the problem. The crucial assumption is that $mks_r > 0$.

The incumbent can manipulate news. This is modeled as a bargaining game between the manager and the politician. The incumbent can make a non-negative offer of money t to the manager in exchange for the suppression of the bad news. Then, if the manager accepts this offer, he makes no report, and the incumbent gets benefits $r - t$ if he is re-elected, and $-t$ if he is not.

The media company has an ownership structure, composed by two large block-holders, $i = 1, 2$, and a continuum of small shareholders. I denote by α_1 and α_2 the fractions of shares owned by the two large shareholders. I assume that $\alpha_1 > \alpha_2$. The remainder of the shares, $1 - \alpha_1 - \alpha_2$, are distributed uniformly among the small shareholders.⁵

A shareholders' meeting is annually convened in order to allocate control power. At the meeting, each of the two large shareholders proposes a plan to run the company. Specifically, the plan of shareholder- i describes what fraction, $x_i \in [0, mks_r]$, of benefits Π , shareholder- i will distribute as dividends of the firm, if he seizes control and there is no written story exposing the corrupt politician.⁶ This payment is intended to limit the payoffs that the manager can get exploiting the informational advantage he has, because he is the only one that can receive the signal, and bargain with the incumbent for the suppression of the news. The plans are binding commitments that will be enshrined in the company charter and cannot be revoked by the controlling shareholder.

Control is allocated to one of the two large shareholders, according to the results from the voting process. Each share carries one vote, and the controlling shareholder is elected by simple majority of the votes effectively cast.⁷ While the attendance of large shareholders to the meeting is guaranteed, this is not the case for small shareholders, who face a cost, $\kappa\Pi$, for

⁵I assume this particular ownership structure because it is related to what the data describe. In 1999, a 78.11 % of the media firms in the sample has at most 2 shareholders controlling more than 50 percent of the total shares of each media company. In 2003, this feature appears in 79.48 % of the cases.

⁶Notice that in the most favorable scenario, compensation for misreporting will be equal to the benefits the outlet would yield if the manager would reject to hid the bad signal, $mks_r\Pi$.

⁷In order to break ties, I assume that when two plans receive the same number of votes, the largest shareholder wins the contest. Frequently, the largest stake-holder of a media firm is the founder. Thus, this rule might reflect the power of the entrepreneur as the founder of the organization. The same assumption can be found in Bennedsen and Wolfenzon[4].

participating in the meeting.⁸ Different small shareholders face different costs and κ is distributed uniformly on $[0, 1]$. Finally, being in office allows the controlling shareholder to get other rents V . These rents guarantee that large shareholders always want to participate in the contest.⁹

The timing of the game is as follows:

1. Large shareholders compete to become the manager of the media. Each shareholder proposes $x_i \in [0, mks_r]$, for $i = 1, 2$, and all shareholders vote. The manager is elected.
2. The incumbent's type θ is realized. If $\theta = g$ the manager observes no signal. If $\theta = b$, with probability $\varphi(y)$ the manager receives a signal. The incumbent observes the media signal and selects a transfer $t \geq 0$.
3. The manager observes the transfer t and decides whether to accept or to reject t . If he accepts, he suppresses the bad news. If he rejects, he reports about the corrupt incumbent.
4. Voters observe whether media report something about the politician and decide whether to buy news. Finally, they vote for the incumbent or the challenger.

3.2 Equilibrium

I focus attention on pure strategy perfect Bayesian equilibrium, and I restrict the solution of the corporate game to strong equilibrium, i.e equilibria such that no group of agents with positive measure has an incentive to deviate¹⁰. The following proposition characterizes the equilibrium¹¹.

Proposition 1 *In the unique equilibrium of the game the following occurs:*

⁸I assume this functional form for the cost to the sake of simplicity. However this is not a crucial assumption of the model. See proof of Proposition 1.

⁹This assumption is introduced to simplify the exposition. Removing this assumption may eliminate the contest for control among shareholders. As shareholder 2 may want to deliver control to the largest block-holder when V is not large enough to over offset the risk of getting control and not receiving a signal about the incumbent.

¹⁰I adopt a non-cooperative approach, in the sense that the concept of strong equilibrium refers to the fact that large shareholders anticipate the least favorable outcome or the most favorable one, when they propose a plan.

¹¹All proofs are in the Appendix.

1. Voters vote for the challenger if they observe a report about the incumbent and re-elect the incumbent when this is not the case.
2. Shareholder 1 becomes the manager of the outlet. He proposes $x_1^* = 0$ if $\alpha_1 \geq 0.5$ and $x_1^* = mks_r - \frac{(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)}$ if $\alpha_1 < 0.5$.
3. The manager accepts t and hides the bad signal if and only if $t \geq [\alpha_1 \pi_r + (1 - \alpha_1)x_1^* \Pi]$.
4. A bad incumbent offers $t = [\alpha_1 \pi_r + (1 - \alpha_1)x_1^* \Pi]$ if: (a) shareholder 1 observes the bad signal; and (b) $r + v(1) \geq t$.
5. In the second period the equilibrium value of $y = 1$. In the first one, y satisfies the following condition: $v'(y) - \varphi'(y) (r + v(1) - \max(0, r + v(1) - [\alpha_1 \pi_r + (1 - \alpha_1)x_1^* \Pi])) = 0$.

The proposition shows that media capture depends on the ownership structure of the media firm. When the ownership structure has a majority shareholder, the equilibrium bribe is equal to $\alpha_1 \pi_r$ i.e. the benefits that the controlling shareholder loses under misreporting. When no shareholder has more than 50% of the company, the bribe also depends on the compensation for misreporting that the largest owner promises to pay to minority shareholders, $(1 - \alpha_1)(\pi_r - \frac{\Pi(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)})$. This payment is a decreasing function of α_1 , as well as of the difference between α_1 and α_2 , which captures the contestability of the main shareholder's voting power.

To analyze how ownership concentration affects corruption in equilibrium, I apply the implicit function theorem to the F.O.C of the incumbent's problem. I find that $\frac{\partial y}{\partial \alpha_1}$ is equal to the following expression:

$$\frac{\partial y}{\partial \alpha_1} = \frac{-\pi_r + d[(\pi_r - \Pi \frac{(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)})] + \Pi(1 - \alpha_1) \left(1 + \frac{\alpha_2(1 - 2\alpha_2)}{(1 - \alpha_1 - \alpha_2)^2}\right)}{\varphi'(y) [-v''(y) + \varphi''(y)t]} \quad (1)$$

where d is a dummy variable that takes value 1 if $\alpha_1 < 0.5$. According to equation (1), concentration affects corruption through two different channels. The first channel is related with what I call the *owner effect (OE)*. The second one is associated with the *contest-for-control effect (CCE)*.

The *OE*, $\Phi_{OE} \equiv -\pi_r$, is determined by the profits the outlet loses when the manager suppresses the bad signal about the incumbent. The sign of

this effect is negative underlining the fact that when there is no competition for corporate control, ownership concentration reduces the amount of stolen public funds, because more concentration increases the equilibrium bribe and thereby reduces the returns from corruption. This feature of the equilibrium appears as a consequence of the policy that the outlet implements to distribute dividends among shareholders. In the model, each shareholder receives benefits proportional to the size of his stock. This makes the losses for misreporting larger for a bigger stake-holder.

Even though the *owner effect* is in line with many findings in the literature of corporate governance, which document that ownership concentration improves the performance of the firms, aligning the interests of managers and owners (see Berle and Means[5], Jensen and Meckling[16], Grossman and Hart[13], Shleifer and Vishny[23], Agrawal and Mandelke[2], Chen[9], and Gutierrez and Tribo[14]), it is interesting that in the case of the media, the positive stylized relationship between ownership concentration and performance does not always apply. I provide empirical evidence about this fact in the following section, and I explain theoretically how this can occur using what I call the *contest-for-control effect*.

The *CCE*, $\Phi_{CCE} \equiv \left[\left(\pi_r - \frac{\alpha_1 - \alpha_2}{1 - \alpha_1 - \alpha_2} \Pi \right) + (1 - \alpha_1) \left(1 + \frac{\alpha_2(1 - 2\alpha_2)}{(1 - \alpha_1 - \alpha_2)^2} \right) \Pi \right]$ reflects the impact of increasing α_1 on the additional burden that the incumbent has to pay when media ownership is dispersed and he pretends to silence the outlet. The effect relates three remarkable ingredients of the problem: contestability of the main shareholder's voting power, expropriation of media minority shareholders' profits, and the cost for the politician in power to silence the industry. To realize how these factors link themselves, notice that the plans that large shareholders propose at the time to compete for corporate control are a function of the absolute and relative size of their stocks. In equilibrium, the main shareholder's plan is either zero or a decreasing function of α_1 . Then, since the bribe that the incumbent has to pay to silence the market depends on the controlling shareholder's promise, more concentration of the property in the hands of the main block-holder reduces the value of that bribe and thereby increases the returns from corruption. Therefore, it is possible to talk about the presence of a *second order tunneling problem*, to refer to the transfer of resources out of the company, from small shareholders to the dishonest politician. Contrary to the *standard tunneling problem*, where the manager appropriates the benefits expropriated to minority owners, in this case, the tunnel favors the corrupt incumbent, because it reduces

the burden he has to afford in order to win the re-election.

Re-writing equation (1) in the following manner it is possible to realize which of the two effects dominates:

$$\frac{\partial y}{\partial \alpha_1} = \left[\frac{-d\pi_r + (1-d) \left[\left(1 + \frac{\alpha_2(1-2\alpha_2)}{(1-\alpha_1-\alpha_2)^2} \right) \right] \Pi}{(\varphi'(y))^{-1} [-v''(y) + \varphi''(y)t]} \right] \quad (2)$$

Thus, equation (2) shows, that when there is a majority shareholder the *owner effect* dominates and corruption decreases as ownership concentrates. However, when no shareholder has more than 50% of the company, the *contest-for-control effect* dominates and corruption increases as ownership concentrates. The following proposition characterizes the corruption function in equilibrium. It is convenient for this purpose to make the following definitions: $\hat{\alpha}_1 \equiv \max\{0.5, \alpha_1 : \alpha_1 = \frac{r+v(1)}{\pi_r}\}$, $\bar{\alpha}_1 \equiv \min\{0.5, \alpha_1 : mks_r - \frac{(1-\alpha_1)(\alpha_1-\alpha_2)}{(1-\alpha_1-\alpha_2)} = \frac{r+v(1)}{\Pi}\}$, and $\underline{\alpha}_1 > 0$ is the minimum possible size for the largest owner's stake.

Proposition 2 *Corruption is a non-monotonic function of ownership concentration. Increasing and convex in the interval $[\max\{\underline{\alpha}_1, \bar{\alpha}_1\}, 0.5)$. Decreasing and concave in the interval $[0.5, \min\{\hat{\alpha}_1, 1\}]$. Constant in the interval $[\underline{\alpha}_1, \max\{\underline{\alpha}_1, \bar{\alpha}_1\}] \cup [\min\{\hat{\alpha}_1, 1\}, 1]$.*¹²

The results presented in Proposition 2 have important implications for the debate on media regulation, as they show that conventional prescriptions on ownership concentration may not be appropriate when it comes to an industry such as the media. This is because policies designed to promote competition must take into account not only economic welfare considerations, but also accountability effects. In this respect, the results show that

¹²The function exhibits the following properties according to the following cases: (i) $\bar{\alpha}_1 < 0.5 \leq \hat{\alpha}_1$; (ii) $0.5 \leq \bar{\alpha}_1, \hat{\alpha}_1$; (iii) $\bar{\alpha}_1, \hat{\alpha}_1 \leq 0.5$.

- (i) The function achieves its maximum at $\alpha_1 = 0.5$ and it is discontinuous at this value.
- (ii) The function achieves its maximum at $\lim_{n \rightarrow \infty} \{\alpha_n \mid n \in N\}$, with $\alpha_n = \frac{2\alpha_1^{\frac{1}{n}} - 1}{2}$, if $r + v(1) > (\pi_r - 0.5\Pi)$, or at any point in the interval $[0.5, 1]$, otherwise. The function is continuous if and only if $r + v(1) = (\pi_r - 0.5\Pi)$.
- (iii) The function achieves its maximum at 0.5 if $r + v(1) > 0.5\pi_r$, or at any point in $[\underline{\alpha}_1, 0.5)$, otherwise. The function is continuous if and only if $r + v(1) = 0.5\pi_r$.

ownership concentration may harm neither the media freedom nor a transparent administration of the public funds. Moreover, they show that cases of intermediate concentration are the worst to curb corruption, while extreme situations in which the ownership is completely concentrated, or widely held are the most appropriate ones for such purpose.

An illustrative example in concordance with the situation in which ownership concentration plays a crucial role to fight corruption, has been documented by *Media Ownership and its Impact on Media Independence and Pluralism*, and corresponds to the case of Bosnian media. The *Dnevni Avaz* is the main newspaper in Bosnia and Herzegovina. For a long time, the paper has been the only one in the market. There is a lot of discussion about its finance and political affiliation, but it has been widely claimed that *Avaz*, initially, was supported by the ruling Bosnian nationalist party *SDA*. Nevertheless, in 2000, its only owner, Fahrudin Radonic, distanced himself from the party in an attempt to establish an independent daily. This move was severely punished by *SDA* officials, who used, without success, various forms of pressure to put an end to his rebellion. The fact that all the property of the paper was concentrated in one shareholder prohibited the government from silencing the outlet.

A contrary case to the one previously described, regards that of Estonian media, at the beginning of their privatization processes. According to the same sources, the media have played an outstanding role in the transformation and liberalization of the Estonian civil and political society. During the privatization, it was mainly the editorial teams who became the owners of the newspapers. Press freedom brought about joint ventures and agreements that divide the market among competing media companies and shareholders. The process delivers independence, pluralism, and transparency.

3.3 Extensions

A potential source of concern related to these findings is how they could change when some assumptions of the model are replaced by others. In the following paragraphs, I discuss what would happen if: (1) large shareholders have more available actions, apart from competition, at the time to define who controls the media, (2) there are more than one outlet in the market, (3) media is ideological, and (4) the bargaining power is not concentrated any more on the incumbent's side.

3.3.1 Actions to Seize Corporate Control

It might be argued, that large shareholders could buy shares, rather than propose a dividend plan, at the time to compete for seizing control. If this possibility were available, one of the two large block-holders would win the contest, and he would pay in equilibrium a price p^* for the votes he bought. When this shareholder receives the bad signal, he decides whether to accept or reject the transfer t , the incumbent proposes, comparing the profits he would obtain if he exposes the corrupt politician, with the ones he would yield if he suppresses the bad news. These benefits are equal to $0.5\pi_r - (0.5 - \alpha_i)p^*$ if he rejects the transfer t , and $t - (0.5 - \alpha_i)p^*$ if he accepts it. In both situations, the largest stakeholder has to pay the cost of winning control. Hence, the equilibrium bribe is equal to $t = 0.5mks_r$, and corruption is independent of ownership concentration. I show in the following section that this finding is not consistent with the empirical evidence.

It could also be possible that large shareholders choose between competition or collusion. In the last situation, large shareholders would pay nothing to minority owners if they accept to hid the news, and they would bargain over the division of V . At first glance, it thus appears, that if the largest block-holder makes a take it or leave it offer to the second owner, both shareholders collude. But this assumes that a collusive agreement can be sustained under all contingencies. This of course, is an extreme assumption that contradicts some empirical evidence about the idea that collusion may break under stress (see Volpin[28]). Disregarding this last point, and assuming that collusion can be held in equilibrium, if both shareholders form a coalition, the *contest-for-control effect* vanishes, as well as the non-monotonicity property of the corruption function. The case resembles the situation in which there is only one majority block-holder. I test empirically this hypothesis, and I do not find evidence validating it.

3.3.2 More Outlets in The Market

It is straightforward to see that the properties of the corruption function in equilibrium remain when there is more than one outlet in the market. To rationalize this result, suppose that there are n media firms, each one with a particular ownership structure similar to the one previously described. All the companies receive the same signal about the incumbent, and they divide readers equally among informative outlets. In equilibrium, it is a dominated

strategy for the incumbent to silence partially the market. As he will not be re-elected, but he will have to pay some bribes. Therefore, if the politician wants to win the political contest, he will have to pay to the controlling shareholder of each outlet an amount of money equivalent to the one the manager would yield if his firm were the only informative company of the industry. Hence, the equilibrium structure of the bribe will be the same as in the case in which there is only one outlet, and function y will exhibit in equilibrium the same properties as before when α_{1j} changes, for $j = 1, 2, \dots, n$.

Even though there are no qualitative differences between this case and the baseline one, quantitative discrepancies appear in the magnitudes of the cut-off points $\hat{\alpha}_{1j}$ and $\bar{\alpha}_{1j}$, which now are defined as follows: $\hat{\alpha}_{1j} \equiv \max\{0.5, \alpha_{1j} : \alpha_{1j} = \frac{r}{\pi_r} - \sum_{i=1, i \neq j}^n \frac{t_i}{\pi_r}\}$ and $\bar{\alpha}_{1j} \equiv \min\{0.5, \alpha_{1j} : mks_r - \frac{(1-\alpha_{1j})(\alpha_{1j}-\alpha_2)}{(1-\alpha_{1j}-\alpha_2)} = \frac{r}{\Pi} - \sum_{i=1, i \neq j}^n \frac{t_i}{\Pi}\}$, as well as in the equilibrium value of y , which in the case of n firms satisfies the following first order condition:

$$v'(y) - r\varphi'(y) + \varphi'(y) \max\left\{0, r - \sum_{i=1}^n t_i\right\} = 0 \quad (3)$$

It is straightforward to show, that $\bar{\alpha}_{1j}$ is larger than in the previous case, while $\hat{\alpha}_{1j}$ and y are lower.

3.3.3 Ideological Media

To consider the possibility that the media and citizens are ideologically motivated, I follow the framework proposed by Besley and Prat[7]. There are two positions, left and right, with the right wingers being a fraction $\pi > \frac{1}{2}$ of the population. Thus, the right wingers determine the election outcome if they vote on purely ideological grounds. There is one media outlet, with an ownership structure equal to the one of the baseline model. All shareholders have the same ideological preferences and each one attaches a benefit proportional to $B > 0$, with the factor of proportionality given by the size of his stock, from having a politician of their preferred type in office. Implicit in this assumption is the fact that the outlet can yield extra profits when the government is of the same ideology as media owners.

A proportion ρ of voters value ideology over information, i.e. they prefer to read an uninformative newspaper with their ideology rather than an informative one on opposite position. The other $1 - \rho$ voters value information, and they buy news only if media make reports exposing corrupt politicians.

If no signal is observed, each voter votes for his ideologically preferred candidate. If a signal is observed, the voter votes for the politician with the highest likelihood of being honest.

It is straightforward to show that in equilibrium the incumbent gives the following payoff to the media, in exchange for the suppression of the news:

$$\max \left\{ \begin{array}{l} 0, \alpha_1 \left(\pi_r^{id} + (-d_2 B + (1 - d_2) B) \right) + \\ + d_1 (1 - \alpha_1) \left[\left(\pi_r^{id} - \frac{(\alpha_1 - \alpha_2) \Pi}{(1 - \alpha_1 - \alpha_2)} \right) \Pi + (-d_2 B + (1 - d_2) B) \right] \end{array} \right\}$$

where d_1 and d_2 are dummy variables that take value 1 if $\alpha_1 < 0.5$ and media's ideology is right, respectively. Compared with the baseline case, the bribe that the politician has to pay to silence the market is different in two respects. First, the profits that the outlet losses for becoming uninformative depend now on the proportion of readers that value information over ideological content, $1 - \rho$. Second, *ceteris paribus*, re-election cost is lower when media share the same ideological preferences that the incumbent, while it is larger if both dissent in their political views.

If the following condition is satisfied: $\{\alpha_1(\pi_r^{id} - B) + d_1(1 - \alpha_1) \left[\left(\pi_r^{id} - \frac{\Pi(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)} \right) - B \right]\} < 0$, corruption is equal to 1. Since the incumbent has to pay nothing to media shareholders in order to suppress the report. When this is not the case, the corruption function exhibits the same properties as in Proposition 2, with $\hat{\alpha}_1 \equiv \min\{0.5, \alpha_1 : r + v(1) = \left[\left(\pi_r^{id} - \frac{\Pi(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)} \right) + (-d_2 B + (1 - d_2) B) \right]\}$ and $\hat{\alpha}_1 \equiv \max\{0.5, \alpha_1 : r + v(1) = \alpha_1(\pi_r^{id} + [-d_2 B + (1 - d_2) B])\}$.

3.3.4 Bargaining Power

To analyze what would happen if the bargaining power were not any more all on the incumbent's side, I study the case in which the incumbent proposes a transfer t to the manager, but the latter has bargaining power to demand in addition a fraction ϕ of the stolen public funds. It is easy to see that the results of Proposition 2 would still remain under this situation, even though, the conditions that define $\bar{\alpha}_1$ and $\hat{\alpha}_1$ are not simple as in the baseline model. Under this situation, the optimal y when the incumbent decides to silence the media is determined by the following equation:

$$-\varphi'(y)(v(y) + r) + (1 - \varphi(y))v'(y) + \varphi'(y)[r - t + v((1 - \phi)y)] + \quad (4)$$

$$+\varphi(y)[(1 - \phi)v'((1 - \phi)y)] = 0 \quad (5)$$

and the impact of changes in α_1 on y is characterized by the following equation:

$$\frac{\partial y}{\partial \alpha_1} = \frac{-d\pi_r + (1 - d) \left[\left(1 + \frac{\alpha_2(1-2\alpha_2)}{(1-\alpha_1-\alpha_2)^2} \right) \right] \Pi}{-S.E.C(\varphi'(y))^{-1}} \quad (6)$$

where *S.E.C* stands for the second order condition of the incumbent's problem. As in the baseline model, the *owner effect* dominates when $\alpha_1 \geq 0.5$, while the *contest effect* does it when $\alpha_1 < 0.5$.

4 Data and Empirical Evidence

The theoretical analysis of the previous section shows that ownership concentration affect corruption through two different channels: the negative *owner effect* that discourages corruption, and the non-negative *contest-for-control* effect that enhances it. In this section, I confront this prediction with data.

4.1 Data

I describe in the following paragraphs the proxies I construct to measure the main media variables, as well as the corruption index I use to test the implications the model delivers. The description of the control variables is relegated to the Appendix.

I focus the analysis on the press market, instead of the T.V or radio ones, because it is in the first one where the ownership structure of media firms experienced more changes. Data corresponding to the press industry come from several sources. I use the data from Djankov et al.[11] for the year 1999. In attempting to control for unobserved country characteristics, I extend this data-set for a sample of 37 countries with private ownership of the media in the year 2003. The countries have been selected for the sample according to the availability of free data at the time to conduct the extension¹³. For each country the data gather information on the ownership structure and market share of the top four publishing companies, according to readership figures.

¹³See the Appendix for a detailed description of all the involved sources.

Equation (1) shows that four media variables determine the equilibrium value of the bribe that a corrupt politician has to pay to silence a media outlet: π_r , α_1 , α_2 , and Π .

Proxy for π_r : according to the model, this variable reflects the profits a media outlet yields if it deviates and publishes the story that exposes the corrupt politician when rival firms are silenced. Hence, π_r is determined by the following parameters or variables: (i) the demand elasticity with respect to the publishing of the corruption story ε , (ii) rival firms' market shares, and (iii) market size. In what follows I discuss how I measure each one.

(i) Unfortunately, there is no available data that allow me, in an experimental way, to estimate how sensitive readers are to the report of corruption stories in each country. Therefore, I assume that ε is the same for each paper and country, and I estimate it exploiting cross-country data on the demand for news and the freedom of the press. The last variable has been built according to political pressures and governmental controls on press content¹⁴. To estimate ε , I work with the following log-log newspaper demand-supply two-equation system:

$$q_i^d = \beta_0 + \beta_1 fpress_i + \beta_2 gdp_i + \beta_3 liter_i + \beta_4 pop_i + \mu_i^d \quad (7)$$

$$q_i^s = \beta_5 + \beta_6 fpress_i + \beta_7 gdp_i + \beta_8 liter_i + \beta_9 pop_i + \beta_{10} fcosts_i + \mu_i^s \quad (8)$$

where subindex- i stands for country- i , q for newspaper circulation per thousands of inhabitants, $fpress$ for press-freedom, gdp for GDP per capita, $liter$ for the literacy rate in the segment of population with more than 15 years old, which is the one expected to read newspapers, pop for population, and $fcosts$ for firing costs¹⁵. In line with the theory, it is expected that coefficient β_1 be significant and negative. Since countries that enjoy a more independent press are located lower in the ranking than other nations in which the

¹⁴See the Appendix for details about this variable.

¹⁵In other specifications, I include as control variables a corruption and a democratic index, to be sure that β_1 is capturing only ε , instead of reflecting in addition the effect of some omitted variables correlated with the press-freedom index as well as with newspaper circulation. However, since the empirical evidence shows that these two indices are not statistically significant, and because the explained variance of the demand estimation that incorporates both measures is lower than the one that exclude them, I do not include this variables in the final specification.

governments distort, reduce, or suppress news. It is also expected that more developed countries, those that display higher figures of the *GDP* per capita and literacy rates, have a larger demand for newspapers i.e. $\beta_2 > 0$ $\beta_3 > 0$. It is also expected that β_4 be positive, as far as *pop* is related to the square surface of a country, since citizens of a bigger nation have larger incentives to buy news in order to be informed of other counties ¹⁶.

I use variable *fcosts* for an identification purpose, since it is an exogenous and exclusive supply shifter. To test the rank condition I run the following regression ¹⁷:

$$q_i = \pi_1 + \pi_2 gdp_i + \pi_3 liter_i + \pi_4 pop_i + \pi_5 fcosts_i + v_i \quad (9)$$

where $\pi_1 = \left(\frac{\beta_5 - \beta_0}{\beta_1}\right) \delta$, $\pi_2 = \left(-\frac{\beta_6 \beta_2}{\beta_1} + \beta_7\right) \delta$, $\pi_3 = \left(-\frac{\beta_6 \beta_3}{\beta_1} + \beta_8\right) \delta$, $\pi_4 = \left(-\frac{\beta_6 \beta_4}{\beta_1} + \beta_9\right) \delta$, $\pi_5 = \beta_{10} \delta$, $v_i = \left(\mu_i^s - \frac{\beta_6 \mu_i^d}{\beta_1}\right) \delta$ and $\delta \equiv \left(1 - \frac{\beta_6}{\beta_1}\right)^{-1}$. The following table presents the results.

Table 1: Rank Condition

<i>q</i>	<i>coef.</i>	<i>std.error</i>
<i>fcost</i>	-0.310	[0.112] * **
<i>pop</i>	0.100	[0.57]*
<i>liter</i>	0.895	[0.39] * *
<i>gdp</i>	1.023	[0.095] * **
<i>cons</i>	-9.021	[1.262] * **
<i>No.obs</i>	67	$R^2 = 0.816$

Robust standard errors in brackets. *: sig. at 10%; **: sig. at 5%; ***: sig. at 1%.

Table 1 shows, that the rank condition is satisfied, since variable *fcosts* is statistically significant at 1%. To estimate β_1 , I use variable *fcosts* to instrument *fpress* ¹⁸. Table 2 reports the results from the IV estimation.

¹⁶The data for the estimation come from several sources and generally correspond to the year 2002. The sample of countries used for the empirical exercise includes all the nations with no missing values in any of the variables that appear in system (3)-(4). See the Appendix for a detailed description of the variables and the source.

¹⁷The rank condition requires that the exogenous variable excluded from the demand

Table 2: Demand Elasticity

q	$coef.$	$std.error$
$fpress$	-1.030	[0.510] * *
pop	0.281	[0.122] * *
$liter$	1.497	[0.540] * **
gdp	0.408	[0.310]
$cons$	-6.672	[2.611] * *
$No.obs$	67	$R^2 = 0.725$

Robust standard errors in brackets. *: sig. at 10%; **: sig. at 5%; ***:sig. at 1%.

The table shows that government controls of press content are significant at 5% level to explain newspaper demand. The estimated value for ε is equal to 1.03.

(ii) A potential source of concern related to the task of measuring mks_r is the fact that this variable must reflect the market share that an outlet gain when other firms that cover the same region misreport about the corrupt incumbent. If all the newspapers were local, the analysis would have been impossible, as there is no information regarding the city in which each paper reports. Fortunately, the data document that in almost all the countries the top three newspapers are national, while the others are regional¹⁹. Therefore, I focus the analysis on these papers, and I define mks_r as the total market share of the main three leading firms. (iii) Finally, I measure the size of the market, Π , with data on daily newspaper circulation. Then, variable $\pi_r = \varepsilon mks_r \Pi$.

Proxy for α_1 : I work with the variable called the *ultimate controlling shareholder* in Djankov et al.[11] to measure the size of the largest owner's stock. To construct this variable the authors follow the methodology proposed by La Porta et al.[18], which involves the following steps. The first step consists in the identification of the shareholders that own a significant voting stake within each media company. This provides the first level of ownership.

equation has a non-zero population coefficient in the supply equation.

¹⁸The correlation between these two variables is significant at 1% level and equal to 0.365.

¹⁹See the Appendix.

In the second step, the ownership structure of each legal entity is identified, to bring the second level of property. The process continues until it reaches an entity for which it is not possible to break down the ownership structure any further. The company that ultimately controls the highest number of voting rights, but no less than 20% at every link of the chain, is defined as the ultimate owner, and its stake is calculated as the minimum holding along the chain of control. When the ownership structure of a newspaper is direct, there is no chain of intermediate firms controlling the outlet, the variable reflects the size of the largest shareholder. When the property is indirect, the variable captures the power of the shareholder that at the end of the chain of control commands the newspaper.

Proxy for α_2 : when extending the data-set from Djankov et al.[11], I gather information about the second largest owner, using the same criterium as before. Unfortunately their data-set does not collect information on this issue, but this does not constitute per-se an important source of concern, since many outlets in 1999 have only one shareholder. For those cases in which the main owner has less than 100%, I proceed in the following manner. First, I look for data on the second largest owner in 1999. For those cases in which I do not find information, I apply the following criterium. If the size of the largest stake-holder does not change between 1999 and 2003, I assume that neither does the size of the second one. This is a quite standard pattern that I observe in those cases for which I have information for both years. The majority of the few cases for which the criterium described above does not apply have the main shareholder with less than 30% of the stake. For this cases, I assume that the company is "widely held" and that the second largest owner has 5% of the stake.

Proxy for y : I use corruption perception indexes to analyze the impact of ownership on y . As other scholars pointed out, the use of subjective measures of governmental corruption has both advantages and disadvantages. Two of the main sources of concern related to the work with not objective data stem on the possibility that the persons answering the survey do not share the same cardinal rankings, or that the latter ones are not uniform, in the sense for example, that a change in corruption from 4 to 5 is different from a change in corruption from 6 to 7. On the other hand, objective data, may be affected by different legal criteria that countries use to categorize a situation as a corruption event. There is also another argument in favor of using these type of measures which is related to the fact that even though

the rankings are constructed with different methodologies, which use complementary inputs, they turn out to be highly correlated among themselves. Thus, the consistency of such ratings across time period, source, and method of construction, reduces the risk of being analyzing the quirks or guesses of individuals.

From the available indicators of governmental corruption at country level, I use as the main measure of corruption the one provided by *International Country Risk Guide* (ICRG), because I think that the concept of corruption modeled in this paper may be more correlated with the concept of corruption measured by this index compared with the ones provided by other indices such as *International Transparency* (CPI). Specifically, the measure reflects to what extent high government officials are likely to demand special payments. In this respect, one can interpret these payments as y , as long as these payments are appropriated by the incumbent in an dishonest manner. The index takes values from 1 to 6 with a value of 1 indicating the highest level of corruption. To facilitate the interpretation of the econometric results, I re-scale monotonically the measure such that higher values indicates now less transparent governments. Since the variable is monthly available, I use the annual average as the indicator of corruption in a particular year. Table 3 shows means, standard deviations, maxima, and minima of the variables described before.

4.2 Empirical Estimates

The purpose of this section is to explore empirically the channels through which ownership affects corruption. In this regard, the main focus of the analysis is to provide suggestive evidence of the theoretical model, as well as of the implications that it delivers: (i) existence of a negative *owner effect*, (ii) existence of a positive *contest-for-control effect*, (iii) existence of a second order tunneling problem.

According to the model, increments in the ownership stake of the largest shareholder of any media firm decrease corruption through the *owner effect* in a magnitude proportional to π_r . Therefore, taking into account that in order to silence the national market a corrupt incumbent has to silence the three national papers, as partial silencing is a dominated strategy, I introduce the following term $\sum_{j=1}^3 \alpha_{1ji} \pi_{ri}$ as an explanatory variable in the estimation of the determinants of corruption at country level. Thus, I test the existence

of the *owner effect* through coefficient δ_{OE} in the estimation of equation (9). Evidence in support of the theoretical model requires that δ_{OE} be statistically significant and negative.

To test the existence of the *contest-for-control effect*, I analyze how the contestability of the main shareholder's voting power affect corruption in equilibrium. According to the model, when large shareholders compete for corporate control, the main owner wins the contest, and he promises a compensation for misreporting equal to $x_{1ji}\Pi = (mks_r - \frac{(\alpha_{1ji}-\alpha_{2ji})}{(1-\alpha_{1ji}-\alpha_{2ji})})\Pi$, where $\frac{(\alpha_{1ji}-\alpha_{2ji})}{(1-\alpha_{1ji}-\alpha_{2ji})}$ captures the contestability of shareholder 1's voting rights normalized by the free float. Due to the presence of a second order tunneling problem, a lower contestability decreases the amount that the largest blockholder has to pay to minority owners and thereby increases corruption in equilibrium. Therefore, to test the existence of this effect I introduces the term $\sum_{j=1}^3(\alpha_{1ji} - \alpha_{2ji})\Pi_i$ as an explanatory variable in the estimation of the determinants of corruption at country level. Evidence in favor of this effect requires that coefficient δ_{CCE} in the estimation of equation (9) be statistically significant and positive. Thus, to test the theoretical model, I estimate the following econometric model:

$$Corr_{it} = \delta_i + \delta_{OE} \sum_{j=1}^3 \alpha_{1jit} \pi_{rit} + \delta_{CCE} \sum_{j=1}^3 (\alpha_{1jit} - \alpha_{2jit}) \Pi_{it} + \quad (10)$$

$$+ \delta_3 \left(\sum_{j=1}^3 \alpha_{1jit} \right) + \delta_4 \left(\sum_{j=1}^3 \alpha_{2jit} \right) + \delta_5 \pi_{rit} + \delta_6 \Pi_{it} + \delta_7 Z_{it} + \delta_t + \varepsilon_{it}$$

where subscript- i stands for country- i and Z for a vector of control variables that includes log value of the GDP per capita, openness to trade, democracy, voice & accountability, regulatory quality, rule of law, political stability & absence of violence indices, as well as a dummy variable that takes value 1 if the top four newspapers of a country have more than 50% of the market. I control for British rule, British colonies, federal state, and protestant traditions through fixed-effects.

The set of controls takes into considerations previous findings in the corruption literature, such as the ones provided by Ades and Di Tella[1], La Porta et al.[19], Triesman[27], and Besley and Prat[7]. More specifically, Ades and Di Tella[1] present the first empirical study of the causes of corruption across countries. The authors find that corruption is higher in countries

where domestic firms are sheltered from foreign competition, by natural or policy induced barriers to trade, and where the antitrust regulations are not effective in preventing anticompetitive practices. In addition, La Porta et al.[19] find that countries with Protestant traditions and more developed economies, have higher quality governments and lower levels of perceived corruption. Lastly, Triesman[27] shows that federal states are more corrupt than unitary ones, and that long periods of exposure to democracy delivers lower corruption. I include other controls such as voice & accountability, rule of law, and political stability, which may be correlated with corruption as well as with ownership concentration. Finally, variables $(\sum_{j=1}^3 \alpha_{1jit})$, $(\sum_{j=1}^3 \alpha_{2jit})$, π_{rit} , and Π_{it} , are introduced in the model to be sure that the coefficients of interest are capturing the effect I want to test, instead of reflecting the impact of one of these variables if they are omitted. The regression results are reported in the following table

Table 3: Testing the Model I

<i>CORR</i>	<i>ICRG</i>	<i>CPI</i>
<i>OE</i>	-0.710	-0.423
	[0.340] **	[0.193] **
<i>CCE</i>	0.159	0.077
	[0.069] **	[0.038] **
<i>FE</i>	<i>Yes</i>	<i>Yes</i>
<i>TE</i>	<i>Yes</i>	<i>Yes</i>
<i>obs</i>	74	74
<i>R</i> ²	0.0508	0.059

Note: included control variables: GDP, openness, democracy, reg. quality, voice and accountability, pol. stab, industry profits. *: sig. at 10%; **: sig. at 5%; ***: sig. at 1%.

The results of column (1) and (2) confirm the predictions of the model. There is a negative owner effect, that discourages corruption, and a positive contest-for-corporate control effect, that enhances it. Both effects are statistically significant at 5% level, and the evidence is robust to the use of more than one measure of corruption.

According to column (1), a 10% increases in α_{1ji} reduces, through the owner effect, the corruption index of country-*i* in $0.071\pi_r$ units. The same

increment raises, through the contest effect, the index in 0.016Π points. The evidence that δ_{CCE} is positive indicates also the presence of a second order tunneling problem, where the resources expropriated to minority owners by a less contestable largest stake-holder reduce the cost to silence the media, and thereby increases corruption in equilibrium. Even though δ_{OE} is larger than δ_{CCE} , this does not mean that the owner-effect dominates the contest-for-control effect. It could be possible that coefficient δ_3 be capturing part of the last effect, reflecting the fact that increments in the size of the main shareholder's stake reduce the fraction of shares held by minority shareholders, and therefore the compensation the largest owner has to pay when the corruption story is not published. In the following section I make robustness checks of these results.

It could be argued that δ_{OE} and δ_{CCE} are capturing the effect of changes in market size instead of reflecting the impact of variations in the ownership structure of the firms. To address this issue, I re-estimate equation (10) assuming that π and Π are constant when included in the terms that capture the impact of the owner and contest effects. Thus, the estimated model is as follows:

$$Corr_{it} = \delta_i + \delta_{OE} \sum_{j=1}^3 \alpha_{1jit} \pi_{ri} + \delta_{CCE} \sum_{j=1}^3 (\alpha_{1jit} - \alpha_{2jit}) \Pi_i + \quad (11)$$

$$+ \delta_3 \left(\sum_{j=1}^3 \alpha_{1jit} \right) + \delta_4 \left(\sum_{j=1}^3 \alpha_{2jit} \right) + \delta_5 \pi_{rit} + \delta_6 \Pi_{it} + \delta_7 Z_{it} + \delta_t + \varepsilon_{it}$$

Table 4 shows that the empirical findings do not change when controlling for variations in the size of the market. The only difference between the results of Table 3 and 4 relies on the absolute values of the coefficients, which in the last case are lower than in the previous one.

4.2.1 Reverse causality

A potential source of concern regarding the estimation of the previous econometric models is the reverse causality problem i.e. rather than identifying the effect of ownership concentration on corruption, one may be identifying the effect of corruption on ownership structure. This problem can be solved using instrumental variables i.e. variables that have no direct effect on corruption

Table 4: Testing the Model II

<i>CORR</i>	<i>ICRG</i>	<i>CPI</i>
<i>OE</i>	-0.634 [0.305] **	-0.407 [0.173] **
<i>CCE</i>	0.127 [0.056] **	0.066 [0.030] **
<i>FE</i>	<i>Yes</i>	<i>Yes</i>
<i>TE</i>	<i>Yes</i>	<i>Yes</i>
<i>obs</i>	74	74
<i>R</i> ²	0.0413	0.005

Note: included control variables: GDP, openness, democracy, reg. quality, voice and accountability, pol. stab, industry profits. *: sig. at 10%; **: sig. at 5%;***:sig. at 1%.

and they are highly correlated with the degree of ownership concentration of media firms. To analyze if the ownership structure of a media firm is an endogenous variable, I perform the Hausman[15] test for endogeneity.

To conduct the Hausman[15] test, it is necessary to find an instrument for the endogenous variable, in this case, the size of the main shareholder's stock. According to Staiger and Stock's [24] work, the estimated coefficients of the second stage have acceptable properties if the F statistic of the first stage is larger than 10. I apply this criterium and I find that the index of rule of law index (RLI) is a good instrument of variable $(\sum_{j=1}^3 \alpha_{1ji})$. Therefore, I instrument the owner effect with variable $RLI\pi_{ir}$. The F statistic of the first stage is 16 when the endogenous variable is $(\sum_{j=1}^3 \alpha_{1ji})$ and 129 when the endogenous variable is the *owner effect*. Finally, I perform the Hausman test and I do not find evidence supporting the endogeneity assumption. The p-value associated to the null hypothesis of exogeneity is equal to 0.463. Thereby, reverse causality is not a problem in this sample.

4.2.2 Competition or Collusion among Large Shareholders?

The last empirical evidence I provide in support of the model is related to the hypothesis that large shareholders compete for corporate control, instead of colluding, at the time to determine who controls the media. To test the

hypothesis that a coalition is formed, against the alternative on competition, I estimate a new model under the assumption that a controlling group is constituted to run the firm. When large shareholders collude, the contest-for-control effect disappears, and corruption decreases as the coalition's size raises. Therefore I estimate the following model:

$$Corr_{it} = \delta_i + \delta_{OE} \sum_{j=1}^3 \alpha_{jit}^{Coal} \pi_{rit} + \delta_1 \left(\sum_{j=1}^3 \alpha_{jit}^{Coal} \right) + \delta_2 \pi_{rit} + \delta_3 Z_{it} + \delta_t + \varepsilon_{it} \quad (12)$$

where α_{ji}^{Coal} stands for the size of the coalition formed in outlet- j from country- i . Thus, if the ownership structure of a media company is composed by a majority shareholder, this variable reflects the size of his stake. Otherwise, it captures the proportion of shares that the two largest owners have, as long as they own together more than 50% of the firm, or the smallest proportion of cash flow needed to get control (50%), if the stake of the top two owners is not enough to reach a majority. For the last case, I follow Bennedsen and Wolfenzon[4], who analyze theoretically the balance of power in closely held corporations. The authors show that the coalition with the smallest cash flow needed to seize control is the one that in equilibrium command a firm, since this coalition has the largest group of shareholders from whom to expropriate. The following table presents the results.

Table 5: Collusion Hypothesis

<i>CORR</i>	<i>ICRG</i>	<i>CPI</i>
<i>OE</i>	-0.033	-0.006
<i>FE</i>	<i>Yes</i>	<i>Yes</i>
<i>TE</i>	<i>Yes</i>	<i>Yes</i>
<i>obs</i>	74	74
<i>R</i> ²	0.021	0.027

*: sig. at 10%; **: sig. at 5%; ***: sig. at 1%.

Table 6 shows that there is no empirical evidence of the existence of the owner-effect under the assumption that large shareholders collude at the time to determine who controls a media firm. The coefficient δ_{OE} is negative, but it is not statistically significant to explain corruption. This result is observed in both regressions, the one that use the index provided by *ICRG*, as well as the one that considers the *CPI* measure.

5 Conclusion

This paper explores, both from the theoretical and empirical point of view the relationship between corruption in the public sector and the degree of ownership concentration of media firms. In doing so, it introduces in the analysis corporate governance aspects of media firms, identifying thereby the channels through which concentration affect corruption. The theoretical and empirical results have important implications for the debate on media regulation, as well as for the design of institutions to promote accountability and to curb corruption in the public sector. In effect, they show that conventional prescriptions on ownership concentration may not be appropriate when it comes to an industry such as media. This is because policies designed to promote the independence of the sector must take into account not only economic welfare considerations, but also accountability effects. Regarding this issue, the paper shows that ownership concentration may not damage neither press freedom, nor a transparent administration of the public funds. This of course stands in sharp contrast with the conventional wisdom, and constitutes one of the main contributions of the present work. The paper also shows that ownership structures as the ones that are commonly observed, with two large shareholders and one of them with a majority of the firm, have a more negative impact on corruption than ownership structures with only one or many small owners. Finally, an important extension that this paper does not cover and that I have left for future work is related to the impact of media cross-ownership on corruption.

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6 Appendix: Proofs of Results

Proof of Proposition 1

The structure of the proof follows Besley and Prat [7]. For the equilibrium of the corporate game I follow Bloch and Hege [8].

The unique pure-strategy equilibrium is characterized as follows:

1. Voters vote for the challenger if they know the incumbent's type is b , and re-elect the incumbent otherwise.
2. Manager- i accepts t if and only if $t \geq [\alpha_i m k s_r + (1 - \alpha_i) x_i^*] \Pi$, with $i = 1, 2$.
3. The incumbent offers $t = [\alpha_i m k s_r + (1 - \alpha_i) x_i^*] \Pi$ if: (a) manager- i observes the bad signal; (b) $r + v(1) \geq t$.
4. In the first period, $y = 1$. In the second period, the equilibrium value of y satisfies the following condition: $v'(y) - \varphi'(y) (r + v(1) - \max(0, r + v(1) - [\alpha_i m k s_r + (1 - \alpha_i) x_i^*] \Pi)) = 0$, where i is the media manager.
5. If $\alpha_1 \geq 0.5$, shareholder 1 proposes $x_1^* = 0$ and becomes the manager of the outlet. If $\alpha_1 < 0.5$, shareholder 1 proposes $x_1^* = m k s_r - \frac{(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)}$, shareholder 2 proposes $x_2^* = m k s_r$, and the largest owners seizes control.

To see that voters do not play weakly dominated strategies, think in their behavior. The only information voters receive is through the media. Kicking out the incumbent when media report that the incumbent's type is b is a strictly dominant strategy. Then, what remains to be proved is that they do not kicked out the incumbent when there is no report. If there is no information about the incumbent, voters do not buy news, but they up-date their believes. The posterior about the fact that the incumbent is a bad politician is as follows:

$$P(\theta = b \mid a = nr) = \frac{P(\theta = b)P(a = nr \mid \theta = b)}{P(\theta = g)P(a = nr \mid \theta = g) + P(\theta = b)P(a = nr \mid \theta = b)}$$

$$P(\theta = b \mid a = nr) = \frac{\gamma [1 - \varphi(y)k]}{(1 - \gamma) + \gamma [1 - \varphi(y)k]}$$

where $k = P(a = r \mid \theta = b)$ stands for the strategy of the manager, $a \in \{r, nr\}$ for an action available to him, r for reporting, and nr for not reporting. Since $P(\theta = b \mid a = nr) < \gamma$ for every value of $k \in [0, 1]$ and $\varphi(y)$, the expected utility of re-electing the incumbent is higher than the one of voting the challenger. Thus voters re-elect the incumbent if they do not observe a report about him.

Now, consider the interaction between the incumbent and the manager. If manager- i accepts to suppress the bad news, he receives a payoff $t - (1 - \alpha_i)x_i^*\Pi$. If manager- i makes the report, he yields $\alpha_i mks_r\Pi$. Thus, manager- i accepts t if and only if $t \geq [\alpha_i mks_r + (1 - \alpha_i)x_i^*\Pi]$. Then, a bad incumbent finds profitable to silence the manager if and only if the benefits he obtains from re-election are at least equal to the cost he has to pay to win the political competition i.e. $r + v(1) \geq [\alpha_i mks_r + (1 - \alpha_i)x_i^*\Pi]$.

Since any elected politician will not be removed from office in the second period, it is clear that if the incumbent is re-elected y in the second period is equal to 1. Then, in the first period, the incumbent chooses y in order to maximize the following expected utility:

$$v(y) + (1 - \varphi(y))(r + v(1)) + \varphi(y) (\max(0, r + v(1) - t))$$

subject to

$$t = [\alpha_i mks_r + (1 - \alpha_i)x_i^*\Pi]$$

which delivers the following F.O.C:

$$v'(y) - \varphi'(y)(r + v(1)) + \varphi'(y) \max(0, r + v(1) - t) = 0$$

Now, consider the contest for corporate control. Since voting is costly, it is a dominant strategy for small shareholders not to participate in the meeting when their preferences agree with those of the largest shareholder. Thus, the only situation where the votes of small shareholders matter is when they favor the dividend plan of the second largest owner. Shareholder 2 wins the contest if and only if he attracts the votes of a fraction at least equal to $\frac{\alpha_1 - \alpha_2}{1 - \alpha_1 - \alpha_2}$ of small shareholders, which means that a proportion equal to that of minority owners has to find $x_2\Pi - \kappa\Pi \geq x_1\Pi$. Since κ is uniformly distributed on $[0, 1]$, the condition for shareholder 2 to seize control is the following:

$$x_1 \leq x_2 - \frac{\alpha_1 - \alpha_2}{(1 - \alpha_1 - \alpha_2)} \quad (13)$$

To see that the equilibrium involves a pair of dividend-plans $(x_1^*, x_2^*) = (mks_r - \frac{(\alpha_1 - \alpha_2)}{(mks_r - \alpha_1 - \alpha_2)}, mks_r)$ when $\alpha_1 < 0.5$, consider Figure VIII.

[Insert Figure VIII about here]

Using condition (17), it is possible to divide the plane into two regions. Region A , where shareholder 1 becomes the manager of the outlet, and region B where shareholder 2 does. I first claim that there cannot be an equilibrium that belongs to region B . To see this notice that, whenever $x_1 = mks_r$, shareholder 1 becomes the manager. Hence, for any point in region B , shareholder 1 has a profitable deviation. Now consider a point in region A , with $x_1 \leq x_1^*$. As $x_1 \leq x_1^*$ and the point belongs to region A , it must be that $x_2 > 0$. By choosing $x_2 = mks_r$, shareholder 2 wins the contest. Hence, for any point in that region, shareholder 2 has a profitable deviation. Finally, consider a point in region A , with $x_2 > 0$ and $x_1 > x_1^*$. Since shareholder 1's utility is decreasing in x_1 , his promise in equilibrium must be the minimal that guarantees him to win the control. Therefore, the only possible equilibrium is the following: $(x_1^*, x_2^*) = (mks_r - \frac{(\alpha_1 - \alpha_2)}{((1 - \alpha_1 - \alpha_2))}, mks_r)$. The case $\alpha_1 \geq 0.5$ is trivial and for this reason I omit the proof.

Proof of Proposition 2

The proof is structured as follows: First, I analyze the function in the interval $[0.5, 1]$. Second, I characterize the function in the interval $[\underline{\alpha}1, 0.5)$, which requires two intermediate proofs: (i) the contest for control effect dominates the owner effect; (ii) under the constraints about the ownership structure there is only one value for the threshold $\bar{\alpha}_1$. Third, I study at which value of α_1 the function achieves its maximum. Fourth, I analyze the continuity of the function.

Consider the case in which α_1 belongs to the interval $[0.5, 1]$. It is clear that at $\hat{\alpha}_1$ the incumbent is indifferent between silencing or not the media. However, he chooses to suppress the bad news if $\alpha_1 \leq \hat{\alpha}_1$, and not to do that otherwise. Thus, if $\hat{\alpha}_1 \geq 1$, the incumbent silences the media, whatever the value of α_1 in the interval $[0.5, 1]$. The function is decreasing and concave according to the following derivatives:

$$\frac{\partial y}{\partial \alpha_1} = \frac{-\varphi'(y) m k s_r \Pi}{[-(v''(y) - \varphi''(y)t)]} < 0 \quad (14)$$

$$\frac{\partial \left(\frac{\partial y}{\partial \alpha_1} \right)}{\partial \alpha_1} = \frac{\varphi'(y) \varphi''(y) (m k s_r \Pi)^2}{[-(v''(y) - \varphi''(y)t)]^2} > 0 \quad (15)$$

If $0.5 \leq \hat{\alpha}_1 < 1$, the incumbent silences media as long as $\alpha_1 \in [0.5, \hat{\alpha}_1]$, because the benefits of winning the re-election exceeds its costs. The function exhibits the same properties as before. However, if $\alpha_1 \in [\hat{\alpha}_1, 1]$, media is not silenced, and corruption is independent of the ownership structure of media firms. Finally, if $\hat{\alpha}_1 < 0.5$ the incumbent does not silence the media and y is constant along the interval $[0.5, 1]$.

Consider the case in which α_1 belongs to the interval $[\underline{\alpha}_1, 0.5)$. (i) In equilibrium, the cost for the incumbent to silence the media is:

$$- \left[\alpha_1 m k s_r + (1 - \alpha_1) \left(m k s_r - \frac{(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)} \right) \right] \Pi \quad (16)$$

which is the sum of the owner and contest effects. The direction of the impact of changes in α_1 on y is given by the sign of the derivative of this expression with respect to the α_1 . If the contest effects dominates, the derivative is positive. Specifically, it can be written as:

$$\frac{\partial(-t)}{\partial \alpha_1} = \left\{ \frac{(1 - 2\alpha_1 - \alpha_2)(1 - \alpha_1 - \alpha_2) + (1 - \alpha_1)(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)^2} \right\} \quad (17)$$

adding and subtracting α_2 in the first parenthesis of the numerator allows to rewrite the expression as follows:

$$= \left\{ \frac{((1 - \alpha_1 - \alpha_2) - \alpha_1 + 2\alpha_2)(1 - \alpha_1 - \alpha_2) + (1 - \alpha_1)(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)^2} \right\} \quad (18)$$

applying the distributive rule in the first term and rearranging the expression it follows that:

$$= \left\{ \frac{(1 - \alpha_1 - \alpha_2)^2 + \alpha_2(1 - \alpha_1 - \alpha_2) + (\alpha_1 - \alpha_2)\alpha_2}{(1 - \alpha_1 - \alpha_2)^2} \right\} \quad (19)$$

$$= \left\{ 1 + \frac{\alpha_2(1 - 2\alpha_2)}{(1 - \alpha_1 - \alpha_2)^2} \right\} > 0 \quad (20)$$

Hence, the contest effects dominates and more concentration delivers more corruption.

(ii) Consider the condition that defines the threshold $\bar{\alpha}_1$:

$$mks_r - \frac{(1 - \alpha_1)(\alpha_1 - \alpha_2)}{(1 - \alpha_1 - \alpha_2)} \equiv \frac{r + v(1)}{\Pi} \quad (21)$$

Since this condition is a quadratic form, there are two possible values for the threshold $\bar{\alpha}_1$. In what follows, I prove that only one value fulfills this condition when α_1 and α_2 are restricted as follows: (i) $\alpha_1 + \alpha_2 < 1$; (ii) $\alpha_1 > \alpha_2$.

Suppose there are two roots that fulfill all the requirements. Taking the derivative of the LHS of expression (25) w.r.t α_1 , and using restrictions (i) and (ii), it is straightforward to show that the LHS decreases as α_1 raises. This implies that to the right of each root the function takes lower values. But since the LHS is a continuous function, this can happen only if there is another value of α_1 at which the $LHS = \frac{r+v(1)}{\Pi}$. Of course, this can not be possible and involves a contradiction.

Having proved (i) and (ii), I will characterized the corruption function in the interval $[\underline{\alpha}_1, 0.5)$. It is clear that at $\bar{\alpha}_1$ the incumbent is indifferent between silencing or not the media. However, according to the result of equation (24), he chooses to suppress the bad news if $\alpha_1 \geq \bar{\alpha}_1$, and not to do that otherwise. Thus, if $\bar{\alpha}_1 < \underline{\alpha}_1$, the incumbent silences the media for any value of α_1 in the interval $[\underline{\alpha}_1, 0.5)$. The function is increasing and convex according to the following derivatives:

$$\frac{\partial y}{\partial \alpha_1} = \frac{-\varphi'(y) \frac{\partial t}{\partial \alpha_1}}{[-(v''(y) - \varphi''(y)t)]} > 0 \quad (22)$$

$$\frac{\partial \left(\frac{\partial y}{\partial \alpha_1} \right)}{\partial \alpha_1} = \frac{\varphi'(y) \frac{[(1-2\alpha_2)\alpha_2]}{(1-\alpha_1-\alpha_2)} [-(v''(y) - \varphi''(y)t)] + \varphi'(y) \left(\frac{\partial t}{\partial \alpha_1} \right)^2 \varphi''}{[-(v''(y) - \varphi''(y)t)]^2} > 0 \quad (23)$$

Suppose now, that $\underline{\alpha}_1 \leq \bar{\alpha}_1 < 0.5$. It is straightforward to show that the incumbent silences media if $\alpha_1 \in [\bar{\alpha}_1, 0.5)$, and decides not to do that for other values. Finally, if $0.5 < \bar{\alpha}_1$, corruption is independent of the ownership structure and constant in the interval $[\underline{\alpha}_1, 0.5)$.

To analyze the point at which the function achieves its maximum, and to determine whether the function is or not continuous, which clearly is in doubt at $\alpha_1 = 0.5$, I combine the analysis carried out in the previous paragraphs, and I consider the following three cases: (i) $\bar{\alpha}_1 < 0.5 \leq \hat{\alpha}_1$; (ii) $0.5 \leq \bar{\alpha}_1, \hat{\alpha}_1$; (iii) $\bar{\alpha}_1, \hat{\alpha}_1 \leq 0.5$.

In case (i) the function increases from $\bar{\alpha}_1$ until before reaching 0.5. In the limit to this point, the cost for the incumbent to silence the media is higher than in the situation in which there is a majority shareholder with 50% of the capital of the firm. This happens because in the first situation, the incumbent has to compensate also minority shareholders. This extra-cost increases the equilibrium value of the bribe and makes corruption lower than in the other case. Since corruption is decreasing from 0.5 until $\hat{\alpha}_1$, the function achieves its maximum at 0.5. Because the limit of the function does not exist at this point, the function is not continuous.

Case (ii) is similar to the previous one, with the difference that the incumbent does not silence the media when there is a majority shareholder running the company. Then, taking into account that y increases from $\bar{\alpha}_1$ until before reaching 0.5, that it is constant from $\alpha_1 = 0.5$, that $v'' < 0$, and that $\varphi'' > 0$, it is straightforward to show from the F.O.C of the incumbent's problem that the maximum of the function is achieved at the limit of 0.5 (from the left) if $r + v(1) > (mks_r - 0.5)\Pi$ or at any point in $[0.5, 1]$ if the benefits from re-election exceeds the cost of silencing the media when there is a larger shareholder.

In case (iii), the function is constant for all the values of α_1 lower than 0.5, and decreasing since 0.5 to $\hat{\alpha}_1$. Thus, the highest value is achieved either at $\alpha_1 = 0.5$, or at any point below that. The first case occurs when $r + v(1) > 0.5mks_r\Pi$, since $\frac{v'(y^s)}{\varphi'(y^s)}$ must be in equilibrium lower than $\frac{v'(y^{ns})}{\varphi'(y^{ns})}$, where y^s stands for corruption when the incumbent silences the media, and y^{ns} when he does not. Then, if $r + v(1) \leq 0.5mks_r\Pi$ the maximum of the function is achieved at any point in the interval $[\underline{\alpha}_1, 0.5)$. Clearly, the function is continuous if at 0.5 the cost of silencing a shareholder with 50% of the stake is equal to the benefits from re-election.

Proof of Lemma 1

This proof is trivial and because of this reason I omit it.

Proof of Proposition 3

This proof resembles that of Proposition 2.

Table 6: Summary Statistics

<i>Var</i>	1999				2003			
	<i>Mean</i>	<i>Std.D</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std.D</i>	<i>Min</i>	<i>Max</i>
α_{11}	0.651	0.285	0.26	1	0.687	0.314	0.11	1
α_{12}	0.611	0.290	0.01	1	0.591	0.298	0.09	1
α_{13}	0.600	0.287	0.01	1	0.681	0.348	0.07	1
α_{14}	0.696	0.285	0.12	1	0.741	0.295	0.14	1
α_{21}	0.07	0.118	0	0.5	0.099	0.143	0	0.55
α_{22}	0.088	0.116	0	0.5	0.129	0.143	0	0.5
α_{23}	0.058	0.094	0	0.49	0.075	0.115	0	0.5
α_{24}	0.064	0.164	0	0.14	0.084	0.150	0	0.55
mks_1	0.198	0.106	0.03	0.5	0.244	0.143	0.03	0.64
mks_{12}	0.378	0.206	0.06	1	0.357	0.190	0.06	1
mks_{123}	0.461	0.209	0.08	0.91	0.444	0.195	0.08	0.85
mks_{1234}	0.538	0.227	0.1	0.97	0.523	0.224	0.1	0.93
Π	4713	10073	60	56000	4828	10148	30	57123
<i>ICRG</i>	2.949	1.367	1	6	3.606	1.288	1	6
<i>CPI</i>	5.027	2.517	1	9	5.132	2.490	1.3	8.6

Source: World Bank, Amadeus Data Base, European Media Institute, Media Ownership and its Impact on Media Independence and Pluralism, Web pages of media companies, Polity IV Data Base, Center for International Comparisons, etc. Variables in original scale. Variables GDPpc and Π in thousands. Number of observations per year: 37.

Appendix

Country	Source
ALBANIA	South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership
ARGENTINA	Djankov et al.(2003) www.grupoclarin.com http://www.comunica.org/chasqui/alonsa75.htm http://www.ivc.com.ar
AUSTRALIA	Djankov et al.(2003) http://oldwww.roymorgan.com/pressreleases www.fxj.com.au www.newscorp.com
AUSTRIA	Djankov et al.(2003) http://www.oeak.at The European Institute for Media www.styria.com Amadeus Data Set
BRAZIL	Djankov et al.(2003) http://www.anj.org.br http://www.infoamerica.org/grupos/folha02.htm
CANADA	Djankov et al.(2003) www.bellglobemedia.ca www.torstar.com http://www.cna-acj.ca/client
COLOMBIA	Djankov et al.(2003) http://www.infoamerica.org/grupos
CROACIA	Djankov et al.(2003) http://www.project-syndicate.org South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership
CZECH REPUBLIC	Djankov et al.(2003) South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership
DENMARK	Djankov et al.(2003) Amadeus Data Set The European Institute for Media http://news.bbc.co.uk/1/hi/world/europe/ http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf
ESTONIA	Djankov et al.(2003) South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf
FINLAND	Djankov et al.(2003) The European Institute for Media http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf http://www.sanomawsoy.fi/investors Amadeus Data Set
FRANCE	Djankov et al.(2003) The European Institute for Media http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf http://www.esj.lille.fr
GERMANY	Djankov et al.(2003) The European Institute for Media http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf Amadeus Data Set www.kek-online.de
GREECE	Djankov et al.(2003) The European Institute for Media http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf Amadeus Data Set
HUNGARY	Djankov et al.(2003) South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership http://www.matesz.hu http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf
INDIA	Djankov et al.(2003) <i>Who Owns the Media? Global Trends and Local Resistances Edited by Pradip Thomas and Zahrom Nain</i>

ITALY	Djankov et al.(2003) http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf The European Institute for Media www.mediamonitor.nl
LATVIA	Djankov et al.(2003) South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf Amadeus Data Set www.bonnier http://www.baltkurs.com/english/archive/01/port.htm
LITHUANIA	Djankov et al.(2003) South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf The European Institute for Media
MALAWI	Djankov et al.(2003) Media institute for South Africa. http://www.misa.org/annual
MEXICO	Djankov et al.(2003) Instituto verificador de circulares
NETHERLAND	Djankov et al.(2003) The European Institute for Media www.mediamonitor.nl cvdM 2003
NEW ZELAND	Djankov et al.(2003) http://npa.co.nz/statistics.php hilary@npa.co.nz
NIGERIA	Djankov et al.(2003) http://www.wacc.org.uk/index.php/wacc/regional_associations/africa/african_articles
NORWAY	Djankov et al.(2003) http://www.project-syndicate.org/member_papers/n
PERU	Djankov et al.(2003) http://www.infoamerica.org/grupos
PORTUGAL	Djankov et al.(2003) The European Institute for Media Amadeus Data Set
ROMANIA	Djankov et al.(2003) South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership
SINGAPORE	Djankov et al.(2003) http://news.bbc.co.uk/2/hi/asia-pacific/country_profiles/1143240.stm
SLOVAK	Djankov et al.(2003) South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership
SLOVENIA	Djankov et al.(2003) South East European Network for Professionalisation of the Media (SEENPM). http://www.mirovni-institut.si/media_ownership
SPAIN	Djankov et al.(2003) The European Institute for Media http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf
SWEEDEN	Djankov et al.(2003) The European Institute for Media http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf
SWITZERLAND	Djankov et al.(2003) The European Institute for Media http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf
UNITED KINGDOM	Djankov et al.(2003) The European Institute for Media http://www.novinar.com/upload/EIM-EP-REPORT-2004.pdf Amadeus Data Set
UNITED STATES	Djankov et al.(2003) http://www.dowjones.com http://www.gannett.com webpages companies

Variable name	Description and Source
ICRG	Corruption in government index. Measures to what extent "high government officials are likely to demand special payments" and "illegal payments are generally expected through lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessment, policy protection, or loans." Scale from 1 to 6. Lower values indicate less corruption. Annual average for the years 1999 and 2003. Source: International Country Risk Guide (ICRG). http://www.prsgroup.com/
CPI	Corruption perceptions index. It is a composite index that measures the frequency and size of bribes paid in a country and the damage of business people due to corruption in the public sector. Scale from 1 to 10. Low values indicate less corruption. Annually available. Source: International Transparency. http://www.transparency.org
Openness	Total trade (exports plus imports) as a percentage of GDP. Source: Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 6.2, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania. http://pwt.econ.upenn.edu/
Log RGDP per capita	RGDPL is obtained by adding up consumption, investment, government and exports, and subtracting imports in any given year. The given year components are obtained by extrapolating the 1996 values in international dollars from the Geary aggregation using national growth rates. It is a fixed base index where the reference year is 1996. Source: Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 6.2, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania. http://pwt.econ.upenn.edu/
Literacy	Percentage of population with more than 15 years old who are literate in 2002. Source: http://www.worldmapper.org . Data from United Nations Development Programme (UNDP) Human Development Report 2004 Table 11. Source: UNESCO Institute for Statistics (United Nations Educational, Scientific and Cultural Organization) 2004.
Regulatory Quality	Index that identifies "the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development." Biannually available. Years used: 1998 and 2002. Source: Kaufmann et al. (2005). World Bank
Voice & Accountability	Index that identifies "the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and freedom of association, and a free media". Biannually available. Years used: 1998 and 2002. Source : Kaufmann et al. (2005). World Bank
Rule of Law	Measuring the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence. The index ranges from -2.5 to 2.5. High values indicate better rule of law. Source: World Bank.
Political Stability	Measuring perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism. The index ranges from -2.5 to 2.5. High values indicate more political stability. Source: World Bank.
Democracy	It measures general openness of political institutions. The index takes values from 0-10. Higher values indicate more democracy. Source Polity IV.
Press Freedom	The measure is constructed taking into account the political pressures and controls on media content (including harassment or violence against journalists or facilities, censorship, self-censorship etc). The index ranges from 0-100. Higher values indicate more freedom of the press. Source: Freedom House.
Daily newspaper circulation	Daily circulation per thousands of inhabitants. Source: Data for 1999 from Djankov et al. (2003). Data for the year 2002 from http://www.worldmapper.org . Data for the year 2003 from several sources. See details for each country in the following table.
Strength of Investor Protection	It measures investors' protection. The index range from 0-10. Higher values indicate more protection. Source: Doing Business, World Bank
Easy of Shareholder Suit Index	It measures to the extent to which shareholders can challenge a transaction made by the manager of the firm. The index ranges from 0-10. Higher values indicate more liability of the manager. Source: Doing Business, World Bank