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"Interaction between a Strategic Mass Media Firm and a Government"

Autor: Julián Alberto Batista

Mentor: Mariano Tommasi

Evaluadores: Dr. Enrique Kawamura
Dr. Federico Weinschelbaum
Dr. Osvaldo Meloni

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Interaction between a Strategic Mass Media Firm and a Government*

Julián Alberto Batista†

Universidad de San Andrés

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Abstract

We try to unveil the economic causes behind conflicts arising between Latin American governments and mass media corporations through a theoretical model, which takes into account the fact that Latin American economies tend to be very unstable and the high level of concentration of the mass media markets in the region. The results are not trivial: mass media firms tend to support the Rival rather than the Incumbent when the later is facing a reelection, and the "capture" transfers from the government to the mass media firm will be increasing in the economic instability of the country.

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† jbatista@udesa.edu.ar

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1. Introduction

The influence of the information provided by the mass media on voters and governments' decisions is widely acquainted in the literature[1]. Many authors have already analyzed, both theoretically and empirically, the mechanisms throughout which the mass media firms affect the political process and the results of the interaction. Notwithstanding, despite the growing literature on this field, it continues to be relative new and is still unexplored, and many important questions remain to be answered and significant insights unveiled.

During the last decade, Latin Americans have witnessed many episodes of sustained conflict between their governments and the main mass media corporations, with accusations and attacks from both sides. While this constitutes a widespread phenomenon across the whole continent, it has taken a high visibility in Argentina, Bolivia, Ecuador and Venezuela, due to the magnitude of the conflicts in those countries, were the "war" between the actors is explicitly declared: the mass media firms are strongly slanted, as they focus their information products in news and information that harm the Incumbent's image while favoring the image of the political opponents. On the other hand, the Incumbents use all the legal and policy instruments they have at hand in order to undermine these firms' credibility, market share and capital.

Up to what we know, there is still no scientific literature aimed at explaining the economic rationale behind the aforementioned political and economic phenomenon[2]. That will be the goal of this paper. We will try to unveil the main theoretical economic causes of the conflicts arising between Latin American governments and mass media firms during the last decade. Explaining this phenomenon rigorously will allow us to avoid relying in widely publicized conspiracy theories and look at the actual theoretical causes behind the facts.

In order to achieve our goal we will develop a political economy game that will aim to capture the main characteristics of the relation between mass media firms and the executive branch of the government in a given and simplified political and institutional framework, as well as highlight the channels throughout which the relation materializes. The decision making process

[1] See for example Strömberg (2002)
[2] Besley & Prat (2006) introduce a model of media capture, it is far more general than ours, that is aimed to explain a specific situation.

carried out by the different actors in the model will adjust until they reach the subgame perfect Nash Equilibrium; this is the solution concept that we will use in this model.

We would like our model to replicate as much as possible the economic, political and mass media market conditions that characterize Latin American countries. That is why we will model a significantly concentrated mass media market, with only one big player. Also, economic instability and weak institutional check and balances to the executive actions will be key characteristics of our model.

The model's theoretical results are very significant. Within an institutional framework that allows only one reelection for the head of the executive, when the Incumbent is running for a second period and the mass media firm has to decide its political position[3], it will always endorse the Rival, no matter how dexterous was the Incumbent when performing at office. This is due to the fact that the Rival will be willing to bid higher expected values to capture the media support.

The remainder of the paper is organized as follows. Section two reviews the related literature. Section three introduces the model. Section four examines the equilibrium arising from the model and the main results associated with it. Section five highlights the unanswered questions that the model leaves for future research. Section six concludes.

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[3] In our model mass media firms will only have three options when facing a reelection: supporting the Incumbent, supporting the Rival and staying neutral.

2. Related Literature

The last decade has witnessed a growing interest of economists in the analysis and study of the mass media market and its influence in the political process.

Strömberg (2002) studies the incentives of the media to deliver news to different socio economical groups. The increasing returns to scale technology and advertising financing of media firms induce them to provide more news to large groups, such as tax payer and dispersed consumer interests, and groups that are valuable to advertisers. This news bias alters the trade-off in political competition and therefore introduces a bias in public policy.

Besley & Prat (2006) is the work that our paper resembles the most. This paper provides a theoretical framework to discuss how and when government captures the media and what effect this has on political outcomes. They show that media pluralism provides effective protection against capture, independent ownership reduces capture and media capture affects political outcomes.

Duggan & Martinelli (2010) develop a model a media slant as a systematic filtering of political news that reduces multidimensional politics to the one-dimensional space perceived by voters. In a two candidate election, they show that media favoring the frontrunner will focus on issues unlikely to deliver a surprise, while media favoring the underdog will gamble for resurrection.

Di Tella & Franceschelli (2010) constructs measures of the extent to which the four main newspapers in Argentina report government corruption in their front page during the period 1998-2007 and correlate them with the extent to which each newspaper is a recipient of government advertising. They find that a one standard deviation increase in monthly government advertising is associated with a reduction in the coverage of the government's corruption scandals by 0.31 of a front page per month.

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3. The Model

Government

We begin by assuming that there are two candidates: the Incumbent and the Rival, indexed by *I* and *R* respectively. The Incumbent seeks reelection (legal arrangements in the model allow for only one reelection) and the Rival is trying to win the office for the first time[4]. The office can be interpreted as the head of the executive power, either at a national or a sub national level.

Performing as the head of the executive may involve many tasks, but here, for the sake of simplicity, we will assume that the degree of success in the accomplishment of all these tasks can be added up in the amount x of a public good X_t provided. The amount of this public good enters directly (and positively) in the voters' utility function. So, *ceteris paribus*, the higher the amount of public good provided, the higher is the Incumbent's probability of being reelected, and the lower is the Rival's probability of wining the office[5].

The amount of the public good supplied depends mainly on two factors: the incumbent's ability as a public officer and the realization of an external shock, which constitutes an exogenous phenomenon that cannot be altered by anyone's decisions or actions, not even the incumbent.

Ability and External Shock

We represent the Incumbent and the Rival's ability to run the government with a parameter θ, which can take values from $\theta^{\min}$ to $\theta^{\max}$, with $\theta^{\max} > \theta^{\min} \geq 0$. This ability parameter may be seen as the candidates' skills as public administrators.

We assume that the ability parameter follows a uniform probability distribution for every candidate that may run for office:

$$\theta_i \sim U\left[\theta^{\min}; \theta^{\max}\right], \qquad i = I, R$$

$$E(\theta_i) = \frac{\theta^{\max} + \theta^{\min}}{2}, \qquad i = I, R$$

[4] In this work we will only deal with voting processes that involve a candidate who is looking for reelection. We will not study voting processes where both candidates are looking to win the office for the first time. That is material for further research on the issue.

[5] Note that this model abstracts from ideological issues. We are not claiming that they are unimportant, but they will not be studied here because we are interest in another phenomenon. They will be material for future research on the issue.

$$Var(\theta_i) = \frac{\left(\theta^{\max} - \theta^{\min}\right)^2}{12}, \qquad i = I, R$$

Some of the voters in the economy (we will come back to this later) will be able to observe the Incumbent's ability parameter but nobody will be able to observe the Rival's ability parameter, not even himself. We assume that a candidate's ability as a public administrator can only be revealed when he is in office performing as the head of the executive.

The Economy faces every tenure period an external and exogenous shock that cannot be affected by anyone in the economy, not even the Incumbent. The external shock behavior will be represented with a uniform probability distribution, defined between e_{min} and e_{max}:

$$e_t \sim U\left[e^{min};\ e^{max}\right]$$

$$e^{min} < 0; e^{min} = -e^{max}$$

$$E(e_t) = 0$$

$$Var(e_t) = \frac{\left(e^{max} - e^{min}\right)^2}{12}$$

In this model, the main task of the head of the executive is to provide the population with a public good X_t, that depends both on the incumbent's ability and the external shock according to the following relationship, where causality runs from the variables that are in the right of the equation to the variable in the left:

$$X_t = \theta_i + e_t + a$$

$where\ a > 0$

a is just a positive and constant parameter whose value is high enough in order to keep X_t greater than 0 for any feasible combination of θ_I and e_t values, making X_t strictly positive in the relevant range of analysis. This assumption makes the analysis more intuitive, as it is not straightforward to imagine a negative provision of a public good.

All the information regarding the distribution function of the ability parameter, the distribution function of the external shock and the mechanism through which the amount of public good is determinated is known by every agent in the economy.

Voters

We assume here that there are two types of voters in the economy: informed voters and uniformed voters. Voters are informed or uninformed regarding the incumbent's ability as a public administrator and the actual value of the external shock.

Being able to infer the Incumbent's ability as a public servant or the magnitude of an external perturbation that the economy faces is not a trivial issue for the average citizen; indeed, it is a hopeless task. Trying to do this will imply the voter carrying out several different and very costly activities: looking for relevant data, interpreting the data according to relevant theories and arriving to a comprehensive conclusion. The average citizen, who we assume assigns his limited day time according to an economic rationality criteria, will soon realize the futility of all this efforts, as the relation benefit-cost is extremely poor.

To start with, gathering all the relevant information is an almost impossible task. Firstly, the voter must decide which information is relevant, as there are public data bases of hundreds of variables that can compete for importance. Notwithstanding, assuming that the voter succeeds in the previous task, not all relevant information is available to the public, as some information may be confidential and only some people have access to it. On top of that, looking for the right information involves having some skills that may take time and resources to develop.

Assuming that the voter gets all the relevant information, he must then proceed to interpret it. Due to the complexity of the social phenomena, performing this activity implies being conversant in many disciplines, such as Economics, Politics, Sociology, Law, Anthropology, Psychology, etc. We believe that we won't err if we claim that there is no human being alive that has deep knowledge of all the relevant scientific (and unscientific) theories.

Once the voter has satisfactorily interpreted all the information he must come to a comprehensive conclusion regarding whether or not, taking all things together, he is going to support the incumbent.

The result of this entire job is a well thought and informed vote, which will not affect the overall result of the elections at all, as there are other millions of voters participating in the electoral process, who probably have rationally decided to stay uninformed.

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We believe that our argument is clear: there are not going to be many informed voters in the economy, chiefly if we take in account that there are some firms that sell the relevant information at a convenient price. We will deepen on this issue later on.

Both types of voters can observe the amount of the public good that the incumbent provides $X_t = \theta_I + e_t + a$, but only the informed voters can note the actual values of θ_I and e_t. The uninformed are unable to distinguish the exact reason why X_t takes its effective value. They will only be able to define a range of values for the variables θ_I and e_t that are consistent with their distribution functions and the actual value of X_t. Here we assume that informed voters cannot transmit what they know to uniformed voters[6].

In order to overcome their inability to get information about the incumbent's performance, uninformed voters consume information services provided by different mass media firms, which communicate values for the relevant variables and claim that those are their true actual values, supported on professional ethics. Uninformed voters believe the information they are consuming and vote accordingly.

All types of voters decide their probability of voting the different candidates according to a probabilistic voting function:

$$p^I = \frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}$$

This must be read as the probability that a citizen votes for the incumbent, given that he believes that the Incumbent has an ability parameter θ_I.

On the other hand, the probability that a citizen votes for the Rival given that he believes that the incumbent has an ability parameter θ_I is:

$$p^R = 1 - p^I = 1 - \frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}$$

In this model, participating in the voting process is mandatory and voters cannot use protest votes, they must choose one of the two candidates.

[6] We could also assume that uninformed voters have another source of information which they trust more than the information provided by informed voters.

The mass media firms

Here, we will assume that there are many mass media firms operating in the economy. But only one of the companies is large enough (i.e. it has enough customers) in order to significantly influence the results of the election by manipulating the information it provides to the public, in this case the uninformed voters. From now on, this mass media firm will be called "the strategic mass media firm".

We are not interested in studying here the small mass media firms' behavior as, by assumption, they cannot significantly affect the variables and outcomes we (and the main players of model) are interested in. We will just assume that if we take all the small mass media firms together, in average, they report the actual values for the relevant variables. No matter that, we allow for heterogeneity and individual biases inside the group, with different firms reporting different values for θ_I and e_t[7].

The strategic mass media firm behavior is relevant for us. For the sake of simplicity, the strategic mass media firm will only choose between reporting three values for θ_I (instead of the infinite different values it can potentially report): $\theta_I^{\max f}$, θ_I or $\theta_I^{\min f}$. These different values imply, in that order, "supporting the Incumbent", "being neutral" (reporting what actually happened) and "supporting the Rival"; in this model the strategic mass media firm has only extreme options. It may be the case that the actual θ_I matches $\theta_I^{\max f}$ or $\theta_I^{\min f}$ but, as the ex ante probability of this event is 0, this possibility will be disregarded during the analysis.

Here, we need to explain what does $\theta_I^{\max f}$ and $\theta_I^{\min f}$ mean. In the first place, the "f" stands for feasible. Indeed, the strategic media will not be able to report to the uninformed voters that θ_I took any value between $\theta_I^{\max}$ and $\theta_I^{\min}$. There will be some values that that θ_I cannot take (although they belong to its distribution function), given that the uniformed votes can observe the actual amount of X_t and they can detect inconsistent information. The smaller value that the strategic media can report to the uniformed voters is the maximum between $\theta_I^{\min}$ and $X_t - e_{\max} - a$. The largest value that the strategic media can report to the uniformed voters is the lesser between $\theta_I^{\max}$ and $X_t - e_{\min} - a$.

[7] The difference in behavior could be explained by ideological issues. These mass media firms are not prone to capture as they do not have strategic weight.

Recall that voters in this model vote according to a probabilistic voting function. So, the probability that an uninformed voter votes the Incumbent when the strategic media supports it is:

$$p_{unf}^{I/I} = \frac{\theta_I^{max\,f} - \theta_I^{min}}{\theta_I^{max} - \theta_I^{min}}.$$

The probability that an uninformed voter votes the Rival when the strategic media supports it is:

$$p_{unf}^{R/R} = 1 - p_{des}^{I/R} = 1 - \frac{\theta_I^{min\,f} - \theta_I^{min}}{\theta_I^{max} - \theta_I^{min}}.$$

The probability that an uninformed voter votes the Incumbent when the strategic media supports the Rival is:

$$p_{unf}^{I/R} = \frac{\theta_I^{min\,f} - \theta_I^{min}}{\theta_I^{max} - \theta_I^{min}}.$$

The probability that an uninformed voter votes the Rival when the strategic media supports the Incumbent is:

$$p_{unf}^{R/I} = 1 - p_{des}^{I/I} = 1 - \frac{\theta_I^{max\,f} - \theta_I^{min}}{\theta_I^{max} - \theta_I^{min}}.$$

The probability that an uninformed voter votes the Incumbent when the strategic media stays neutral is:

$$p_{unf}^{I/N} = p_{inf}^{I} = \frac{\theta_I - \theta_I^{min}}{\theta_I^{max} - \theta_I^{min}}.$$

The probability that an uninformed voter votes the Rival when the strategic media stays neutral is:

$$p_{unf}^{R/N} = p_{inf}^{R} = 1 - p_{inf}^{I} = 1 - \frac{\theta_I - \theta_I^{min}}{\theta_I^{max} - \theta_I^{min}}.$$

where p_{inf}^{R} is the probability that an informed voter supports the Incumbent.

Now, we must say something about the composition of the population. Informed voters are the λ of the population, with $\lambda \epsilon (0; 1)$[8] while uniformed voters are the $1 - \lambda$ of the population.

[8] For all what was stated above, we would expect that λ takes values nearer to 0 than to 1

The uninformed voters are divided in two groups: the ones who consume the strategic mass media firm's information services and the ones who consume the information services of another mass media firm.

The uninformed voters that consume the strategic mass media firm's information services are the ρ of the population, with $\rho \epsilon (0; 1 - \lambda]$. So, the uninformed voters that consume an information services provided by a different mass media firm are the $1 - \rho - \lambda$ of the population.

Payment for the strategic media

In this model, the strategic mass media firm's support is an invaluable asset for candidates running for office, as the information regarding the Incumbent's ability provided to voters can be pivotal for the elections outcomes. Candidates will be willing to do what it takes in order to capture this mass media firm. We will allow candidates to make monetary bids to the strategic mass media firm, which will be self enforcing[9] and effective conditional on the triumph of the candidate that the firm supported.

In the real world monetary transfers from the government to mass media companies is a very usual issue. These transfers usually take the form of official propaganda, which is the government paying for time or space in the mass media. Also, if the strategic mass media firm is very large or is part of a business group that has interests in different sectors of the economy, as it is the case of Argentina, the transfers can materialized in the awarding of public tenders for millions of dollars.

If the strategic media supports the candidate who loses the election, then there will be no transfers of resources. Note that it is assumed that no retaliation takes place when the candidate that is not supported by the strategic mass media firm wins the election and the supported candidate loses. The assumption here is that there are still opportunities for mutual beneficial cooperation between the actual incumbent and the strategic media. There will be elections in the future were the incumbent is going to participate, or if he is in his second term in office, he will be supporting a candidate of his own party who would take better care of his political legacy.

[9] We assume that there is an effective one period ahead commitment technology that prevents any deviation from what has been agreed.

When the strategic media decides to stay neutral, its payoff will be zero no matter what happens.

The strategic mass media firm's matrix of payments:

	I Wins	**R Wins**
Support I	τ_I	0
Support R	0	τ_R

where τ_I stand for the Incumbent's bid and τ_R stands fo the Rival's bid.

Before we continue we will introduce some definitions that will prove useful as they will save work in the future.

$q^{I/I}$ is the probability that the incumbent wins the election given that the strategic media supports him:

$$q^{I/I} = (1-\rho)p_{inf}^{I} + \rho p_{unf}^{I/I} = (1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) + \rho\left(\frac{\theta_I^{\max f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)$$

$$= \frac{(1-\rho)\theta_I + \rho\theta_I^{\max f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}$$

$q^{R/I}$ is the probability that the Rival wins the election given that the strategic media supports the incumbent:

$$q^{R/I} = 1 - q^{I/I} = (1-\rho)\left(1 - p_{inf}^{I}\right) + \rho\left(1 - p_{unf}^{I/I}\right)$$

$$= 1 - (1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) - \rho\left(\frac{\theta_I^{\max f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)$$

$$= \frac{\theta_I^{\max} - (1-\rho)\theta_I - \rho\theta_I^{\max f}}{\theta_I^{\max} - \theta_I^{\min}}$$

$q^{R/R}$ is the probability that the rival wins the election given that the strategic media supports him:

$$q^{R/R} = 1 - q^{I/R} = (1-\rho)\left(1 - p_{inf}^{I}\right) + \rho\left(1 - p_{unf}^{I/R}\right)$$

$$= 1 - (1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) - \rho\left(\frac{\theta_I^{\min f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)$$

$$= \frac{\theta_I^{\max} - (1-\rho)\theta_I - \rho\theta_I^{\min f}}{\theta_I^{\max} - \theta_I^{\min}}$$

$q^{I/R}$ is the probability that the incument wins the election given that the strategic media supports the rival:

$$q^{I/R} = (1-\rho)p_{inf}^{I} + \rho p_{unf}^{I/R} = (1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) + \rho\left(\frac{\theta_I^{\min f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)$$

$$= \frac{(1-\rho)\theta_I + \rho\theta_I^{\min f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}$$

$q^{I/N}$ is the probability that the incument wins the election given that the strategic media stays neutral:

$$q^{I/N} = (1-\rho)p_{inf}^{I} + \rho p_{unf}^{I/N} = (1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) + \rho\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) = \left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)$$

$q^{R/N}$ is the probability that the rival wins the election given that the strategic media stays neutral:

$$q^{R/N} = 1 - q^{I/N} = (1-\rho)\left(1 - p_{inf}^{I}\right) + \rho\left(1 - p_{unf}^{I/N}\right)$$

$$= 1 - (1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) - \rho\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) = \frac{\theta_I^{\max} - \theta_I}{\theta_I^{\max} - \theta_I^{\min}}$$

Strategic mass media firm expected payoffs

If we gather together the payments matrix and the probability voting functions we obtain the strategic mass media firm's expected payoffs for its different courses of action.

The strategic mass media firm's expected payoff associated with supporting the incumbent is:

$$q^{I/I}[\tau_I] = \left[\frac{(1-\rho)\theta_I + \rho\theta_I^{\max f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right][\tau_I]$$

The strategic mass media firm's expected payoff associated with supporting the rival is:

$$q^{R/R}[\tau_R] = \left[\frac{\theta_I^{\max} - (1-\rho)\theta_I - \rho\theta_I^{\min f}}{\theta_I^{\max} - \theta_I^{\min}}\right][\tau_R]$$

The strategic mass media firm will be willing to support the Incumbent if:

$$q^{I/I}\tau_I > q^{R/R}\tau_R$$

The interpretation of this equation is straightforward. The larger $q^{I/I}$ is with respect to $q^{R/R}$, the smaller is the transfer that the Incumbent needs to offer in order to capture the strategic media. The strategic mass media firm will choose to support the candidate who assures the largest expected transfer.

Incumbent

Now we will analyze the strategic problem from the point of view of both candidates, starting with the Incumbent.

The Incumbent's problem consists in maximizing his expected payoff. If the incumbent wins the election, he will get rents for the value of the constant A. If he wins the election given that the strategic mass media firm supported him, he will have to pay his bid τ_I. If he loses the election, he will get a 0 payoff.

The Incumbent chooses τ_I to solve the problem:

$$\max V_I = q^{I/?}(A - \tau_I) = \left[(1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) + \rho\left(\frac{\theta_I^{?} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)\right](A - \tau_I)$$

Now we will look for the Incumbent's best responses.

If the incumbent loses the bid, his expected payoff will be:

$$V_I = q^{I/R}A = \left[(1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) + \rho\left(\frac{\theta_I^{\min f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)\right]A$$

If the incumbents bids and wins, his expected payoff will be:

$$V_I = q^{I/I}(A - \tau_I) = \left[(1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) + \rho\left(\frac{\theta_I^{\max f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)\right](A - \tau_I)$$

Now we will look for the largest τ_I that the incumbent is willing to pay. In order for the incumbent to rather prefer bidding than not bidding:

$$q^{I/I}(A - \tau_I) \geq q^{I/R}A$$

$$\tau_I \leq \left[\frac{q^{I/I} - q^{I/R}}{q^{I/I}}\right]A$$

$$\tau_I \leq \left[\frac{\theta_I^{\max f} - \theta_I^{\min f}}{(1-\rho)\theta_I + \rho\theta_I^{\max f} - \theta_I^{\min}}\right]A\rho$$

The incumbent will be willing to bid higher values, the larger the office rents A are, the larger is the influence of the media ρ, and the larger is the difference between $\theta_I^{\max f} - \theta_I^{\min f}$. All these results are intuitive.

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The Rival

The Rival faces a very similar problem. He has to choose τ_R in order to maximize:

$$\max V_R = q^{R/?}(B - \tau_R) = \left[1 - (1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) - \rho\left(\frac{\theta_I^{?} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)\right](B - \tau_R)$$

If the rival loses the bid, his expected payoff will be:

$$V_R = q^{R/I}B = \left[1 - (1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) - \rho\left(\frac{\theta_I^{\max f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)\right]B$$

If the rival bids and wins, his expected payoff will be:

$$V_R = q^{R/R}(B - \tau_R) = \left[1 - (1-\rho)\left(\frac{\theta_I - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right) - \rho\left(\frac{\theta_I^{\min f} - \theta_I^{\min}}{\theta_I^{\max} - \theta_I^{\min}}\right)\right](B - \tau_R)$$

Now we will look for the largest τ_I that the Rival is willing to pay. In order to rather prefer bidding than not bidding:

$$q^{R/R}(B - \tau_R) \geq q^{R/I}B$$

$$\tau_R \leq \left[\frac{q^{R/R} - q^{R/I}}{q^{R/R}}\right]B$$

$$\tau_R \leq \left[\frac{\theta_I^{\max f} - \theta_I^{\min f}}{\theta_I^{\max} - (1-\rho)\theta_I - \rho\theta_I^{\min f}}\right]B\rho$$

The rival will be willing to bid higher values, the larger the office rents *B* are, the larger is the influence of the media ρ, and the larger is the difference between $\theta_I^{\max f} - \theta_I^{\min f}$. All this results are intuitive.

Note that we have assumed that the incumbent and the rival expected different rent values from winning the electoral process. This is due to the fact that winning the office will mean to the Incumbent only one more tenure period as the head of the executive, while the Rival expects one tenure period and the chance of winning a second period. So,

$$B = A(1 + probability\ of\ a\ second\ tenure)$$

It is important to note that the Rival's maximum feasible expected bid will be always higher than the Incumbent's:

$$q^{I/I}\tau_I{}^{max} = \left[q^{I/I} - q^{I/R}\right]A = \left[\frac{\theta_I^{max\,f} - \theta_I^{min\,f}}{\theta_I^{max} - \theta_I^{min}}\right]A\rho$$

$$q^{R/R}\tau_R{}^{max} = \left[q^{R/R} - q^{R/I}\right]B = \left[\frac{\theta_I^{\max f} - \theta_I^{\min f}}{\theta_I^{\max} - \theta_I^{\min}}\right]B\rho$$

So,

$$q^{R/R}\tau_R{}^{max} > q^{I/I}\tau_I{}^{max}$$

So, ceteris paribus, the Rival will always be willing to bid an amount that assures a larger expected value transfers value for the strategic mass media firm than the Rival. This means that the strategic mass media firm will always be captured by the Rival.

Today's Rival relevant probability of winning will be given by the next election's expected $q^{R/R}$. Recall that,

$$q^{R/R} = \frac{\theta_I^{\max} - (1-\rho)\theta_I - \rho\theta_I^{\min f}}{\theta_I^{\max} - \theta_I^{\min}}$$

So the expected value for $q^{R/R}$ will be:

$$E(q^{R/R}) = \frac{\theta_I^{\max} - (1-\rho)E(\theta_I) - \rho E(\theta_I^{\min f})}{\theta_I^{\max} - \theta_I^{\min}}$$

where $E(\theta_I^{\min f})$ is the largest value between $\mathrm{E}(\theta_I) - \mathrm{e}_{\max}$ and $\theta_I^{\min}$.

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4. Equilibrium and Results

Subgame Perfect Nash Equilibrium

In order to arrive to an equilibrium solution for the game we will assume that the bid process takes the form of a second price auction[10]; so both the Rival and the Incumbent reveal they're truth valuation for the strategic mass media support when they make their offer.

As we mentioned before, the value of the Rival's bid will be larger than the Incumbent's. So the only Subgame Perfect Nash Political Equilibrium of this game will be the trio

$$\tau_S, \tau_R, SMMF = \left[\left(\frac{\theta_I^{\max f} - \theta_I^{\min f}}{\theta_I^{\max} - (1-\rho)\theta_I - \rho\theta_I^{\min f}}\right) A\rho; \left[\frac{\theta_I^{\max f} - \theta_I^{\min f}}{\theta_I^{\max} - (1-\rho)\theta_I - \rho\theta_I^{\min f}}\right] B\rho; R\right]$$

That is, both the Incumbent and the Rival bid the maximum amount they are willing to pay to get the strategic mass media firm support, and the Rival wins the second price auction[11]. This is to say that the strategic mass media firm will choose to support the rival and receive $\left[\frac{q^{R/R}}{q^{I/I}}\right]\left(\frac{\theta_I^{\max f} - \theta_I^{\min f}}{\theta_I^{\max} - (1-\rho)\theta_I - \rho\theta_I^{\min f}}\right) A\rho$ as transfers if the Rival wins the elections.

The expected value of the transfer is:

$$\left(\frac{\theta_I^{\max f} - \theta_I^{\min f}}{\theta_I^{\max} - \theta_I^{\min}}\right) A\rho$$

Results Analysis

We can draw very significant conclusions from the last section's results.

In the first place, no matter the Incumbent's actual dexterity at his job, the strategic mass media firm will always decide to support the Rival, as he will be willing to bid higher expected transfers.

Secondly we can say something regarding the size of the transfer that the strategic mass media firm will receive. As expected, *ceteris paribus*, it is going to be increasing in the rents associated with wining the office A and the strategic mass media firm's influence spectrum on the voters ρ.

[10] We have chosen a second price auction as the mechanism to bid for the strategic mass media support to make the model as simple and tractable as possible. Surely, this process is more complex.

Ceteris paribus, transfers will be increasing in the difference between $\theta_I^{\max f}$ and $\theta_I^{\min f}$. Recall that $\theta_I^{\min f}$ is the maximum between $\theta_I^{\min}$ and $X_t - e_{\max} - a$, while $\theta_I^{\max f}$ is the lesser between $\theta_I^{\max}$ and $X_t - e_{\min} - a$. Here we get important insights.

Note that the expected value of the transfer depends strongly on the amount of the public good provided X_t in the following sense. When X_t gets very high or very low values (in the extreme situations $X_t = \theta_I^{\max} + e_{\max} + a$ and $X_t = \theta_I^{\min} + e_{\min} + a$ respectively), the transfer will tend to be low, as the strategic mass media firm will not have significant room to manipulate the voter's preferences, as there will be a small span of feasible values that the actual θ_I and e_t can take. Thus $\theta_I^{\max f}$ and $\theta_I^{\min f}$ will have close values. In the extreme situations, there is only one feasible value for θ_I and e_t, $\theta_I^{\max}$ and $e_{\max}$ and $\theta_I^{\min}$ and $e_{\min}$ respectively and the mass media firm loses all its negotiation power as $\theta_I^{\max f}$ and $\theta_I^{\min f}$ must have the same value, the only one that fits the actual realizations of the variables.

On the other hand, when amount of the public good provided X_t gets a value that is close to its expected value $E(X_t)$, the negotiation power of the mass media firm (and thus the expected transfer) will increase, as there will be a relatively large span of values of θ_I and e_t that are consistent with the actual realization of the amount of the public good provided.

Another important determinant of the expected transfer value is the size of the variance of the external shock e_t. *Ceteris paribus*, the larger this value is, the higher the expected value of the transfer will be, with the exception of the aforementioned extreme cases.

This result tells something very interesting. *Ceteris paribus*, if the strategic mass media firm operates in a country with a structurally highly unstable economy, it will get in average, higher transfers than if it operates in very stable economy. Indeed, if the external shock did not exist, the source of the rent we analyzed during this whole paper will automatically disappear.

Now consider the widely spread conflicts between Latin American governments and the main mass media corporations that we mention in the introduction and motivated this paper. This model provides an interesting explanation for that phenomenon: the mass media firms will always tend to be captured by the Rivals rather than by the Incumbents, as the formers will always be willing to bid higher expected transfers.

5. Further Research

Our paper has posed many questions that were left unanswered[12], and has also shed some light on still unexplored theoretical paths; it should be a starting point for further theoretical and empirical research.

The main results of the theoretical model is that *ceteris paribus* economic instability will led to higher transfers from the candidates to politically relevant mass media firms. This hypothesis should be empirically tested using proper statistical methodology.

Here we have focused only in reelections, under political institutions that only allow for one reelection, and we have abstracted from ideological issues influencing the political results, assumptions that will need to be lessen in the future to shorten the gap between the model and reality.

Also, further research must take into account that this problem should be model as a repeated game, were voters are not going to believe that extreme results can occur in a repeated way; this fact should be taken into account in the strategic mass media firm's decision.

Lastly, here we have not tackled the existence of causality between economic instability and concentration in the news media market. This is also material for further research.

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[12] This is an almost unavoidable problem as this our first paper on the issue.

6. Conclusion

In this paper we have developed a theoretical model to try to explain the economic rationale behind the conflicts between some Latin America governments and the main mass media corporations.

The model states that, of we abstract from ideological issues, the strategic mass media firms tend to support the Rival rather than the Incumbent when the later faces a reelection. This is due to the fact that wining the office means for the rival a tenure period and the possibility of winning a second one, while for the Incumbent only means one extra period.

The results of our theoretical research imply that the transfers to the strategic mass media firm are going to be higher the more customers the mass media firm has, the more unstable the economy is and the nearer that the overall performance of the incumbent during his first tenure period as to the expected performance (taking into account the account the incumbent's ability parameter and the external shock).

As a first paper in a certain specific issue, we have left some unanswered theoretical and empirical question that should be tackled in future research.

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