The Dark Side of Clientelism[1]

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Abstract. This article analyzes, at a subnational level, a political system in which a precarious democracy takes shape once the mayor, as a member of a political organization constituting a political patronage machine, not only co-opts civil society but also seeks to plunder municipal funds to reinforce its political hegemony, weakening and even destroying the existing institutional framework. In direct contradiction to the central theses of economic voting and orthodox political economy, the main finding of this article demonstrates that the executive, through his local power networks operating in the context of a deteriorated social structure, do not promote processes of equitable wealth redistribution but instead promotes local empowerment processes through clientelist practices, creating a cartel government made up of the parties represented on the municipal council. The council, as a veto player, will strengthen and support the establishment of a predator state led by the executive. ***Key Words***: *Status Quo, Veto Players, Political Patronage, Predator State.* **JEL Classification**: C72, D31, D33, D63.

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1. Introduction

This article introduces a model of veto players theory in order to develop an analysis of the interaction between the mayor's and municipal council's systems of ends in a negotiation process in the policy space of a municipality – where an agenda that defines municipal public policies is approved – but more importantly, of how this interaction affects resource distribution in the municipal economy through public policies that are part of the agenda.

More precisely, the model considers a situation in which the mayor, being a political patron, is a non-benevolent policymaker with private information about his rent-seeking activities. The mayor rose to office through vote buying during the electoral campaign that promoted the political organization to which he/she belongs, and which is a cartel in which certain patrons and businesspeople collude in order to control a significant portion of municipal wealth. We know that a vote market, as a situation in which votes are exchanged for economic (but not necessarily monetary) payments, is strictly informal, and hence, all economic activity by agents is – legally or in practice – not covered or insufficiently covered by formal arrangements (Schaffer, 2006; Gersbach and Muhe, 2011; Dekel et al. 2008; Cendales, 2012)[2]. This explains why an investigation of the political organization's statutes does not provide relevant information about the financing of vote buying, because while the organization has a formal structure, this is nothing more than a shell (Freidenberg and Levitsky, 2007).

Given the characteristics of the party's behavior in the elections, Cendales (2012) studied the effects that this behavior has on its behavior as the governing party, demonstrating how the mayor's clientelist rationality is distinguished by selective plundering of the wealth of worse off (**WO**) individuals, as an effective strategy for manipulating and reproducing electoral capital in the next election in order to co-opt government at the subnational level[3]. Given that the individual's endowment of wealth consists of private assets and public sector assets[4], we assume that the stock of private assets is

[2]In such a market, operators who belong to the political organization buy the votes with resources from private agents who belong to the organization.

[3]This induces the existence of a democratic level of low intensity given that there is no political representation of the needs and desires of **WO** individuals in public decisions that affect resource distribution in the municipality (Moser, 2008: 138; Freidenberg and Levitsky, 2007; Fan, Zhang and Zhang, 2002).

[4]An example of public assets are parks, wilderness areas, railroads, public radio, public buildings, airports, seaports, mineral deposits and sewerage infrastructure.

constant with a depreciation rate equal to zero, and the rate to depreciation of public sector assets is positive. Thus, if the resources used by the mayor to finance public policies do not remedy the depreciation of public assets, then the stock of wealth of individuals will decrease.

Using the governing party's clientelistic rationality established by Cendales (2012), which determines the mayor's preferences in the policy space, the political negotiation process between the mayor and the municipal council is described as a political negotiation game (**PNG**) as in Tsebelis (2000). While the mayor's preferences in the policy space are one parameter, the council's preferences in the policy space are endogenous to the model, and depend on the incentives scheme offered by the mayor in the negotiation process. This scheme may take the form of bribes and rewards the municipal council for the magnitude of the resources that can be plundered once the mayor obtains approval of his agenda.

The main result of this article (**PROPOSITION 5**) demonstrates that the interaction between the mayor and the council has a negative effect on the allocation of resources if the municipal council is non-prioritarian — that is, if it approves agendas in which **WO** individuals do not receive any priority in the execution of public policy[5]. More exactly, we prove that in the political equilibrium, public sector resources that are used to finance policies that benefit **WO** individuals will be plundered in such a manner that the resource distribution of the municipal economy will be, in a stable way, more inequitable[6]. Hence, the negotiation between the mayor and the council induces a political equilibrium in which plundering of public resources by the mayor is maximized, i.e., the mayor's clientelist rationality is carried out optimally. Thus, the system of ends of a non-prioritarian council is consistent with the system of ends of the mayor that, by controlling the executive apparatus in the municipal political system, installs a predator state.

[5]Two conjectures are emphasized that have yet to be refuted. On the one hand, Moser (2008) and Fan, Zhang and Zhang (2002) showed in a robust way the impact of public policies on wealth distribution. On the other hand, Vinod Thomas et al. (2000) showed how public education policy affects resource distribution by demonstrating that the number of years of education is negatively related to inequality in the distribution of human capital.

[6]The analysis assumes that the mayor and his political organization have the capacity to divert municipal resources from municipal development objectives such as poverty reduction and supplying primary education services, among others, as long as the mayor seeks to maximize his own bene. . . ts rather than the bene. . . ts to society.

The analysis provided in this article is quite close to that proposed by Bandiera and Levy (2011) in that it considers a type of social situation in which democracy, rather than benefit **WO** individuals, deteriorates their well-being by choosing municipal public policies.

However, unlike Bandiera and Levy (2011: 1322), in our analysis this is not due to diversity in preferences among the poor, but to the fact that the governing party, led by the democratically elected mayor, plunders public resources used to finance public policies that favor **WO** individuals. By worsening the material conditions in which **WO** individuals live, the party is able to buy their votes for a lower price in the next mayoral election, and therefore able to mobilize the electoral mass needed to maintain the office (Cendales, 2012: 254). We say that this is a democracy besieged by a political organization that, having won control of the mayor's office, seeks to coopt it.

Given the crisis of political representation, the main result established in this article contradicts the implications of both the responsibility hypothesis formulated in economic vote literature (Paldam, 2008: 535) as well as the median voter hypothesis (Brunner and Ross, 2010: 898). There are two reasons for this.

First, the choice of public policies does not depend on the objective of maximizing the preferences of the median-income voter, but rather on political negotiation processes influenced by veto players. The point is that these veto players induce a political equilibrium in which, rather than representing the demands of **WO** individuals or the median-income voter (see Brunner and Ross, 2010: 898), they represent the demands of the political organization that is coopting the state at the local level.

Second, in this scenario **WO** individuals do not exact an electoral penalty, given that the votes mobilized by the party during the campaign are bought, rather than being ceded spontaneously by citizens, as would be the case if they felt that their needs were addressed by the political platform promoted by the party. Why do **WO** individuals sell their votes? Given the crisis of political representation (Schaffer, 2006),

> (...) the payment obtained by the voter in a vote market, regardless of what it is, will always be greater than nothing, which is precisely what the voter obtains with the public policies that are executed, regardless of which party is governing. This situation is not implausible, as it occurs in certain Colombian territorial entities such as municipal-

ities, departments or towns where vote buying is a practice widely accepted by voters[7] (Cendales, 2012: 238).

The article is organized as follows. In the preliminaries, we describe a non-prioritarian economy and the policy space. This is followed by definitions of not only the properties exhibited by the council's and mayor's preferences in the policy space, to establish something similar to a political configuration at the municipal level, but also the **PNG** associated with it, which is a dynamic game with complete and perfect information. This is so that, given the order in which the veto players move, we are able to resolve the **PNG** by applying the backward induction method to find what is known in game theory literature as a subgame perfect Nash equilibrium (**SPNE**). This equilibrium determines the set of public policies that will be applied in the municipality; in such a manner that the set of public policies being applied in the municipal economy is a political equilibrium or status quo in the policy space (Tsebelis, 2000).

In the results I section, we study a set of political negotiation games, distinguishing two types of political equilibrium in such a manner that both the preferences of the mayor and the council are taken exogenously. In the first type of equilibrium the council has the capacity to impose the continuity of the status quo, even when the mayor sets the agenda, and hence, the political equilibrium is the same status quo. In the second type of equilibrium, if the municipal council offers increasingly lesser priority to the **WO** individuals in the agenda, *ceteris paribus*, then a greater amount of wealth will be expropriated from those individuals. We emphasize that in each **PNG** considered in this section, the council's preferences are taken exogenously.

In the results II section, the council's preferences are endogenized through a game given that these preferences depend on an incentives scheme offered by the mayor. We demonstrate that the council, given the incentives implemented by the mayor, adopts preferences in the policy space that induce a political configuration in which the council is indifferent between the agenda that induces the status quo and the mayor's agenda. This implies that in

[7] In the Chocó Department (Colombia), a voter said given that "(...) whoever is governing does not fulfill their promises, they should pay for the vote." They say: 'give me a little something,' knowing 'that little something wont' even get us out of this morass, nor will it make the politician accountable in the future,' as Mena says about the electoral reality in the black communities of the Atrato River, which crosses Chocó from south to north on its way to the Caribbean Sea" (Vieira and Cariboni, 2009).

political equilibrium the mayor will plunder municipal public resources to the extent established by his system of ends, installing a predator state in a precarious municipal democracy. Section 4 presents the related literature.

1. Preliminaries

1.1. *A non-prioritarian economy*

Two approaches are emphasized. The first is that of the capacities proposed by Moreno-Ternero and Roemer (2006), and which we adopt in our analysis. The second is prioritarianism, proposed both in the context of distributive justice theories of political philosophy and in the context of analytical Marxism (Roemer, 2004). Using both approaches, we will define a non-prioritarian economy.

Capacities. The capacities of an individual are defined as his or her skills at obtaining certain results (income) given the resources he or she has, in such a manner that those results determine the conditions in which the individual lives. Following Moreno-Ternero and Roemer (2006), an individual's amount of resources is defined as their endowment of wealth.

Given his or her capacities, the individual will produce greater income if his or her endowment of wealth increases, *ceteris paribus*. We say that an individual has greater capacity with respect to another individual if he or she can generate a greater income with the same endowment of wealth (Moreno-Ternero and Roemer, 2006). Note that an individual's capacities depend on certain circumstances for which he or she is not responsible, e.g., the cultural, social and economic background of his or her family (García-Pérez and Villar, 2009). In this analysis we assume that an individual's capacities are exogenous to the model.

There is an income with which an individual can consume exactly a set of primary goods such as housing, education and healthcare, among others, which are

> (...) things that every rational man is presumed to want. These goods normally have a use whatever a person's rational plan of life (Rawls, 1971: 62).

If an individual, given his or her capacities, produces an income that is less than what is needed to consume precisely the set of primary goods, using the minimum endowment of wealth required by any individual to generate an income, then we say that the individual has low capacities. Otherwise, we say that the individual has high capacities. The social group of low capacity individuals will be denoted as $\mathcal{V}_B$ and the social group of individuals with high capacities will be denoted as $\mathcal{V}_A$. Let us assume that $|\mathcal{V}_B| = |\mathcal{V}_A|$ such that $|\mathcal{V}_i|$ denotes the cardinal of the set $\mathcal{V}_i$. Having distinguished between the social groups $\mathcal{V}_B$ and $\mathcal{V}_A$, what does it mean that the economy of a municipality is precisely a non-prioritarian economy?

A non-prioritarian economy. A wealth allocation rule assigns to each individual a certain endowment of wealth, in such a manner that the wealth available in the economy is equal to the sum of the endowments of wealth of all individuals in that economy. An economy is to be non-prioritarian if the wealth allocation rule provides the lowest endowments of wealth to the voters with the lowest capacities and provides the highest endowments of wealth to voters with the highest capacities, i.e., an economy is non-prioritarian if no priority is offered to individuals who belong to social group $\mathcal{V}_B$ with respect to individuals who belong to social group $\mathcal{V}_A$ in the wealth allocation rule (Roemer, 2004).

The wealth available in the economy is denoted by $\mathbf{W} \in \mathbb{R}_+$ such that, given the allocation of wealth in the economy, $\mathbf{W}_i \in \mathbb{R}_+$ denotes the sum of the endowments of wealth of individuals who belong to social group $\mathcal{V}_i$ such that $i \in \{\mathbf{A},\mathbf{B}\}$.

Following Moreno-Ternero and Roemer (2006), a municipal economy is defined as a triple $(\mathcal{V}, u, \mathbf{W})$ such that $\mathcal{V} = \mathcal{V}_A \cup \mathcal{V}_B$ is the set of individuals in the economy and $u = (u_i)_{v_i \in \mathcal{V}}$ is the profile of the results function, that is, $u_i : \mathbb{R}_+ \to \mathbb{R}_+$ is a non-decreasing function that describes the capacities of the individual i such that $u_i(w_i) \in \mathbb{R}_+$ is the income produced by that individual given his or her wealth endowment $w_i \in \mathbb{R}_+$. Therefore, the following postulate is established.

Postulate 1. *The municipal economy* $(\mathcal{V}, u, \mathbf{W})$ *is a non-prioritarian economy, and hence,* $\mathbf{W}_A > \mathbf{W}_B$.

1.2. ***The policy space***

The creation of public policies is the main result of a political system, and political actors are precisely those who propose the different public policies that affect the distribution of resources in the economy. Given that public policies influence wealth allocation, let $\mathcal{S} = \{(\mathbf{W}_B, \mathbf{W}_A) : \mathbf{W}_B + \mathbf{W}_A \leq \mathbf{W}\}$

be the set of possible ways in which wealth $\mathbf{W}$ can be distributed among social groups $\mathcal{V}_B$ and $\mathcal{V}_A$.

Following Tsebelis (2000), let $\mathcal{P} \subset \mathbb{R}^n_+$ be the policy space such that $\mathcal{P}$ is a compact, convex set in $\mathbb{R}^n_+$. We say that an element $\sigma \in \mathcal{P}$ is a vector of public policies. Given that the target populations of a agenda $\sigma \in \mathcal{P}$ are social groups $\mathcal{V}_A$ and $\mathcal{V}_B$, rather than isolated individuals, we consider the relationship between the sets $\mathcal{P}$ and $\mathcal{S}$ through the function $\psi : \mathcal{P} \to \mathcal{S}$. It is assumed that for each wealth allocation rule $(\mathbf{W}_B, \mathbf{W}_A) \in \mathcal{S}$ there is one and only one agenda $\sigma \in \mathcal{P}$ such that $(\mathbf{W}_B, \mathbf{W}_A) = \psi(\sigma)$, i.e., ψ is a bijective function. Hence, if two different sets of public policies are implemented, the allocation rules induced will be different.

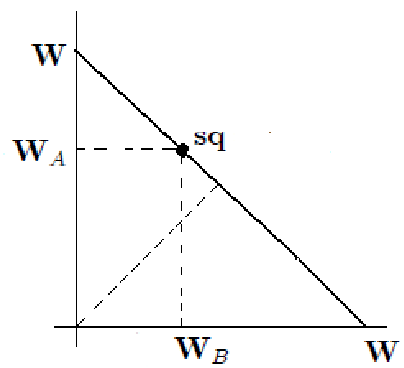

FIGURE 1.

Therefore, if agenda $\sigma \in \mathcal{P}$ is the status quo in the municipality, that is, σ is the set of public policies currently being applied in the municipality, then $\mathbf{sq} = \psi(\sigma) \in \mathcal{S}$ describes the way in which municipal wealth $\mathbf{W}$ is distributed between social groups $\mathcal{V}_A$ and $\mathcal{V}_B$ given $\sigma \in \mathcal{P}$. Given that we are considering a non-prioritarian municipal economy (Postulate 1), it holds that the status quo $\sigma \in \mathcal{P}$ induces an allocation rule $\mathbf{sq} = (\mathbf{W}_B, \mathbf{W}_A)$ such that $\mathbf{W}_A > \mathbf{W}_B$. Given that ψ is a bijective function, we say that $\mathbf{sq}$ is the status quo of the municipal political system and $\mathcal{S}$ is the policy space (Figure 1).

The assumption 1 say that if two allocation rules are very close then this is due to agendas that are very close.

Assumption 1. *The function ψ is an isometry, and hence, $\|\sigma - \sigma'\|_2 = \|\psi(\sigma) - \psi(\sigma')\|_2$ such that $\|\cdot\|_2 : \mathbb{R}^m \to \mathbb{R}$ is the standard Euclidean norm in $m = n$,2. Note that if $\psi : \mathcal{P} \to \mathcal{S}$ is an isometry then $\psi^{-1} : \mathcal{S} \to \mathcal{P}$ is an isometry. Henceforth, we suppress the subscript of the function symbol $\|\cdot\|_2$.*

1.3. ***Veto players***

Because the way the municipal political system is organized legally, the veto players are the mayor and the council (Tsebelis, 2000: 442). The political actors are rational in the sense of veto players theory, and in consequence they seek to maximize the realization of their system of ends with the choice of certain actions in the policy space. These actions are restricted by the institutions of the political system.

Following Tsebelis (2000), let $\succsim_i : \mathcal{S} \to \mathcal{S}$ be a binary relation defined on $\mathcal{S}$ such that $\mathbf{x} \succsim_i \mathbf{x}'$ is read as "*allocation rule* $\mathbf{x}$ *is at least as preferred as allocation rule* $\mathbf{x}'$". In particular, there is a wealth allocation rule $\mathbf{x}_i \in \mathcal{S}$ that political actor i presumes as optimal given his political rationality and hence, $\mathbf{x}_i \succsim_i \mathbf{x}$ for any $\mathbf{x} \in \mathcal{S}$. It is said that $\mathbf{x}_i \in \mathcal{S}$ is the ideal point of political actor i. Following Tsebelis's approach, and given the ideal point $\mathbf{x}_i$ of the veto player i, we say that this veto player weakly prefers $\mathbf{x}$ to $\mathbf{x}'$, if and only if $\mathbf{x}$ is closer than $\mathbf{x}'$ to ideal point $\mathbf{x}_i$. In symbols, $\mathbf{x} \succsim_i \mathbf{x}' \Leftrightarrow \|\mathbf{x} - \mathbf{x}_i\| \leq \|\mathbf{x}' - \mathbf{x}_i\|$.

Given that ψ is a bijective function, if $\mathbf{x}_i \in \mathcal{S}$ is the ideal point of political actor i, then $\psi^{-1}(\mathbf{x}_i) = \sigma_i$ is the ideal agenda of political actor i. Additionally, given assumption 1, it is possible to define the preferences of political actor i on $\mathcal{P}$ based on his or her preferences defined on $\mathcal{S}$. Let $\gtrsim_i : \mathcal{P} \to \mathcal{P}$ be a binary relation on $\mathcal{P}$ such that $\sigma \gtrsim_i \sigma'$ is read as "*agenda* σ *is at least as preferred as agenda* σ'". Let us define $\gtrsim_i$ as follows: if $\psi(\sigma) = \mathbf{x}$ and $\psi(\sigma') = \mathbf{x}'$ then $\sigma \gtrsim_i \sigma' \Leftrightarrow \|\mathbf{x} - \mathbf{x}_i\| \leq \|\mathbf{x}' - \mathbf{x}_i'\|$. Given that ψ is a isometry, it hold that $\sigma \gtrsim_i \sigma' \Leftrightarrow \|\sigma - \sigma_i\| \leq \|\sigma' - \sigma_i\|$. Hence, the veto player i weakly prefers σ to σ', if and only if σ is closer than σ' to ideal agenda σ_i. Notice that if $\psi(\sigma) = \mathbf{x}$ and $\psi(\sigma') = \mathbf{x}'$ then $\sigma \gtrsim_i \sigma' \Leftrightarrow \mathbf{x} \succsim_i \mathbf{x}'$.

On the other hand, the veto player i is indifferent between allocation rules $\mathbf{x}$ and $\mathbf{x}'$ if and only if they are the same distance from his ideal point $\mathbf{x}_i$. Formally, if $\sim_i : \mathcal{S} \to \mathcal{S}$ is the indifference relation, then, $\mathbf{x}' \sim_i \mathbf{x} \Leftrightarrow \|\mathbf{x}' - \mathbf{x}_i\| = \|\mathbf{x} - \mathbf{x}_i\|$. In consequence, given an allocation rule $\mathbf{x}$ different from $\mathbf{x}_i$, the set $I_i[\mathbf{x}]$ of all the allocation rules for which the veto player i is indifferent to $\mathbf{x}$, is the set of all rules located in the circle of radius $\|\mathbf{x} - \mathbf{x}_i\| = r$ around the point $\mathbf{x}_i$. In symbols, $I_i[\mathbf{x}] = \{\mathbf{x}' : \|\mathbf{x}' - \mathbf{x}_i\| = r\}$.

Therefore, the veto player's indifference map is a family of concentric circles around the point $\mathbf{x}_i$, such that the indifference curves with smaller radii are strictly preferred to indifference curves with larger radii. In particular, we are interested in indifference curve $I_i[\mathbf{sq}]$ (Figure 2). We will denote by $MI_i[\mathbf{sq}]$ the disc of radius $\|\mathbf{sq} - \mathbf{x}_i\|$ around the point $\mathbf{x}_i$, and hence, $MI_i[\mathbf{sq}]$

is the set of all allocation rules that the veto player i weakly prefers to the status quo $\mathbf{sq}$.

The mayor. Given the clientelist rationality of mayor ($\mathbf{A}$), what is the geometric location of his ideal point $\mathbf{x_A} \in \mathcal{S}$ in the policy space? Given that one of the mayor's objectives is to co-opt the mayor's office, in the next electoral campaign he will seek to buy votes in a vote market through his political operators -his clients- directly linking his organization to voters.

Whose votes does he buy in the vote market? The votes of $\mathbf{WO}$ individuals, since the reserve prices for their votes are the lowest in the vote market, given that their demands are low in each possible negotiation with operators. There are two reasons for this (Cendales, 2012).

First, each $\mathbf{WO}$ individual is willing to sell his vote at a low price because his living conditions are precarious and it is difficult for him to obtain access to primary goods that all individuals are presumed to be able to consume to live in dignified conditions. This is because, given the wealth allocation rule in the economy, this individual's endowment of wealth is markedly insufficient.

On the other hand, for such voters it is clear that if their desires and needs are not represented politically in public decisions, they must decide whether to sell their vote to a political operator or give it to a candidate whose policy program will never be implemented. The crucial point is that any payment the voter obtains from a political operator for his vote will always be greater than nothing, which is precisely what the voter obtains with the public policies executed by any candidate who wins the election.

The aforementioned is known by the mayor, so that he will seek, during the period in which he governs, to worsen the living conditions of $\mathbf{WO}$ individuals by executing an inadequate and inefficient investment in public policies that benefit them. This will enable him to negotiate the votes at a lower price in the next electoral campaign, since a reduction in the endowments of wealth of $\mathbf{WO}$ individuals, *ceteris paribus*, will induce in them lower valuations of their votes. Therefore, the ideal point $\mathbf{x_A}$ of the mayor, as an expression of their system of ends, is located in segment $[(0, \mathbf{W}_A), \mathbf{sq}]$ such that the wealth endowments of social group $\mathcal{V}_A$ don't change (See figures 2.a, 2.b and 2.c).

The municipal council. The municipal council ($\mathbf{C}$) is a democratic organism responsible for establishing the size of the government and bureaucracy. While the council is a collective veto player, it is assumed to be an individual political actor based on the assumption that there is a political organization that dominates this collective body (Tsebelis, 2000).

What is the geometric location of the council's ideal point $\mathbf{x_C} \in \mathcal{S}$ in the policy space? The council's ideal point $\mathbf{x_C}$ is geometrically located in the interval $[(0, \mathbf{W}), (\mathbf{W}, 0)]$ given that the council is not the agenda setter. Moreover, given the norms of the municipal political system, the council only has the capacity to decide whether to accept or veto agenda $\sigma_{\mathbf{A}}$ proposed by the mayor. In consequence, if the council is non-prioritarian, its ideal point $\mathbf{x_C}$ is located in the interval $[(0, \mathbf{W}), \mathbf{sq})$ (See figures 2.a, 2.b and 2.c).

1.4. **P*olitical Negotiations***

Political Configurations. A political configuration in policy space $\mathcal{S}$ is a triple $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$, in such a manner that for each political configuration $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$, the sets $MI_{\mathbf{C}}[\mathbf{sq}]$ and $MI_{\mathbf{A}}[\mathbf{sq}]$ are well defined and contain point $\mathbf{sq}$ on their borders (See figures 2.a, 2.b and 2.c).

Figures 2.a, 2.b and 2.c are three possible political configurations, in which the positions of the ideal point of the mayor and the status quo do not change.

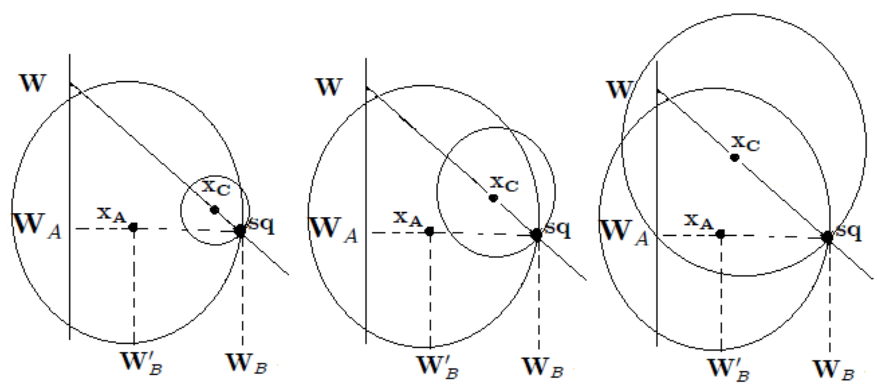

FIGURE 2.a **FIGURE 2.b** **FIGURE 2.c**

In consequence, if the mayor's ideal point $\mathbf{x_A}$ and the status quo $\mathbf{sq}$ are parameters in the model, then for each ideal point $\mathbf{x_C}$ of the council in the interval $[e_2\mathbf{W}, \mathbf{sq}]$ there is a political configuration. Therefore, there are as many political configurations as ideal points $\mathbf{x_C}$ in interval $[e_2\mathbf{W}, \mathbf{sq}]$. Let

$$\mathcal{C}(\mathcal{V}, u, \mathbf{W}) = \{(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq}) : \mathbf{x_C} \in [e_2\mathbf{W}, \mathbf{sq}], \mathbf{x_A} \text{ and } \mathbf{sq} \text{ are fixed}\} \quad (1)$$

be the set of all possible political configurations that can take place in the non-prioritarian municipal economy $(\mathcal{V}, u, \mathbf{W})$ and in which the council is non-prioritarian.

Political Negotiation Games. For each political configuration $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq}) \in \mathcal{C}(\mathcal{V}, u, \mathbf{W})$ there is a sequential game $\Gamma(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$ with complete and perfect information, such that the set of actions available to veto player i is the disc $MI_i[\mathbf{sq}]$. Let $W(\mathbf{sq}) = MI_{\mathbf{C}}[\mathbf{sq}] \cap MI_{\mathbf{A}}[\mathbf{sq}]$ be the winset of game $\Gamma(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$ such that all points in the winset are accepted by both veto players. In this simplified game the mayor is the agenda setter, and the council accepts or rejects the proposal. In consequence, the mayor has significant power to determine the municipal legislative result.

In the first stage of the game, given that the mayor is the agenda setter, he proposes an agenda $\sigma^{\circ} \in \mathcal{P}$ that induces a wealth allocation rule $\mathbf{x}^{\circ} = \psi(\sigma^{\circ}) \in \mathcal{S}$. In the second stage of the game, the municipal council must decide whether to accept or veto the agenda $\sigma^{\circ} \in \mathcal{P}$ proposed by the mayor.

If the council accepts the agenda proposed by the mayor, then the payment obtained by veto player $i \in \{\text{A,C}\}$ will be as high as political equilibrium $\mathbf{x}^{\circ}$ is close to its ideal point $\mathbf{x}_i$, such that if the political equilibrium is its ideal point, then the payment will be infinite. Formally, $u_i(\mathbf{x}^{\circ}, \mathbf{x}^{\circ}) = 1/\|\mathbf{x}^{\circ} - \mathbf{x}_i\|$ si $\mathbf{x}^{\circ} \neq \mathbf{x}_i$ y $u_i(\mathbf{x}^{\circ}, \mathbf{x}^{\circ}) = \infty$ si $\mathbf{x}^{\circ} = \mathbf{x}_i$. If the council does not accept allocation rule $\mathbf{x}^{\circ}$ then the mayor will have to modify the proposed agenda initially. Let $\{\{\mathbf{A}, \mathbf{C}\}, \{MI_i(\mathbf{sq})\}_{i \in \{\mathbf{A},\mathbf{C}\}}, \{u_i\}_{i \in \{\mathbf{A},\mathbf{C}\}}\}$ be the representation in normal form of the dynamic game $\Gamma(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$. We say that $(\mathbf{x}^{\circ}, \mathbf{x}^{\circ})$ is an **SPNE** of the game $\Gamma(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$ *sii* $\mathbf{x}^{\circ}$ is a political equilibrium in political configuration $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$.

2. Results I: A family of political negotiation games in a non-prioritarian economy

We will consider two types of political configurations, in such a manner that in a first political configuration $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq}) \in \mathcal{C}(\mathcal{V}, u, \mathbf{W})$, at the same time that the mayor is a selective predator, the council seeks to preserve the status quo of the municipal political system. In consecuence, the council's agenda $\sigma_{\mathbf{C}}$ is the agenda σ that has currently being applied in the municipal economy, and hence $\mathbf{x_C} = \mathbf{sq}$.

We note that $(\mathbf{sq}, \mathbf{x_A}, \mathbf{sq}) \in \mathcal{C}(\mathcal{V}, u, \mathbf{W})$ is a political configuration in which the set of actions available to the council is a singleton set such that the allocation rule **sq** is the single element; in consequence, the only agenda that both veto players weakly prefer to the status quo is the same status quo (Figure 3.a).

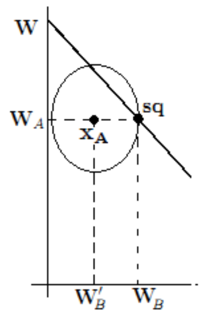

FIGURE 3.a.

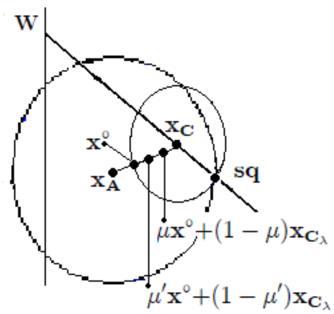

FIGURE 3.b.

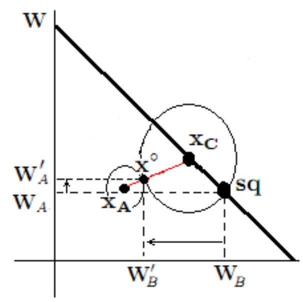

FIGURE 3.c.

What is the political equilibrium that emerges in this political configuration? Proposition 1 answers this question.

`Proposition 1.` *If* $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$ *is a political configuration in which it holds that* $\mathbf{x_C} = \mathbf{sq}$, *then the council has the capacity to impose the continuity of the status quo* **sq**, *even when the mayor sets the agenda, i. e., the political equilibrium is the same status quo* $\mathbf{sq} = \mathbf{x_C}$ (Tsebelis, 2006; Tsebelis and Alemán, 2005).

Thus, if the municipal council can govern freely with respect to controls, pressures or vetoes exercised by the political organization to which the executive belongs, then the system of brakes and counterweights at the municipal level would impede the executive from having any room to maneuver in terms of negotiating the agenda.

The council has the political capacity to maintain a stable distribution of wealth in a municipality given their capacity to veto any agenda that, having been proposed by the mayor, deviates from the equilibrium agenda. If this is true even when the mayor's office is controlled by a political organization that seeks to plunder public sector resources used to finance public policies that benefit **WO** individuals, then, under what conditions is it certain that the mayor has the capacity to selectively expropriate public resources if his political organization's aim is to co-opt the mayoralty through buying votes in a future election?

To answer this question, we consider a second type of political configuration in which, while the mayor continues to be a selective predator, for the council the optimal extent to which social group $\mathcal{V}_B$ should be expropriated is positive, and hence, it holds that $\mathbf{x_C} \in [e_2\mathbf{W}, \mathbf{sq})$. However, agenda $\sigma_{\mathbf{C}} = \psi^{-1}(\mathbf{x_C})$ of the council is programmatically identified more with agenda $\sigma = \psi^{-1}(\mathbf{sq})$ than with the mayor's agenda $\sigma_{\mathbf{A}} = \psi^{-1}(\mathbf{x_A})$, that is, $\|\mathbf{x_C} - \mathbf{x_A}\| > \|\mathbf{x_C} - \mathbf{sq}\|$ (Figure 3.b). Note that if $\|\mathbf{x_C} - \mathbf{x_A}\| > \|\mathbf{x_C} - \mathbf{sq}\|$ then $\mathbf{x_A} \notin MI_{\mathbf{C}}(\mathbf{sq})$, and hence, $\mathbf{x_A} \notin W(\mathbf{sq})$.

`Proposition 2`. *If the council is non-prioritarian and its agenda $\sigma_{\mathbf{C}}$ is programmatically identified more with agenda $\sigma = \psi^{-1}(\mathbf{sq})$ than with the mayor's agenda $\sigma_{\mathbf{A}}$, that is, $\|\mathbf{x_C} - \mathbf{x_A}\| > \|\mathbf{x_C} - \mathbf{sq}\|$, then in the political equilibrium $\mathbf{x}^\circ = (\mathbf{W}'_B, \mathbf{W}'_A)$ that defeats status quo $\mathbf{sq}$, it holds that voting population $\mathcal{V}_B$ is plundered of a wealth amount equal to $\mathbf{W}_B - \mathbf{W}'_B > 0$ and voting population $\mathcal{V}_A$ is benefited by a wealth amount equal to $\mathbf{W}'_A - \mathbf{W}_A > 0$* (Figura 3.c).

With proposition 2 it is possible to state that given that the council is non-prioritarian, in its political negotiation with the mayor it will agree to a certain expropriation of resources that had been allocated to financing public policies that benefit **WO** individuals, if public policies are promoted that favor **BO** individuals, given the council's preference for the agenda $\sigma_{\mathbf{C}} = \psi^{-1}(\mathbf{x_C})$, which is less equitable than agenda $\sigma = \psi^{-1}(\mathbf{sq})$ (Figure 3.b).

If agenda $\sigma^\circ = \psi^{-1}(\mathbf{x}^\circ)$, upon defeating agenda $\sigma = \psi^{-1}(\mathbf{sq})$, promotes a more inequitable wealth distribution, then under the hypothesis of proposition 2, that happens to the magnitude of wealth $\mathbf{W}_B - \mathbf{W}'_B$ that is expropriated from voting population $\mathcal{V}_B$ if the council gives greater priority to **BO** individuals, *ceteris paribus*? This question is resolved by proposition 3.

`Proposition 3`. *Under the hypotheses of proposition 2, if the council offers greater priority to* **BO** *individuals in the agenda, ceteris paribus, then in the political equilibrium that results from the political negotiation it holds that a greater amount of wealth will be expropriated from voting population $\mathcal{V}_B$.*

The figure 4.a shows how what is set forth in proposition 3 corresponds geometrically to establishing that an increment in the magnitude of interval $[\mathbf{x_C}, \mathbf{sq}]$ implies a reduction in the magnitude of interval $[\mathbf{x_A}, \mathbf{z}]$ given that $\mathbf{x}^\circ$ is the political equilibrium described in proposition 2; hence, if the ideological distance between the council's ideal point $\mathbf{x_C}$ and the status quo $\mathbf{sq}$ increases, then the council will agree, in terms of political negotiation with the mayor, to expropriating a greater amount of the wealth perceived by **WO** individuals. Note that point $\mathbf{z}$ is such that interval $[\mathbf{x}^\circ, \mathbf{z}]$ is perpendicular to interval $[\mathbf{x_A}, \mathbf{sq}]$ as long as it holds that $\|\mathbf{x}^\circ - \mathbf{z}\|$ is the distance from point $\mathbf{x}^\circ$ to interval $[\mathbf{x_A}, \mathbf{sq}]$; in symbols,

$$\|\mathbf{x}^\circ - \mathbf{z}\| = \min_{\mathbf{x} \in [\mathbf{x_A}, \mathbf{sq}]} \|\mathbf{x}^\circ - \mathbf{x}\| \tag{2}$$

In addition, note that ideal point $\mathbf{x_A}$ and allocation rule $\mathbf{sq}$ are parameters in the analysis and in consequence, political equilibrium $\mathbf{x}^\circ$ varies with the variation in the position of the council's ideal point $\mathbf{x_C}$.

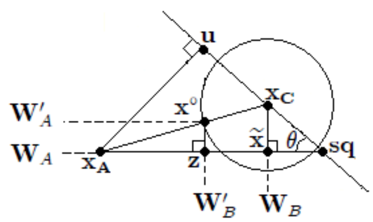

FIGURE 4.a.

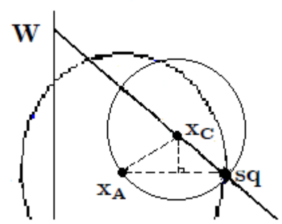

FIGURE 4.b.

In an extreme case, if the priority that the council gives to **BO** individuals increases, *ceteris paribus*, to the limit point at which it is indifferent between agenda $\sigma = \psi^{-1}(\mathbf{sq})$ and agenda $\sigma_\mathbf{A} = \psi^{-1}(\mathbf{x_A})$, this will promote a political equilibrium that will be exactly the mayor's ideal point $\mathbf{x_A}$ (Figure 4.b), and hence, the mayor will plunder municipal public resources to the extent established by the system of ends of his political organization, installing a predatory state. In consequence, the co-opting of the state at the subnational level will be efficient if the council is indifferent between agenda σ that induces the status quo $\mathbf{sq} = \psi(\sigma)$ and agenda $\sigma_\mathbf{A}$, with which allocation rule $\mathbf{x_A}$ is induced. The latter is established in the following proposition.

`Proposition 4`. *Let* $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$ *be a political configuration in which it holds that* $\mathbf{x_A} \in [e_2\mathbf{W}_A, \mathbf{sq})$ *and* $\|\mathbf{x_C} - \mathbf{x_A}\| = \|\mathbf{x_C} - \mathbf{sq}\|$. *It hold that the mayor is an efficient looter, and in consequece, the political equilibrium* $\mathbf{x}^\circ$ *is* $\mathbf{x_A}$, *and hence,* $\mathbf{x}^\circ = \mathbf{x_A}$.

We say that in each possible political configuration $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$ in which it holds that $\|\mathbf{x_C} - \mathbf{sq}\| > 0$, the resources that the mayor effectively is able to loot are "invested" both in the creation of political influence and in maintaining the invisible organizational structure embedded in the political organization (della Porta 2004), as these are resources that

> maintain the support of the electoral base in the next election or, at worst, build positions of power that enable them to survive in the future if the next elections are adverse (Rehren, 2000: 149).

Given the institutional context considered in the analysis, the council is a collective actor made up of political leaders who as a group can be integrated into a cartel party once they are aware of the incentives they receive due to their position in government. Therefore, what is proposed in this article is to understand the relationship between the mayor and the council as a relationship between the parties as power networks, such a manner that they form part of a kind of negotiation and exchange in establishing the agenda that will defeat the status quo.

If the magnitude that the mayor effectively is able to plunder depends on the council's ideal point position in the policy space, and in addition the mayor knows this, then of all the possible political configurations that can take place according to the council's ideal point, which one emerges from the incentives mechanism surreptitiously implemented by the mayor in the political negotiation process? The following section responds to this question.

3. Results II: The optimal political negotiation game

In this section a game is introduced, in which the council's ideal point position in the policy space depends on the incentives scheme that the mayor implements in the political negotiation process, and with which the mayor offers a retribution to the council for the magnitude of the resources that he is able to plunder upon approval of his agenda in the negotiation process.

Let $\mathbf{x}^*$ be an allocation rule situated on segment $[e_2\mathbf{W}, \mathbf{sq}]$ such that $\|\mathbf{x}^* - \mathbf{sq}\| = \|\mathbf{x}^* - \mathbf{x_A}\|$ (Figure 5.a). That is, $\mathbf{x}^*$ is an allocation rule with respect to which the council is indifferent between the status quo $\mathbf{sq}$ and the mayor's ideal point $\mathbf{x_A}$.

Let $\mathbf{C}(\mathcal{V}, u, \mathbf{W}) = \{(\mathbf{x}_{\mathbf{C}_\lambda}, \mathbf{x_A}, \mathbf{sq}) : \mathbf{x}_{\mathbf{C}_\lambda} = \lambda\mathbf{x}^* + (1-\lambda)\mathbf{sq} \text{ and } \lambda \in [0, 1]\}$ be a subset of political configurations in which $\mathbf{x_A}$ and $\mathbf{sq}$ are fixed, and in addition it holds that $\mathbf{x}_{\mathbf{C}_\lambda}$ is a convex combination of $\mathbf{x}^*$ and $\mathbf{sq}$, and therefore, the position of ideal point $\mathbf{x}_{\mathbf{C}_\lambda}$ depends on the value of λ in the closed interval $[0, 1]$.

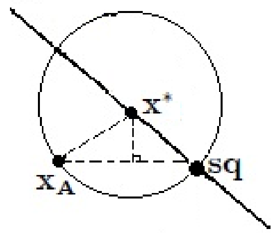

FIGURE 5.a.

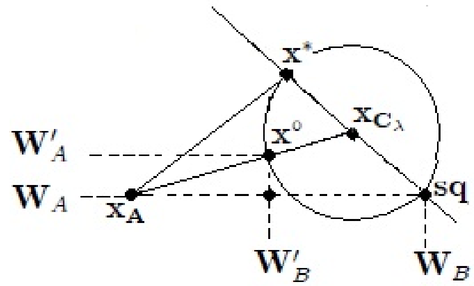

FIGURE 5.b.

In particular, if $\lambda = 1$ then the council's ideal point $\mathbf{x}_{\mathbf{C}_1}$ is precisely the allocation rule $\mathbf{x}^*$, and therefore, in political configuration $(\mathbf{x}^*, \mathbf{x}_\mathbf{A}, \mathbf{sq})$ the mayor is an efficient predator (`proposition 4`). On the other hand, if $\lambda = 0$, then the council's ideal point $\mathbf{x}_{\mathbf{C}_0}$ is precisely the allocation rule $\mathbf{sq}$, and therefore in political configuration $(\mathbf{sq}, \mathbf{x}_\mathbf{A}, \mathbf{sq})$, the municipal council safeguards the stability of status quo $\mathbf{sq}$ (`proposition 1`). In consequence, $\mathbf{C}(\mathcal{V}, u, \mathbf{W})$ is a set of political configurations in which the council's ideal point $\mathbf{x}_{\mathbf{C}_\lambda}$ travels continuously along the interval $[\mathbf{sq}, \mathbf{x}^*]$ and allocation rules $\mathbf{x}_\mathbf{A}$ and $\mathbf{sq}$ are fixed.

Let $\Gamma(\mathbf{C}(\mathcal{V}, u, \mathbf{W}))$ be a sequential game defined over the set of political configurations $\mathbf{C}(\mathcal{V}, u, \mathbf{W})$ such that in the first stage of the game, the council takes an action $\lambda \in [0, 1]$ which will involve a political equilibrium $\mathbf{x}^\circ$ in political configuration $(\mathbf{x}_{\mathbf{C}_\lambda}, \mathbf{x}_\mathbf{A}, \mathbf{sq})$ in which, by `proposition 2`, the looting of a certain amount of wealth $\Delta\mathbf{W}_B$ takes place such that $|\Delta\mathbf{W}_B| \in [0, \|\mathbf{sq} - \mathbf{x}_\mathbf{A}\|]$.

Let $\mathbf{I} \in \mathbb{R}_+$ be the amount of resources from the government budget used to finance public policies whose target population is social group $\mathcal{V}_B$. Let $I : [0, 1] \to [0, \mathbf{I}] \subset \mathbb{R}$ be a function such that $I(\lambda)$ is the amount of resources that the mayor plunders in political equilibrium $\mathbf{x}^\circ$ of political configuration $(\mathbf{x}_{\mathbf{C}_\lambda}, \mathbf{x}_\mathbf{A}, \mathbf{sq})$. By `proposition 3`, it holds that $I'(\lambda) > 0$; in other words, if the council assigns an ever-decreasing priority to social group $\mathcal{V}_B$ then it will agree to the mayor plundering an ever-increasing quantity of resources $I(\lambda)$. However, the mayor can only increase the amounts plundered at ever-decreasing rates, that is, $I''(\lambda) < 0$.

Note that if the council's ideal point is $\mathbf{x}_{\mathbf{C}_0}$ then the quantity of resources the mayor plunders at equilibrium $\mathbf{x}^\circ$ of political configuration $(\mathbf{x}_{\mathbf{C}_0}, \mathbf{x}_\mathbf{A}, \mathbf{sq})$

is equal to $I(0) = 0$; and if the council's ideal point is $\mathbf{x}_{\mathbf{C}_1}$ then the quantity of resources plundered by the mayor at political equilibrium $\mathbf{x}^{\circ}$ of political configuration $(\mathbf{x}_{\mathbf{C}_1}, \mathbf{x}_{\mathbf{A}}, \mathbf{sq})$ is equal to $I(1) = \mathbf{I}$. Formally, it holds that $I(0) = 0$ and $I(1) = \mathbf{I}$.

¿What is the relationship between the amount of wealth $\Delta\mathbf{W}_B$ that social group $\mathcal{V}_B$ loses at political equilibrium $\mathbf{x}^{\circ}$ that defeats status quo $\mathbf{sq}$ and the amount of resources $I(\lambda)$ that the mayor plunders at political equilibrium $\mathbf{x}^{\circ}$ of political configuration $(\mathbf{x}_{\mathbf{C}_0}, \mathbf{x}_{\mathbf{A}}, \mathbf{sq})$**?**

The larger the quantity of resources plundered from the government budget used to finance public policies whose target population is social group $\mathcal{V}_B$, the greater the amount of wealth that social group $\mathcal{V}_B$ loses, given the deterioration of the public sector assets to which it has access. If the physical degradation of such public assets is not restored (depreciation), infrastructure such as schools, health centers, highways, and water, lighting and sewer installations will deteriorate and in some cases may be lost completely.

If $\phi : [0, \mathbf{I}] \to [0, \|\mathbf{sq} - \mathbf{x}_{\mathbf{A}}\|]$ is a function that describes the relationship between the amount of wealth $\Delta\mathbf{W}_B$ that social group $\mathcal{V}_B$ loses at political equilibrium $\mathbf{x}^{\circ}$ that defeats status quo $\mathbf{sq}$ and the amount of resources $I(\lambda)$ that the mayor can plunder at political equilibrium $\mathbf{x}^{\circ}$ of political configuration $(\mathbf{x}_{\mathbf{C}_0}, \mathbf{x}_{\mathbf{A}}, \mathbf{sq})$, then it holds that ϕ is an increasing function such that $\phi(I(\lambda)) = |\Delta\mathbf{W}_B|$ is the amount of wealth that social group $\mathcal{V}_B$ loses, given the position of the council's ideal point $\mathbf{x}_{\mathbf{C}_\lambda}$. It holds that $\phi'(I(\lambda)) > 0$, $\phi(I(1)) = \|\mathbf{sq} - \mathbf{x}_{\mathbf{A}}\|$ and $\phi(I(0)) = 0$. Therefore, if the council assigns an ever-decreasing priority to social group $\mathcal{V}_B$ then social group $\mathcal{V}_B$ will lose an increasing amount of wealth. It is clear that if $\phi \circ I : [0, 1] \to [0, \|\mathbf{sq} - \mathbf{x}_{\mathbf{A}}\|]$ is the composite function, it holds that $\phi \circ I'(\lambda) > 0$, $\phi \circ I(0) = 0$ and $\phi \circ I(1) = \|\mathbf{sq} - \mathbf{x}_{\mathbf{A}}\|$.

If $I(\lambda)$ are the resources plundered by the mayor at political equilibrium $\mathbf{x}^{\circ}$ of political configuration $(\mathbf{x}_{\mathbf{C}_0}, \mathbf{x}_{\mathbf{A}}, \mathbf{sq})$, let $I_{\mathbf{A}}(\lambda)$ and $I_{\mathbf{C}}(\lambda)$ be the mayor's and the council's shares, respectively, such that $I(\lambda) = I_{\mathbf{A}}(\lambda) + I_{\mathbf{C}}(\lambda)$. It holds that $I_i'(\lambda) > 0$ and $I_i''(\lambda) < 0$ for each $i \in \{\mathbf{A}, \mathbf{C}\}$.

In the second stage of the game, the mayor observes participations $I_{\mathbf{A}}(\lambda)$ and $I_{\mathbf{C}}(\lambda)$ and chooses bribe $\mathbf{C}$ as a reward for the municipal council. The council's payoff is $U(I_{\mathbf{C}}(\lambda) + \mathbf{C})$ and the mayor's payoff is $V(I_{\mathbf{A}}(\lambda) - \mathbf{C}) + k \cdot U(I_{\mathbf{C}}(\lambda) + \mathbf{C})$ where $k > 0$ reflects the fact that the governing party, as a cartel party, seeks to include the parties of the council members, where k is the quota of sympathy that the governing party communicates to the parties with seats on the council. It holds that the functions of the mayor's and council's payoffs are increasing and strictly concave.

`Proposition 5`. *In the Nash equilibrium of game $\Gamma(\mathbf{C}(\mathcal{V}, u, \mathbf{W}))$, the council's optimal action is $\lambda = 1$, i. e., the optimal political configuration is that described in proposition 4.*

It can be stated that the council, given its non-prioritarian ideological conception, agrees to choose political agendas that induce openly inequitable allocation rules if there is a mayor whose aim is to loot public resources that finance public policies benefiting **WO** individuals. The power of the political organization to which the mayor belongs is ratified and strengthened by ensuring the long-term economic well-being of the political structure through looting public resources, since

> (...) "power" is not a free-floating entity, but depends on control of certain strategic resources—capital, means of production, organized violence—that vary from country to country (Portes, 2006: 244).

We have demonstrated that a non-prioritarian council, in the context of a municipal political system, legitimizes rather than vetoes the power of a political elite, a dominant class that obtains its power precisely from controlling public resources.

4. Related literature

The orthodox political economy has sought to explain the choice of public policies that make up the status quo in a political system based on the political platforms promoted by the parties and citizens' preferences for public policies (Roemer, 2001). Furthermore, following the median voter theory, it is asserted that

> Democracy is generally deemed to be good for the poor; since the elites are few while the poor are many, common wisdom suggests that democracywill lead to the choice of policies that reflect the preferences of the poor (Bandiera and Levy, 2011: 1322).

However, nothing could be further from Colombia's political and institutional reality. In many areas of Colombia, whether municipalities or departments, the lower the income of the median voter, the greater the redistributive trend, but of an inequitable nature. Precisely, Gruner states that

> In particular one observes that fiscal variables such as the size of the redistributive government sector are not related to measures of inequality. According to the data, a given unequal distribution may be politically stable even in presence of large inequalities (Gruner, 2009: 240).

Even so, following orthodox political economy, both Bandiera and Levy (2011) and Gruner (2009) assume that voters expect that the policy announced by the party will be implemented. To cite just one case, Bandiera and Levy (2011) accept that political outcomes in local democracies are determined by the preferences of the median -typically poor-agents if there is no diversity in preferences among the poor. However, if there is diversity in preferences among the poor,

> (...) even in fully functioning democracies, where the elites have no additional powers and all votes have equal weight, policy choices may reflect the preference of the elites rather than those of the poor (Bandiera and Levy, 2011: 1322).

Nevertheless, what is indicated here is that while it is certain that the rupture indicated by Gruner (2009) and Bandiera and Levy (2011) exists, this takes place in a party system in which the parties don't politically represent the needs and desires of voters. Therefore, in this context political consensus among voters is impossible, since the political parties are governed by informal and invisible organizations that rather than representing voter needs and desires, represent those of their members in a selective way (Freidenberg and Levitsky, 2007). We can say that political economy models produced by developed western economies do not operate in Colombia as long as they assume that the parties are highly formalized.

> In other words, they simply assume that the parties are organized as set out in their statutes. These assumptions don't go far in Latin America. The difference between the way in which parties are organized in their statutes and how they function in practice is enormous (Freidenberg y Levistski 2007, 540)

In the words of Prats (2004),

> In Latin America, almost nothing is what it appears to be because, in many spheres, institutional informality clearly prevails, sometimes in contradiction with the formality that it annuls and replaces the facts (Prats 2004)

Hence, these models are methodologically irrelevant because their analysis omits description of plotting by the political institutions that configure a political system, which determines both the distribution of power among political actors and the nature of the political negotiation process that political actors engage in from their different positions in the policy space and given their relative veto power in the negotiation[8].

In fact, decisions about municipal public spending, which are eminently political – regarding how to distribute, execute and set the amount of the budget to finance such spending – do not depend, at least in many municipalities in Colombia, on the criteria of rationality that decision models assume guides the behavior of a local government as a decision agent. Rather than obeying criteria of economic efficiency, decisions about public spending instead follow rationality criteria based on certain ideological positions that, situated in the policy space, express the system of ends that formal or informal political organizations seek to promote, consistent with the institutions of a political system and a party system.

In general, the description offered by political competition models of the institutional process in which public policy decisions are made openly neglects the institutional conditions in which a government is situated as a decision agent. These institutional conditions deny the possibility of deciding the amount and management of public spending in an independent and unilateral way.

With respect to the relationship between political patronage and wealth distribution, Gallego and Raciborski (2008) consider the patron-client relationship in which the client is "free" to decide whether to vote for the political party that has provided him or her with certain favors. They assume that if a party obtains a person's vote it is because the voter has decided to acknowledge his gratitude for the favors received. Gallego and Raciborski (2008) establish that the electoral quota mobilized by a party is due to the gratitude of those voters who have ceded their vote in response to favors received.

Several considerations on the previous statements: First, Gallego and Raciborski (2008) overlook he fact that a patron uses coercive and violent methods to ensure the client's adherence, since political patronage is the exercise of a social relationship of domination. Second, patron favors are

[8] The latter is decisive given that we know that in Colombia the lack of proximity between electors and elected officials.

resources that flow continuously to their clients in order to maintain the political structure of the organization; only a few individuals can be the clients of a patron. Delivering payments to voters for their votes is quite different from granting favors to the patron's clients. Voters do not belong to the party organization, while clients do.

We can say that the favors a patron provides to his operator (client) is what links the client to the party organization, such that the patronage organization exists and is administered on

> (...) the basis of asymmetrical transactions, where the former controls the significant resources of power and guarantees, as a 'guardian,' access to them for his clientele in exchange for loyalty and political support. This dyadic relationship is particularist and exists between individuals with unequal power and socioeconomic status with the purpose of obtaining mutual benefits, exchange of jobs, contracts, positions of power and personal links for political support, especially votes (Rehren 2000: 131).

Therefore, this article provides a rational choice reasoning that sets the first theoretical bases in the context of subnational analysis. These foundations make it possible to establish some statements regarding the relationship between the vote-buying phenomenon, negotiation of the agenda among veto players and wealth allocation.

Appendix

`Proof of proposition 1`. If $\sigma_{\mathbf{C}} = \sigma$, then, $MI_{\mathbf{C}}(\mathbf{sq}) = \{\mathbf{sq}\}$. In efect, seeking a contradiction, Let us assume that there is a rule $\mathbf{x}$ such that $\mathbf{x} \neq \mathbf{sq}$ and $\mathbf{x} \succsim_{\mathbf{C}} \mathbf{sq}$. If $\mathbf{x}_{\mathbf{C}} = \mathbf{sq}$ by hypothesis, then, $\|\mathbf{sq} - \mathbf{x}_{\mathbf{C}}\| = 0$. On the other hand, if $\mathbf{x} \succsim_{\mathbf{C}} \mathbf{sq}$ then $\|\mathbf{x} - \mathbf{x}_{\mathbf{C}}\| \leq \|\mathbf{sq} - \mathbf{x}_{\mathbf{C}}\|$ by definition of $\succsim_{\mathbf{C}}$. In consequence, $\|\mathbf{x} - \mathbf{x}_{\mathbf{C}}\| < \|\mathbf{sq} - \mathbf{x}_{\mathbf{C}}\|$ given that $\mathbf{x} \neq \mathbf{sq}$. Hence, $\|\mathbf{x} - \mathbf{x}_{\mathbf{C}}\| < 0$, which is a contradiction. Therefore, there is no rule $\mathbf{x} \neq \mathbf{sq}$ such that $\mathbf{x} \succsim_{\mathbf{C}} \mathbf{sq}$, i.e., $MI_{\mathbf{C}}(\mathbf{sq}) = \{\mathbf{sq}\}$.

It hold that $\mathbf{sq} \in MI_{\mathbf{A}}[\mathbf{sq}]$ by construction $MI_{\mathbf{A}}[\mathbf{sq}]$. But we know that $MI_{\mathbf{C}}[\mathbf{sq}] = \{\mathbf{sq}\}$, and in consequence, $MI_{\mathbf{C}}[\mathbf{sq}] \subset MI_{\mathbf{A}}[\mathbf{sq}]$. Hence, $MI_{\mathbf{C}}[\mathbf{sq}] \cap MI_{\mathbf{A}}[\mathbf{sq}] = MI_{\mathbf{C}}[\mathbf{sq}]$ and $W[\mathbf{sq}] = MI_{\mathbf{C}}[\mathbf{sq}]$, i.e., $W[\mathbf{sq}] = \{\mathbf{sq}\}$.

Let $\Gamma(\mathbf{x}_{\mathbf{C}}, \mathbf{x}_{\mathbf{A}}, \mathbf{sq})$ be a game of political negotiation such that $\mathbf{x}_{\mathbf{C}} = \mathbf{sq}$. Following the backward-induction algorithm, and given that the decision is taken by unanimity, the mayor knows that the council accepts the rule $\mathbf{x} = \psi(\widetilde{\sigma}) \in \mathcal{S}$ if and only if $\mathbf{x} \in W(\mathbf{sq})$ (see Figure 4.b). Hence, it hold that $\mathbf{x}^{\circ} \in W(\mathbf{sq})$ is the optimal action if $\mathbf{x}^{\circ} \succsim_{\mathbf{A}} \mathbf{x}$ for all $\mathbf{x} \in W(\mathbf{sq})$. We note that

$\mathbf{x}^{\circ} = \mathbf{sq}$ if $W(\mathbf{sq}) = \{\mathbf{sq}\}$ and $\mathbf{sq} \succsim_{\mathbf{A}} \mathbf{sq}$. Therefore, the mayor chooses in the first stage of the game the action $\mathbf{sq}$, in such a manner that, the council in the second stage of the game accepts the agenda $\psi^{-1}(\mathbf{sq}) = \sigma^{\circ}$ given that $\mathbf{sq} = \mathbf{x_C}$. In consequence, $(\mathbf{sq}, \mathbf{sq})$ is a **ENPS** such that $u_{\mathbf{C}}(\mathbf{sq}, \mathbf{sq}) = \infty$ and $u_{\mathbf{A}}(\mathbf{sq}, \mathbf{sq}) = 1/\left\|\mathbf{sq} - \mathbf{x_A}\right\|$. *Q.E.D.*

`Proof of proposition 2`. Consider Figure 4 and let $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$ be a political configuration in which it hold that $\mathbf{x_C} \in [e_2\mathbf{W}, \mathbf{sq})$, $\|\mathbf{x_C} - \mathbf{x_A}\| > \|\mathbf{x_C} - \mathbf{sq}\|$ and $\mathbf{sq} = (\mathbf{W}_B, \mathbf{W}_A)$. Given that the mayor is the agenda setter, he chooses in the first stage of the game a agenda $\sigma = \psi(\mathbf{x})$ such that $\mathbf{x} \succ_{\mathbf{A}} \mathbf{x}'$ for all $\mathbf{x}' \in W(\mathbf{sq})$. Let us define $\mathbf{x}^{\circ}$ in such a manner that $\{\mathbf{x}^{\circ}\} = I_{\mathbf{C}}[\mathbf{sq}] \cap [\mathbf{x_A}, \mathbf{x_C}]$ (see figure 4.a). Notice that

$$\mu'\mathbf{x}^{\circ}+(1-\mu')\mathbf{x_C} \succ_{\mathbf{A}} \mu\mathbf{x}^{\circ}+(1-\mu)\mathbf{x_C} \tag{2.1}$$

if $\mu' > \mu$ (see figure 4.a). It is clear that $\mathbf{x}^{\circ} \succ_{\mathbf{A}} \mathbf{x}$ such that $\mathbf{x} = \mu\mathbf{x}^{\circ}+(1-\mu)\mathbf{x_C}$ for any $\mu \in [0,1)$ if $\|\mathbf{x}^{\circ} - \mathbf{x_A}\| < \|\mathbf{x} - \mathbf{x_A}\|$ for any $\mu \in [0,1)$. In consequence, following the backward-induction algorithm, it hold that $\mathbf{x}^{\circ} \in W(\mathbf{sq})$ is the mayor's optimal action given that the council accepts the rule $\mathbf{x}^{\circ}$ in the second stage of the game and $u_{\mathbf{A}}(\mathbf{x}^{\circ}, \mathbf{x}^{\circ}) > u_{\mathbf{A}}(\mathbf{x}, \mathbf{x}^{\circ})$ for any $\mathbf{x} \in MI_{\mathbf{A}}[\mathbf{sq}]$. Hence, $(\mathbf{x}^{\circ}, \mathbf{x}^{\circ})$ is the **ENPS** of the game and $u_{\mathbf{C}}(\mathbf{x}^{\circ}, \mathbf{x}^{\circ}) = 1/\|\mathbf{x}^{\circ} - \mathbf{x_C}\|$. Notice that if $\mathbf{x}^{\circ}=(\mathbf{W}'_B, \mathbf{W}'_A)$ is the political equilibrium that defeat the status quo, then, $\mathbf{W}_B - \mathbf{W}'_B > 0$ is the amount of expropriated wealth to the **WO** individuals and $\mathbf{W}'_A - \mathbf{W}_A > 0$ is the amount of wealth to the **BO** individuals. *Q.E.D.*

`Proof of proposition 3`. Consider figure 5 and notice that $\mathbf{x_A}$, $\mathbf{sq}$ and $\mathbf{u}$ are parameters such that $\mathbf{u} \in ((0, \mathbf{W}), \mathbf{sq})$ and

$$\|\mathbf{x_A} - \mathbf{u}\| = \min_{\mathbf{x} \in ((0,\mathbf{W}),\mathbf{sq})} \|\mathbf{x_A} - \mathbf{x}\|$$

Hence, the intervals $[\mathbf{x_A}, \mathbf{u}]$ and $((0, \mathbf{W}), \mathbf{sq})$ are orthogonals and $\Delta\mathbf{x_A}\mathbf{u}\mathbf{sq}$ is a right triangle. Let $\widetilde{\mathbf{x}} \in [\mathbf{x_A}, \mathbf{sq}]$ such that the intervals $[\widetilde{\mathbf{x}}, \mathbf{x_C}]$ and $[\mathbf{x_A}, \mathbf{sq}]$ are orthogonals, i.e.,

$$\|\widetilde{\mathbf{x}} - \mathbf{x_C}\| = \min_{\mathbf{x} \in [\mathbf{x_A},\mathbf{sq}]} \|\mathbf{x_C} - \mathbf{x}\|$$

Using the pythagorean theorem, and given the right triangle $\Delta\mathbf{x_A}\mathbf{u}\mathbf{x_C}$, it hold that

$$\|\mathbf{x_A} - \mathbf{x_C}\|^2 = \|\mathbf{u} - \mathbf{x_C}\|^2 + \|\mathbf{u} - \mathbf{x_A}\|^2 \tag{3.1}$$

Differentiating (3.1) with respect to $\|\mathbf{sq}-\mathbf{x_C}\|$, and given that $\|\mathbf{u}-\mathbf{x_A}\|$ is constant, we get

$$\frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=\frac{\|\mathbf{u}-\mathbf{x_C}\|}{\|\mathbf{x_A}-\mathbf{x_C}\|}\cdot\frac{\partial\|\mathbf{u}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} \tag{3.2}$$

But $\|\mathbf{u}-\mathbf{sq}\|=\|\mathbf{u}-\mathbf{x_C}\|+\|\mathbf{sq}-\mathbf{x_C}\|$, and hence,

$$\frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=\frac{\|\mathbf{u}-\mathbf{x_C}\|}{\|\mathbf{x_A}-\mathbf{x_C}\|}\cdot\frac{\partial\left[\|\mathbf{sq}-\mathbf{u}\|-\|\mathbf{sq}-\mathbf{x_C}\|\right]}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} \tag{3.3}$$

In consequence, $\dfrac{\partial\|\mathbf{sq}-\mathbf{u}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=0$ given that $\mathbf{sq}$ and $\mathbf{u}$ are parameters. Therefore,

$$\frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=-\frac{\|\mathbf{u}-\mathbf{x_C}\|}{\|\mathbf{x_A}-\mathbf{x_C}\|}<0 \tag{3.4}$$

On the other hand, we know that $\|\mathbf{x}^\circ-\mathbf{x_C}\|=\|\mathbf{sq}-\mathbf{x_C}\|$ by construction, in consequence,

$$\frac{\partial\|\mathbf{x}^\circ-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=\frac{\partial\|\mathbf{sq}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=1 \tag{3.5}$$

Hence, given that $\|\mathbf{x_A}-\mathbf{x_C}\|=\|\mathbf{x_A}-\mathbf{x}^\circ\|+\|\mathbf{x}^\circ-\mathbf{x_C}\|$, by (3.4) and (3.5) it hold that

$$\frac{\partial\|\mathbf{x_A}-\mathbf{x}^\circ\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=\frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}-\frac{\partial\|\mathbf{x}^\circ-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=-\frac{\|\mathbf{u}-\mathbf{x_C}\|}{\|\mathbf{x_A}-\mathbf{x_C}\|}-1<0 \tag{3.6}$$

Let us consider the angle $\theta=\widehat{\mathbf{x_C}\mathbf{sq}\widetilde{\mathbf{x}}}$ such that

$$\cos\theta=\frac{\|\widetilde{\mathbf{x}}-\mathbf{sq}\|}{\|\mathbf{x_C}-\mathbf{sq}\|}\Leftrightarrow\|\widetilde{\mathbf{x}}-\mathbf{sq}\|=\|\mathbf{x_C}-\mathbf{sq}\|\cdot\cos\theta \tag{3.7}$$

In consequence,

$$\frac{\partial\|\widetilde{\mathbf{x}}-\mathbf{sq}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=\frac{\partial\|\mathbf{x_C}-\mathbf{sq}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\cos\theta+\|\mathbf{x_C}-\mathbf{sq}\|\frac{\partial\cos\theta}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} \tag{3.8}$$

Given that $\theta<\frac{\pi}{2}$ is a parameter, then, $\dfrac{\partial\cos\theta}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=0$ and

$$\frac{\partial\|\widetilde{\mathbf{x}}-\mathbf{sq}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}=\cos\theta>0 \tag{3.9}$$

Therefore, given that $\|\mathbf{x_A}-\mathbf{sq}\| = \|\mathbf{x_A}-\widetilde{\mathbf{x}}\| + \|\widetilde{\mathbf{x}}-\mathbf{sq}\|$, $\dfrac{\partial\|\mathbf{x_A}-\mathbf{sq}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} = 0$ and $\|\mathbf{x_A}-\mathbf{sq}\|$ is a parameter, then, by (3.9) we have that

$$\frac{\partial\|\mathbf{x_A}-\widetilde{\mathbf{x}}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} = -\frac{\partial\|\widetilde{\mathbf{x}}-\mathbf{sq}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} < 0 \tag{3.10}$$

Thus, since the triangles $\Delta\mathbf{x_A}\widetilde{\mathbf{x}}\mathbf{x_C}$ and $\Delta\mathbf{x_A}\mathbf{z}\mathbf{x}^\circ$ are similar, then

$$\|\mathbf{x_A}-\mathbf{z}\|\,\|\mathbf{x_A}-\mathbf{x_C}\| = \|\mathbf{x_A}-\mathbf{x}^\circ\|\,\|\widetilde{\mathbf{x}}-\mathbf{x_A}\| \tag{3.11}$$

Hence, its hold that

$$\frac{\partial(\|\mathbf{x_A}-\mathbf{z}\|\|\mathbf{x_A}-\mathbf{x_C}\|)}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} = \frac{\partial(\|\mathbf{x_A}-\mathbf{x}^\circ\|\|\widetilde{\mathbf{x}}-\mathbf{x_A}\|)}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} \tag{3.12}$$

In consequence, if

$$\frac{\partial(\|\mathbf{x_A}-\mathbf{z}\|\|\mathbf{x_A}-\mathbf{x_C}\|)}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} = \overbrace{\frac{\partial\|\mathbf{x_A}-\mathbf{z}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\,\|\mathbf{x_A}-\mathbf{x_C}\|}^{\mathbf{a}} + \overbrace{\|\mathbf{x_A}-\mathbf{z}\|\,\frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}}^{\mathbf{b}} \tag{3.13}$$

and

$$\frac{\partial(\|\mathbf{x_A}-\mathbf{x}^\circ\|\|\widetilde{\mathbf{x}}-\mathbf{x_A}\|)}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} = \overbrace{\frac{\partial\|\mathbf{x_A}-\mathbf{x}^\circ\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\,\|\widetilde{\mathbf{x}}-\mathbf{x_A}\|}^{\mathbf{c}} + \overbrace{\|\mathbf{x_A}-\mathbf{x}^\circ\|\,\frac{\partial\|\widetilde{\mathbf{x}}-\mathbf{x_A}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}}^{\mathbf{d}} \tag{3.14}$$

then,

$$\mathbf{a}-\mathbf{d} = \mathbf{c}-\mathbf{b} \tag{3.15}$$

We claim that $\mathbf{c}-\mathbf{b}<0$, i. e.,

$$\underbrace{\frac{\partial\|\mathbf{x_A}-\mathbf{x}^\circ\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}}_{(-)}\underbrace{\|\widetilde{\mathbf{x}}-\mathbf{x_A}\|}_{(+)} - \underbrace{\|\mathbf{x_A}-\mathbf{z}\|}_{(+)}\underbrace{\frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}}_{(-)} < 0 \tag{3.16}$$

By definition of norm $\|\cdot\|$, and expressions (3.4) and (3.6), it verify the signs in exppression 3.16. However, we must prove that the expression (3.16) is negative.

By the expressions (3.4) and (3.6), we have

$$\frac{\partial\|\mathbf{x_A}-\mathbf{x}^\circ\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} < \frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} < 0 \tag{3.17}$$

Hence, if $\|\widetilde{\mathbf{x}}-\mathbf{x_A}\| > \|\mathbf{x_A}-\mathbf{z}\| > 0$ and $-\dfrac{\partial\|\mathbf{x_A}-\mathbf{x}^{\circ}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} > -\dfrac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} > 0$, then,

$$-\frac{\partial\|\mathbf{x_A}-\mathbf{x}^{\circ}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\|\widetilde{\mathbf{x}}-\mathbf{x_A}\| > -\frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\|\mathbf{x_A}-\mathbf{z}\| > 0 \tag{3.18}$$

Equivalently,

$$\frac{\partial\|\mathbf{x_A}-\mathbf{x}^{\circ}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\|\widetilde{\mathbf{x}}-\mathbf{x_A}\| < \frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\|\mathbf{x_A}-\mathbf{z}\| < 0 \tag{3.19}$$

Therefore,

$$\frac{\partial\|\mathbf{x_A}-\mathbf{x}^{\circ}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\|\widetilde{\mathbf{x}}-\mathbf{x_A}\| - \frac{\partial\|\mathbf{x_A}-\mathbf{x_C}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\|\mathbf{x_A}-\mathbf{z}\| < 0 \tag{3.20}$$

In consequence, (3.16) is negative.

But, given the expression (3.15), it hold that

$$\frac{\partial\|\mathbf{x_A}-\mathbf{z}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\|\mathbf{x_A}-\mathbf{x_C}\| - \|\mathbf{x_A}-\mathbf{x}^{\circ}\|\frac{\partial\|\widetilde{\mathbf{x}}-\mathbf{x_A}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} < 0 \tag{3.21}$$

Additionally, we know that $\dfrac{\partial\|\widetilde{\mathbf{x}}-\mathbf{x_A}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} < 0$ by the expression (3.10). In consequence,

$$\frac{\partial\|\mathbf{x_A}-\mathbf{z}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|}\|\mathbf{x_A}-\mathbf{x_C}\| < \|\mathbf{x_A}-\mathbf{x}^{\circ}\|\frac{\partial\|\widetilde{\mathbf{x}}-\mathbf{x_A}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} < 0 \tag{3.22}$$

Thus, if $\|\mathbf{x_A}-\mathbf{x_C}\| \geq 0$ then $\dfrac{\partial\|\mathbf{x_A}-\mathbf{z}\|}{\partial\|\mathbf{sq}-\mathbf{x_C}\|} < 0$. *Q.E.D.*

`Proof of proposition 4`. If $\|\mathbf{x_C}-\mathbf{x_A}\| = \|\mathbf{x_C}-\mathbf{sq}\|$ then $\mathbf{x_A} \in MI_{\mathbf{C}}[\mathbf{sq}]$ by definition of $MI_{\mathbf{C}}[\mathbf{sq}]$ and $\mathbf{x_A} \in W(\mathbf{sq})$. It is verified that $\mathbf{x_A} \succsim_{\mathbf{A}} \mathbf{x}$ for all $\mathbf{x} \in W(\mathbf{sq})$; and in consequence, $\mathbf{x_A}$ is the political equilibrium in the political configuration $(\mathbf{x_C}, \mathbf{x_A}, \mathbf{sq})$ such that $\mathbf{x_A} \in [e_2\mathbf{W}, \mathbf{sq})$ and $\|\mathbf{x_C}-\mathbf{x_A}\| = \|\mathbf{x_A}-\mathbf{sq}\|$. *Q.E.D.*

`Proof of proposition 5`. Following the backward induction method, we start by determining the mayor's best response, which can be calculated by maximizing $V(I_{\mathbf{A}}(\lambda) - \mathbf{C}(\lambda)) + kU(I_{\mathbf{C}}(\lambda) + \mathbf{C}(\lambda))$ such that the bribe $\mathbf{C}$ that the Mayor gives to the council depends of his action λ.

Hence,

$$\frac{\partial\left[V(\cdot) + kU(\cdot))\right]}{\partial \mathbf{C}(\lambda)} = -V'(\cdot) + kU'(I_{\mathbf{C}}(\lambda) + \mathbf{C}(\lambda)) \tag{5.2}$$

Let $\mathbf{C}^*(\lambda)$ such that

$$-V'(I_{\mathbf{A}}(\lambda) - \mathbf{C}^*(\lambda)) + kU'(I_{\mathbf{C}}(\lambda) + \mathbf{C}^*(\lambda)) = 0 \tag{5.3}$$

Note that $\mathbf{C}^*(\lambda)$ is an implicit function of λ. In consequence,

$$-V''(\cdot)\left(I'_{\mathbf{A}}(\lambda) - \frac{\partial \mathbf{C}^*(\lambda)}{\partial \lambda}\right) + kU''(\cdot)(I'_{\mathbf{C}}(\lambda) + \frac{\partial \mathbf{C}^*(\lambda)}{\partial \lambda}) = 0 \tag{5.4}$$

If we differentiate both sides of (5.4) with respect to $\frac{\partial \mathbf{C}^*(\lambda)}{\partial \lambda}$, we get

$$\frac{\partial \mathbf{C}^*(\lambda)}{\partial \lambda} = \frac{V''(\cdot)I'_{\mathbf{A}}(\lambda) - kU''(\cdot)I'_{\mathbf{C}}(\lambda)}{V''(\cdot)+kU''(\cdot)} \tag{5.5}$$

Hence, the expression (5.5) is negative if $V''(\cdot) > kU''(\cdot)$ and $I'_{\mathbf{A}}(\lambda) > I'_{\mathbf{C}}(\lambda)$, i. e., the optimal bribe $\mathbf{C}^*(\lambda)$ decreases if λ tends to 1.

Given the mayor's optimal action $\mathbf{C}^*(\lambda)$, the council's decision problem is defined as follows:

$$\max_{\lambda \in [0,1]} U(I_{\mathbf{C}}(\lambda) + \mathbf{C}^*(\lambda)) \tag{5.6}$$

Differentiating with respect to λ we get

$$\frac{\partial U(I_{\mathbf{C}}(\lambda) + \mathbf{C}^*(\lambda))}{\partial \lambda} = -U'(\cdot) \cdot (\frac{\partial I_{\mathbf{C}}(\lambda)}{\partial \lambda} + \frac{\partial \mathbf{C}^*(\lambda)}{\partial \lambda}) \tag{5.7}$$

Let λ^* such that

$$-U'(I_{\mathbf{C}}(\lambda^*) - \mathbf{C}^*(\lambda^*)) \cdot (\frac{\partial I_{\mathbf{C}}(\lambda^*)}{\partial \lambda} + \frac{\partial \mathbf{C}^*(\lambda^*)}{\partial \lambda}) = 0 \tag{5.8}$$

But $U' > 0$ by hypothesis, and hence (5.8) is true if

$$\frac{\partial I_{\mathbf{C}}(\lambda^*)}{\partial \lambda} = -\frac{\partial \mathbf{C}^*(\lambda^*)}{\partial \lambda} \tag{5.9}$$

Given the expressions (5.5) and (5.9) we have

$$\frac{V''(\cdot)I'_{\mathbf{A}}(\lambda^*) - kU''(\cdot)I'_{\mathbf{C}}(\lambda^*)}{V''(\cdot)+kU''(\cdot)} = -I'_{\mathbf{C}}(\lambda^*) \tag{5.10}$$

Hence,

$$V''(\cdot)I'_{\mathbf{A}}(\lambda^*) - kU''(\cdot)I'_{\mathbf{C}}(\lambda^*) + I'_{\mathbf{C}}(\lambda^*)V''(\cdot)+I'_{\mathbf{C}}(\lambda^*)kU''(\cdot) = 0 \tag{5.11}$$

or equivalently

$$V''(\cdot)[I'_{\mathbf{A}}(\lambda^*) + I'_{\mathbf{C}}(\lambda^*)] = 0 \tag{5.12}$$

But $V''(\cdot) < 0$ at every point of its domain, and in consequence, (5.12) is true if

$$I'_{\mathbf{A}}(\lambda^*) + I'_{\mathbf{C}}(\lambda^*) = 0 \tag{5.13}$$

Hence, if $I'_{\mathbf{A}}$ and $I'_{\mathbf{C}}$ are strictly increasing functions on the closed interval $[0, 1]$ and sum of increasing functions is increasing, then, it holds that $\lambda^* = 1$. *Q.E.D.*

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