

# Power-sharing Agreements as Political Risk-sharing Contracts

Leonard Wantchekon\*

Princeton University and Yale University

First draft: May 6, 1996

This version: January 10, 2001

---

\*I thank Roger Myerson and Michel Poitevin and seminar participants at Northwestern University and Ohio State University for invaluable comments. I am responsible for any remaining error.

## **Abstract**

This paper presents a dynamic model to analyze the structure of long term political contracts between a minority party and majority party and investigates the commitment value of such contracts. In the model, parties are assumed to be risk averse and to be willing to construct a “legitimate” and violence-free political system. In order to be “insured” against political violence, the majority party is willing to trade a partial control over the government with the minority party for legitimacy and civil order. I show that when the contractual arrangement is legally enforceable, parties are fully insured and the principles governing allocation of power across parties are consistent from one period to another. When there is suspicion about the majority’s willingness to respect the terms of the contract, this party has to give the minority the maximum possible share of power and make it effective before the elections. When neither party can be trusted, the optimal risk sharing contract can be enforced only if parties value the future very highly. Otherwise, “political insurance” will only be partial and the minority access to government will change over time depending on its past and current electoral support.

## INTRODUCTION

Protection of ethnic and political minorities is one of the most contentious issues in constitution design during democratic transitions. Negotiations for new constitutions in ethnically divided countries are plagued by serious commitment problems. To see how such problems may arise, consider for example pre-electoral negotiations between a party representing an ethnic minority and a party representing an ethnic majority. The minority might fear there is no guarantee that the majority leaders will respect the agreement after the elections. The majority party may be very cooperative before the vote and then become repressive and non-conciliatory as soon as it takes control of the coercive instruments of the state.

There is an important literature in political economy of institutions addressing the issue of political commitment. Weingast (1994) explains how this question played a role in the outbreak of the American Civil War. Weingast investigates why Southerners previously willing to accept political outcomes under the Constitution changed their minds and in what way Republicans, believed to be rather moderate on the question of the abolition of slavery, were a threat to the South. He claims that the stability of Antebellum politics was the result of an explicit set of political exchanges by which a sufficient number of Northerners joined Southerners to provide strong protection for slavery in exchange for Southerners' cooperation on other policy dimensions. The institution which ensured Northerners' commitment to respect the terms of the exchange was the balance rule affording each region equal representation in the Senate and hence granting each a veto power over national policy making. With the break of the balance rule as well as the rise of the Republican Party which became explicitly hostile to slavery, Northerners' commitment ceased to be credible. This, Weingast argued, led to Southern secession and to the Civil War.

Ordeshook (1991) analyzes commitment values of constitutional arrangements. His paper compares two competing views of constitutions. The first, offered by Tullock, presents constitution as a long term social contract and the second offered by Hardin

considers it as a coordinating device. He claims that the Hardin idea allows for a more satisfying view of the way that constitutions become self-enforcing. If constitution were a contract that binds generations across periods, then there should be an exogenous force, a “third party” to guarantee the enforcement. In the absence of such neutral force, agents might discuss the matter before hand and agree on a particular pattern of play. If each believes that the other will abide by the implicit agreement, both will have an incentive to act accordingly. Writing a constitution is then “an act of coordination which is maintained through its self-generating incentives and expectations.” Ordeshook raises and explores the issue of constitutional stability but fails to construct a coherent model that analyzes the structure of a self-enforcing constitution. This paper provides such a model by first defining the political exchange taking place and then explaining the restrictions to be placed on the constitutional arrangements so that they will be upheld in the future.

The standard solution to commitment problems in ethnically divided countries is extensive power sharing or consociational democracy. Lijphart (1969) defined consociational democracy as “a government by elite cartel designed to turn democracy with fragmented culture into a stable democracy” (p. 216). This model of democracy has been used by its proponents as an explanation of political stability in the Netherland, Belgium and Switzerland, and has served as a normative model for constitutional engineering in ethnically divided countries. However, the consociational paradigm has been criticized for its weak empirical support in Europe (Barry, 1975 and van Schedelen, 1984). Nordlinger (1972) and Horowitz (1985) have also found the model inappropriate for “deeply divided” societies in Africa, Asia and the Middle-East. The question then becomes: when does consociational democracy work? Why did this model of democracy succeed in Netherland but fail in Lebanon?

To address these issues, I use insights from the theory self-enforcing risk sharing contracts (Thomas and Worall [1988, 1994] and Gauthier et al [1994, 1997]. In the model, parties are assumed to derive utility from holding office, to be risk averse and to value political stability. In order to achieve this stability, a majority party

is willing to trade its control over the state institutions and the government to a minority party for more legitimacy and civil order. In other words, the majority exchanges some spoils of office for insurance from the minority against civil disorder. I characterize the efficient power-sharing contract. When the majority is not able to commit to respect the terms of the contract, this party has to give the minority the maximum possible share of power and make it effective before the elections. In the case where neither party can be trusted, the optimal risk sharing contract can be enforced only if parties value the future very highly. Otherwise, there is a risk of political instability. In addition, the minority access to government will change over time depending on its past and current electoral support.

Friedrich (1974) used the term legitimacy to denote “whether a given rulership is believed to be based on a good title by most of those subject to it.” So legitimacy requires a large popular support. In order to get the extra support needed for its right to govern, the majority party may have to give up part of its control over the government. Since parties are expected to interact for a long period of time, this exchange takes the form of a long term contract. If the contractual arrangement is legally enforceable, parties are fully “insured” and there is no risk of political violence. When there is suspicion about the majority’s willingness to respect the terms of the contract, this party has to make very large political concessions and make these concessions effective before the elections. Otherwise the minority could engage in costly political actions and create civil disorder. When neither party can be trusted, the optimal risk sharing contract can be enforced only if parties value the future very highly. Otherwise, political stability will only be partial and the minority share of power will vary depending on its past and current electoral support.

The paper is structured as follows. Section 2 presents the basic model. Section 3 presents optimal power allocation under full enforceability and section 4 discusses the structure of constitutions when only party can commit to respect the contract and section 5 discusses the case where neither party can commit. Section 6 present applications to the theory of consociational democracy and section 7 concludes.

## THE MODEL

I begin by presenting a simple dynamic model that enables me to investigate how parties solve commitment problems. The political environment that I consider is a pluralistic society with cleavages between (ethnic) groups. There are two active players in this environment: an (ethnic) minority party  $m$  and an (ethnic) majority party  $M$ . Each agent is rational and derives utility from holding office. I denote by  $p_{k,t}$  the level of power of party  $k$  at time  $t$ , where  $k$  is either  $M$  or  $m$ . I assume that political power can be derived from one's ability to create civil disorder or from controlling the government and that these two forms of political power are equivalent.

Elections leads to allocation power in a very particular way. It officially entitles the winning party of  $G$  units of spoils of office government and provides the losing party (the minority) with a signal of its level of popular support. It provides the minority with a reading of its chances of winning an open conflict. This popular support represents  $R(s_t)$  probability of winning, where  $s_t$  is the minority's vote share at time  $t$ . The function  $R$  is defined from  $[0, \bar{s}]$  to  $[0, \bar{r}]$ , where  $\bar{s} \in \left(0, \frac{1}{2}\right)$  is the maximum vote share that the minority party could get in any election to be held today or in the future<sup>1</sup> and  $\bar{r}$  some real number which is the upper bound to  $R(s)$ . In addition, I assume that  $0 < G < 1$ . Thus, whereas  $M$  derives its power from the electoral process,  $m$  derives its power from its ability to create civil disorder

The minority wants to have some control over the government in order to push for its political agenda and for this purpose it is willing to give some insurance against civil disorder. The majority requires civil order to enjoy the spoils of office, and to prevent civil disorder from occurring this party is willing to concede  $g_t$  units of control over the government.

Furthermore, assume that before the elections, the majority has the option to give up some units of government control and the minority can also give up its "guns"<sup>2</sup>.

---

<sup>1</sup>Thus, electoral uncertainty is not about which party will win the election, but about how much electoral support the minority is going to get.

<sup>2</sup>In other words, the model allows for transfer of power to be made before electoral uncertainty is

If  $M$  is the only party to make a pre-electoral transfer, then  $g_t$  is independent of the electoral outcome while  $r_t(\cdot)$ , transferred by  $m$  after the election, depends on  $s_t$  and becomes  $r_t(s_t)$ .

Moreover, I assume that “military force” and government control are perfect substitutes so that I can consider  $g_t$  as the *ex ante* net transfer of power from the majority to the minority and  $r_t(s_t)$  as the net post-electoral transfer of “power” from the minority to the majority. As a result, a positive  $g_t$  means that  $M$  transfers more power to  $m$  than it receives from this party and a negative  $g_t$  means that  $M$  receives more power from  $m$  than it transfers to this party. Likewise, a positive  $r_t(s_t)$  means that  $m$  transfers more power to  $M$  than it receives from  $M$  and a negative  $r_t(s)$  means that  $m$  receives more power from  $M$  than it transfers to this party.

More formally, denote by  $g_t^+$  and  $g_t^-(s_t)$  pre-electoral and post-electoral concessions from  $M$  to  $m$ . Denote by  $r_t^-$  and  $r_t^+(s_t)$  pre-electoral and post-electoral concessions from  $m$  to  $M$ . The *ex ante* net trade is then given by  $g_t = g_t^+ - g_t^-$  and the *ex post* net trade is given by  $r_t(s_t) = r_t^+(s_t) - r_t^-(s_t)$ . Assume that  $g_t^+$  and  $g_t^-$ , are all positive real numbers and suppose without loss of generality that at least one of them is equal to zero and let me make the same assumption with respect to  $r_t^+(s_t)$ , and  $r_t^-(s_t)$ . Thus  $g_t$  is either equal to  $g_t^+$  or to  $g_t^-$  while  $r_t(s_t)$  is either equal to  $r_t^+(s_t)$  or to  $r_t^-(s_t)$ . Therefore I can call  $g_t$ , a pre-electoral concession which can be either government control or military force and  $r_t(s_t)$ , a post-electoral transfer which can be “probability of civil unrest” or government control.

By giving up its guns and renouncing its ability to create civil disorder, the minority is actually providing political legitimacy to the majority and this provision enhances the power of the latter. Thus,

At any particular period  $t$ , after  $M$  “pays” a  $g_t$  and “gets back” state contingent  $r_t(s)$ , its level of power is

$$G - g_t + r_t(s_t)$$

---

resolved.

where  $g_t > 0$  and  $r_t(s_t) > 0$ .

Likewise the residual power of the minority party  $m$  is given by

$$R(s_t) + g_t - r_t(s_t)$$

## Time sequence

There is an infinite sequence of periods,  $t = 1, 2, 3, \dots, \infty$ . Each period is divided into three dates,  $t_0, t_1$  and  $t_2$ . In each  $t$ , there is the following time sequence of events: at  $t_0$  Party  $M$  makes a transfer of value  $g_t$  to party  $m$ . At  $t_1$ , there is an election and the state  $s$  is realized. At  $t_2$ ,  $m$  makes a transfer of value  $r_t(s_t)$  back to  $M$ . I define the contractual arrangement  $(g, r)$  by  $\gamma$ , where  $g = (g_0, g_1, \dots, g_t, \dots)$  and  $r = (r_0, r_1, \dots, r_t, \dots)$

At each period  $t$ , the arrangement  $\gamma$  can depend upon the complete past history of the relationship between  $m$  and  $M$ . The history up to  $t$  is defined as the vector of all previous electoral outcomes. Formally,  $h_t = (s_1, s_2, \dots, s_t)$ , where  $s_t$  is the vote share of party  $m$  at period  $t$ . I assume  $h_0 = \emptyset$  and denote by  $\aleph_t$ , the set of all possible histories up to period  $t$ .

Let me now define formally the contractual arrangement  $\gamma$ .

**Definition 1:** *A political risk-sharing contract  $\gamma$  is a sequence of functions  $\{g_t, r_t\}$ , where  $t = 1, \dots, \infty$ , and  $s_t \in [0, \bar{s}]$ , such that*

$$g_t : \aleph_{t-1} \longrightarrow \mathfrak{R} \text{ and } r_t : \aleph_t \longrightarrow \mathfrak{R}$$

*The variable  $g_t$  represents a political concession made by  $M$ . The variable  $r_t$  represents the transfer made by  $m$  at  $t$  after observing  $s$ .*

*I define a political regime as the set  $\{m, M, \gamma\}$ .*

Denote by  $u(\cdot)$  and  $v(\cdot)$  two strictly increasing and concave functions representing the utility derived from power by respectively the minority and the majority. Both functions are assumed to be defined from a closed set to  $\mathfrak{R}$ .

At any period  $t$ , the *per-period* payoff of party  $m$  is given by:



$$u(R(s_t) + g_t - r_t(s_t))$$

Likewise the expected utility of party  $M$  is given by:

$$v(G - g_t + r_t(s_t)).$$

Denote by  $\underline{u}(s_t)$  and  $\underline{v}(s_t)$  the levels of power that the minority and the majority can derive from anarchy. Furthermore, assume that both parties discount the future by a common factor  $\beta \in (0, 1)$ .

For any history  $h_{t-1}$ , party  $m$ 's expected surplus from period  $t$  onwards is given by:

$$U(\gamma, h_{t-1}) = E \sum_{\tau=t}^{\infty} \beta^{\tau-t} \{u(R(s_t) + g_t - r_t(s_t)) - \underline{u}(s_t)\}$$

Likewise, party  $M$ 's expected surplus from period  $t$  onwards is given by:

$$V(\gamma; h_{t-1}) = E \sum_{\tau=t}^{\infty} \beta^{\tau-t} \{v(G - g_t + r_t(s_t)) - \underline{v}(s_t)\}.$$

After I define the terms of the political exchange and the contractual arrangement, I now need to formally define legitimacy and consociational contractual arrangements. A political regime is legitimate if a party which has the power to create civil disorder (in our case, the minority) decides to cooperate instead.

**Definition 2:** *A political regime is legitimate if at every point in time and regardless the electoral outcome, the minority accepts to lower the risk of violence. A regime is illegitimate otherwise. A political regime is oppressive if the majority never concedes government control to the minority. A regime is of “power-sharing type” if the majority always concedes some government control to the minority.*

Let me denote by  $\bar{g}$  the level of pre-electoral concession when the minority gets its maximum possible vote share  $\bar{s}$ . Power-sharing is “extensive” if there exists  $g^*$

such that  $g^* \geq \bar{g}$  for all  $t$  on the equilibrium path, after non deviation histories. It follows from definition 2 that an oppressive regime is illegitimate and power-sharing provides legitimacy. Also note that if the regime is oppressive, the minority may initiate anarchy and this will lead to the power distribution  $(\underline{u}(s_t), \underline{v}(s_t))$ . So long as  $\underline{v}(s_t) < v(G)$ , there is an implicit cost for the majority from breaking up the relationship. The expression  $v(G) - \underline{v}(s_t)$  measures the level of vulnerability of the majority and can be considered as external check on the this party, as a safeguard against oppression of the minority<sup>3</sup>.

Power that can be derived from anarchy is assumed to be more volatile than power that can be derived from democratic process<sup>4</sup>. In an anarchic political system, a party can be wiped out or it can gain a complete control of the political system. Under these circumstances, risk-averse parties will therefore be inclined to design a risk sharing mechanism and to derive their power from the democratic process. However while “anarchic” power is trivially enforceable, the “democratic” power may not be enforceable. For instance, if at some point in time, the power that a party can derive from anarchy is relatively high it might have an incentive to violate the contractual arrangement<sup>5</sup>. The objective of this paper is to investigate how, in the emerging democracies, parties resolve the conflict between risk sharing and self-enforcement. I aim to examine what types of actions parties design *ex ante* to surmount commitment problems or what restrictions are to be placed on the constitutional arrangements so that they will be upheld in the future. I will assume that for all  $t$ ,  $s_t$  is identically

---

<sup>3</sup>Explaining the foundations of a Madisonian democracy, Dahl (1956) wrote “If not restrained from external checks, any group of individuals will tyrannize over the others...The external check consists of applications of reward and penalties and the expectation that this reward will be applied by some source other than the given individuals.” (p. 6)

<sup>4</sup>That is to say, for all  $s$  and for all  $t$ ,  $\underline{u}(s)$  and  $\underline{v}(s)$  take more extreme values than  $u(R(s_t) + g_t - r_t(s_t))$  and  $v(G - g_t + r_t(s_t))$  respectively.

<sup>5</sup>In other words, if at some point in time and in some state of the world  $u(R(s_t) + g_t - r_t(s_t)) > \underline{u}(s_t)$  then the minority will have a short-term incentive to violate the contract, unless the long-term benefit from compliance is high. Likewise, the majority will have an incentive to violate the agreement if  $v(G - g_t + R_t(s_t)) > \underline{v}(s_t)$

and uniformly distributed so that could replace  $s_t$  by  $s$ .

## POLITICAL RISK-SHARING WITH FULL ENFORCEABILITY

Let me analyze the benchmark case where the contractual arrangement is signed at  $t = 0$  and legally enforceable. This is the case where at any point in time, all the terms of the contract will be respected by both parties. Party  $M$  will maximize its gain from trade (surplus) subject to the constraint that party  $m$  participates. However, party  $m$  will participate only if its surplus is positive, that is only if  $V(\gamma, h_0) \geq 0$ . So, the problem of party  $M$  is

$$\begin{aligned} \gamma^\bullet &= \arg \max V(\gamma, h_0) \\ \text{s.t.} & \\ & U(\gamma, h_0) \geq 0 \end{aligned} \tag{1}$$

**Proposition 1:** *The optimal contractual arrangement with full enforceability is such that the ratios of the benefit of one additional unit of power at time  $t$  and state  $s$  over the benefit of one additional unit of power at time  $\tau$  and state  $q$  are equal for both parties. The arrangement results in political “stability” since the expected distribution of power is constant across time.*

The optimal contract is the one which equalizes the marginal rate of substitution of parties’ residual power across states and periods. To see why this is true, suppose that the ratios of marginal benefits are different, for instance that it is 4 for the majority and 2 for the minority. This means that from time  $\tau$  and state  $q$  to time  $t$  and state  $s$ , the majority puts relatively “too much” value on an additional unit of power whereas the minority puts “too little” value on this unit. As result the former will be willing to give more power while the latter will be willing to be given more power. The process will continue until the ratios of marginal benefits are equalized.

At the optimum, there is perfect risk sharing and perfect political stability since the expected distribution of power is stationary and remains unchanged over time. At the optimum, only  $g_t - r_t(s)$ , the net transfer of power between parties can be determined and this transfer depends only on the current electoral outcome. The more serious the risk of political violence is, (i.e.  $r_t(s)$  small), the higher is the net transfer of power to the minority. When the risk gets small ( i.e.  $r_t(s)$  high), the net transfer of power is small. Obviously, the great challenge of a divided society is whether the majority is willing to give enough control of the government to the minority cannot commit to reduce the risk of violence substantially or whether the minority is willing to cooperate by reducing the risk of violence when the majority cannot make large concessions. Finally, note that an optimal power-sharing may well involve a positive probability of violence, that is  $r_t(s)$  needs not to be equal to  $R_t(s)$ . In fact,  $r_t(s) \leq R_t(s)$  represents a check on the majority power.

### **CONTRACTUAL ARRANGEMENT WHEN THE MINORITY CAN COMMIT BUT THE MAJORITY CANNOT.**

Let me assume that only  $m$  can commit to respect the terms of the contract. That is, whenever the political power that can be derived from anarchy is higher than political power to be derived from the democratic process, party  $M$  may renege on the contract. Since this party cannot be forced to respect the terms of the agreement, it should be provided with the proper incentives. This will happen only if, at any point in time, party  $M$  derives at least as much utility from respecting the contract as reneging on it. Since both parties are involved in a long term relationship,  $M$ 's utility from reneging depend on how  $m$  reacts to this action. I assume that  $m$  generates anarchy if  $M$  reneges on the contract. This punishment strategy will help me to characterize the set of feasible contracts that will be obeyed without legal enforcement. I say that these contracts satisfy the self-enforcing constraint.

The majority will make a credible commitment to respect the terms of the contract

if the benefits of doing so outweigh the cost of renegeing and “breaking up” with the minority. As in section 1, the terms of the contracts are described by the set  $\gamma = \{g_t(h_{t-1}), r_t(h_t)\}$  for all  $h_t \in \mathfrak{N}_t$ . Suppose the transfer in government control has to be made before the period  $t$  election, that is  $g_t = g_t^+ > 0$ . In this case, party  $M$  may have an incentive to violate this agreement unless its surplus from compliance, that is  $V(\gamma, h_{t-1})$ , is positive. If instead this transfer were to be made after the election, that is  $r_t(s) = -r_t^-(s) < 0$ , and  $M$  is willing to renege on this contract, the surplus from compliance is given by

$$v(G - g_t + r_t(s)) - v(G - g_t) + \beta V(\gamma, h_{t-1}, s).$$

Thus, the problem of  $M$  is:

$$\gamma^* = \arg \max V(\gamma, h_0)$$

$$s. t. \quad U(\gamma, h_0) \geq 0$$

$$V(\gamma, h_{t-1}) \geq 0 \quad \forall t, h_{t-1}$$

$$v(G - g_t + r_t(s)) - v(G - g_t) + \beta V(\gamma, h_{t-1}, s) \geq 0 \quad \forall s, t, h_{t-1} \quad (2)$$

**Proposition 2:** *Assume  $m$  can commit but  $M$  cannot. Then there exists an “extensive” power-sharing arrangement that is incentive compatible for the majority regardless of the discount factor  $\beta$ . This arrangement is efficient and leads to political stability since the expected distribution of power remains unchanged over time.*

The proposition states that if in each period the uncommitted party makes a substantial pre-electoral concession to the committed party, that is  $g_t \geq \bar{g} = \frac{G - \bar{r}}{2}$ , then the full commitment contract can be enforced<sup>6</sup>. This is true regardless of the value of the discount factor. Even when parties are not optimistic about the future of their relationship, the majority's commitment problem can be surmounted and the optimal contract be enforced. This is because with a high  $g_t$  enough power is ceded to the minority that this party is willing to provide legitimacy to the majority regardless the electoral outcome. The majority will then gain by staying in the contractual relationship and will never violate the agreement.

If a substantial pre-electoral concession cannot be made, then the full commitment contract cannot be supported for all values of the discount factor  $\beta$ . If this discount factor is high enough, then player  $M$  will abide by the agreement because the future benefits of such action exceed the short run gain of violating the agreement.

Next, I characterize the optimal contractual arrangement when  $g_t < \bar{g}$  and the discount factor is low. This scenario captures the situation in which making "excessive" concessions to the minority is "too" unpopular among the ethnic majority.

**Proposition 3:** *If "extensive" power-sharing is not feasible and both parties are myopic, then the optimal contract is such that there exists a lower bound to the minority's power. This bound is time-independent and increasing in the minority's electoral support.*

When the discount factor is low and  $\bar{g}$  is not attainable, perfect insurance, that is a fixed power sharing, is not feasible. As a result the minority power must to some extent depend to some extent on the electoral outcome. However, there exists a minimum level of power which prevents the majority from violating its agreement and optimally trading off its current and future power. This result shows that either the power distribution is fixed over time or it is bounded from below. The "rights"

---

<sup>6</sup>The proof of Proposition 1 given in appendix explains how  $\bar{g}$  is derived.

of the minority are then protected regardless of how parties discount the future. In addition, the contract induces limited political mobility because electoral outcomes “slightly” affect power distribution.

The argument remains valid even when the minority is the party with commitment problems. In this case, this party will have to make credible preelectoral “statements” to prove its commitment to civil order and to a stable political system. The statement might for instance take the form of dismantling of the military wing of this party if it has one<sup>7</sup>. From a technical point of view this reversal of roles between the two parties mean that both  $g_t$  and  $r_t(s)$  take negative values.

Preelectoral concessions can also be seen as signaling devices designed by one party to convince the other on its commitment to carry out the terms of the contract. To show this formally, let me assume that there are two indistinguishable types of the majority party, the “honest” type which always carries out its promises and a “dishonest” type which will break its promise if it is in its interest to do so. Each type will send a costly preelectoral message in terms of political concessions. The minority party after receiving the message decides to create anarchy or remain peaceful. This game, under certain conditions will have a separating equilibrium, in which the honest type and the dishonest type send different messages. Since the minority’s ability create anarchy might decrease from one period to another, the dishonest type will ,during this time period, have an incentive to violate the contract. Hence the dishonest of minority party will not gain by making a large preelectoral concession. In contrast, the honest type will want to make such concession to prove its commitment never to renege on the contract. The size of this concession will increase as the probability weight put on the existence of the honest type decreases<sup>8</sup>.

In the process of transition to democracy, power sharing arrangements can be seen

---

<sup>7</sup>By taking such action, the minority gets rid of the means of any eventual anarchy. As a result the majority will have nothing to fear.

<sup>8</sup>The main problem with this approach is that the exchange is not efficient due to information cost.

as a gift exchange between parties. For the exchange to be efficient, the party that cannot commit to respect the terms of the contract has to be somehow disciplined. This party will have to bear all the risk of a failed transition by making some preelectoral investments which will be lost if it behaves in an opportunistic manner. The argument is similar to the one developed in Williamson (1983), which explains how the use of hostages could help to support efficient exchange. In this model, the hostage represents the preelectoral investment made by party  $M$ .

Fearon (1992) explains violence in the former Yugoslavia by the inability of ethnic majorities in these countries to commit not to exploit the minorities in the new state. According to the author the commitment problems arise when groups interact in anarchy in the absence of a third party able to guarantee and enforce contracts and the minority's ability to create anarchy decreases with time. In such circumstances the minority will gain by fighting in the present. Fearon rightly pointed out that these problems could be solved by giving some bargaining power to minorities. This paper argues that even in the absence of a court, both parties could solve the commitment problems by designing self-enforcing contracts, that is contracts which are immune to opportunistic behavior. These arrangements arise from preelectoral forums or roundtables between parties which then become something like an insurance market. Political stability is guaranteed by giving not just "some" leverage to the minorities in the new political system, but by giving them the best deal that they could possibly get. Furthermore the power sharing arrangement should be effective before the elections and can be interpreted as an insurance premium. This contract will be enforced even if, due to a low discount rate, the value of creating anarchy declines sharply over time. Consequently even in the context of an anarchic political situation where the minority's ability to create anarchy decreases over time, commitment problems can be solved and ethnic wars averted.

The result in this section is based on the assumption that only one party, namely the majority, has a commitment problem. However, as I have said earlier the minority can also have an incentive to violate the contractual arrangement if it is beneficial



to do so. Under these circumstances the contractual arrangement that I have just described may not be feasible. In the following lines, I study the structure of contracts in the case when both parties have commitment problem.

## CONTRACTUAL ARRANGEMENT WHEN NEITHER PARTY CAN COMMIT

In the presence of a bilateral commitment problems, incentives have to be designed such that both parties will obey the contract. The optimal contract when neither party can commit will solve the following maximization problem.

$$\begin{aligned}
\gamma^{**} = \quad & \arg \max \quad V(\gamma, h_0) \\
s. t. \quad & U(\gamma, h_t) \geq 0 \\
& V(\gamma, h_{t-1}) \geq 0 \quad \forall t, h_{t-1} \\
& u(R(s) + g_t - r_t(s)) - u(R(s) + g_t) + \beta U(\gamma, h_{t-1}, s) \geq 0 \quad \forall s, t, h_{t-1} \\
& v(G - g_t + r_t(s)) - v(G - g_t) + \beta V(\gamma, h_{t-1}, s) \geq 0 \quad \forall s, t, h_{t-1} \\
& \hspace{15em} (3)
\end{aligned}$$

The first two equations mean that the contract has to generate a positive surplus for both parties at any point in time and after any history. The next two mean that after any history either party has to prefer staying in the contract rather than reneging on it. The post electoral (*ex post*) incentive constraint for  $m$  that is,  $u(R(s) + g_t - r_t(s)) - u(R(s) + g_t) + \beta U(\gamma, h_{t-1}, s) \geq 0$ , applies when  $g_t = -g_t^- < 0$  and the *ex post* incentive constraint for  $M$ , that is  $v(G - g_t + r_t(s)) - v(G - g_t) + \beta V(\gamma, h_{t-1}, s) \geq 0$  applies when  $r_t(s) = -r_t^-(s)$ .

The following proposition describes the self-enforcing contract.

**Proposition 4:** *Assume neither  $m$  nor  $M$  can commit. Then there exists a “non extensive” power-sharing arrangement that is incentive compatible for both parties as long as the discount factor  $\beta$  is sufficiently high.*

This result shows that perfect risk sharing is possible even when there is a total breakdown of trust between parties. This will happen only if parties care enough about the future, that is if their discount factor is sufficiently high. To see why, suppose that the minority party is willing to create anarchy. A high discount rate makes the future cost of anarchy outweigh the immediate gain of such action. The minority party will gain by abiding by the terms of the contract and consequently, the efficient risk sharing contract will be enforced.

Now let me characterize the properties of the contract when the discount factor is not sufficiently high.

**Proposition 5:** *When neither party can commit, the optimal contract is such that the more a party is expected to gain from the contractual relationship the less it must concede. In addition, the allocation of power across parties may change “slightly” over time depending upon past and current electoral outcomes.*

When the discount factor is low, the optimal contract cannot be enforced. The second best self-enforcing contract will be such that when the majority’s expected gain from the exchange increases, its preelectoral concession will decrease. This seems a bit surprising since I might expect the majority party to be more generous when the exchange become more profitable. However, the intuition of this result becomes clear when I look at how the profitability of the exchange affects the self-enforcing constraints. When this surplus is low,  $M$  is almost indifferent between breaking up the relationship and obeying the contract. Consequently  $M$  will be perceived as high risk and will have to pay a higher insurance premium. In other words it will have

to make more substantial preelectoral concessions in order to win the trust of its opponent.

The result may explain extensive power-sharing proved stable in Switzerland, Netherland but failed in most Third World countries including Lebanon and Nigeria (Horowitz [1985]). For Weingast (1997), the main reason lies in the presence of institutions that provide incentives for mutual tolerance and in the fact that citizens want these institutions preserved. My argument relies on two factors: (1) differences in the level of economic development and government resources that determine the value attached by the different groups to “staying together” and (2) the inability to commit to respecting the institutions that they have agreed upon. Lack of commitment to institutions requires large concessions that neither the majority nor the minority is willing to make unless they value their relationship very highly. Economic development and abundance of government resources make those concessions easier. The result echoes Przeworski et al (2000) empirical result showing that democracy never collapse in countries with GDP over \$2, 800.

The optimal contract is such that bad electoral performance leads to less power and good electoral performance leads to more power. Moreover a succession of bad (good) performances will reduce (increase) power even further. This means that parties are not fully insured. They bear more risk than they do in the case of an optimal contractual arrangement. In addition, power distribution over time is random and there is political mobility. The arrangement also induces upper and lower bounds on the levels of residual power. As a result, parties’ control over the state will never fall below some minimum level and will never increase beyond some maximum level. This conclusion has important implications for democratic theory. Riker (1982) argues that the role of democratic institutions is to restrain the power of the majority and of elected officials. The protection of the minorities against exploitation comes from the fact political majorities are in general unstable and transitory. “ The majority is not likely to tyrannize over people who may themselves be on top after the next elections. ” (p 234). The model of democracy that I consider in this paper is

different from a Madisonian democracy in one very important aspect. The majority is *not* temporary or unstable. As a result, elections provide absolutely no external check to prevent the exploitation of the minority. Restraints on the majority will arise not from the will of the people but from a direct interaction between parties, from the willingness of the majority to stabilize its hold on the political system and to prevent rebellions or secession. These restraints arise as optimal solutions to commitment problems, to lack of trust between parties.

## APPLICATIONS

Lijphart (1969) considers “cooperation by leaders of different groups which transcends the segmental or subcultural cleavages at the mass level” as essential in establishing democracy in pluralistic societies. The first and most visible form of this cooperation is coalition government. In Switzerland the institutional form of this system of government was the Federal Council composed of members of the four main parties in proportion to their electoral support. As I have already mentioned, the Transitional Executive Council in South Africa was another illustration of this type power-sharing arrangement. The other forms of elite cooperation in this system of government defined as Consociationalism, are mutual veto, proportionality and segmental autonomy.

This paper derives consociational form of government as an efficient contractual arrangement between a minority party and a majority party. The fundamentals of our model formalize Lijphart’s description of a segmented political system. By assuming for instance that there exists an upper bound  $\bar{s}$  to the minority party’s electoral support, I capture political polarization and ethnic division. Also our assumption of anarchy as the only alternative to power sharing is well in the spirit of Lijphart’s works. Consociationalism arises in our model from strategic interactions between rational and selfish political agents attempting to maximize the utility they could derive from holding office. The threat of anarchy effectively prevents a selfish and

power loving majority from monopolizing the political system, from abusing its power or exploiting the minority. I also found that political concessions made before the elections are effective in preventing the occurrence of conflicts. This is to say that the timing of the application of the power sharing contract might be of critical importance in promoting cooperative behavior among political partners. When the majority cannot be trusted, this party will have to make very large concessions to secure its hold on the political system<sup>9</sup>. Moreover, for optimal cooperative behavior to be sustained in the absence of such concessions, it must be the case that parties are very optimistic about the future. They need to believe that the new system will last a long time.<sup>10</sup>

An interesting feature of the contractual arrangement in the presence of bilateral commitment problems is that the more parties have to lose from the relationship, the less they have to give up. This means that in a country where ethnic conflicts have weakened the state and led to a proliferation of private armies, negotiated transition will be successful only if the political partners are willing to make extreme concessions. Otherwise foreign intervention or mediation might be the only way to restore order.

One motivation of this paper was to explain why majority parties tend to concede “too much” during the negotiation process leading to transition to democracy. Jung and Shapiro (1994) using South Africa as an example stressed the fact that going into the negotiations, government reformers representing the white minority had a structural advantage derived from their control over the coercive institutions of the state. This paper, using a rational choice perspective, shows that even in the absence of such advantage, the results of the negotiations might have been the same. The ANC representing the black majority, needed to win not only the elections but also political legitimacy to secure civil order. For this purpose, this party needed a broad and large consensus, one that it could obtain only if it agreed to power sharing. More-

---

<sup>9</sup>In section 2, we define the system arising from such concessions as strongly consociational. Examples of such systems are the post-apartheid South Africa and the post 1988 Chile.

<sup>10</sup>This to say that the discount rate has to be “very” high.

over, given the supposed lack of credibility of the ANC, concerning its commitment to consociational arrangements, this party had “to make a statement” in order to establish trust between the two communities. This was achieved by having the ANC make large pre-electoral concessions to the National Party.

### CONCLUDING REMARKS

This paper uses insights from the theory of self-enforcing risk sharing contracts to discuss the rationality of power sharing arrangements. When there is limited enforceability of these arrangements, I derived restrictions such that the arrangement will in fact be upheld in future periods. Many of these restrictions are consistent with observed political institutions in South Africa, Chile, Poland and elsewhere. I point out for instance the critical importance of timing in the application of the contract.

A major restriction in the structure of the model developed in this paper concerns the asymmetry between parties. Consequently, given its demographic weight, the minority is expected to lose any elections to be held in the future. Even if this assumption reflects the realities of countries such as Switzerland, South Africa, Sri Lanka or Russia, it does not apply to advanced democracies. If our model were to capture key features of these political systems, parties should have a fairly equal chance of winning the elections. In this case Dahl (1956) claims that the main protection against the exploitation of minorities comes from the fact that majorities are unstable and transitory. I intend, in future works, to explore the issue of commitment and constitutional stability in the more general setting of a Madisonian democracy as well as providing a formal and rational choice perspective to Dahl’s conjectures.

### REFERENCES

- [1] Barry, Brian. 1975. “Political Accommodation and Consociational Democracy. *British Journal of Political Science* 5 (October): 477-505.
- [2] Dahl, Robert. 1956. *A preface to Democratic Theory*. New Haven. Yale University

Press.

- [3] Fearon, James D. 1992. Ethnic War as Commitment Problem. Mimeo University of Chicago.
- [4] Friedrich, Karl. 1974. *Limited Government*. Prentice Hall Inc., Engelwood Cliffs, New Jersey.
- [5] Gauthier, Celine and Poitevin Michel. 1994. *Using Ex Ante Payments in Self-Enforcing Contracts*. Discussion Paper 0394, CRDE, Universite de Montreal.
- [6] Gauthier, Celine, Poitevin Michel and Patrick Gonzalez. 1997. Ex Ante Payments in Self-Enforcing Risk-sharing Contracts” *Journal of Economic Theory* 76: 106-144.
- [7] Horowitz Donald L. 1985. *Ethnic Groups in Conflict*. Berkeley: University of California Press.
- [8] Huntington Samuel P., 1991. *The Third Wave: Democratization in the Late Twentieth Century*, Norman: University of Oklahoma Press.
- [9] Jung Courtney and Shapiro Ian, 1995. South Africa’s Negotiated Transition: Democracy and Opposition in Comparative Perspective. *Politics and Society* 23: 269-308
- [10] Lijphart, Arend. 1977. *Democracy in Plural Societies*. New Haven. Yale University Press
- [11] Nordlinger, Eric. 1972. *Conflict Regulation in Divided Societies*. Center for International Affairs, Harvard University, Cambridge, Mass.] :
- [12] Przeworski, Adam, Michael Alvarez, Jose Cheibub and Fernando Limongi. 2000. *Democracy and Development*. Cambridge: Cambridge University Press.
- [13] Riker, William H. 1982. *Liberalism against Populism: A Confrontation Between the Theory of Democracy and the Theory of Social Choice*. San Francisco: W.H. Freeman.

- [14] Ordeshook, Peter C. 1991. Constitutional Stability. *Constitutional Political Economy* 3: 137-75
- [15] Thomas, Jonathan and Worrall Tim, 1988. Self Enforcing Wage Contracts, *Review of Economics Studies*, 55: pp 541-554
- [16] Thomas, Jonathan and Worrall Tim, 1994. Informal Insurance Arrangements in Village Economies. Working Paper Department of Economics, University of Warwick.
- [17] Weingast, Barry. 1994. Institutions and Political Commitment: A New Political Economy of the American Civil War Era. Manuscript, Hoover Institution.
- [18] Weingast, Barry. 1997. The Political Foundations of Democracy and the Rule of Law. *American Political Science Review* 91 No 2: 245-263.
- [19] Williamson, Oliver . 1983. Credible Commitment: Using Hostages to Support Exchange. *American Economic Review* 73: pp 519-540.
- [20] Williamson, Oliver. 1985. *Economic Institutions of Capitalism*. New York. Free Press

## APPENDIX

### **Proof of Proposition 1:**

Problem (3.1) is well defined and has a unique solution since  $u$  and  $v$  are strictly concave functions on a compact set.

The first order conditions associated with problem (3.1) are:

$$\begin{aligned}
 g_t &: u'(g_t, r_t(s)) + \lambda \cdot v'(g_t, r_t(s)) &= 0 \\
 r_t^s &: u'(g_t, r_t(s)) + \lambda \cdot v'(g_t, r_t(s)) &= 0 \\
 g_\tau &: u'(g_\tau, r_\tau(q)) + \lambda \cdot v'(g_\tau, r_t(q)) &= 0 \\
 r_\tau^q &: u'(g_\tau, r_\tau(q)) + \lambda \cdot v'(g_\tau, r_\tau(q)) &= 0
 \end{aligned}$$



Rearranging these equations gives:

$$\frac{u'(r_t(s) + g_t - r_t(s))}{u'(R_d(s) + g_\tau - r_\tau(q))} = \frac{v'(G - g_t + r_t(s))}{v'(G - g_\tau + r_\tau(q))}$$

Q.E.D.

**Proof of Proposition 2:**

Denote  $p_t(s) = G - g_t + r_t(s)$ . Let us consider an optimal contractual arrangement  $(g_t, r_t^*(s))$ . We know from equation (2.1) that

$$g_t - G - p_t^*(s) = r_t^*(s)$$

The question is, what restrictions to put on  $g_t$  so that the arrangement will satisfy the ex ante and the ex post self-enforcing constraint. In other words, how high could  $g_t$  possibly be to make a myopic minority willing to provide legitimacy to the majority?

Assume  $\bar{g} \geq p^*(\bar{s}) + G$ . This implies that  $p^*(\bar{s}) - p_t^*(s) \leq r_t^*(s)$

Let us set  $g_t^* = \bar{g}$ . I know that party  $M$ 's ex post self-enforcing constraint is:

$$v(G - g_t + r_t^*(s)) - v(G - g_t) + \beta V(\gamma, h_{t-1}, s) \geq 0 \quad \forall s, t, h_{t-1}$$

When parties are totally myopic, that is for  $\beta = 0$ , this constraint is trivially satisfied since  $r_t^*(s) \geq 0$  for all  $s$ . For  $\beta \in (0, 1]$ , the constraint is satisfied as long as  $V(\gamma, h_{t-1}, s) \geq 0$ .

Let us now check whether the ex ante constraint are satisfied. Since the optimal level of power is stationary, the expected per-period surplus,  $Ev(p^*(s)) - E\underline{v}(s)$ , is constant across periods. Then we have

$$V(\gamma; h_{t-1}) = E \sum_{\tau=t}^{\infty} \beta^{\tau-t} \{v(g_t, r_t(s)) - \underline{v}(s)\} = \frac{\beta [Ev(p^*(s)) - E\underline{v}(s)]}{1 - \beta}$$

is constant and positive. For the same reason,  $V(\gamma; h_{t-1}, s)$  is positive. This means that  $\{g_t, r_t^*(s)\}$  satisfy both the *ex ante* and the *ex post* self-enforcing constraint. As a result it solves the majority commitment problem.

Now assume  $\bar{g} < p^*(\bar{s}) + g$  and  $g_t = \bar{g}$ . Again as long as we consider an optimal contract  $\{g_t, r_t^*(s)\}$ , the optimal residual power is constant (becomes  $\{g, r^*(s)\}$ ) and as result the ex ante constraint is satisfied. For the ex post constraint to be satisfied, it has to be case that

$$v(p^*(s)) - v(G - g) + \frac{\beta [Ev(p^*(s)) - E\underline{v}(s)]}{1 - \beta} \geq 0$$

Solving for  $\beta$ , we have

$$\beta \geq \frac{v(G - g) - v(p^*(s))}{v(G - g) - v(p^*(s)) + [Ev(p^*(s)) - E\underline{v}(s)]} \quad \text{for all } s$$

The critical value of the discount rate above which all of the ex post constraints are satisfied is given by:

$$\beta_1 = \frac{v(G - g) - v(p^*(\bar{s}))}{v(-p^*(\bar{s}) - g) - v(p^*(\bar{s})) + [Ev(p^*(\bar{s})) - E\underline{v}(s)]}$$

So for all values of the discount rate above  $\beta_1$ , optimal contract will be enforced. For values of  $\beta$  below  $\beta_1$ , the optimal contract cannot be enforced.

### **Proof of Proposition 3**

To be completed. Follows from Corollary 1 in Gauthier et al (1994, 1997) and Proposition 2.

### **Proof of Proposition 4:**

Let us consider an optimal contract  $\{g_t, r_t^*(s)\}$ . As in proposition 2, we look for restrictions on this contract and on the discount factor such that the self-enforcing constraints will be satisfied for both agents.

First, we know that,  $V(\gamma^\bullet, h_t) = 0$ . From this result, we can claim that  $\gamma^\bullet$  will be self-enforcing as long as  $r_t^*(s) \geq 0$  for all  $s$  and  $t$ . Let us then find a value of  $g_t$  such that  $r_t^*(s) \geq 0$ . Consider  $g_t = p^*(0) - R(0)$  From the feasibility constraint we have,

$$r_t^*(s) = R(s) - R(0) + p^*(0) - p^*(s) \geq 0$$

So the contract is self-enforcing for party  $M$ .

Now, we have to check whether the ex post constraint is satisfied for  $m$ . For this to be true it must be the case that

$$u(p^*(0)) - v(R(s) + r_t(0)) + \frac{\beta [Ev(p^*(s)) - E\underline{u}(s)]}{1 - \beta} \geq 0$$

That is,

$$u(p^*(s)) - u(R(s) - r(0) + p^*(0)) + \frac{\beta [Ev(p^*(s)) - E\underline{u}(s)]}{1 - \beta} \geq 0$$

Consequently, using the same argument as in proposition 2, we claim that the critical level of discount factor is

$$\beta_2 = \frac{u(R(\bar{s}) - R(0) + p^*(0)) - u(p^*(\bar{s}))}{u(R(\bar{s}) - R(0) + p^*(0)) - v(p^*(\bar{s})) + [Eu(p^*(\bar{s})) - E\underline{u}(s)]}$$

So for any value of the discount factor above this threshold, the optimal contract will be self-enforcing for party  $m$ . This shows under the described restrictions the contract is self-enforcing.

**Proof of Proposition 5**

To be completed. The proof of proposition 5 follows quite closely Lemma 1 and Proposition 6 Gauthier et al (1997).