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A Public Choice Approach to Military Coups d'Etat.

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"I must now once again confess that I do not have a general theory of dictatorship or a general theory of how dictators stay in power. I've been concerned about the problem of dictatorship for almost as long as I've been interested in public choice... The reasons that my writings have mainly been concerned with democracies is simply that dictatorship turns out to be a very difficult subject."

Gordon Tullock, Autocracy. Dordrecht, The Netherlands: Kluwer Academic Publishers, 1987, p. 18.

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INTRODUCTION:

Since the pioneering works of Anthony Downs (1957), James Buchanan and Gordon Tullock (1962), and William Riker (1962) most of the public choice literature have been developed under a democratic framework. These works, which are based upon the assumptions of utility maximization and rationality of the individual voters, present testable theories of political behavior.

Unfortunately, democracy, while highly desirable, does not represent an appropriate description of the political regimes that have ruled most countries in the world during a large part of this century.³ Zehra Fatma Arat (1984) has built an index of democraticness for selected countries which allows me to clearly illustrate this point.⁴ From the Arat sample I have selected the

²This paper has greatly benefitted from the help of others. I want to thank the members of my thesis committee at the University of Chicago, Robert Fogel, Larry Sjaastad and the chairman, Sam Peltzman, for their help, advice and encouragement. I specially want to thank Larry Sjaastad for his friendship and guidance over all these years. My good friends Carlos Asilis and Chi-Wa Yuen helped me with their advice and comments when this project was starting and encouraged me to pursue it. At different stages, I also benefitted from the comments from Arie Avishur, George Mc Candless, Edgardo Favaro, Philip Keefer, George Stigler, and from the participants of workshops at the University of Chicago (Public Finance Workshop) and at the Center for Macroeconomic Studies of Argentina (CEMA). The usual disclaimer applies.

³"The dominant form of government in the world today is dictatorship. Further throughout history, dictatorship has been the commonest form of government in the world" (Tullock [1987], p. 4).

⁴The measure of democraticness is based upon principles which lead to higher levels of popular control. This control is perceived to have three components: political participation (which measures the extent that popular will is reflected at decision-making institutions), competitiveness (which measures the competitiveness of the political system), and civil and political liberties (which measures the coerciveness of the government). The

63 countries which have been included during the whole period and I have classified 17 of them under the label of "first world countries", and the remaining 46 under the label of "others"; from the later I have selected the 19 Latin American countries (see Table 1).

TABLE 1

SCORES OF DEMOCRATICNESS FOR 63 SELECTED COUNTRIES

Year	Average (63)	First World (17)	Others (46)	Latin America (19)
1950	11.32	19.39	8.34	11.10
1955	10.94	19.43	7.80	10.21
1960	11.42	19.35	8.49	11.70
1965	11.25	19.42	8.23	10.64
1970	10.94	19.36	7.83	9.96
1975	10.75	19.42	7.56	7.51
Average	11.10	19.40	8.04	10.19

Source: Compiled from Zehra Fatma Arat, "The Viability of Political Democracy in Developing Countries. Ph.D. dissertation, The Graduate School of the State University of New York at Binghamton, 1984.

While the average score for the 17 "first world countries" reached 19.40, it dropped for the 19 Latin American countries to 10.19, and to only 8.04 for the 46 "non first world countries" as a whole.⁵ From these scores it comes clear that, during this

estimated scores, which are ranked in the (0-20) interval, fluctuate between 0.55 and 18.91; the higher the rank, the higher the degree of democraticness.

⁵I have classified under the label of "first world" the Western European countries in addition to the USA, Canada, Australia and New Zealand. I have classified under the label of

historical period, democracy, rather than be characterized as the rule, has to be considered as an exception!

The first paper in the public choice literature developed under a non-democratic framework was presented by Thomas Ireland in 1967. This work, as well as the Gordon Tullock's (1971) paper, opened a new framework to the study of non-democratic changes of government. Until Ireland's and Tullock's works, the study of revolutions was an exclusive field of political scientists, who focus their interest on the public good aspect of the revolutions.⁶ Since the appearance of Ireland's and Tullock's works a group of scholars (Leites and Wolf, 1970; Tullock, 1974; Silver, 1974; Cao Garcia, 1983; Cartwright, Delorme and Wood, 1985; etc.) have challenged this romantic notion of revolution using the assumptions and methodology provided by the economic theory.⁷ The by-product designation of this self interest theory is credited to Gordon Tullock (1971), who used the term following Mancur Olson (1965), whose analysis of the motivations of an agent as an active

"others" the remaining forty six countries: Afghanistan, Albania, Bulgaria, China, Czechoslovakia, Ethiopia, Greece, Hungary, Iran, Iraq, Jordan, Lebanon, Liberia, Mongolia, Nepal, Philippines, Poland, Portugal, Romania, South Africa, Saudi Arabia, Spain, Thailand, Turkey, USSR, Yemen, A.R., Yugoslavia plus the following nineteen Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

⁶The public good approach can be summarized by portraying the object of the revolution as the improvement of the welfare of society; Goldstone, 1980, presents a good review of this approach.

⁷This challenge can be summarized by the following statement which concludes Tullock's (1971) paper,

"In sum, the theoretical arguments for the view that revolutions are carried out by people who hope for private gain and produce such public goods as they do produce as a by-product seems to me very strong. As for now, no formal empirical test has been made of it, but a preliminary view of the empirical evidence would seem to support the by-product theory. This, of course, is a paradox. Revolution is the subject of an elaborate and voluminous literature and, if I am right, all of this literature is wrong."

participant in a collective action can be extended to the revolutionary activity.

While most of the public choice literature in non-democratic changes of government center their interest in the so called "mass revolutions" (Ireland, 1967; Leites and Wolf, 1970; Tullock, 1971; Cartwright, Delorme and Wood, 1985; Kuran, 1989; Grossman, 1991; etc.), most of the actual irregular executive transfers are military coups d'etat. For example, mass revolutions like the French Revolution of 1789, the Russian Revolution of February 1917, or the Iranian Revolution of 1978-1979, are completely unusual events in Latin American countries; instead, military coups d'etat are a well known political tradition.

To the best of my knowledge, only Gordon Tullock (1974), Silver (1974), Cao Garcia (1983), and Mbaku and Paul (1989) analyze coups d'etat. Of these scholars, only Gordon Tullock's illuminating work explicitly studies military coups d'etat by means of a microeconomic analysis of benefits and costs. Tullock differentiates coups d'etat from mass revolutions and analyzes structural factors that affect the participation of the army officers in the coup. But, as point of fact, as Tullock (1987) emphasizes, that much more progress has been done in understanding democracies than dictatorships; this paper is intended to contribute to fill this gap by proposing a simple theory which may help us to better understand military coups d'etat.

I will devote the following section to develop the theory. It will closely follow the Tullock's approach to the subject but it will also take into account the civilian side of the coup; the inclusion of civilian considerations constitute the basic difference between my framework and that of Tullock, and radically departs from the by-product theory of revolutions since it provides public good considerations, instead of private interest rewards, as the engine for the motivations of the civilian actors. These considerations are a side product of the pressure groups approach to the economic policy developed since the seminal work of Arthur Bentley (1908). To take into account the role played by civilian

groups will allow me to obtain further insights into the causes of military coups d'etat; insights which are unattainable if we consider solely the military side of the coup.

THE THEORY:

The casual observation of most of the Latin American military coups d'etat⁸ shows that this sort of non-democratic change of government is usually not verified without some sort of support by part of the civilian population. In this section I will extend the Tullock framework in order to take into account this fact. I will describe in the first part of the section some stylized facts that, at least in the Latin American case, the military coups d'etat apparently fulfill; in the second part I will propose a theory which provides the motivations for the civilian actors to participate in a coup, and which would satisfy the described stylized facts. Finally, given these considerations, I will introduce a very simple model which takes into account not only the military side of the coup but also the civilian side.

The history of many Latin American countries presents a common denominator: the army has played an important role in their political life. This role is evidenced by long periods of military ruling and an amazingly large number of military coups d'etat. Notwithstanding, this role has been frequently overstated by assumptions that military coups d'etat are just a military phenomena. The observation of the Latin American political history does not support this assumption. If, for example, we center our attention in a leading case and analyze the large number of military regimes that characterize Argentina (see Robert Potasch [1981] or Alain Rouquie [1982]), it comes clear that, at least for this country, there was not a military coup d'etat without some sort of support from at least part of the civilian population.

⁸ From now on, unless I explicitly indicate the contrary, I am referring to military coups d'etat that overthrow democratic regimes.

Actually, this conclusion can be extended to most of the successful coups in Latin America; and, can even be applied to most of these non-democratic changes of government regardless of the geographic location of the specific country. For example, Rosemary O'Kane (1987) analyzes the composition of the governments that emerge after military coups d'etat during a period of 30 years (see Table 2).

TABLE 2

THE ARMED FORCES AND CIVILIAN MIX OF COUP GOVERNMENTS

Period	Civilian and Military Mix	Military	Latin American	
			Civilian and Military Mix	Military
1950-1959	14	1	6	0
1960-1969	36	13	10	4
1970-1979	24	9	9	1
Total	74	23	25	5
Percent	76	24	83	17

Source: Compiled from O' Kane, Rosemary. The Likelihood of Coups, Averbury, 1987.

Regardless of the geographic location of the countries, as few as 24 % of these administrations were composed exclusively of army officers; this proportion falls to only 17 % if we reduce our sample to Latin American countries. Based on this type of evidence, O'Kane concludes that the strong emphasis on the role of

the army in military coups d'etat cannot be empirically supported.⁹

On the contrary, the political history of most of the Latin American countries shows that usually there is negligible civilian resistance against the installation of a military regime. This asymmetry in the behavior of the civilian actors does not necessarily imply agreement with the coup, given that this situation may probably be its effect (for example, any form of civilian resistance is usually very dangerous under a military ruler). But regardless of the exact motivation of this behavior, the absence of civilian resistance is a stylized fact that is illustrated by different indicators of political participation (see Edgardo Zablotsky [1992 (i)]).

Zablotsky [1992 (i)] has selected four coups, in four different countries (Argentina, 1976; Perú, 1968; Uruguay, 1973; and Chile, 1973), and has looked for indicators of political protest (protest demonstrations, political strikes, riots, armed attacks, and political assassinations) in the three years previous to the coup and in the following three years. The pattern of these indicators does not support the hypothesis that civilian groups have challenged the overthrow of democratic regimes, since the number of events did not increase at the time that the coups occurred, nor during the following year; in fact, the number of events follows in many cases a decreasing path. Table 3 summarizes the evidence provided by these indicators, by reporting the average

⁹Rosemary O'Kane [1987], pp. 9-11, states,

"The value of the supreme consideration given to the military in coups d'etat, however, is clearly belied by the evidence that approximately only one in six of the governments set up after coups d'etat are composed exclusively of military personnel; the vast majority of post coup governments include a mixture of military and civilian personnel. These mixes can range from the extremes of only one civilian, as in Burma 1962 to only one military officer as in Ecuador, 1961.... Strong emphasis on the role of the military in coups d'etat cannot then be justified by their normally bringing military governments to power, they are just likely to install military civilian mix governments, often install largely civilian governments and sometimes entirely civilian ones."

number of each type of event verified in the selected countries.

TABLE 3

CIVILIAN RESISTANCE TO THE COUP

Type of Event	-3	-2	-1	COUP	1	2	3
(A)	2.5	4.7	4.7	3.7	1.0	0.3	0.7
(B)	0.0	1.3	4.3	7.0	0.0	0.0	0.0
(C)	3.7	3.0	5.7	6.2	0.5	0.7	0.7
(D)	20.3	10.0	25.7	17.0	6.7	1.7	0.0
(E)	0.7	3.2	6.2	4.2	0.5	0.0	0.0

Source: Compiled from Charles Taylor and Michael Hudson, World Handbook of Political and Social Indicators, 1972 and Charles Taylor and David Jodice, World Handbook of Political and Social Indicators, Vol. 2, 1983.

where,

- (A) = Protest Demonstrations.
- (B) = Political Strikes.
- (C) = Riots.
- (D) = Armed Attacks.
- (E) = Political Assassinations.

Given these stylized facts it is necessary to look for a theory which allows to model the civilian side of the coup asymmetrically: by discriminating between the utility maximizing civilian agents which would benefit or be harmed by the change of political regime; providing the former with motivations for supporting the coup, but not bringing the latter incentives to participate in defense of the democratic system. In actuality, this theory should also satisfy two additional stylized facts:

- A) Even when we consider the civilian side of the coup, this sort of non-democratic change of government remains essentially a military subject, in which most of the army officers participate but most of the civilian groups remain inactive.¹⁰
- B) A military coup d'etat which overthrows a democratic regime is generally preceded by a period of economic and social chaos, which may characterize a vacuum of power (where a vacuum of power is defined as a situation where the government does not fulfill its obligation to rule).¹¹

A public good theory is a natural candidate to play this role, given that in this type of framework the civilian actors will only choose to participate if they can significantly affect the probability of success of the action. Under this class of theory, if the participation of some civilian groups which benefit by the change of political regime affects the probability of installing a military government,¹² while the participation of the civilian groups harmed does not,¹³ then the former would participate in

¹⁰For example, Gordon Tullock (1974), p. 60, states,

"For most citizens of the state, remaining neutral is the optimal course of action.... In general, remaining neutral is not the profit maximizing course of action for the average army officer."

¹¹This stylized fact was suggested by Robert Fogel.

¹²I define that a coup has been successful if a military government has been installed; then, a coup that has substituted a democratic regime for only some weeks will not be considered successful. Under this definition, a civilian group may increase the probability of success of a coup by taking part in the new government in positions where the army officers have not comparative advantages (i.e., economics, foreign relations, education, etc.), or by providing the necessary political support for the military government to be recognized, or even to received financial support, from foreign countries, etc.

¹³This asymmetry may be explained by the fact that any form of violent civilian opposition (riots, armed attacks, political assassinations, etc.) is ineffective given the military power of

support of the coup, while the latter will remain inactive.

We will devote the second part of the section to introduce a public good theory--based upon the pressure groups approach to the economic policy--which will provide the motivations for the civilians actors who participate in a coup. This theory radically differs from the by-product theory of revolutions on one key element: it provides public good considerations instead of private interest rewards as the engine for the motivation of the participants (see Mbaku and Paul [1989], for an example of the by-product approach).¹⁴

The pressure groups approach was originally proposed by Arthur Bentley (1908); his seminal work introduced an economic approach to political behavior that focused on political pressure groups

the regular army.

¹⁴John Mbaku and Chris Paul (1989) present a model which provides private interest rewards as the motivation for the civilian actors in order to take part in a coup,

"The present model differs from previous constructs of the economic or by-product theory of revolutions in its structuring of an engine for the self interest motivation of participants. The previous construct of the theory suggest that there exist a negative relationship between the probability of political instability and the state of the economy.... While concurring with this conclusion the present model treats the economy's health as a product of rent seeking behavior on the part of government officials. In effect, the governmental apparatus is employed to create and extract rents. This behavior has two important implications. First, blocking competition in both the political and economic markets excludes non-members from sharing the rents and profits generated. Second, the creation and extraction of rents slows or reverses economic growth; further reducing the well being of excluded individuals.... Blocked from competing for gains in government controlled markets and from competing for rents by exclusion from institutionalized political process, members of excluded groups attempt to capture control of the government by extra constitutional or violent political means. That is, members of excluded groups seek to displace the in-power-group. Their object is, however, not to create free markets and/or public goods, but rather to capture the rent creating government control of markets for the purpose of creating and extracting rents. This goal is achieved by excluding non-member groups which results in continued political instability" (Mbaku & Paul [1989], p. 64).

instead of voters, politicians and political parties¹⁵ (see Edgardo Zablotsky [1992 (ii)] for an study on the subject). Under this framework the economic policies have to be interpreted as equilibriums, given that they are the end product of a redistributive game; game which is highly influenced by the rules under which it is played.¹⁶

I will make use of this approach because it is an useful tool to explain redistributive policies under any type of political regime.¹⁷ Under a military government the political activity is

¹⁵The Bentley's approach can be illustrated by the following quotation:

"The phenomena of government are from start to finish phenomena of force...I prefer to use the word pressure instead of force, since it keeps the attention closely directed upon the groups themselves...Pressure, as we shall use it, is always a group phenomenon. It indicates the push and resistance between groups. The balance of the group pressures is the existing state of society. Pressure is broad enough to include all forms of the group influence upon group, from battle and riot to abstract reasoning and sensitive morality...It allows for humanitarian movements as easily as for political corruption. Groups exert their pressure, whether they find expression through representative opinion groups or whether they are silent, not indeed with the same technique, not with the same palpable results, but in just as real a way." (Arthur Bentley [1908], pp. 258-259).

¹⁶"Suppose, for example, we take a modern battle, and note that it is fought, not with complete abandon, but under definite limitations which forbid certain cruelties, such as the poisoning of springs, the butchery of the wounded, firing upon Red Cross parties, the use of explosive bullets, or the use of balloon explosives. Or suppose we take a political campaign, and note that in one country the contestants use methods which are not used in another...There are rules of the game in existence, which form the background of the group activity" (Arthur Bentley [1908], p. 218).

¹⁷For example, Bentley [1908], p. 305, states,

"Suppose now we take a general formation of interest groups, such as we know in our existing European and American countries... .It is evident that within this range of nations the tripartite division into monarchies, aristocracies, and democracies has absolutely nothing whatever to bring to us in the way of making our material better capable of analysis and study. We must examine these governments with reference to the ways the interests work

ruled out, then, models of political behavior that focused on voters, politicians, and political parties do not provide any help for the understanding of its redistributive policies; by the contrary, models that focused on political pressure groups are not constrained by the type of political regime, they are an useful tool for explaining redistributive policies under any type of regime.

In order to describe the role played by public good considerations on the behavior of the civilian actors I will borrow a formalization of Bentley's work developed by Gary Becker (1983, 1985):¹⁸ In any society there exists virtually an unlimited number of pressure groups which compete for government redistribution;¹⁹

through the government, with reference the techniques they follow, and to the special kinds of groups, or organs, which exist to reflect them and harmonize them."

¹⁸The Bentley's ascendent over the Becker's work is clearly illustrated by the following quotation,

"Individuals belong to particular groups-defined by occupation, industry, income, geography, age and other characteristics-that are assumed to use political influence to enhance the well being of their members. Competition among these groups for political influence determines the equilibrium structure of taxes, subsidies, and other political favors." (Gary Becker, [1983], p.372)

¹⁹This is clearly illustrated by Bentley (1908), pp. 207-208,

"If we take all the men of our society, say all the citizens of the United States, and look upon them as a spherical mass, we can pass an unlimited number of planes through the center of the sphere, each plane representing some principle of classification, say, race, various economic interests, religion, or language . . . Now, if we take any of these planes and ignore the others, we can group the whole mass of the sphere by means of an outline or diagram traced upon the circle which the plane makes by its intersection with the sphere, and by partition walls erected on this outline at right angles to the circle...Similarly, by means of some other plane together with partition walls perpendicular to it, we can group the whole population on a different basis of classification: that is to say, for a different purpose. Assuming perhaps hundreds, perhaps thousands, of planes through the sphere, we get a great confusion of the groups. No one set of groups, that is, no set distinguished on the basis of any one plane, will be an

each of these groups exerts any available form of political pressure (P_i) in order to maximize the utility of its members. The pressure exerted by each group is translated into political influence through the so called "influence functions,"

$$I_i(P_1, \dots, P_i, \dots, P_n; X) = n_i R_i^{20} \quad i = 1, \dots, n$$

where R_i represents the redistributive outcome of each of the n_i identical members of the i^{th} group, and X represents any other relevant consideration that may affect the outcome of the redistributive game. The interaction between groups is modeled as a Cournot-Nash non-cooperative game in political pressure; so, the equilibrium is determined by the utility maximizing condition for each group with respect to its level of political pressure, taking as given the pressure exerted by any other group.

The level of political pressure chosen by any group depends on variables like the size of the group, its efficiency producing political pressure, the effect of additional pressure on their influence, and the deadweight costs of taxes and subsidies (see Becker [1983]); but it also depends on the rules under which the different pressure groups compete, which I will summarize by the variable X .

These rules are influenced by many factors, i.e., the basic laws of the country (Constitution, Electoral Law, Judicial Traditions, etc.), the level of political participation (the extent that popular will is reflected at decision making institutions), the level of competitiveness of the political system (political

adequate grouping on the whole mass... A classification into farmers, artisans, merchants, etc., will answer some purposes in studying our population but not others. A classification by race answer some purposes but not many."

²⁰Subject to the government budget constraint $\sum_i n_i R_i = 0$. In order to simplify the exposition we are not taking into account the deadweight losses from taxes and subsidies (see Becker [1983], pp. 389-390, for a more complete exposition).

parties may be forbidden, only one official party may be allowed, etc.), the level of civil and political liberties (anti-government demonstrations, strikes may be forbidden, etc.), etc. (see Arat, 1984). The following example will help me to illustrate this point; a usual form of restricting the extent to which popular will is reflected in decision-making institutions consists of blocking access of the political process to part of the population; South Africa gives us a clear illustration of this practice. In South Africa a substantial part of the residents of the geographic area have no political rights;²¹ the elimination of this form of political discrimination would sharply affect the rules of the redistributive game, being possible to predict changes in its outcome,

$$I_i(P_{1,r}, \dots, P_{i,r}, \dots, P_{n,r}; X_r) \neq I_i(P_{1,f}, \dots, P_{i,f}, \dots, P_{n,f}; X_f)$$

$i = 1, \dots, n$

where, the subscripts r and f indicate an scenario characterized by the existence of political restrictions, and full political rights, respectively. The expected change in the outcome of this game is, from my point of view, one of the most critical factors in the white opposition to the complete elimination of political restrictions.

The role played by the rules of the redistributive game provides the public good considerations which would motivate the

²¹As Gordon Tullock (1987), pp. 4-14, states,

"Modern Israel and South Africa are also electoral, although in both cases a considerable number of the residents of the geographic area are not permitted to vote... The number is, of course, very much larger in South Africa than in Israel. Israel has a Jewish population of about 3.5 million, and an Arab population of about 1,650,000. Of the latter, about 1.15 million live in the area conquered by Israel in 1966 and cannot vote. There are about 5.4 million whites with full franchise, and about 18 million blacks and Asians with either restricted or no franchise in South Africa."

civilians actors to participate in a coup. A military coup d'etat that overthrows a democratic regime will alter the rules of the redistributive game; the reason for this is that the immediate consequence of the overthrow of a democratic regime will be the establishment of a dictatorship, a situation which will drastically modify the structure of the political organization of society (i.e., the Parliament will be closed, the political parties forbidden, any Electoral Law ruled out, etc.). The change in the rules of the game embodied in a successful coup will bring up a new political-economic equilibrium, which will have associated changes in the redistributive success of the different groups,²² providing the public considerations to the civilian actors in order to take part in a coup,

$$I_i(P_{1,c}, \dots, P_{i,c}, \dots, P_{n,c}; X_c) \neq I_i(P_{1,d}, \dots, P_{i,d}, \dots, P_{n,d}; X_d) \\ i = 1, \dots, n$$

²²Gary Becker (1983) explicitly supports this hypothesis,

"All political systems, however, including dictatorial as well as democratic systems, have been subject to pressures from special interest groups that try to use influence to enhance their welfare. ... Since only weak restrictions are imposed on these functions, the basic implications of the analysis should be applicable to widely different political systems, including nondemocratic systems, although, of course, the influence of particular groups is often sensitive to the characteristics of a political system" (Becker [1983], p. 375).

He also supports it implicitly in his (1985) paper,

"If special interest groups are crucial to the political process, political systems would be largely defined by their activities and opportunities. Democracies have competition among groups with relatively equal political strength, while totalitarian and other nondemocratic systems have restricted competition among groups with highly unequal strength... In democracies so defined, a few groups cannot easily obtain very large subsidies, since I have shown that large subsidies stimulate countervailing pressure by those taxed to finance the subsidies. In totalitarian systems, on the other hand, a few groups can more readily use the state to raise substantially their well being because other groups are not permitted to form effective opposition" (Becker [1985], p. 345).

where from now on the subscripts c and d refer to a military and a democratic regime, respectively (I summarize in the Appendix of the paper the empirical support to the Bentley's approach to public policy; see Zablotsky [1992 ii], for a more detailed exposition).

The public good characteristic of these considerations would satisfy the described stylized facts, given that the change in the redistributive success of the different groups is exclusively associated with the change in the rules of the game embodied in a successful coup, and not with their level of participation in the action. This implies, assuming a positive cost of participation, that a pressure group will only take part in a coup if he can significantly affect the probability of success of the attempt.

I will devote the rest of the section to present a very simple model which takes into account these considerations. In regard to this goal my first step will be to formalize the problem faced by the military actors; in order to do so I will closely follow Tullock's approach to the subject.

An army officer may support a coup heavily, leading it, or he may want to participate only as a follower in the event that most of his colleagues participate. In the first case his level of support of the coup (X_i) will be high, while in the second it will be small but positive. Similarly, he may want to lead the repression, which will imply a large, in absolute value, but negative (X_i), or he may want to participate in the repression as a follower which will imply a smaller, in absolute value, and negative (X_i). Obviously, neutrality implies $X_i = 0$.

In order to choose his optimal level of participation in support of the coup or of the repression (X_i) the army officer will take into account the different payoffs that he expects to receive if the coup succeeds (R_i, P_i), or fails (D_i), and his own assessment of the probability of success of the action (L_i).²³

²³I will assume that the army officers will not take into account some of the factors proposed by Tullock, like their estimation of the likelihood of injury through the participation in

The army officer expects to receive a private interest payoff (R_i) if the coup succeeds. It will be positive for the army officers who support the coup and negative for the officers who join the repression. An example of this payoff would consist in a higher rank that an officer may obtain if the coup succeeds and he participates in its support; another example may be a penalty, like an early retirement if the coup succeeds and he participates in the repression,²⁴

$$R_i = R_i(X_i); \quad R_i(0) = 0; \quad dR_i/dX_i > 0$$

Each army officer also expects to receive a public good payoff (P_i) if the coup succeeds. An example of this reward is a higher budget for the army which may even imply higher salaries for the army officers independently of their level of participation in support or opposition to the coup; another example may consists in a change in the ideological orientation of the country.

By the same token, every officer expects to receive a private interest payoff (D_i) if the coup fails. It will be positive for the army officers who join the repression and negative for the officers

support or against the coup, the cost associated to that injury, or the entertainment value of participation. This assumption is done for simplicity, given that the inclusion of anyone of these factors will have no relevancy for this research.

²⁴Gordon Tullock (1974), p. 64, proposes the alternative hypothesis that the army officer will face a punishment if he remains neutral,

"For the neutral, the slogan "He who is not with me is against me" may lead to positive punishment. More commonly, however, the injuries inflicted upon a neutral come from the need for the winning side to distribute rewards to their supporters. He is deprived of his position not because he is disliked, but because the position is needed for other purposes."

I have assumed that there is no punishment if the officer remains neutral once again for simplicity; this assumption is completely innocuous, since from my model I can reproduce anyone of the Tullock's results.

who support the coup,

$$D_i = D(X_i); \quad D_i(0) = 0; \quad dD_i/dX_i < 0$$

Then, in order to choose his optimal level of participation in support of the coup or of the repression each army officer will face the following maximization problem,

$$\text{Max}_{\{X_i\}} E(U_i) = L_i \int_0^{T_i} U_i(R_{it} + P_{it}) e^{-\delta t} dt + (1-L_i) \int_0^{T_i} U_i(D_{it}) e^{-\delta t} dt$$

In order to maintain my framework as simple as possible I will assume:

- 1) $R_{it} = R_i$, $P_{it} = P_i$, and $D_{it} = D_i$. This assumption is also employed by Mirani (1984), and Usher and Engineer (1987), in frameworks where an agent face the possibility to participate in the production of violent political pressure (i.e., riots, rebellions, etc.). While this assumption implicitly precludes the possibility that the agent takes into consideration the likelihood that the revolution's success will create an unstable political situation and that other revolutions may occur as a result,²⁵ it is completely innocuous to my present goal: obtain

²⁵As Ireland (1967), p. 51, states,

"Something should be said about the nature of an individual's expected utility from a revolutionary outcome. His expected utility must be seen as discounted utility for an indefinite period of time into the future following the success of the revolution. It involves the individual's expectations about what laws will be put into effect and how the balance of political power in the society will shift as a result of the introduction of the revolutionary institutions. The individual will also take into consideration the possibility that the revolution's success will create an unstable political situation and that other revolutions may occur as a result. If this is so, the individual will make guesses about the changes these potential revolutions might bring. All of these factors and others will be weighed and balanced into the individual's expected utility."

a better understanding of military coups d'etat, not the much more complicated issue of cycles of military and civilian regimes.

- 2) $L_i = L_i(L)$ and $dL_i/dL > 0$, where (L) represents the probability of success of the coup; a similar assumption is implicitly employed by Silver (1974)²⁶ and O'Kane (1981),²⁷

$$L = L(X_1, \dots, X_n; V); \quad \partial L / \partial X_i > 0; \quad \partial L / \partial V > 0$$

where (V) summarizes the exogenous factors that affect the probability of success of a military coup d'etat for given levels of participation of the army officers. An example of this variable may be the participation of a foreign country in support of the coup ($V > 0$), or of the repression ($V < 0$); another one, the participation of civilian groups in support of the coup.

Under these assumptions the maximization problem faced by each army officer becomes,

²⁶"Students of revolution have long been aware that revolutions frequently occur after conditions have markedly improved or while in process of improvement.... Reforms often increase the political capabilities of the revolutionaries (i.e., by giving them seats in Parliament, coverage in the mass media, and access to financial contributions) which raises their L_v (likelihood of success of the revolution, [mine]).... Perhaps most important in a world of imperfect knowledge, many persons will quite rationally interpret the reforms as a sign of weakness or submission. In this event their subjective estimate of the L_v will rise" (Silver [1974], pp. 65-66).

²⁷"The decision of a group of conspirators to intervene, however, is based upon calculation of the chances of success.... Following Luttwak's method, three obstacles to coups may be suggested. When they exist,....., they will reduce the likelihood of success of the coup. Being part of the calculations of the conspirators, they will also reduce the probability of such an attempt" (O'Kane [1981], p. 294).

$$\text{Max}_{\{X_i\}} E(U_i) = \pi \{L_i(X_1, \dots, X_n; V) U_i(R_i + P_i) + [1 - L_i(X_1, \dots, X_n; V)] U_i(D_i)\}$$

$$\text{where, } \pi = \int_0^{T_i} e^{-\delta t} dt$$

My next step will consist to formalize the problem faced by the civilian actors. The exact specification of this problem has no relevance as far as it contemplates the existence of a positive marginal cost of participation;²⁸ this cost will rule out the participation of any pressure group who does not affect the probability of success of the coup to a perceptible degree.

Consider, for example, that each pressure group faces the following maximization problem,²⁹

²⁸For example, Ireland (1967), p. 51, states (for the case of a mass revolution),

"The individual... has direct costs attached to his participation in the revolution. These involve the opportunity costs for man hours spent in carrying out the revolution and, more importantly, the possibility that the participant might be injured or killed while fighting for the success of the revolution."

²⁹Another possible specification of this maximization problem consists to assume that all the costs of participation are bear at the time of the coup; such that,

$$\text{Max}_{\{Y_j\}} E(U_j) = L_j \int_{T_c}^{T_j} U_j(W_{jt} + M_{jt}) e^{-\delta t} dt + (1 - L_j) \int_{T_c}^{T_j} U_j(W_{jt} + D_{jt}) e^{-\delta t} dt + U_j(W_{j0} + D_{j0} - C_{j0})$$

where,

C_j = Cost of participation faced by each member of the group j .

$$C_j = C(|Y_j|), \quad C(0) = 0 \quad \text{and} \quad dC_j/d|Y_j| > 0$$

it is possible to show that under both specifications I can derive the same result.

$$\begin{aligned} \text{Max}_{\{Y_j\}} E(U_j) &= L_j \int_0^{T_j} U_j(W_{jt} + M_{jt} - C_{jt}) e^{-\delta t} dt + \\ &+ (1-L_j) \int_0^{T_j} U_j(W_{jt} + D_{jt} - F_{jt}) e^{-\delta t} dt \end{aligned}$$

which under similar assumptions to the ones imposed to the military building block,

- 1) $W_{jt} = W_j$, $M_{jt} = M_j$, $D_{jt} = D_j$, $C_{jt} = C_j$, and $F_{jt} = F_j$
- 2) $L_j = L_j(L)$ and $dL_j/dL > 0$

becomes,

$$\text{Max}_{\{Y_j\}} E(U_j) = \epsilon \{L_j(L) U_j(W_j + M_j - C_j) + [1 - L_j(L)] U_j(W_j + D_j - F_j)\}$$

where, $\epsilon = \int_0^{T_j} e^{-\delta t} dt$

and,

Y_j = Level of participation of each of the identical members of the group j in support of the coup ($Y_j > 0$), or of the repression ($Y_j < 0$).

W_j = Income of the agent independent of government redistribution.

M_j = Government redistribution to each member of the group j under the rules of the redistributive game embodied in a military regime.

C_j = Cost of participation in support of the coup.

$$\begin{aligned} C_j &= C(Y_j) \quad \text{and} \quad dC_j/dY_j > 0 \quad \text{if} \quad Y_j > 0 \\ C(Y_j) &= 0 \quad \text{if} \quad Y_j \leq 0 \end{aligned}$$

D_j = Government redistribution to each member of the group j under the rules of the redistributive game embodied in a democratic regime.

F_j = Cost of participation in defense of the democratic regime.

$$F_j = F(Y_j) \quad \text{and} \quad dF_j/dY_j < 0 \quad \text{if} \quad Y_j < 0$$

$$F(Y_j) = 0 \quad \text{if} \quad Y_j \geq 0$$

The interaction between the actors is modeled as a Cournot-Nash non-cooperative game in their level of participation; then, the equilibrium is determined by the utility maximizing condition for each actor (military or civilian) with respect to his level of participation in support of the coup or of the repression, taking as given the level of participation of any other actor,

$$dE(U)/dX = \partial L/\partial X [U(R+P)-U(D)] + L U'(R+P) R' + (1-L) U'(D) D' = 0$$

$$i = 1, \dots, n$$

$$dE(U)/dY = \partial L/\partial Y [U(W+M-C)-U(W+D-F)] - L U'(W+M-C) C' - (1-L) U'(W+D-F) F' = 0$$

$$j = 1, \dots, m$$

where I am omitting from now on the subscripts i and j , and I am assuming $\pi = \epsilon = 1$.

By comparing both sets of first order conditions it becomes clear why the proposed theory would satisfy the stylized fact that most army officers take part in a coup while most civilian actors defer from doing so. My framework provides army officers with not only public good considerations but also private interest rewards; then, while the total payoff expected by the army officers is not independent of their level of participation, the total payoff expected by the civilian actors is only based in a public good consideration: the change in the outcome of the redistributive game embodied in the overthrowing of the democratic regime. Therefore, while most army officers will choose to take part, most pressure groups will choose to remain inactive, unless they can affect the probability of instauration of the military regime to a perceptible degree,

$$\partial L / \partial Y = 0 \rightarrow Y^* = 0$$

By means of a similar argumentation it is easy to show that the model would also satisfy the stylized fact that in most of the Latin American military coups d'etat it is usually verified some sort of support by part of the civilian population but not any form of civilian resistance. In order to contemplate this empirical asymmetry I have proposed a public good theory, given that in this framework the civilian actors will only choose to participate if they can significantly affect the probability of success of the coup. Under this scenario if the participation of some of the pressure groups benefitted by the change of political regime affects the probability of success of the coup, but the participation of any of the groups harmed does not; the former groups would support the coup, because $\partial L / \partial Y > 0$; but the later will remain inactive, given that $\partial L / \partial Y = 0 \rightarrow Y^* = 0$.

The maximization problem faced by the actors allow them to choose their optimal level of participation in the contingent stage of a military coup d'etat, but it does not explain how the coup has begun. I will assume, as it is also implicitly done by Gordon Tullock (1974)³⁰ and Rosemary O'Kane (1981)³¹, that an increase in

³⁰"So far we have discussed why individuals would join a coup, not the decision process which might lead people to entrepreneur one. In essence, what happens is that a number of high officials-- or in some cases low officials who happen to have access to exceptional opportunities--... quickly take action which is intended to set off the kind of cascade effect we have described. However, the group that issues the pronunciamiento or the small unit which simply grabs, can hardly make the type of calculation described above. What they do, of course, is observe a situation in which they believe that a sudden move will set off a cascade toward themselves. Since the profits of pulling off such a coup are very great (albeit the dangers of failure are also great), profit-seeking individuals might be expected to look for such opportunities" (Tullock [1974], p. 81).

³¹"That coups are just a particular strategy for overthrowing governments is generally agreed in the literature.... Given the importance of planning and timing, mistakes will be made. Sometimes coups may be attempted and fail due to tactical errors.

the probability of success will increase the likelihood that a subgroup of the army officers would decide to begin the action,

$$C = C(L) \quad \text{and} \quad dC/dL > 0$$

where, (C) represents the probability of a coup. Under this assumption, it is possible to show that the model would also satisfy the remaining stylized fact: a military coup d'etat which overthrows a democratic regime is generally preceded by a vacuum of power, which usually implies an economic and social chaos. Given this chaos it is expected that the income independent of government redistribution may come back to its "normal" level under the new government.³² In terms of the model I will differentiate the income independent of government redistribution if the coup succeed (W_c) from the income if there is not a successful coup (W_d); such

At other times coups which would have been successful may not be attempted because the conspirators are unready or have simply miscalculated their potential for success. The crucial question to be answered, therefore, should not be why coups occur, in the sense of for what reason conspirators stage them--fools may stage failed coups at any time--but under what conditions, if attempted they would like to succeed. Such conditions would, in principle, be capable of explaining both successful and genuine but unsuccessful coups" (O'Kane [1981], p. 288).

³²For example, Mancur Olson (1991), pp. 3-4, states,

"What incentives explain the emergence of government?... Since governments are the main custodians of the power to employ violence in modern societies, we have to go back to the even more elemental question of why violence plays such a depressingly large role in human affairs.... It is mainly because of the incentive individuals sometimes have to commit violence that anarchy is so terrible. Since life in an anarchy is appallingly inefficient, there are gains from making and carrying out an agreement to maintain peace and order."

A similar argument is provided by Martin Paldam (1987), pp. 165-166,

"Most people dislike military regimes and they are acceptable only when the real politicians have created chaos in the economy, and then only as long as people have this chaos clearly in mind."

that, $(W_c) > (W_d)$. Under this specification the impact effect of a successful coup on the participation of the civilian agents will be positive if, for example, $U'' < 0$,

$$\text{Sign } \partial Y / \partial W_c = \text{Sign } \{ \partial L / \partial Y [U'(W_c + M - C)] - L U''(W_c + M - C) C' \}$$

I do not wish to close this paper without highlighting the significance of the central factor, suggested by my theory, that may influence the likelihood of a military coup d'etat: the expected change in the rules of the redistributive game. A military coup d'etat that overthrows a democratic regime will alter these rules since the immediate consequence of the overthrowing of a democratic regime will be the establishment of a dictatorship, which will drastically modify the structure of the political organization of society. This change will bring up a new political-economic equilibrium, which will have related changes in the redistributive success of the different groups; the larger these changes are the higher the civilian support to the coup would be,³³

$$\text{Sign } \partial Y / \partial D \text{ (Impact effect)} = \text{Sign } \{ -\partial L / \partial Y U'(W + D) D' \} < 0.$$

In fact, any change in the outcome of the redistributive game is associated with changes of economic policies (see Edgardo Zablotsky [1992 (ii)]); in these terms it is possible to think in

³³For example, the Electoral Law may determine if the political decisions are dependent or independent; where a dependent political decision is one that it is taken after political negotiations (i.e., a Congressman would vote in favor of a project presented by a colleague if this colleague votes in favor of a project proposed by the first Congressman). The low cross hauling of taxes and subsidies embodied in a political regime where the decisions are independent implies that the change in the rules of the game embodied in the overthrowing of the democratic regime will have a stronger influence over the outcome of the redistributive game, increasing the benefits provided by a successful coup to the pressure groups benefitted by the change of political regime, which would increase their support to the coup.

these policies as economic predictors of the coup,³⁴ but it is important to point out that, under the theory proposed in this paper, these policies are nothing more than proxies of the real causes of the coup: the basic laws of the country which highly determine these policies through their effect over the rules of the redistributive game; in synthesis,

A military coup d'etat is better interpreted as the final outcome of a given set of basic laws rather than as the end result of erroneous economic policies, given that these policies are the end product of a redistributive game and the rules of this game are highly influenced by the basic laws of the country.

I will devote the following section to summarize the main highlights of the proposed theory.

SUMMARY AND CONCLUSIONS:

This paper was devoted to the study of military coups d'etat, one of the most prevalent types of non democratic change of government, but one which has not received a proportional degree of attention under the framework of the public choice literature.

In order to contribute to fill this gap, I have proposed a simple theory which may help us to better understand the subject.

³⁴The civilians harmed by the change in the rules of the redistributive game may try to prevent the coup by exerting a lower level of political pressure in democracy, reducing in this way the benefits provided by the change of political regime to the pressure groups benefitted by the rules of the game embodied in a military regime; I will assume that the civilians harmed by the coup act as if they do not take into account this possibility; an appealing justification for this assumption is present in a country where the level of uncertainty about the future is so high (most of the Latin American countries may fairly be classified under this category) that an optimal behavior for the actors would consist to maximize their redistribute success today regardless of any future effect of this behavior.

This theory was composed of two building blocks: the military side of the coup, which closely followed the framework developed by Gordon Tullock, and the civilian side.

The inclusion of this second building block constitutes the basic difference between my framework and the Tullock's one, and radically departs from the by-product theory of revolutions because it proposes public good considerations--instead of private interest rewards--as the engine for the motivations of the civilian actors.

The theory was based upon the pressure groups approach to the economic policy, developed since the seminal work of Arthur Bentley (1908). Under this framework a military coup d'etat which overthrows a democratic regime would provide public good considerations which serve to motivate the civilians actors to participate, because it will alter the rules of the redistributive game. The change in the rules of the game embodied in a successful coup will bring about a new political-economic equilibrium, which will have associated changes in the redistributive success of the different groups, providing in this way the public considerations for civilian actors to take part in a coup.

The public good characteristic of the proposed theory would allow my framework to satisfy the following stylized facts:

- A) In most of the Latin American military coups d'etat it is usually verified some sort of support of part of the civilian population but not any form of civilian resistance.
- B) Most army officers take part in a coup but most civilian actors do not.
- C) A military coup d'etat is generally preceded by a period of economic and social chaos which may characterize a vacuum of power.

In summary, the proposed theory highlights the significance of a non-military factor that may influence the likelihood of a

military coup d'etat: the expected change in the rules of the redistributive game. Under these terms, a military coup d'etat is better interpreted as the final outcome of a given set of basic laws rather than as the end result of erroneous economic policies, given that these policies are the end product of a redistributive game and the rules of this game are highly influenced by the basic laws of the country.

It seems fair to conclude that the consideration of the role played by civilian actors in military coups d'etat will help us to gain further insights into their causes; insights which are unattainable if we only consider the military side of the coup.

APPENDIX:

The public good considerations which would motivate the civilian actors to participate in a coup will only be relevant in a military coup d'etat that overthrows a democratic regime; they are basically non-existent in a coup that replaces one military government with another. This type of coup, although it replaces the military head of the state and some of the government officials, it does not modify the political organization of society³⁵ (i.e., the Parliament has been closed since the

³⁵As Ramon Cao Garcia (1983), p. 78, states,

"On the basis of the intentions of the plotters, two types of coups d'etat can be distinguished: (a) "changing of the guard" coups, and (b) "structural" coups. A changing of the guard coup intends to change the head of the state and some of the government officials without any change in the basic government policies or the political organization of society. The structural coup, on the other hand, is one where the plotters aim not only to exclude some government officials from their offices, but also intend to drastically modify the existing government policies and change the political organization of society...A changing of the guard coup can only be possible in dictatorships, because in democracies all coup is of structural variety. The reason is that the immediate consequence of a coup d'etat is the establishment of a dictatorial regime and, if the political institutions of society before the coup were democratic, a coup would drastically change the structure

overthrowing of the democratic regime, the political parties forbidden, the Electoral Law ruled out, etc.). This hypothesis is supported by the behavior of the index of democraticness built by Arat (1984). From his estimated time series it is possible to verify important changes in the estimated value of the index after a military coup d'etat which overthrows a democratic regime but not after a coup which only replaces a military ruler by another one (the time series of this index are reported in Edgardo Zablotsky [1992, ii]). Consequently, given the fact that the rules of the redistributive game remains basically unaltered after a coup that only replaces a military ruler by another one, there is no reason to expect that the outcome of the redistributive game will be greatly affected by the change of military ruler. This asymmetry will prove to be of great utility in order to provide empirical support to the Bentley's approach to public policy.

I will devote this Appendix to provide evidence in support of the Bentley's approach to public policy by evaluating the plausibility of the hypothesis that a military coup d'etat which overthrows a democratic regime will produce significant changes in the outcome of the redistributive game (induced by the change in the rules of the game embodied in the coup) which will not be verified either after a coup that only replaces a military ruler by another one, or after a democratic presidential transition.

In order to further this goal I will make use of an indicator of macroeconomic rent seeking proposed by Eliakim Katz and Jacob Rosenberg(1989). Katz and Rosenberg (1989) present quantitative measures of the proneness of different countries to respond to pressure groups in determining the composition of their spending. To do so, the authors measure the budget related rent seeking activity based on the data regarding the various categories in the government's budget (assuming that every change in the proportion of the government's budget spent for a given purpose occurs as a

of the political organization."

result of rent seeking activity by pressure groups.³⁶⁾

I will use a similar methodology since in this terms, my hypothesis predicts that the budget-related rent seeking activity will increase after a change of political regime but not after simply a change of ruler.

The following measure, which I will call the Bentley Index, captures the rent seeking for budgetary allocation as a proportion of the overall government spending,

$$\text{Bentley Index}_t = \sum_{i=1 \dots n} | S(t)_i - S(t-1)_i |$$

where $S(t)_i$, $S(t-1)_i$ are the proportions of the budget going to purpose i in years t and $t-1$ respectively and the number n is equal to the number of categories in the budget. Then, the Bentley Index represents the total sum of the absolute changes in the proportion allocated to different categories in year t over year $t-1$.³⁷

I will build up time series of the Bentley Index for different countries. The Statistical Yearbook of the United Nations provides a complete and similar desegregation of the total expenditures of the different governments since 1976; but for my purposes, I am interested in data from the fifties, sixties and the beginning of the seventies, when most of the coups have been verified. Then, I will make use of the data provided by the Statistical Yearbook since 1976; an alternative, but complete, desegregation provided by the International Financial Statistics (IMF) for the early seventies; and for the fifties and sixties the different

³⁶For the purposes of measurement Katz and Rosenberg take into account the change in a given category in the budget (and not the overall size of the category) to represent rent seeking activity; given that rent seeking battles to alter the structure of property rights over the budget takes place at the margin.

³⁷In order to avoid double counting Katz and Rosenberg divide the value of this Index by 2. For my goal it will not be necessary to do so, since I am not concerned with the specific value of the Index but with its first differences.

desegregations available for the different countries provided by the Statistical Yearbook of the United Nations.

Under this caveat n will represent the number of available categories in a specific country, and $S(t)_i$, $S(t-1)_i$, the proportions of the basket of the n available categories going to purpose i in years t and $t-1$ respectively. I will also build time series of an alternative version of the Bentley Index, excluding the allocation to "defence."

I will define that the information provided in a specific case supports the proposed hypothesis if:

- A) The Bentley Index in the year when a change of regime was verified (if it was verified before October 1), or in the following year (if it was verified after October 1), exceeds the mean of the series by at least one standard deviation.
- B) The Bentley Index in the year when a change of ruler was verified (if it was verified before October 1), or in the following year (if it was verified after October 1), does not exceed the mean of the series by at least one standard deviation.

Otherwise, I will determine that it rejects the proposed hypothesis.

I will classify an event as a change of regime if:

- A military coup d'etat overthrows a democratic regime.
- A democratic regime is restored.
- There is a mass revolution.

I will classify an event as a change of ruler if:

- There is a non democratic transition (i.e. a military government is replaced by another one).
- There is a democratic transition (i.e. a democratic presidential transition).

I will examine 32 events; from them 14 represent changes of regimes and 18 changes of rulers.

Changes of regimes

A) Military Coups d'etat which Overthrow Democratic Regimes:

- Argentina: 1966 (General Ongania replaced President Arturo Illia), 1976 (General Roberto Rafael Videla replaced President Maria Estela Martinez de Peron).
- Chile: 1973 (General Agustin Pinochet replaced President Salvador Allende).
- Ecuador: 1963 (A Military Junta replaced President Julio Arosemena Monroy).
- Panama: 1968 (A Provisional Junta of Government replaced President Arnulfo Arias).
- Uruguay: 1973 (After a military coup d'etat President Jose Maria Bordaberry was allowed to remain in office but only as a figurehead).

B) Democratic Regimes which are Restored:

- Argentina: 1963 (Arturo Illia assumed the government after the non democratic ruling of Jose Maria Guido), 1973 (Hector Jose Campora assumed the government after 7 years of military ruling).
- Dominican Republic: 1966 (Joaquin Balaguer won the July election, the first after the USA 1965 invasion).
- Greece: 1974 (The military rulers called Constantine Karamanlis to form a caretaker government preparatory to return to civilian rule).
- Peru: 1956 (Manuel Prado is elected President in the first

free elections since 1945).

- Spain: 1977 (Prime Minister Adolfo Suarez moved energetically to advance the reform program of the political system).
- Venezuela: 1958 (Romulo Betancourt, leader of Accion Democratica, won the presidential election, the first free one after the General Perez Jimenez dictatorship).

C) Mass Revolutions:

- Iran: 1979 (On February, the religious leader, Ayatollah Ruhollah Khomeini came back to Iran and formed a Revolutionary Council; two months later an Islamic Republic was proclaimed).



Change of Rulers

A) Non Democratic Transitions:

- Argentina: 1970 (General Ongania is replaced by General Marcelo Levingston), 1971 (General Levingston is replaced by General Alejandro Lanusse), 1981 (General Viola is replaced by General Galtieri), 1982 (General Galtieri is replaced by General Bignone).
- Dominican Republic: 1962 (Joaquin Balaguer installed a 7-man Council of State with himself as President after the resignation, in November 1961, of General Hector Trujillo).
- Uruguay: 1976 (Juan Maria Bordaberry was finally deposed. The Council of the Nation designated after 3 months Dr. Aparicio Mendez as President).

B) Democratic Transitions:

- Chile: 1958, 1964 and 1970 (Jorge Alessandri, independent, rightist candidate; Eduardo Frei, Democracia Cristiana Party; and Salvador Allende, leftist candidate, were elected President).
- Ecuador: 1956 and 1960 (Jose Camilo Ponce Enriquez, Conservative Party; and Jose Maria Velazco Ibarra, charismatic leader who had also been elected President in 1934, 1944 and 1952, were elected President).

- France: 1981 (Francois Mitterrand, Socialist contender, defeated the incumbent President, Valery Giscard d'Estaing, candidate of the Gaullist-allied Independent Republicans).
- Israel: 1977 (The opposition Likud party arrived to the government for the first time since the establishment of the state, after the stunning electoral upset of the Israel Workers' Party).
- Spain: 1982 (The ruling of the Democratic Center Party ended on December, when Felipe Gonzalez, leader of the Socialist Workers' Party, was inaugurated as the first left-wing chief executive since 1936).
- United Kingdom: 1974 and 1979 (Harold Wilson, leader of the Labor Party; and Margaret Thatcher, leader of the Conservative Party, were designated Prime Minister).
- United States: 1977 and 1981 (James Carter, Democrat candidate; and Ronald Reagan, Republican candidate, became President).

In Edgardo Zablotsky (1992, ii) I report the time series of both versions of the Bentley Index for each case, as well as a brief summary of the political history of each country in the relevant periods. Tables 4 and 5 summarize the information provided by these time series.

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TABLE 4

BENTLEY INDEX. SUMMARY OF THE RESULTS

Country	Change of Regime		Change of Ruler but not of the Regime	
	Support	Reject	Support	Reject
Argentina (63-79)	2	2	2	0
Argentina (77-83)	0	0	2	0
Chile	1	0	2	1
Dominican Republic	1	0	1	0
Ecuador	1	0	2	0
France	0	0	1	0
Greece	1	0	0	0
Iran	1	0	0	0
Israel	0	0	1	0
Panama	1	0	0	0
Peru	1	0	0	0
Spain	0	1	1	0
United Kingdom	0	0	1	1
United States	0	0	2	0
Uruguay	1	0	1	0
Venezuela	1	0	0	0
Total	11	3	16	2
Percentage	79	21	89	11

TABLE 5

BENTLEY INDEX WITHOUT "DEFENCE." SUMMARY OF THE RESULTS

Country	Change of Regime		Change of Ruler but not of the Regime	
	Support	Reject	Support	Reject
Argentina (63-79)	2	2	2	0
Argentina (77-83)	0	0	2	0
Chile	1	0	2	1
Dominican Republic	1	0	1	0
Ecuador	0	1	2	0
France	0	0	1	0
Greece	1	0	0	0
Iran	1	0	0	0
Israel	0	0	1	0
Panama	0	1	0	0
Peru	1	0	0	0
Spain	0	1	1	0
United Kingdom	0	0	1	1
United States	0	0	1	1
Uruguay	1	0	1	0
Venezuela	0	0	0	0
Total	8	5	15	3
Percentage	62	38	83	17

The evidence provided by the behavior of the Bentley Index supports the proposed hypothesis in 79 percent of the changes of regimes (11) and 89 percent of the changes of rulers (16); by the same token, if I do not take into account the change in the government expenditures in "defence," the behavior of the Bentley Index supports the proposed hypothesis in 62 percent of the changes of regimes (8) and 83 percent of the changes of rulers (15).

There exist many factors which appear to hinder the probability of obtaining evidence in support of my hypothesis (or of any other one) by using the estimated time series of the Bentley Index. For example:

A) The fact that government spending by exact purpose or by very desegregated data is not available for most countries. Even for the countries where we have the complete desegregation of the total expenditures of the government, the data is highly aggregated (7 or 8 categories); to the extent that rent seeking takes place between sub-departments, the very aggregated data are likely to lead to underestimates of the rent seeking taking place for government spending.³⁸

B) The fact that the available categories represent in some cases as few as 30 percent of the budget; which implies that there may be important changes between the rest of the categories which are not taken into account by our index.

³⁸As Katz and Rosenberg (1989) indicated for the nine categories that they have utilized,

"The purposes here are taken as equivalent to the very broadly defined nine categories of spending by government departments described above. To the extent that most (or at least considerable) rent seeking takes place between sub-departments or purposes, these very aggregated data are likely to lead to underestimates of the rent seeking taking place for government spending."

Under these conditions the fact that the behavior of both versions of the Bentley Index in 15 different countries--during different periods of time, and under different available budget desegregations--does not seem to reject the hypothesis that the budget related rent seeking activity increases after a change of political regime but not after a change of ruler alone represents, from my point of view, an important support for the Bentley's approach to public policy.

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