POLITICAL STABILITY AND ECONOMIC GROWTH.

A TWO WAY RELATION.

EDGARDO E. ZABLOTSKY

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I. INTRODUCTION.

It is usually asserted that political instability significantly lowers private investment, as well as economic growth, since it has adverse influence on property rights, and by that on investment and growth (i.e, Robert Barro, 1991; Ross Levine & David Renelt, 1992; Paolo Mauro, 1994; Edgardo Zablotsky, 1994). Political instability may lead entrepreneurs to wait until the uncertainty is resolved, before undertaking irreversible investment projects, it also may lead to capital flight; by the same token, multinational companies may be less likely to locate their subsidiaries in countries that face the possibility of coups, revolutions, terrorism, or expropriation.

For example, Robert Barro (1991) reports, for a sample 98 countries in the period 1960-1985, that growth rates are negatively related to measures of political instability. He makes use of variables like figures on revolutions, coups, and political assassinations, since these relations could involve the adverse effects of political instability on property rights, and therefore on private investment.

Similarly, Ross Levine and David Renelt (1992) conclude that the figure on revolutions and coups per year is robustly negative correlated with the investment share of gross domestic

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product. Thus, not surprisingly, countries that experience a high number of revolutions and coups tend to be countries that invest less of their resources domestically than countries with stable political environments.

By the same token, Paolo Mauro (1994), accounts that any one the different proxies of political stability that he analyzes is significantly positively correlated with private investment and economic growth.

In this paper we will face the problem from a different perspective; we will propose that there also exists a relation from economic growth to political stability. In direction to this goal we will center our attention on military coups d'etat.

The study of military coups d'etat has not received enough attention in the public choice literature; actually, since the pioneering works of Downs (1957), Buchanan and Tullock (1962), and Riker (1962) most of the public choice literature have been developed under a democratic framework. The first paper in the public choice literature developed under a non-democratic framework was presented by Ireland in 1967. This work, as well as the 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. 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. The by-product designation of this self interest theory is credited to Tullock (1971), who used the term following Olson (1965), whose analysis of the motivations of an agent as an active 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

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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.

To the best of my knowledge, only Tullock (1974), Silver (1974), Cao Garcia (1983), Mbaku and Paul (1989), Zablotsky (1992) and Morón (1994) analyze coups d'etat. Of these scholars only Tullock and Zablotsky explicitly study military coups d'etat by means of a microeconomic analysis of benefits and costs. This paper provides further insights on the issue; it is divided in three sections.

Section 2 proposes an alternative definition of a military coup d'etat that characterizes military coups d'etat that overthrow democratic regimes better than the usual definitions. We will show that in order to understand the behavior of the army officers who face the decision to participate in a coup it is insufficient to analyze the private interest motivations that they may have, as it is stated by the by-product theory of revolutions; it is also necessary to analyze the public good rewards that the high rank officers may consider. Section 3 is devoted to develop our proposed hypothesis, and to provide preliminary evidence in order to illustrate its feasibility.

II. AN ALTERNATIVE DEFINITION OF A MILITARY COUP D' ETAT.

This section is devoted to propose an alternative definition of a military coup d'etat; this definition allows us to understand better the behavior of the army officers who face the decision to participate in a

coup that overthrows a democratic regime.

It is usually argued that the main difference between a revolution and a coup d'etat is that in the former case a significant proportion of the revolutionaries are not members of the government or of the ruling coalition, while in the latter the members of the plot are part of the government.[2]

In actuality, this definition fully applies to most, but not every type of coup d'etat; the military coups d'etat that overthrow democratic regimes should be considered an exception, given that they are headed by high ranking officers who only supposedly are part of the government. The army officers are professionals, they are neither elected officers nor are they part of the governmental coalition; therefore, the usual definition: *in a coup d'etat the members of the plot are part of the government or of the ruling coalition*, is inadequate to characterize this type of irregular executive transfer. In order to characterize adequately this class of non-democratic change of government I will introduce the following alternative definition: *"A military coup d'etat that overthrows a democratic regime is characterized by the fact that its actors*

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[2] For example, Cao Garcia (1983), p. 77, states,

"In contrast to revolutions, which are activities organized by persons outside the government, a coup d'etat is an attempt of a subset of this ruling coalition to overthrow from office the head of a government, together with a subset of his supporting coalition, by means of political violence... The basic difference between a revolution and a coup d'etat, therefore, is that, while revolutionary activities are made, ex definitio, by individuals outside government, coups d'etat are carried out by government officials."

are supposedly, but not in fact, members of the government."

This subtle difference is of great relevance in the understanding of the role played by public good considerations on the behavior of the army officers. For example, Tullock (1974) sustains that public good considerations are apt to play as small a part in the decision to participate in a coup as in the participation in any outside revolution (Tullock, 1974, p. 62); indeed, it is clear from his arguments that he bases this conclusion in the traditional definition of a coup. However, it can be shown that under my alternative definition it is not possible to reach such a conclusion; in order to demonstrate this point, we will explicate Tullock's line of argumentation.

Tullock studies military coups d'etat by means of a microeconomic analysis of benefits and costs, analyzing structural factors that affects the participation of the army officers in the coup. He proposes a framework where, in order to choose his position, every army officer compares the total expected payoff that he would receive if he joins the coup (Pr), if he stays loyal to the government by joining the repression (Pd), and if he remains neutral (Pin).

The army officer will join the coup if:

$$Pr > Pd \text{ and } Pr > Pin$$

similarly, he will join the repression if:

$$Pd > Pr \text{ and } Pd > Pin$$

otherwise, he will choose to remain neutral. Where:

$$Pin = Pg \, Lv - Np$$

$$Pr = Pg \, (Lv + L_i) + R_i \, (Lv + L_i) - P_i \, [1 - (Lv + L_i)] - Lw \, Ir + E$$

$$Pd = Pg \, (Lv - L_i) + D_i \, [1 - (Lv - L_i)] - Pp \, (Lv - L_i) - Lw \, Ir + E$$

and,

Pg = Public good generated by a successful coup.

Lv = Likelihood of a revolutionary victory if the subject is neutral.

Np = Punishment for remaining neutral.

L_i = Change in the probability of revolutionary success resulting from the subject participation.

R_i = Private reward to the subject for his participation in the military coup d'etat if the coup

succeeds.

P_i = Private penalty imposed on the individuals for his participation in the coup if it fails.

Lw = Likelihood of injury through the participation in support of, or against, the coup.

Ir = Injury suffered in action.

E = Entertainment value of participation. Silver (1974) defines this term as the "psychic

income from participation," given that it may include a wide variety of factors, like the

individual's sense of duty to the law, race, humanity, the rulers, the revolutionary brotherhood,

his taste for conspiracy, etc.

D_i = Private reward to the individual for his participation in putting down the coup if the government wins.

Pp = Private cost imposed on the defenders of the government if the coup succeeds.

The public good reward (Pg) will have a relevant role in the decisions of the agents if, and only if,

the change in the probability of revolutionary success resulting from the participation of the agent (L_i) is

significantly different from zero.[3] As in a mass revolution the participation of the subject will have an

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[3] $Pr - Pin = Pg\ L_i + R_i\ (Lv + L_i) - P_i\ [1 - (Lv + L_i)] - Lw\ Ir + E + Np$

infinitesimally small effect over the probability of success of the action (L_i . 0), then we can conclude that public good considerations do not play a role in the behavior of the agents; therefore, the subject will be motivated to participate by the expectation of a private return and the public good reward generated by a successful revolution must be interpreted only as a by-product.

Gordon Tullock also argues that public good considerations are not an important factor in explaining coups d'etat; in order to support this statement he analyzes the following facts:

A. For most of the junior government officials L_i will be close to zero.

B. For the high rank government officials while L_i will be significantly different from zero, the important governmental positions that they hold imply that they are basically satisfied with the government, such that if public good considerations (Pg) have any role at all, it will be against their participation in the coup.[4]

$$Pd - Pin = Pg\ L_i + D_i\ [1 - (Lv - L_i)] - Pp\ (Lv - L_i) - Lw\ Ir + E + Np$$

then, Pg will play a role only if L_i ... 0.

[4] *"Note that L_i, the effect that the individual may have on the coup, is not necessarily infinitesimally small for a government official. Under these circumstances, the expression $Pg\ L_i$ may be more significant for the government official than it is for the private citizen. This is dubious, however. Most of the junior government officials will still have very small L_i's; therefore this expression should be close to zero. On the other hand, the senior government officials, although they will indeed have somewhat larger L_i's are also likely to receive very large rewards or very large punishments in the private sphere from the success or failure of the coup. Under the circumstances, it is likely that for them, too, the public good aspect of the coup is relatively minor. Another feature that must be emphasized is that the participants in the coup or in defense against the coup are*

The first argument, while fully correct, is generally not important for explaining military coups d'etat; usually, given the verticality of the army,[5]2 the only relevant behavior that explains a military coup d'etat is the behavior of the senior officers; officers whose L_i's will be significantly different from zero.[6]

The second Tullock's argument is based upon the fact that the senior officers are members of the government; so, while the argument is entirely correct for any coup d'etat that satisfies the traditional definition of a coup, it is no longer satisfactory for military coups d'etat that overthrow civilian regimes, given

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officials of the government. They are that group of people who are least likely to be unhappy about the policy of the government. Further, the higher rank they have, the higher the L_i; but at the same time, the more likely it is that they are basically rather satisfied with the existing government, except insofar as they would like to have a higher rank. Under the circumstances, public good considerations - if they are of any importance at all among government officials considering a coup - are more likely to weigh in on the side of retaining the present government than on the side of attempting to overthrow it. Thus, public good considerations are apt to play as small a part in the decision to participate in a coup as in participation in any outside revolution."

Tullock, 1974, p. 62.

[5] As Tullock, 1974, p. 63, argues,

"The infantry private who is suddenly informed by all of his officers that they have joined the revolution probably finds it extremely dangerous to do anything except to agree with them."

[6] It is possible to find examples where the privates, organized into battalions, resist orders (i.e., the 1991 Moscow coup), but they are clearly the exceptions; exceptions that, for example, do not characterize the traditional Latin American military coup d'etat.

that this type of non-democratic change of government satisfies our alternative definition instead of the traditional one.

Therefore, in order to understand the behavior of the army officers who face the decision to participate in a coup it is insufficient to analyze the private interest motivations that they may have, as it is stated by the by-product theory of revolutions; it is also necessary to analyze the public good rewards that the high rank officers may consider. There is no reason to assume that public good considerations are not a relevant factor in explaining a military coup d'etat that overthrows a democratic regime; thus, it seems appropriate to view private returns and public good considerations as complementary factors in the decisions of the army officers. It is surprising that the romantic public good considerations that are prevalent in most of the political science literature on non-democratic changes of government cannot be rejected only in the less romantic type of irregular executive transfer: the military coup d'etat that overthrows a civilian regime.

Zablotsky (1992) makes use of the assumption that private returns and public good considerations are complementary factors in the decision process of the army officers who face the possibility to take part in a military coup d'etat; in the following section we will make use of the same assumption in order to obtain further insights on non-military factors that may affect the probability of the coup.

III. ECONOMIC GROWTH. A REQUIREMENT FOR POLITICAL STABILITY.

This essay is devoted to present further results on non-military factors that may increase the probability of a military coup d'etat. In direction to this goal I will make use of the framework proposed by Zablotsky (1992). It will closely follow the Tullock's approach to the subject but it also will take into

account the civilian side of the coup; the inclusion of civilian considerations constitutes the basic difference between this 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 (see Zablotsky, 1995).

Our first step will consist to describe the military building block of the model. 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).

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,

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

Each army officer also expects to receive a public good payoff (P_i) if the coup succeeds (see Section 2).

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 who support

the coup,

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

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,

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

In order to maintain the framework as simple as possible I will assume as in Zablotsky (1992):

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.).

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) and O'Kane (1981),

$$L = L(X_1,...,X_n; V) \qquad ML/MX_i > 0 \qquad ML/MV > 0$$

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 civilian groups in support of the coup.

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

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

where, $\ B = * \int_0^{T_i} e^{-*t} \ dt$

0

The next step will consist to formalize the problem faced by the civilian actors. The exact specification of this problem lacks of relevance as far as it contemplates the existence of a positive marginal cost of participation; 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,

$$\begin{array}{cc} T_j & T_j \\ \text{Max } E(U_j) = L_j * U_j(W_{jt} + M_{jt} - C_{jt})\, e^{-*t}\, dt + (1 - L_j) * U_j(W_{jt} + D_{jt} - F_{jt})\, e^{-*t}\, dt \\ \{Y_j\} \quad 0 & 0 \end{array}$$

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,

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

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

and,

Y_j = Level of participation of each identical member 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.

$$C_j = C(Y_j) \quad \text{and} \quad dC_j/dY_j > 0 \quad \text{if} \quad Y_j > 0$$

$$C(Y_j) = 0 \quad \text{if} \quad Y_j \,\#\, 0$$

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.

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

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

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,

$$ME(U)/MX = ML/MX \; [U(R + P) - U(D)] + L \; U'(R + P) \; R'+ (1 - L) \; U'(D) \; D'= 0$$

$$ME(U)/MY = ML/MY \; [U(W+M-C)-U(W+D-F)] - L \; U'(W+M-C) \; C'- (1-L) \; U'(W+D-F)F'= 0$$

where we are omitting from now on the subscripts i and j, and I am assuming $B = , = 1$.

By comparing both sets of first order conditions it becomes clear that this framework would satisfy the stylized fact that most army officers take part in a coup while most civilian actors defer from doing so (see Zablotsky, 1992). The framework provides army officers not only with 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 installation of the military regime to a perceptible degree,

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

By means of a similar argumentation it is easy to show that the model also would satisfy the stylized fact that in most of the 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. To contemplate this empirical asymmetry we have made use of a public good theory - based upon the pressure groups approach to the economic policy - given that under this framework the civilian actors will only choose to participate if they can significantly affect the probability of success of the coup (see Zablotsky, 1992). 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 but the latter will remain inactive.

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. We will assume, as it is also done by Tullock (1974), O'Kane (1981), and Zablotsky (1992), that an increase in 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 military coup d'etat.

Our next step will consist to make use of the described framework in order to obtain further insights on non-military factors that may affect the probability of a military coup d'etat; in direction to this goal we will propose the following hypothesis: *A decrease in the income independent of government redistribution (W) of the civilian actors benefitted by the change of political regime will increase, assuming decreasing marginal utility, the benefits dispensed to the actors by a successful coup; this would create an incentive for their participation in its support, consequently raising the probability of this non-democratic change of government.*

$$\text{Sign } \partial Y/\partial W = \text{Sign } \{\partial L/\partial Y \ [U'(W+M-C)-U'(W+D)]-L \ U''(W+M-C) \ C'\} < 0$$

$$\text{if} \quad *\partial L/\partial Y \ [U'(W+M-C)-U'(W+D)]* > *L \ U''(W+M-C) \ C'*$$

In order to illustrate the plausibility of this hypothesis it will be necessary to identify a pressure group that would be benefitted by the change in the rules of the redistributive game embodied in the overthrowing of the democratic regimes, and then to analyze the behavior followed by some variables that may affect the income independent of government redistribution of its members.

Given that there are no reasons to assume that in various countries the pressure groups benefitted by the overthrow of democratic regimes will be the same, I will center my interest on a specific one:[7] Argentina, where the export (agricultural) sector appears to have been benefitted by the modifications in the commercial policy embodied in the overthrow of the democratic regimes (see Zablotsky, 1992).

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[7] Actually, there are no reasons even to assume that in a given country the groups benefitted will be the same across time, since different variables that affect the outcome of the redistributive game may vary (see, for example, Becker, 1983).

Table 1 describes the behavior followed by the real foreign price index of exports; index highly associated with the income independent of government redistribution of the export sector.

The index actually fell before the overthrow of each of the democratic regimes (1962, 1966, and 1976); this fact motivates us to investigate further the plausibility of the hypothesis by basing our analysis on the behavior followed by the international price of the main agricultural products.

TABLE 1

REAL FOREIGN PRICE INDEX OF EXPORTS (1960=100)

Year	Event	Real Foreign Price Index of Exports (1)	Year	Event	Real Foreign Price Index of Exports (1)
1960		100	1972		113
1961		97	1973		138
1962	Coup	91	1974		146
1963		95	1975		121
1964		107	1976	Coup	106
1965		105	1977		102
1966	Coup	102	1978		97
1967		97	1979		111
1968		92	1980		115
1969		89	1981		109
1970		93	1982		89
1971		103	1983		79

Source: Adolfo Sturzenegger, Wylian Otrera and Beatriz Martinez Mosquera, Trade, Exchange

Rate, and Agricultural Pricing Policies in Argentina, World Bank Comparative Studies, The World Bank,

May 1990.

where,

(1) Foreign Price Index of Exports (CEPAL)/USA Wholesale Price Index.

Table 2 reports the relative participation of the main agricultural products between 1960 and 1984,

TABLE 2

RELATIVE PARTICIPATION OF THE MAIN AGRICULTURAL PRODUCTS

Product	1960-1964		1970-1974		1980-1984	
	Million of U$S	Percent	Million of U$S	Percent	Million of U$S	Percent
Beef	1038	30	2137	30	4182	25
Dairy Prod.	426	112	753	11	1781	11
Wheat	368	11	543	8	1656	10
Corn	241	7	751	11	1266	8
Total	2073	60	4184	60	8885	54

Source: Adolfo Sturzenegger, Wylian Otrera and Beatriz Martinez Mosquera, Trade, Exchange Rate, and Agricultural Pricing Policies in Argentina, World Bank Comparative Studies, The World Bank, May 1990.

All of the products, with the exception of the dairy ones, are traded goods; then, I will focus my attention in their real international prices. To consider another independent source of information, I also will examine the behavior of an index elaborated by Adolfo Sturzenegger, Wylian Otrera and Beatriz Martinez Mosquera (1990): the relative price of each of these agricultural products respect to non-agricultural ones in absence of any form of government intervention (direct or indirect).

The relative prices in the absence of any form of governmental intervention are defined as:
$$P_i^*/P_{NA}^* = \{[(P_i^{FOB} * E^e) - GP_i]/1.03 - C_i\}/P_{NA}^*$$

where,

- P_i^*/P_{NA}^* = Relative price in the absence of government intervention of agricultural good i respect to the nonagricultural goods.

- P_i^{FOB} = FOB price of product i.

- E^e = Equilibrium adjusted nominal exchange rate.

- GP_i = Port costs for product i.

- 1.03 = Export commission costs.

- C_i = Transport and distribution costs (from the farm to the port) of product i.

- $P_{NA}^* = X_{nat} I_{nat} [d/(1+t_{nat}^i)] + X_s I_s + X_{cc} I_{cc}$

- $d = E^*/E$. Divergence between the actual real exchange rate (E) and the sustainable equilibrium free-trade/real-exchange rate (E^*).

- t_{nat}^i = Estimated implicit tariff for the nonagricultural tradable index.

- I_{nat} = Nonagricultural tradable index.

- I_s = Service index.

- I_{cc} = Cost of construction index.

- X_{nat} = 0.36

- X_s = 0.57

- X_{cc} = 0.07

Table 3 summarizes all the relevant information provided by both indicators (in the Appendix there are reported the time series of each of them).

TABLE 3

SUMMARY OF THE RESULTS

Items	Increasing Path	Decreasing Path
Real International Prices		
Beef	0	4
Wheat	1	3
Corn	2	2
Relative Prices in the Absence of Government Intervention		
Beef	0	3
Wheat	0	3
Corn	1	2

Both indicators have usually fallen before military coups d'etat that have overthrown democratic regimes (the real price in 75 percent of the observations and the relative price without any form of governmental intervention in 89 percent of the cases).

Therefore, it seems fair to state that the evidence I have examined does not reject the proposed hypothesis, because the income independent of government redistribution of the agricultural sector seems to have fallen before coups that have overthrown democratic regimes; which would have risen, in terms of our framework, the probability of this non-democratic change of government.

Morón (1994) also provides empirical evidence that may support the proposed hypothesis. He

makes use of a panel data consisting of information about 16 Latin American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Haiti, Panama, Peru, Paraguay, Uruguay, and Venezuela) for the period 1950-1990. He shows that the lack of diversification in the export structure of a country contributes to explain successful coups d'etat. Countries that had not been able to diversify the export sector are more likely to suffer economic instability due to an external shock originated mainly by sharp declinations in the commodity prices. Therefore, world market conditions and in particular export characteristics form a very sound basis for developing a general explanation for coups d'etat.

This evidence is consistent with our proposed hypothesis since, in a small country where the export sector is benefitted by the change in the rules of the redistributive game embodied in a successful coup, the probability of this event will increase if the international price of the export good decreases, because it will decrease the income independent of government redistribution of the sector.

Having determined the role played by the income independent of government redistribution it becomes clear the role played by economic growth; economic growth may reduce the probability of a military coup d'etat since it would increase the income independent of government redistribution of the interest groups benefitted by the event. It is interesting to point out that our hypothesis satisfies the stylized fact that high developed countries would be a less probable stage for military coups d'etat than low developed ones.

Moron (1994) provides evidence that sustains this assertion; he shows that the poverty situation of a country affects the number of coups d'etat in the same country.

Zehra Fatma Arat (1984) has built an index of democraticness for selected countries which allows

us to illustrate clearly the point.[8] From the Arat sample we have selected the 63 countries which have been included during the whole period and we have classified 17 of them under the label of "first world countries", and the remaining 46 under the label of "others"; from the later we have selected the 19 Latin American countries (see Table 4).

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.[9]

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[8] The 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 com- petitiveness of the political system), and civil and political liberties (which measures the coerciveness of the government). The 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.

[9] We have classified under the label of "first world" the Western European countries in addition to the USA, Canada, Australia and New Zealand. We have classified under the label of "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.

TABLE 4

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.

In conclusion, this paper has proposed the hypothesis that there exists a relation from economic growth to political stability. This hypothesis does not oppose but complement the usual one, which states that political stability is a prerequisite for economic growth. Under our hypothesis the relation between political stability and economic growth has to be understood as a two way relation.

APPENDIX

TABLE A.1: BEEF

Year	Event	Real Value of Exports (1951=100)	
		Chilled Beef	Corned Beef
1951		100	100
1952		104	115
1953		132	118
1954	Coup	133	112
1955		125	100
1956		95	94
1957		89	87

Source: I.M.F., International Financial Statistics.

Year	Event	Real Price FOB Buenos Aires (1960=100)	Relative Price without Intervention
1960		100	10.05
1961		95	9.56
1962	Coup	88	8.57
1963		87	7.15
1964		123	9.07
1965		143	11.67
1966	Coup	100	8.21
1967		90	7.65
1968		86	7.44
1969		81	7.11
1970		87	6.71

TABLE A.1--Continued

Year	Event	Real Price FOB Buenos Aires (1960=100)	Relative Price without Intervention
1971		119	8.51
1972		127	8.53
1973		165	9.01
1974		140	8.30
1975		92	6.31
1976	Coup	60	3.60
1977		85	5.66
1978		72	4.74
1979		112	6.25
1980		117	7.31
1981		120	9.28
1982		100	8.98
1983		91	8.67

Source: Adolfo Sturzenegger, Wylian Otrera and Beatriz Martinez Mosquera, Trade, Exchange Rate, and Agricultural Pricing Policies in Argentina, World Bank Comparative Studies, The World Bank, May 1990.

Note: Price FOB, Buenos Aires: annual, U$S/ton.

TABLE A.2: WHEAT

Year	Event	Real Value of Exports (1951=100)
1951		100
1952		119
1953		122
1954		88
1955	Coup	87
1956		75
1957		71

Source: I.M.F., International Financial Statistics.

Year	Event	Real Price FOB Buenos Aires (1960=100)	Relative Price without Intervention
1960		100	1.64
1961		106	1.83
1962	Coup	107	1.41
1963		102	1.49
1964		113	1.41
1965		100	1.33
1966	Coup	82	1.10
1967		90	1.05
1968		96	1.49
1969		92	1.46
1970		87	1.21

TABLE 39.--Continued

Year	Event	Real Price FOB Buenos Aires (1960=100)	Relative Price without Intervention
1971		85	1.06
1972		85	1.22
1973		138	1.62
1974		221	2.62
1975		179	2.68
1976	Coup	124	1.44
1977		81	1.03
1978		94	1.22
1979		88	0.99
1980		119	1.44
1981		121	1.07
1982		99	1.20
1983		81	1.44

Source: Adolfo Sturzenegger, Wylian Otrera and Beatriz Martinez Mosquera, Trade, Exchange Rate, and Agricultural Pricing Policies in Argentina, World Bank Comparative Studies, The World Bank, May 1990.

Note: Price FOB, Buenos Aires: January (December or February during 1966-1970, 1973 and 1975), U$S/ton.

TABLE A.3: CORN

Year	Event	Real Value of Exports (1951=100)
1952		100
1953		68
1954		53
1955	Coup	63
1956		56
1957		52

Source: I.M.F., International Financial Statistics.

Year	Event	Real Price FOB Buenos Aires (1960=100)	Relative Price without Intervention
1960		100	1.37
1961		94	1.31
1962	Coup	96	1.23
1963		104	1.27
1964		104	1.06
1965		112	1.34
1966	Coup	93	1.02
1967		99	1.35
1968		89	1.17
1969		89	1.20
1970		96	1.11

TABLE A.3--Continued

Year	Event	Real Price FOB Buenos Aires (1960=100)	Relative Price without Intervention
1971		95	0.97
1972		97	1.03
1973		127	1.02
1974		128	1.16
1975		139	1.31
1976	Coup	125	1.45
1977		95	1.09
1978		95	1.07
1979		83	0.74
1980		102	0.97
1981		89	0.85
1982		70	0.82
1983		80	1.18

Source: Adolfo Sturzenegger, Wylian Otrera and Beatriz Martinez Mosquera, Trade, Exchange Rate, and Agricultural Pricing Policies in Argentina, World Bank Comparative Studies, The World Bank, May 1990.

Note: Price FOB, Buenos Aires: May (July in 1967), U$S/ton.

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