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THE HAZARD RATE OF POLITICAL REGIMES

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IRIS Summary

Political instability has long been an issue of interest among social scientists. There is widespread consensus that political stability is a necessary condition for growth and prosperity. People are encouraged to invest and trade when they are confident in the future, and the prospect of political unrest and sudden changes in the "rule of the game" largely undermine business and consumer confidence. Moreover, rapid turnover in power makes it difficult to have coherent decision-making and hinder the implementation of policies for structural change.

In this paper we present a preliminary study on the stability of political regimes. We used a proportional hazard rate model to study the effect of some observable economic and political conditions on the hazard rate of different types of regimes. In a longitudinal data set we find ~at economic development has a stabilizing effect in countries where democratic political institutions exist. Regimes with democratic institutions and with a higher level of per capita GDP show a lower hazard rate than regimes with a lower degree of economic development. This stabilizing effect of economic development fades when we analyze the sub-sample of autocratic regimes. Rich autocracies did not show a lower hazard rate than less developed autocracies.

While the stability of autocracies was not affected by their degree of economic development, it was greatly associated with the degree of popular discontent. Widespread discontent with leaders in autocratic regimes highly increases their hazard rate. This relationship is found to be much weaker for regimes with democratic institutions.

The hazard rate for regimes with competitive elected executive and legislature is found to be less than one half the hazard rate for the rest of the sample. This evidence the greater stability of democratic regimes compared with regimes with non-democratic political institutions. We also find an important South American effect. South American political regimes show a much higher hazard rate than their counterparts in other regions. This larger regional instability is particularly important in the case of democracies.

When we controlled by means of parametric duration models for the observable heterogeneity, we found a non-monotonic time dependence pattern for the hazard rate of political regimes. Political regimes showed an increasing risk of collapse during the first years, with their hazard rates reaching a peak around the fourth year. After that period, they stabilize and duration breads stability.

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1. Introduction

Political instability has long been an issue of interest among social scientists. Economists in particular have been largely interested in political instability because there is widespread consensus that political stability is a necessary condition for growth and prosperity. There are at least two reasons for this. First, people are encouraged to invest and trade when they are confident in the future, and the prospect of political unrest and sudden changes in the "rules of the game" largely undermine business and consumers confidence. Second, as Bienen and Van de Walle (1991, Ch. 1) have remarked, the effect of rapid turnover in power makes it difficult to have coherent decision-making and hinder the implementation of policies required for structural changes.

Within this context, Clague et al. (1994) have remarked that the expected tenure of autocrats and the expected duration of democratic regimes affect the incentive for rulers to protect property rights, an important element determining the rate of accumulation and growth. Clague et al.'s remark is based on Olson's (1993) work, where he stated that autocrats who expect to enjoy a long tenure, and therefore profit from the rents associated to office for a longer period, are more likely to grant subjects secure property rights. The provision of secure property rights would induce subjects to invest achieving a greater rate of growth than in the case where the expected tenure is short. When autocrats have a short time horizon, they no longer have an incentive to encourage long-run investment that will increase the output, and they will gain more from expropriating than from protecting property rights. Likewise, the duration of democratic rule may also be expected to influence investment decisions. The possibility that democratic rule be toppled by an autocrat is likely to constitute a discouragement for investment, because it is not sure that the new autocrat will be able to provide guarantees for property rights. This link between political stability and the possibility of economic growth constitutes an important reason to be concerned about the determinants of the stability of political regimes[1].

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[1]There is empirical evidence of this linkage between political instability and economic performance. Kormendi and Meguire (1985) found that political instability is inversely related to gross investment. Barro (1991) showed that political instability, measured by an index of revolutions, coups, and assassinations, had a negative impact on growth. Alesina et al. (1992), controlling for joint endogeneity of growth and political instability, also showed a significant negative effect of instability on growth.

Huntin (1973) pointed out that one dimension of political stability is the chance of structural changes in a society. In his view, a polity is politically stable if it has been able to avoid changes in its basic structural arrangements over the years. Continuity, or persistence of forms, distinguishes stable polities from those unable to maintain their pattern in the face of environmental pressures. When we analyze the degree of political stability from this prospective, we see that developing countries have been largely unstable over the last forty years. The large majority of these countries have experienced dramatic changes in their political institutions, and many of these changes have occurred through violent means such as a coup d'etat. While some countries have switched from constitutional democracies to autocracies, other have experienced changes in the inverse sense. This motivates four interesting questions. First, what determines the continuity of the political institutions in these countries? Second, are the determinants of this continuity the same for autocratic and democratic regimes? Third, is the likelihood of survival of a political regime affected by the tenure of the regime itself? Four, if the probability of survival of a political regime is dependent on its tenure, is this time dependence pattern the same for democracies and autocracies? In this work, we study these questions by means of duration models and a longitudinal data set.

The next section briefly discusses the determinants of the stability of political regimes, and argues that the degree of economic development, economic performance, the degree of popular discontent with the incumbent, and its tenure determine its probability of collapse. The third section presents details on the basic econometric framework used. Section four briefly refers to the data used in the estimations. Section five presents a proportional hazard model to study the determinants of political regime changes. Section six estimates parametric duration models for the different type of political regimes, and focus on the role of time in determining the risk of collapse. Section seven concludes.

2. The determinants of regime instability

When analyzing changes in political regimes among developing countries through time, it is possible to observe; (1) autocrats who get replaced by another autocrat, usually by means of a coup, (2) autocrats who decide to voluntarily step down from office calling for elections and restoring political

competition, (3) democracies that perish by means of a coup d'etat, and (4) leaders democratically elected who suppress some constitutional rights and freedoms and usually suspend the legislative power or rend them ineffective. Therefore, when thinking about the determinants of political regimes' stability common conditions leading to these changes have to be stressed.

Within the socio-political literature, economic backwardness has been identified as a primary cause of political instability[2]. Empirical evidence on this relationship, has been offered by O'Kane (1984), and by Londregan and Poole (1991, and 1992) who found that poverty breeds coups.

A second major determinant of political instability is economic performance. Linz (1978) presented a model of democratic breakdown where he argues that the lack of legitimacy of a regime is what determines its end. This lack of legitimacy is closely related to the lack of effectiveness and efficacy of the government in finding and implementing solutions to the basic problems facing a society. In his model, the collapse of a democratic regime can be brought on by rapid and massive changes in economic conditions, such as a deep recession, a rampant inflation, or a crisis in the balance of payment. Likewise, O'Kane (1987) argued that coups d'etat are dramatic responses to an unstable and sometimes hopeless economic situation, and reports that the likelihood of coups is larger in countries with an economic structure leading to unstable economic performance. The same relationship between coups and economic performance was evidenced by Londregan and Poole (1991, and 1992). In a large sample spaning a 32 year period, they found that the probability of a coup is largely influenced by the rate of economic growth. Similar results were found by Sanhueza (1995, Ch.3) and Galetovic and Sanhueza (1995).

A third major determinant of political instability is the degree of open discontent of the citizenry with the incumbent. Linz (1978) argues that the process of breakdown of a democratic regime leads to the collapse of the regime itself when popular dissatisfaction is expressed under the leadership of a disloyal opposition accompanied by mass mobilization. By the same token, Sanhueza (1995, Ch. 3) and Galetovic and Sanhueza (1995) show that the probability of a coup is highly correlated with the number of riots, political strikes and demonstrations against the incumbent.

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[2] See for example, Finer (1962), Zolberg (1968), and Luttwak (1969).

An interesting and major issue in this work is the effect of tenure on the likelihood of survival. of a political regime. Sanhueza (1995, Ch. 3) found that the probability of a coup was inversely correlated with the duration of the political regime, suggesting that political regimes consolidate over time. He also found that autocratic regimes and democratic regimes differ in this respect. While autocrats tend to consolidate their rule over time, democracies do not show the same pattern. This finding suggests that time can be an important determinant of the probability that a political regime collapses, at least for autocracies. A deeper analysis of the effect of time requires more detailed analysis of the consolidation process. We take up the issue in this work by explicitly including the effect of time on the probability that a political regime collapses.

Before discussing the data used to operationalize these determinants of political regimes' stability, the basic econometric framework used in this work is presented.

3. The Econometric Framework

In this section, we introduce the basics of a duration model. This type of model is a suitable tool to study the determinants of the likelihood that a political regime survives through time. This econometric framework is fairly new for economists, and within political science it has been used by Bienen and Van de Walle (1991) to study the determinants of leadership duration[3].

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[3]This study uses a similar econometric technique, but differs in many aspects. First, Bienen and Van de Walle focus their attention on the duration of leadership instead of the duration of political regimes. Although there is a direct link between these two concepts, they are different. Duration of leadership is the time a leader has held office, duration of political regimes relates to the time a set of political institutions is maintained. This difference leads us to focus on the characteristics of political institutions to define political regimes. Instead of identifying the permanence of specific leaders in office, we emphasize the differences between autocratic and democratic regimes. Nevertheless, in the case of autocracies, which are the largest percentage of our sample, our definition is quite similar to the one used by Bienen and Van de Walle. A second difference is the sample used. While Bienen and Van de Walle use a sample of leaders from developed and developing countries, we focus on the stability of the latter. Our focus on developing countries is based on the fact that most developed western countries have well established democracies, which have been quite stable over the years, and most of the leadership changes have not entailed a change in the basic political institutions. A third, and more important, difference is the underlying theoretical framework driving the empirical work. While Bienen and Van de Walle look for the determinants of leadership turnover on the individual characteristics of leaders, and the sociological characteristics of the countries they head, we based our analysis on the duration of political regimes on some economic and political determinants. The basics of the framework have been nicely summarized in Kiefer (1988), and are also discussed in Green (1993: Ch.22). More advanced developments can be found in Lancaster (1990).

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There are two main advantages of duration models to study transition data. The first appealing feature is that they take into account the censored nature of the data, and make full use of the available information. At the end of the sampling period, all the countries have an ongoing political regime. Usually, we do not know their actual duration, we only know that they were ongoing regimes at the end of the sampling period. These censored observations, or spells, are explicitly considered in the estimation of duration models.

A second major advantage of duration models is they allow an explicit formulation of the time dependence pattern of the conditional probability of survival of a political regime after a given time. Therefore, the effect of tenure on the likelihood of survival of particular political regimes can be easily formulated with these models. Moreover, it is easy to obtain direct estimations of the instantaneous transition probabilities from one political regime to another. These transition probabilities, also known as hazard rates, can be interpreted as the regimes' conditional probabilities of collapse at a given point in time, conditional of having reached that point in time[4].

Let us define T as a non-negative random variable representing the lifetime of a political regime. Let $F(t; X)$ denotes the cumulative probability distribution of T conditional on a vector of covariates X with the attributes of each regime, and $f(t; X)$ its density function. Therefore, the probability that a regime collapses before time t is,

$$F(t; X) = \Pr(T \leq t / X) = \int_0^t f(s; X) ds$$

The probability of a regime surviving up to time t is given by the survivor function,

$$S(T; X) = \Pr(T \geq t / X) = \int_t^\infty f(s; X) ds$$

The hazard function, which specifies the instantaneous probability a regime collapses at time t given that it has lasted up to t, is defined as,

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[4] Kiefer (1988) has remarked that modeling a probability distribution (as it is the case of a logit or probit model) lead us to the estimation of unconditional probabilities of collapse (e.g. the probability that a regimes survives exactly 5 years). On the other hand, duration models lead to the estimation of conditional probabilities of collapse (e.g. The probability that a regime collapses after 5 years conditional that it has been an ongoing regime for five years).

$$h(t;X) = \lim \frac{\Pr(t \leq T \leq t + \Delta t / T \geq t; X)}{\Delta t}$$

$$= \frac{f(t;X)}{S(t;X)}$$

The hazard function $h(t;X)$ has duration dependence if $dh(t;X)/dt \neq 0$. It has a positive duration dependence at t_0 if $dh(t;X)/dt > 0$ at $t=t_0$, or a negative duration dependence at $t=t_0$ if $dh(t;X)/dt < 0$. A positive duration dependence implies that the likelihood of collapse at time t, conditional upon duration up to time t and our vector of attributes X, is increasing in t. The inverse is implied if the hazard function has negative time dependence.

The question about the effect of the regime's tenure on its probability of collapse can be framed in terms of positive, negative, or nonexistent duration dependence. If for example, we expect that an autocracy has a lower probability of collapsing if the autocrat has been in power for a longer period, we then expect the hazard function to have a negative duration dependence. It may also be possible that the hazard function is non-monotonic with respect to time and displays positive time dependence at some range of t and negative time dependence in another range.

This model can be estimated by maximum likelihood techniques. If a sample of n completed spells is available, and each one is independent of the others, the likelihood function is,

$$L^* = \prod_{i=1}^{n} f(t_i, X_i)$$

This likelihood function can be modified to consider right-censored duration data. In this case, the contribution to likelihood from those censored observations is the value of the survivor function $S(t_i, X_i)$, the probability that the duration is longer than t_j at the time of censoring. To write the log-likelihood function where we take into account the censored nature of our observations, let $d_i = 1$ if the ith regime duration is uncensored and $d_i = 0$ if censored, then the log-likelihood function is,

$$L = \sum_{i=1}^{n} d_i \ln f(t_i, X_i) + \sum_{i=1}^{n} (1 - d_i) \ln S(t_i, X_i)$$

which has completed spells contributing a density term $f(t_i, X_i)$, and censored spells contributing a probability $S(t_i, X_i)$.

The density is the product of the hazard function and the survivor function, therefore, we have,

$$f(t, X) = h(t, X) S(t, X)$$

Considering that the log of the survivor function is the negative of the integrated hazard function $\Lambda(t, X)$[5], the log-likelihood function can be written as,

$$L = \sum_i d_i \ln h(t_i, X_i) - \sum_i \Lambda(t_i, X_i)$$

Before discussing particular specifications for this model, in the next section, we describe the data used in the estimations.

4. The Data

To study the determinants of political regimes' duration and their hazard rate, we built a longitudinal data set. This data set contains annual economic and political information for a large sample of developing countries.

The duration of political regimes: We constructed a duration variable from the classificaction of political regimes offered by Clague et al. (1994). Based on the legislature's characteristics and the nature of the executive in each country reported by Gurr (1990), Clague et al. classified a large number of countries for the period 1950-1990 in four types of political regimes; Dictatorships, Almost Dictatorships, Intermediate, Almost Democracies, and Democracies[6]. In this work, we identify three types of regimes; autocracies, almost democracies, and democracies. The autocratic regimes correspond to those regimes classified as Dictatorship and Almost Dictatorships by Clague et al. The other two types of regimes follow the

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[5]The integrated hazard function at time t is the integral of the hazard function between 0 and t,

$$\Lambda(t, X) = \int_0^t h(s, X) \, ds$$

[6] More details on the classification scheme are presented in appendix 1.

classification offered by Clague et al. for Almost Democracy and Democracy. Our duration measure corresponds to the number of continuous years a country was classified as a democracy, and the number of continuous years a country was classified as an almost democracy. For regimes classified as autocracies, the criterion to define a political regime was the tenure of the head of state. In these cases, the duration of a regime corresponds to the number of continuous years a country had the same leader and the country was classified as an autocracy[7].

We modified Clague et al.'s original data set for Mexico. Since the revolution, Mexico has had a one party system, with elections of the head of the State every six years. This regime was classified by Clague et al. as an Almost Dictatorship following the Gurr-Banks scheme. If we follow our general rule to compute the duration of political regimes we would have a new regime every six years. Nevertheless, we decided to consider as only one regime the period in which the PRI has lead the country, which we think corresponds to a more accurate definition of regime duration.

The use of Clague et al.'s data presents two major censoring problems. First, the data were sampled for the period 1950-1982 and, although some regimes started after 1950, there were many regimes that at the time were already ongoing. These regimes are left-censored in our sample. By the same token, at the end of the sample period many regimes had not yet ended. These regimes are right-censored in our sample. If we do not take into account the censoring of the data, we would obtain biased results in our estimations[8]. We deal with the censoring problem in two ways. Political regimes that were left-censored were separated into two groups. The first group corresponds to regimes that were ongoing by 1950, but ended soon after that year. To solve the left-censoring problem without losing a great amount of information, we eliminated from our sample those regimes that ended before 1953. The second group corresponds to ongoing regimes by 1950 that did not end during the first three years of the decade. For this

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[7]This definition of regime is only similar to the one used by Bienen and Van de Walle (1991). For example, if a democratic elected leader dissolves the legislature and assumes dictatorial power, we consider the democratic regime ended. Bienen and Van de Walle would not code the change in the institutions, because they focus on the survival of the leader.

[8]As an illustration, see the example offered by Kiefer (1988: 667).

group, we used their actual duration by supplementing the information based on historical accounts reported in The Europa World Year Book (1993). The list of countries in each group are reported in appendix 2. The right-censoring problem could be directly handled by the parametric and semiparametric techniques used in this work and, therefore, no adjustment was made. The list of political regimes and their classification based on the regime type is presented in appendix 3.

The degree of economic development and performance: As a measure of the degree of economic development, we use the average per capita GDP for the period the regime has lasted. To make real GDP comparable across countries through time we use Summers and Heston's (1991) measures of GDP at international prices in constant 1985 U.S. dollars. As a measure of economic performance, we use the average growth rate in per capita GDP during the regime.

The degree of legitimacy of the political regime: We proxy the lack of legitimacy of a regime by an index of popular unrest based on information reported by Jodice and Taylor (1983). The index was constructed as the average number of political strikes, political demonstrations against the government, and riots per year for each regime. High values of the index reflect a large popular discontent with the regime and should negatively affect its probability of survival. Also as a measure of the lack of legitimacy, we include an index of the number of unsuccessful coup attempts that occurred during the regime. Coups are more likely to be attempted when incumbents and their institutions lack legitimacy, a past record of unsuccessful coups reflects that incumbents and their institutions lack legitimacy on the part of the citizenry.

The regional effect: An interesting empirical finding reported by Londregan and Poole (1991, 1992), Sanhueza (1995, Ch. 3), and Galetovic and Sanhueza (1995), is that South American countries were subject to a systematically higher risk of a coup. Considering that coups d'etat are a usual way by which political regimes reach an end, South American political regimes should show a higher probability of collapse. We control for this regional characteristic by means of a dummy variable that takes the value of 1 if the country is South American or zero otherwise.

Table 1

Descriptive Statistics of Duration Times and Covariates for Political Regimes

Variable	Sample	Mean	Standard Deviation	Minimum Value	Maximum Value
Duration	Whole	7.4	8.3	1	54
	Autocracies	6.5	7.5	1	54
	Alm. Dem.	6.3	5.1	1	20
	Democracies	19.7	11.8	4	52
GDP	Whole	1680	1226	247	8071
	Autocracies	1570	1093	261	5859
	Alm. Dem.	1850	1181	448	4865
	Democracies	2596	2093	247	8071
Growth	Whole	1.71	4.65	-18.9	20.6
	Autocracies	1.47	5.04	-18.9	20.6
	Alm. Dem.	2.94	2.56	-2.37	8.53
	Democracies	2.12	1.89	-3.16	5.61
Popunrest	Whole	5.3	10.3	0	94
	Autocracies	4.2	6.9	0	48.5
	Alm. Dem.	8.7	16.7	0	94
	Democracies	11.7	19.9	0.15	88.4
Uncoup	Whole	0.72	1.29	0	9
	Autocracies	0.76	1.23	0	7
	Alm. Dem.	0.41	1.08	0	6
	Democracies	0.9	2.05	0	9

The type of regime: We control for the characteristics of the political institutions by means of two dummy variables, one taking the value of 1 if the regime is an almost democracy or zero otherwise, and a second dummy taking the value of 1 if the regime is a democracy or zero otherwise. Descriptive statistics for duration and the covariates are presented in table 1.

5. A Proportional Hazard Model: A Semiparametric Estimation

Before studying the effect of time on the hazard rate of political regimes, we need to control for their observed heterogeneity. We require a model that is flexible enough so we do not have to make a prioristic assumption on the time dependence characteristic of the hazard rate. A suitable model for this purpose is the proportional hazard model and its semiparametric estimation first discussed by Cox (1972, and 1975). The proportional hazard model, and its semiparametric estimation, presents two appealing

features. First, the model considers a baseline hazard, which is independent of the covariates, whose functional form does not need to be specified when it is estimated by means of Cox's approach. This characteristic allows us not to be concerned with the specific functional form of the hazard function. Second, in a proportional hazard model the estimated parameters associated with each covariate have a straightforward interpretation. They can be interpreted as the constant proportional effect of each regressor on the conditional probability that a regime collapse at a given duration[9].

The main shortcoming of the proportional hazard specification is that the effect of changes in the covariates on the conditional probability of collapse at a given duration is independent of time. We return to this problem in the next section where we estimate duration models with a more structured specification of the duration dependence. In this section, we briefly present the main elements of the proportional hazard model. We then explain the basics of the semiparametric technique used to estimate the model and present the results.

The Proportional Hazard Model: In the proportional hazard model, the hazard function depends on a vector of explanatory variables X with unknown parameters β and λ_0 or,

$$h(t, X, \beta, \lambda_0) = \phi(X, \beta) \, \lambda_0(t)$$

where $\lambda_0(t)$ is a "baseline" hazard corresponding to $\phi(.) = 1$. In this specification, the effect of the explanatory variables is to multiply the hazard λ_0 by a factor ϕ, which does not depend on duration t. The coefficient β can be interpreted as the constant proportional effect of X on the conditional probability that a political regime collapses at duration t.

The partial-likelihood estimation technique: Cox's partial-likelihood approach can be used to estimate the vector β in the proportional hazard model without specifying the form of the baseline hazard function λ_0. Suppose the completed (non-censored) durations are ordered from the shortest to the longest duration,

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[9]Although, the model and the estimation technique were first discussed by Cox, insightful presentations can also be found in Kalbfleisch and Prentice (1980), and Kiefer (1988).

$t_1 < t_2 < ... < t_n$. The conditional probability that observation 1 concludes a spell at duration t_1, given that any of the n observations could have been concluded at duration t_1 is,

$$\frac{h(t_1, X_1 \beta, \lambda_0)}{\sum_{i=1}^{n} h(t_1, X_i, \beta)}$$

if we assume that the hazard function is proportional, i.e. $h(t, X, \beta) = \phi(X, \beta) \lambda_0(t)$, this expression reduces to,

$$\frac{\phi(X_1, \beta)}{\sum_{i=1}^{n} \phi(X_i, \beta)}$$

and this is the contribution of the shortest duration observed to the partial-likelihood.

In each case, the contribution to likelihood is the ratio of the hazard for the individual whose spell was completed at duration t, divided by the sum of the hazards for individuals whose spells were still in progress just prior to time t. The likelihood is formed as the product of the individual contributions, and the resulting log-likelihood function is,

$$L(\beta) = \sum_{i=1}^{n} \left\{ \ln \phi(X_i, \beta) - \ln\left[\sum_{j=1}^{n} \phi(X_j, \beta) \right] \right\}$$

The intuition here is that, in the absence of all information about the baseline hazard, only the order of the duration provides information about the coefficients.

The right-censoring problem of the duration data is easily handled in this semiparametric estimation of the proportional hazard model. A regime whose spell is censored between duration t_j and t_{j+1} appears in the summation in the denominator of the contribution to log-likelihood of (ordered, uncensored) observation 1 to j, but not in any others. Right-censored spells do not enter the numerator of a contribution to likelihood at all.

A common proportional hazard specification is the exponential regression specification,

$$h(t_i, X_i, \beta) = \exp(X'\beta) \lambda_0(t)$$

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This specification of $\phi = (.)$ is convenient because its non-negativity does not impose restriction on $\hat{\beta}$. We use this specification in the estimations.

The Results: The estimated coefficients for the proportional hazard model are presented in table 2. Column 1 shows the results for the whole sample of developing countries. We also run the model for a stratified sample of autocracies, almost democracies, and democracies. The results for each sub-samples are presented in columns 2, 3, and 4 respectively.

The first interesting result in the estimations is the stabilizing effect of development. As we can see in the four samples, the average level of GDP per capita fosters stability. High levels of per capita GDP decrease the hazard rate of political regimes, and the coefficients are statistically significant, except for the sample of autocracies. The stabilizing effect of development is mainly associated with regimes that are democratic or were classified as almost democracies. As we can see in column 1 in table 2, an increase of ten percent in the average level of per capita GDP for the whole sample (U.S. $ 168), decreases the hazard rate of a political regime only by 1.7%. This effect is much more important for regimes classified as almost democracy or democracy. An increase of 10% in the average level of per capita GDP for each regime type (U.S. $ 185 and U.S. $ 260, respectively) decreases the hazard rate in 14.8% for regimes classified as almost democracies, and in 18.2% for democracies. This finding suggests that development is an important determinant of the stability of political regimes in the presence of democratic political institutions, but that the level of development is not an important determinant of the stability of political regimes when democratic institutions do not exist. In other words, economic development brings stability in democracy, but does not ensure stability for autocracy.

A second interesting result is the important destabilizing effect of popular unrest. When we consider the whole sample, an increment in one point in the average number of opposition manifestations during the regime increases the hazard rate 9.5%. The large destabilizing effect is related to the importance of popular unrest in determining the hazard rate of autocracies. When we focus on the estimated coefficient for the stratified estimations, we see that for autocracies a one point increment in the protest activity index increases the hazard rate by 14%. The magnitude of the coefficient for regimes classified as

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almost democracies is similar, but, as in the case of democracies, it is not statistically significant.

Table 2

Proportional Hazard Estimations

Dependent Variable: Hazard Rate for Political Regimes

	(1) Whole Sample	(2) Autocracies	(3) Alm. Democ.	(4) Democracies
GDP	-0.0001*	-0.00008	-0.0008**	-0.0007*
	(-1.85)	(-0.98)	(2.16)	(-1.84)
GROWTH	-0.018	-0.009	-0.109	0.098
	(-0.86)	(-0.45)	(-1.17)	(0.36)
POPUNREST	0.0178***	0.033***	0.0167	-0.005
	(2.96)	(3.35)	(1.32)	(-0.375)
UNCOUP	-0.130**	-0.122**	-0.140	-0.005
	(-2.29)	(-1.96)	(-0.82)	(-0.01)
SAMER	0.786***	0.668***	0.436	2.42***
	(4.18)	(3.19)	(1.30)	(2.99)
ALMDEM	-0.287	-	-	-
	(-1.26)			
DEMOC	-1.37***	-	-	-
	(-4.0)			
Completed Spells	202	166	24	12
Censored Spells	76	56	12	8
χ^2	48.05	24.6	14.55	13.92

t-tests in parentesis
*** significant at 1% confidence level
** significant at 5% confidence level
* significant at 10% confidence level

The positive effect of popular unrest in the hazard rate of autocracies is not surprising. Demonstrations, political strikes, and riots, are potentially costly expressions of discontent in autocratic regimes. Their occurrence is a very accurate sign of the lack of political support and legitimacy enjoyed by the ruler. Therefore, a high value of the index measuring popular discontent within these regimes is not surprisingly associated with a higher hazard rate. For democratic regimes, the association between the index of popular unrest and the degree of legitimacy is weaker than for autocracies. In democracies, demonstrations and strikes are normal legal ways of expressing opposition to policy decisions, and they do not necessarily entail an erosion of the legitimacy of the existing political institutions. The quality of our variable used as a proxy for the degree of legitimacy is lower for democracies, and can explain its lack of

significance in the estimation of the hazard rate for political regimes classified as almost democracies and democracies.

The effect of a past history of failed coups on the hazard rate is not significant in our sample of regimes classified as almost democracies and democracies. For autocracies, the hazard rate of regimes that have experienced unsuccessful coups is systematically lower than the hazard rate of autocracies that have not experienced failed coups attempts. In other words, the conditional probability that an autocratic regime collapses decreases with a past history of failed coups. This finding, which is somewhat surprising, is consistent with previous finding by Sanhueza (1995, Ch.3) and Galetovic and Sanhueza (1995), where they reported that the probability of a coup was negatively related to the past occurrence of coups. Given that coups are the most common way by which autocratic regimes reach an end, the lower probability of its occurrence may be driving the negative effect on the hazard rate of a past history of failed coups. The occurrence of past failed coups, instead of destabilizing autocrats, has the effect of securing the survival of the regime.

Although the sign of the estimated coefficients for our performance variable, the average growth rate of per capita GDP, suggests that regimes that have under-performed show a higher hazard rate, they are not statistically significant. Nevertheless, it is interesting to note that the estimated coefficient for regimes with democratic institutions is ten times larger than the estimated coefficient for autocracies. This implies that democratic institutions are more likely to experience changes in the face of relatively poor economic performance compared with regimes under autocratic rule.

Our regional variable, controlling for South American regimes, is economically and statistically important in determining the hazard rate. When we consider the whole sample of developing countries, South American regimes show a hazard rate that is 78% larger than the rest. This regional effect is very important for democracies. South American democracies show a hazard rate that is almost three times higher than for other democracies.

When we consider the whole sample and we control for regime type, we find that the existence of fully democratic institutions highly decreases the hazard rate for political regimes. Regimes classified as democracies, show a hazard rate that is less than one half the hazard rate for the rest of the sample. The

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establishment of democracy brings stability in the sense of a lack of change in the existing political institutions.

With these results in mind, in the next section we present a parametric duration model where we control the observed heterogeneity in the sample, and we use a functional form for the hazard that is flexible enough to study the effect of time on the hazard rate.

6. Parametric Models of Duration

The proportional hazard model estimated in the previous section has two shortcomings. First, it assumes that the baseline hazard rate is independent of the covariates. This implies that the effects of changes in the covariates on the hazard rate are independent of time. On the other hand, the partial-likelihood estimation technique does not consider the baseline hazard and, therefore, it precludes the study of the effect of time on the hazard rate of political regimes. These two shortcomings motivate the specification of an econometric model with more structure. In this section, we present a duration models where we choose a hazard rate specifications allowing the the study of the time dependence issue.

A Weibull duration model: A functional form of the hazard rate which permits us to explore the issue of time dependence, and is sufficiently flexible to consider positive and negative duration dependence paths for the hazard rate of political regimes is the Weibull specification. The Weibull hazard function is a two parameter family of hazard functions that has been widely used for duration analysis and, following Kiefer (1988), can be written as,

$$h(t, X, \beta, \alpha) = \gamma(X, \beta) \, \alpha \, t^{\alpha-1}$$

where $\gamma(X, \beta)$ is a re-scaling parameter that depends on explanatory variables. Changes in the covariates vector X re-scale the hazard rate at a given duration t, but the re-scaling factor is not independent of time as it was in the proportional model. The time dependence characteristic of the hazard rate depends on the value of the parameter α. The hazard function will be increasing in duration if $\alpha > 1$, decreasing if $\alpha < 1$, and constant if $\alpha = 1$. Therefore, this specification allows us to test simultaneously the effect on the hazard rate of political regimes of changes in the covariates and time.

As in the case of the proportional hazard model, a convenient specification of $\gamma(.)$ is an exponential function. Its non-negativity does not impose restrictions on the estimated coefficients β. We use this specification in the estimations. For computational simplicity we do not estimate the hazard rate, but rather we estimate the survival function for the different samples[10].

The results: Estimations for the survival function, when duration times follow a Weibull distribution, are shown in table 3.

Column 1 shows the estimated coefficients for the whole sample, column 2 for autocracies, and column 3 and 4 for almost democracies and democracies respectively. A first interesting remark is that changing the specification of the functional form of the hazard rate has very little qualitative effect on the covariates' estimated coefficients. The results from the previous section are robust to a change in the hazard function from a proportional to a Weibull specification. The only change is an increase in the significance level of the negative effect of growth in the level of per capita GDP on the probability of collapse.

What it is more interesting about this new results is the estimated value of the distributional parameter α, associated with the duration dependence pattern of the hazard rates. After controlling for the observed heterogeneity by means of the covariates included in the estimations, the parameter α reflects what Bienen and Van de Walle have termed the "pure" effect of time, i.e. the netted effect of duration on the probability that a political regime collapses.

The estimated value for α is very close to 1 for the whole sample of regimes and for the sample including only autocracies. This suggests that the hazard rate of political regimes in general, and autocracies in particular, is independent of duration, and that regimes that have lasted longer do not show a lower hazard rate than regimes that are more recent. This finding is somehow unexpected when we consider the negative relationship between tenure of a political regime on its probability of experiencing a

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[10] In this work we have used two main statistical programs, SAS and LIMDEP. Neither of them has a subroutine that directly estimate the hazard rate for a Weibull model. This is not a limitation at the conceptual level, because as we argued in section 3, there is a one to one relationship between the hazard rate and the survival rate.

coup d'etat reported by Sanhueza (1995, Ch. 3), which is a common way political regimes and especially autocracies reach an end.

Table 3

Estimated Weibull Survival Function

<u>Dependent Variable:</u> Survival Rate for Political Regimes

	(1) Whole Sample	(2) Autocracies	(3) Alm. Democ.	(4) Democracies
Constant	1.99^{***}	2.13^{***}	0.98^{**}	2.69^{***}
	(17.2)	(17.3)	(2.3)	(3.8)
GDP	0.0001^{**}	0.0001	0.0006^{**}	0.0004^{*}
	(2.17)	(1.37)	(2.2)	(1.63)
Growth	0.029^{*}	0.019	0.098^{*}	0.0093
	(1.70)	(1.12)	(1.65)	(0.07)
Popunrest	-0.019^{***}	-0.040^{***}	-0.014	0.005
	(-3.43)	(-4.72)	(-0.69)	(0.28)
Uncoup	0.16^{***}	0.17^{***}	0.114	-0.037
	(3.14)	(3.05)	(0.57)	(-0.18)
Samer	-0.943^{***}	-0.906^{***}	-0.377	-1.07^{***}
	(-4.98)	(-4.18)	(-0.67)	(-3.80)
Alm. Dem.	0.296	--	-	-
	(1.29)			
Democracy	1.607^{***}	-	--	-
	(4.28)			
α	1.037	1.026	1.479	2.374
(std.dev.)	(0.074)	(0.08)	(1.575)	(0.944)
Completed Spells	202	166	24	12
Censored Spells	76	56	12	8
χ^2	70.3	41.3	202	17.2

t-test in parenthesis
*** significant at 1% confidence level
** significant at 5% confidence level
* significant at 10% confidence level

For our sample of almost democracies and democracies, the estimated value for α is larger than for the whole sample, 1.48 and 2.37 respectively. At first sight, this would suggest that regimes with democratic political institutions show a hazard rate with positive time dependence, i.e. that the risk of collapse of these regimes increases with duration. What is important to notice is that although the estimated coefficients are high, they also show a large standard error, and it is not possible to reject the null hypothesis that the estimated coefficient for α, for both sub-samples, is equal to 1. Therefore , it is not

reasonable to rule out the possibility of a duration invariant hazard rate for these regimes.

Sensitivity of duration dependence to distributional assumptions: The finding of no duration dependence in the estimated hazard rate for the different types of regimes can be the result of a lack of flexibility on the functional form of the model specified. The main limitation of the Weibull specification is the assumption of monotonicity of the hazard rate. If the hazard rate of a newly restored regime increases with duration during the first period, and decreases later on, the Weibull model, by not allowing a non-monotonic time dependence, may lead to misleading conclusions[11]. We test for a non-monotonic hazard specification using the log-logistic hazard function.

The log-logistic parameterization is useful because it not only allows for a monotonic effect of time on the hazard rate, as the Weibull specification does, but it also considers the possibility of a non-monotonic effect of time on the hazard rate. Following Kalbfleisch and Prentice (1980: Ch. 2), the parametric log-logistic hazard function can be written as,

$$h(t, X, \beta, \rho) = \frac{\gamma(X, \beta) \rho \left[\gamma(X, \beta) t \right]^{\rho-1}}{1 + \left[\gamma(X, \beta) t \right]^{\rho}}$$

This hazard function is monotone decreasing if $0 < \rho \leq 1$. If $\rho > 1$, the hazard increases from zero to a maximum at $t = (1 - \rho)^{1/\rho} / \gamma$, and decreases toward zero thereafter.

The estimated value of ρ and γ, when $\gamma(X, \beta)$ is specified as an exponential function and evaluated at the mean values of our covariates, are shown in table 4.

The estimated parameter ρ is greater than 1 for the whole sample and for the three sub-samples. This implies that political regimes show a non-monotone hazard function that first increases with time and

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[11] It is possible to hypothesize a non-monotonic time dependence pattern of the probability of collapse for political regimes. Let us think about a newly restored autocracy. During the first years, the leader is learning how to manage the government and to maximize his payoff from office avoiding the possibility of being ousted by a coup. As time passes, the autocrat needs to rely less on widespread violent repression, which is an expensive way to deter entrance, and can rely more on selective repression, as well as the buying out of political entrepreneurs capable and willing to stage a coup. The lack of information and skills of new autocrats in targeting their effort to deter coups, make the early years of a regime especially risky. That is why, it is plausible that the probability of collapse for autocracies shows an increasing trend during the first years, but after some duration, when the autocrat has already learned how to remain in office, shows a decreasing trend.

then decreases. For the whole sample, the hazard rate shows a positive time dependence up to the 4th year, and negative dependence thereafter. We get a similar result for the sample of autocracies. Autocracies are at a higher risk of collapse during the first three years, but after that time they become less prone to collapse. This finding can be interpreted as the existence of a learning process for autocrats, who after a period of risky learning are capable of deter entrance and more effectively retain office.

Table 4

Duration Dependence Parameters for the Log-logistic Hazard Rate

Parameter	Whole Sample	Autocracies	Almost Democracies	Democracies
ρ	1.57	1.55	1.95	1.49
$\gamma\,(X,\beta)$	0.181	0.210	0.147	0.036
t^*	3.84	3.2	6.62	4.2

t^* corresponds to the duration at which the estimated hazard rate reaches a maximum.

Democracies also show a similar pattern of time dependence on their hazard rate. Regimes with fully democratic political institutions show a hazard rate that increases as the result of time during the first 4 years, and experience a negative time dependence thereafter. Regimes that were classified as almost democracies, also show the same time dependence pattern, but it is interesting that the consolidation process starts much later than in the case of fully democratic regimes, around the 7th year.

7. Conclusion

In this work, we presented a preliminary study on the stability of political regimes. We constructed a longitudinal data set to study the determinants of political regimes durations. The censored nature of the data, as well as the interest to study the effect of time on the probability that a political regime collapses, lead us to use a duration model.

We used a proportional hazard rate model to study the effect of some observable economic and political conditions on the hazard rate of different types of regimes. We found that economic development has a stabilizing effect in countries where democratic political institutions existed. Regimes with democratic institutions and with a higher level of per capita GDP showed a lower hazard rate than regimes

with a lower degree of economic development. This stabilizing effect of economic development fades when we analyze the sub-sample of autocratic regimes. Rich autocracies did not show a lower hazard rate than less developed autocracies.

While the stability of autocracies was not affected by their degree of economic development, it was greatly associated with the degree of popular discontent. Widespread discontent with leaders in autocratic regimes highly increased their hazard rate. This relationship was found to be much weaker for regimes with democratic institutions.

The hazard rate for regimes with competitive elected executive and legislature was found to be less than one half the hazard rate for the rest of the sample. This evidence the greater stability of democratic regimes compared with regimes with non-democratic political institutions. We also found an important South American effect. South American political regimes showed a much higher hazard rate than their counterparts in other regions. This larger regional instability is particularly important in the case of democracies.

When we controlled by means of parametric duration models for the observable heterogeneity, we found a non-monotonic time dependence pattern for the hazard rate of political regimes. Political regimes showed an increasing risk of collapse during the first years, with their hazard rates reaching a peak around the fourth year. After that period, they stabilize and duration breads stability.

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Appendix 1
Classification of Countries with Respect to their Political Structure

This appendix briefly presents the methodology devised by Clague, Keefer, Knack, and Olson (1994) to classify countries according to their political structure based on the information contained in Gurr's (1990) work *Polity II*. This data set contains yearly information on the political structure for a large sample of countries. Among the variables reported, characteristics of the executive and the legislature are included. There are two variables collected by Arthur Banks (1979): EXSELEC (Method of Executive Selection), and LEGEF (Effectiveness of the Legislature); and another collected by Gurr (1990): XRCOMP (Competitiveness of Executive Selection). These variables are coded as follows:

XRCOMP

1- If the selection of the Chief Executive is by hereditary succession, or rigged elections, or by coups, or by military designation, or repeated incumbent selection of successors.

2- Dual/Transitional. When there are two executives, one chosen by hereditary succession, the other by competitive election. Also for transitional arrangements between selection and election.

3- Election of Chief Executive in Competitive Elections.

EXSELEC

1. Direct Election.

2. Indirect Election.

3. Nonelective.

LEGEF

0. None

1. Ineffective: Either rubber stamp, or domestic turmoil makes the implementation of legislation impossible, or the effective executive prevents the legislature from meeting or substantially impedes the exercise of its function.

2. Partially Effective. A situation in which the effective executive's power substantially outweighs but does not completely dominates that of the legislature.

3. Effective. Possession of significant governmental autonomy by the legislature. Using these three variables, five types of polities are identified: Democracies, Almost Democracies, Intermediate, Almost Dictatorships, Dictatorships.

Countries were coded as <u>Democracies</u> when: XRCOMP=3, EXSELEC= 1 or 2, and LEGEF=3. Countries were coded as <u>Almost Democracies</u> when; XRCOMP=3, EXSELEC= 1 or 2, and LEGEF=2, or when; XRCOMP=2, EXSELEC= 1 or 2, and LEGEF=3. Countries were coded as <u>Intermediate</u> when; XRCOMP=2, EXSELEC= 3, and LEGEF=0 or 1, or when; XRCOMP=2, EXSELEC=3, and LEGEF=2, or when XRCOMP=2, EXSELEC=1 or 2, and LEGEF=0 or 1, or when XRCOMP=2, EXSELEC=1 or 2, and LEGEF=2. Countries were coded as <u>Almost Dictatorships</u> when; XRCOMP=1, EXSELEC=3, and

LEGEF=2. Finally, countries were coded as <u>Dictatorships</u> when; XRCOMP=1, EXSELEC=3, LEGEF=0 or 1.

Censored Duration Data

A limitation of our duration model is that we can only have right censored spells. This implies that we can only consider spells begining in 1950 or later. By 1950 many countries already had an ongoing political regime. If we eliminate those regimes we are eliminating a large piece of information from our estimations. On the other hand, we can not consider 1950 as the first year of those regime because we are biasing our results. To deal with this left censoring problem, we separated the countries that by 1950 had an ongoing regime in two groups. The first group corresponds to countries in which the elimination of the first regime did not entail a great loss of information because the ongoing regime ended soon. For these countries we deleted the first regime. For the second group the elimination of the first regime entailed a great loss of information so we updated the duration of the regimes based on historical information reported in The Europa World Year Book (1993).

First Group of Countries.

Egypt. We included regimes since 1953, the first year of ruling of the military junta that overthrew King Farouk.

Iran. We considered as the first regime the one headed by Muhammad Mussadeq in 1951.

Jordan. We considered as first regime the one headed by Talal ibn Abdullah in 1951.

Nepal. We considered as the first regime the one starting in 1951, when a limited constitutional monarchy was established.

Saudi Arabia. We considered as the first regime the one headed by Sa'ud ibd Abd Al Aziz in 1953.

Panama. We considered as the first regime the one lead by Col. Jose Antonio Ramon in 1952.

Bolivia. We considered as the first regime the one that started in 1951 after the overthrown of Paz Estensoro by a military junta.

Venezuela. We considered as first regime the one headed by Marcos Perez Jimenez who seized power in December 1952.

Second Group of Countries.

For the following countries we considered the actual duration of the regime by 1950.

Ethiopia, Leshoto, South Africa, Burma, Israel, Philippines, Sri Lanka, Syria, Syria, Taiwan, Thailand, Turkey, Costa Rica, Dominican Republic, Honduras, Nicaragua, Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Yemen, Indonesia, Afghanistan.

For these countries we used the actual duration of the regimes by 1950, but due to a lack of data, we only used information on the determinants of their stability since 1950. Mexico constitutes a special case. The country was classified as Almost Dictatorship for the whole period. Every six years the country experienced changes in leadership due to elections within the PRI. We did not consider the change of head of state as a change in the political regime.

Appendix 3

List of Political Regimes

Country	Period		Duration	Regime Type
Algeria	1963	1964	3	Autocracy
Algeria	1965	1977	13	Autocracy
Algeria	1978	1982	5	Autocracy
Angola	1975	1978	4	Autocracy
Angola	1979	1982	4	Autocracy
Benin	1965	1966	2	Autocracy
Benin	1967	1967	1	Autocracy
Benin	1968	1968	1	Autocracy
Benin	1969	1969	1	Autocracy
Benin	1970	1971	2	Autocracy
Benin	1972	1982	11	Autocracy
Botzwana	1966	1982	17	Almost Democracy
Burundi	1962	1963	2	Autocracy
Burundi	1964	1964	1	Autocracy
Burundi	1966	1975	10	Autocracy
Burundi	1976	1982	7	Autocracy
Cameroon	1961	1981	21	Autocracy
Cameroon	1982	1982	1	Autocracy
CenAfric	1962	1965	6	Autocracy
CenAfric	1966	1978	13	Autocracy
CenAfric	1979	1980	2	Autocracy
CenAfric	1981	1982	2	Autocracy
Chad	1962	1974	13	Autocracy
Chad	1975	1977	3	Autocracy
Chad	1979	1979	1	Autocracy
Chad	1981	1981	1	Autocracy
Congo	1963	1967	5	Autocracy
Congo	1968	1968	1	Autocracy
Congo	1969	1976	8	Autocracy
Congo	1977	1978	2	Autocracy
Congo	1979	1982	4	Autocracy
Egypt	1953	1953	1	Autocracy
Egypt	1954	1969	16	Autocracy
Egypt	1970	1980	11	Autocracy
Egypt	1981	1982	2	Autocracy
Ethiopia	1950	1973	34	Autocracy
Ethiopia	1975	1982	8	Autocracy
Gabon	1961	1963	3	Autocracy
Gabon	1964	1966	3	Autocracy
Gabon	1967	1982	16	Autocracy
Ghana	1960	1965	6	Autocracy
Ghana	1966	1968	3	Autocracy
Ghana	1970	1971	2	Almost Democracy

Ghana	1972	1975	4	Autocracy
Ghana	1979	1980	2	Almost Democracy
Ghana	1981	1982	2	Autocracy
Guinea	1958	1982	25	Autocracy
Ivory Coast	1960	1982	23	Autocracy
Kenya	1965	1968	4	Almost Democracy
Kenya	1974	1977	4	Autocracy
Kenya	1978	1982	5	Autocracy
Lesotho	1966	1969	4	Almost Democracy
Lesotho	1970	1982	13	Autocracy
Liberia	1950	1979	36	Autocracy
Liberia	1980	1982	3	Autocracy
Madagascar	1961	1971	12	Autocracy
Madagascar	1972	1974	3	Autocracy
Madagascar	1975	1982	8	Autocracy
Malawi	1966	1982	17	Autocracy
Mali	1960	1967	8	Autocracy
Mali	1968	1982	15	Autocracy
Mauritan	1961	1977	18	Autocracy
Mauritan	1979	1979	1	Autocracy
Mauritan	1980	1982	3	Autocracy
Mauritiu	1968	1982	15	Almost Democracy
Morocco	1956	1960	5	Autocracy
Morocco	1961	1982	22	Autocracy
Mozambique	1976	1982	8	Autocracy
Niger	1960	1973	14	Autocracy
Niger	1974	1982	9	Autocracy
Nigeria	1960	1965	6	Almost Democracy
Nigeria	1966	1974	9	Autocracy
Nigeria	1975	1975	1	Autocracy
Nigeria	1976	1977	2	Autocracy
Nigeria	1979	1982	4	Democracy
Rwanda	1962	1972	11	Autocracy
Rwanda	1973	1982	10	Autocracy
Senegal	1964	1977	14	Autocracy
Sierra Leone	1961	1966	6	Almost Democracy
Sierra Leone	1968	1972	5	Almost Democracy
Sierra Leone	1978	1982	5	Autocracy
Somalia	1960	1968	9	Almost Democracy
Somalia	1969	1982	14	Autocracy
South Africa	1950	1982	52	Democracy
Sudan	1956	1957	2	Almost Democracy
Sudan	1958	1963	6	Autocracy
Sudan	1965	1968	4	Almost Democracy
Sudan	1971	1982	12	Autocracy
Tanzania	1963	1982	21	Autocracy
Togo	1961	1962	2	Autocracy
Togo	1963	1966	4	Autocracy
Togo	1967	1982	16	Autocracy

Country	Start	End	Years	Regime
Tunisia	1959	1982	24	Autocracy
Uganda	1962	1965	4	Almost Democracy
Uganda	1967	1970	4	Autocracy
Uganda	1971	1978	8	Autocracy
Uganda	1979	1979	1	Autocracy
Uganda	1980	1982	3	Autocracy
Zaire	1967	1982	16	Autocracy
Zambia	1972	1982	11	Autocracy
Zimbabwe	1965	1977	13	Democracy
Zimbabwe	1980	1982	3	Almost Democracy
Bangladesh	1973	1974	2	Autocracy
Bangladesh	1975	1980	6	Autocracy
Banglade	1981	1981	1	Autocracy
Banglade	1982	1982	1	Autocracy
Burma	1950	1961	14	Democracy
Burma	1962	1982	21	Autocracy
India	1950	1974	25	Democracy
India	1975	1976	2	Almost Democracy
India	1977	1982	6	Democracy
Iran	1951	1951	1	Autocracy
Iran	1952	1952	1	Autocracy
Iran	1955	1978	24	Autocracy
Iran	1979	1982	4	Autocracy
Iraq	1950	1951	2	Autocracy
Iraq	1952	1952	1	Autocracy
Iraq	1953	1953	1	Autocracy
Iraq	1954	1956	3	Autocracy
Iraq	1957	1957	1	Autocracy
Iraq	1958	1962	5	Autocracy
Iraq	1963	1964	2	Autocracy
Iraq	1965	1965	1	Autocracy
Iraq	1966	1967	2	Autocracy
Iraq	1968	1978	11	Autocracy
Iraq	1979	1982	4	Autocracy
Israel	1950	1982	34	Democracy
Jordan	1951	1952	2	Autocracy
Jordan	1953	1982	30	Autocracy
South Korea	1950	1959	12	Autocracy
South Korea	1960	1960	1	Almost Democracy
South Korea	1961	1962	2	Autocracy
Kuwait	1963	1964	4	Autocracy
Kuwait	1965	1976	12	Autocracy
Kuwait	1977	1982	6	Autocracy
Malaysia	1957	1968	12	Almost Democracy
Malaysia	1971	1982	12	Almost Democracy
Nepal	1951	1957	7	Autocracy
Nepal	1959	1979	21	Autocracy
Pakistan	1956	1957	2	Almost Democracy
Pakistan	1958	1961	4	Autocracy

Pakistan	1962	1968	7	Almost Democracy
Pakistan	1977	1982	6	Autocracy
Philippines	1950	1971	26	Democracy
Philippines	1972	1982	11	Autocracy
Saudi Arabia	1953	1963	11	Autocracy
Saudi Arabia	1964	1974	11	Autocracy
Saudi Arabia	1975	1981	7	Autocracy
Saudi Arabia	1982	1982	1	Autocracy
Singapore	1965	1982	18	Almost Democracy
SriLanka	1950	1976	29	Democracy
SriLanka	1978	1982	5	Almost Democracy
Syria	1950	1953	5	Autocracy
Syria	1961	1961	1	Autocracy
Syria	1962	1962	1	Autocracy
Syria	1963	1963	1	Autocracy
Syria	1964	1965	2	Autocracy
Syria	1966	1969	4	Autocracy
Syria	1970	1982	13	Autocracy
Taiwan	1950	1974	26	Autocracy
Taiwan	1975	1982	8	Autocracy
Thailand	1950	1956	9	Autocracy
Thailand	1957	1957	1	Autocracy
Thailand	1958	1962	5	Autocracy
Thailand	1963	1967	5	Autocracy
Thailand	1971	1972	2	Autocracy
Thailand	1975	1975	1	Almost Democracy
Thailand	1976	1976	1	Autocracy
Thailand	1979	1982	4	Almost Democracy
Cyprus	1976	1982	7	Almost Democracy
Turkey	1950	1959	14	Democracy
Turkey	1961	1978	18	Democracy
Turkey	1980	1982	3	Autocracy
Costa Rica	1950	1982	34	Democracy
Dom.Republic	1950	1960	29	Autocracy
Dom.Republic	1962	1962	1	Autocracy
Dom.Republic	1964	1964	1	Autocracy
Dom.Republic	1965	1965	1	Autocracy
Dom.Republic	1966	1977	12	Autocracy
Dom.Republic	1978	1982	5	Almost Democracy
El Salvador	1950	1955	6	Autocracy
El Salvador	1956	1959	4	Autocracy
El Salvador	1960	1960	1	Autocracy
El Salvador	1961	1961	1	Autocracy
El Salvador	1962	1963	2	Autocracy
El Salvador	1964	1971	8	Almost Democracy
El Salvador	1972	1976	5	Autocracy
El Salvador	1977	1978	2	Autocracy
Guatemala	1950	1950	1	Autocracy
Guatemala	1951	1953	3	Autocracy

Guatemala	1954	1956	3	Autocracy
Guatemala	1958	1962	5	Almost Democracy
Guatemala	1963	1965	3	Autocracy
Guatemala	1966	1966	1	Almost Democracy
Guatemala	1974	1977	4	Autocracy
Guatemala	1978	1981	4	Autocracy
Guatemala	1982	1982	1	Autocracy
Haiti	1950	1955	6	Autocracy
Haiti	1956	1956	1	Autocracy
Haiti	1957	1970	14	Autocracy
Haiti	1971	1982	12	Autocracy
Honduras	1950	1953	5	Autocracy
Honduras	1954	1955	2	Autocracy
Honduras	1956	1956	1	Autocracy
Honduras	1957	1962	6	Autocracy
Honduras	1963	1964	2	Autocracy
Honduras	1965	1970	6	Autocracy
Honduras	1964	1967	4	Autocracy
Panama	1968	1968	1	Autocracy
Panama	1969	1977	9	Autocracy
Panama	1978	1981	4	Autocracy
Panama	1982	1982	1	Autocracy
Trinidad	1962	1982	21	Democracy
Argentin	1950	1954	7	Autocracy
Argentin	1966	1969	4	Autocracy
Argentin	1970	1970	1	Autocracy
Argentin	1971	1972	2	Autocracy
Argentin	1973	1975	3	Almost Democracy
Argentin	1976	1980	5	Autocracy
Argentin	1981	1981	1	Autocracy
Bolivia	1951	1951	1	Autocracy
Bolivia	1956	1959	4	Autocracy
Bolivia	1960	1963	4	Autocracy
Bolivia	1964	1964	1	Autocracy
Bolivia	1965	1965	1	Autocracy
Bolivia	1966	1968	3	Autocracy
Bolivia	1969	1969	1	Autocracy
Bolivia	1970	1970	1	Autocracy
Bolivia	1971	1977	7	Autocracy
Bolivia	1978	1978	1	Autocracy
Bolivia	1979	1979	1	Autocracy
Bolivia	1980	1980	1	Autocracy
Bolivia	1981	1981	1	Autocracy
Bolivia	1982	1982	1	Autocracy
Brazil	1950	1962	17	Democracy
Brazil	1965	1968	4	Autocracy
Brazil	1969	1973	5	Autocracy
Chile	1950	1954	20	Almost Democracy
Chile	1955	1959	5	Democracy

Chile	1960	1960	1	Almost Democracy
Chile	1961	1972	12	Democracy
Chile	1974	1982	9	Autocracy
Colombia	1950	1952	3	Autocracy
Colombia	1953	1956	4	Autocracy
Colombia	1957	1957	1	Autocracy
Colombia	1958	1961	4	Autocracy
Colombia	1962	1965	4	Autocracy
Colombia	1966	1968	3	Autocracy
Colombia	1974	1982	9	Almost Democracy
Ecuador	1950	1960	13	Almost Democracy
Ecuador	1961	1962	2	Autocracy
Ecuador	1963	1965	3	Autocracy
Ecuador	1966	1966	1	Autocracy
Ecuador	1967	1967	1	Autocracy
Ecuador	1968	1969	2	Almost Democracy
Ecuador	1972	1975	4	Autocracy
Ecuador	1976	1978	3	Autocracy
Ecuador	1979	1982	4	Almost Democracy
Guyana	1980	1982	3	Autocracy
Paraguay	1950	1953	5	Autocracy
Paraguay	1954	1982	29	Autocracy
Peru	1956	1961	6	Almost Democracy
Perú	1963	1967	5	Democracy
Peru	1968	1974	7	Autocracy
Peru	1975	1977	3	Autocracy
Peru	1980	1982	3	Almost Democracy
Uruguay	1952	1971	20	Democracy
Uruguay	1973	1975	3	Autocracy
Uruguay	1976	1980	5	Autocracy
Uruguay	1981	1982	2	Autocracy
Venezuela	1952	1957	6	Autocracy
Venezuela	1959	1982	24	Democracy
Burkina Faso	1960	1965	6	Autocracy
Burkina Faso	1966	1968	3	Autocracy
Burkina Faso	1970	1976	7	Autocracy
Burkina Faso	1980	1981	2	Autocracy
Burkina Faso	1982	1982	1	Autocracy
Oman	1970	1982	13	Autocracy
Yemen	1950	1961	14	Autocracy
Yemen	1962	1964	3	Autocracy
Yemen	1965	1965	1	Autocracy
Yemen	1966	1966	1	Autocracy
Yemen	1967	1973	7	Autocracy
Yemen	1974	1976	3	Autocracy
Yemen	1977	1977	1	Autocracy
Yemen	1978	1982	5	Autocracy
Indonesia	1950	1966	18	Autocracy
Indonesia	1967	1982	16	Autocracy

Afghanistan	1950	1966	21	Autocracy
Afghanistan	1967	1972	6	Autocracy
Afghanistan	1973	1977	5	Autocracy
Afghanistan	1978	1978	1	Autocracy
Afghanistan	1979	1982	4	Autocracy
Lebanon	1953	1974	22	Almost Democracy
Libya	1952	1968	17	Autocracy
Libya	1969	1982	14	Autocracy