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Demographic Correlates of Political Instability in Latin America: The Impact of Population Growth, Density, and Urbanization*

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Introduction

In trying to account for political instability in Latin America, many scholars have adopted one or more variants of what might be called the demographic thesis. According to this thesis, Latin American political instability is due in no small measure to such things as population explosion, run-away urbanization, and heavy population densities. One version is given by Wiarda and Wiarda (1986: 177): "The evidence is overwhelming, we think, of both indirect and direct causal relations between unchecked population growth and the possibilities for rising social tension, violence, political upheaval, and breakdowns of entire national, social and political systems" in Latin America. Rossi and Plano state that "In Latin America, revolution has been encouraged" by, among other things, "the population explosion, growing urbanization," and "heavy population densities" (1980: 93, 18). The demographic thesis has been specifically applied to El Salvador. According to McDonald (1985: 530), "Population, or more precisely the relationship of increasing population to limited land, created a volatile political context in El Salvador. The smallest of the continental Latin American nations, it has the highest ratio of people to land as well as one of the highest ratios of population growth." It has also been asserted that "uncontrolled population growth threatens Mexico's political stability" (DeWitt, 1986: 4).

Yet, students of comparative political instability find no relationship between either population growth or density, on the one hand and, on the other, political

instability across the world. According to Weiner (1971: 573), "There is no evidence to suggest that population growth *alone* as an independent variable can explain instability, violence, aggressive behavior, and the rise of radical movements of the left or right." Nor is there any "noticeable relationship between density and political instability" (Weiner, 1971: 587). In a sophisticated statistical study of more than 100 countries, Hibbs (1973: 162) concluded that "it appears that, *other factors held constant, the rate of population growth does not influence magnitude of mass political violence within nations.*" Only in the case of growing urbanization is there statistical evidence on the side of the demographic hypothesis: Sanders (1981: 180) found that, in Latin America, "changes in the level of urbanization" "play a significant role" in what he calls "peaceful challenge instability" during the period 1948-1967.

The lack of statistical association between population growth or density and political instability across the world, however, does not preclude the possibility of a relationship between these variables, in the direction hypothesized by the demographic hypothesis, in Latin America. As Sanders (1981: 204) points out, global studies such as Hibbs', which assess the average relationship between variables (such as population growth and political instability) in a large group of countries obscure the fact that there are "several distinct and conflicting *regional* patterns of interrelationship, conflicting patterns which inevitably undermine the utility of identifying only one 'average,' general pattern." One cannot reject the possibility that population growth or density plays an explanatory role in political instability in Latin America simply because no relationship is observed when many countries from all over the world are statistically analyzed as a single group. As a matter of fact, Sanders' finding of a positive relation between urbanization change and Latin American political instability was produced by a statistical model which, though global, takes into account regional variations. It is possible that, had Sanders included population growth and density in his analysis, these variables might also have emerged as significant predictors in the Latin American region.

The purpose of this essay is to inquire statistically if, as the demographic hypothesis would have it, population growth and population density, like increasing urbanization, operate as significant predictors of Latin American political instability. If, as Wiarda and Wiarda affirm, the evidence is indeed "overwhelming" that population growth has a "direct causal relation" with Latin American instability, then the evidence should manifest itself as a significant statistical relation via correlation and regression analyses.

Data, methodology, and specification

In order to test the relation between population growth and population density, on the one hand, and Latin American political instability, on the other, the following method was used. Six measures of political instability were taken from the latest edition of *The World Handbook of Political and Social Indicators* (Taylor and Hudson, 1983). These measures, listed annually between 1968 and 1977, are: the number of protests, political strikes, political riots, armed attacks, irregular executive transfers, and executive adjustments. These variables were used to

TABLE 1
Symbols and Summary Statistics for Latin American Political Instability Analysis: 1968-1977 (n=180)

Variable	*Symbol*	*Mean*	*Standard Deviation*
Population[a]	POP	15.5	24.4
Population growth[b]	POPR	2.6	2.2
Density (area)[c]	DENSAREA	84.1	109.5
Density (arable land)[d]	DENSLAND	2914.9	1334.3
Urbanization[e]	URBAN	40.0	15.7
Urbanization change[f]	URBANR	2.4	1.5
Gross National Product per capita[g]	GNPPC	1505	867
Change in GNP per capita[h]	GNPPCR	2.7	3.9
Protests	PROTST	1.2	2.4
Political strikes	POLSTR	.9	2.6
Political riots	RIOTS	1.9	3.8
Armed attacks	ARMATK	3.7	8.9
Irregular executive transfers	IRGXTR	.1	.4
Executive adjustments	XADJMT	1.1	1.4
Political instability index	INDEX	0.0	1.7

[a] Population, in millions.
[b] Annual percent change in POP.
[c] Population per square mile of area.
[d] Population per 1,000 hectares of land which is arable or under permanent cultivation.
[e] Percent of population living in clusters of 20,000 and over.
[f] Annual percent change in URBAN.
[g] In constant, 1982 dollars.
[h] Annual percent change in GNPPC.

Sources: Calculated from data in United States Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers* (Washington, D.C.: 1977 and 1983); Charles Lewis Taylor and David A. Jodice, *World Handbook of Political and Social Indicators* (third edition) (New Haven: Yale University Press, 1983); James W. Wilkie and Adam Perkal (eds.), *Statistical Abstract of Latin America* (volume 23) (Los Angeles: UCLA Latin American Center Publications, 1984); Food and Agriculture Organization of the United Nations, *Production Yearbook* (Rome: 1975, 1976, 1978).

create a seventh variable, a "political instability index," through Principal Component Analysis, a procedure that generates the linear combination of the six component variables that explains the maximum amount of variability among them, resulting in an overall measure of stability/instability adjusted so that it has a mean of zero. The instability variables were separately correlated with and regressed against eight predictor variables discussed below. Descriptive statistics for the entire data set are shown in Table 1. (It should be noted that two countries with societies or regimes qualitatively different from their neighbors were excluded from the analyses: Cuba because it has a Communist regime and Haiti because it has more in common with the Franco-African region than with what is called "Iberoamerica," i.e., the Spanish-speaking countries of the Americas, and Brazil.)

The list of exogenous predictors consists of population, population growth, density, urbanization, urbanization change, economic development, and eco-

nomic growth. Following Hibbs (1973) and Sanders (1981), population size was included as a control variable, a necessary procedure when analyzing countries ranging in size from 2 million people (Panama) to over 100 million (Brazil). Because they appear in many instability studies, Gross National Product per capita and per capita GNP change were also included as controls. It should be noted that theoretical propositions and empirical findings concerning relations between these economic variables and political instability are conflicting (Sanders, 1981: 16-17).

In order to take urbanization into account, estimates of urban population—measured as the percent of population living in clusters of 20,000 and over—were taken from the *Statistical Abstract of Latin America* (Volume 23, page 140), for the years 1940, 1950, 1960, 1970. (This source gives only one value per decade.) To generate annual values for this variable, the following method was utilized: linear and non-linear (quadratic) models were fitted to the data for each country. Then the best model (based on scatter plots, R^2, and a statistic called PRESS)[1] for each country was used to predict annual values for urbanization. Urbanization change was then calculated using annual urbanization values. Linear prediction functions were adopted for Argentina, Chile, Costa Rica, Colombia, El Salvador Guatemala, Mexico, Peru, and Venezuela; and non-linear functions for Bolivia, Brazil, the Dominican Republic, Ecuador, Honduras, Nicaragua, Panama, Paraguay, and Uruguay. It should be noted that while the estimates of the *level* of urbanization (URBAN) obtained with the linear and non-linear methods are strongly correlated (Pearson's r=.98), those of the rate of urbanization change (URBANR) are less strongly correlated (Pearson's=.50) and, as will be discussed, do not correlate in exactly the same way with the instability measures.

Density was measured with two variables. In one (DENSAREA), population is divided by total area, and in the other (DENSLAND) by land that is arable or in permanent crops. Since much of Latin America's land area consists of mountains, deserts, rain forests, and jungle the latter variable would appear to be a more discriminating measure of "true" density (called "physiological density" by an anonymous reviewer of this journal). However, it should be mentioned that the two density measures are directly related (Pearson's r=.67) and, as we shall see, correlate with the instability measures in much the same manner.

The following equation identifies the general model utilized:

$$\text{Instability} = a_0 + b1\text{POP} + b2\text{POPR} + b3\text{DENS} + b4\text{URBAN} + b5\text{URBANR} + b6\text{GNPPC} + b7\text{GNPPCR} + e$$

where Instability=any of seven measures listed in Table 1, e.g., INDEX;
POP=population size;
POPR=annual percentage change in POP;
DENS=either of two measures shown in Table 1;
URBAN=percent urban;
URBANR=annual percent change in URBAN;
GNPPC=Gross National Product per capita;
GNPPCR=annual percent change in GNPPC;
a_0=constant term (intercept);

TABLE 2
Pearson Correlation Coefficients: Bivariate Relationships Between Instability Variables and Exogenous Predictors (n=180).

	PROTST	*POLSTR*	*RIOTS*	*ARMATK*	*IRGXTR*	*XADJMT*	*INDEX*
POP	.23*	.04	.12*	.21*	−.08	−.00	.14*
POPR	−.15*	−.21*	−.11	−.12*	−.14*	−.33*	−.26*
DENSAREA	−.13*	−.16*	−.15*	−.14*	−.12*	−.24*	−.23*
DENSLAND	−.31*	−.23*	−.17*	−.35*	−.16*	−.21*	−.35*
URBAN	.36*	.33*	.28*	.37*	.13*	.43*	.48*
URBANR	−.20*	−.19*	−.18*	−.21*	−.05	−.25*	−.28*
GNPPC	.20*	.14*	.11	.20*	.01	.25*	.23*
GNPPCR	.00	−.04	−.06	−.09	−.11	−.12*	−.09

* significant at .10 level or higher.

b1, b2, . . . ,b7=regression parameters;
e=stochastic error term.

Results

Table 2 shows the bivariate correlations between each of the political instability variables and the exogenous predictors. The first thing to notice is that population growth and both density measures are *negatively* related to instability. These correlations contradict what many Latin Americanists believe: population growth, urbanization change, and density are indeed correlated with instability in Latin America, but the direction of the bivariate relationships, in the 1968-1977 data, is *opposite* to that alleged, i.e., it is negative, not positive. Also, the size of the negative coefficients is greater in the case of physiological than arithmetic density. The second thing to notice is that the *level* of urbanization *is* directly related to each of the instability indicators. Indeed, the strongest coefficients in the table belong to this variable.

It is interesting to note the contrasting effects of urbanization and density, the former being positively and the latter negatively related to instability. In the minds of many scholars, density and urbanization go together. For example, an anonymous reviewer for this journal urged us "to abandon the criterion of arithmetic density (population per square mile) and use instead that of percent urban. The latter is also imprecise but is a closer measure of actual density." However, both density measures (DENSAREA and DENSLAND) vary inversely with urbanization (Pearson's r is about −.40 in each case). Being negatively related to each other, it comes as no surprise that density and urbanization seem to have opposite impacts on instability. Be that as it may, our reviewer's expectations were indeed verified: urbanization correlates positively with Latin American political instability. On the other hand, neither population growth, nor density, nor growing urbanization does: each of these variables is negatively related to Latin American instability. These results are contrary to the demographic thesis.

Regression analysis also fails to support the thesis. Table 3 shows that neither

population growth, nor growing urbanization, nor physiological density contributes to political instability. In fact, in the equations where any of these variables is significantly related to instability, as in the equation for the instability index, the direction is negative. On the other hand, the level of urbanization is consistently positively related to instability.

There are two important differences between Tables 2 and 3. Statistical significance drops out of most of the relations between density, urbanization change, and population growth, on the one hand, and the instability measures, on the other. None of these variables is significantly related to most of the instability measures, once the other predictors are controlled for, as occurs in regression analysis. It appears that in Latin America, as across the world, both population growth and density are largely unrelated to instability. (We will take up the role played by urbanization change presently.) The other important difference is the changing role played by GNP per capita. In the bivariate correlations, this variable is directly related to instability, but in the regression equations it varies inversely with instability. This reversal is probably best accounted for by the fact that urbanization, which as we have seen is positively related to instability, is fairly strongly correlated with GNP per capita (Pearson's r=.75). In other words, the urbanized and the rich countries tend to be one and the same. Once the effect of urbanization is controlled for, the impact of GNP per capita seems to be to ameliorate instability. This finding may reconcile the opposite conclusions which, as was previously mentioned, different researchers have reached concerning the impact of GNP per capita on instability.

Against these findings, two objections readily come to mind. One is that the analyses only cover a single decade. It may very well be that the years 1968-1977 are not representative of long-term trends. With this objection in mind, using a different source for population and income,[2] we regressed the instability measures (all but the number of political strikes, which was not available for the earlier period) on the exogenous variables over both a 30-year period (1948-1977), and the same 20-year period (1948-1967) analyzed by Sanders. The results are summarized in Table 4, which shows the regression equations for armed attacks, executive adjustments, and the index of political instability (calculated from five instability measures this time, the number of political strikes being unavailable) in both periods. The equations for these instability indicators have more statistically significant relations and a higher R^2 than those for the number of protests, riots, and irregular executive transfers. For the sake of conserving space, the equations for these last three variables are not shown in Table 4, although they are mentioned in the text where relevant.

Table 4 shows that neither population growth nor density (arithmetic density this time) is a statistically significant predictor of Latin American instability in the 1948-1967 period. In the 1948-1977 time span, however, population growth is negatively related to the number of executive adjustments (and of irregular executive transfers, which is not shown) while density varies inversely with the number of executive adjustments and the index of political instability (as well as with the number of riots). On the other hand, the level of urbanization is directly related to at least one instability measure in both periods: the number of executive

TABLE 3

OLS Estimates of Seven Political Instability Measures in Latin America, 18 Countries: 1968-1977. (t statistics in parentheses) (N=177)

	Protests	*Political Strikes*	*Riots*	*Armed Attacks*	*Irregular Executive Transfers*	*Executive Adjustments*	*Instability Index*
Population	.02***	.0004	.02	.07***	−.001	.000	.008*
	(2.65)	(.05)	(1.57)	(2.73)	(−.85)	(.02)	(1.77)
Population growth	−.04	−.14	−.09	−.17	−.03*	−.23***	−.14**
	(−.42)	(−1.34)	(−.56)	(−.48)	(−1.71)	(−4.38)	(−2.28)
Density (land)	−.0003**	−.0002	−.0002	−.002***	−.000	.000	−.0002**
	(−2.43)	(−1.34)	(−.81)	(−3.19)	(−1.29)	(.25)	(−2.30)
Urbanization	.05***	.06***	.08***	.18***	.004	.04***	.05***
	(2.93)	(3.33)	(2.80)	(2.93)	(1.39)	(3.68)	(4.73)
Urbanization Change	−.21*	−.19	−.32	−.84*	−.001	−.05	−.16**
	(−1.64)	(−1.38)	(−1.49)	(−1.81)	(−.05)	(−.68)	(−2.02)
GNP per capita	−.0006*	−.0008**	−.001**	−.002*	−.000	−.000	−.0006***
	(−1.89)	(−2.26)	(−2.06)	(−2.13)	(−1.43)	(−1.00)	(−2.96)
GNP per capita change	−.01	−.04	−.08	−.27	−.01*	−.09***	−.07**
	(−.26)	(−.77)	(−.90)	(−1.47)	(−1.71)	(−3.27)	(−2.13)
Intercept	1.39	1.04	1.69	6.81**	.29*	.80	.21
	(1.47)	(.96)	(1.04)	(1.95)	(1.73)	(1.49)	(.33)
R^2	.21	.16	.13	.26	.08	.30	.34

* significant at .10 level.
** significant at .05 level.
*** significant at .01 level.

TABLE 4
OLS Estimates of Selected Indicators of Political Instability, Two Time Periods: 18 Latin American Countries.

	1948-1967			*1948-1977*		
	ARMATK	*XADJMT*	*INDEX*	*ARMATK*	*XADJMT*	*INDEX*
Population	.04	.02***	.01**	.04	.01**	.008**
	(.63)	(2.92)	(2.24)	(1.24)	(2.17)	(2.34)
Population growth	.18	−.12	.01	−.57	−.17*	−.09
	(.19)	(−.95)	(.13)	(−.86)	(−1.89)	(−1.47)
Density (area)	−.004	−.002	−.000	−.01	−.003***	−.002**
	(−.32)	(−1.05)	(−.34)	(−1.33)	(−2.53)	(−1.94)
Urbanization	.01	.06***	.03*	−.09	.04***	.01
	(.09)	(2.96)	(1.73)	(−1.02)	(3.19)	(1.18)
Urbanization change	2.11***	−.02	.15**	1.13**	−.10	.04
	(2.81)	(−.25)	(1.99)	(2.13)	(−1.42)	(.83)
GNP per capita	.02*	−.002**	.000	.02***	−.002***	.0003
	(1.83)	(−2.06)	(.11)	(2.99)	(−2.48)	(.67)
GNP per capita change	−.56**	−.12***	−.07***	−.47***	−.12***	−.06***
	(−2.34)	(−3.82)	(−2.89)	(−2.79)	(−5.05)	(−3.63)
Intercept	−4.74	1.57	−1.02**	1.66	2.12***	−.23
	(−1.03)	(2.52)	(−2.27)	(.53)	(4.92)	(−.72)
R^2	.08	.15	.11	.06	.14	.09
N	323	323	323	497	497	497

* significant at .10 level.
** significant at .05 level.
*** significant at .01 level.

adjustments and the instability index in the 1948-1967 interval, and the number of executive adjustments in the 1948-1977 period. Thus, the impact of population growth, density, and urbanization on political instability, where they are statistically significant, is in the same direction regardless of what time period is analyzed.

Not so with the variable urbanization change. Recall that in the 1968-1977 decade, it was negatively related to instability. But as Table 4 shows, urbanization change has a direct impact on the number of armed attacks and the instability index (as well as of protests and riots) in the 1948-1967 interval. This is consistent with Sanders' previously discussed finding. However, urbanization change is unrelated to all but one indicator of instability, the number of armed attacks, in the 1948-1977 time span. Thus, the relationship between urbanization change and instability does not hold across time periods: it is positive in the 1948-1967 interval, as Sanders reported, but it is negative in the 1968-1977 decade. When the entire 1948-1977 time span is analyzed, the relation is non-existent except in the case of the number of armed attacks.

The net result of this analysis is inconclusive. There is evidence suggesting a direct relation between growing urbanization and one or more indicators of Latin American instability in the 1948-1967 and 1948-1977 periods, as well as data indicating a negative relation in the 1968-1977 decade. The relation seems to depend on the period under observation and the measure of instability used. It may also depend on how urbanization itself is measured. For example, when we re-ran the regressions using estimates of urbanization change for all countries obtained with a simple linear function, we found it to be positively related to the number of riots, armed attacks, executive adjustments, and the political instability index in the 1948-1977 time span; to armed attacks and the index only in the 1948-1967 interval; and to none of the instability measures in the 1968-1977 decade. These findings may help explain why, as Sanders (1981: 16-17, 44) points out, the role played by urbanization change in political instability is a matter of dispute.

It should be noted that the percent of the variance in the instability indicators explained by the predictor variables was small in all three time periods. In the 1968-1977 decade the highest R^2 was .33; it was .15 in the 1948-1967 interval; and .14 in the 30 year period 1948-1977. This suggests that demographic variables play at best a marginal role in predicting political instability. Even if population growth had the effect on political instability hypothesized by the demographic thesis, which as we have seen it does not, the small amount of the variance explained makes it hard to understand alarmist writings predicting political cataclysms as a result of the so-called "population explosion" in Latin America.

Another objection that might be raised against the analyses to this point is that they do not take into account the possibility of a lagged relationship between population growth and political instability. This line of reasoning suggests that the effects of population growth are felt not immediately but after an interval of several years, when the number of instability events rises in response to the strains caused by population growth in previous years. To test this hypothesis, population growth at year t was correlated with each of the instability indicators at years t+1, t+2, . . . , t+9 during the 1948-1977 period. In other words, population growth occurring at one year was correlated with the number of instability events observed from one to nine years later, a procedure designed to estimate lagged effects taking place within a decade. The results appear in Table 5. The first row shows the correlations between population growth and each of the instability indicators, all observations taking place in the same year t. The second row displays the correlations between population growth at year t and the number of instability events observed one year later, at year t+1. Each descending row exhibits the correlation between population growth at year t and instability events occurring at succeeding years, up to the year t+9. Thus, the last row represents population growth in the years 1949, 1950, 1951, . . . , 1968 correlated with the number of instability events observed in 1958, 1959, 1960, . . . , 1977, respectively.

The data do not support the hypothesis that there is a lagged effect between population growth and instability. There is no tendency for the magnitude of any of the coefficients, which are uniformly small to begin with, to rise with time. Only two instability indicators, the number of protests and the number of executive adjustments, are correlated with population growth at a level of statistical significance in most of the rows and, although the coefficients are small, the

TABLE 5
Bivariate Correlations Between Population Growth at Year t and Instability Variables at Years t+1 through t+9: 1948-1977.

Year	*PROTST*	*RIOTS*	*ARMATK*	*IRGXTR*	*XADJMT*	*INSTABILITY INDEX*	*N*
t	−.08*	.00	−.02	−.10*	−.17*	−.10*	522
t+1	−.03	.01	−.04	−.06	−.17*	−.08*	504
t+2	−.08*	.03	−.02	−.07*	−.17*	−.09*	486
t+3	−.08*	.04	−.02	−.08*	−.16*	−.08*	468
t+4	−.06	.08*	.01	−.09*	−.17*	−.06	450
t+5	−.08*	.05	.03	−.01	−.16*	−.05	432
t+6	−.06	.07	.04	−.07	−.15*	−.04	414
t+7	−.09*	.03	.05	−.07	−.18*	−.07	396
t+8	−.01	.04	.05	−.09*	−.18*	−.04	378
t+9	−.11*	−.00	.05	−.07	−.15*	−.08	360

* significant at .10 level or higher.

sign of the relationship is invariably negative. There is only one case of a statistically significant positive correlation: that of population growth at year t and the number of riots at year t+4. As with the other coefficients, it is small (Pearson's r =.08). Note that, out of 54 correlation coefficients, less than half (22) are statistically significant; and of these, all but one point to a negative lagged relationship between population growth and political instability. Thus, the relationship is tenuous at best and, when statistically significant, almost invariably negative.

Summary and Conclusions

Many Latin Americanists have expressed alarm about the alleged effects of population growth, population density, and growing urbanization on Latin American political instability. It is asserted that these demographic variables are directly related to political violence and regime change in Latin America. This essay subjected the demographic thesis to empirical test. The results were mixed: while there is no evidence that population growth or density has a direct impact on Latin American instability, it appears that urbanization and, less conclusively, growing urbanization, do.

In the case of the absolute level of urbanization, we found a consistently positive relation with instability across three time periods: 1948-1967, 1968-1977, and 1948-1977. It seems that in Latin America, the concentration of population in urban areas has a direct impact on political instability. However, it is not clear just how this finding can be construed as supporting the demographic thesis, which argues that the stresses and strains accompanying the *growth* in population and urbanization are destabilizing. But urbanization is negatively correlated with both population growth and urbanization change (Pearson's r ranges between −.30 and −.35 in both cases in all three time periods). It would seem that one would first have to explain these negative relations theoretically, as well as the lack of relation between population growth and instability, before one can claim support for the demographic thesis on account of urbanization's direct relation with instability.

More easily interpreted as supporting the demographic thesis are some of the results obtained with the variable urbanization change. Like Sanders (1981), we found a direct relation between growing urbanization and political instability in the Latin American region in the 1948-1967 interval. While Sanders only found evidence linking urbanization change to what he called "peaceful challenge instability," e.g., the number of protests, we also obtained positive results with measures of what he called "violent challenge instability," namely the number of armed attacks. On the other hand, we found an inverse relation between urbanization change and instability in the 1968-1977 decade, a puzzling reversal in the direction of the relationship. It may be that the years between 1968 and 1977 were unusual in an as-of-yet undetermined way, so that the inverse relation between urbanization change and instability observed during this decade is spurious. This explanation is plausible, particularly in light of the fact that when the entire 1948-1977 time span is analyzed, urbanization change is related at a level of statistical significance with some of the instability measures, notably the number of armed attacks and the instability index.

Nevertheless, the negative relation obtained in the 1968-1977 decade cannot be ignored. It may or may not be an aberration. At the very least, it should give pause to those who write about the destabilizing effects of growing urbanization as if there were no contrary data. It is to be hoped that when a new edition of the *World Handbook* comes out with data for the 1978-1987 decade, the hypothesis will be tested again to ascertain whether the 1948-1967 or the 1968-1977 pattern is repeated. In the meantime, our conclusion must remain tentative: on the relation between growing urbanization and political instability in Latin America, the demographic thesis finds qualified support.

Parenthetically, it should be pointed out that the literature on political instability contains conflicting hypotheses concerning the role played by both urbanization and urbanization change (Sanders, 1981: 16-17, 44). Our own findings do not resolve this issue – they may even confound it. For example, some scholars believe that urbanization is a measure of modernization, and as such should have a negative impact on instability. Indeed, Sanders (1981: 179) found that one dimension of instability, what he called "violent change instability," varied inversely with urbanization in a sample of 103 countries during the 1948-1967 period. Why the relationship should be reversed in Latin America is an intriguing question, but one beyond the scope of this paper.

Concerning population growth and density, which by any account are central to the demographic thesis, the results of our analysis are unequivocal: there is no evidence whatsoever that either variable contributes to Latin American instability. In fact, in the few instances where we found a statistically significant relation, the impact of population growth and density on instability was negative. Nor did we find any support for the hypothesis that the effects of population growth on instability are delayed by several years.

We conclude that in Latin America, as across the world, there is no reason to believe that either population growth or density is a cause of political instability. When it comes to its most crucial hypotheses, the demographic thesis is not supported by the data. To paraphrase economist Julian Simon (1989: 535), the alleged relation between population growth or density and Latin American political instability is another of those hypotheses that many scholars believe is true and which seems perfectly logical but has no factual basis in the empirical evidence.

Notes

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1 In a regression model the *predicted residual* for a particular data point is the residual for that data point which results from a model that was estimated without using the particular data point. The PRESS statistic is the sum of squares of all predicted residuals and is used to evaluate how well different regression models fit a data set.

2 *Statistical Abstract of Latin America* (Volume 26). This source gives Gross Domestic Product at constant, 1970 dollars, beginning with the year 1948. For the instability data during the years 1948-1967, we used the 1972 edition of the *World Handbook of Political and Social Indicators*.

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