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The electoral cycle of international migration flows from Latin America

1. INTRODUCTION

There is abundant scientific literature about the effect that politics in destination countries have on immigration flows (Tienda, 2002), as well as about the effect of political and humanitarian crises (wars, famines, etc.) on the probability of migrating (Castles and Miller, 1993). However, there is little research that links emigration flows with elections and other democratic political events at the origin. One of the few studies that provide numerical evidence on how immigration flows vary by election years in the country of origin suggests that, in Nicaragua, either emigration flows towards Costa Rica diminish, or return migration increases, or both. According to a study based on good quality vital statistics in Costa Rica, the typically sharp increase in births by Nicaraguan migrant mothers is stopped or even reversed during the year before elections in Nicaragua and during the electoral year (Brenes-Camacho, 1999). How can elections have an impact on the decision to migrate to another country? Can democratic electoral processes in countries of origin have such an appeal for migrants as to motivate them or discourage them to return home?

Given the democratization processes experienced by Latin American countries during the 1980s and 1990s, studying such patterns is important because they might mean that uncontrolled migration flows can be managed or redirected faster than expected by promoting democratic activities and by helping governments from developing countries to fulfill the expectations of their electorates.

This article intends to show how political cycles are important in describing temporal patterns in emigration and return migration flows among Latin American migrants. Its goal is to explore the interrelationship between electoral variables and migrants' economic expectations.

2. THEORETICAL FRAMEWORK

A possible link between the electoral political cycle and migration deci-

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sions is based on one of the basic concepts of neo-classical economics: expectations. According to classical economic theory, migration occurs when there are geographic differentials in wages and employment levels, due to differentials in demand and supply of the workforce (Massey *et al*., 1993, 1994; Harris and Todaro, 1970; Todaro, 1976; Todaro y Maruszko, 1987) Assuming that individuals are economically rational agents, they perform a cost-benefit analysis when deciding whether to migrate or not. If the potential benefit is greater than the cost, agents migrate. Potential benefit is based on the expectations of finding a job and on the expected income in the country of destination, rather than on the full security of finding a job. As Massey *et al*. (1993: 701) explain, "Expected income is defined as the probability of employment (one minus the unemployment rate) times the mean income in whatever economic sector a rational actor contemplates working […] The difference between incomes expected at origin and destination, when summed and discounted over some time horizon and added to the negative costs of movement, yields the expected net gain from movement, which if positive promotes migration".

Even though it is very likely that income expectations in countries of origin and destination might have an impact on migration flows, operationalizing expected income as a function of unemployment rates at origin and destination might yield a limited specification. Expected income is not determined by labor income only. It may also be determined by welfare policies, such as subsidies, public employment or public transfers. There is empirical evidence that shows that migration is sensitive to those policies. In the United States of America (U.S.), government subsidies for low socio-economic status (SES) groups at origin or destination might decelerate, halt or redirect emigration rates. De Jong, Graefe and St. Pierre (2005) report that poor families in the U.S. have a greater probability of migrating towards states where it is easier to qualify for public subsidies. Stecklov *et al*. (2005) show that the PROGRESA program subsidies in Mexico diminish the probabilities that Mexicans have of migrating towards the U.S.

Indicators of macroeconomic performance - such as the unemployment rate mentioned above - and the establishment of targeted welfare policies may be correlated with the temporal proximity to an election. From a broad perspective, an electoral cycle refers to "…the relative timing of elections" (Shugart, 1995: 328). In political sciences, an electoral cycle may refer to changes in voters' political alignment over time (Beck, 1979). An "electoral cycle" can also refer to changes in social and economic variables that are correlated to the timing of elections. This covariation is the so-called political business cycle. There are several theoretical models that explain the relationship (Drazen, 2000). Some theories propose that voters respond rationally to the political parties' economic agendas, while other theories argue that public officials develop expansive economic policies in order to recover the voter's

favor. Alesina's rational partisan model (Alesina, 1987; Drazen, 2000) assumes that voters react to "surprise" expected inflation, which is determined by the policies of the political parties in contention (right-wing and left-wing). The opportunistic model assumes that policy makers control macroeconomic monetary instruments inducing low price increase or higher economic output before election and higher inflation and lower economic output after the election (Drazen, 2000). Such a cycle will increase voting for the incumbent. Regardless of the actual mechanism, there is empirical evidence that shows a political economic cycle in several countries, particularly in developing countries (Ames, 1987; Block, 2002; Gonzalez, 2002; Persson and Tabellini, 2003; Schuknecht, 1996). Such a business cycle may then arise from direct or indirect manipulation of economic incentives, as well as through welfare policies (public employment, public transfers, etc.). Schuknecht (1996) argues that, in developing countries, welfare policies may be more effective in determining voters' preferences than general macroeconomic performance.

Migration behavior may follow the political business cycle if migration flows are sensitive to the macroeconomic performance behind such a cycle. If economic policies implemented near an election are aimed at improving workers' income, controlling inflation, or expanding welfare benefits, then classical and neoclassical economics predict that the likelihood of migrating would decrease.

Nevertheless, neoclassical theory on migration has been criticized by several authors (a critical revision of several migration theories can be found in Massey *et al*., 1993, 1994). The main arguments against neoclassical theory are: 1) that research that has tried to prove these theoretical premises have not succeeded in operationalizing the concepts of expected income and cost, or that after being operationalized, the results obtained are not the ones predicted by the theory; 2) that the theory does not successfully explain why migration flows keep happening despite unfavorable macroeconomic conditions in destination countries or favorable economic conditions at origin; 3) and that the theory does not fully explain how the interaction between the real or potential migrant and his social environment (family, community, social support networks at destination) might produce barriers or incentives to migrate (Massey *et al*., 1993, 1994).

An electoral cycle in migration flows might also be determined by other political and social factors, rather than by current characteristics of labor markets or welfare policies. Regarding political factors, mobilizations due to political violence - which produce refugee flows - are the most evident, but there are other more subtle political factors that might affect migration processes. According to Lam (2002), lack of political confidence was more important than lack of economic confidence in explaining emigration intentions by Hong Kong inhabitants after the transition from British to Chinese rule. Cinel (1991)

considers that the Italian unification process promoted not only a reduction in emigration rates, but also an increase in returning migrant flows during the period 1870-1929. Besides, democratization processes and peace accords after war conflicts have reduced emigration and induced return migration to Central America, South America, the Middle East and Eastern Europe (Lundquist and Massey, 2005; Klinthäll, 2007; Lubbad, 2007; Villa and Martínez-Pizarro, 2001). This latter evidence suggests that migration flows may follow an electoral cycle that is not necessarily driven by the political business cycle.

It is evident that there is scientific literature that links political events with migration decisions, but we did not find any article that relates electoral processes with migration decisions using individual data. The aim of this study is to explore this relationship in several Latin American countries. The article starts testing the statistical relationship between the timing of elections and the likelihood of out-migration and return migration. The article then tests whether this relationship is due to the political business cycle by statistically controlling for the confounding effect of macroeconomic variables.

3. OBJECTIVES

The main goal of this article is to determine whether there is an electoral cycle in emigration and return migration among Latin American migrants. In this article, an electoral cycle in migration flows means that the likelihood to emigrate and to return to the home country is different during an election year, the year before, and the year after, compared to during other years at origin countries. This effect is studied with migrants from Mexico, Costa Rica, Nicaragua, Dominican Republic, Peru, and Guatemala. Most of the flows refer to migration to the U.S except in Peru, where other destination countries are also included. Additionally, the article also analyzes Nicaraguans that migrate to Costa Rica. It also studies whether these electoral cycles might be explained by political business cycles that run parallel to electoral cycles.

4. DATA AND METHODS

4.1 The MMP and LAMP projects

The Mexican Migration Project (MMP) and the Latin American Migration Project (LAMP) contain useful information to analyze migration processes from the region towards the United States. Some of the country-specific studies have information about South-South migration (Nicaragua to Costa Rica, Peru to Argentina). This article uses a combination of different datasets that are comparable with each other. These research projects have

been conducted by Princeton University (U.S.), in collaboration with the University of Guadalajara, as well as with other research centers in Latin America. The projects have been funded by grants from the U.S.A. National Institute of Child Health and Human Development (NICHD), and the Mellon Foundation (MMP, 2004; LAMP, 2004). The datasets to be used are known as: MMP118, LAMP-DR7, LAMP-CR7, LAMP-GUAT3, and LAMP-NIC9. Data were collected using the "ethno-survey" technique (Massey *et al*, 1987) applied in several communities in Mexico, Dominican Republic, Guatemala, Peru, Nicaragua, and Costa Rica. LAMP also includes datasets from El Salvador and Paraguay, but their usefulness for the analysis is limited due to differences in the questionnaires.

Sample selection starts with choosing a community which is known to be the origin of large emigration flows. Community selection is based on parallel information from censuses, administrative records, or ethnographic research that indicates that the place is a major source of emigrants. They were selected in order to cover various levels of urbanization and socioeconomic conditions. Therefore, sampled communities are not a random sample of each country's geographical units (for a detailed explanation of the sampling scheme, see Massey and Sana, 2003). However, the household sample is drawn randomly within communities. After defining the community's geographical boundaries, interviewers construct a house sampling frame. The field supervisor selects a simple random sample of approximately 100 to 200 households, assuming one household per house. This sampling design means that inferences cannot be made about whole countries, but only for communities with high emigration rates. Even though interviewers ask questions about all household members, most of the questions about migration history refer to household heads. Additionally, in order to find information about migrants who haven't returned to their home towns, interviewers collect names and addresses of migrants (generally, family members) who are still in the U.S. or in other destinations (Costa Rica for Nicaraguans, Argentina for Peruvians) at the time of the interview, using a "snowball" technique. Finally, the supervisor contacts these migrants, draws a subsample, and conducts the "ethnosurvey" with a modified version of the original questionnaire. This non-random "snowball" sampling is based on addresses given by relatives at origin towns, as well as on information gathered on-site during the fieldwork at destination. It is not possible to draw a random sample of migrants at destination because it is difficult to create a sampling frame of migrants, given that 1) the size of the migrant population is large, 2) the destination is not necessarily concentrated in a single place, and 3) an important proportion of migrants might not be located because they lack formal migration documents. Sampling weights of return migrants are based on the inverse of selection probabilities in each community, while sampling weights for migrants living in the country of destination are computed through indirect demographic techniques that try to account for the size of each community's population of migrants who have not returned (LAMP, 2004; Massey *et al*, 1987; Massey and

Sana, 2003; MMP, 2004). The average refusal rate per community is approximately 1% to 5%, including migrants who have not returned (Massey and Sana, 2003). Given the snowball sampling design for migrants who have not returned, rejection rates tend to be low.

In the MMP-LAMP projects, interviewers ask questions about all household members; however, most of the questions about migration history refer to household heads. Therefore, the analyses refer to household heads. Additionally, most information is retrospective, especially among return migrants. Therefore, the information might be affected by recall bias. In order to minimize the effect of recall bias, the analyses refer to migratory movements that occurred between 1984 and 2004; movements that happened earlier are excluded. This window period coincides with economic crises that affected Latin America during the 1980s, the so-called "lost decade". During this decade, Latin American governments implemented structural adjustment programs aimed at controlling the effects of the economic downturn. This window period is also characterized by the end of civil conflicts (in Guatemala and Nicaragua) and the development of more democratic electoral processes (in Mexico, Nicaragua, and Guatemala). However, most of the Peruvian elections that occurred during this period are the ones in which Alberto Fujimori won the presidency and was reelected. The Fujimori government can be considered an authoritarian regime.

4.2 Methods

We test the association between election years and migration flows using standard survival analysis techniques such as semi-parametric (Cox proportional hazards models) and parametric (exponential, Weibull, log-normal, log-logistic, and Gompertz) models. In the analyses of emigration, the main dependent variable is the hazard of first migration to the U.S. (abroad in the Peruvian case, and to Costa Rica in some of the Nicaraguan models). In the analyses of return migration, the main dependent variable is the hazard of returning to the country of origin during the first migration.

Survival models, also known as event-history models, are comprised of techniques in which the variable of interest is the time that passes from an initial point in time until the occurrence of certain event. Event history models take into account the number of events or failures (numerator of a hazard rate) and the time of exposure for the number of individuals at risk (denominator of a hazard rate). These models are also known as hazards model because they are represented as equations with hazards as the dependent variable. A hazard is "the rate at which spells (being in one state for a certain time) are completed after duration t, given that they last until t" (Greene, 2003: 792). A hazard function, thus, gives a continuous representation of a curve that describes incidence rates through time (age, duration since diagnosis, etc.).

In the Cox proportional hazards model, the hazard $h(t|X_i)$ is modeled as:

$$h(t|X_i) = h(0) * \exp[\alpha + \beta X_i + \varepsilon_i] \quad [1]$$

where:

$h(t)$, is the hazard at time t

$h(0)$, is the baseline hazard function

$X_{i,}$, is the vector of covariates for individual

α,β, are the vectors of coefficients for control variables

ε_I, is the error term.

A parametric proportional hazard model can be represented by the following formula (Klein and Moeschberger, 2003):

$$h(t|X_i) = \exp[\alpha + \beta X_i + f(t) + \varepsilon_i] \quad [2]$$

where:

$f(t)$ is the parametric function that describes the relationship between time and the hazard.

The rest of the notation is as described above.

The parametric models to be tested are exponential, Gompertz, Weibull, log-logistic, and log-normal. The final parametric model is chosen based on the smallest Bayesian Information Criterion (BIC). The exponential, Gompertz, and Weibull models have a proportional hazards specification. This means that the effect of a variable over the hazards remains constant over survival time. The log-logistic and log-normal models have an accelerated failure time (AFT) specification. This specification means that the effect of a variable over the hazards varies over time because the regression coefficients indicate changes in the logged time of survival rather than in the hazard rates. This distinction is important because in proportional hazard models, positive coefficients mean greater hazards, while in AFT models, positive coefficients mean smaller hazards.

The MMP and LAMP datasets are already arranged in person-years, facilitating event history analyses. In all these models, time will be operationalized as age, and the main covariates are a set of dummy variables:

electoral year: 1=year during which elections are held, 0=other
before electoral year: 1=year before electoral year, 0=other
after electoral year: 1=year after electoral year, 0=other.

The baseline category is the set of years in between two elections. In the models for return migration, migrants who have not returned and were contacted by the "snowball" sampling scheme are the censored cases. The analysis acknowledges that the sampling weights computed for non-return migrants might affect point estimates of the hazards of migrating back. In the models for first migration, censored cases refer to those who have not migrated yet.

Specification of the models will follow previous studies that have

worked with the same datasets and the same dependent variables: emigration and return migration (Massey *et al*., 1987; Lundquist and Massey, 2005; Riosmena, 2006). The control variables in the model for emigration are: sex, education (years of schooling), marital status (cohabiting or married), children at time of migration, parents or siblings living at destination (except for Nicaraguan flows to Costa Rica, given that there is no information about it), owning land (number of properties), and owning business (number of businesses). There is also a set of binary variables for every selected community, in order to control for differences in community size.

The control variables in the model for return migration are: age, education, marital status, other family members with migration experience, number of children at the time of migration, logarithm of monthly wage at destination, and status of entry to destination (documented or undocumented migrant).

Additionally, the models that control for the political business cycle have three macroeconomic variables: the Exchange Rate of the origin country's currency with respect to the U.S. dollar, the Real Gross Domestic Product (GDP) per Capita in current prices, and the Real GDP per Capita Relative to the United States, in current prices. This information is taken from Penn World Tables version 6.3 (Heston *et al*., 2009; Riosmena, 2006).

5. RESULTS

The figures in Table 1 are used to describe the general dataset as well as the population at risk for first out-migration. There are two separate columns for Nicaragua; although most of the figures are roughly the same, the set of people that are at risk of migrating to Costa Rica is different from the set at risk of migrating to the U.S., given that both destinations are analyzed as competing risks. The number of communities studied in the MMP/LAMP project varies by country (Table 1). There are as many as 118 in Mexico (with a total of 17,747 household heads interviewed), and as few as 3 communities in Guatemala. Table 1 shows descriptive statistics for the confounding variables that are included in the survival models. The characteristics of the interviewees - all household heads - are very similar across countries, although there are several noteworthy differences. Mean age at interview is very similar; it ranges from 39 to 43 years. However, mean age at migration varies across countries. The youngest mean age at migration is observed among Nicaraguans migrating to Costa Rica, while the oldest mean age at migration is observed among Peruvians (they emigrated from Peru at 40 years of age, on average). In Nicaragua and in the Dominican Republic, household heads are more likely to be women (30%). In contrast, in Guatemala and Mexico, less than 17% of household heads are women. The average education level is very similar across countries (between 6 to 8 years of schooling), except in Peru where most household heads who were interviewed had on average of 12 years of education. Given that communities were selected

based on their high emigration rates, it is possible to argue that the communities visited in the Peruvian LAMP Project are characterized by a relatively higher educational level than the country as a whole the similar values between the means and standard deviations of the variables at the end of the table suggest that the number of siblings living in the U.S. (or abroad for Peruvians), the number of properties, and the number of businesses owned by household heads are variables with considerable positive skewedness: the mode in all of these variables is zero.

Table 1 – *Descriptive statistics of the MMP/LAMP datasets used for the analysis of first out-migration: Mexico, Nicaragua, Peru, Mexico, Dominican Republic, Costa Rica, and Guatemala (1984-2004)*

Characteristics	Mexico	Nicar. (to U.S.) (1)	Nicar. (to CR) (1)	Peru	Domin. Republic	Costa Rica	Guate-mala
Number of communities	118	9	9	5	7	7	3
Original Total sample	17747	1789	1789	822	978	1428	513
Total for first out-migration	13765	1753	1740	791	967	1384	501
Total person-years	141325	30743	30501	14488	13845	24757	9540
Mean age at interview (sd)	42.2 (15.7)	39.5 (16.1)	40.5 (15.5)	42.9 (14.8)	39.4 (15.5)	39.3 (15.4)	38.8 (15.0)
Mean age at first migration (sd)	29.9 (10.9)	34.8 (12.4)	29.9 (10.2)	39.8 (15.0)	34.0 (12.6)	32.2 (11.5)	32.8 (9.1)
% females	16.2	30.2	30.4	20.0	28.5	22.2	14.8
Mean years of schooling (sd)	6.4 (4.6)	7.3 (4.9)	7.3 (4.9)	12.5 (4.5)	8.3 (5.0)	8.1 (4.4)	6.1 (4.6)
No. of children ever-born (sd)	3.7 (3.3)	3.0 (2.6)	3.0 (2.6)	2.5 (2.1)	2.9 (2.9)	2.4 (2.4)	2.4 (2.0)
% married	65.2	42.9	41.6	60.3	36.1	57.4	59.9
% with father in U.S. (2)	4.2	0.8	-	1.0	4.3	1.2	1.4
% with mother in U.S. (2)	1.2	0.1	-	0.6	6.6	1.2	1.2
No. of brothers in U.S. (sd) (2)	0.3 (0.7)	0.1 (0.5)	-	0.1 (0.5)	0.3 (0.7)	0.1 (0.5)	0.2 (0.5)
No. of sisters in U.S. (sd) (2)	0.1 (0.5)	0.1 (0.5)	-	0.1 (0.4)	0.3 (0.7)	0.1 (0.3)	0.1 (0.4)
No. of properties (land, houses) (sd)	0.7 (0.5)	0.6 (0.5)	0.6 (0.5)	0.8 (0.6)	0.4 (0.6)	0.7 (0.7)	0.7 (0.6)
Number of businesses (sd)	0.2 (0.4)	0.3 (0.5)	0.3 (0.5)	0.2 (0.5)	0.2 (0.4)	0.2 (0.5)	0.3 (0.5)

Notes: (1) For Nicaragua, the total sample is the same, but the total sample for first out-migration and total person-years are different because migrating to Costa Rica or the U.S. is considered a competing risk. Therefore, the risk set is different. (2) In Peru, the variables refer to relatives abroad rather than relatives in the U.S. The Nicaraguan survey did not ask for relatives in Costa Rica.

Table 2 – *Descriptive statistics of the MMP/LAMP datasets used for the analysis of first return migration: Mexico, Nicaragua, Peru, Mexico, Dominican Republic, Costa Rica, and Guatemala (1984-2004).*

Characteristics	Mexico	Nicar. (to U.S.) (1)	Nicar. (to CR) (1)	Peru	Domin. Republic	Costa Rica	Guate-mala
Number of communities	118	9	9	5	7	7	3
Original Total sample	17747	1789	1789	822	978	1428	513
Total for first return migration	1642	126	167	35	100	153	63
Total person-years	4055	872	715	91	769	502	303
% females	6.1	23.8	30.0	17.1	23.0	13.1	7.9
Mean years of schooling (sd)	7.2 (3.8)	10.4 (4.4)	7.4 (4.1)	14.1 (3.7)	10.1 (4.8)	7.9 (3.6)	7.4 (4.2)
No. of children ever-born (sd)	2.4 (2.6)	2.4 (2.1)	1.9 (2.1)	2.2 (2.0)	2.5 (2.6)	2.0 (2.0)	2.4 (1.8)
% married	61.3	59.5	34.1	65.7	52.0	65.4	65.1
% with father in U.S. (2)	12.7	6.3	-	0.0	19.0	6.5	3.2
% with mother in U.S. (2)	3.5	9.5	-	0.0	27.0	8.5	1.6
No. of brothers in U.S. (sd) (2)	0.7 (1.1)	0.6 (1.0)	-	0.3 (0.6)	0.9 (1.4)	0.4 (0.9)	0.4 (0.8)
No. of sisters in U.S. (sd) (2)	0.2 (0.7)	0.5 (1.0)	-	0.3 (0.9)	0.7 (1.0)	0.2 (0.6)	0.2 (0.6)
No. of properties (land, houses) (sd)	0.5 (0.5)	0.6 (0.5)	0.3 (0.4)	0.8 (0.8)	0.3 (0.7)	0.6 (0.7)	0.7 (0.5)
No. of businesses (sd)	0.1 (0.4)	0.2 (0.5)	0.1 (0.4)	0.3 (0.5)	0.2 (0.5)	0.2 (0.4)	0.3 (0.4)
% with proper migratory documents at first migration (3)	7.1	7.9	-	71.4	53.0	98.0	6.3
Mean weekly wage (in U.S.$) (4) (sd)	192.4 (689.1)	175.0 (246.5)	39.4 (103.2)	647.0 (436.4)	219.5 (423.8)	208.2 (339.9)	108.2 (138.1)

Notes: (1) For Nicaragua, the total sample is the same, but the total sample for first out-migration and total person-years are different because migrating to Costa Rica or the U.S. is considered a competing risk. Therefore, the risk set is different. (2) In Peru, the variables refer to relatives abroad rather than relatives in the U.S. The Nicaraguan survey did not ask for relatives in Costa Rica. (3) The Nicaraguan survey did not ask about documentation used for first migration to Costa Rica. (4) Nicaraguan wages in Costa Rica are given in columns. The mean and standard deviation were converted to US$ based on the exchange rate of the year of return.

Table 2 describes the subsample of migrants used to estimate the models of first return migration. There are more differences across countries in this

table. Among Mexicans and Guatemalans, less than 8% of migrants exposed to the risk of moving back to their homeland are women, but among Peruvians, 30% of them are women. Again Peruvians are, on average, better educated than the rest of the migrants. Most of migrants are married (proportions over 50%), except Nicaraguans in Costa Rica(only 30% of them are married). It is also noteworthy that most migrants, except for Peruvians and Costa Ricans entered the U.S. without proper legal documents.

Table 3 – *Hazard ratios of first out-migration for dichotomous variables of electoral year, year before elections, and year after elections, from Cox proportional hazards model (Controlling for age, sex, education, current number of children, number of children ever born, marital status, relatives with migration history, number of properties, and number of businesses)*

Countries	Before electoral year		Electoral year		After electoral year	
Nicaragua (to U.S.)	0.89		0.66	***	0.77	***
Nicaragua (to CR)	0.67	***	0.53	***	0.70	***
Peru	0.43	***	0.88		1.21	
Mexico	0.90	***	0.99		0.86	***
Dominican Republic	0.77	***	1.49	***	1.31	***
Costa Rica	1.61	***	1.65	***	1.08	
Guatemala	0.89		2.06	***	1.56	**

Source: MMP and LAMP datasets.
Note: *: p<0.05, **: p<0.01, ***: p<0.001

The article begins with the analysis of first out-migration, using Cox proportional hazard models (Table 3). These models control for confounding effects, but do not include macroeconomic indicators as covariates. There is a first group of origin countries where the electoral cycle reduces the likelihood of emigrating. According to these models, the risk of emigrating is lower during an electoral year and the year after in the Nicaraguan flows towards the U.S. and Costa Rica. The risk is also lower in the previous year before the elections in the flow from Nicaragua to Costa Rica, as well as in the flows from Peru and Mexico. In the other group of countries, the hazards of out-migrating are greater during the election years. This happens in the Dominican Republic, Costa Rica, and Guatemala. However, in the Dominican Republic, the hazards of emigrating are lower during the year before the elections. This suggests that the flows in the Dominican Republic might follow a similar pattern as the first group, but with a different timing. A proportional hazards test is performed for each regression in order to assess one of the main assumptions of the Cox regression and several parametric regression models: Gompertz, exponential, and Weibull (Table 4). The assumption holds for all the studied flows.

Table 4 – *Rho statistic and associated probability of proportionality test for electoral period binary variables in Cox regression for first out-migration, for each country*

Countries	Before electoral year		Electoral year		After electoral year	
	Rho	p-value	Rho	p-value	Rho	p-value
Costa Rica	0.025	(0.871)	0.012	(0.938)	-0.039	(0.806)
Dominican Republic	0.025	(0.871)	0.012	(0.938)	-0.039	(0.810)
Guatemala	-0.024	(0.937)	-0.110	(0.752)	-0.090	(0.816)
Peru	-0.031	(0.954)	0.016	(0.977)	-0.051	(0.934)
Nicaragua (to U.S.)	0.121	(0.658)	0.139	(0.601)	-0.014	(0.957)
Nicaragua (to CR)	-0.026	(0.869)	0.002	(0.991)	0.059	(0.688)
Mexico	-0.021	(0.740)	0.032	(0.650)	-0.015	(0.826)

Source: MMP and LAMP datasets.

The parametric models confirm what is observed from the Cox regression analyses (Table 5). The first 6 flows are modeled with a Gompertz distribution, while the last two (the flows from the Dominican Republic and Nicaragua to the U.S.) are modeled with a log-logistic regression. In the first 6 models, negative coefficients imply smaller emigration risks, while in the last two, negative coefficients indicate a lower time to emigrate (hence, greater hazards of out-migration).

Table 5 – *Survival regression coefficients (and hazard ratios in parentheses underneath when proper to the model) of first out-migration for dichotomous variables of electoral year, year before elections, and year after elections, from parametric hazards model with contextual economic variables and without them (Controlling for age, sex, education, current number of children, number of children ever born, marital status, relatives with migration history, number of properties, and number of businesses)*

Countries	Without economic contextual variables			With economic contextual variables		
	Before electoral year	Electoral year	After electoral year	Before electoral year	Electoral year	After electoral year
Gompertz regression						
Mexico	-0.117*** (0.89)	-0.021 (0.98)	-0.161*** (0.85)	0.056* (1.06)	0.110*** (1.12)	-0.145*** (0.86)
Nicaragua	-0.368***	-0.648***	-0.367***	-0.088	-0.393***	-0.194

...Cont'd...

Table 5 – *Cont'd*

Countries	Without economic contextual variables			With economic contextual variables		
	Before electoral year	Electoral year	After electoral year	Before electoral year	Electoral year	After electoral year
(to CR)	(0.69)	(0.52)	(0.69)	(0.92)	(0.68)	(0.82)
Peru	-0.690***	-0.065	0.17	-0.678***	-0.049	0.180
	(0.50)	(0.94)	(1.19)	(0.51)	(0.95)	(1.20)
Costa Rica	0.485***	0.529***	0.109	0.590***	0.468***	0.184
	(1.62)	(1.70)	(1.12)	(1.80)	(1.60)	(1.20)
Guatemala	-0.125	0.673***	0.414*	-0.189	0.664***	0.409
	(0.88)	(1.96)	(1.51)	(0.83)	(1.94)	(1.50)
Log-logistic regression						
Nicaragua (to U.S.)	0.040	0.325***	0.104**	0.041	0.272***	0.067
Dominican Republic	0.049	-0.173***	0.002	0.064*	-0.088***	-0.026

Source: MMP and LAMP datasets.
Note: *: p<0.05, **: p<0.01, ***: p<0.0001, ***

The right-hand panel of Table 5 represents the models augmented with controls for the political business cycle, operationalized with the GDP per capita, the GDP per capita relative to the U.S. GDP per capita, and the exchange rate of each origin country's currency with respect to the U.S. dollar. In most of the countries, the inclusion of these variables does not change the direction of the coefficients. In some of them - the flow from Nicaragua to Costa Rica and the flow from the Dominican Republic to the U.S. -, this addition slightly softens the regression coefficient for the election year; this implies that the electoral cycle in these flows still exists, but it is partially accounted for by the political business cycle.

The only flow that is modified after including the macroeconomic indicators in the equation is the Mexican flow. According to the original equation, Mexicans were less likely to emigrate during the years before and after an election while the coefficient for the electoral year was not significantly different to zero. However, after controlling for the political business cycle, the coefficients for the year before elections and for the electoral year are positive and statistically significant. This implies that, after controlling for the economic context, there are apparent political motivations for emigrating during this period.

Table 6 – *Hazard ratios of first return migration for dichotomous variables of electoral year, year before elections, and year after elections, from Cox proportional hazards model (Controlling for age, sex, education, current number of children, number of children ever born, marital status, relatives with migration history, number of properties, number of businesses, natural logarithm of wage, and legal status of entry into destination)*

Countries	Before electoral year		Electoral year		After electoral year	
Dominican Republic	7.380	***	8.007	***	14.364	***
Nicaragua (to U.S.)	1.013		1.662	*	1.470	
Peru	2.354	*	0.408	*	1.754	*
Nicaragua (to Costa R.)	1.397		1.414		0.447	***
Mexico	1.025		0.818	***	0.808	***
Costa Rica	0.692	*	0.801		1.089	
Guatemala	0.905		0.563		1.336	

Source: MMP and LAMP datasets.
Note: *: p<0.05, **: p<0.01, ***: p<0.001

The electoral cycle of return migration seems different than that observed for first out-migration. Based on hazard ratios from Cox regressions, there appears to be 4 groups of countries (Table 6). In the first group (Dominican Republic and Nicaragua to the U.S.), people are more likely to migrate back to their countries of origin during the elections period. In Peru (a second one-member group), people are more likely to return during the years before and after the elections, but are less likely to do so during the election year. This pattern is difficult to explain. In a third group of flows (Costa Rica and Mexico to the U.S., and Nicaragua to Costa Rica), return migration is less likely during at least one of the electoral period years. Finally, in Guatemala, there is no significant effect of the electoral period over the hazards of return migration. The proportional hazards assumption holds for all the Cox models (Table 7).

The parametric models confirm again the Cox regression results (Table 8). A log-logistic regression and a log-normal regression are adjusted to the Dominican and Guatemalan data, respectively. Given that these are AFT specifications, negative coefficients mean greater likelihood of returning. The flow from Nicaragua to the U.S. is modeled with a Weibull regression,

Table 7 – *Rho statistic and associated probability of proportionality test for electoral period binary variables in Cox regression for first return migration, for each country*

Countries	Before electoral year		Electoral year		After electoral year	
	Rho	p-value	Rho	p-value	Rho	p-value
Costa Rica	-0.087	(0.666)	0.119	(0.556)	0.054	(0.784)
Dominican Republic	0.187	(0.744)	0.025	(0.962)	0.271	(0.605)
Guatemala	-0.340	(0.388)	0.344	(0.342)	0.148	(0.696)
Peru	-0.014	(0.984)	-0.277	(0.568)	-0.178	(0.754)
Nicaragua (to U.S.)	-0.029	(0.942)	0.106	(0.733)	-0.195	(0.555)
Nicaragua (to Costa R.)	0.032	(0.908)	0.056	(0.836)	-0.037	(0.878)
Mexico	0.018	(0.836)	-0.008	(0.929)	-0.039	(0.646)

Source: MMP and LAMP datasets.
Note: *: p<0.05, **: p<0.01, ***: p<0.001

while the remaining four flows are modeled with a Gompertz regression. The Gompertz and Weibull models assume proportional hazards. Therefore, a negative coefficient is translated into a smaller hazard ratio, and lower hazards of migrating back.

The inclusion of macroeconomic variables in the models changes the coefficients of the electoral period variables, except in Mexico and the

Table 8 – *Survival regression coefficients (and hazard ratios in parentheses underneath when proper to the model) of first return migration for dichotomous variables of electoral year, year before elections, and year after elections, from parametric hazards model with contextual economic variables and without them (Controlling for age, sex, education, current number of children, number of children ever born, marital status, relatives with migration history, number of properties, number of businesses, natural logarithm of wage, and legal status of entry into destination)*

Countries	Without economic contextual variables			With economic contextual variables		
	Before electoral year	Electoral year	After electoral year	Before electoral year	Electoral year	After electoral year
Gompertz regression						
Perù	0.115***	-1.365***	0.875***	3.275***	-0.911*	-2.255***
	(1.12)	(0.26)	(2.40)	(26.45)	(0.40)	(0.10)

...Cont'd...

Table 8 – *Cont'd*

Countries	Without economic contextual variables			With economic contextual variables		
	Before electoral year	Electoral year	After electoral year	Before electoral year	Electoral year	After electoral year
Nicaragua (to CR)	0.829 (2.29)	0.705*** (2.02)	-1.173*** (0.31)	0.680* (1.97)	0.356 (1.43)	-1.392*** (0.25)
Mexico	-0.047 (0.95)	-0.216*** (0.81)	-0.364*** (0.69)	0.095* (0.93)	-0.071 (0.93)	-0.214*** (0.81)
Costa Rica	-0.353 (0.70)	-0.288 (0.75)	0.025 (1.03)	-0.377 (0.69)	-0.510*** (0.60)	-0.093 (0.91)
Weibull regression						
Nicaragua (to U.S.)	0.024 (1.02)	0.379 (1.46)	0.454* (1.57)	0.709*** (2.03)	1.096*** (2.99)	0.858*** (2.36)
Log-logistic regression						
Dominican Republic	-1.421***	-1.702***	-2.125***	-0.693	0.159	-0.491
Log-normal regression						
Guatemala	-0.043	-0.189	-0.477	0.532	1.060*	1.037

Source: MMP and LAMP datasets.
Note: *: p<0.05, **: p<0.01, ***: p<0.001

Nicaraguan flows towards Costa Rica. In Peru, there was a greater likelihood of returning the year after elections, but with the macroeconomic controls, the likelihood of returning is now smaller. In the case of the Costa Rican flows, there is no significant effect of the electoral period years on return migration in the original equation, but in the equation that accounts for the political business cycle, the hazards of migrating back are lower during an election year. A similar pattern is observed with the log-normal regression for Guatemala. The coefficients for the electoral period years tend to be significant after controlling for the business political cycle in the Nicaraguan flows towards the U.S., while the opposite happens in the regression for Dominicans.

These results suggest that the political business cycle is confounded with the electoral cycle in the process of return migration. If the state of the economy is accounted for, elections motivate Nicaraguans in the U.S. to return to their home country, but discourage Guatemalans, Costa Ricans, and Peruvians to do so. On the contrary, the state of the economy seems to account for the negative return flows of Mexicans and the positive return flows of Dominicans during the electoral period.

6. CONCLUSIONS

The empirical evidence drawn from the analysis suggests that there is a political cycle in either emigration or return migration flows in 6 Latin American countries. If elections were to generate expectations of a better economic or political situation in the near future, the electoral cycle would have to decrease the likelihood of emigrating and would have to increase the likelihood of return migration. The only flows showing this pattern clearly are the flows from Nicaragua (Table 9). Nicaraguans are significantly less likely to out-migrate during the elections year. They are more likely to migrate back from Costa Rica during the whole three-year electoral period, but back from the U.S only during the year before elections. The hazards are lower in the year after elections. The flows from Peru also show a similar pattern after controlling for macroeconomic indicators. Peruvians are significantly less likely to emigrate and more likely to return during the pre-electoral year. However, they are less likely to migrate back during the year of elections and the year after. In Mexico, the expected direction of the electoral cycle is observed only for return migration in the equations that control for the political business cycle. Mexicans are more likely to out-migrate during the electoral and pre-electoral years, although they are less likely to do so the year after elections. In Guatemala and Costa Rica the effects have the opposite direction to the expected pattern.

Table 9 – *Summary of the effect of the electoral cycle on migration hazards (based on statistically significant coefficients of survival models)*

Flows	First out-migration		First return migration	
	Effect of electoral cycle on migration	Modified by business cycle	Effect of electoral cycle on migration	Modified by business cycle
Nicar. To U.S.	Decreased hazard in electoral and post-electoral years	Significant only for electoral year.	Increased hazard	No change
Nicar. To C.R.	Decreased hazard during all electoral period	Significant only for electoral year.	Increased hazard in electoral and pre-electoral years; decreased hazard in post-electoral year	Coefficient in electoral year no longer significant; other coefficients have the same direction.
Peru	Decreased hazard during pre-electoral year	No change	Increased hazard in post-electoral year; decreased hazard in	Increased hazard in pre-electoral year; decreased in electoral and post-electoral

...Cont'd...

Table 9 – *Cont'd*

Flows	First out-migration		First return migration	
	Effect of electoral cycle on migration	Modified by business cycle	Effect of electoral cycle on migration	Modified by business cycle
			electoral year	years
Mexico	Decreased hazard during pre- and post-electoral years	Increased hazard during pre-electoral and electoral years, decreased hazard during post-electoral year	Decreased hazards in electoral and post-electoral years	Increased hazard in pre-electoral year; decreased in post-electoral year
Domin. Republic	Increased hazard during electoral year.	Decreased hazard during pre-electoral year.	Increased hazard	No significant effects
Costa Rica	Increased hazard during pre-electoral and electoral years	No change	No significant effect	Decreased hazard in electoral year.
Guate-mala	Increased hazard during electoral and post-electoral years	No statistically significant change	No significant effect	Decreased hazard in electoral year

The exceptional case of Costa Rica might be due to its political system. Among the 6 Latin American countries that were studied, Costa Rica has the most stable democratic regime with economic policies that have been very uniform since 1986. Therefore, the expectation of having a drastic change in socio-economic policies after an election might be less likely than in the other countries. These other countries have recently experienced military dictatorships (Nicaragua) or authoritarian democratic governments (Mexico, Peru, Dominican Republic). Given that the analyses performed in this article refer to the periods after authoritarian administrations (except in Peru), citizens' expectations of change after an election are supposed to be great (Fornos *et al*., 2004; Lopez-Pintor, 1996; O'Donnell and Schmitter, 1986). On the contrary, the absence of an authoritarian regime in Costa Rica might explain the absence of an electoral cycle effect. However, this explanation does not apply to Guatemala, whose pattern was similar to Costa Rica. Guatemala experienced the end of a civil war and political unrest during the same time period.

Verification of an electoral cycle in Peru and Nicaragua is somehow

expected given that there are migration processes to neighboring countries: Nicaragua towards Costa Rica and Peru towards Chile and Argentina. The costs and legal barriers of emigrating and returning to their home countries are less stringent than if the U.S. or Europe were the destination. This result conveys that electoral cycles might be more frequent in South-South migration flows. If this is true and the assumption that people in countries that have recent transitions to democracy have greater expectations from elections, then it might be possible to observe electoral cycles from other Latin American countries with large emigration flows towards neighboring countries: Colombia, Bolivia, Ecuador and Paraguay, or the migration processes of Guatemalans going to Belize.

The expected pattern observed in the flows from Mexico and Nicaragua to the U.S. indicates that there can still be an electoral cycle despite the typical costs of Latin American migration processes to the U.S. (distance, border restrictions). This electoral cycle cannot be generalized, since the effect was different among Dominicans, Guatemalans and Costa Ricans. It is difficult to explain what Mexicans (the largest emigrant community in the U.S.) have in common with Nicaraguans and how they differ with the other Latin Americans who are studied in the article. More research is needed to understand whether there are other covariates that explain this similarity, aside from the covariates included in the models: family in the U.S., marital status, children, properties and business at home countries, legal migratory status in the U.S., or wage levels (the latter in the case of the return migration models).

Another goal of this article was to analyze whether the existence of an electoral cycle could be explained by the political business cycle. The only emigration flow that was completely modified by the inclusion of macroeconomic variables in the model was the Mexican flow. This means that Mexicans are less likely to emigrate to the U.S. during the electoral period than during other times. Nevertheless, if the effect of the state of the country's economy is taken into account in the model, Mexicans are more likely to migrate during the election year and the year before. The other flows were not affected by the inclusion of macroeconomic variables in the model. This suggests that the electoral cycle in first out-migration is not explained by higher economic output during the electoral period, which is typical of developing countries (Ames, 1987; Block, 2002; Drazen, 2000; Gonzalez, 2002; Schuknecht, 1996). If the electoral cycle is not explained by the political business cycle, then it is possible that this electoral pattern might be indicating long-term economic expectations (rather than the short-term expectations of the political business cycle) or non-economic expectations, such as political stability (Lam, 2002).

The macroeconomic performance indicators do modify the relationship between the electoral years and return migration in all of the countries, except in Nicaragua. After controlling for these covariates, emigrants are less likely

to return during the electoral period, especially during the years after elections. Only in the Dominican Republic are hazard regression coefficients no longer significant after controlling for the macroeconomic variables. Therefore, it appears that the electoral cycle in return migration does reflect migrants' economic expectations in most of the studied countries.

The article analyzes a little studied topic: the relationship between election years and migration flows in Latin America. The author finds a statistical relationship. However, it is important to acknowledge the limitations of the study. The analyses are performed using the MMP and LAMP datasets and the analyses share the advantages and limitations of these datasets. They comprise some of the richest information that can be found about migration from Latin America. Nevertheless, data refer only to migration processes among household heads hence inference can only be made to migration flows of household heads. Additionally, most information about migration behavior is collected from answers to retrospective questions, rather than from prospective longitudinal data. The towns visited by the MMP/LAMP projects are not a representative sample of the countries' towns. The towns are selected based on previous knowledge about their status as major focal points of out migration; the houses in the sample are selected randomly from all the entire population of houses in the towns. Therefore, inferences can only be made to people living in this major focal points of outmigration and not to everyone living in these countries..

The selection of the window period also might have affected the results. The window period was chosen with the specific aim of reducing the effect of recall bias. However, the 1984-2004 period partially overlaps with the 1980s decade, a period characterized by economic crises in several Latin American countries. The article cannot clearly control for the effect of the economic crises, although the macroeconomic variables used to operationalize the political business cycle are also correlated with the effects of the economic downturns.

A more thorough analysis of the electoral cycle should include political variables such as popular perception about democracy and political parties, voting behavior, or political participation. The MMP/LAMP datasets do not contain this kind of information given that the main goal of the projects is to explore migration patterns rather than political information. It would be interesting to collect such information in future versions of the MMP/LAMP ethnosurveys.

Despite the limitations, the article raises important questions about non-economic motivations for migrating. More research is needed to study the kinds of motivations that might explain the electoral cycle observed in the article's analyses. Understanding the presence of cycles in migration trends might be useful for policy makers in both countries of origin and destination because cycles imply that emigration flows are not necessarily constant over time.

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