

Linking Migration Administrative Migration Records And The Electoral List For Estimating The Number Of Costa Rican Emigrants.

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Abstract

As part of the demographic evaluation of the 2011 Population Census of Costa Rica, we found that emigration from Costa Rica was increasing, but there was no trustworthy figure of the number of emigrants. Based on the Costa Rican national identification number, we linked four datasets: the Births Master Dataset, the Electoral List (“padrón”)—which is the basis for the census evaluation—the Deaths Registry or Death Index, and the Migration dataset, that contains all the entries and exits through “ports of entry”. Based on the linked datasets, we estimated that between January 2000 and May 2011, 124,539 Costa Ricans left the country and did not return. Among them, 117,478 were still recorded in the Electoral List: 60,786 men and 56,692 women. By characterizing the emigrant population by sex, age, and last county of residence, we described the main patterns of the Costa Rican emigration process of the last decade.

Introduction

For the last 61 years, the Costa Rican National Institute of Statistics and Censuses (INEC) has chosen to evaluate censuses using demographic techniques because Costa Rica has vital statistics of relatively good quality and it also has an electoral list or Electoral Registry (“padron electoral”) that serves as a population registry of Costa Rican-born people. In Costa Rica, the census has traditionally been a “de jure” census: People are enumerated according to their usual place of residence, instead of the place where they are at the exact moment of the census interview. A data cleaning and linkage process was performed in order to estimate the number of Costa Rican emigrants during the inter-census period (2000-2011), as part of the evaluation of the completeness of the 2011 Population Census, which was conducted between May 28th and June 1st, 2011. The evaluation was developed by researchers at the Central American Center for Population (CCP) of the University of Costa Rica, in collaboration with INEC, whose officials supervise the procedure.

The importance of the administrative records of entries and exits through official Migration control posts.

The main claim for performing a demographic evaluation is that the coverage of Vital Statistics is good and – on average– better than the census coverage. Within the Latin American context, Costa Rica has good-quality vital statistics. Through the comparison of several administrative registries, CCP researchers have concluded that the under-registration rate is almost non-existent for the Births registry, and is around 0.7% for the Death Registry. Our evaluation shows that the main problem of the Costa Rican vital statistics is late registry: 0.7% of births and around 3.5% of deaths are not in the same year that they happened.

The administrative registry of international migration entries and exits, however, does not have such good quality because the system of recording is not as well established as the one for births and deaths. International migration has always been an important variable in Costa Rica’s population estimates and projections because this country has traditionally been an attractive pole for Central and South American migrants (especially, Nicaraguans, Panamanians, and Colombians). Additionally, during the process of evaluating the 2011 census, there was evidence that emigration of Costa Ricans has been growing during the 21st century. According to the United States of America (U.S.) 2010 Population Census, the Hispanic population with a Costa Rican origin increased from 68,588 persons in 2000 to 126,418 persons (Ennis, Ríos-Vargas, and Albert NG, 2011). Although the Hispanic population in U.S. censuses may include people born in the U.S., previous censuses have shown that most of the population with a Costa Rican origin was born in Costa Rica (around 90%).

Given that emigration could affect our evaluation, the CCP requested the dataset of international entries and exits from 2000 to 2011 to the Government institution that supervises the process: the General Direction of Migration and Foreign Status (Dirección General de Migración y Extranjería, from now on DGMyE). Through a process of linkages we evaluated the quality of the information in the dataset and computed an estimate of the Costa Rican emigrants during this period. We describe the process in the following paragraphs; however, before describing it, we summarize the general strategy of the census evaluation and, thus, explain why the data linkage is important in this process

The basis of the census evaluation

Our demographic approach for census evaluation is to build a new baseline “corrected” population that we compare to the enumerated population in the census. Most of the construction of the native population is based on the people registered in the Electoral Registry. As mentioned before, in Costa Rica, the Electoral Registry is basically a population registry of Costa Rican citizens (including the foreign born who were granted citizenship). The registry is built and updated using the applications and renewals of the Costa Rican identification card, called “cédula” (See Annex). People gain citizenship at age 18, although there is an important number of people aged 18 and 19 years old that do not apply for the identification card immediately after becoming 18. Several analyses that we have performed with the Electoral Registry show that it is highly complete –because Costa Ricans need the identification card for several daily purposes

besides voting—, except at very old ages. On the contrary, the main argument in this monograph is that there is over-registration in the Electoral List.

Data linkage

The direct product of the data linkage is to estimate the number of Costa Rican emigrants between 2000 and 2011. However, the main goal of the linkage is to measure how many persons in the Electoral List “should not be there” because they were outside the country during the census date.

Therefore, we needed to link four large datasets:

- a) the Births Master Dataset: This dataset gathers all the people born in Costa Rica or all the people that became citizens, and were then officially registered.
- b) the Electoral List (“padrón”): It contains the names of all the Costa Rican citizens who have a valid identification card.
- c) the Deaths Registry: This dataset records all the deaths occurred in Costa Rica and were officially registered.
- d) the Migration dataset: It contains all the entries and exits through “ports of entry”.

Each dataset provides an important piece of information. The Master Data has the date of birth —so the age at the census date can be computed— and it is the most complete dataset because all past and present citizens must be recorded there; the electoral list is the basis of the census evaluation, and it also contains the electoral district where the citizen has been living when the “cédula” was renewed; the Deaths Registry or Death Index is important in order to check whether the Electoral List includes people who were dead at the census date, but was not excluded from the “padrón” because of late registration. Finally, the Migration dataset is the one that allow us to estimate the number of emigrants.

The linkage is completely based on the identification card number or “cédula”. Each id number is composed of 9 digits: the first digit refers to the province of birth —in Costa Rica, there are 7 provinces, the 8 code refers to naturalizations, or foreign-born people who applied for the Costa Rican citizenship, and the 9 code is for late registration, that is when a person was registered in the Civil Registry 10 years after he was born) —, the following four numbers are called “tomos” (the number of the physical book where the birth was recorded) and the last four numbers are called “asiento” (the page number in the “tomo”).

It is worth noticing that the identification card must be renewed in person at one of the Civil Registry offices. If a person does not renew the “cédula”, she is excluded from the electoral list. Unlike the U.S. electoral system, the Costa Rican electoral list is updated automatically and it is relatively difficult for a person to lose

the right to vote because very few crimes prevent citizens from this right.

Quality of Migration (DGMvE) records

Before estimating the number of emigrants, it was important to evaluate the quality of the migration data. Using official figures published by the DGMvE, we estimated that the net migration of Costa Ricans during the 2000-2010 period amounted to -876 thousand persons. This would imply that more than one fifth of the Costa Rican-born population emigrated during the last 11 years (the census enumerated 4,301,712 in 2011; 3,915,813 were born in Costa Rica). In order to estimate whether these figures were inflated, based on the linked data, we computed how many persons had two subsequent entries without an exit, and how many persons had two subsequent exits without an entry. Based on our analyses, there were 635.177 exits without an intermediate entry, and 1.157.048 entries without an exit. These figures represent 18% of the total migration movements of the period; therefore, we conclude that 18% of the records are inconsistent.

Definition of emigrant

Given these inconsistencies, we decided to establish a conservative definition of emigrant. This definition was aimed to take into account migratory movements in which the error could be minimized. Based on conversations with Migration authorities, we concluded that the worse-quality records referred to entries and exits happened through land or sea ports of entry. The error should be lower when the travel is done by air because the controls at airports are tighter. Besides, all airports have a digital reader that automatically records the identification card from the passport (in Costa Rica, the passport number is the same as the identification number).

We decided to use the following definition of emigrant. A Costa Rican emigrant is the person:

- a) With a valid Costa Rican identification card, according to Master Data.
- b) who exited the country before May 30th 2011
- c) through an international airport, and
- d) who did not enter the country again since the last exit

Number of emigrants

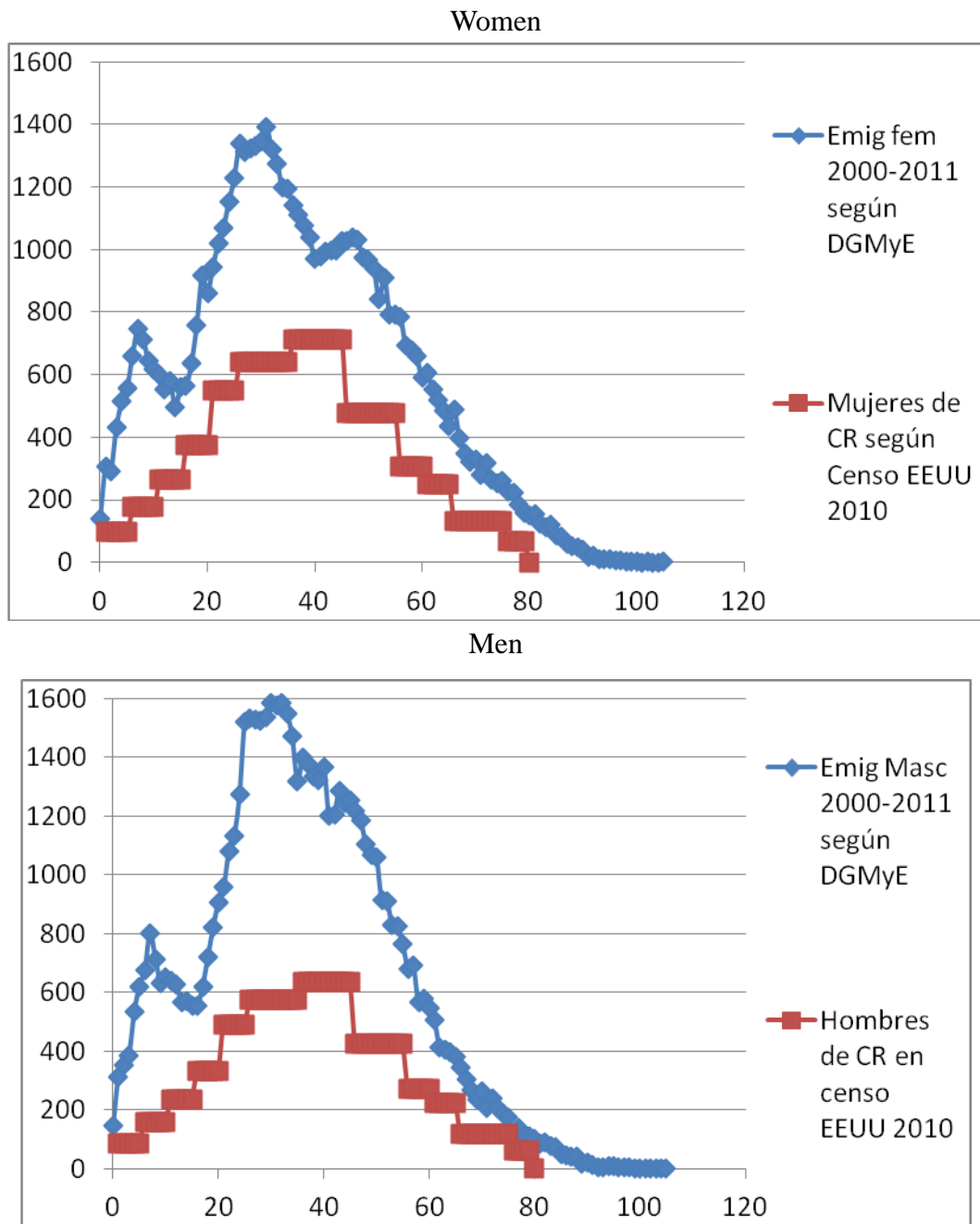
Based on the data linkage and the definition of “Costa Rican emigrant”, we estimated that between January 2000 and May 2011, 124,539 Costa Ricans left the country and did not return before the 2011 census date. If true, this figure implies that around half of these people were enumerated in the 2010 U.S. Census. Among them, 117,478 were still recorded in the Electoral List: 60,786 men and 56,692 women.

Emigrants’ characteristics:

The linkage to the Births Master dataset allows us to estimate the distribution of the emigrants by sex and age. Of the 124 thousand emigrants, 64,647 are men and 59,892 are women. If we notice that the 2010 U.S. Census enumerated more women than men, our figures corroborate the notion that migrant men are more difficult to enumerate in census and surveys than women.

The following figures show the distribution by sex, age, and last county of residence for the emigrants.

Figure 1. Costa Ricans that emigrate between 2000 and 2011 and have not returned (blue line), and difference of Costa Ricans enumerated in the 2000 and 2010 U.S. Census (red line), by sex and age in 2011.

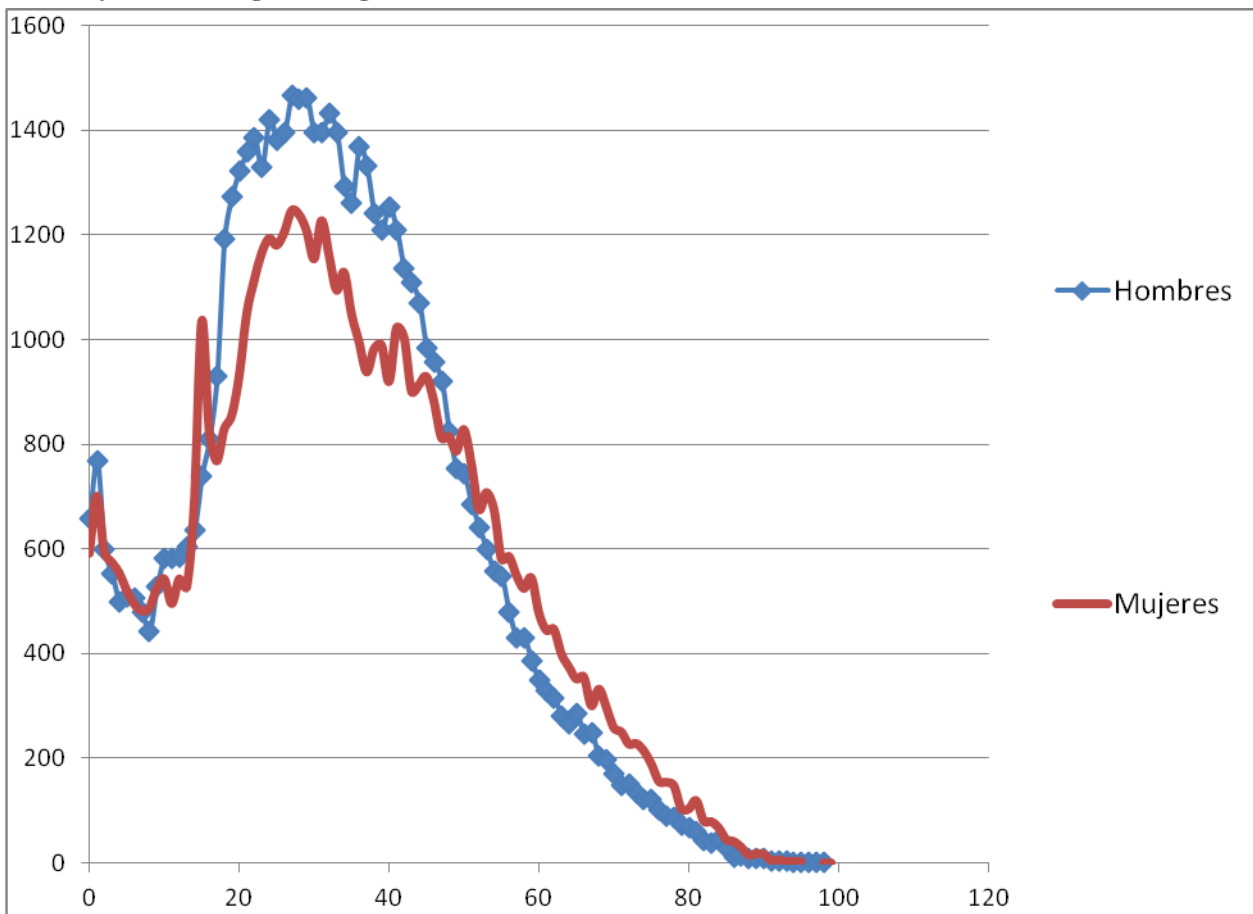


Notes: 1. Costa Ricans that report exits through international airports between 2000 and May 2011, and have not returned before May 2011.

2. El total fue distribuido por edades, según la distribución por edad de costarricenses según el censo 2000.

Fuente Source: Data from the General Direction of Migration and Foreign Born, Republic of Costa Rica, U.S. Census Bureau, Census 2000 Special Tabulations (STP-159), and Ennis SR, Ríos-Vargas M, Albert NG (2011).

Figure 2. Costa Ricans that emigrate between 2000 and 2011 and have not returned (blue line), by sex and age of migration.



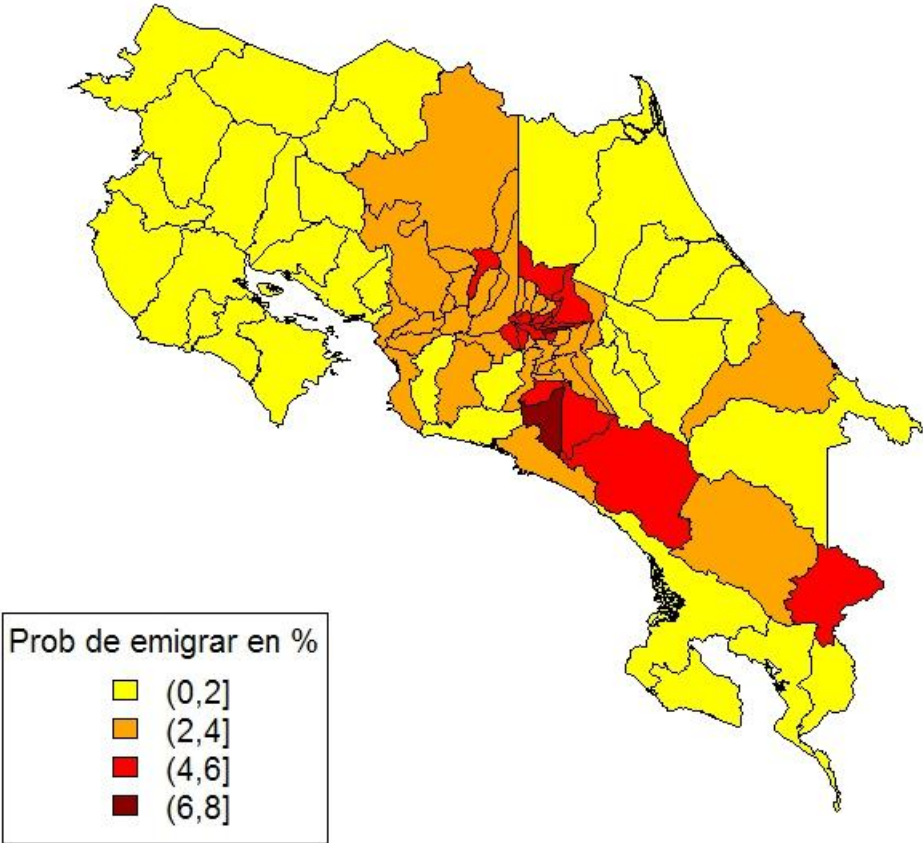
Notes: 1. Costa Ricans that report exits through international airports between 2000 and May 2011, and have not returned before May 2011.

2. El total fue distribuido por edades, según la distribución por edad de costarricenses según el censo 2000.

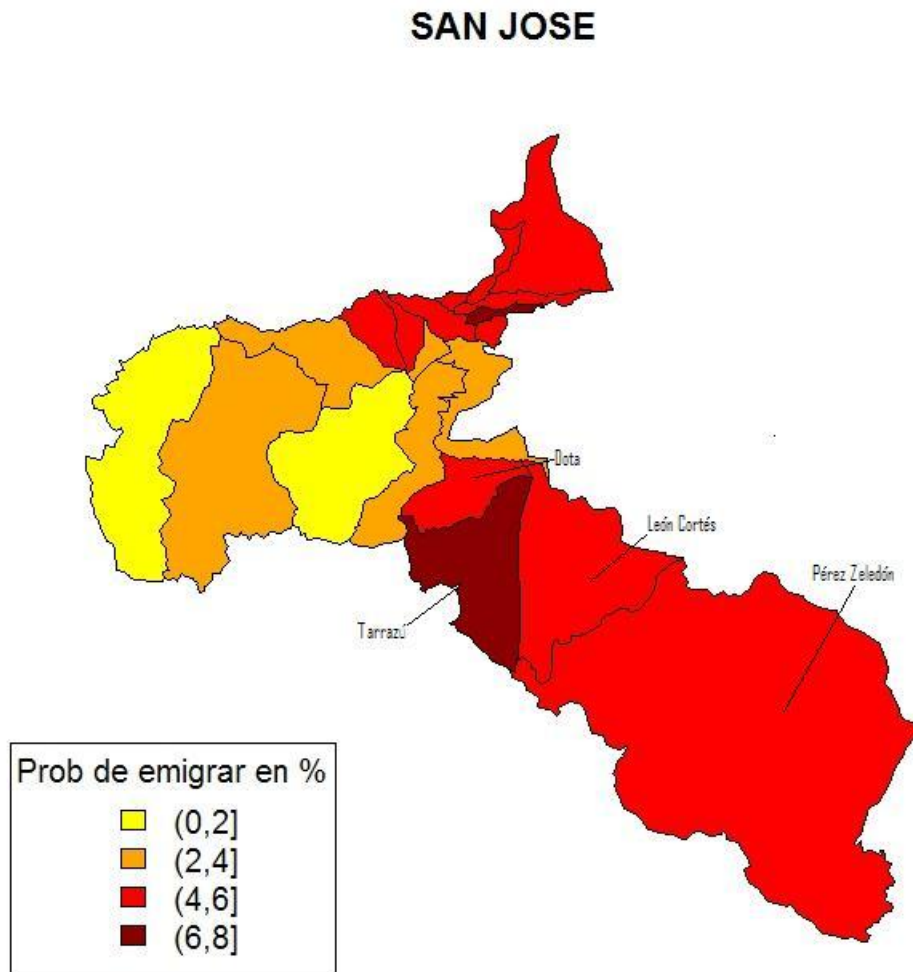
Fuente Source: Data from the General Direction of Migration and Foreign Born, Republic of Costa Rica, U.S. Census Bureau, Census 2000 Special Tabulations (STP-159), and Ennis SR, Ríos-Vargas M, Albert NG (2011).

Map 1. Costa Ricans that emigrated between 2000 and 2011¹, by last county of residence.

COSTA RICA



**Map 1. Costa Ricans that emigrated between 2000 and 2011¹ , by last county of residence.
(Continue)**

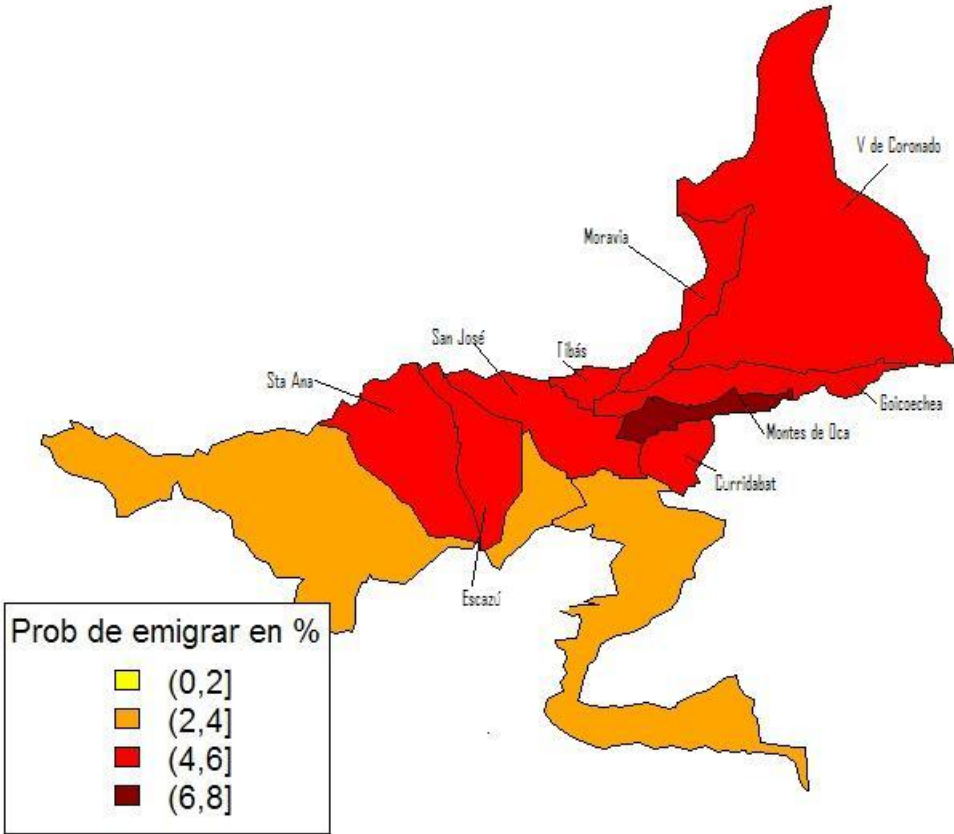


Notas: 1. Costarricenses que reportan egresos por aeropuertos internacionales entre 2000 y 2011, y que no reportan ingresos durante el período.

Fuente Bases de datos de la Dirección General de Migración y Extranjería de la República de Costa Rica, pareada con Padrones Electorales.

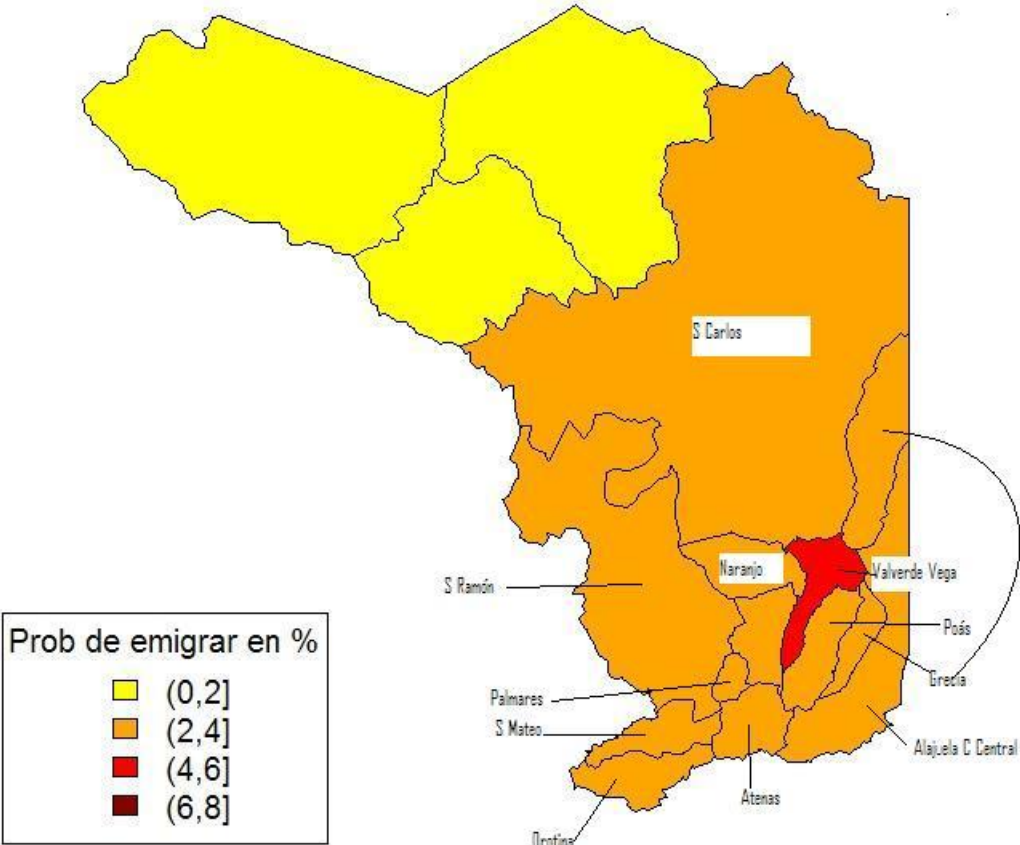
**Map 1. Costa Ricans that emigrated between 2000 and 2011¹ , by last county of residence.
(Continue)**

SAN JOSE METROPOLITANO

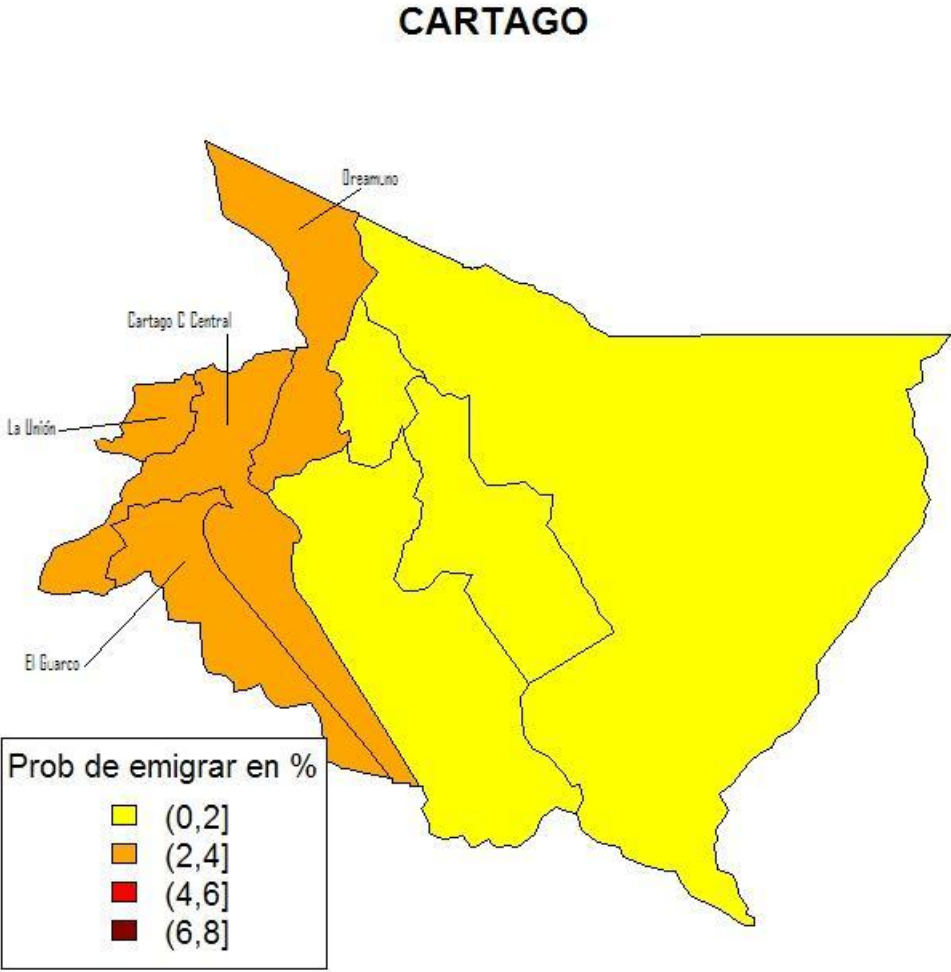


**Map 1. Costa Ricans that emigrated between 2000 and 2011¹ , by last county of residence.
(Continue)**

ALAJUELA

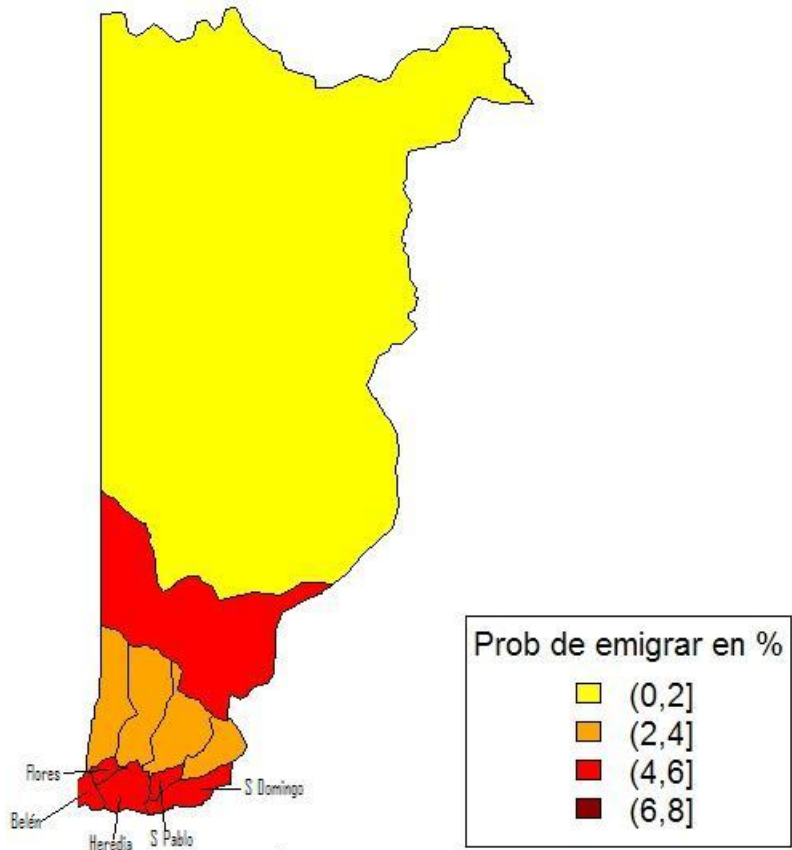


**Map 1. Costa Ricans that emigrated between 2000 and 2011¹ , by last county of residence.
(Continue)**



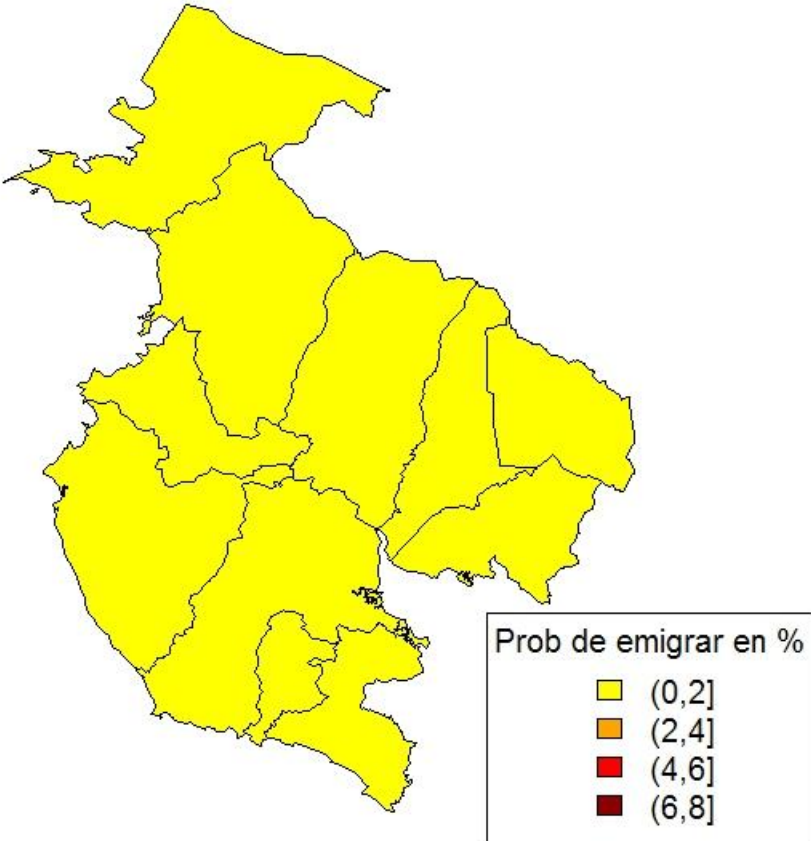
**Map 1. Costa Ricans that emigrated between 2000 and 2011¹ , by last county of residence.
(Continue)**

HEREDIA



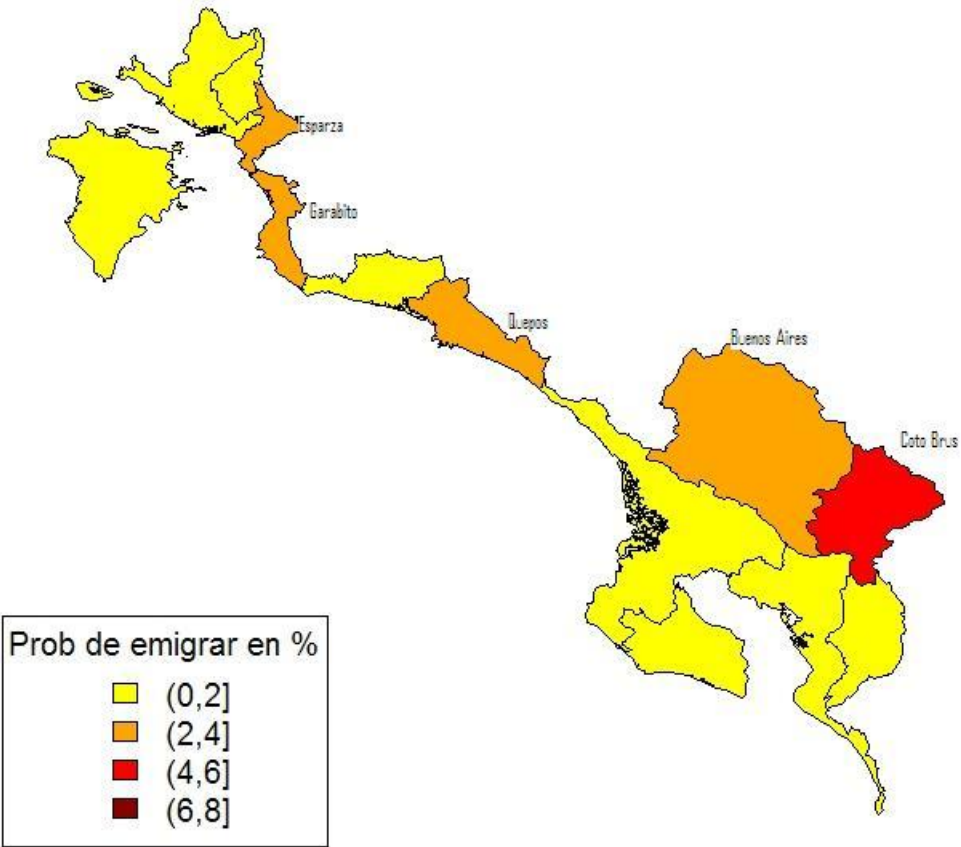
**Map 1. Costa Ricans that emigrated between 2000 and 2011¹ , by last county of residence.
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GUANACASTE



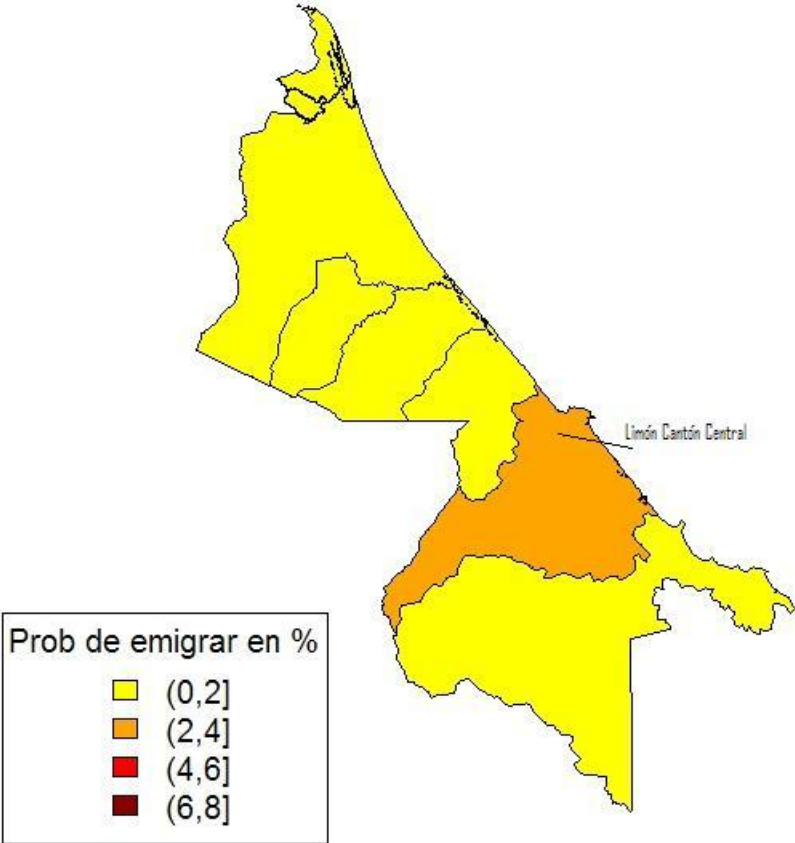
**Map 1. Costa Ricans that emigrated between 2000 and 2011¹ , by last county of residence.
(Continue)**

PUNTARENAS



**Map 1. Costa Ricans that emigrated between 2000 and 2011¹ , by last county of residence.
(Continue)**

LIMON



Annex. Costa Rica's national id

