How many immigrants live in Spain? An alternative estimation to the population register based on births and fertility rates.
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Short abstract

Estimates of immigrants are often subject to controversy and increasing scrutiny. We propose an indirect method to validate existing estimates of immigrants' stock from Spanish municipal population registers (*padrón*). These registers might be over-counting immigrants who double register in different municipalities or fail to deregister when leaving the country. The proposed method uses two pieces of information: births to immigrants and their fertility rates. Data on births by parent's nationality come from the Spanish national birth registry; fertility rates are estimated with data from the National Immigrant Survey (2007). Our estimates resulted in lower numbers of immigrants than the 2005 *padrón*. However, the difference for females was small and within sampling errors for relevant groups. The difference for males is larger and significant, but uncertainties regarding male fertility cast doubts about it. If significant over-count of immigrants in the *padrón* exists, this concentrates in certain groups of males only.

Introduction

Spain, a country of emigration for centuries, has become a country of immigration in the last two decades (Arango, 2000). According to census and population register data, Spain hosted 350,000 foreigners in 1991, 1.5 million in 2001 and 5.6 million in January 2009; that is, the relative weight of foreigners in the total population increased from 0.9% in 1991 to 12% in 2009. In recent years, Spain has turned out to be the main receiving country of immigration flows in Europe (EUROSTAT, 2007). The demographic effects of these trends are evident in the increasing contribution of immigration to population growth. Since 2000, net migration has accounted for approximately 90% of Spain's population growth. And natural increase is also considerably influenced by immigrants' birth rates. In 2008, 20.7% of all live births were to foreign mothers –and 23.9% to either a foreign mother or a foreign father.

The aim of this paper is to provide independent estimates of the current stock of immigrants in Spain by following the footprints they leave behind. Our estimate combines information on the number of births (the footprints) by parents' nationality in the birth registry with information about fertility of immigrants from the 2007 National

Immigrant Survey (*Encuesta Nacional de Inmigrantes-ENI*)[1]. Our estimates then enable us to validate the count of immigrants in the Spanish municipal population register or "*padrón*".

The municipal register is an administrative register in which all municipality inhabitants are recorded. These lists are generated and controlled by the respective town councils. Since 1996, a new continuous and computerized management system for municipal registers was established, based on the coordination of all of them by the National Statistical Institute (INE), which carries out the appropriate checks to correct errors and duplicates. These registers constitute a more reliable source of information on the immigrant population than alternative sources such as the Ministry of Interior Foreign Yearbook, which only covers immigrants with legal residence permits. Many foreigners do not hold the proper documentation required for residing and working in Spain. For instance, in early 2009, the number of foreigners with a valid residence permit was approximately 4.5 million, 1.1 million below the number of foreigners enumerated by the population register.[2] In the last regularization campaign carried out in mid-2005, 560,000 undocumented immigrants were granted a residence permit conditional on a labor contract, but there has not been any extraordinary regularization program since then.[3]

The coverage of municipal population registers is assumed to be high, since registration provides automatic access to education and health services –regardless of citizenship or legal status– and is a prerequisite to obtain a legal residence permit, for those lacking it upon arrival. However, it is probably not flawless. Prior research suggests that certain groups –particularly those engaged in temporal agricultural work– are undercounted, and that there is a time-lag between arrival and registration (Devolder, Domingo and García, 2003). Under-registration is also probable among children, diminishing at ages in which school admission requires certificate from the municipal population. Most studies, however, warn against the tendency of the population register to overestimate the number of current immigrants in the country. This may happen because of double-registration is difficult to detect among foreign residents without a unique identity document, and because immigrants do not usually deregister when they return to their country of origin or move on to another country in the EU.[4]

Assessing the validity of immigrant population data from the *padrón* is a crucial prerequisite to use it in the formulation of sound immigration policies and to use it as the source of population data to have denominators about immigrants' activities.

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[1] Since our aim is to validate the population registry with independent estimates, we cannot just use the expansion factors in the ENI to have the numbers of immigrants since those factors were originally established to reproduce the counts of the registry.

[2] Only one-third of this difference can be attributed to the presence of EU citizens, who are not required to apply for a residence permit.

[3] Extraordinary regularization programs have taken place in 1986, 1991, 1996, 2000, 2001 and 2005. These programs granted temporary residency permits and allowed a significant proportion of immigrants in the informal economy to incorporate into the formal labour market.

[4] Following the legal modifications introduced in 2003, as from December 2005 foreigners from outside the EU are required to renew their inscription in the population register every two years, or else be automatically removed from the register. This measure has probably reduced the likelihood of over-registration in the population register since 2006 by correcting for the outflow of foreigners,

Although there is a rich tradition in demography of developing indirect measurement techniques, these developments have been restricted mostly to the study of mortality and fertility. The classic *United Nations Manual X on Indirect Techniques for Demographic Estimations* (United Nations, 1983), for example, completely ignores migration. Although an IUSSP working group examined and developed indirect methods for the study of international migration, its work focused only on out-migration flows (Zaba, 1985). Bean et al. (1983) estimates of the number of illegal migrants in the USA using information on sex ratios is an isolated example of the use of indirect techniques in the study of immigration. This paper builds on an earlier work estimating the number of Nicaraguans in Costa Rica using data on births and fertility (Rosero-Bixby et al., 2002).

Data and methods

The number of births from foreign parents is the starting point of the proposed method to estimate the stock of migrants. The data on births by parents' origin are readily available in Spain in the web pages of the National Institute of Statistics (*Instituto Nacional de Estadística – INE*) since 1996[5]. Coverage of birth statistics is virtually complete in Spain (reference) and there are no reasons to believe that birth registry of immigrants is different. However, a limitation of the available data on births is that parents' origin is only classified by country of citizenship until 2007. The classification with the unequivocal criteria of country of nativity started to be available only in 2007.

An estimate of immigrants' fertility rates is then necessary to move backwards from the aforementioned births to the population that originated them. We estimated the fertility rates of immigrants with data from the *National Immigrant Survey (Encuesta Nacional de Inmigrantes-ENI)*, conducted by the INE in 2007. We used the micro database of the survey provided by INE and the Stata-10 software to analyze it (Statacorp 2007). Although its large sample size (15,519 immigrants of all ages) allows reliable analyses for the whole aggregate of immigrants and for some large subgroups by origin, sampling errors in fertility rates introduce limitations to the level of disaggregation we can go as well as some degree of uncertainty in our estimates.

We estimated single-age fertility patterns for females and males with ENI information on migrants' country of nativity and using local regression smoothing techniques[6] to identify single-age patterns that reduce the "noise" from sampling errors and identify the "signal" in the ENI data on fertility.

With the series of age-specific fertility rates, the identity to estimate, for each sex, the number of immigrants in reproductive ages (*NR*) from country/region *i* is as follows:

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[5] Vital registration statistics classified mothers by country of citizenship and not country of birth until 2007; hence, before that date they do not allow us to identify immigrants who have acquired Spanish citizenship by naturalization or *jus sanguis* criteria. Although a large proportion of immigrant women, particularly those from Latin America or those married to Spaniards, qualify for expedited citizenship status (after two years of residence the former and one year the later instead of the ten year standard requirement), the statistics on naturalization reveal lower levels of naturalization than in other European countries with longer immigration tradition. The total number of naturalizations between 2001 and 2007 (280,422) are well below the potentially eligible population.

[6] We used the Stata software (StataCorp 2007) and its "lowess" command to smooth out the age patterns

$$NR^i = \sum_a \frac{B^i_a}{f^i_a}$$

Where:

- B is the number of births from mothers/fathers, origin i, and age a (source: birth registration data from the INE); and
- f is the age specific fertility rate of immigrants by nativity i, and at age a (estimate from the ENI survey by sex).

To take into account the heterogeneity of the immigrant population, the estimation procedure is conducted separately for nationalities with relevant presence in Spain (Morocco, Ecuador, Romania…), and several residual groups (e.g. rest of Latin America, rest of Africa and so on). We first defined 11 groups of immigrants by origin as shown in table 1 with a restriction of having a sample size in the ENI of at least about 200 observations in each group. Then, regression models showed no significant differences in fertility levels and patterns among some of these groups, allowing us to regroup the countries of origin in just seven: (1) Ecuador, (2) Other Latin America, (3) Morocco, (4) Other Africa, (5) Western Europe, (6) Romania, and (7) Eastern Europe (including Asia in it) .

We estimated fertility rates for the period 2004-2006, i. e. the three previous years to the ENI interview. To do this we built a complete birth history for each respondent older than 14 years in the ENI with information for the following three groups of children in the survey:

1. Children living in the household, from the ENI rosters of household members, which includes child's information on age, birth year, and country of birth.
2. Children alive who do not live with the respondent, from the ENI roster for these children, which provides information on their age and country of birth.
3. Deceased children (4% of children ever born). The ENI inquired about the number of children deceased but not about their date of birth. We randomly imputed these birth dates with a random number generator and using information about the age of the respondent and a simple age fertility pattern.[7] For example, for a 20-year old respondent, the birth date of a death child must be in the 2002-2006 period and for a 60 year old female respondent, the birth year of a death child is most likely to be in the period 1967–1981 when she was in the peak reproductive ages (it cannot be before 1962 or after 1991, i.e. outside the reproductive ages). Of the 1,088 dead children, 33 resulted imputed as born in the period of interest (2004-2006), 29 of them after migration to Spain.

Only children born in Spain are included in the fertility computation, as well as only the time spent in Spain is considered for the rate's denominator. For example, an immigrant with exactly 30 years in the interview, who arrived to Spain 18 months ago, will have 0,5 year of exposure in the age 28, a full year of exposure in the age 29, and zero exposure in all other ages.

We obtained point and interval estimates of the fertility rates from the ENI and thus point and interval estimates of the stock of migrants as well. The 95% confidence

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[7] The pattern assumes that fertility is null before age 15 and at ages 45 and over, and that fertility at the age brackets 15-18 and 33-44 tends to be half that in ages 19-32 years.

intervals were determined using the relative sampling errors[8] for the general fertility rate of each sex and group of immigrant's nativity.

Results

Immigrants' fertility

Figure 1 shows a preliminary estimate of the total fertility rate for each sex computed with the observed age-specific (single year) fertility rates from the ENI. Only Moroccans (males and females) and female migrants from other African countries – mostly Sub-Saharan Africa– show above-replacement fertility levels. Female's fertility in other groups range from 1.3 births in Eastern Europeans to 2.0 births in Western-Europeans immigrants who keep their citizenship. These fertility levels are somewhat higher than those for Spanish women (1.26 births in the same period), but typically lower than fertility levels in their origin countries.

Fertility of immigrant males is lower than that of females, except among some Latin Americans. The gender gap in fertility is substantial among Moroccans, other Africans, and Asians. These three groups also have the higher sex imbalance in the stock of migrants (according to the 2005 *padrón,* the corresponding sex ratios in reproductive ages are 2.50, 3.26 and 1.82, whereas in all other groups the sex ratios are lower than 1.25). It seems that scarcity of women of the same origin results in exceptionally low fertility of immigrant men. The same, however, is not true for female fertility: scarcity of men of the same origin (such as among Colombians and other Latin Americans, who have sex ratios of 0.73 and 0.63 respectively) does not result in lower than expected fertility of females. Although it is possible that the lower fertility of males comes from under-reporting of children in the survey, the aforementioned inverse association with the sex ratios among adults suggests that these fertility sex gaps are plausible and not just a product of bad data.

A third important element contained in Figure 1 is the comparison of the TFRs in each immigrant group depending on whether the groups were defined on basis of citizenship or nativity. In most cases, the TFR is the same with the two definitions. The exceptions are West Europeans, and females from Sub Sahara Africa, who have significantly higher fertility by citizenship than by nativity.

To have larger sample sizes and to avoid ambiguities about nationalities (among individuals with several nationalities) and about the exact date of acquisition of a nationality, we used the criterion of country of birth (nativity) to define the groups of immigrants and to analyze their fertility patterns. However, in those groups with higher fertility with the citizenship criteria we introduced a final correction in the estimates that takes into account the higher fertility that some groups have when defined by the citizenship criterion.

Using multiple regression models we tested whether both the level and the age-pattern of fertility differed significantly between immigrant groups. We found that differences among Latin Americans were not statistically significant, except for Ecuadorians (who

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[8] Sampling errors were estimated with the command "strate" in the Stata software

have higher and earlier fertility). We also found that fertility among Asian immigrants[9] was not significantly different from the group of Eastern Europeans. We consequently merged all Latin Americans, except Ecuadorians, in a unique group as well as Eastern Europeans with Asians in a group we call "Euro-Asians" which actually is 80% Eastern European.

Figure 2 shows the age-specific fertility patterns derived from the ENI survey for the seven groups of immigrants (defined by nativity) we identified as having differential fertility (the figures are in Annex 1). For comparison purposes, the figure also includes the curves of Spanish natives in 2005. As mentioned before, fertility curves for immigrant groups were smoothed out using local regression procedures. Table 2 summarizes the level of each fertility curve with the TFR and the age-pattern with the mean fertility age (MFA).

Among females, we identify four distinct age patterns:
1. Spaniards (the reference group)
2. Western Europeans with a pattern similar to Spaniards after age 30 and slightly higher fertility before this age.
3. African immigrants (including Moroccans) with substantially higher and earlier fertility.
4. Other nationalities (Latin America and Eastern Europe) with higher fertility than Spaniards at young ages and lower rates after about age 30.

For males, there are five fertility patterns:
1. Spaniards and Western Europeans immigrants
2. Moroccans with higher fertility rates than Spaniards at all ages, especially after 35 years of age.
3. Other Africans, with lower fertility than Spaniards until about age 35 and higher fertility after this age.
4. Ecuadorians, and to some extent Romanians and Euro-Asians, with substantially higher early fertility and lower late fertility than Spaniards.
5. Other Latin Americans with somehow high rates at old ages (after 40) and intermediate rates (between Spain and Ecuador) at young ages.

In general terms, female immigrants have moderately higher (TFR of 1.75 births) and substantially earlier (MFA 28.8 years) fertility than Spanish women (1.26 births and 32.3 years). Immigrant males also have higher fertility than natives (1.45 vs. 1.19), although the difference is smaller than for females. The fertility age-pattern, as measured by the mean age, of male immigrants (33.6 years) differs little from Spaniards (34.0 years), with the important exception of men from Ecuador who have their children at substantially younger ages.

The estimated number of immigrants

The numbers of births born to immigrant mothers or fathers from the Spanish vital registration system ("*Movimiento Natural de la Población*—MNP" in INE's statistics)

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[9] Because of the small simple size of Asians (about 100 women and 200 men), the ENI has very limited statistical power to identify significant fertility differences for this group, which must be merged to other groups. We found that Eastern Europeans were the closest group to merge.

by age and nationality (Annex 2) in conjunction with our smoothed, age-specific fertility rates (Annex 1) result in the estimated numbers of immigrants in reproductive ages as shown in Table 3. Both births and fertility rates correspond to the period 2004-2006 and thus the estimate of immigrants is for mid-2005. Since the *padrón* counts people by January 1 of each year, the comparable figure is the average of the 2005 and 2006 *padrón*.

The *padrón* accounts for 11% more immigrant women and 17% more immigrant men than our estimate. Recalling that our estimate contains a sampling error in its fertility component, it is important to go beyond just point estimates and to look at confidence intervals (Figure 3). The interval for the ratios *padrón*/estimate for all immigrants is significantly higher than one. The discrepancy between these two sources of data is thus not due to sampling error.

However, when one looks at specific groups of female immigrants, only West Europeans (1.82 ratio) and Other Latin Americans (1.31 ratio) show a significantly higher count in the *padrón* (Figure 3). In the other five groups of immigrant women there is no significant discrepancy between the *padrón* and this paper estimate (the ratio does not differ significantly from one). For immigrant males, the excess count in the *padrón* is more general, since it also shows up in a significant way for Moroccans and Romanians.

Discussion

This paper has presented a simple, indirect method to estimate the number of immigrants in reproductive ages from information on births classified by parents' origin and on fertility rates of immigrants. The method, which had been used successfully before to estimate the number of Nicaraguans in Costa Rica (Rosero Bixby et al. 2002) was applied to Spain data and the resulting estimates suggest that the municipal register of immigrants, the *padrón*, slightly over-counts their number, especially among men.

The potential over-count of women shows up only for Latin American and Western European immigrants, which are the only groups with large figures of individuals who have adopted the Spanish nationality and thus may keep double nationality. If these immigrants declared their original nationality in the birth certificate of their children, our estimate will tend to be higher than the count of citizens in the *padrón*. In the other groups of female immigrants there are no significant differences between our estimates and the count in the *padrón*, which lead us to the conclusion that for female immigrants, our estimate validates the count in the *padrón*.

For male immigrants, the count in the *padrón* is also significantly higher for Moroccans and Romanians, which suggest that the discrepancy is not only about the ambiguity of double nationality. An alternative explanation is that our estimate could be under-counting male immigrants if our fertility estimate is too high (however, there are no reasons to believe this possibility, on the contrary, male fertility rates looked very low compared to women's rates) or if the birth registry under counted births from foreign fathers. A more plausible explanation is that mobility of Moroccan and Romanian males is higher than in other groups and thus this higher mobility sometimes results in registration in several municipal *padrones* or in individuals who returned to their country and were not de-registered.

A limitation in the use of this method with Spanish data was that we have available a classification of births by parents' *citizenship* (contrary to *nativity*), which is an ambiguous criteria to define immigrants, especially in situations of double nationality. To avoid such ambiguity, the method requires using as far as possible the criteria of nativity (country of birth) to define immigrants. This is possible with the INE data on births only starting in 2007 statistics.

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Table 1. ENI sample size to estimate fertility by origin of immigrants

Country of origin	15-44 aged females		20-49 aged males	
	Citizenship	Birth	Citizenship	Birth
Ecuador	557	620	469	519
Colombia	426	522	238	278
Peru & Bolivia	366	422	235	285
South cone	289	413	265	403
Rest of Latin America	517	793	255	472
Morocco	517	574	665	760
Rest of Africa	158	184	388	415
Western Europe*	526	1,180	556	1,157
Romania	621	632	553	557
Rest of Europe	498	515	334	342
Asia	97	115	174	204
Spain, naturalization	883		720	
Spain, *jus sanguis*	515		540	
Total	5,970	5,970	5,392	5,392

*Includes also Canada, the USA, Australia and New Zeeland

Table 2. Total fertility rate (TFR) and mean fertility age (MFA) in 2004-6. Spaniards and immigrants by nativity

Country of nativity	TFR (births)		MFA (years)	
	Females	Males	Females	Males
Spain	1.26	1.19	32.3	34.0
Immigrants				
All	*1.75*	*1.45*	*28.8*	*33.6*
Ecuador	1.54	1.53	26.6	30.0
Other Latin Am.	1.63	1.41	28.8	32.6
Morocco	3.23	2.15	30.0	37.1
Africa	2.93	1.20	29.5	37.5
Western Europe	1.50	1.33	30.5	33.6
Romania	1.29	1.26	26.6	31.0
Euro-Asia	1.37	1.04	28.6	33.5

Source: For immigrants: ENI; for Spaniards: INE, MNP available at:
http://www.ine.es/prodyser/micro_mnp_nacim.htm

Table 3. Immigrants to Spain by mid 2005 in the *padrón* and our estimate from births and fertility

Country of citizenship	Number of immigrants (in 1,000s)				Ratio padrón / estimate	
	Females 15-44		Males 20-49			
	Padrón	Estimate	Padrón	Estimate	Females	Males
All	*1,163.6*	*1,049.8*	*1,433.6*	*1,229.8*	*1.11*	*1.17*
Ecuador	173.2	185.9	162.1	153.4	0.93	1.06
Other Latin America	386.4	295.7	309.6	246.3	1.31	1.26
Morocco	113.5	130.4	264.8	216.9	0.87	1.22
Africa	40.1	33.6	128.9	146.8	1.19	0.88
Western Europe	165.4	90.9	203.2	177.7	1.82	1.14
Romania	127.6	129.7	152.3	104.9	0.98	1.45
Euro-Asia	157.4	183.6	212.6	183.8	0.86	1.16

Table 3. Sex ratio of immigrants in the *padrón* the ENI and the EPA

Data source	Sex ratio
2005-6 padrón, ages 20-49	1.22
2007-8 padrón, ages 20-49	1.19
2006-7 ENI, ages 20-49 un-weighted	0.90
2006-7 ENI, ages 20-49 weighted	1.20
2005-6 EPA, ages16-44	1.02

Figure 1. Preliminary TFR estimates for 11 groups of immigrants. 2004-06
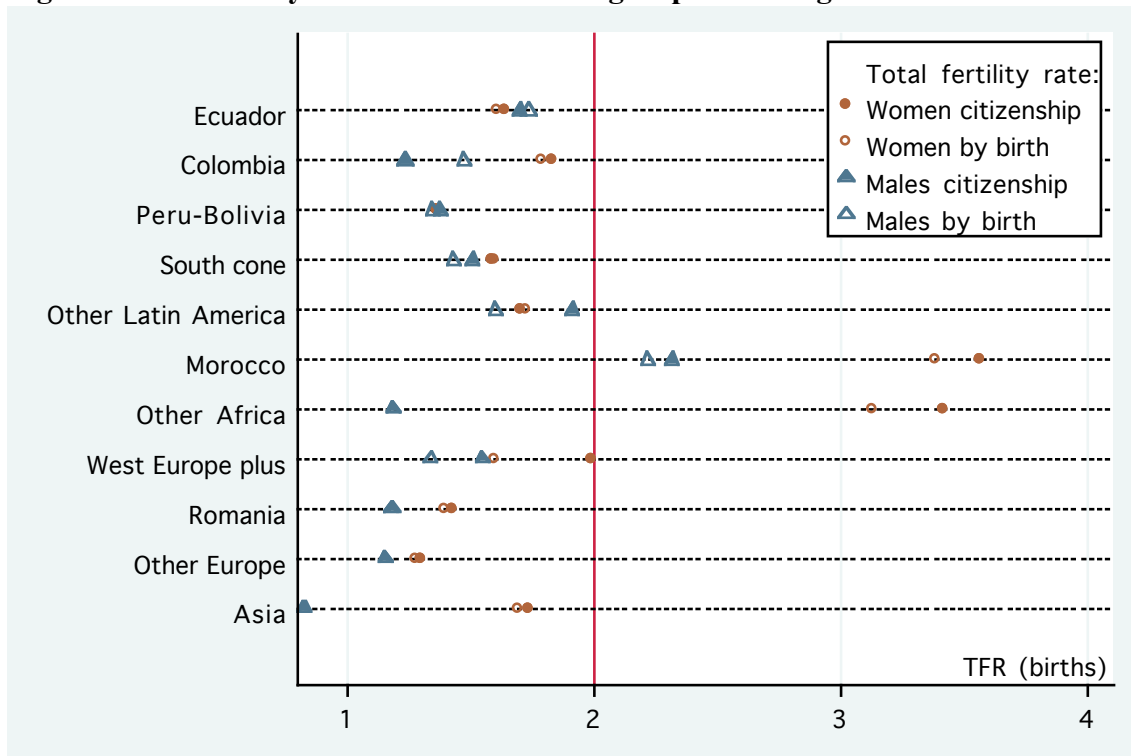
Source: ENI. TFR was computed from fertilty rates for five-year age groups

Figure 2. Fertility rates of Spaniards (registry) and immigrants in the survey
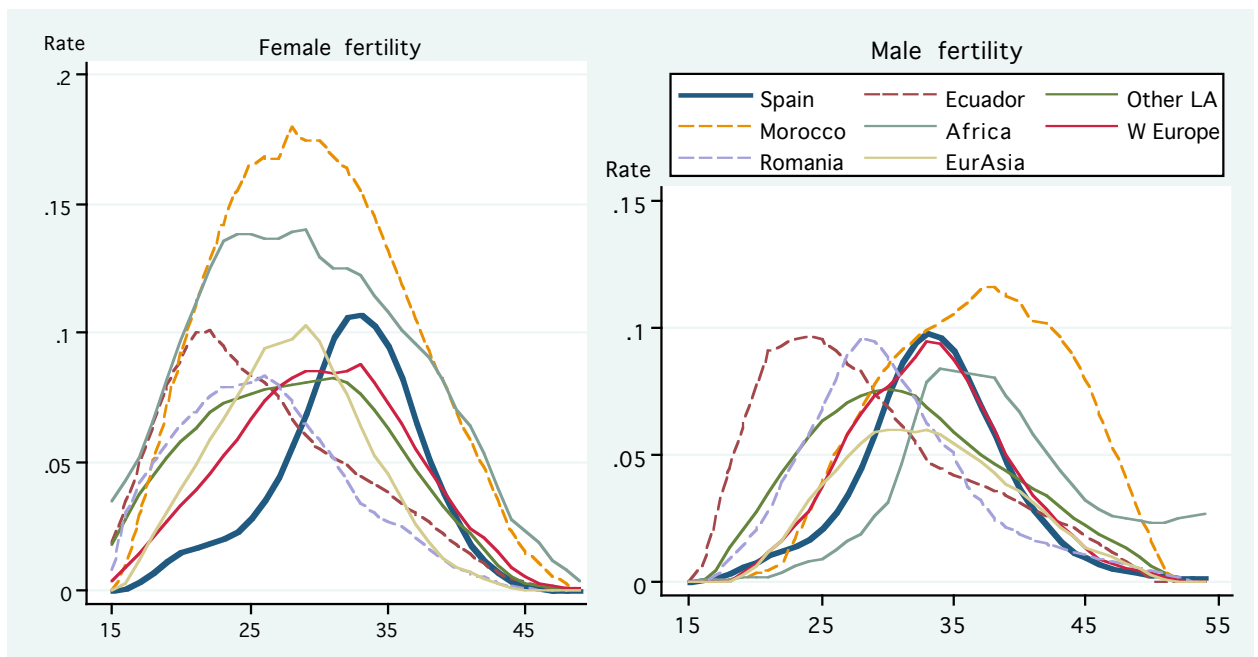
Source: ENI, single-age rates soothed with local regression (Stata command: lowess)

12

Figure 3. Point and interval of the ratio *padrón*/estimate of immigrants to Spain by 2005

Annex 1. Age specific fertility rates of immigrants (defined by nativity) in Spain

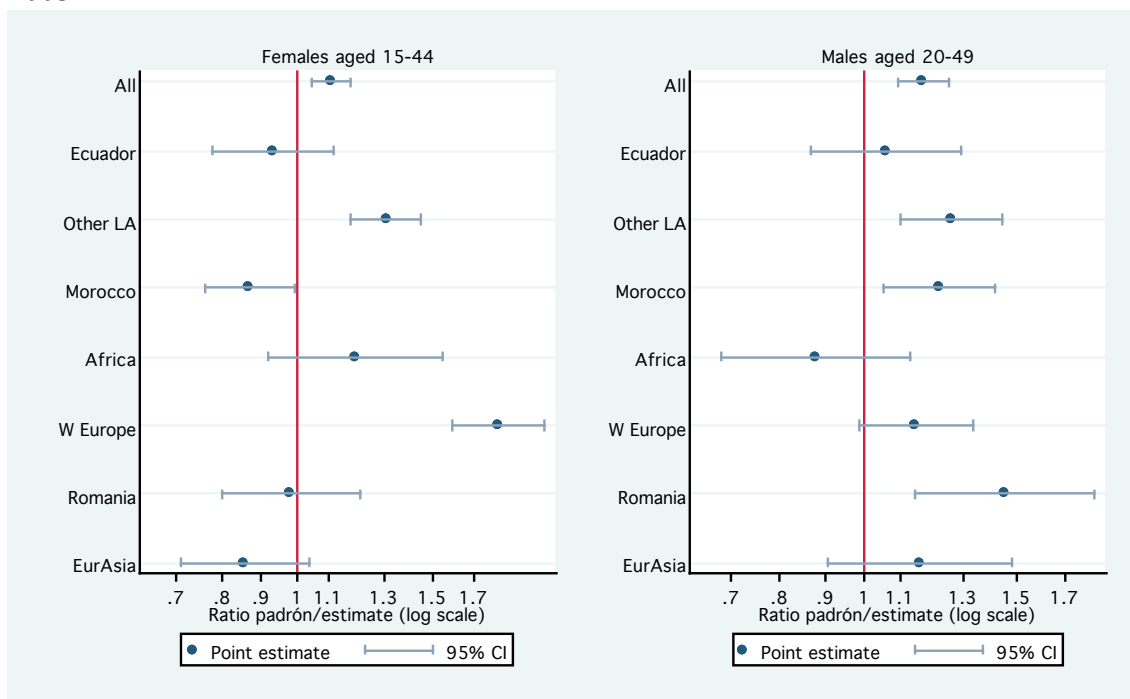| Age	Women' Fertility rates from ENI 2004-6						
	Ecuador	Other LA	Morocco	Africa	W. Europe	Romania	EurAsia
15	0.0187	0.0181	0.0025	0.0344	0.0035	0.0082	0.0025
16	0.0350	0.0274	0.0105	0.0432	0.0092	0.0307	0.0027
17	0.0500	0.0374	0.0298	0.0515	0.0143	0.0417	0.0119
18	0.0653	0.0448	0.0504	0.0658	0.0205	0.0498	0.0211
19	0.0801	0.0518	0.0720	0.0821	0.0269	0.0581	0.0301
20	0.0905	0.0579	0.0922	0.0971	0.0333	0.0647	0.0393
21	0.1004	0.0632	0.1109	0.1122	0.0396	0.0696	0.0492
22	0.1009	0.0696	0.1275	0.1250	0.0458	0.0757	0.0587
23	0.0948	0.0731	0.1423	0.1356	0.0526	0.0793	0.0668
24	0.0889	0.0747	0.1550	0.1381	0.0589	0.0793	0.0752
25	0.0837	0.0767	0.1653	0.1388	0.0671	0.0805	0.0842
26	0.0812	0.0784	0.1681	0.1369	0.0742	0.0837	0.0940
27	0.0753	0.0793	0.1676	0.1367	0.0791	0.0798	0.0961
28	0.0671	0.0804	0.1799	0.1392	0.0827	0.0740	0.0976
29	0.0601	0.0812	0.1744	0.1405	0.0850	0.0651	0.1030
30	0.0550	0.0819	0.1750	0.1300	0.0852	0.0589	0.0970
31	0.0520	0.0826	0.1686	0.1255	0.0842	0.0520	0.0850
32	0.0489	0.0813	0.1638	0.1250	0.0856	0.0429	0.0761
33	0.0444	0.0762	0.1556	0.1227	0.0881	0.0343	0.0644
34	0.0414	0.0705	0.1456	0.1149	0.0813	0.0302	0.0523
35	0.0382	0.0634	0.1322	0.1087	0.0733	0.0272	0.0451
36	0.0339	0.0549	0.1193	0.1014	0.0646	0.0248	0.0356
37	0.0302	0.0473	0.1060	0.0963	0.0552	0.0209	0.0264
38	0.0269	0.0398	0.0932	0.0902	0.0471	0.0167	0.0186
39	0.0227	0.0329	0.0821	0.0815	0.0390	0.0125	0.0123
40	0.0183	0.0272	0.0696	0.0704	0.0315	0.0092	0.0091
41	0.0143	0.0227	0.0587	0.0640	0.0246	0.0070	0.0071
42	0.0108	0.0161	0.0477	0.0531	0.0209	0.0052	0.0048
43	0.0072	0.0101	0.0361	0.0405	0.0152	0.0034	0.0029
44	0.0049	0.0056	0.0238	0.0279	0.0093	0.0025	0.0025
TFR	**1.54**	**1.63**	**3.23**	**2.93**	**1.50**	**1.29**	**1.37**
Correction*	1.00	1.00	1.00	1.09	1.29	1.00	1.00

Annex 1 continuation

	Men' Fertility rates from ENI 2004-6						
Age	Ecuador	Other LA	Morocco	Africa	W. Europe	Romania	EurAsia
20	0.0775	0.0278	0.0029	0.0025	0.0068	0.0201	0.0062
21	0.0910	0.0351	0.0042	0.0025	0.0115	0.0275	0.0117
22	0.0931	0.0423	0.0073	0.0031	0.0159	0.0388	0.0157
23	0.0953	0.0499	0.0167	0.0059	0.0220	0.0491	0.0243
24	0.0968	0.0571	0.0272	0.0076	0.0270	0.0578	0.0317
25	0.0952	0.0629	0.0389	0.0090	0.0375	0.0677	0.0382
26	0.0910	0.0666	0.0504	0.0122	0.0482	0.0798	0.0436
27	0.0856	0.0702	0.0583	0.0159	0.0577	0.0897	0.0493
28	0.0826	0.0728	0.0672	0.0188	0.0661	0.0962	0.0544
29	0.0743	0.0746	0.0779	0.0255	0.0731	0.0948	0.0591
30	0.0686	0.0757	0.0850	0.0310	0.0772	0.0882	0.0599
31	0.0617	0.0753	0.0907	0.0462	0.0821	0.0800	0.0597
32	0.0551	0.0733	0.0956	0.0638	0.0884	0.0726	0.0592
33	0.0475	0.0687	0.0993	0.0782	0.0942	0.0625	0.0596
34	0.0447	0.0641	0.1024	0.0839	0.0937	0.0550	0.0579
35	0.0416	0.0590	0.1056	0.0830	0.0873	0.0506	0.0540
36	0.0399	0.0542	0.1096	0.0823	0.0791	0.0375	0.0510
37	0.0378	0.0499	0.1152	0.0809	0.0695	0.0318	0.0469
38	0.0357	0.0462	0.1161	0.0803	0.0598	0.0245	0.0430
39	0.0339	0.0432	0.1128	0.0731	0.0499	0.0213	0.0386
40	0.0307	0.0399	0.1097	0.0667	0.0417	0.0187	0.0352
41	0.0284	0.0368	0.1030	0.0581	0.0338	0.0166	0.0310
42	0.0259	0.0334	0.1022	0.0505	0.0282	0.0147	0.0267
43	0.0234	0.0289	0.0965	0.0436	0.0221	0.0130	0.0215
44	0.0209	0.0251	0.0893	0.0370	0.0172	0.0114	0.0172
45	0.0176	0.0221	0.0793	0.0316	0.0128	0.0100	0.0136
46	0.0146	0.0190	0.0660	0.0287	0.0091	0.0088	0.0114
47	0.0113	0.0159	0.0537	0.0258	0.0068	0.0077	0.0093
48	0.0079	0.0129	0.0403	0.0249	0.0055	0.0065	0.0069
49	0.0038	0.0096	0.0270	0.0237	0.0044	0.0054	0.0049
TFR	**1.53**	**1.41**	**2.15**	**1.20**	**1.33**	**1.26**	**1.04**
Correction*	1.00	1.00	1.00	1.00	1.15	1.00	1.00

*Factor to correct the rates in order to obtain an estimate for country of citizenship

Annex 2. Number of births from parent's immigrants in Spain 2004-06

Age	Ecuador	Other LA	Morocco	Africa	W. Europe	Romania	EurAsia
			Mother's nationality				
15	118	116	21	22	9	95	17
16	312	276	134	42	50	215	44
17	500	480	428	69	84	391	99
18	680	777	842	128	158	644	216
19	877	1125	1387	226	201	936	362
20	1153	1499	1887	350	269	1164	599
21	1404	1904	2222	423	310	1302	940
22	1637	2346	2566	560	389	1305	1249
23	1819	2640	2596	646	464	1391	1632
24	1905	2993	2710	707	534	1510	1865
25	1952	3229	2657	891	665	1541	2031
26	1959	3546	2722	920	749	1551	2042
27	1839	3692	2517	999	957	1459	2192
28	1851	3572	2498	988	1074	1306	2143
29	1645	3588	2345	904	1192	1222	1990
30	1609	3504	2213	864	1415	959	1902
31	1462	3333	2112	792	1610	804	1624
32	1318	2993	1932	667	1544	672	1414
33	1115	2702	1746	548	1562	525	1172
34	1024	2409	1651	500	1412	418	1012
35	851	2139	1438	394	1376	374	832
36	717	1760	1378	335	1148	306	675
37	666	1361	1119	261	948	229	479
38	478	1115	956	235	771	160	360
39	389	893	837	183	617	78	291
40	279	680	662	116	423	50	185
41	204	414	479	72	276	33	127
42	138	283	327	41	177	17	90
43	93	144	211	33	104	8	55
44	53	91	128	19	60	10	32

Annex 2 continuation

			Father's nationality				
Age	Ecuador	Other LA	Morocco	Africa	W. Europe	Romania	EurAsia
20	614	558	87	33	96	337	119
21	838	912	191	60	161	398	220
22	1127	1127	304	97	220	493	377
23	1396	1462	453	114	262	692	606
24	1665	1752	664	204	375	919	793
25	1828	1965	930	245	466	1189	1027
26	1787	2274	1268	322	562	1266	1294
27	1838	2362	1591	427	711	1462	1496
28	1730	2487	1870	475	895	1522	1674
29	1583	2438	2219	608	1134	1489	1707
30	1558	2608	2343	729	1334	1301	1756
31	1389	2431	2431	770	1543	1193	1526
32	1264	2294	2677	751	1693	948	1539
33	1121	2229	2731	831	1794	717	1278
34	1040	2061	2799	853	1767	638	1185
35	933	1816	2584	792	1757	579	1121
36	767	1549	2565	843	1669	492	930
37	686	1379	2414	793	1536	393	763
38	533	1152	2251	790	1351	273	570
39	464	1014	1992	637	1176	193	477
40	406	847	1666	630	1033	91	394
41	347	675	1483	561	864	85	332
42	267	587	1295	421	736	67	237
43	200	430	1051	336	484	49	199
44	158	333	912	277	393	50	144
45	141	285	712	239	375	27	121
46	82	218	611	215	256	23	91
47	71	165	405	154	226	24	64
48	67	136	327	150	179	14	52
49	50	113	250	119	146	18	46