Economic and Cultural Gaps among Foreign-born Minorities in Spain

By

Sara de la Rica*
UPV/EHU, FEDEA, IZA, CReAM

Francesc Ortega**
Queens College CUNY

October 2011

Abstract. This paper compares the economic and cultural gaps of the largest foreign-born ethnic minorities in Spain: Latinos, Eastern Europeans and Moroccans. We focus on several outcomes: the gender education gap, early marriage, inter-ethnic marriage, fertility, female employment, command of Spanish, and social participation. Our results suggest that Latinos are the group with patterns of behavior closest to those of natives, followed by Eastern Europeans. In several dimensions, such as the marriage penalty for females, Moroccans are the groups with larger gaps relative to natives. Our results also show large improvements in the educational attainment of younger Moroccan cohorts, which is an important determinant of the outcomes we have analyzed. Finally, we note that even though employment rates of immigrants tend to be higher than those of natives, immigrants are much more likely to be employed in low-paying occupations.

Keywords: Immigration, Cultural gaps, Ethnicity, Assimilation, Integration.
JEL Classification: J15, J61, F22.

*The author acknowledges financial aid from the Spanish Ministry of Education and Science (ECO2009-10818).

**The author acknowledges financial aid from the Spanish Ministry of Science and Innovation (ECO2008-02779). Both authors are grateful to Javier Polavieja (IMDEA) for very helpful discussions.

1. Introduction

Since the early 1990's immigration flows into Spain have been on the rise. In particular, the decade between 1998 and 2008 has been characterized by one of the largest immigration episodes in recent history among OECD countries. Over this period, the foreign-born share among the working age population in Spain has increased from below 3% to almost 15%.

Aside from the large size of the inflows, Spain's immigration experience is characterized by the large heterogeneity of these inflows, in terms of origin. In 2008 the largest ethnic groups among the foreign-born population are Latinos, Eastern Europeans, and Moroccans.[1] Interestingly, these groups differ substantially in their "cultural distance" vis-à-vis the Spanish society. Presumably, Latino immigrants face the smallest cultural gap since Spanish is the mother tongue for the large majority of the population. Arguably, Eastern Europeans are the second group regarding cultural distance vis-à-vis Spain. As shown later, the vast majority of Spain's immigrants from Eastern Europe are from Romania, a country with a Latin-based language (Romanian) and a traditionally Christian population (Eastern orthodox). Moreover, their education levels are high, roughly at Spanish levels. Finally, Moroccans face the largest cultural gap with today's Spanish society among the three large minority groups. Morocco is an eminently Muslim country with low average education levels relative to Spain.

Our goal is to examine the cultural and economic gaps of ethnic foreign-born minorities that differ in the cultural distance to the norms in their host society. In particular, we address the question of whether these gaps are increasing (or decreasing) in the cultural distance between natives and each minority ethnic group. Secondly, we examine the evolution of these gaps across cohorts, for each group.

[1] The next section provides a detailed description of the sizes of these groups and their composition in terms of countries of origin. See Sandell (2008) for a detailed description of the ethnic composition of Spain's foreign-born population, as well as their geographical distribution within Spain. Several recent papers have analyzed the economic effects of immigration in Spain, such as Amuedo-Dorantes and De la Rica (2011a, 2011b), Farre et al (2011), and Gonzalez and Ortega (2010), among many others. Bertoli et al (2010) argue that for Ecuador, one of the main origin countries, Spain's immigration policy played a big role in determining the sizeable inflows from this country.

We focus on the three main foreign-born ethnic groups: Latinos, Eastern Europeans and Moroccans. Specifically, we study the following dimensions of cultural gaps: the gender gap in educational attainment, fertility rates, early marriage, inter-ethnic marriage, female employment, command of Spanish, and social participation. Methodologically, we use regression analysis to provide a comparison across ethnic groups that accounts for differences in observables. We also provide an analysis of the similarity between natives and immigrants along several socio-economic dimensions, following Vigdor (2008).

Overall our results suggest that Latinos – the group with the shortest cultural distance to Spanish social norms, have assimilated the most. Moroccans have assimilated the least, although the main differences seem to reflect differences in education levels. Our results also suggest that years since migration and education are important determinants of economic and cultural gaps. Hence, it is important to control for differences in these two dimensions when comparing across ethnic groups. Furthermore, we find that education levels have risen rapidly for the younger cohorts of Morocco-born immigrants, which suggests a narrowing of the gaps over time.

The structure of the chapter is as follows. Section 2 introduces our datasets. Section 3 provides an overview of Spain's recent immigration experience and a descriptive summary by ethnic group. Section 4 analyzes gender gaps in educational attainment. Section 5 is devoted to marriage and section 6 to fertility. Section 7 studies female employment. Section 8 and 9 explore the command of Spanish and social participation, respectively. Section 10 provides a measure of similarity between natives and immigrants and section 11 concludes. All figures and tables are gathered at the end.

2. The Data

Our two main data sources are the 2007 Labor Force Survey ("Encuesta sobre la Población Activa" or LFS) and the 2007 National Immigration Survey ("Encuesta Nacional de Inmigrantes" or NIS), both conducted by the Spanish Institute of Statistics.

The Spanish Labor Force Survey is well-known and standardized across all European countries. The new National Immigration Survey deserves some comments. This survey

sampled the foreign-born population residing in Spain in 2007, with the goal of providing insights on migrants' experiences in transitioning from their home country into Spain, on their job history after arrival, and on their ties with the home country. The object of study were individuals born outside Spain, who were at least 16 years old at the time of the survey, and had either been living in Spain for at least one year or had intention to do so. The total size of completed questionnaires is around 15,000. Correspondingly, our definition of immigrant is a foreign-born, adult individual who at the time of the interview (2007), had been living in Spain for at least one year. In most of our analysis we restrict to individuals age 16-60. When we report data on the native population we use the same age criterion. The next section provides a detailed overview of the foreign-born population in Spain.

3. Descriptive statistics

This section describes the main ethnic groups in terms of their size, demographics, years since migration, and educational attainment.

3.1. Country of origin and ethnicity

According to Registry data, in 1998 the foreign-born population in Spain was small (2.9 % of the total population) and originated mainly in Morocco (16%), France (12%) and Germany (10%). However, during the period 1998-2008, the foreign-born population has increased sharply and there has been a dramatic change in the composition of the inflows by country of origin. By 2008, the foreign-born share reached 13% of the total population and the share of the immigrant population originating in Morocco, France and Germany fell to 11%, 2%, and 3%, respectively (2008 Registry). Let us now describe a bit more in detail the geographical origin of the foreign-born population in Spain by 2008 and its ethnic composition.

We start by examining the size of the immigrant population by geographical origin. Specifically, we use the 2007 NIS to classify the foreign-born population by country of birth. We also provide a comparison of this sample with the 2008 Registry data. The figures from the two sources are highly consistent. As Table 1 shows, according to the NIS almost 40% of the foreign-born population originated in the American continent, with Ecuador, Colombia and Argentina being the top three origin countries. Europe was

the origin of 38% of the foreign-born population, with Romania being the main country of origin, followed by the UK and France. According to the NIS, Romania accounted for 9.5% of the foreign-born population in Spain in 2007. As the 2008 Registry shows, the number of Romanians residing in Spain increased sharply during 2007 reaching almost 14% of the foreign-born population in 2008 and becoming the single main source country. Among the remaining immigrants, 17% were born in African countries and slightly less than 5% in Asia. The top three African countries of origin were Morocco (11.8% of the foreign-born population), Algeria (1.2%) and Senegal (0.7%). The top three Asian countries of origin were China (1.2%), the Philippines (1%) and Pakistan (0.9%).

Next, we turn to the definition of the ethnic groups that we shall use throughout our analysis: Latinos, Eastern Europeans, and Moroccans. Respectively, these groups account for 38.7%, 16%, and 11.9% of the foreign-born population in 2007 (Table 2). We restrict to these group for the following reasons: Latinos and Eastern Europeans account for the lion's share of the immigration flows into Spain over the last decade. Traditionally, Morocco has been the main source immigration country for Spain, and still represents a very large share of the foreign-born population. In addition, the vast majority of Moroccans are Muslim, which makes it a very interesting group to study the immigration and integration experience of Muslim immigrants into Western societies.

Table 2 reports the largest three countries of origin in each ethnic category and the share of each of those countries in the respective ethnic group. Latinos mainly originate from Ecuador (21%), Colombia (17%) and Argentina (13%). By far, the main country of origin for Eastern Europe is Romania (60% of the group), followed at a large distance by Bulgaria (14%) and the Ukraine (9%).

3.2. Years since arrival

Table 3 reports the distribution of individuals in each ethnic group by years since migration. On average, Moroccans arrived to Spain 14 years ago. Latinos and, particularly, Eastern Europeans arrived to Spain much more recently: 8.8 and 5.0 years ago on average, respectively.

3.3. Age and gender

This section describes the distribution of immigrants by age and gender for each ethnic group. Clearly, differences across groups in these distributions are likely to affect the rates of overall and inter-ethnic marriage, which we shall analyze later. Table 4 reports the age distributions, separately for men and women. We also include the analogous data for the native population to provide a basis for comparison.

Two features stand out. First, the age distribution is roughly similar across all groups. For instance, the share of individuals below age 30 is roughly 30% and the average age is 36 for immigrant males. Eastern Europeans are on average younger and Moroccans tend to be older. More dramatic differences appear when we look at the relative number of females in each age group, as illustrated by the third panel in Table 3. Consider women in the 16-29 and 30-49 age groups. Among Latinos and Eastern Europeans, the share of women is roughly 50%. However, it is only 35% for Moroccans, indicating that the supply of marriage-age women is shorter for the latter group.[2]

3.4. Educational Attainment

We now turn to the distribution by schooling of each ethnic group. We define three groups: individuals that at most completed primary education, individuals that completed secondary education, and individuals with completed tertiary education.

Table 5 reports the results, together with the education distribution of the native population. We restrict our sample to individuals age 25-50 to make the comparisons across groups more informative. First, note that Moroccans have the lowest educational attainment. Average years of education are 7.4 for Moroccan men and 6.1 for Moroccan women. In contrast, Latinos and Eastern Europeans have on average 10-11 years of schooling, only slightly below natives. Next, we note that except for Moroccans, women are slightly more educated than men in all ethnic groups, including natives. The

[2] Cortina et al (2008a) report differences in sex ratios by country, within ethnic group. For instance, the female share among Ecuadorians is particularly high.

next section provides a more formal analysis of the gender gap in educational attainment.

4. Gender Gaps in Education

In many European countries, including Spain, there is public perception that Muslim minorities have markedly different attitudes regarding women's role in society. In this section, we provide a comparison of the gender gaps in education across ethnic groups and by birth cohort, which will be informative about the intensity of cultural assimilation for the different ethnic minorities.

Table 6 reports our estimates of the average gender gaps in years of education for different ethnic groups and birth cohorts using regression analysis. The dependent variable is years of education. The table reports the coefficient associated to a female dummy, which can be interpreted as the difference between the average years of education of women relative to men. We estimate a separate regression for each ethnic group and cohort. Standard errors are in parenthesis. Table 6 reveals important differences in gender gaps in education across ethnic groups, as well as across birth cohorts. Consider first individuals in age bracket 31-40. Point estimates are positive – that is, women have higher education than men – for all groups except for Morocco. The values range from -2.46 years (Morocco) to 0.49 (Eastern Europe). For earlier (older) cohorts, point estimates are negative – women have lower education – for all groups. Morocco displays the largest gender gap. Finally, among individuals younger than 30 we do not find a statistically significant gender gap for any group. Only Morocco displays a gender gap, although it is not statistically significant.

In sum, for the largest cohort (age 31-40), we find evidence of a sizeable gender gap only for Morocco. However, even for Moroccans, we find rapidly diminishing gender gaps across cohorts, possibly converging toward a situation with higher educational attainment for women.

5. Marriage

5.1. Early marriage

This section explores another interesting dimension along which behavior may vary across ethnic groups. We quantify cultural differences in marriage habits. Specifically, we focus on differences in the frequency of early marriage and inter-ethnic marriage.

We focus on females and state that a woman "married early" if she got married by age 25. Table 7 reports the distribution of early marriages by ethnicity, as well as predicted probabilities obtained from estimating linear probability models.[3] Predicted probabilities are evaluated at each group's average characteristics. The first row of Table 7 reveals that 16% of Latino women married early. The figure is higher for Eastern European women (29%), and much higher (62%) among Moroccans. In comparison, only 2.9% of native women married early.

The second and third rows report the predicted probability of an early marriage with and without controlling for schooling, while controlling for age in both cases. The comparison is interesting because it is often argued that differences in the probability of early marriage simply reflect differences in education. As seen in the third row of Table 7, significant differences across ethnic groups still remain. Moroccan females are much more likely to marry by age 25 than females from South and Central America (Latinas) or from Eastern Europe. Moreover, the result is not simply driven by lower educational attainment. We note that, relative to natives, early marriage is high for Latinas and Eastern European women as well.

5.2. Inter-ethnic marriage

This section explores the performance of the different ethnic groups along another important dimension of cultural integration, namely, the frequency of inter-ethnic marriages. We focus on foreign-born individuals who are married and classify them according to the country of birth of their spouse. We define three categories: the two

[3] Our results do not vary much when we examine the distribution of early marriages for men, although males get married a bit older. We do not report the results for the sake of brevity.

spouses were born in the same country, the spouse was born in Spain, or the spouse was born in a third country (that is, neither Spain nor one's own country). For comparison we also report on inter-marriage rates for natives, defined as marriage with a foreign-born individual.[4]

Table 8 reports our findings for each ethnic group and birth cohort. Panel 8A reports the distribution over the three types of marriage. Consider first age bracket 31-40, the largest cohort. We note first that marrying someone from a third country is very rare (below 5% for all foreign-born minorities). Interestingly, we only detect this behavior in our data among Moroccans (1.82%). Second, the fraction of inter-ethnic marriages with Spanish natives is highest among Latinos (33% of all marriages), Moroccans (17%), and Eastern Europeans (11%). A proper interpretation of these figures requires accounting for differences in observables, such as years since migration, as well as taking into account differences in the age-gender distribution.

Panel 8B estimates the probability of an inter-ethnic marriage for each group, defined as the probability of marrying a Spain-native or an individual from a third country of origin on the sample of married individuals. The dependent variable takes the value of 1 if the individual is married either to a Spanish native or to someone from a third country (not Spain and not the individual's own country of birth). The reference group is married individuals younger than 31. A linear probability model is estimated, separately for each group. The coefficient reported under age<31 is the constant of the estimation and the rest of coefficients must be understood as the change in the probability of an inter-ethnic marriage with respect to the reference group. We control for years since migration and age. First, our results show that the probability of an inter-ethnic marriage increases with time since migration for all groups. When we focus on individuals age 30 or younger, we find that 21% of married Latinos are in an inter-ethnic marriage. The comparable figures for Eastern Europeans and Moroccans are, respectively, 19% and 16%. In comparison, 22% of married natives age 30 or younger had a foreign-born spouse.

[4] Cortina et al (2008b) study how inter-marriage affects the probability of employment for married women, using Spanish data. They find that foreign-born women married to Spain-born natives have lower employment rates than those with foreign-born husbands. They also report that the type of partner does not have any effect on the probability of employment of native women.

It is worth pointing out a striking feature that appeared in Table 4 (panel 3). Namely, the fraction of women in marriage age is much lower among Moroccans (roughly, by 20-30 percentage points for ages 16-29 and 30-49). As a result, there is a large excess of demand for women in the "marriage market" for this group. Thus while it may be the case that Moroccans have a stronger preference for intra-group marriage, feasibility constraints in the marriage market push Moroccan men to marry outside their group. However, we find a probability of inter-ethnic marriage among Moroccans that lies only slightly below that of Latinos and Eastern Europeans, suggesting that there is a significant number of unmarried Moroccan women.

6. Fertility

This section examines fertility rates for each ethnic group. Following Georgiadis and Manning (2008), we focus on the sample of foreign-born women age 18-45. For each of them we compute the total number of children alive. Unlike in usual household surveys, our data include both children who are present in the household and children residing elsewhere (e.g. in the country of origin).

Table 9A reports the average number of children per woman for each of the ethnic groups considered in the study. Clearly, Moroccans have relatively more children on average, respectively, 1.72 and 1.95 children per woman. In comparison, Latino and Eastern European women have on average 1.27 and 0.97 children, respectively. The table also shows that the average age of women in the four ethnic groups is very similar.

We next provide a slightly more rigorous analysis. Specifically, we estimate a linear regression where the dependent variable is the total number of children on the sample of all foreign-born women in age range 18-45. On the right-hand side we include ethnic group dummies (with Latinos being our reference group) and a quadratic polynomial in age. We present two sets of estimates. In the first estimation we do not control for years of education but we do so in the second set of estimates. In the former case, the results confirm the findings suggested by the descriptive statistics. Namely, Moroccan women have a significantly higher number of children than women from the other ethnic groups. Interestingly, the picture changes when we control for education levels. Now, Moroccan women have the same fertility as Latino women. In sum, controlling for age

and education, Eastern European women have 0.2 fewer children than Latino and Moroccan women.

7. Female Employment

We now turn to assimilation in the labor market. In particular, we are interested in comparing the employment rates of women across ethnic groups. It is traditionally believed that women from traditional Muslim societies are restricted in their ability to participate in the labor market.

Let us start by examining some descriptive statistics. Table 10A reports the average employment rates among females in age bracket 25-59 for each ethnic group. Each row represents a different set of women. We consider all women, single women, married women, and married women with kids. When we compare the unconditional employment rates, we find striking differences. While almost 70 percent of Latino and Eastern European women work, only 35 and 42 percent of Moroccans do. In comparison, 50% of native women work. Interestingly, when we condition on being single, the employment rates of all four groups are very similar (and larger than for natives). However, when Moroccan women get married or have children, their employment-population rates drop dramatically (30-40 percentage points). In contrast, the "penalty" of getting married or having children is much smaller for native women as well as for Latino and Eastern European women. Respectively, their employment-population rates only decrease by 5, 10 and 4 percentage points.

Next, we estimate the conditional probability of being employed for each of the different ethnic groups and for each group of women, controlling for age and education. Table 10B displays the results. The estimates here confirm the findings suggested by the descriptive statistics above. Overall, Latino and Eastern European women are more likely to be employed. However, the marriage/children penalty is small for Latino and Eastern European women while very large for women born in Morocco.[5]

[5] It is worth noting that single Moroccan women have the highest employment-population rate.

8. Command of Spanish

The purpose of this section is to examine the knowledge of Spanish of the different ethnic groups. Language difficulties may clearly prevent immigrants from an adequate integration in the host country. Given that among our ethnic groups there is a wide disparity in the distance between their original languages and Spanish, it is interesting to examine the outcomes for each group.

We classify the foreign-born population in three levels of fluency. The highest level corresponds to individuals that report Spanish as their first language. The second level contains individuals that report understanding and speaking Spanish. Finally, the lowest level of fluency corresponds to individuals that declare that they understand Spanish but do not speak it.

Table 11A reports our results. First, we consider all individuals, regardless of their year of arrival. Naturally, the vast majority of Latinos appear as native Spanish speakers (95%). The other group with a significant proportion of native Spanish speakers is Morocco (9.55%), reflecting the fact that some individuals were brought by their parents when they were very young and report Spanish as their mother tongue. Eastern Europeans appear as the relatively less fluent group. However, even among this group the vast majority reports speaking and understanding the language.[6]

The second part of the Table reports on the command of Spanish of recent immigrants, defined as individuals that arrived one or two years prior to the survey. Clearly, the fraction of individuals that only understands Spanish increases for all groups, except for Latinos. The figures are 9.72% for Eastern Europeans, and 7.32% for Moroccans. Overall, these descriptive statistics suggest that immigrants learn Spanish very quickly after arrival.

Next, we turn to a regression analysis to investigate the determinants of language fluency and to provide a more rigorous comparison across groups. In our analysis, we

[6] The high level of command of Spanish across all groups is a bit surprising, and may partly reflect the design of the NIS. Recall that only individuals living in Spain for at least one year (or that intend to stay) were interviewed.

drop Latinos and individuals that report Spanish as their mother tongue. Our dependent variable is an indicator for whether an individual speaks and understands Spanish. The right-hand side variables include dummy variables for being Eastern European. Thus, Morocco is the reference group in the regression. We also control for years since migration, age, and gender. We estimate a linear probability model.

Table 11B reports the results. The intercept of the regression takes the value 0.79, reflecting the very high proportion of individuals that speak and understand Spanish. Note that Eastern Europeans are significantly more likely to speak and understand Spanish than Moroccans (2.7 percentage points) when we control for age, years since migration and years of education. Turning to the controls, we find the expected signs. The level of command of Spanish is increasing in education levels. Age and years since migration do not contribute to explain difference in the command of Spanish when comparing Moroccans and individuals from Eastern Europe. On the contrary, an extra year of education has a large effect on fluency for these individuals. Finally, our estimates suggest that women are less likely to be able to speak and understand Spanish.

In conclusion, the average level of Spanish is very high among all ethnic groups in our study, suggesting fast learning rates. However, we find significant differences across groups. Obviously, most Latinos are native Spanish speakers. More interestingly, we find that, after controlling for differences in observables, Eastern Europeans have better command of Spanish than Moroccans. Our results seem very reasonable, once we recall that the vast majority of Eastern Europeans in Spain are from Romania. Thus, their mother tongue is also Latin-based, which makes learning Spanish relatively easy.

9. Social Participation

This section explores another dimension of integration, namely, the degree of participation in social activities. To address this issue we use two sets of questions posed to foreign-born individuals surveyed in the NIS. The first set asks about participation in clubs and associations specifically targeted to foreigners. More interesting for our purposes, the second set of questions is about participation in social activities that are not directly targeted to foreigners. In both cases, individuals are asked about participation in religious, cultural/educational activities, and sports clubs.

Table 12A presents some descriptive statistics. The first observation is that take-up rates are relatively low (below 5% for all groups and activities). Sports clubs feature the highest participation while religious associations display the lowest. Secondly, Latinos seem to participate in activities not targeted to foreigners more often than other ethnic groups. Table 12B provides a regression analysis. The dependent variable is an indicator for whether the individual participated in any type of association not directly targeted to foreigners. The rest of the specification is very similar to the one used in the previous section. On the right-hand side we include dummies for ethnic groups Eastern Europe, and Morocco. The excluded category is Latinos. We control for age, gender, years since migration and years of education.

Clearly, Latinos are the ethnic group that is more likely to participate in social activities not directly targeted to foreigners. Moroccans are the least likely group to participate, after controlling for observables. Age and education levels are conducive to larger social involvement, and women are less likely to participate.

10. Similarity between natives and immigrants

This section compares natives and immigrants along several socio-economic dimensions. Mainly, we focus on labor-market and family-formation outcomes. Our exercise follows Vigdor (2008),[7] who proposes the following thought experiment. Consider drawing an individual randomly from the population and asking what is the probability that he or she is foreign-born. Clearly, if we do not control for any characteristics this is just the foreign-born share in the population. More interestingly, we can ask the question by focusing on relevant socio-economic outcomes after controlling for demographic characteristics.[8]

Specifically, we estimate a series of probit models for the probability of being foreign-born. The outcomes of interest are employment, log mean wage in the current occupation (among natives), a dummy for being married or in cohabitation, the number

[7] These estimates can be used to build "assimilation" indices as in Vigdor (2008).
[8] To gain precision in our estimates, in this section we do not distinguish by ethnic origin.

of children, and an indicator for being married/cohabitating with a Spain-born (native) individual. We control for age, education, and gender.[9]

Table 13 presents the estimated marginal effects. The first column includes only the demographic controls and a dummy for being employed. Column 2 adds the average wage in the current occupation. Column 3 includes the variables concerning family formation (married, number of children, inter-ethnic marriage). Finally, column 4 allows for different effects by gender of the respondent.

Several results stand out. First, compared to natives, immigrants are younger, less educated, and slightly more likely to be female. Among these, relatively lower education is the main predictor for being foreign-born. Turning to economic differences, we note that foreign-born individuals are more likely to be employed than natives. However, immigrants are employed in lower quality occupations, as measured by mean wages. Based on the estimates in column 2, being employed increases the probability of being foreign-born by 5 percentage points. Likewise, being employed in an occupation that pays, on average, one thousand euros more monthly reduces the probability of being foreign-born by 1.9 percentage points.

We now turn to the outcomes concerning family formation (column 3). Note that being married is a signal for being foreign-born. However, as the number of children in the household increases the probability of being foreign-born falls. This reflects the substantial number of recent immigrants that chose to leave their children in their respective origin countries. We also note that the marginal effects associated to these variables are substantially larger than the effects of differences in the labor-market characteristics. Not surprisingly, the largest predictor for being foreign-born is being married (or cohabiting) with a Spain-born partner. It reduces the probability of being an immigrant by 35.3 percentage points. Finally, we note that most effects are very similar for men and women. Even though the interactions with the female dummy included in column 4 are often significant, the magnitudes are usually rather small. We find interesting that being employed has a substantially larger effect on the probability of

[9] The data for the analysis in this section is from the 2007 Spanish Labor Force Survey. This dataset does not contain wage data. We compute median monthly wages by occupation for natives using the Wage Structure Survey and merge it into our dataset. We assign a zero wage to the non-employed.

being foreign-born for women (2.9 percentage points) than for men (1.9 percentage points).

Overall, these estimates suggest the following conclusions. First, young and low-educated individuals are much more likely to be foreign-born. Second, high employment rates in low-paying occupations are an important distinction between the labor-market outcomes of natives and immigrants. However, the largest differences between natives and immigrants arise in their family organization. Controlling for age and education, immigrants are much more likely to be married (or in cohabitation) but much less likely to have a Spain-born partner or several children (in the household).

11. Conclusions

Our aim in this paper is to examine the cultural and economic gaps of ethnic foreign-born minorities that differ in the cultural distance to the norms in their host society. In particular, we address the question of whether these gaps are increasing (or decreasing) in the cultural distance between natives and each minority ethnic group living in Spain. Secondly, we examine the evolution of these gaps across cohorts, for each group.

Our results reveal large differences across ethnic groups in educational attainment, and in years since migration. Both variables are well known to be important determinants of integration. Moroccans arrived in Spain earlier and have substantially lower education levels. Eastern Europeans are the most recent arrivals and, together with Latinos, have schooling levels that are similar to those of natives. Secondly, we find that women are on average equally or more educated than men in all ethnic groups, except for Moroccans. Third, we also find large differences in marriage patterns across ethnic groups. Our results suggest that Latinos have the lowest rates of early marriage (and overall marriage) while Moroccans have the highest.

With respect to interethnic marriages, we find that the Latino group is the one with a higher fraction of marriages to Spanish natives (33%), relative to the total number of marriages. This group is followed by Morocco, with a rate of 17% of their married population having a Spain-born spouse. At the other end, only 11% of the married Eastern Europeans are married to Spanish natives. Our interpretation of these results are

driven partly by cultural distance (which accounts for the high inter-ethnic marriage of Latinos) and partly by the imbalance in sex ratios faced by immigrants from Morocco. We also find that Moroccans have the highest fertility rates, while Eastern Europeans have the lowest. Our regression results show that low levels of education are largely responsible for the highest fertility of Moroccans.

Fifth, we find that among single women (without children), employment rates are high and very similar for all ethnic groups. However, while marriage and children impose only a small employment penalty on Latino and Eastern European women, Moroccan women's employment rates drop precipitously. The welfare implications are not obvious given that fertility rates are higher among women in these groups, which reduces the potential economic benefits of participating in the labor market.

Sixth, the command of Spanish is very high across all groups, although naturally the highest among Latinos. Among non-Latinos, our regression analysis reveals that Eastern Europeans are around 3 percentage points more likely to be fluent in Spanish than Moroccans, controlling for education and years since migration. Our analysis of social participation reveals that Latinos are more likely to participate in clubs and associations non-targeted to foreigners, compared to all other groups. Finally, we find substantial dissimilarity in the labor-market outcomes and family organization of natives and immigrants, after controlling for demographics and educational attainment.

Overall these results suggest that Latinos –the group with the shortest cultural distance to Spanish social norms– appear very similar to natives in most economic and cultural outcomes. Moroccans still display large gaps along several dimensions, which are largely explained differences in educational attainment. Our results also show that these gaps shrink rapidly as time in Spain (since migration) rises and that native-immigrant gaps appear to be shrinking fast for the younger cohorts.

References

-Amuedo-Dorantes, C. and S. De la Rica, "The Immigration Surplus and the Substitutability of Immigrant and Native Labor: Evidence from Spain", forthcoming in Empirical Economics (2011).

- Amuedo-Dorantes, C. and S. De la Rica, "Complements or Substitutes? Task Specialization by Gender and Nativity in Spain" Labour Economics, 18, 2011; doi : 10.1016/j.labeco.2011.02.002

- Bertoli, S., Fernandez-Huertas, J., Ortega, F., 2011. "Immigration Policies and the Ecuadorian Exodus." The World Bank Economic Review 2011; doi: 10.1093/wber/lhr004.

- Bisin, A., Verdier, T., (2000). "Beyond the Melting Pot: Cultural Transmission, Marriage, and the Evolution of Ethnic and Religious Traits," Quarterly Journal of Economics, CXV(3), 955-988.

- Bisin, A., Topa, G., Verdier, T., (2004). "An Empirical Analysis of Religious Homogamy and Socialization in the U.S," Journal of Political Economy, 112(3), 615-64.

- Bisin, Alberto, Eleonora Patacchini, Thierry Verdier and Yves Zenou (2007) "Are Muslim Immigrants Different in Terms of Cultural Integration?", CEPR DP 6453.

- Chiswick, Barry R. (1980) "The Earnings of White and Coloured Male Immigrants in Britain", Economica, 47, 81-87.

- Constant Amelie, and Klaus F. Zimmermann (2008) "Measuring Ethnic Identity and Its Impact on Economic Behavior", forthcoming, Journal of the European Economic Association.

- Cortina, C., Esteve, A., Domingo, A. (2008a). "Marriage Patterns of the Foreign-Born Population in a New Country of Immigration: The Case of Spain." The International Migration Review.

- Cortina, C., Garcia, T., Esteve, A. (2008b). "Gender relations in intermarriage: lessons learned from the Spanish case." Mimeo.

- Farré, L., González, L., and Ortega, F., 2011. "Immigration, Family Responsibilities and the Labor Supply of Skilled Native Women," The B.E. Journal of Economic Analysis & Policy: Vol. 11: Iss. 1 (Contributions), Article 34. DOI: 10.2202/1935-1682.2875.

- Gonzalez, L., Ortega, F., 2010. "How Do Very Open Economies Absorb Large Immigration Flows? Evidence from Spanish Regions." Labour Economics 18 (2011) 57–70.

- Gonzalez-Ferrer, A., Cebolla-Boado, H., 2008. "Immigration in Spain: from handling new arrivals to integrating immigrants (in Spanish)." Centro de Estudios Politicos y Constitucionales. Cuadernos y Debates 184. Madrid.

- Manning, Alan and Sanchari Roy (2007) "Culture Clash or Culture Club? The Identity and Attitudes of Immigrants in Britain", CEP Discussion Paper No. 790.

- Manning, A., (2009). Unpublished note on "An extension on Vigdor's assimilation indices."

- Sandell, R., 2008. "A Social Network Approach to Spanish Immigration: An Analysis of Immigration into Spain 1998-2006," FEDEA working paper 2008-33.

- Stewart, Mark B. (1983) **"**Racial Discrimination and Occupational Attainment in Britain", Economic Journal, 93, 521-541.

- Vigdor, J.L. (2008). "Measuring Immigrant Assimilation in the United States." *Manhattan Institute Civic Report* 53 (2008).

Tables

Table 1: Foreign-born population in Spain, by origin.

Continent	NIS 2007 Freq. thousands	NIS 2007 Rel. freq.	Registry 2008 Freq. thousands	Registry 2008 Rel. freq.
AMERICA	1,779	39.5	1,703	36.0
Ecuador	370	8.2	383	8.1
Colombia	299	6.6	268	5.7
Argentina	232	5.1	180	3.8
EUROPE	1,718	38.1	2,018	42.7
Romania	429	9.5	656	13.9
UK	269	6.0	315	6.7
France	203	4.5	88	1.9
Germany	160	3.5	158	3.3
Bulgaria	100	2.2	140	3.0
AFRICA	761	16.9	772	16.3
Morocco	534	11.8	539	11.4
Algeria	53	1.2	47	1.0
Senegal	30	0.7	42	0.9
ASIA	207	4.6	230	4.9
China	54	1.2	107	2.3
Philippines	47	1.0	21	0.4
Pakistan	39	0.9	44	0.9
Total Foreign-born	4,508	100	4,725	100
Total Spain			46,064	

Sources:
NIS 2007, Reference individuals. All Ages
Registry 2008 (January 1st)

Table 2: Main ethnic groups in Spain in 2007.

Ethnic group	Frequency thousands	Rel. frequency %
LATINOS	**1,746**	**38.7**
Ecuador	370	0.21
Colombia	299	0.17
Argentina	232	0.13
EASTERN EUROPE	**720**	**16.0**
Romania	429	0.60
Bulgaria	100	0.14
Ukraine	68	0.09
MOROCCANS	**537**	**11.9**
REST	1,506	33.4
Total	4,509	100

Note 1: Source is NIS 2007, Reference individuals. All ages.

Note 2: Relative frequency for ethnic groups is over total foreign-born population.
For each individual country, relative frequency is over the respective ethnic group.

Table 3: Years since migration, by ethnic group.

YSM	Latinos	Eastern Europe	Morocco
1	8.5	10.9	3.7
2	7.8	9.3	5.4
3	7.8	15.1	6.4
4	10.0	14.5	7.6
5	11.3	16.2	6.0
6	14.2	12.1	8.9
7	11.3	8.4	7.4
8	6.8	5.1	5.0
9	2.6	1.4	6.4
10	1.5	0.5	2.7
11 to 15	4.8	3.8	12.0
over 15	13.6	2.8	28.5
All	100	100	100
mean	8.8	5.1	14.0

Source: NIS 2007, Main sample (reference individuals age 16-60).

Table 4: Age-gender distribution, by ethnic groups.

Only men Age	Latinos	Eastern Europe	Morocco	Natives
16 to 29	31.9	32.0	30.0	20.9
30 to 49	53.4	59.0	51.9	35.5
50 to 64	10.8	8.2	13.1	22.9
65 to 74	2.3	0.7	3.3	12.5
over 75	1.6	0.2	1.8	8.26
All	100	100	100	100
mean	36.7	34.5	37.9	46.77

Only women Age	Latinos	Eastern Europe	Morocco	Natives
16 to 29	29.9	39.7	30.3	18.6
30 to 49	53.1	49.7	48.1	33.9
50 to 64	12.5	10.1	12.3	22.3
65 to 74	2.6	0.5	5.9	13.5
over 75	2.0	0.1	3.3	11.7
All	100	100	100	100
mean	37.7	34.1	39.1	48.94

Fraction of women Age	Latinos	Eastern Europe	Morocco	Natives
16 to 29	52.6	54.0	36.5	49.1
30 to 49	54.2	44.3	34.5	51.1
50 to 64	57.7	53.9	34.8	51.6
65 to 74	57.9	39.1	50.5	54.1
over 75	58.9	29.2	51.9	60

Source: NIS 2007, Main sample.

Table 5: Educational attainment of natives and immigrants.

.

MEN	Latinos	Eastern Europe	Morocco	Natives
Primary or less	33.3	41.2	63.0	18.01
Secondary	45.2	48.5	26.6	56.35
Tertiary	21.5	10.4	10.4	25.64
average years	11.1	10.6	7.6	11.42

WOMEN	Latinos	Eastern Europe	Morocco	Natives
Primary or less	31.0	30.9	77.5	18.72
Secondary	43.2	45.5	15.0	52.83
Tertiary	25.8	23.6	7.5	28.45
average years	11.1	11.2	5.7	11.61

Source: NIS for foreign-born and LFS for natives. Ages 25-50. Completed education

Table 6: Gender Gaps in Years of Education for different birth cohorts.

Age	Latinos	Eastern Europe	Morocco	Natives
Less than 30	0.194	0.558**	-0.593	0.821**
	[0.127]	[0.202]	[0.416]	[0.032]
31-40 years	0.191	0.490**	-2.466**	0.543**
	[0.142]	[0.186]	[0.459]	[0.045]
41-60 years	-0.315**	-0.155	-0.821*	-0.353**
	[0.165]	[0.316]	[0.455]	[0.038]

Data sources: NIS (2007) for foreign-born and LFS (2007) for natives.

Note: The dependent variable is years of completed education; the coefficient reported is the impact of female on years of education from a linear probability model. There is a separate estimation for each ethnic group and for each birth cohort. ** significant at 5%, * significant at 10%. All regressions control for age and for years since migration (ysm). Standard errors are in brackets.

Table 7: Early marriage.
Distribution and Predicted Probabilities by ethnicity. Females ages 16-25.

	Latinos	Eastern Europe	Morocco	Natives
Proportion married	0.16	0.29	0.62	0.03
	[0.37]	[0.45]	[0.48]	[0.17]
Pred. prob. married, controls for age and years since migr. (ysm).	0.165	0.291	0.624	0.03
	[0.133]	[0.175]	[0.271]	[0.03]
Pred. prob. Married, controls age, ysm and education	0.165	0.291	0.624	0.03
	[0.136]	[0.178]	[0.293]	[0.04]
N. observations	442	237	125	8,892

Data sources: NIS (2007) for Immigrants and LFS (2007) for Natives. Sample consists of all female between 16 and 25 years of age.

Notes: The first row computes the proportion of marriages. Standard deviation in brackets. In the second row, we compute the predicted probability of marriage evaluated at each ethnic group's average age, controlling for years since migration. For this prediction, the dependent variable is an indicator of marriage among all female between 16 and 25 years of age. A linear probability model is estimated, and there is a separate estimation for each ethnic group. The third row computes the predicted probability of an early marriage, as before, but controlling not only for years since migration but also for years of education. In rows 2 and 3, robust standard errors in square brackets.

Table 8: Inter-ethnic marriage.

Table 8A: Conditional means by ethnic group and birth cohort

	Latinos	Eastern Europe	Morocco	Natives
Age: Less than 30				
% Married	28	38	49	8.9
Spouse from				
Same country	68.6	80.6	90.9	79.3
Spain	31.0	19.1	9.1	
Third country	0.0	0.3	0.0	21.9
Age: 31-40 years				
% Married	54	65	76	63.7
Spouse from				
Same country	66.7	88.6	80.9	89.6
Spain	32.9	11.4	17.3	
Third country	0.0	0.0	1.8	10.4
Age: 41-60 years				
% Married	60	66	77	79.6
Spouse from				
Same country	55.0	87.9	61.7	95.3
Spain	45.0	12.2	38.0	
Third country	0.0	0.0	0.3	4.7

Sources: NIS (2007) for foreign-born and LFS (2007) for natives.

Notes: The sample is composed of all married individuals between 16 and 60 years. Third country means a country different from one's birth country and from Spain. For Natives, we have computed the percentage of all married individuals between 16 and 60 years married with a Spaniard (same country) or married to a foreign-born.

Table 8B: Probability of inter-ethnic marriage.
Linear probability models.

	Latinos	Eastern Europe	Morocco	Natives
Age: < 31 years	0.182**	0.081**	-0.027**	0.217**
	[0.020]	[0.023]	[0.019]	[0.012]
Age: 31-40	0.027	-0.109**	0.009	-0.113**
	[0.024]	[0.026]	[0.028]	[0.010]
Age 41-60	0.094**	-0.150**	-0.067**	-0.169**
	[0.025]	[0.028]	[0.031]	[0.012]
Years since mig.	0.023**	0.025**	0.021**	---
	[0.002]	[0.002]	[0.001]	
observations	2624	1181	1064	48707

Sources: NIS [2007]. The sample is composed of all married individuals between 16 and 60 years.

Notes: For foreign-born, the dependent variable takes the value of 1 if the individual is married either to a Spanish native or to someone from a third country (not Spain and not the individual's own country of birth). For natives, the dependent variable equals one if married to a foreign-born. The reference group is married individuals younger than 31. A Linear Probability model is estimated, and there is a separate regression for each ethnic group. The coefficient reported under age<31 is the constant of the estimation and the rest of coefficients must be understood as the increase or decrease in the probability of an inter-ethnic marriage with respect to the reference group. ** significant at 5%, * significant at 10%.

Table 9A
Average Number of Children by ethnic group

	Latinos	Eastern Europe	Morocco	Average Spain*
Number of children	1.27 [1.19]	0.97 [0.90]	1.72 [1.60]	1.38
Average Age	32.9	31.28	32.29	
Female	[6.86]	[6.72]	[7.18]	
Observations	2628	1063	548	

Data source is NIS. The sample includes all females aged between 18 and 45 years of age. Standard Deviation in brackets. Data for Average Number of Children in Spain is taken from the Spanish Institute of Statistics (Basic Demographic Indicators – 2006, includes all native and immigrant women).

Table 9B
Determinants of the Average Number of Children

Controls	Not Controlling for Education	Controlling for Education
Eastern Europe	-0.18**	-0.20**
	[0.03]	[0.03]
Morocco	0.51**	0.03
	[0.06]	[0.06]
Years of Education	-	-0.09**
		[0.005]
N. observations	4239	4239

Data source is NIS. The sample includes all females aged between 18 and 45 years of age. The dependent variable is number of children and there is a joint regression for all ethnic groups. Reference is Latinos. A linear regression is estimated. Each reported coefficient measures the difference in the average number of children between Latinos and the other ethnic origins. Age and age squared and years since migration and its square are also included in both regressions. Robust standard errors in brackets. ** significant at 5%, * significant at 10%.

Table 10A

Female Employment Rates by Ethnic Group and for different demographic characteristics

	Latinos	Eastern Europe	Morocco	Natives
All Women	0.70	0.69	0.35	0.499
	[0.45]	[0.46]	[0.47]	[0.50]
Single Women	0.76	0.71	0.65	0.527
	[0.43]	[0.45]	[0.48]	[0.499]
Married Women	0.65	0.67	0.26	0.478
	[0.47]	[0.47]	[0.44]	[0.498]
Married Women	0.65	0.66	0.24	0.438
with children	[0.48]	[0.47]	[0.43]	[0.499]

Data Source is NIS for foreign-born and LFS for natives. The sample includes all females between aged 25 and 59 years.

Table 10B

Conditional Probability of Employment – All Women and for Different Demographic Characteristics

	Latinos	Eastern Europe	Morocco
All Women	0.67**	0.58**	0.21**
	[0.02]	[0.05]	[0.05]
Single Women	0.675**	0.61**	0.74**
	[0.04]	[0.10]	[0.13]
Married Women	0.63**	0.64**	0.12**
	[0.03]	[0.06]	[0.05]
Married Women with	0.64**	0.62**	0.11**
children	[0.04]	[0.06]	[0.05]

Data Source is NIS. The sample includes all females between aged 25 and 59 years.
Notes: A linear probability model is estimated separately for each ethnic group and for each group of women. All regressions control for age [three age categories (less 35, 36-45 and older than 45 - less than 35 as reference), for years since migration and its square and for education (no education, primary, secondary and tertiary – reference: primary). Hence, the reported coefficients are the average employment rates for the reference female (<35 with primary education) for each ethnic group and for each family situation. Robust Standard errors in brackets. ** significant at 5%, * significant at 10%.

Table 11: Fluency in Spanish by ethnic group.

Table 11A: Means, main sample NIS.

	Latinos	Eastern Europe	Morocco
All individuals			
Native-speaker	94.9	0.5	9.6
Speaks & Understands	4.9	96.7	87.3
Only Understands	0.2	2.9	3.1
	100.0	100.0	100.0
Recent [ysm<3)			
Native-speaker	90.8	0.0	0.0
Speaks & Understands	8.2	90.3	92.6
Only Understands	0.9	9.7	7.3
	100.0	100.0	100.0

Table 11B - Probability of Speaking and Understanding Spanish
Sample: non-Latino, non-native speakers
Linear Probability Model

Dependent variable:	Speak & Understand
Constant	0.797
	[0.026]**
Eastern Europeans	0.027
	[0.012]**
Years since Migration	0.000
	[0.000]
Age	-0.001
	[0.000]**
Years education	0.014
	[0.001]**
Female	-0.050
	[0.010]**
Observations	3604
R-squared	0.1

Robust Standard errors in brackets. ** significant at 5%.

Table 12: Social participation in associations and clubs.

Table 12A: Descriptive statistics

	Latinos	Eastern Europe	Morocco
Targeted to foreigners			
Religious [1]	1.31	1.94	1.65
Cultural and educational	1.38	1.32	1.87
Sports	1.83	0.57	0.82
Non-targeted			
Religious [2]	3.03	1.63	1.32
Cultural and educational	3.57	1.54	2.31
Sports	4.88	2.07	2.86
Religious [1+2]	4.34	3.57	2.97

Source: NIS, main sample.

Table 12B: Linear probability model.

Dependent variable: Participation in either type of association not targeted to foreigners.

dep. var:	Participation
Constant	-0.013
	[0.007]*
Eastern Europeans	-0.010
	[0.003]**
Moroccans	-0.015
	[0.003]**
female	0.008
	[0.003]**
years since migration	0
	[0.000]
age	0.001**
	[0.000]
years of education	0.001
	[0.000]**
Observations	9188
R-squared	0.01

Omitted category is Latinos. Robust standard errors in brackets. ** significant at 5%; * significant at 10%;

Table 13: Similarity between native and foreign-born individuals.
Dependent Variable: Probability of Being Foreign Born
(Probit model, Marginal Effects reported)

Variables	(1) FB==1	(2) FB==1	(3) FB==1	(4) FB==1
Employed	0.026**	0.050**	0.024**	0.019**
	[0.002]	[0.002]	[0.002]	[0.003]
Emp*female				0.010**
				[0.004]
Avg. wage ocup-				
pation (wocup)		-0.019**	-0.011**	-0.009**
		[0.001]	[0.001]	[0.001]
Wocup*female				-0.003*
				[0.002]
Married			0.216**	0.210**
			[0.004]	[0.005]
Married*female				0.010*
				[0.005]
Kids			-0.041**	-0.043**
			[0.001]	[0.002]
Kids*female				0.004*
				[0.002]
Spouse_native			-0.353**	-0.345**
			[0.004]	[0.006]
Spouse_nat*female				-0.008*
				[0.005]
Edu2	-0.037**	-0.034**	-0.017**	-0.017**
	[0.002]	[0.002]	[0.002]	[0.002]
Edu3	-0.047**	-0.035**	-0.021**	-0.021**
	[0.002]	[0.002]	[0.002]	[0.002]
Female	0.013**	0.010**	0.010**	0.005
	[0.002]	[0.002]	[0.001]	[0.003]
Age	-0.002**	-0.002**	-0.001**	-0.001**
	[0.000]	[0.000]	[0.000]	[0.000]
Observations	101530	101530	101530	101530
Pseudo-R2	0,019	0,023	0,290	0,290

Notes: The dependent variable is an indicator for foreign-born. We report marginal effects from a probit. Average monthly wages by occupation in thousands of euros. Standard errors in brackets. ** significant at 5%, * significant at 10%.