

The Occupational Attainment of Migrants and Natives in Barcelona, 1930*

Javier Silvestre, María Isabel Ayuda and Vicente Pinilla

Abstract

Very few empirical studies have analyzed the labour market performance of migrants in European countries in the nineteenth and early twentieth centuries. This article uses a rich new micro-dataset to examine the occupational attainment of migrants, mostly internal migrants, in the city of Barcelona, a key destination from the late nineteenth century onwards, adding to the literature on internal migrations in Spain during the period of industrialization. The study shows that the occupational outcomes achieved by early migrants tended to match those of natives, the reference group. However, some groups of migrants who arrived at the end of the period covered by the study show poorer outcomes than natives. The relative underachievement of these groups is explained by changes in the type of migrants and in the characteristics of the labour market. Our estimates also suggest that Spanish migrants did not experience upward occupational mobility after settling in Barcelona.

Keywords: occupational attainment; mobility; assimilation of migrants; labour market of Barcelona

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Economic growth and structural change in the nineteenth and early twentieth centuries caused an increase in internal migrations in European countries. Although less pronounced than before World War I, urban growth continued throughout the interwar period, raising concerns about the rural exodus and its consequences.¹ Rates of internal migration in the interwar period were even higher in some Southern European countries to which industrialization had arrived relatively late.² However, little attention has been paid to the labour market incorporation of migrants.³ Understanding the process of migration is important because of its role in the reallocation of labour to higher marginal product areas and in the growth of cities, two key factors in the economic development of industrializing nations at the turn of the century—and of developing countries later.⁴

The aim of this study is twofold. Firstly, it offers new evidence for the extent of economic assimilation of migrants, mostly internal migrants, in a European urban labour market. Only two studies for Britain have empirically examined the performance of (male) internal and international migrants compared to those born in the host cities.⁵ Jeffrey G. Williamson showed that migrants did not earn less than non-migrants in mid-nineteenth century Britain with the significant exception of the Irish.⁶ Timothy J. Hatton and Roy E. Bailey conclude that migrants in interwar London even enjoyed slightly higher earnings and

¹ Hohenberg and Lees, *Making of Urban Europe*, pp. 217-226; Moch, *Moving Europeans*, p. 129; Lucassen, *Immigrant Threat*, pp. 27-99.

² Treves, *Migrazioni Interne*, p. 169; Silvestre, “Internal Migrations”, p. 237.

³ Klein, “Did Children’s Education Matter?”, pp. 1-2, reviews related research. See also Sicsic, “City-Farm Wage Gaps”.

⁴ See, for example, Long, “Rural-Urban Migration”, p. 2; Lall, Selod, and Shalizi, “Rural-Urban Migration in Developing Countries”.

⁵ Other studies focus on out-migration, using samples of individuals drawn from two censuses to delve into the potential selection of internal migrants. Long, “Rural-Urban Migration”, provides evidence for positive selection. However, studies for the United States point to negative selection; see Ferrie, “Migration to the Frontier”; Stewart, “Migration to the Agricultural Frontier”. Upward occupational mobility also provided a motive for leaving the countryside. Klein, “Did Children’s Education Matter?”, goes deeper into the study of intergenerational mobility.

⁶ Williamson, “Migrant Earnings”.

lower unemployment than natives, again with the main exception of the Irish, a difference attributable to individual characteristics, particularly skills.⁷

We examine a further major destination. Migration to Barcelona increased sharply between the late nineteenth century and the early 1930s—the migratory cycle ended with the outbreak of the Spanish Civil War in 1936. The city’s population doubled in size between 1900 and 1930 due principally to the arrival of migrants, and by 1930 it had 1,005,565 inhabitants, a similar figure to Birmingham, Budapest, Glasgow or Rome. Meanwhile, the proportion of the population born outside the city reached 56.1 percent.

Secondly, this study throws light on internal migrations in Spain during the period of industrialization. Prior empirical research has focused on the causes and (to a much lesser extent) the effects of migration on sending and receiving areas.⁸ Among other issues, it has been proposed that the lack of pull from non-agricultural sectors provides the best explanation for the low rates of internal migration until the 1910s. The impact of migration on average wages has also been examined in some detail, but little work has been done on the process of migrant incorporation into a new labour market.

Barcelona was not just any destination. Together with Madrid, it was the main magnet for migrants—including immigrants from abroad—although the historical literature stresses the scarcity of opportunities for newcomers compared to natives.⁹ It has also been claimed that migrants’ lack of upward mobility strengthened and radicalized revolutionary labour movements. In this regard, Barcelona suffered high levels of strike activity and social conflict compared to other European cities.

This article empirically examines the causes underlying the assimilation of migrants in Barcelona using occupation as an indicator of labour market position. Those born in Barcelona constitute our reference group. A rich micro-database, the 1930 register of inhabitants, allows us to assess the importance of human capital variables and other individual and spatial features of migration in the incorporation process. The article also considers how the occupational attainment of migrants varied once they had arrived in Barcelona. Although the first concern of new arrivals to a city may be to find a job, research shows that the aim of migrants is upward occupational mobility, which is associated with

⁷ Hatton and Bailey, “Natives and Migrants”.

⁸ Rosés and Sánchez-Alonso, “Regional Wage Convergence”; Silvestre, “Internal Migrations”; Pons, Paluzie, Silvestre, and Tirado, “Testing the New Economic Geography”.

⁹ See, for example, Kaplan, *Red City, Blue Period*, p. 60; Rider, “New city”, p. 76; Oyón, “Split of a Working-Class City”, pp. 92-94; Ealham, *Anarchism and the City*, p. 5.

higher wages.¹⁰ We also use evidence provided by the historical literature to circumvent the limitations of the source and complete the picture of in-migration.

Our findings suggest that migrants arriving at the end of the nineteenth century did not generally suffer any curtailment of their opportunities to enter better occupations. Occupational attainment for both early migrants and natives is thus explained mainly in terms of measured human capital accumulation. However, significant differences emerged over time. Some groups of Spanish migrants who arrived later found themselves locked into worse occupations than natives, though other groups and international immigrants may have outperformed the Barcelona-born. For a variety of reasons, the results do not support the existence of upward occupational mobility once migrants had settled in Barcelona. We will argue that developments in the labour market and, particularly, changes in the types of some migrant groups help to explain migrant incorporation patterns.

I

The economic development of the city of Barcelona in the nineteenth century was based on cotton textiles manufacturing and other consumer industries such as food processing. This situation changed at the beginning of the twentieth century. In particular, the city's economy benefitted from Spanish neutrality in World War I, and public investment and international capital inflows in the 1920s.¹¹ The industrial and service sectors became more diversified. Table 1 contrasts the number of workers employed at three different dates in eight industries for which comparable data is available, as well as the residual figure for other industries (which may reach 25 percent). New, expanding industries included metalworking, woodworking and chemicals, though textiles and construction were also large employers, as was commerce (not reflected in the Table).

[Table 1]

¹⁰ The historical research is cited in footnotes 4-7. Reviews of the literature for developing countries are provided in Mazumdar, "Rural-Urban Migration", pp. 1114-1146; and Lall, Selod, and Shalizi, "Rural-Urban Migration in Developing Countries", pp. 5, 17, 23.

¹¹ Sudrià, "Modernidad", pp. 49-55; Tafunell, "Construcción", p. 9; Calvo, "Activitats econòmiques", pp. 176-177; Catalan, "Recursos humans", pp. 223-228; Smith, "Rise of labour", pp. 18-22; Sánchez, *Barcelona*, pp. 14-17.

The city expanded its territory, sometimes by annexing nearby towns, and changed its urban landscape by investing in land transport infrastructure and port modernization. This transformation reached a symbolic zenith with the celebration of the 1929 International Exhibition. This consolidation of the growth process may indeed have mitigated the impact of the Crash of 1929, with the notable exception of the construction industry.¹²

Migrants responded to employment opportunities and relatively high wages in the buoyant labour market of Greater Barcelona. According to new estimates, real wages in Barcelona were among the highest in Spain in the 1910s and 1920s.¹³ Barcelona also offered a wider range of non-agricultural job opportunities than other potential destinations, a decisive factor behind internal migrations in Spain at the time.¹⁴ Data from population censuses and statistical yearbooks (available from 1900 onwards), re-sorted and presented in Table 2 show that net migration accounted for almost all population growth in Barcelona from 1900 onwards.

[Table 2]

The population census of 1930 indicates that 563,841 inhabitants had been born outside Barcelona. Thirteen eastern provinces of Spain accounted for 77 percent of in-migration. Barcelona, as a growing Mediterranean port and a recipient of international capital flows was also able to attract numbers of immigrants (26,659) from other countries. The main places of origin, from among 56 countries, were France, Germany, Italy, Cuba, Switzerland, Argentina and Britain.¹⁵

An interesting feature of migration flows to Barcelona is that the city's main area of influence increased over time. Migration on a significant scale may reach back as far as the 1860s.¹⁶ Most migrants between the 1860s and the end of the century originated predominantly from nearby villages and towns belonging to the province of Barcelona itself and the other Catalan provinces (Tarragona, Gerona and Lerida). A relatively small number

¹² Sánchez, *Barcelona*, p. 17; Tafunell, "Construcción", p. 14; Rider, "New city", p. 75.

¹³ Rosés and Sánchez-Alonso, "Regional Wage Convergence".

¹⁴ Simpson, "Real Wages"; Borderías, "Women Workers"; Silvestre, "Internal Migrations".

¹⁵ Tatjer, "Evolució demogràfica", p. 106. A number of immigrants from Cuba and Argentina may have been Spanish return migrants and their descendents; see Sánchez-Alonso, "Other Europeans".

¹⁶ Vidal, "Exode rural", pp. 196-200. On previous inflows, see for example, Mora-Sitja, "Labour market integration".

of migrants also came from the Balearic Islands.¹⁷ The main area of influence before 1900 is shown in Figure 1 (as a guide, we also used the distribution of cases over time in the dataset described in the next section). The influence of Barcelona continued to expand from the beginning of the twentieth century onwards, as shown in Figure 2. This was the result of the rising numbers of migrants arriving from the regions of Valencia (comprising the provinces of Castellon, Valencia and Alicante) and Aragon (provinces of Huesca, Zaragoza and Teruel).¹⁸ Scholars have highlighted certain features of migration prior to the World War I, including its relatively slow, albeit steady pace.¹⁹ Some features of migration flows changed from World War I onwards, when the number of migrants increased sharply (we return to this issue below). Later migrations included those from the more distant provinces of Murcia and Almeria, as shown in Figure 3.

[Figure 1]

[Figure 2]

[Figure 3]

II

The purpose of this article is to analyze the labour market incorporation of migrants. We used the 1930 *Padrón Municipal de Habitantes* (municipal register of inhabitants) as our main source. This population register comprises 800 volumes of approximately 300 pages each. Each page, or card, provides information for one household, and was completed by municipal agents. An agent was assigned to each of the 239 zones into which the city was divided. We used the computerized, spatially representative 5 percent sample, accounting for 12,825 households compiled by the social historian José Luis Oyón and his collaborators. One in twenty cards was extracted.²⁰

¹⁷ Vidal, “Demografía Baleárica”, p. 224. The distance between Barcelona and the port of Palma de Mallorca is 207 km.

¹⁸ Arango, “Cambio económico”, pp. 58-59; Aracil, Ferrer, Recaño, and Segura, “Inmigración”, pp. 307-311; Oyón, Maldonado, and Griful, *Barcelona 1930*, pp. 49-60.

¹⁹ Camps, *Formación del Mercado*, pp. 51, 58, 81-91, 237; Llonch, “Canales migratorios”; Mirri, “Migrantes”.

²⁰ For a full description of the source and the 5 percent sample, including a further spatial representativeness check, see Oyón, Maldonado, and Griful, *Barcelona 1930*, pp. 9-11. See also Oyón, *Quiebra*, pp. 21-61;

All male heads of household above the age of 18 (10,263 individuals) were drawn from the database.²¹ Members of the armed forces were excluded. Women's characteristics tend to be more poorly reported in the *Padrón* than men's.²² For this reason we decided to focus on males. A total of 1,027 cases were excluded because information regarding some of the relevant items was incomplete. There was no standard case of incomplete information to suggest that these exclusions could bias the sample. Unreported information often concerned one or more of the following main items: age, literacy, municipality of birth, year of arrival and occupation. The final database totaled 9,236 individuals.

The *Padrón* indicates the municipality of birth. According to the sample taken here, 69.0 percent of the population was born outside the city of Barcelona, which is higher than the figure of 56.1 percent provided by the 1930 population census. However, the gap between the two rates can be attributed to the fact that the *Padrón* is a list of heads of households. Co-residents, for whom some relevant information is always incomplete, and children born in Barcelona are therefore not considered as a unit of analysis. The correlation between the number of individuals from different places of origin (N=52) recorded in the census and the sample is remarkably high at 0.96, however. This result suggests that although our source overstates the size of in-migration, it correctly reflects its structure.

For the purposes of this article, the main variable is occupational attainment. The *Padrón* does not provide systematic information about wages.²³ The *Padrón* is also not a reliable source for the study of employment and unemployment, as is often the case with historical datasets. In this regard, it may have been the way municipal agents collected information which caused them to declare so few individuals to be unemployed. Unemployment rates in the city and province of Barcelona in the late 1920s nevertheless

Doménech and Elu-Terán, "Women's Paid Work", p. 379; Tatjer, "Inmigración", p. 127. The original source is available from the Barcelona Municipal Archive.

²¹ The number of workers in their sixties and seventies is not negligible. According to the 1930 population census, in fact, the labour market participation rate of people above the age of 65 was 83.27 percent.

²² See also Doménech and Elu-Terán, "Women's Paid Work".

²³ Using occupational wage data compiled by the Spanish Ministry of Labour, an attempt was made to convert occupation into a crude estimate of individual wages, following the method proposed by Williamson, "Migrant Earnings". However, this approach was abandoned due to the lack of correspondence between occupational categories and the insufficient variation of the imputed wage data. Similar problems are described in Doménech and Elu-Terán, "Women's Paid Work", p. 387.

appear to have been very low. One year after the 1929 Crash, the rate of unemployment in the city of Barcelona was 4.3 percent.²⁴

The final sample records 317 different occupations. Each occupation was classified using HISCLASS, which is based on HISCO, a historicized version of the International Labour Organization's 1968 *International Standard Classification of Occupations* (ISCO). HISCO and HISCLASS were created by researchers associated with the International Institute of Social History in Amsterdam (the History of Work Information System project).²⁵ HISCO is an occupational classification system providing a list of 1,600 occupations. HISCLASS transforms these occupations into a convenient number of socio-economic groups using a set of theoretical and fixed criteria. The main dimensions of each group in HISCLASS are the manual/non-manual division, skill level, the degree of supervision, and the economic sector.

The original HISCLASS taxonomy comprises twelve groups. For operational (econometric) purposes, and to avoid very few observations in some groups, a classification of four *categories* was created.²⁶ Table 3 specifies the conversion of the twelve HISCLASS groups (column II) into the four categories created here (column I). *Ad hoc* allocation of occupations, as in the original HISCO to HISCLASS transition, was unavoidable in some cases. Two further items included in the *Padrón*, home ownership and the presence of domestic servants, were used as further criteria in dubious cases.²⁷ The final column in Table 3 indicates the most common occupation in each of our four final categories.²⁸ One feature of the data is the vagueness of the most common occupation, *jornalero*, literally meaning 'day labourer' (4,594 observations of 9,236). However, this term tended to refer to a common type

²⁴ The figure for London in the same year was 8.01 percent; see Soto, *Trabajo industrial*, p. 344; Hatton and Bailey, "Natives and Migrants", p. 33.

²⁵ The HISCO and HISCLASS schemes are explained in detail in Mass and van Leeuwen, "Total and Relative Endogamy"; and Pélissier, Rébaudo, van Leeuwen, and Maas, "Migration and Endogamy". See also Tammes, "Occupational Structure". Detailed information can also be found at the International Institute of Social History web site (<http://historyofwork.iisg.nl/>).

²⁶ This is a common strategy adopted by HISCLASS users. See also Green, "Immigrant Occupational Attainment"; Long, "Rural-Urban Migration"; Barrett and Duffy, "Are Ireland's Immigrants Integrating".

²⁷ For a similar strategy, see Long, "Rural-Urban Migration", p. 9.

²⁸ As a validity check, we compared our breakdown of occupations with the one provided by Vilanova, "Anarchism Political Participation", p. 102, based on the 1934 electoral census. The percentages of the total samples are very similar.

of worker at that time and place. *Jornaleros* in Barcelona did not usually have any specific qualification and often floated between occupations, economic sectors and even locations.²⁹

[Table 3]

The source has two main potential shortcomings, each of which is commonly, though not always, found in studies of past and present, international and internal migration.³⁰ Both are related to the fact that the *Padrón* is a single cross-section dataset.³¹ Firstly, the source focuses on “stayers”. For example, although it is not possible to determine the precise figure, a number of recent arrivals in particular may have been temporary migrants, often working as *jornaleros* for a few months or years in the construction sector in Barcelona and then returning to their (often rural) places of origin.³² The source used here may, therefore, include early cohorts of permanent and probably more successful migrants, and recent cohorts providing a more representative selection from the migrant pool. Thus, if the least successful migrants had a greater propensity to return, the cross-section analysis will provide upwardly biased estimates. Nevertheless, tentative calculations (based on the population censuses) suggest that temporary migrants were far less numerous than permanent migrants in Barcelona in 1930 and the preceding years.³³

²⁹ Tatjer, “Inmigración”, p. 129; Doménech and Elu-Terán, “Women’s Paid Work”, p. 380. Thanks are also due to Carles Sudrià for the information he has provided.

³⁰ An additional feature of this study is that our sample records in-migrants over a long period and, therefore, the possibility of survivor bias is not considered.

³¹ See Borjas, “Assimilation”; Chiswick, Lee, and Miller, “Longitudinal Analysis”; Hatton, “Cliometrics”. More complete datasets have recently been used in the historical literature on both international and internal migrations. See Ferrie, “Migration to the Frontier”; Minns, “Income”; Long, “Rural-Urban Migration”; Stewart, “Migration to the Agricultural Frontier”; Abramitzky, Boustan, and Eriksson, “Self-Selection and Economic Outcomes”.

³² See Silvestre, “Temporary Internal Migrations”, and the works cited therein.

³³ Figures are not strictly equivalent; see Silvestre, “Temporary Internal Migrations”. In any event, rates of permanent in-migration in the city and province of Barcelona between 1900 and 1930 increased from 40.8 to 56.1 percent and from 22.3 to 35.9 percent, respectively. Meanwhile, the rate of temporary in-migration in the province of Barcelona, the only figure available, remained around 4 percent until the turn of the century and then decreased, only to rise again to 4.8 percent in 1930. In the regressions presented below we also excluded migrants who had been in Barcelona less than three (or five) years, as possible temporary migrants. The results obtained were very similar.

Secondly, cross-section datasets do not account for possible changes in migrants' productivity, which are not captured by the rest of the variables. Existing research (discussed below) in fact suggests that the labour market quality of some groups of migrants may have deteriorated from World War I onwards, when migration increased. Our data allowed us to control for place of origin, given that research for international immigrants arriving in the US proposes that part of this cross-section bias could be explained by the origin mix.³⁴ The lack of longitudinal information data, however, counsels caution in interpreting our empirical evidence.

A further characteristic of the source is that the dataset does not include information to account for the effect of changes in labour market opportunities. To explore the evolution of migrants' incorporation into the labour market, we replicated the main analysis dividing the sample into the principal migrant arrival periods and then compared how migrants' outcomes differed.

III

The key issues in the present analysis are the occupational mobility of migrants and their occupational distribution compared to natives.³⁵ At the time of arrival in the place of destination, migrants may be concentrated in certain occupations. Moreover, they may suffer a disadvantage in the labour market in comparison with similar natives. On the labour supply side, differences in the level and type of human capital, and in demographic characteristics, may explain part of the situation. Skills acquired in places of origin, for example, may not be fully transferable to the destination labour market. Moreover, recent migrants usually have less information about the labour market and the host society. On the demand side, employers may have less information about the characteristics of new migrants than about natives.

As time of residence extends, however, migrants may move up the occupational ladder. Differences in the labour market position of migrants and similar natives may also be eroded. It has been argued that migrants are able to adapt their stock of human capital to the requirements of the new labour market by learning from their experience. The pace at which migrants converge with their native counterparts also depends on the process of acquiring

³⁴ See Hatton, "Immigrant 'quality'", p. 514; Borjas, "Economics of Immigration", p. 1685; and the works cited therein.

³⁵ We follow the line of seminal works, such as Chiswick, "Effect of Americanization"; Borjas, "Assimilation", and subsequent literature.

information about the labour market. Furthermore, employers are also able to acquire information about the characteristics of migrants over time.

Multinomial logit (MNL) models were estimated to compare the occupational attainment of male natives and migrants in the city of Barcelona in 1930. The MNL model is the most frequently used regression model when the outcome is *nominal*, that is, when the categories are assumed not to have a natural order.³⁶ The ranking of occupations is not easy at the empirical level, however, because jobs have attributes that are difficult to compare. In our classification of four occupational categories (see Table 3), it seems clear that *Unskilled, Manual* and *High Skills, Non-Manual* were categories at, respectively, the lowest and the highest levels of the social class distribution. The situation is less evident, however, regarding the order of the two intermediate cases. *Low and Medium Skilled, Non-Manual* occupations may have higher skills content or even higher status, than *Low and Medium Skilled, Manual* occupations. Due to the lack of wage information, however, it is not possible to determine whether wages in the former category were higher or lower than those in the latter.

Ordered probit models (not reported here) were also estimated to check the robustness of the findings.³⁷ Occupational categories were ranked as follows: *High, Non-Manual*; *Low and Medium, Non-Manual*; *Low and Medium, Manual*; and *Unskilled, Manual*. It was assumed that non-manual jobs are preferred to manual jobs, and also that the *Low and Medium, Non-Manual* category reflects higher status or prestige than the *Low and Medium, Manual* category, as confirmed by differences between occupational categories regarding home ownership and the employment of domestic servants. Supplementary analysis leads to virtually the same conclusions. We prefer to present the results obtained via MNL regressions, which we consider the most appropriate to model our outcome variable. In the next sections, however, we argue that belonging to *Low and Medium, Non-Manual* occupations may be preferred to belonging to *Low and Medium, Manual* occupations.

We also evaluated a further option regarding the distribution of individuals across occupational categories. A reduced, more general, Manual/Non-Manual classification was considered in order to decrease the likelihood of errors in assigning categories to occupations. The results of the binary logit model were consistent with those finally presented.

³⁶ Wooldridge, *Econometric Analysis*, pp. 497-499. See also Green, “Immigrant Occupational Attainment”.

³⁷ These regressions and all the supplementary regressions mentioned below but not reported in this article are available from the authors on request.

The determinants of occupational attainment in the regression models include three human capital attributes, namely age, literacy and the rural/urban nature of the migrant, as well as moving costs, length of residence, regional (or provincial) origin, and family structure variables.

Age (in 1930) may be used as a proxy for experience, while the square of age captures the possible existence of decreasing returns to experience in occupational attainment.³⁸ Age at arrival (and age at arrival squared) was included as an alternative to age to reflect the fact that young migrants may face different opportunities in the destination to those who migrate as adults (for natives, age at arrival equaled 0).³⁹

Literacy is defined as the ability to read and write (dummy variable set to 1 for literate respondents). We assume that literacy is an appropriate indicator of the stock of human capital accumulated by individuals in a country in which differences in regional literacy rates in the early twentieth century were still large.⁴⁰

We also took into account the rural/urban nature of the migrant as a supplementary indicator of the possession of readily transferable human capital in Barcelona (natives act as the reference group). Urban migrants are likely to have had fewer problems integrating, as their skills would have been more similar to those of natives than the skills found among rural migrants. We obtained the size of each municipality from the population census closest to the migrant's year of arrival in Barcelona. For each migrant, municipality of origin was considered to be urban if its population exceeded 10,000 inhabitants.⁴¹

Moving costs are proxied by distance. The distance in a straight line between the municipality of origin and Barcelona should be an indicator of travel, information and opportunity costs, and of the cost of entering a new labour market and potential willingness to accept any job (if the migrant comes from far away). For natives, the distance variable equals

³⁸ Hatton and Bailey, "Natives and Migrants", also use "age-minus-x" variables to capture steps in the shape of age-earnings and age-unemployment profiles. Because our outcome variable is nominal (four categories), instead of continuous (earnings) or dichotomous (employment/unemployment), we entered only age and age squared without imposing knot points for the sake of simplicity.

³⁹ Migrants arriving young tend to achieve higher socio-economic status, including better occupations; see Myers, Gao, and Emeka, "Gradient of Immigrant Age-at-Arrival Effects", and the studies reviewed therein.

⁴⁰ Nuñez, "Educación", p. 230; Vilanova, "Anarchism Political Participation", p. 99.

⁴¹ We have chosen a standard criterion, as explained by Tafunell, "Urbanización y vivienda", p. 457, and the studies reviewed therein. Population census dates are 1877, 1887, 1900, 1910, 1920 and 1930.

0—in the regression, this is equivalent to interacting distance with a dichotomous variable that scores 1 if the individual is an in-migrant.

The variables years since arrival and years since arrival squared (controlling for age in our regressions) measure the pace at which migrants may experience occupational mobility.⁴² For natives, this variable equals 0—in the regression, this is equivalent to interacting years since arrival with a dichotomous variable that scores 1 if the individual is an in-migrant.

Place of birth (dichotomous) variables should reflect **regional differences in unobserved human capital and/or ability** which are not captured by the remaining variables included in the model.⁴³ According to the historical literature, we utilized the municipality of birth to divide the database into eight main groups, one for the Barcelona-born, six for those born in Spain and one for those born abroad. The percentage of the sample accounted for by each group is Natives: 31.0; Rest of Barcelona province: 10.6; Rest of Catalonia + the Balearic Islands: 17.6; Valencia: 11.7; Aragon: 8.8; Murcia and Almeria: 7.5; Rest of Spain: 9.9; and Other Countries: 2.8.⁴⁴

Finally, marital status (dummy variables for single, married and widower) and the number of children under 16 (living in the same home as the respondent) are also included. It is true that family structure variables may be determined simultaneously with labour market outcomes—for example, higher occupational attainment for married men may be related to positive selection into marriage. Our focus is therefore on the remaining variables. We treat family characteristics principally as control variables.

IV

Certain descriptive statistics for natives and migrants are shown in Tables 4 and 5. Table 4 reports the distribution of individuals across occupational categories. For the entire sample (Panel A), natives and migrants from the province of Barcelona, the remaining Catalan provinces and the Balearic Islands, and particularly international immigrants, are less

⁴² This variable refers to the most recent year of arrival in the case of temporary migrants.

⁴³ We obtained virtually the same results in specifications in which we added a Catalan-speaking origin variable with the help of a language map of Spain. (Place of birth variables were sometimes removed).

⁴⁴ Migrants from the Balearic Islands are placed together with Catalan migrants because there are very few of the former in the sample and the duration of residence in Barcelona is very similar, as are other characteristics of individuals in these two groups. Migrants from the Rest of Spain comprise a heterogeneous group in which those born in the capital city of Madrid predominate (11.5 percent of this group).

concentrated in the *Unskilled, Manual* category. Among the other groups of migrants, those from Murcia and Almeria are the most heavily concentrated in this category. The pattern tends to reverse for the other three categories, with some exceptions. Migrants from the rest of Spain hold an intermediate position between these two main patterns.

The rest of the Table (Panels B, C and D) refers to the principal migratory periods. For the most successful group of migrants from the Rest of Catalonia and the Balearic Islands, and for migrants from Valencia, the distribution of individuals across occupational categories is very stable over time. In contrast, concentration in the *Unskilled, Manual* category increases successively in subsequent periods for the rest of the Spanish migrant groups. The distribution of international immigrants tends to improve for successive cohorts.

[Table 4]

Table 5 suggests that differences in certain basic characteristics may explain at least part of the differences in the distribution of individuals across occupational categories. Firstly, the average age of those groups of migrants most likely to be in the *Unskilled, Manual* category (Valencia, Aragon, Murcia and Almeria) is lower than the average age of more successful groups of migrants (particularly, Rest of Barcelona, and Rest of Catalonia and Balearic Islands). On the contrary, age at arrival is higher. Secondly, differences in literacy rates can be substantial, particularly between migrants from Murcia and Almeria and the remaining groups of migrants and natives. Thirdly, the concentration of individuals in the *Unskilled, Manual* category and in the two *Non-Manual* categories may also be partly explained by differences in the length of residence. Finally, average differences in rural/urban origin and distance (as a proxy for moving costs) may also explain the better performance of some migrant groups, although the relationship seems to be less clear.⁴⁵ In the next section, multivariate analysis is employed to disentangle the relative contribution of relevant and control variables to occupational attainment.

⁴⁵ Certain predominantly rural populations surrounding urban centers in the province of Murcia, such as the capital city, Lorca, Cartagena and Cieza, were classified as urban in population censuses. However, there is no clear criterion to determine the rural/urban nature of individuals from these places. We therefore decided to follow the classification in the censuses, although we are aware that the number of urban migrants in the Murcia and Almeria group may be overstated. We are grateful to José Miguel Martínez Carrión for his help. See also Reher, "Urban Growth", pp. 193-194.

[Table 5]

V

The main results of the MNL models are shown in Tables 6 and 7. Regressions were estimated using Stata 11.⁴⁶ Interpreting the coefficients is not straightforward given the nonlinearity of the model and the numerous possible comparisons between occupational categories. The results are presented in terms of marginal changes in the predicted probability of belonging to each occupational category (marginal effects are computed at sample values and then averaged). For each explanatory variable, the tables report the marginal impacts on the likelihood of belonging to each of the four occupational categories.⁴⁷ In the case of the continuous variables (age in 1930, distance, years since arrival, and the number of children), the value of the marginal impacts is computed when the variable increases by one unit. In the case of the dummy variables (all those remaining), the value of marginal impacts is computed when the variable changes from 0 to 1. Regressions are estimated using heteroskedasticity-robust standard errors. Likelihood Ratio (LR) tests run for each model suggest that the hypothesis that the effects of all variables are simultaneously zero can be rejected.

In Table 6, we present the results for a model referring to natives and internal migrants, for whom the source is richer. International immigrants, for whom the source provides all the information with the exception of rural/urban origin and distance, are added in Tables 7-10.

In Table 6, results for the age variables are reasonable. Each year of age, as a proxy for experience, reduces (increases) the probability of belonging to one of the two manual (non-manual) categories. These results suggest that experience increased the probability of belonging to a non-manual category. Returns from experience appear to decrease among older individuals. The effects are significant only for the *Unskilled, Manual* and *Low and Medium, Non-Manual* categories, which are, however, the largest (see notes to Table 3). Each

⁴⁶ The MNL model makes the IIA (independence of irrelevant alternatives) assumption. This means that adding or deleting alternatives (i.e. occupational categories) does not affect the odds among the remaining alternatives. Discrepancies between available tests are, however, possible. Moreover, IIA is a very restrictive assumption, and relaxation makes sense under certain conditions, for example when the outcome categories are plausibly assumed to be different; see McFadden, “Conditional Logit Analysis”; and Ameniya, “Qualitative Response Models”. In any event, the Hausman-McFadden test and the Small-Hsiao test tend to coincide in not rejecting the assumption at the usual levels, suggesting that the application of MNL models to our data is appropriate.

⁴⁷ We also obtained the *relative risk ratios* (the *Unskilled, Manual* category was chosen as reference).

year of age reduces the predicted probability of belonging to the *Unskilled, Manual* category by 1.0 percent, for example. Using age at arrival instead of age in an unreported model led to similar, if somewhat lower, impacts.

[Table 6]

Observing the effect of literacy, strong and significant results emerge in three of the four categories.⁴⁸ The predicted probability of belonging to the *Unskilled, Manual* category is 32.1 percent lower for a literate individual, whereas the predicted probability is 25 percent and 6 percent higher in the two non-manual categories, respectively. The relatively low impact of human capital in the *High, Non-Manual* category may indicate that other, uncaptured, qualities, such as further education or existing wealth, as well as a network of potential clients or a license, are necessary to belong to occupations included in this category.

While urban migrants tended to assimilate somewhat better than rural migrants, the most interesting result is that, in comparison with the reference group of natives, the impact of the urban migrant variable is highly significant for the two largest categories. Urban migrants are less likely to be in the *Unskilled, Manual* category, and more likely to be in the *Low and Medium, Non-Manual* category. This result suggests that migrants who possessed human capital transferable to the urban labour market in fact tended to perform better in occupational terms than natives.⁴⁹

The effect of distance, our proxy for the cost of moving, is only significant for the two non-manual categories, and its impact is small—a 100 km increase in distance increases/reduces the predicted probability of belonging to the *Low and Medium/High* category by 1 percent. The positive sign of the relationship between distance and the probability of achieving the *Low and Medium, Non-Manual* category is somewhat surprising in principle. However, this result is similar to findings for other cities of different sizes, in

⁴⁸ (Unreported) interactions suggest that the effect of literacy does not depend on whether the individual is a migrant or a native.

⁴⁹ The importance of human capital transferability is confirmed if age at arrival is substituted for age in order to focus on migrants' labour market experience *once* they had arrived in Barcelona. In this model, urban (and rural) migrants performed worse than natives.

which diversified labour markets offered opportunities for some types of workers for whom the cost of moving was not necessarily a barrier.⁵⁰

The pattern of coefficients obtained from the calculation of years since arrival in Barcelona does not suggest upward occupational mobility. The effects are once again only significant for the largest categories. Moreover, each year of residence in Barcelona increases the predicted probability of belonging to the *Unskilled, Manual* category by 0.2 percent and reduces the predicted probability of belonging to the *Low and Medium, Non-Manual* category by the same amount.

The composition of place of origin was also considered. In order to overcome collinearity constraints, we constructed a new reference for the place of birth dummies. This new base comprises individuals born in the city of Barcelona *plus* individuals born in the rest of Barcelona province, namely the migrant group likely to be most similar to natives.⁵¹ To clarify further, the rural/urban origin of migrants is interpreted relative to individuals born in the city of Barcelona, whereas the (regional and provincial) place of birth dummies are interpreted relative to individuals born in the entire province of Barcelona. This methodological procedure may underestimate the impact of migrant status, if migrants from the rest of the province of Barcelona do in fact differ in some significant respects from individuals born in the capital. The place of birth effects should be interpreted with this potential limitation in mind, though we will return to this issue later.

In comparison with people born in the province of Barcelona, all groups of Spanish migrants are more likely to belong to the lowest occupational category and less likely to belong to the remaining categories. However, various differences among groups emerge. Migrants from the remaining Catalan provinces and the Balearic Islands were those least penalized. The penalty was also relatively low for migrants from the rest of Spain. In contrast, the labour market performance of migrants from the remaining principal places of origin, Valencia, Aragon, and Murcia and Almeria, tended to be worse. Compared to people born in the province of Barcelona, migrants from Murcia and Almeria, for example, are 33 percent more likely to be in the *Unskilled, Manual* category.⁵²

⁵⁰ For big cities, such as Madrid and Paris, see Pallol, Carballo, and Vicente, “Inmigración y mercado”, pp. 155-158; and Rosental, Postel-Vinay, Suwa-Eisenmann, and Bourdieu, “Migrations et transmissions inter-générationnelles”, pp. 764-774.

⁵¹ This strategy follows Barrett and Duffy, “Are Ireland’s Immigrants Integrating?”.

⁵² To better isolate the effect of place of birth variables, we added interactions with human capital indicators (proxied by age, literacy and the rural/urban nature of place of origin). This was done in the alternative binary

Finally, the interpretation of family variables may be difficult, due to potential endogeneity. Compared to married individuals, however, the effect of being single is consistent with the findings of earlier studies showing that potential access to better economic and social positions was associated with a late-marriage pattern.⁵³

In Table 7 we report the results for a regression model including international immigrants. The impact of the rest of the variables tends to be similar to that reported in Table 6. On the other hand, the results for international immigrants suggest that their pattern of integration into the Barcelona labour market tended to follow a different path to that of Spanish migrants.⁵⁴ Compared to people born in the province of Barcelona, international immigrants are around 20 percent less/more likely to be in the manual/non-manual category. The predicted probability is 5 percent higher in the *High, Non-Manual* category. The incorporation of international immigrants differs from Britain. Some British cities, particularly London, were major destinations for a diverse pool of foreigners.⁵⁵ In a relatively poor country such as Spain, however, even the biggest cities tended to be basically attractive only for middle-class and affluent international immigrants.⁵⁶ According to our sample, for example, salesmen, manufacturers, engineers and assistants were the most common occupations among French, German, Italian and Swiss immigrants in Barcelona.⁵⁷

[Table 7]

logit specification presented above (outcome variable: Manual/Non-Manual occupations) because inclusion of all interaction terms generated severe problems of multicollinearity. The impact and sign of the place of birth variables tended to be similar.

⁵³ Reher, *La familia en España*, p. 289; Oyón, Maldonado, and Griful, *Barcelona 1930*, p. 93. The association seems to apply to both natives and migrants. A baseline model including only age, age squared, literacy and family structure variables was used to confirm the sign and impact of marital status.

⁵⁴ Because the regression model reported in Table 7 does not include the rural/urban origin variable, collinearity constraints (Table 6) are no longer present. To allow comparison between Tables 6 and 7, however, we decided to maintain the group of individuals born in the city of Barcelona plus individuals born in the rest of Barcelona province as the reference for the place of birth dummies.

⁵⁵ Williamson, “Migrant Earnings”; Hatton and Bailey, “Natives and Migrants”. On differences among immigrant groups in the US, see Hatton and Williamson, *Age of Mass Migration*, pp. 80-86; Stewart, “Migration to the Agricultural Frontier”.

⁵⁶ For Bilbao, Madrid and Cádiz see, for example, García Abad, *Historias*, pp. 160-161, 354; Pallol, “Una ciudad”, 205, 213, 216-217; Serrano, Román, and de Paula, “Los flujos”, pp. 240-254.

⁵⁷ This pattern also seems to apply to Spanish return migrants and their descendents; see Oyón, Maldonado, and Griful, *Barcelona 1930*, pp. 86-87.

We performed a series of further checks to confirm our findings. In order to verify the lack of upward occupational mobility, we separately compared each group of migrants with natives. Table 8 shows the results only for years since arrival.⁵⁸ The estimated coefficients do not exhibit a coherent pattern of improvement in occupational attainment over time. For more successful groups, such as those of Catalan migrants (Panels A and B), this result may indicate that outcomes tended to be aligned with skills. Similarly, international immigration to Spain (Panel G) mainly consisted of individuals who already belonged to non-manual occupations upon arrival, as mentioned above. Results for the other groups of Spanish migrants, together with strong effects found for place of birth variables in previous tables, may point to different characteristics of individuals which were not captured.⁵⁹ These are important issues, which we consider in the discussion of Table 10 at the end of this section and in the next section.⁶⁰

[Table 8]

The performance of natives and migrants can also be compared using the predicted probability that individuals in a given age group will belong to each occupational category. Based on the results in Table 7, which include the more successful international immigrants, Table 9 shows little life-convergence associated with years in Barcelona. The difference between predicted probabilities actually decreases at the end of the life cycle (>60) in the largest *Unskilled, Manual* category. Older migrants also significantly narrow the gap with natives in the two intermediate categories, although this effect occurs somewhat earlier (at 51-60), and they even outperform natives at the end of the life cycle in the *Low and Medium, Non-Manual* category. However, the difference in favor of natives increases over time in the category at the highest level of the social class distribution.

⁵⁸ The square of years since arrival is not reported because of its tiny impact.

⁵⁹ The separate regressions (Table 8) also confirmed that the occupational attainment of migrants tended to be influenced by their place of origin.

⁶⁰ Significant effects for the largest categories in the case of migrants from the rest of Spain (Panel F) are consistent with the type of early migrant in this group. Our data and previous research indicate an abundance of early, illiterate migrants from poor Andalusian provinces (beyond Almeria and often from coastal and port areas), locked into unskilled occupations over time; see Tatjer, “Inmigración”; Oyón, Maldonado, and Griful, *Barcelona 1930*, pp. 61, 80-82.

[Table 9]

The results presented so far suggest that differences between the occupational attainment of natives and migrants can be partly explained by differences in the level and type of measured human capital, proxied by age, literacy and the rural/urban origin. Migrant status, however, also tends to influence labour market performance. In order to explore the effect of place of birth, we divided the sample into the main arrival periods as shown in Table 10. Only place of origin variables are shown, as the effect of unreported variables was similar across the three periods, and to the results reported in Table 7.

[Table 10]

Table 10 suggests that the previous models gave more weight to the situation from 1914 onwards, when the number of migrants increased sharply. The percentage of the sample accounted for in each period is: Before 1900: 20.4; 1900-1913: 30.5; and 1914-1930: 49.1. Place of birth seems to have been relatively unimportant for the earliest cohorts (Panel A). It mattered somewhat more for migrants arriving in the early twentieth century (Panel B) and finally became an important determinant for almost all of those arriving later (Panel C). As in previous models, migrants from the Rest of Catalonia and Balearic Islands, and international immigrants present better outcomes.

In the next section, we delve into the effect of place of birth for recent Spanish migrants, which may point to missing individual key resources not specifically captured by our remaining variables. New characteristics of the labour market are also considered.

VI

At the turn of the century, small workshops making intensive use of skilled labour were still predominant in the city of Barcelona. In this context, the historical literature confirms that not only natives but also migrants from the Rest of Catalonia, in particular, Valencia and Aragon were able to access skilled and semi-skilled jobs. A key feature of many of these early migrants was the possession of human capital of a kind that was readily transferable to

an urban labour market.⁶¹ For example, it has been shown that Barcelona was home to numerous stage-migrants, who ended up in there after a “learning-by-moving” process in which they gained experience. Migration networks may have accelerated the pace at which early migrants converged with natives, facilitating access to information and resources that were useful in the labour market.⁶² While the presence of relatives already working for the migrant’s employer was an important factor, it has also been proposed that relatively low endogamy rates and low spatial concentration enabled interaction with natives and other migrant groups.⁶³ As a result, there were no significant differences between natives’ and migrants’ access to a numerous occupations in a range of industries.⁶⁴

As the century progressed, the city’s industrial structure modernized. Medium-sized and large factories began to appear among the abundance of small workshops. Industrial relations also tended to change, accompanied by mechanization and a greater division of labour. Migrants flooded into a number of traditional industries such as textiles, transport (including the docks) and, in particular, public and private construction, which increasingly became the main gateway for migrants entering the labour force.⁶⁵ Some migrants may also have entered expanding industries such as metalworking.⁶⁶

Two factors may, however, have lessened the chances of upward mobility and hindered improvement in the situation of some groups of migrants compared to natives.

The first factor involves new characteristics of the labour market. Thus, the greater demand for labour was mainly for unskilled work, particularly in the construction industry.⁶⁷

⁶¹ Vidal, “Exode rural”, p. 200; Camps, *Formación del Mercado*, pp. 51, 58, 81-91, 237; Llonch, “Canales migratorios”; Mirri, “Migrantes”; Smith, “Rise of labour”, pp. 20-21; Sánchez, *Barcelona*, p. 87, 93; Oyón, *Quiebra*, p. 28.

⁶² Bauer, Epstein, and Gang, “Measuring Ethnic Linkages”, review the positive and negative effects of migration networks on migrant performance.

⁶³ Mirri, “Migrantes”, pp. 91-92; Smith, “Rise of labour”, p. 21; Oyón, *Quiebra*, p. 93.

⁶⁴ Mirri, “Migrantes”, p. 84-86; Smith, “Rise of labour”, p. 21.

⁶⁵ See, for example, Checa, “Immigrants”, p. 89; Martin, *Agony of modernization*, p. 318; Sudrià, “Modernidad”, p. 54; Tatjer, “Evolució demogràfica”, p. 101-102; Smith, “Rise of labour”, pp. 21-22; Gabriel, “Red Barcelona”, p. 64; Durgan, “Search for unity”, p. 110; Sánchez, *Barcelona*, pp. 164-165; Oyón, *Quiebra*, pp. 70-71; Ealham, *Anarchism and the city*, p. 24; and other works cited therein.

⁶⁶ Ealham, *Anarchism and the city*, pp. 24-25; and other works cited therein. See also Tatjer, “Evolució demogràfica”, p. 101-102; Smith, “Rise of labour”, pp. 21-22; Gabriel, “Red Barcelona”, p. 64; Durgan, “Search for unity”, p. 110; Sánchez, *Barcelona*, pp. 87-90; Oyón, *Quiebra*, pp. 70-71.

⁶⁷ As explained in the works cited in the previous two footnotes.

Construction was in fact a slow-growing industry, as shown by annual rates of employment growth—the rate for the 1920s is the lowest among the industries reported in Table 1.⁶⁸ The construction industry also suffered from two serious crises in the 1920s, which may have affected migrants more than natives.⁶⁹ Related evidence based on our occupational-level data suggests that, compared to their predecessors, recent, Non-Catalan migrants had less chance of entering key occupations—which may reflect economic transformation—than Catalan migrants and natives.

Changes in the labour market are still not enough to explain such differences between the incorporation of more recent and earlier cohorts of migrants, in particular as found in Table 10, Panel C—bearing in mind limitations in the use of cross-section data.

The second, and perhaps more important, factor therefore concerns the type of migrant. The evidence suggests that the characteristics of, at least, some groups of migrants may have changed towards the end of the period under study. Although empirical research suggests that pull factors provide the best explanation for the increase in internal migrations in Spain, late migration flows from the more distant, poorer provinces of Murcia and Almeria to Barcelona were the result of push factors associated with the crisis in the mining industry and agriculture.⁷⁰ Resource depletion, labour-saving technological change and falling international demand caused many workers, who floated between agriculture and mining, to prefer direct migration to Barcelona rather than stay in the declining mining areas.⁷¹ A further cohort of agricultural workers migrated from the province of Almeria to Barcelona in the second half of the 1920s due to the US ban on imports of table grapes.⁷² Scholars have stressed the lack of transferable human capital among these mining and agricultural workers,

⁶⁸ See also Soto, *Trabajo industrial*, p. 124. In the US, the flow of immigrants into slow-growing, unskilled-labour-intensive industries before World War I is described in Hatton and Williamson, *Age of Mass Migration*, pp. 95-96.

⁶⁹ Based on life story interviews, see Oyón, *Quiebra*, pp. 40-43, 84-86. See also Tafunell, “Construcción”; and Rider, “New city”, p. 75-76.

⁷⁰ For the importance of pull factors, see Silvestre, “Internal Migrations”.

⁷¹ Vilá, “Aportación murciana”; Tatjer, “Inmigración”, p. 140; Checa, “Immigrants”, p. 88; Oyón, Maldonado, and Griful, *Barcelona 1930*, pp. 60-62; Silvestre “Temporary Internal Migrations”, pp. 553, 555; Martínez-Soto, Pérez de Perceval, and Sánchez-Picón, “Itinerarios migratorios”.

⁷² Tatjer, “Inmigración”, p. 140; Sánchez Picón, *Integración*; Pinilla and Ayuda, “Foreign Markets”, p. 185.

who in our database account for 23.8 percent of the Non-Catalan migrants arriving between 1914 and 1930.⁷³

Migration networks may have fuelled negative self-selection of recent, predominantly Non-Catalan migrants in contrast to earlier conditions. Relatives, friends and acquaintances who had migrated earlier reduced the costs of migration and, therefore, encouraged more individuals to migrate by helping them to find jobs, in particular the first job. “Dense” networks (proxied by high endogamy rates and high spatial concentration) may also have reduced incentives to acquire location-specific skills, such as language, and to interact with natives.⁷⁴ Research based on life story interviews, business archives and marriage records also reveals the contrasting positive effect of networks for both natives and Catalan migrants in order to gain access to better occupations.⁷⁵

Together with the pull of migration networks and improvements in the Spanish transport system, which cut moving and insertion costs, the change towards more negative self-selection is consistent with an urban economy with abundant unskilled job opportunities, rising wages in a number of years during the late 1910 and the 1920s, and a stagnant (or even decreasing) skill-premium.⁷⁶ However, these may have raised untoward expectations for the newly arrived. It has been argued that Barcelona became a place of “myth” in many rural areas, offering a possible escape from economic backwardness.⁷⁷ The number of migrants rose in the 1910s and 1920s (see also Table 2). There is some evidence to suggest increased labour market competition in Barcelona. Estimates indicate that average wages in Barcelona

⁷³ See, for example, Vilá, “Aportación murciana”; Candel, *Inmigrantes y trabajadores*, pp. 41-42; Tatjer, “Evolució demogràfica”, p. 102; Martin, *Agony of modernization*, p. 318; Oyón, Maldonado, and Grifol, *Barcelona 1930*, p. 50. See also Sentís, *Viatge*, p. 78; Vandellós, *Immigració*, pp. 71-72, 97, 132-133.

⁷⁴ Oyón, *Quiebra*, pp. 139-144, 300-302; Soto, *Trabajo industrial*, p. 123. See also Sentís, *Viatge*, pp. 30-31; and Maluquer i Sostres, *Població i societat*, pp. 140-141.

⁷⁵ Oyón, *Quiebra*, pp. 92-104; Smith, “Rise of labour”, p. 21.

⁷⁶ See, for example, Borjas, Bronars, and Trejo, “Self-Selection and Internal Migration”; Hatton and Williamson, *Age of Mass Migration*, pp. 86-92. For wages in Barcelona, see Oyón, *Quiebra*, pp. 71-74; Maluquer de Motes and Llonch, “Trabajo”, p. 1179, and the works cited therein. See also Llonch, “Jornada, salarios y costes labores”. For transport, see Herranz, “Reducción de los costes”, pp. 195-199; Martínez-Soto, Pérez de Perceval, and Sánchez-Picón, “Itinerarios migratorios”, pp. 412-413.

⁷⁷ Vilá, “Aportación murciana”, p. 96. See also Ealham, *Anarchism and the city*, p. 5. A related issue is that very few of the most recent migrants may have been able to overcome savings constraints, for example, to start their own small business once in Barcelona; see Vilá, “Aportación murciana”, p. 98; Martínez-Soto, Pérez de Perceval, and Sánchez-Picón, “Itinerarios migratorios”, p. 413; Oyón, *Quiebra*, p. 68.

would have been up to nine percent higher than their actual levels if no in-migration had occurred throughout the 1920s.⁷⁸ It has also been shown that the lack of opportunities at the end of the 1920s led a number of the most recent migrants from Murcia and Almeria to re-emigrate from Barcelona to the south of France (in particular Marseille and Lyon).⁷⁹

Two further concerns need to be addressed. Historians and sociologists have pointed to the emergence of some anti-migrant feeling among some political and union leaders, and social and medical scientists, as the stock of migrants in Barcelona increased.⁸⁰ Could these attitudes have contributed to the poor occupational attainment of some migrant groups? For the most part, local resentment focused on demographics, as the fertility rate had been declining in Catalonia since the late nineteenth century, and political mobilization, rather than labour market competition. In fact, the same sources also report a number of pro-migrant opinions given the insufficient native labour supply.⁸¹ In this light, the reasons discussed in the preceding paragraphs of this Section provide a better explanation of under-achievement among some groups of migrants compared to natives.

It has also been argued that migrants' lack of upward mobility strengthened and radicalized left-wing and anarchist labour movements in Barcelona.⁸² The findings reported in this study would rather support a more skeptical view of the link between in-migration and the radicalization of the labour movement, as proposed by other scholars. Thus, migrants from Murcia and Almeria, who were usually accused of being the most radical, accounted for a small part of the migrant stock.⁸³ Moreover, migrants may have made up the majority of the revolutionary movement, but they were not alone. Natives and Catalan migrants, who

⁷⁸ These estimates refer to the province of Barcelona; see Silvestre, "Internal Migrations", p. 255. They are in line with those found in other studies; see Boyer, "Labour Migration"; Hatton and Williamson, *Age of Mass Migration*, pp. 124-125, and the works cited therein.

⁷⁹ Checa, "Immigrants", p. 88; Martínez-Soto, Pérez de Perceval, and Sánchez-Picón, "Itinerarios migratorios", p. 412. See also Sentís, *Viatge*, p. 35.

⁸⁰ See, for example, Maluquer i Sostres, *Població i societat*, p. 156; Termes, "Inmigració", pp. 219-240; Izquierdo, *Prensa*, pp. 93-117; Tatjer, "Evolució demogràfica", p. 107; Mirri, "Migrantes", pp. 181-182, and the works cited therein.

⁸¹ In this regard, anecdotal evidence suggests that employers looked at the price of wages rather than the birthplace of workers. See Izquierdo, *Prensa*, p. 99. We have been unable to find any evidence of native workers or unions influencing the hiring or promotion of migrants.

⁸² See, for example, Kaplan, *Red City, Blue Period*, pp. 60-61; Gabriel, "Red Barcelona", p. 50; Oyón, "Split of a working-class city", pp. 101-103; Ealham, *Anarchism and the City*, 43, 86.

⁸³ See also Doménech, "Institutional change", p. 438.

enjoyed easier access to better occupations, also contributed to both the leadership and the base of radical unionism and politics.⁸⁴ Finally, the migrants' many different places of birth are consistent with the different facets of their involvement in the union movement in Barcelona. For example, migration was also intense from conservative and deeply Catholic areas with no strong connection to revolutionary trade unionism. In addition, the influential, but ideologically fractious anarchist movement included both natives and migrants who had arrived from different places at different times.⁸⁵

VII

This article has explored the capacity of a major labour market to incorporate migrants, mostly internal migrants. As a growing industrial and service city since the mid-nineteenth century, Barcelona had attracted almost 600,000 migrants by 1930. The study of this city contributes to an international literature in which empirical analyses remain few. It also addresses an important and almost unconsidered aspect of migrations in Spain during the country's industrialization. This article employs a micro-database which, among other variables of interest, provides information on occupations. The data, a cross-section survey, are not immune to the possibility of bias. Additional historical evidence has been used to support the empirical conclusions.

The main results suggest that there were no important variations in the occupational attainment of early migrants and natives. The labour market incorporation of late migrants, however, differs markedly. There is also no evidence of upward occupational mobility of migrants. In a context of demand for predominantly unskilled labour and increased labour market competition, the poorer occupational outcomes achieved by some more recent groups of Spanish migrants is mainly explained by the mismatch between migrants' stock of human capital and the requirements of certain jobs, and the functioning of migration networks which facilitated mobility and access to unskilled jobs, but failed to open doors to other occupations.

For the purposes of comparison, London in 1930 is the most similar case to that of the present study. Relative to natives, internal migrants achieved similar or higher earnings and

⁸⁴ See, for example, Gabriel, "Red Barcelona"; Smith, "Rise of labour", p. 6. On the complexities of union activity in urban and rural Spain, see Doménech, "Institutional change", and "Rural labour markets".

⁸⁵ See, for example, Rider, "New City", p. 83; Smith, "Rise of labour", p. 37. See also Candel, *Otros catalanes*, p. 23.

were less affected by unemployment. Much of this advantage is explained by the positive selection of migrants.⁸⁶ In line with the findings for London, this study shows that the labour market in Barcelona tended to allocate workers across occupations on the basis of their lower or higher attributes. A key difference, however, seems to be the change in the type of migrant. In addition, international immigrants in Barcelona, a positively selected group, achieved better outcomes than in London.

Migrants contributed greatly to population growth in Barcelona. It could be argued that the capacity of the city to assimilate the most recent and numerous migration flows was somewhat limited. However, this article and previous research have shown that migration flows responded to economic differences, such as wage and non-agricultural employment gaps. As noted with respect to the impoverished southeastern migrants, their situation at home would probably have been much worse if they had not moved to an urban destination.⁸⁷

⁸⁶ Hatton and Bailey, "Natives and Migrants".

⁸⁷ Candel, *Inmigrantes y trabajadores*, pp. 41-43; Tatjer, "Inmigración", p. 142.

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FIGURES

Figure 1. Main regions of origin for migrants in the city of Barcelona, before 1900



Figure 2. Main regions of origin for migrants in the city of Barcelona, 1900-1913

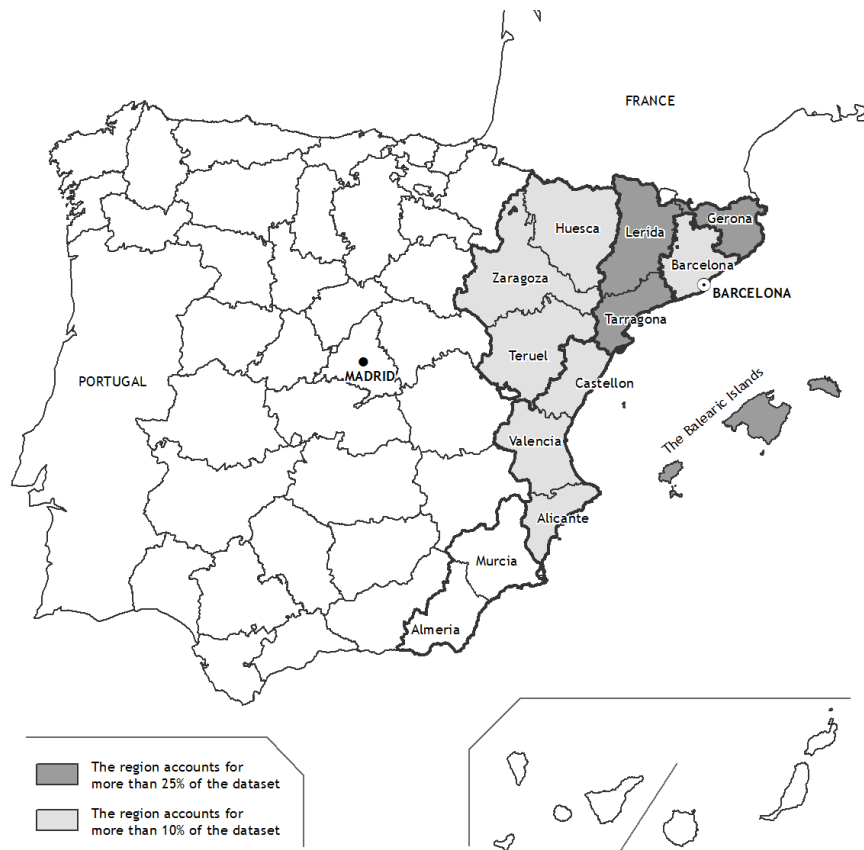


Figure 3. Main regions of origin for migrants in the city of Barcelona, 1914-1930



TABLES

Table 1. Industrial working population employed in the city of Barcelona

	1905		1920		1930	
	Workers	%	Workers	%	Workers	%
Textiles	34,677	24.4	47,872	25.4	89,607	24.1
Metalworking	8,943	6.3	27,131	14.4	40,466	10.9
Construction	15,229	10.7	20,727	11.0	30,464	8.2
Woodworking	3,858	2.7	11,116	5.9	29,669	8.0
Food processing	8,129	5.7	7,268	3.9	28,973	7.8
Clothing	20,479	14.4	14,402	7.6	26,111	7.0
Transport	22,237	15.7	14,129	7.5	21,206	5.7
Chemicals	3,336	2.4	7,662	4.1	13,478	3.6
Rest of industries	24,925	17.6	38,090	20.2	91,853	24.7
Total	141,903	100	188,397	100	371,827	100

Notes: Transport includes sailors and dockworkers.

Sources: Estimates are based on data from the *Censo obrero* de 1905; Smith, "Rise of labour"; and *Censo de la Población de España*, 1920, 1930.

Table 2. Decomposition of population growth in the city of Barcelona

Inter-Census Period	Annual Rates of Growth x 1,000		
	Population Growth	Natural Increase	Net Migration
1901-1910	9.7	0.7	9.0
1911-1920	18.9	-2.8	21.7
1921-1930	34.4	5.1	29.3
Total, 1901-1930	20.5	1.3	19.2

Notes: Calculations are based on data taken from population censuses (Population Growth) and statistical yearbooks (Natural Increase).

Sources: *Censo de la Población de España, 1910, 1910, 1920, 1930*. Reclassifications of statistical yearbook data by García Barbancho, *Migraciones Interiores*.

Table 3. Occupational categories

Our Categories	HISCLASS Groups [Code]	Main Occupations in each Category (Percentage of Total in each Category)
I- Unskilled, Manual	Unskilled Workers [11] Unskilled Farm Workers [12]	Labourer [<i>Jornalero</i>] (95.1)
II- Low and Medium Skilled, Manual	Foremen [6] Medium-Skilled Workers [7] Farmers and Fishermen [8] Lower-Skilled Workers [9]	Locksmith [<i>Cerrajero</i>] (2.2) Electrician [<i>Electricista</i>] (2.0) Carpenter [<i>Carpintero</i>] (8.1) Bricklayer [<i>Albañil</i>] (7.8) Mechanic [<i>Mecánico</i>] (6.4) Shoemaker [<i>Zapatero</i>] (6.2) Painter [<i>Pintor</i>] (5.0) Tailor [<i>Sastre</i>] (4.8)
III- Low and Medium Skilled, Non-Manual	Non-Manual Lower Managers [3] Non-Manual Lower Professionals, Clerical and Sales Personal [4] Non-Manual Lower Clerical and Sales Personal [5]	Driver [<i>Chofer</i>] (2.8) Salesmen [<i>Comercio</i>] (32.9) Assistant [<i>Empleado</i>] (18.7) Janitor [<i>Portero</i>] (18.8) Salesclerk [<i>Dependiente</i>] (6.6)
IV- High Skills, Non-Manual	Non-Manual Higher Managers [1] Non-Manual Higher Professionals [2]	Manufacturer [<i>Industrial</i>] (42.7) Proprietor [<i>Propietario</i>] (11.5) Physician [<i>Médico</i>] (12.4) Lawyer [<i>Abogado</i>] (6.5)

Notes: The number of observations for our categories I, II, III and IV is 4,830, 1,147, 2,624 and 635, respectively.

Table 4. Occupational attainment for male workers in the city of Barcelona in 1930 (percent)

	Natives		Migrants					Other Countries
	Rest of Barcelona	Rest of Catalonia, and B.I.	Valencia	Aragon	Murcia and Almeria	Rest of Spain		
A- Total sample								
Unskilled, Manual	45.3	41.3	46.5	69.0	67.9	77.2	52.7	22.2
Low/Medium, Manual	12.8	14.9	14.4	13.4	9.8	8.7	9.7	10.3
Low/Medium, Non-Manual	32.4	33.9	30.8	14.8	20.6	13.2	33.0	51.3
High, Non-Manual	9.4	9.8	8.3	2.7	1.7	0.9	4.6	16.1
Total	100	100	100	100	100	100	100	100
N=	2,860	978	1,629	1,085	817	691	915	261
B- Migrants arriving before 1900								
Unskilled, Manual	-	42.8	44.8	68.2	60.5	43.5	41.0	29.8
Low/Medium, Manual	-	14.4	15.1	13.5	14.5	13.0	9.0	7.0
Low/Medium, Non-Manual	-	31.1	29.9	14.1	22.4	39.1	39.0	45.6
High, Non-Manual	-	11.7	10.2	4.2	2.6	4.3	11.0	17.5
Total		100	100	100	100	100	100	100
N=		334	451	192	152	23	100	57
C- Migrants arriving 1900-1913								
Unskilled, Manual	-	45.4	47.6	68.8	65.2	71.6	52.3	23.7
Low/Medium, Manual	-	15.5	13.7	13.1	11.6	7.4	9.3	13.6
Low/Medium, Non-Manual	-	32.1	31.3	15.2	21.3	18.8	32.2	47.5
High, Non-Manual	-	7.0	7.4	2.9	1.9	2.3	6.1	15.3
Total		100	100	100	100	100	100	100
N=		271	517	375	207	176	214	59
D- Migrants arriving 1914-1930								
Unskilled, Manual	-	37.0	46.7	68.7	71.6	80.5	54.7	18.6
Low/Medium, Manual	-	15.0	14.5	13.5	7.4	8.9	9.8	10.3
Low/Medium, Non-Manual	-	37.8	31.0	15.8	19.7	10.0	32.6	55.2
High, Non-Manual	-	10.2	7.7	1.9	1.3	0.6	2.8	15.9
Total		100	100	100	100	100	100	100
N=		373	661	518	458	492	601	145

Notes: B.I. = Balearic Islands.

Source: The 1930 *Padrón Municipal de Habitantes* of Barcelona.

Table 5. Selected characteristics of male workers in the city of Barcelona in 1930

	Natives		In-Migrants					
		Rest of Barcelona	Rest of Catalonia, and B.I.	Valencia	Aragon	Murcia and Almeria	Rest of Spain	Other Countries
Age in 1930	42.1	47.4	46.6	44.0	43.9	41.4	43.5	44.7
Age at arrival	-	23.1	23.8	24.3	25.9	28.0	28.5	27.3
Literacy (Percent)	94.4	94.5	92.2	81.8	89.5	77.6	94.2	98.1
Rural origin (Percent)	-	74.4	73.6	71.4	84.6	30.4	57.6	(n.a.)
Distance (km)	-	37.2	114.7	320.9	237.1	520.0	612.5	(n.a.)
Years since arrival	-	24.3	22.7	19.8	18.1	13.5	14.9	17.5

Notes: Number of observations = 9,236. B.I. = Balearic Islands.

Source: The 1930 *Padrón Municipal de Habitantes* of Barcelona. See the text for definition of variables.

Table 6. Multinomial logit model of occupational attainment for male workers in the city of Barcelona in 1930.

Natives and internal migrants.

	Unskilled, Manual		Low and Medium, Manual		Low and Medium, Non-Manual		High, Non-Manual	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
Age	-0.010***	0.003	-0.001	0.002	0.008***	0.003	0.002	0.001
Age ²	0.000*	0.000	0.000	0.000	-0.000**	0.000	-0.000	0.000
Literate	-0.321***	0.015	0.005	0.013	0.254***	0.009	0.062***	0.005
(Born in Barcelona City)								
Rural origin	-0.027	0.023	0.013	0.016	0.020	0.021	-0.006	0.012
Urban origin	-0.086***	0.025	0.025	0.019	0.051**	0.024	0.010	0.015
In-migrant x								
Distance x 100 km	-0.010	0.008	0.006	0.005	0.014**	0.007	-0.009**	0.005
In-migrant x								
Years since arrival	0.002*	0.001	0.000	0.001	-0.002*	0.001	-0.000	0.000
In-migrant x								
Years since arrival ²	-0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(Born in Barcelona, City + Rest of Province)								
Rest of Cat. + B.I.	0.044**	0.020	-0.012	0.012	-0.030*	0.017	-0.002	0.009
Valencia	0.236***	0.024	-0.033**	0.016	-0.165***	0.017	-0.036***	0.010
Aragon	0.230***	0.032	-0.054***	0.013	-0.122***	0.019	-0.051***	0.077
Murcia, Almeria	0.330***	0.027	-0.081***	0.015	-0.197***	0.020	-0.059***	0.010
Rest of Spain	0.157***	0.043	-0.074***	0.019	-0.083	0.034	-0.000	0.027
(Married)								
Single	-0.175***	0.026	-0.004	0.019	0.099***	0.026	0.080***	0.019
Widower	-0.009	0.025	-0.004	0.017	0.015	0.023	-0.002	0.012
Children < 16	-0.005	0.004	0.011***	0.003	-0.013***	0.004	0.008***	0.002
Log Pseudolikelihood = -9,522.691								
LR Chi ² (48) = 1,252.568								
Prob > Chi ² = 0.000								
N= 8,975								

*** indicates statistical significance at the 1 percent level.

** indicates statistical significance at the 5 percent level.

* indicates statistical significance at the 10 percent level.

Notes: Rest of Cat. + B.I. = Rest of Catalonia + Balearic Islands. The regression includes an intercept term, and is estimated using heteroskedasticity-robust standard errors. Reference categories for explanatory variables are in parentheses.

Table 7. Multinomial logit model of occupational attainment for male workers in the city of Barcelona in 1930.
Natives, internal migrants and immigrants.

	Unskilled, Manual		Low and Medium, Manual		Low and Medium, Non-Manual		High, Non-Manual	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
Age	-0.009***	0.003	-0.001	0.002	0.009***	0.003	0.002	0.001
Age ²	0.000*	0.000	0.000	0.000	-0.000**	0.000	0.000	0.000
Literate	-0.326***	0.015	0.004	0.012	0.258***	0.009	0.064***	0.005
In-migrant x								
Years since arrival	0.001	0.002	0.001	0.001	-0.002	0.001	-0.000	0.000
In-migrant x								
Years since arrival ²	-0.000	0.000	-0.000	0.000	0.000	0.000	0.000	0.000
(Born in Barcelona, City + Rest of Province)								
Rest of Cat. + B.I.	0.013	0.016	0.000	0.011	-0.004	0.014	-0.010	0.007
Valencia	0.186***	0.017	-0.008	0.012	-0.128***	0.014	-0.049***	0.006
Aragon	0.191***	0.018	-0.042***	0.011	-0.090***	0.016	-0.060***	0.005
Murcia, Almeria	0.251***	0.019	-0.051***	0.011	-0.139***	0.016	-0.061***	0.005
Rest of Spain	0.067***	0.018	-0.044***	0.010	0.014	0.017	-0.038***	0.006
Other Countries	-0.207***	0.030	-0.021	0.020	0.179***	0.031	0.049***	0.018
(Married)								
Single	-0.174***	0.025	-0.007	0.019	0.103***	0.026	0.078***	0.019
Widower	-0.007	0.024	-0.002	0.017	0.015	0.023	-0.005	0.011
Children < 16	-0.004	0.004	0.011***	0.003	-0.014***	0.004	0.007***	0.002
Log Pseudolikelihood = -9,853.856								
LR Chi ² (42) = 1,346.434								
Prob > Chi ² = 0.000								
N= 9,236								

*** indicates statistical significance at the 1 percent level.

** indicates statistical significance at the 5 percent level.

* indicates statistical significance at the 10 percent level.

Notes: Rest of Cat. + B.I. = Rest of Catalonia + Balearic Islands. The regression includes an intercept term, and is estimated using heteroskedasticity-robust standard errors. Reference categories for explanatory variables are in parentheses.

Table 8. Multinomial logit model of occupational attainment for male workers in the city of Barcelona in 1930.

Natives and groups of migrants. Years since arrival

	Unskilled, Manual		Low and Medium, Manual		Low and Medium, Non-Manual		High, Non-Manual	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
A- Natives and internal migrants from the rest of the province of Barcelona								
In-migrant x Years since arrival	0.004	0.003	0.000	0.002	-0.003	0.003	-0.001	0.000
N= 3,838								
B- Natives and internal migrants from the rest of Catalonia and Balearic Islands								
In-migrant x Years since arrival	0.003	0.002	-0.000	0.001	-0.003	0.002	-0.000	0.001
N=6,443								
C- Natives and internal migrants from Valencia								
In-migrant x Years since arrival	0.005	0.004	-0.001	0.000	-0.009**	0.004	0.005*	0.003
N=3,946								
D- Natives and internal migrants from Aragon								
In-migrant x Years since arrival	0.001	0.005	0.005	0.003	-0.002	0.005	-0.004	0.005
N=3,677								
E- Natives and internal migrants from Murcia and Almeria								
In-migrant x Years since arrival	-0.000	0.008	-0.003	0.000	-0.004	0.008	0.008	0.010
N=3,552								
F- Natives and internal migrants from the rest of Spain								
In-migrant x Years since arrival	0.009**	0.004	0.002	0.003	-0.010***	0.004	-0.001	0.003
N= 3,777								
G- Natives and immigrants from other countries								
In-migrant x Years since arrival	0.009	0.008	0.003	0.006	-0.009	0.019	-0.003	0.004
N=3,122								

*** indicates statistical significance at the 1 percent level.

** indicates statistical significance at the 5 percent level.

* indicates statistical significance at the 10 percent level.

Notes: Regressions include an intercept term, age, age², literacy, rural/urban origin (or, in panel G, a dichotomous native/immigrant variable), distance (panels A-F), years since arrival² and family structure variables, and they are estimated using heteroskedasticity-robust standard errors.

Table 9. Predicted probability of belonging to each occupational category for main age groups (percent)

	Unskilled, Manual		Low and Medium, Manual		Low and Medium, Non-Manual		High, Non-Manual	
	Natives	Migrants	Natives	Migrants	Natives	Migrants	Natives	Migrants
18-30	72.69	77.85	13.50	10.97	10.46	9.39	3.35	1.79
31-40	61.00	67.36	14.57	12.21	18.58	17.20	5.85	3.23
41-50	47.80	54.70	14.36	12.46	28.89	27.72	8.95	5.12
51-60	34.00	40.43	12.83	11.57	40.75	40.62	12.42	7.38
> 60	16.68	20.74	8.75	8.27	57.32	60.34	18.48	11.71

Notes: Based on Table 7. For each age group of natives or migrants the sum of probabilities is one hundred.

Table 10. Multinomial logit model of occupational attainment for male workers in the city of Barcelona in 1930.

Natives, internal migrants and immigrants. Year of arrival

	Unskilled, Manual		Low and Medium, Manual		Low and Medium, Non-Manual		High, Non-Manual	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
A- Before 1900								
(Born in Barcelona, City + Rest of Province)								
Rest of Cat. + B.I.	-0.002	0.035	0.008	0.024	0.004	0.033	-0.010	0.018
Valencia	0.188***	0.043	-0.004	0.029	-0.130***	0.036	-0.054***	0.016
Aragon	0.154	0.047	-0.001	0.031	-0.080*	0.041	-0.073***	0.013
Murcia, Almeria	-0.024	0.098	-0.021	0.063	0.102	0.100	-0.057	0.037
Rest of Spain	-0.037	0.055	-0.050*	0.029	0.092*	0.055	-0.006	0.028
Other Countries	-0.150**	0.069	-0.051	0.041	0.154**	0.075	0.047	0.050
Log Pseudolikelihood = -4,804.155 LR Chi ² (42) = 426.288 Prob > Chi ² = 0.000 N= 4,156								
B- 1900-1913								
(Born in Barcelona, City + Rest of Province)								
Rest of Cat. + B.I.	0.023	0.036	-0.017	0.021	-0.006	0.033	0.000	0.020
Valencia	0.185***	0.036	-0.020	0.022	-0.127***	0.030	-0.039***	0.016
Aragon	0.176***	0.042	-0.036	0.023	-0.084**	0.037	-0.056***	0.014
Murcia, Almeria	0.201***	0.045	-0.071***	0.019	-0.080**	0.041	-0.049***	0.017
Rest of Spain	0.064	0.044	-0.054***	0.020	0.002	0.040	-0.013	0.023
Other Countries	-0.159**	0.066	-0.069**	0.030	0.128*	0.070	0.099*	0.059
Log Pseudolikelihood = -5,219.967 LR Chi ² (45) = 530.068 Prob > Chi ² = 0.000 N= 4,685								
C- 1914-1930								
(Born in Barcelona, City + Rest of Province)								
Rest of Cat. + B.I.	-0.001	0.028	0.018	0.019	-0.010	0.023	-0.006	0.012
Valencia	0.188***	0.026	0.007	0.020	-0.130***	0.021	-0.054***	0.008
Aragon	0.213***	0.026	-0.053***	0.015	-0.099***	0.023	-0.061***	0.007
Murcia, Almeria	0.283***	0.024	-0.036**	0.017	-0.181***	0.019	-0.067***	0.006
Rest of Spain	0.078***	0.025	-0.031**	0.016	0.002	0.023	-0.050***	0.008
Other Countries	-0.256***	0.038	0.016	0.032	0.192***	0.042	0.048*	0.026
Log Pseudolikelihood = -6,481.814 LR Chi ² (45) = 971.709 Prob > Chi ² 0.000 N= 6,118								

*** indicates statistical significance at the 1 percent level.

** indicates statistical significance at the 5 percent level.

* indicates statistical significance at the 10 percent level.

Notes: Rest of Cat. + B.I. = Rest of Catalonia + Balearic Islands. Regressions include the whole set of explanatory variables included in Table 7, and they are estimated using heteroskedasticity-robust standard errors. Reference categories for explanatory variables are in parentheses.

