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Abstract

Forced migrations and exiles are shocks that affect to the lives of millions of individuals. Among the consequences of this non-voluntary migration, the loss of a significant stock of human capital is of particular importance. The Republican exile in post-civil war Spain is an excellent case study since the traditional representation is that Spain lost highly qualified population. However, not that much has been said about the quantification of this loss or the measurement of the quality of the human capital that left Spain after the end of the civil war. This paper tries to fill this gap offering an estimation of the quality of the human capital that left Spain comparing it with the years that preceded and followed it and with economic migrants who were moving at the same time. Mexico was the major destination for Spanish refugees since the beginning of the Civil War and produced a unique primary source for analysing economic immigrants and refugees. We use multivariable regression models to estimate the existence of a skill premium in Republican refugees, analysing proxies of human capital like occupations, heights, and foreign languages spoken. Our results suggest that Spanish Republican refugees presented a skill premium compared to economic migrants. This result is particularly relevant because traditional economic migrants from Spain to Mexico have been considered a "privileged migration" given their high levels of human capital. The quality of the source allows us to extend the analysis to women human capital, an important contribution given the traditional invisibility of women in recorded economic history.

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Forced migrations, exiles, and genocides are shocks that affect the lives of millions of individuals. The literature has stressed the obvious differences between forced and voluntary migration. Refugees do not choose their country of destination or the time they move; economic "pull factors" in destination countries are weaker and "push factors" from origin countries are stronger for refugees (Hatton 2020). Refugees are assumed to be economically selected to a much lower degree than economic migrants and contemporary refugees typically arrive in a host country with less locally applicable human capital, including language and job skills, than economic migrants (Brell, Dustmann & Preston 2020). This paper focuses on the Spanish exile in Mexico that followed the Civil War. The Republican exile differs quite substantially from the general picture regarding refugees. Many of them landed in Mexico since other options were blocked, risky, or undesirable (remaining in France or re-emigrating to another country) and, particularly, because Mexico opened the door for Spanish Republicans. They spoke the same language and presumably had professional skills above the average of the Mexican population. In contrast to contemporary refugees, Mexican citizenship was granted immediately, and they could look for employment without any legal or administrative barriers. [1]

Although the moral effects of exile are dramatic and direct, there are also secondary consequences that are usually undervalued; the loss of a significant stock of human capital in the country of origin is one of them. Recent studies have focused their interest on this field and on the importance of the drain caused by forced migrations and genocides (Acemoglu, Hassan & Robinson 2011; Towes & Vézina 2020). The Republican exile in post-Civil War Spain is an excellent case of study. The literature related to the issue is abundant in both quantity and quality, ranging from the recreation of the personal experiences of the exiles to the quantification of their numbers (Ruiz Franco & Riesco Roche, 1999). The traditional view of this extensive literature argues that the importance of the Spanish exile does not rely exclusively on the number of people who left the country, but also on their quality; farmers, merchants, and blue-collar workers moved but so did university professors, teachers, engineers, and liberal professionals. The literature assumes that the Spanish exile represented a brain drain for the country. Research on contemporary refugees paints a consistent picture of refugees as disadvantaged both socially and economically relative to other immigrants at arrival (Brell, Dustmann & Preston, 2020). In contrast, the literature presents the Spanish exile as a highly qualified flow compared with traditional economic immigrants and not disadvantaged at all compared with the Mexican population.

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[1] In the short run, many refused to become Mexican citizens and retained their passports, anticipating a desire to return to Spain as soon as Franco fell. The only condition the Mexican government established for Spanish exiles was not to get involved in Mexican politics.

However, little has been said about the quantification of this loss or the measurement of the quality of the human capital that left Spain after the end of the Civil War. This paper attempts to fill this gap offering an estimation of the quality of the human capital that left Spain during the exile, and also puts it into a broader context comparing it with the years that preceded and followed it. It uses data from Mexico, one of the largest recipients of Spanish exiles. The initial results show that, depending on the estimator used, the level of qualification of those exiled to Mexico could almost double that of economic migrants at the same time. The paper also includes an estimation of the female human capital that was lost in the exile, an important contribution given the traditional invisibility of women in recorded economic history. Our estimation shows that female human capital was a significant proportion of the amount of human capital lost in the Republican exile in Mexico.

The paper is structured as follows. The first section will present a general overview of the Spanish Republican exile. Section two will describe the sources used in this paper. The following section will present the main descriptive results followed by an econometric analysis of the data based on our methodology. Section five discusses and interprets the main results, and the final section concludes.

The Spanish exile

From January to March 1939, around 400,000 Spanish refugees crossed the French border before the end of the Civil War (Rubio 1974, tab 48). Most of them crossed the Pyrenees from the neighboring regions of Catalonia, Aragon, Navarre and the Basque Country or from other more distant areas such as Valencia. Many returned in the following months and by December 1939 only 140,000 Spaniards remained in France. Facing the problem of Spanish refugees, the French government began negotiations with Latin American countries to take in Spanish refugees, but received only three positive responses: Mexico, Uruguay, and Chile.[2] The Mexican government of President Cárdenas agreed to open the borders to Spanish Republican exiles with no limits, which meant that Mexico (with a modest tradition as a country of destination for Spanish emigrants) came to account for 15 per cent of all exiles becoming the second largest recipient only behind France (Pla Brugat, 2001).

An estimate of the total volume of permanent emigration produced by the Spanish Civil War gives a figure of 190,000 people, mostly in France (Rubio 1974, p. 228). When compared with traditional Spanish emigration the magnitude is modest.[3] If we compare the Spanish exile with other political

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[2] Initially, the French government forced repatriations until May 1939 when such repatriations to Spain were banned because of protests in France against repression by the Franco side.

[3] Between 1910-1913 the total volume of Spanish emigration reached nearly 900,000 people; in the 1920s, the peak was 650,000 during 1920-1923 (Sánchez-Alonso 1995, chap. 3)

emigrations, for example after the Russian Revolution and Civil War of 1917-1920 or with the volume of European refugees after the Second World War, the order of magnitude is also not comparable.

However, Spanish historiography has attached extraordinary importance to the emigration of Republican refugees to Mexico. There are several reasons for this. First, unlike recent asylum seekers (1997-2014) in the European Union, where the requested destination is influenced by the stock of immigrants of the same national origin in the destination countries (Hatton 2016), the immediate determinant of the choice of destination for Spanish exiles was not the stock of Spanish immigrants living in Mexico (as could have been the case in Argentina, Uruguay or Cuba), but the political decision of President Cárdenas. Second, unlike the traditional Spanish migratory flows to America (including Mexico), the literature on the Spanish exile presents a group with high levels of professional skills (Abellán 1976-1978) and stresses the fact that Spain lost human capital. Pla Brugat (2001) supports this view and argues that the forced migration of Republican exiles to Mexico certainly included a relevant number of major intellectuals, although also arguing that it was a much more heterogeneous movement than initially thought.

The extent to which Mexico is a good proxy of the Republican exile is an important question and one that should be addressed. We considered including the French exile figures in our calculations of human capital lost; however, there are several obstacles to this step. First, although hundreds of thousands of Spaniards crossed the frontier towards France, many of them returned to Spain. One of the reasons was that the exiles experienced appalling living conditions in France. From the recording of the personal experiences of many exiles, different authors have pointed out that the welcome that the Republicans received in France was far from hospitable. As still happens today, the Spanish refugees were kept in refugee camps that did not comply with the most basic living standards. The poor sanitary conditions and the hard winter of 1939 produced numerous casualties, while the French authorities did not allow Spanish doctors and nurses to give any medical care to their countrymen at the beginning (Mancebo, 2008:96). The prospects of the Republican exiles in France were equally pessimistic with options that ranged from direct repatriation to being forced into the French Foreign Legion (Pérez Guerrero, 2008:77). Reports of the exiles explain how Franco's regime sent emissaries to the refugee camps to encourage people to return, reinforcing the repatriation to Spain (Rafaneau-Boj, 1995:149).

Pla Brugat estimates that around half of the Republicans living in France in June 1939 were employed in the secondary sector, one third in the primary, and around 18 per cent in services (Pla Brugat, 2000:169).   However, this estimation that could work as a crude proxy of human capital changed during the following months when many of them returned to Spain. Although we can speculate

about who went back, the difficulties involved in identifying the profile of those who did, make the direct incorporation of French exiles to the estimation of human capital difficult.

Was the profile of the Mexican Republican exile representative of the Spanish population? Data on the passengers in the first three ships which arrived in Mexico during the summer of 1939 show that nearly 50 per cent of them had occupations in the tertiary sector, 15 per cent had liberal professions and 13 per cent were teachers, university professors and intellectuals. (Pla Brugat 1994: tab. 9.2). The Spanish population census of 1930 gives a total of 27 per cent in the tertiary sector. Although these data from the early arrivals to Mexico may not be representative of the total flow, the traditional iconography presents a Mexican exile that was not a good mirror of Spanish society (Vilar, 2006:360). According to this interpretation, the Mexican exile was mainly composed of intellectuals and therefore only representative of the most cultivated social spectrum. There is no discussion about the importance of some of the individuals who left the country such as scientists, artists, or politicians, and there are numerous studies analyzing this movement that crossed the Atlantic after the end of the Civil War (Angosta, 2009).[4] In the scientific and academic world, the effect went beyond the individuals involved as it also destroyed the research groups that they led (Barona, 1998:109). Political repression in Spanish universities and scientific centers during the 1940s did the rest, destroying scientific and academic networks in Spain (Giral, 1994).

However, the emphasis on intellectuals and scientists is not consistent with what the data show. The analysis of the aggregate data points in a different direction, showing that the Mexican exile was not dominated by intellectuals (Pla Brugat, 2000:164). If noneconomic factors have a large importance for refugees, refugee populations are likely to include both low and high-skilled individuals whose skills are more suited to their country of origin than to their destination, and also demographic types who might be unlikely to migrate for economic reasons (Brell, Dustmann & Preston 2020). Our data support this view and show that together with the top social elite there was also a substantial movement of lower classes. Our aim is to go a step beyond the traditional representation and to clarify both the quantity and the quality of the human capital that left Spain after the end of the Civil War.

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[4] As an example, Blas Cabrera Felipe, who was considered one of the leading physicists of his time, sharing experiences with figures such as Einstein, Bohr or Curie and being invited to the Solvay Conference, a meeting of the best scientists of the world.

Sources and data

The main source used in the paper is the National Registry of Foreigners in Mexico, created by the Mexican government in 1926. The registry was established by the General Direction of Migratory Services and contained information about the Spanish migrants who lived in the country. The registry also included any foreigner of other nationalities who had entered Mexico before the 1st of May 1926. All the migrants who lived in the country at the time were registered, and a document with their personal information issued as proof of their legal status. The registry includes information for several generations of immigrants who had entered Mexico from the mid-nineteenth century, and from 1929 all the new immigrants who arrived were registered with a similar document.

The registry includes information provided by the expatriates that was highly detailed. The standard document included, among other items, two pictures, one front and one side, date of entry, information about the shape of the eyebrows, eyes, mouth, or facial hair, height, date and place of birth, occupation, religion, and the number of languages spoken. Figure 1 shows a typical design of the card and the sort of data that it included.[5]

Figure 1: Immigration Card Design

The cards themselves are kept by the General Archive of the Nation in Mexico and were digitalized by the Spanish Ministry of Culture using its online archive system. We have thus been able to consult and transcribe the information. Based on the contents of around 26,000 digitalized cards we extracted name and surname of the immigrant, the year when the individual entered Mexico, year of birth, the province of birth in Spain, gender, age, occupation, whether the immigrant was a political refugee or not, last reported residence, the sort of transport used to enter the country and its name

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[5] An example of a real card is presented in the appendix (Figure A1).

(in the case of ships), stature, number of foreign languages spoken, and religion. To compare exiles and traditional migrants we included in our sample only those records for individuals older than 18 years.

From this information we created a profile of the immigrant in Mexico before 1936 and also a profile of the Republican exile. In addition to the characterization of the different sorts of migrations, one of the main aims of this paper is the estimation of human capital of the people who arrived in Mexico between the mid-1920s and the late 1940s. The contrast of the exile with traditional economic migration will offer us a comparative perspective, making it possible to put the human capital of the exiles into a broader context and thus enabling us to better isolate the effect of belonging to the first group, an exercise that has not been carried out in the literature to our knowledge.

The first step, therefore, was the definition of human capital and the estimators that can be used to measure it. In our case the immigration records kept by the Mexican authorities do not offer information about formal education levels, but about the occupation of the immigrant, a proxy that can be used to measure the level of human capital. Each individual had to provide detailed information about his working experience when they entered the country. Those immigrants who already lived in Mexico gave details of their current occupation.

We used the HISCAM scale proposed by Lambert *et al.* (2013) to operationalize the information from the occupations into a quantitative index, a social stratification index that has been widely used in the historical literature where higher values represent more advantaged occupational positions. This proxy for human capital is not free of methodological problems; the extent to which the job declared was related (or not) with the real level of human capital of the individual is a factor we cannot control. Another problem of the jobs declared is derived from the diligence of the Mexican agents who interviewed the immigrants. In some cases, the civil servants grouped the occupations into main categories considering that a member of a music band or a composer were both musicians. Similar problems can be found in the case of the educational sector where, for instance, many schoolteachers were registered as university lecturers (Llorens, 1976). Another problem derived from the use of occupations is the lack of heterogeneity in female migrants; most women were recorded as housewives, making it impossible to distinguish differences in their level of human capital.

We also observe a certain time inconsistency in the level of detail offered by immigrants in relation to their occupations. After the mid-1930s the description of jobs was incredibly accurate, providing not just a general description such as engineer, but an even more detailed picture such as agricultural engineer or industrial engineer. The sources are not equally generous in the description of jobs before the 1930s. In many cases immigrants declared themselves as *employees*, *traders* or

merchants. As mentioned above, the immigration records that we analyze were introduced in 1926, and it is precisely the information about the immigrants who entered Mexico before this year and were already living in the country that appears to have a lower level of detail. In contrast, those immigrants whose records were created as they entered Mexico starting in the 1930s are the most detailed. This limitation means that the recreation of series of human capital for those immigrants who arrived before 1930 is less reliable.

For this reason, we searched for alternative estimators of human capital that could be studied and compared through the whole period under study. One of the possibilities using the information included in the cards is the number of languages other than Spanish that the immigrant could speak.[6] The advantage of using this proxy is that it allows us to identify differences between female migrants much better than using occupations. For instance, we cannot distinguish the levels of human capital between women recorded as housewives using their occupation, but we are able to do so using the number of foreign languages spoken. A housewife raised in a wealthy family probably received a better education that one born in a poor one, a situation that could be identified by the number of foreign languages spoken. The use of foreign languages also solves the potential problem explained above concerning the use of general occupations such as employees or merchants before 1930 in a similar way that it does with the case of housewives.

We made adjustments to exclude from this proxy those languages that cannot be considered foreign: Catalan in the case of migrants born in Catalonia or Basque for those born in the Basque Country and that should be considered mother languages. We understand that the use of this proxy probably captures a very high level of formal education. For instance, a highly qualified worker such as a master carpenter who does not speak a foreign language would be classified as low skilled. However, we assume that learning foreign languages requires natural skills that could also identify a level of human capital beyond formal education or occupation. In fact, when we compare the average number of languages spoken by immigrants every year, they tend to present a high correlation with the estimators derived from occupations such as HISCAM[7].

From the occupation of each individual, we also transcribed his/her social class using the HISCLASS scheme based on dimensions such as manual vs non-manual work, skills, the supervisory character of the occupation and its economic sector (van Leeuwen and Maas, 2011). We used its 5 class version that divides occupations in the following social classes:

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[6] Speaking a language different to Spanish has no relevance for adjustment in Mexico but shows the quality of education received in Spain.

[7] The correlation between both variables is 0.66 for the whole period and 0.76 between 1900 and 1950.

1   Elite (higher managers and higher professionals)

2   Lower middle class (lower managers, professionals, clerical and sales personnel and foremen)

3   Self-employed farmers and fishermen

4   Skilled workers (medium skilled and lower skilled)

5   Unskilled workers and farm workers

Finally, we also use the stature of the migrant as a proxy of human capital, as the literature has suggested that there is a high correlation between both dimensions. Camara *et al.* (2019) showed that between 1855 and 1960, a similar period to the one covered in this paper, Spanish conscripts who were illiterate were also systematically shorter than those who could write and read, and these were even shorter than those who were recorded as students. Similarly, Huang (2015) shows that the stature of Dutch conscripts in the mid-twentieth century also increased in line with their level of education. Silventoinen and Lahelma (2001) revealed the same correlation between education and height in Finland and Sweden between 1920 and 1969, as did Heineck (2006) in the case of Germany between 1952 and 1981. The correlation between human capital and height is not restricted to historical studies, as Meyer and Selmer (1999) showed in their study for the late twentieth century where they proved that both men and women who were more educated were also taller. The correlation found in the literature is not surprising, as adult stature depends on the nutrients and the physical weariness that the body received during the growing period, and both variables are highly correlated with the socioeconomic status of the families in which individuals were raised. In a society where the transmission of socioeconomic status between parents and children was very high (Santiago-Caballero, 2020), height seems to be a reasonable proxy for socioeconomic status and indirectly for the human capital of migrants.

As in the case of foreign languages, one of the strengths of using height is that it avoids some of the problems that appear with the use of general occupations such as housewives, employees, or merchants. However, we should take into account that there were also important differences in height between regions in Spain that could have a natural rather than a social origin. Quiroga (2001) showed important regional differences in the height of Spanish conscripts between 1893 and 1954, with the Canary Islands systematically ranking at the top and the regions of the interior ranking at the bottom. To this regional disparity, that could in part have a genetic cause, we should also add that trends in the average height in Spain's different regions over time were not homogeneous, as Quiroga herself and Martinez Carrión (2001) explained. Therefore, the inclusion of regional controls is necessary when comparing the differences in height between individuals from different provinces.

To make the height of individuals who were measured at very different ages comparable, the height recorded in the cards had to be adjusted because stature tends to diminish after the age of 50, as a consequence of the compression of the discs between the vertebrae. Fernihough and McGovern (2015) estimated an annual reduction between 0.08 and 0.1 per cent for males and 0.12 and 0.14 per cent for females. We used the average of these ranges to adjust heights for migrants older than 50.

Our first approach to visualize the potential differences between exiles and traditional migrants was based on a descriptive analysis of the data, comparing the profile of the exiles with that of the traditional migrants. We later analyzed the evolution of our three human capital proxies over time to check not only whether there was an increase in their values with the arrival of the exiles, but also whether the changes are unexpected or in line with the time trends observed for traditional migrants.

Comparing exiles with traditional migrants.

To evaluate the loss of human capital because of the exile, we must put this loss into a broader context. To better understand the impact of the exile, we will compare it with the migrations that took place before, during and after the arrival of the Republican refugees. This perspective will enrich our interpretation of the results by providing a comparative analysis. Were refugees more skilled than the traditional immigrants? If so, by how much? What about those who moved to Mexico at the same time and in later periods but did not register as political refugees? The traditional immigrant and the Republican exile represented a different type of migration and therefore had very distinctive features.

In the age of mass migration, Mexico was not a preferred destination for Spanish emigrants in contrast with Argentina, Brazil, Uruguay, and Cuba. The peak of arrivals before 1939 happened during the 1920s (Figure 2). As in the rest of the Americas, traditional Spanish immigration to Mexico had virtually stopped after 1930 when the number of Spaniards entering the country declined substantially. The arrival of immigrants remained low until the first waves of Republican exiles produced a significant increase in the number of Spanish expatriates entering Mexico. The first exiles arrived straight after the beginning of the Civil War in 1936, followed by still small but increasing numbers in 1937 and 1938. It would be in 1939 when the highest number of exiles, both in absolute and relative terms, arrived in Mexico. After the end of the war, Mexico received three major expeditions with the arrival of the ships *Mexique*, *Sinaia* and *Ipanema*, transporting a total of 4,660 expatriates (Pla Brugat, 2000:161). Exiles continued to arrive in significant numbers during the three following years to decline considerably in 1943. It was not until 1947 that another, much smaller, wave of exiles entered Mexico. In relative terms and compared to traditional migration, exiles represented the lion's share of total Spanish immigrants between 1939 and 1942. In 1944 the arrival

of conventional immigrants to Mexico resumed, returning to a traditional migration pattern that is supported by other authors (Lida and Pacheco Zamudio, 1994).

Figure 2. Spanish traditional and exile migration to Mexico, 1870-1950
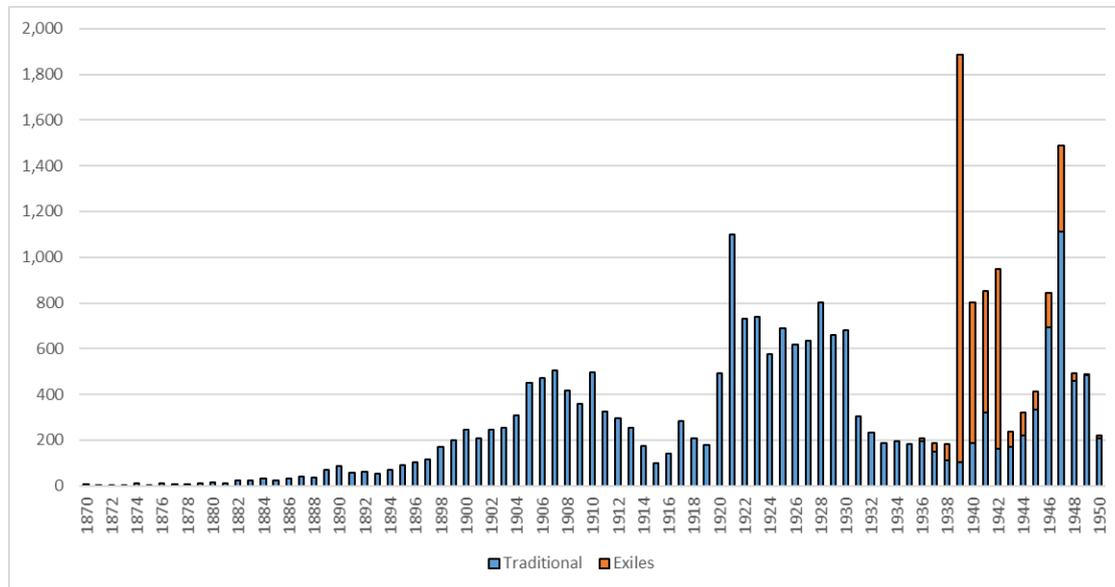
Sources: Computed with data from the *Registro Nacional de Extranjeros*

The economic immigrant in Mexico was quite different from the Spanish immigrant in Argentina, Uruguay, or Cuba. Lida and Pacheco Zamudio (1994) defined them as a "privileged migration" because of their success as traders, entrepreneurs, and professionals. The average traditional immigrant was named José, a Roman Catholic who only spoke Spanish, was 168 cm tall, and lived in the province of Asturias. Around his 39th birthday Jose decided to take a ship from Spain to the port of Veracruz in Mexico. From there he moved to the interior of the country to Mexico DF where he lived and worked as a trader. Maria was José's female counterpart and like him she was a Catholic who did not speak any foreign language, was 159 cm tall, and lived in Asturias. Also around 39 years old, she took a ship from Spain to Veracruz and then the road to the Mexican capital where she became a housewife.[8]

The average Republican exile was a little different. His name was also José and he was also a Catholic, although he lived in Barcelona where he worked in trade-related activities, spoke French, and was 169 cm tall. At the age of 38 he was forced to leave and probably after passing through another country he arrived by ship to the port of Veracruz, moving later to Mexico DF. Maria was José's wife

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[8] These results coincide with those estimated by Lida and Pacheco Zamudio (1994) in a study of emigrations to Mexico before the Spanish Civil War. For a detailed study of the question, see Lida (2006).

and therefore lived with him in Barcelona before they had to leave the country. She was three years younger than her husband, a Roman Catholic, only spoke Spanish and was 159 cm tall. After the end of the Civil War, she followed her husband to Mexico where they lived in the capital and she continued working as a housewife.

Extracted from over 26,000 individual records, the profiles presented above represent the different types of migrations and show some of the most important differences. The first one is obvious; the traditional immigrant left his country freely while the exile was forced to do so. The second is the difference in the levels of human capital; on average almost half of the exiles spoke at least one foreign language, while 7.5 per cent of them spoke two and 2.2 per cent spoke three or more.[9] On the side of the traditional immigrants the numbers were considerably lower, with around 11 per cent speaking a foreign language, although not that disappointing considering that illiteracy rates in Spain were around 32 per cent in 1930 and 23 per cent in 1940 (Pla Brugat, 2000:171).

Table 1 presents the differences between traditional migrants and exiles in several dimensions that define the profile of the migrants. In the case of traditional migrants, we included two columns, the first using the information for the whole period and the second with the sample restricted to the same entry years as the Republican exiles. The most significant difference between both samples of traditional migrants is the higher HISCAM and the number of foreign languages spoken by those who entered Mexico between 1936 and 1950.[10] Traditional migrants in the later years were also younger when they migrated and had a higher share in the primary and secondary sectors than their predecessors. The share of men was considerably lower and the share of minors higher. Exiles were more similar to the traditional migrants who moved with them, although there were also differences between both groups. The number of foreign languages spoken by the exiles was much higher than by traditional migrants, as was the share of occupations in the secondary sector. The share of exiles who declared themselves as Catholics was also much lower than the level of traditional migrants in either of the two samples.

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[9] Computed with data from the *Registro Nacional de Extranjeros*.
[10] Between 1930 and 1948, a period of generally low emigration from Spain to Latin America, the relative importance of the emigration of professionals increased, to the detriment of rural and even industrial emigration (Yañez, 1994: 183-202).

Table 1. Descriptive statistics of indicators, traditional migrants vs exiles.

Indicator	Traditional migrants		Exiles
	All	1936-50	
HISCAM	60.5	64.2	64.9
Foreign languages	0.15	0.29	0.55
Height	165.7	165.5	164.8
HISCLASS	2.2	2.3	2.5
Age	38.8	36.8	36.7
Primary sector	8.3	13.6	9.7
Secondary sector	7.6	12.6	19.4
Tertiary sector	84.1	73.8	70.9
Share men	0.74	0.57	0.58
Share minors	3.13	7.2	5.1
Share Catholics	96.1	96.2	63.6

Source: Computed with data from the *Registro Nacional de Extranjeros*

Figure 3 presents the evolution of the average HISCAM of all migrants including the Republican exile between 1886 and 1950. The trends show a steady decline of its value between 1886 and the early 1920s followed by an intense recovery until 1935, remaining at high levels until 1943 when the average HISCAM decreased but still remained at high historical levels. Long-term trends were very similar for both genders with average female HISCAM scores being in general lower.

A quick look at the average number of foreign languages spoken by all migrants shows a relative stability between 1886 and the early 1920s when, as in the case of HISCAM, the series experienced an increase that was very intense from 1936 coinciding with the arrival of the first Republican exiles (Figure 4). This growth peaked in 1942 and was reversed very quickly coinciding with a reduction in the numbers of exiles. It remained high in the late 1940s, although with values that were similar to those expected if the 1922-34 period that represents the traditional migrants' trend is extrapolated. As in the case of HISCAM, long-term trends were very similar in both genders that also showed a very high correlation in short-term changes.

Figure 3. Average HISCAM of migrants 1886-1950 (5-year moving average)
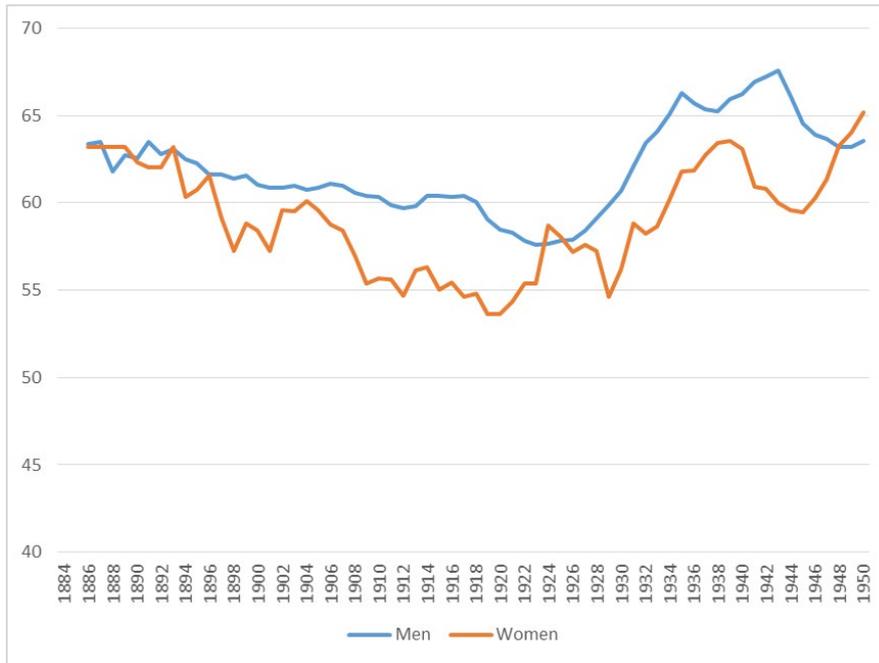
Source: Computed with data from the *Registro Nacional de Extranjeros*


Figure 4. Foreign languages per migrant 1886-1950 (5-year moving average)
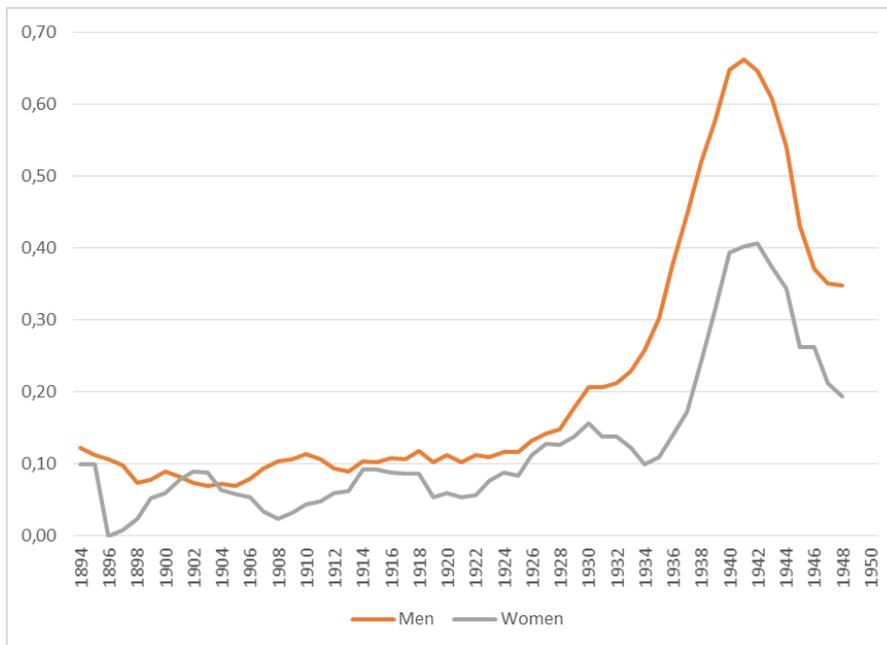
Source: Computed with data from the *Registro Nacional de Extranjeros*

The evolution of average height also shows a general improvement in the long term, although short-term changes and minimum and maximum levels were different to those presented by HISCAM and languages (Figure 5). The lowest values are found at the beginning of the period in the 1880s and the maximum levels in the 1940s. Short-term changes show a deterioration between the final years of the nineteenth century and the early 1910s, followed by a steady increase that continued until the end of the period for males and until the early 1940s for women. In the case of height, the arrival of the first exiles in 1936 does not coincide with an increase in average height; this continued to rise after 1942 when their numbers dwindled.

Figure 5. Average migrant height, 1886-1950 (5-year moving average)
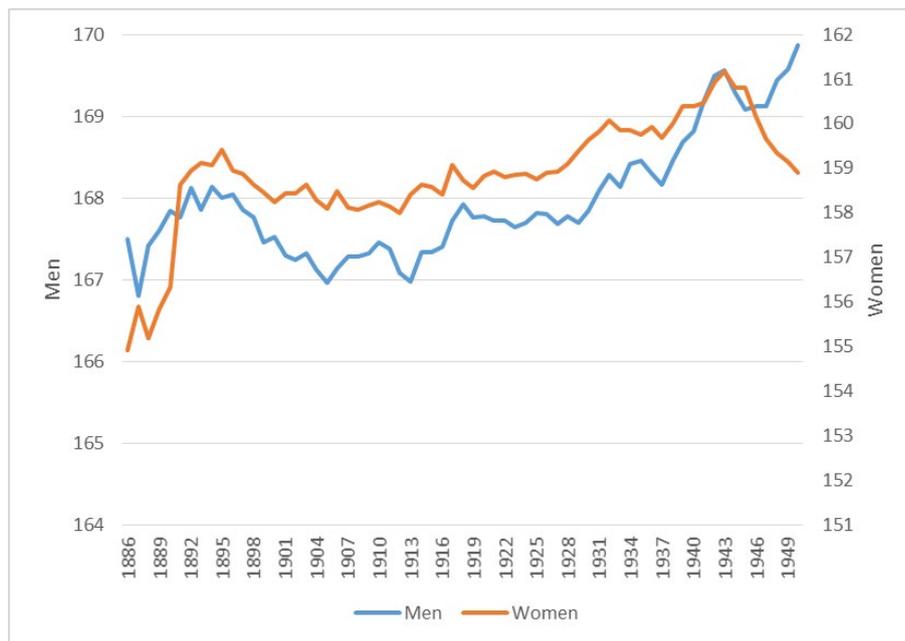
Source: Computed with data from the *Registro Nacional de Extranjeros*

Therefore, a descriptive analysis of the data suggests that the Republican exiles shared some similarities with traditional migrants, especially with those who moved in the same year, although there were also some stark differences between both groups. The following section attempts to exploit this variance to better identify the potential different profile of the exiles using traditional migrants as control group.

Econometric analysis

In order to better isolate the effect of the exile, we carried out an econometric analysis comparing at individual level the potential determinants of the differences in human capital between refugees and traditional migrants, using OLS pooled regressions with the following specifications:

$$Human\ Capital_i = \propto\ + \beta_1\ Exile_i + D_i + P_i + \varepsilon_i \qquad (1)$$

$$Human\ Capital_i = \propto\ + \beta_1\ Exile_i + \beta_2 Male_i + D_i + P_i + \varepsilon_i \qquad (2)$$

$$Human\ Capital_i = \propto\ + \beta_1\ Exile_i + \beta_2 Male_i + \beta_2 HISCLASS_i + D_i + P_i + \varepsilon_i \qquad (3)$$

Where $Human\ Capital_i$ represents each one of the three proxies (HISCAM, foreign languages and height) for individual i and *Exile* represents a dummy variable that takes value 1 if the migrant claims to be an exile from the Spanish Civil War. The existence of a gender gap in the three human capital dimensions, especially in the case of height, where genetic differences are clear, implies that we should also control for gender with the variable *Male,* a dummy variable that takes value 1 if the individual is male. We should also consider that the average values of the three proxies of human capital could present changes over a period of time as long as the one considered in this paper, and for that reason the factor variable *D* was introduced in the models to control for the decade of birth of the migrant. In a similar way and as explained above, there could be significant regional differences in the average levels of human capital considered in our three dimensions; so, to account for changes in the geographical origin of the migrants over time, we introduced the factor variable *P* to control for the province of birth of the individual. Finally, we include *HISCLASS* as factor variable with five possible values ranging from 1 (Elites) to 5 (Unskilled workers and farm workers) as described above. We expect that this variable will be highly correlated with our three dimensions of human capital, and with its inclusion we attempt to find significant differences between exiles and traditional migrants who belong to the same social class. In other words, our objective is to estimate whether exiles were not just on the top in terms of human capital within the whole sample, but also within their respective social classes.

Tables 2 to 4 present the four specifications for the three dimensions of human capital: HISCAM, foreign languages, and height. In the case of HISCAM, our estimates show that once gender, decade, and province of birth are controlled, individuals who declare themselves as exiled have a HISCAM value 4 points higher than the traditional migrant. When social class is introduced as control, the

value of the exile dummy is reduced as expected, but we still find a significant impact meaning that even within the same social class, exiles enjoyed a 1.2 point premium in their HISCAM value compared to traditional migrants. Males present a higher HISCAM than women that although reduced, also exists once social classes are introduced as controls. The effect of social class is also the expected, where using the Elites as baseline we can observe a clear gradient with reducing HISCAM scores as we move from class 2 to class 5.

Table 2. Correlates of HISCAM

Dep. variable: HISCAM	Model I	Model II	Model II
Exiled	3.6***	4.0***	1.2***
	(0.33)	(0.34)	(0.20)
Male		3.4****	0.8****
		(0.43)	(0.25)
HISCLASS			
(Class 1 − Elite Baseline)			
Class 2 − Lower middle class			-28.3***
			(0.26)
Class 3 − Self-employed farmers and fishermen			-36.3***
			(0.25)
Class 4 − Skilled workers			-33.7***
			(0.28)
Class 5 − Unskilled workers and farm workers			-42.1***
			(0.35)
Decade of birth control	Yes	Yes	Yes
Province of origin control	Yes	Yes	Yes
Constant	61.0	57.6	85.1
Obs.	16,630	16,630	16,630
R2	0.05	0.06	0.62
F-test	0.00	0.00	0.00

Notes: *,** and *** denote significance at 10, 5 and 1 per cent levels, respectively. Robust standard errors in parentheses.

Table 3 presents the same three models using foreign languages as human capital proxy. The results are similar to HISCAM and the exile dummy presents values that are very stable in all the specifications. On average, exiles speak around 0.3 more foreign languages per head than traditional migrants, a value that increased once social classes are introduced as controls. Women suffer a penalty that is also maintained when social classes are considered, where as expected there is a clear gradient from the top to the bottom social class.

Table 3. Correlates of Languages

Dep. variable: Languages	Model I	Model I	Model III
Exiled	0.29***	0.30***	0.33***
	(0.01)	(0.01)	(0.02)
Male		0.13***	0.07***
		(0.007)	(0.02)
HISCLASS			
(Class 1 – Elite Baseline)			
Class 2 – Lower middle class			-0.32***
			(0.02)
Class 3 – Self-employed farmers and fishermen			-0.46***
			(0.02)
Class 4 – Skilled workers			-0.43***
			(0.02)
Class 5 – Unskilled workers and farm workers			--0.42***
			(0.03)
Decade of birth control	Yes	Yes	Yes
Province of origin control	Yes	Yes	Yes
Constant	0.33	0.33	1.17
Obs.	21,727	21,727	15,902
R2	0.13	0.15	0.20
F-test	0.00	0.00	0.00

Notes: *,** and *** denote significance at 10, 5 and 1 per cent levels, respectively. Robust standard errors in parentheses.

Finally, the analysis using height presented in Table 4 shows very different results. Without gender controls, exiles were in fact 0.7 centimeters shorter than traditional migrants, a difference that disappears once gender is introduced. These results are explained by the share of women in the exile group, higher than in the sample of traditional migrants and the genetic gender gap in statures between men and women that Models II-III show, with males being between 9 and 10 centimeters taller than women. Contrary to the case of HISCAM, exiles do not seem to enjoy higher statures than traditional migrants in any of the specifications. We also observe that individuals belonging to class 1 were the tallest, although the gradient as we move to the lowest social class (class 5) is not as clear as in the case of HISCAM.

Table 4. Correlates of Heights

Dep. variable: Height (cm)	Model I	Model II	Model III
Exiled	-0.7***	0.04	0.08
	(0.15)	(0.16)	(0.16)
Male		8.9***	10.0***
		(0.10)	(0.22)
HISCLASS			
(Class 1 – Elite Baseline)			
Class 2 – Lower middle class			-1.4***
			(0.18)
Class 3 – Self-employed farmers			-1.4***
and fishermen			(0.23)
Class 4 – Skilled workers			-1.7***
			(0.22)
Class 5 – Unskilled workers			-1.3***
and farm workers			(0.46)
Decade of birth control	Yes	Yes	Yes
Province of origin control	Yes	Yes	Yes
Constant	162.2	155.3	158.0
Obs.	20,505	20,505	15,236
R2	0.03	0.30	0.15
F-test	0.00	0.00	0.00

Notes: *,** and *** denote significance at 10, 5 and 1 per cent levels, respectively. Robust standard errors in parentheses.

Discussion

Our results show that when using HISCAM and foreign languages as proxies of human capital, both series experienced maximum historical levels that coincide with the arrival of the Republican exile to Mexico. There are, however, also important differences between both series. While in the case of HISCAM the increase started in the early 1920s, well before the arrival of exiles, in the case of foreign languages there is a clear correlation between an exponential growth and the arrival of the first batch of political refugees. Height on the other hand presents a very different trend to the other two proxies and shows a deterioration from the late nineteenth to the early twentieth century to recover later, with no significant changes during the arrival of the exiles.

The econometric analysis of the three proxies for human capital supports the descriptive analysis presented above. The first main conclusion combining both approaches is that exile status does not seem to correlate with taller heights. There are several reasons that could explain this result, making it compatible with those obtained for the other two dimensions of human capital. The first one is

that as explained above, height is expected to be correlated with human capital, but is a more tangential proxy than more direct estimates such as HISCAM or foreign languages. A second possibility, also congruent with the first one, is that achieving high stature requires a lower investment than obtaining a good occupation or learning a foreign language. In other words, an average family could afford to invest in decent nutrition and a low workload for its children to guarantee a good stature, but did not have the resources to invest in the education required to achieve a top occupation or learn a foreign language. The fact that the significance of the exile dummy for HISCAM and foreign languages is maintained once social classes are considered suggests that this could be the case, and that in these two cases the exile dummy is significant because exiles were also part of the top of their respective social classes with more room to invest in education.

Traditional migrants were in fact very positively selected as Lida and Pacheco Zamudio (1994) explain, and they were considerably taller than the average Spaniard who did not migrate. A recent study by Cámara *et al.* (2019) estimates that the average height of the Spanish conscript ranged between 162 and 165 centimetres for the cohorts born in 1840 and 1920 respectively, while the figures for the same cohorts of Spanish migrants to Mexico were 166 and 169 centimetres. The comparison with the heights of the elites in Brazil and Colombia reinforces the high statures of Spanish migrants to Mexico. Males reached similar heights to their Colombian and Brazilian counterparts in the elites in the early twentieth century (around 168 centimetres). Female Spanish migrants in Mexico were on average one centimetre taller than women belonging to the elites in Colombia, around 159 versus 158 centimetres respectively (Meisel and Vega, 2007; Franken, 2019).

The results for HISCAM and languages (Tables 2 and 3) show that exiles presented higher values for both proxies when they were compared with traditional migrants. In the case of HISCAM, exiles achieved an average HISCAM around 4 points higher than the scores achieved by traditional emigrants at the same time, who averaged a HISCAM of 66.[11] In the case of languages, the difference between both groups was more substantial, with exiles speaking around 0.3 more languages per head than the traditional migrants who moved to Mexico at the same time, who averaged 0.34 languages per head. Why, though, was the connection between exile status and foreign languages much stronger than with HISCAM? A possible answer could be that many of the exiles who claimed to speak French learnt it not through the kind of formal education that we are attempting to estimate, but from their long stays on French soil before they sailed to Mexico. As we explained above, large numbers of exiles left Spain straight after the beginning of the Civil War and moved to southern

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[11] Table A1 in the appendix shows examples of occupations with HISCAM around 66 compared to those with HISCAM 4 points higher.

France where many of them remained during the war hoping to return after the conflict. When the war finished and the Republicans lost, many of them moved from France to Mexico becoming part of our sample. It would not be surprising to find cases of exiles who had to learn French during their stay in France and declared themselves to be speakers of French when they entered Mexico. Although this possibility is pure speculation, we carried out several robustness checks of our results that are presented in Table 5 and repeat the most complete model with four new specifications. Model V excludes all individuals who only declared themselves to be speakers of French from the sample. In this model we penalize both traditional migrants who had learnt French but also all exiles who had learnt it in Spain, or in other words we measure the ability of individuals to speak other languages different to French in a way that affects exiles and traditional migrants equally. Given that exiles seemed to obtain better occupations (HISCAM) than traditional migrants and that French was the main foreign language taught in Spain at the time, we believe that, on average, this specification penalizes exiles more than traditional migrants. Model VI excludes from the sample all exiles who arrived from Catalonia or Aragon. The reason is that the bulk of the exiles who escaped to France, remained there, and potentially travelled later to Mexico came from these two regions that share borders with France. Model VII excludes all the exiles who arrived from the ships that the Republican government in exile hired to transport some of the refugees who were living in France. [12] Finally, model VIII is the most restrictive and directly excludes all exiles who declared that they were able to speak only French. We believe that this is clearly a lower bound, since we are excluding from the sample a large number of exiles no matter where they learnt French that was also the most common language spoken in all the sample. The results in all the models are consistent with those obtained in the previous models, suggesting that the exile dummy in foreign languages does not seem to be a consequence of their stay in France. The values of the coefficients for Models V and VIII are as expected lower. In the case of Model V, excluding all migrants who only spoke French reduced the average number of languages spoken by traditional migrants who moved at the same time as the exiles to 0.26, compared with 0.34 if French they were included. Therefore, the reduction in the coefficient is also related to the reduction in the average number of total languages spoken as a consequence of excluding a large number of individuals who only spoke French.

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[12] Those ships were *Flandre, Guinea, Ipanema, Manuel Arnus, Mexique, Nyassa, Orinoco, Santo Domingo, Siboney* and *Sinai*.

Table 5. Correlates of languages adjusting for exiles in France

Dep. variable: Languages	Model V	Model VI	Model VII	Model VIII
Exiled	0.17***	0.28***	0.33***	0.16***
	(0.02)	(0.02)	(0.02)	(0.02)
Male	0.12**	0.06***	0.12***	0.1***
	(0.02)	(0.02)	(0.02)	(0.02)
HISCLASS				
(Class 1 − Elite Baseline)				
Class 2 − Lower middle class	-0.60***	-0.50***	-0.49***	-0.34***
	(0.04)	(0.03)	(0.03)	(0.02)
Class 3 − Self-employed farmers and fishermen	-0.63***	-0.53***	-0.52***	-0.45***
	(0.04)	(0.03)	(0.03)	(0.033
Class 4 − Skilled workers	-0.64***	-0.52***	-0.52***	-0.45***
	(0.05)	(0.04)	(0.04)	(0.03)
Class 5 − Unskilled workers and farm workers	--0.56***	-0.47***	-0.47***	-0.43***
	(0.05)	(0.04)	(0.04)	(0.03)
Decade of birth control	Yes	Yes	Yes	Yes
Province of origin control	Yes	Yes	Yes	Yes
Constant	1.29	1.29	1.22	1.17
Obs.	14,447	15,204	14,896	14,967
R2	0.15	0.29	0.21	0.13
F-test	0.00	0.00	0.00	0.00

Notes: *,** and *** denote significance at 10, 5 and 1 per cent levels, respectively. Robust standard errors in parentheses.

The analysis of the exile from a female perspective has often been forgotten, although qualitative research that analyzes the situation of the female republicans in the exile (Martinez, 2007) does exist. With our data we carry out a quantitative analysis of the human capital of Spanish women in the exile. As mentioned before, one of the common problems in the use of female occupational categories is the frequency with which women are classified as housewives, without being able to draw conclusions about their real qualifications. In other cases, occupations such as seamstress, common for immigrant women, may be temporary jobs held by the exiled women during their early years in Mexico, and may not correspond to their pre-exile occupation. The number of languages spoken other than Spanish allows us to overcome these obstacles in assessing women's human capital. Our results show that the weight of women in the loss of human capital was significant; according to our estimations more than one third of all the foreign languages spoken by the exiles were spoken by women, suggesting that a considerable share of the human capital lost corresponded to female exiles. In terms of population, women represented 42 per cent of the Republican exiles to Mexico. The difference between both numbers reflects the lower levels of human capital that, on average, existed between males and females; even reaching lower human capital levels than men, women represented a substantial percentage of the brain drain. The case of the Mexican exile

highlights the importance of women, a group that is usually forgotten in quantification exercises given the lack of comparable sources. Figures 3-5 reveal that this issue is very relevant, because we observe very similar trends in the evolution of male and female migrants' profiles over time. The synchronicity of the long-term waves that we observe in the three human capital proxies for both genders provides new and key evidence for the study of the effects of the brain drain in the age of mass migrations, usually focused on men due to the limitations imposed by historical sources.

Conclusions

The study of the Spanish Civil War and its consequences has generated intense and controversial academic debates, including the role of the Republican exiles and the loss of human capital that they represented. Refugees are assumed not to be economically selected to the same degree as economic migrants as push factors are stronger than economic pull factors. The Spanish exile in Mexico after the Civil War is a good case of study since it is frequently presented as a highly selected flow that arrived to Mexico with skills above the average of the Mexican population. The literature argues that the importance of the Spanish exile does not rely exclusively on the number of people who left the country, but on their quality. The traditional view presents the exile as a loss of human capital and a brain drain for Spain. Taking the Mexican exile as a case study, this paper attempts to quantify this loss, and to put into context the quality of the human capital that left Spain after the war. Our quantification exercise allows us to go beyond the traditional view of Spanish exile focused almost exclusively on intellectuals, writers, and highly qualified professionals. Spanish refugees were, overall, an immigration with high human capital compared with the traditional economic immigrant.

We created a profile of the immigrant in Mexico before 1936 and a profile of the Republican exile to compare traditional economic immigrants with refugees. To quantify human capital of the two groups, we use three different indicators: HISCAM for occupations, the number of foreign languages different to Spanish that immigrants could speak, and stature. Our data allow us to create an index of human capital using the average number of foreign languages spoken, that we believe captures the highest level of human capital for Spanish migrants during the period considered. Our results show that when using HISCAM and foreign languages as proxies of human capital, exiles presented higher values for both variables when they are compared with traditional migrants. However, exile status does not seem to correlate with taller height, though traditional immigrants in Mexico were considerably taller than the average Spaniard who did not migrate.

If we assume that languages were the highest qualification, followed by HISCAM, the fact that the effect of exile is highest in languages suggests that Spanish exiles were indeed highly qualified. Our data show that on average almost half of the exiles spoke at least one foreign language, while the

corresponding figure among traditional immigrants was only around 11 per cent. The high selectivity of the exiles is also reflected in the significance of the exile dummy when social class controls were introduced in our models, suggesting that exiles were among the most skilled members of each one of these classes.

The gender approach is an important contribution of this paper, because the proxies we use allow us to measure human capital for women much better than using occupations. Therefore, we can quantify the level of qualification of women, a variable that is usually omitted from economic history given the lack of recorded data. The role of women in the Mexican exile was not only quantitative; their importance in terms of human capital is also significant. Depending on the proxy used, around one quarter of the human capital lost with the Mexican expatriates came from females. An important lesson of this result highlights the importance of quantifying the relevance of a group that is usually invisible in economic history.

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Appendix

Table A1. Examples of occupations with HISCAM scores around 66 and 70.

Occupations with HISCAM around 66
45190 Other Salesmen, Shop Assistants and Demonstrators
41025 Working Proprietor (Wholesale or Retail Trade)
22200 Transport and Communications Supervisors
16000 Sculptor, Painter, Photographer or Related Creative Artist, Specialisation Unknown
16150 Engraver and Etcher (Artistic)
16310 Photographer, General
39320 Correspondence Clerk
45120 Wholesale Trade Salesperson

Occupations with HISCAM around 70
39350 Insurance Clerk
39520 Library Clerk
44220 Business Services Salesman (except Advertising)
17120 Composer
13990 Other Teachers
21240 Contractor
2255 Hydraulics Engineer
22680 Supervisor and General Foreman (Production and Distribution of Electricity, Gas and Water)
42220 Buyer

Figure A1. Example of card.

Source: PARES (http://pares.culturaydeporte.gob.es/inicio.html)

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