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ORIGINAL PAPER

Domestic migrations in Spain during its first industrialisation, 1840s–1870s

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Abstract

Using an original microeconomic database with information for around 200,000 individuals, this paper creates new estimates of internal migrations in Spain in a key moment of its economic history. Our analysis shows that internal migrations were not a linear process including both periods of stagnation and also rapid growth, and that the 1850s were a decade of surprising high mobility in the absence of modern transportation. We also conclude that the rise in mobility was geographically asymmetrical with traditional urban centres losing ground against the rise of Madrid and Barcelona. The modernisation of the country also had significant social impacts with the migratory gender gap being significantly reduced prior to 1870. An analysis of the determinants of internal migrations suggests that traditional push and pull factors described by the literature in the early twentieth century seem to be also behind the early migrations of the mid-nineteenth century. The modernisation of the country provided new opportunities in urban areas that, combined with falling transport and information costs, created the perfect conditions for the 'democratisation' of long-distance migrations.

Keywords Migrations · Spain · Gender gap · Industrialisation

JEL Classification N33 · N94 · R23 · O14

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1 Introduction

The central decades of the nineteenth century were a key period for the economic history of Spain. Up to then, never before in Spanish history had GDP per capita increased more rapidly than during the decades that followed the end of the Napoleonic invasion. The growth was also transmitted to wages that grew quickly between 1810 and 1860, while total factor productivity in agriculture also showed an intense growth and the terms of trade with key economies like Britain improved (Alvarez-Nogal and Prados de la Escosura 2013; Prados de la Escosura 1994). The take-off of the Spanish economy continued during the second half of the nineteenth century, when the economy achieved per capita growth rates that would not be reached again until the roaring twenties. Between 1850 and 1883, Spain grew as quickly as Britain, three times faster than Italy and more rapidly than France and Germany. The country experienced a rapid transformation into a modern economy with the rise in the industrial sector whose productivity boomed, and that by 1870 represented 20% of total output (Prados de la Escosura 2017). The modernisation also included the creation of key infrastructures like the railroad that stabilised and levelled domestic prices (Peña and Sánchez-Albornoz 1984). Spain also experienced sustained political changes influenced by the liberal revolutions that improved the quality of its institutions (Prados de la Escosura and Santiago-Caballero 2018).

However, our knowledge of domestic migrations at national level during this key period of Spanish economic history is very limited. Prior to the late 1870s, the existing literature on internal migrations in Spain has relied on local and regional studies. The main reason is the lack of official sources at aggregate levels and the necessity to rely on micro-studies using local records.[1] Most of these studies suggest the existence of significant movements before the 1870s and highlight the relevance that the economic development of Spain in the nineteenth century had in the process. Camps (1993:29) argued that in some regions like Catalonia and the Basque Country, urban populations grew fast between 1787 and 1857, and that in the former the decline of rural industries were a key motivation. Similarly, Silvestre suggested that the rise in permanent migrations in Spain could have started as early as the 1860s, as consequence of urban industrialisation and the loss of competitiveness of rural industries (Silvestre 2010:121). The rapid economic and social changes that took place in Spain during the second half of the nineteenth century are, therefore, seen as potential drivers of the increasing internal mobility of labour (Beltrán Tapia and de Miguel Salanova 2017:103). However, although local and regional studies suggest that intense domestic migrations were well underway before the 1870s, we do not count on a study at national level to measure these changes. The first nationwide

[1] At regional and local-level, Catalonia has been one of the most studied regions with studies like Fabré (1991), Camps (1992, 1995), Recaño Valverde et al. (1996), Llonch (1996), Marfany (2001) and Ros Navarro (2003). Florencio and López Martínez (2000) studied internal migrations in Andalusia as did Florencio Puntas and López Martínez (2000) focusing on temporary emigrants. Other papers include the seminal work by Reher (1990) in Cuenca, Sarasua (1994b) for emigrants from Cantabria to Madrid, Dubert (1998) in Galicia, Pallol Trigueros et al. (2010) for Madrid or Collantes Gutierrez (2001) in mountainous regions.

estimates of domestic migrations use the information provided by the official censuses from 1877, and show that domestic permanent migrations increased steadily during the last quarter of the nineteenth century. However, they also suggest that the growth was relatively slow until the first decades of the twentieth century (Silvestre 2005b:165). Unveiling if the transformation that Spain experienced long before the 1870s had a significant impact in internal mobility at national levels is therefore compromised by the lack of statistical sources at macroeconomic level for earlier decades.

The most recent literature has also focused on the determinants of domestic migrations. Silvestre (2005a) analysed the main factors behind internal migrations in Spain between 1877 and 1930, concluding that wage differentials between origin and destination, job opportunities in the non-agricultural sector, the benefits of migration chains, and travel costs measured using distances played an important role explaining domestic migratory movements. In a study on domestic migrants to Madrid between 1880 and 1930, Beltrán Tapia and de Miguel Salanova argued that domestic migrants were positively selected, and that skilled migrants had more chances to move from rural areas when agrarian wages at origin were lower. On the other hand, distance only had a significant effect on skilled females and its effect decreased over time (Beltrán Tapia and de Miguel Salanova 2017:115).

The international literature also suggests similar trends of increasing internal migrations during the nineteenth century. As for Spain, the rise in internal movements is usually connected to the process of rapid growth and industrialisation. In Britain, the differences between those regions more involved in this modernisation and the rest offered new opportunities and incentives for a rapid reallocation of labour (Long 2005). In the Netherlands, the job opportunities provided in wealthy urban areas and the lack of opportunities in rural areas fostered the same process (Bras 2003:220). Manufacturing and trade transformed entire cities like Liverpool or Bremen where the accumulation of wealth provided new opportunities for domestic migrants (Lee 2005:439). Similar movements were also found in peripheral economies like Sweden, where long-distance migrations increased during the nineteenth century even before the modernisation of the country (Dribe 2003:254).

The traditional push and pull factors explaining internal migrations present evidence that is very similar to the Spanish case. In late nineteenth-century England and Wales, wage differentials and the stock of migrants in recipient locations encouraged migrations, while distance between origin and destination decreased it (Boyer and Hatton 1997:712). Long confirmed the role of wage differences but did not find evidence to support the relevance of distances or migration chains (Long 2005:25).[2] Grant (2000) pointed out the importance of job opportunities in recipient locations and also in the relevance of attractive wages in Germany. In Sweden, lower wages in origin were a significant push factor, while the existence of migration chains and the economic prospects in the final destination were the most important pull factors

[2] He concluded that the latter could be consequence of using individual-level data to capture the effect of location-level factors like distance and the stock of migrants.

(Eriksson et al. 2016:5). As in Spain, it seems that urban immigrants in Britain were positively selected (Long 2005:26).

This paper will address the key lines of research considered by the literature described above, providing new evidence at a crucial time in the economic history of one of the main economies in Europe. We will reveal if as the literature has hypothesised and studied at a smaller geographical scale, the intense process of economic and social transformation that the country was experiencing from the mid-nineteenth century had an impact in the internal reallocation of labour. In order to do so, we gathered a dataset of marriage records for 32 locations including the largest cities of the country and also a wide range of middle size towns and smaller rural locations. The database, entirely assembled from archival work and primary sources, includes more than 32,000 marriage records that contain information for more than 190,000 individuals. After presenting the source and its reliability, the paper explains how the stock of domestic migrants was estimated from the registries. The text then presents the main results at aggregate and local levels. We provide a description of the migratory dynamics both from the sending regions and the recipient locations, including detailed information regarding the formation of the migratory stock in the main recipient locations. The connection of the new estimates with the official statistics from 1877 onwards provides a long-term view of the modernisation of Spain from its very beginnings. We also estimate the long-term changes in the gender migratory gap and present a conjectural explanation for its reduction. The second major contribution of this paper addresses the determinants behind the movement of domestic migrants, following a methodology that allows comparability with the available literature for later periods. We replicate the model used by Silvestre (2005a) to analyse if the push and pull factors identified for later migrations apply to the early migrations of the mid-nineteenth century. Finally, the last section of the paper concludes.

2 Sources and data

The need for demographic information pushed the Spanish governments of the nineteenth century to create the first civil registry to record births, marriages and deaths. Up to that point, civil authorities had to rely on information supplied by the church that thanks to its infrastructure and resources was able to retain a monopoly on the control and record of demographic statistics. The first attempt to create a civil registry appeared with the decree of the 3rd of February 1823 that issued the creation of a civil registry or births, marriages and deaths in every municipality. (Decreto de XLV de 3 de febrero para el gobierno económico-político de las provincias, 1823). However, and with few exceptions like the city of Madrid, the attempt failed as it was not supported by the resources required for its creation. It was not until the decree on the 24th of January 1841 that the first civil registries would be created but limited only to those municipalities that were provincial capitals, heads of judiciary districts or locations with more than 500 families or around 2000 inhabitants (Decreto de 24 de enero para la creación de un registro civil. Art. 7, 1841). The government understood that only municipalities with a certain scale would possess the

resources to create and maintain the registry themselves. The decree ordered ecclesiastical authorities to ask the registry for permission before carrying out any baptism or burial and to communicate within 24 h any marriages, including severe penalties and fines for those priests who did not comply.

Therefore, the decree guaranteed that the registry would have the resources and provide the incentives for an efficient functioning, and studies comparing its content with those kept by the church confirm its reliability (Valero Escandell 1986, p. 94). The government issued templates that were sent to all the local registries, so the information could be recorded and kept in homogenous formats, a fact that allowed us to use and compare it systematically in all the country. This first civil registry was abandoned with the provisional law 2/1870 on June 17th that established a new civil registry covering all the municipalities and controlled by the judiciary that has been maintained up to the present time. The old civil registry was abandoned, but its records were kept by the local authorities that usually preserved them in the historical archives of each municipality.

Therefore, the first civil registry lasted between 1841 and 1870, providing unique information at microeconomic level that systematically gathered and analysed in large numbers can help us to overcome the lack of macroeconomic evidence in a key period of the economic history of Spain. The records included key information about the married couple but also about their parents, been the most important field for our study the province of origin of all the family members and particularly that of the groom and the bride. We also collected the profession of the groom, his father, the bride's father and the ages of the couple. As we will see later, this information will be important to calibrate our results and will provide significant insight into the dynamics behind migratory movements. The data were extracted directly from the marriages civil registry records contained in thirteen historical municipal archives and in some cases also from online archives like Familysearch.com.[3]

Figure 1 and Table 1 present our sample of 32 locations that have a distinctive urban character and were also the largest recipients of migrants, although we also included smaller and more rural areas that increase the variance of our sample for statistical purposes. The 32 municipalities of our sample include the seven largest cities of Spain, and by 1877 contained more than 1,700,000 inhabitants, representing more than 10% of all the population. It also represented around 60% of the population in municipalities with more than 20,000 inhabitants and three quarters of their migrant population.[4] This point is relevant as most of the internal migrations had large urban centres as their main destinations. In sectorial terms, the sample is also heterogeneous containing cities dominated by services, industrial centres, rural areas and mixed economies.

[3] A list with the location of the sources for each location is presented in the online appendix.

[4] The 1877 census identified immigration as those inhabitants who were born in a different province.

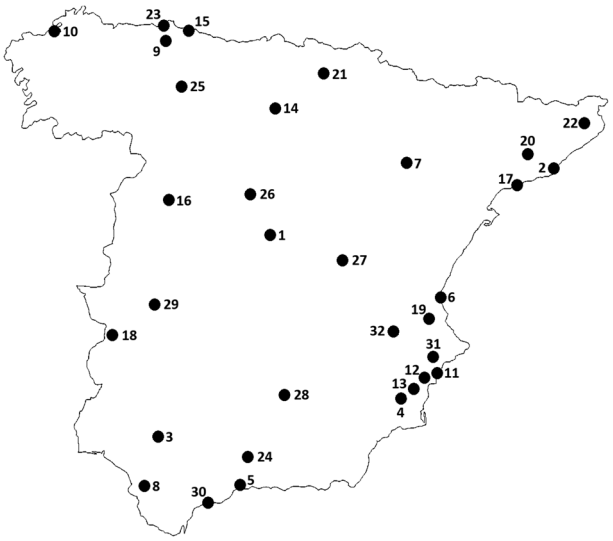

Fig. 1 Geographical distribution of the sample

3 Measuring internal migrations

The use of marriage records to estimate internal migrations has been previously used in the literature in the absence of official records (Camps 1995; Fabré 1991; Ros 1997). Our estimations suggest that the records are also a good proxy not only for the flow of migrants but also for its stock. Figure 2 shows the relationship between the percentage of the population in our sample that was born in a different province according to the 1877 census (both males and females) and our estimates using the marriage records in the closest available year.[5]

The results show a very high correlation that almost falls within the 45 degrees line, and part of the discrepancies could simply be consequence of the fact that for most of the locations there is a difference of almost a decade between the values of the census (1877) and that of the marriage records (c. 1870). In fact, in the case of Barcelona and Seville, we count on marriage records for the same year when the census took place, and the migrant population estimated by both sources is virtually the same.[6] In order to see if the records were not just good at estimating the total amount of migrants but also their geographical origins, we used the 1871 local census of the city of Linares as case study and extracted a random sample including one-third of its inhabitants recording their province

[5] We must take into account that the records of the first civil registry that are used in this paper finish in 1870, and that for some locations, the closest available dates are in the late 1860s.

[6] The percentages of internal migrants estimated by the census for Barcelona and Seville males were 43 and 30%, respectively, exactly the same values that we obtained using marriage records. In the case of females, the census estimated 41 and 23%, respectively, and our calculations using marriage records were 43 and 19%.

Table 1 Sample of locations and population by year

	1841	1850	1860	1870
1. Madrid	157.397	219.284	282.598	356.940
2. Barcelona	121.815	152.801	207.671	248.943
3. Seville	100.498	106.514	118.298	133.481
4. Murcia	82.517	85.916	87.803	90.545
5. Málaga	68.271	81.282	94.732	107.750
6. Valencia	66.355	86.395	107.703	136.452
7. Zaragoza	56.500	59.950	67.428	77.339
8. Jerez de la Frontera	33.104	42.222	52.158	59.677
9. Oviedo	19.610	22.542	29.239	31.604
10. La Coruña	19.415	23.385	30.132	31.910
11. Alicante	19.021	23.286	31.162	32.860
12. Elche	18.068	18.801	18.734	19.432
13. Orihuela	17.452	21.639	25.208	24.754
14. Burgos	15.924	22.891	25.721	28.238
15. Villaviciosa	15.810	17.597	19.655	19.932
16. Salamanca	13.786	14.054	15.906	17.085
17. Tarragona	13.014	15.519	18.433	21.217
18. Badajoz	11.715	16.955	22.895	22.816
19. Alcira	11.287	12.655	13.652	15.625
20. Igualada	10.095	12.048	11.896	12.254
21. Vitoria	9.553	14.132	18.728	23.340
22. Gerona	8.172	11.394	14.341	14.806
23. Avilés	8.111	7.867	7.414	8.377
24. Archidona	7.846	7.628	7.401	7.803
25. León	7.074	8.557	9.866	10.917
26. Segovia	6.625	8.482	10.412	10.916
27. Cuenca	6.622	7.116	7.375	7.930
28. Linares	6.567	8.972	12.342	27.208
29. Trujillo	6.026	6.942	7.505	8.757
30. Marbella	5.105	5.835	6.698	7.448
31. Jijona	4.795	5.412	6.053	6.193
32. Alpera	2.432	2.624	2.553	2.804

of origin. We chose Linares as it was a middle size city with a large percentage of migrants that could be a good case for our comparative study. The results presented in Table 7 in the online appendix show that marriage records were also a good proxy of the stock of migrants in terms of their geographical origins. Using the information from Trigueros et al. (2010) for Madrid in 1860 and Marfany (2001) for Igualada around 1850 from local recounts, we were able to compare their estimations of the labour composition for both cities with ours using the marriage records. The results with all the comparisons are presented in Tables 8

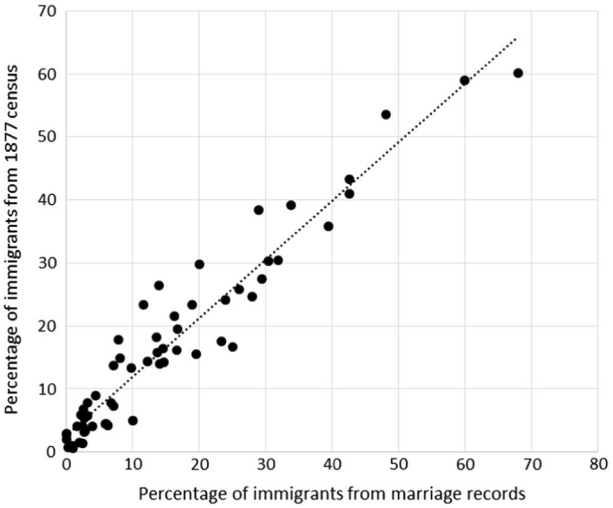

Fig. 2 Domestic migrants in 1877 census vs migrants in marriage records. *Note* Percentage of grooms and brides born in a different province from where the municipality is located. *Source* 1877 census and marriage records

and 9 in the online appendix, and show again that marriage records are a good proxy for population stocks.[7]

We estimated the stock of domestic migrants around four benchmark years, 1841, 1850, 1860 and 1870 using the closest available years in the marriage records. Although in most of the cases, the years used were exactly the same as the benchmarks, in some of them, the source did not exist and we had to proxy using the closest available records. Table 6 in the online appendix shows the years used for every location and benchmark. In some cases, it was not possible to obtain the exact province of origin, as the officials recorded as origin a larger region that comprises several provinces, so in those cases, we divided that migrant in equal parts between the different provinces contained in the recorded region.[8] As we are only interested in domestic migrants, we excluded all international migrants, although their number was so small that the impact in any case was very limited.[9]

We calculated two different estimators of the stock of domestic migrants. For comparability with the official records that followed after 1877, the first estimate uses the methodology of the 1877 census that recorded the percentage of the

[7] In the case of Igualada, using the information provided by Marfany (2001) from the local recounts, we estimated that the average distance from the places of origin of the migrants was around 23 kilometres, while our estimations using marriage records yield 22 kilometres.

[8] For example, if the records indicated that the migrant arrived from Extremadura, we gave 0.5 migrants to each one of its two provinces, Cáceres and Badajoz.

[9] The percentage of international migrants that we estimate in our sample was 0.84% for women and 0.90% for men. They were mainly located in Madrid, Barcelona, Seville and Zaragoza that represented 71% of international female migrants and 72% of international male migrants.

Table 2 Estimations of the stock of migrants and gender gap. *Source* Marriage records

	Percentage		Distance		Gender gap	
	Men	Women	Men	Women	Percentage	Distance
1841	29.9	20.2	76	41	1.48	1.85
1850	29.0	21.0	75	43	1.38	1.74
1860	33.3	24.4	89	52	1.37	1.71
1870	33.9	26.5	86	55	1.28	1.56

First two columns show the estimated stock of migrants as percentage of total population Distance is measured as the average distance travelled in kilometres, taking value 0 for those born in the same province. The Gender gap is calculated as the male/female ratio in both estimations

population in a location that arrived from a different province. This will allow us to compare our results with the official series that begin in 1877 to present a long-term comparative perspective since 1841. However, this would not take into account the distance travelled, as it would equally count a migrant travelling from a neighbouring province and one moving from a much larger distance. For that reason, the second proxy was the average distance travelled by the inhabitants in each location, where those who arrived from the same province including the locals were assigned a distance of zero and those arriving from a different province were assigned the distance to their provincial capital.[10] In both cases, we calculated the average values for all the locations of the sample. To obtain a national estimation, we aggregated both proxies weighing them by the population of each location. Because we do not count on censuses to provide population estimates for each benchmark year, we estimated them using the information from the census of *Matrícula Catastral* of 1842 and the population censuses of 1857, 1860 and 1877 from where we interpolated the levels.[11]

4 Estimation of the stock of domestic migrants in Spain

Table 2 shows the evolution of the percentage of the population in our sample arriving from a different province between 1841 and 1870, the average distance travelled, and an estimation of the gender gap calculated as the ratio between both estimates for males and females. The results show that the first decade was one of moderate decrease in the stock of male migrants and moderate increase for females. The most significant changes took place between 1850 and 1860 when our estimated stock of male migrants increased by almost 15% and for females by more than 16%. Slow

[10] There were many cases when the marriage records provided the province of origin but not the municipality, not being able to distinguish locals from migrants who arrived from short distances within the province.

[11] Instead of total population, we interpolated female and male populations for each benchmark and location to obtain migration estimates by gender that were later aggregated to obtain the national average.

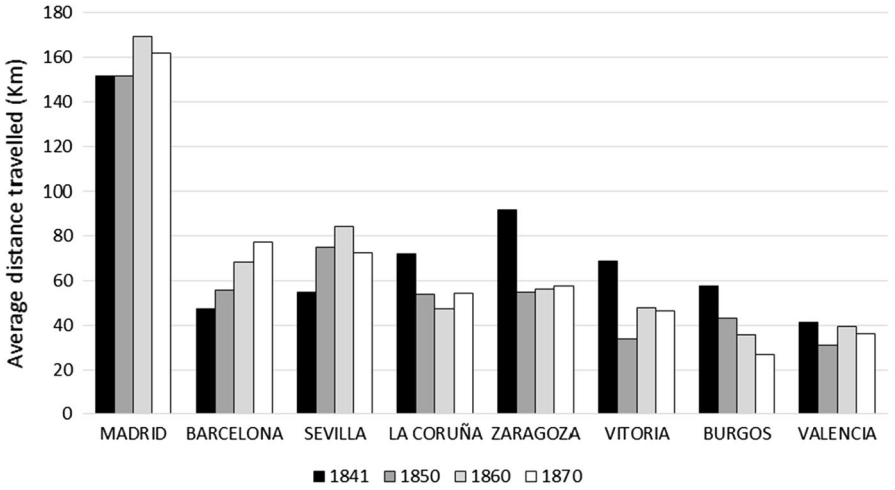

Fig. 3 Average distance travelled in selected locations. *Notes* Average distance estimated for grooms and brides. *Source* Marriage records

growth would follow for male migrants while the stock of female migrants would still increase by more than 8% between 1860 and 1870.

Taking into account the average distance travelled, the trends were very similar, but the intensity of the changes was different. The most important difference is the growth experienced between 1850 and 1860 when the average distance travelled for men increased by almost 19% and for women by more than 20%. Compared to the growth experienced by the stock of migrants, this did not only meant that more people moved than in any other period, but also that they did it covering larger distances. The results coincide with the suggestions in the literature about the possible increase in internal migrations before the establishment of key transport infrastructures like the railroad (Silvestre 2010, p. 121). Our data allows us to track back in time when the process took place, identifying the 1850s as the decade when the stock of migrants changed more intensely coinciding with a period of industrialisation and take-off in the country. Internal mobility kept increasing between 1860 and 1870, although the growth was not as intense as during the previous decade.

Our results also show that mobility levels were higher for men than for women. However, during the whole period, the growth rates of the stock of female migrants were higher than for men, producing a quick and intense catching up between both groups. The gender gap was larger using average distance than the percentage of migrant population, suggesting that distance played a role explaining gender differences. While in 1841, the percentage of the stock of male migrants was 48% higher than female, the difference in 1870 was just 28%. In the case of distance, the differences fell from 85% in 1841 to 56% in 1870.

However, a closer analysis of the data shows that the process was not linear and uniform across locations. Figures 3 and 4 show the average distance travelled by men and women and the estimated share of migrants from a different province in eight large cities across Spain. Madrid reveals its character as capital of the country

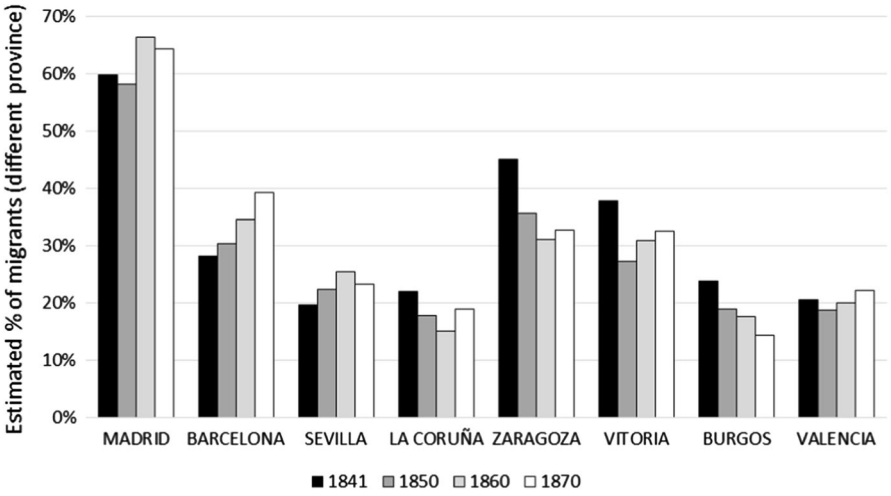

Fig. 4 Estimated percentage of migrants from a different province in selected locations. *Source* marriage records

and the largest urban centre presenting also the highest average distance of the sample that increased slightly between 1840 and 1870. Barcelona started from a relatively low point, but the average distance increased very quickly through all the period, and by 1870 reported the second highest level just behind Madrid. Seville was the third city where we observed long-term growth between 1840 and 1870, although most of the increase took place during the first decade showing stagnation until 1870. The evolution in the other five cities, La Coruña, Zaragoza, Vitoria, Burgos and Valencia present a very different picture where the average distance fell, a decrease that in many cases was dramatic between 1840 and 1850. If we divide the sample by gender, we can observe that the decrease in most of the cities is mainly consequence of the collapse of male movements while female migrations appear to be more resilient. The study of the share of migrants from a different province show a similar pattern, although we have to consider that this variables does not take into account the rapid growth in population that cities like Madrid and Barcelona experienced. Madrid maintained very high shares of migrants that by 1860 represented two-thirds of its population. As in the case of average distance travelled, Barcelona started from a much lower point but increased it quickly as did Seville that reached the highest share in 1860. As in the case of average distance travelled, all the other cities showed a decline between 1841 and 1870 with the only exception of Valencia that increased slightly its share from 21 to 22%.

The analysis of the rest of the sample not included in Fig. 3 reveals that the decrease in mobility experienced by cities like La Coruña, Zaragoza, Vitoria, Burgos or Valencia was the rule and not the exception. For males, 10 of the locations experienced an increase in the average distance while 22 showed a decrease. In the case of females, 13 locations increased the average distance, 16 showed a decrease and three did not show any significant changes. In fact, if we exclude Madrid and Barcelona

from the calculations, the average distance decreased for men and remained stable for women during the whole period. Therefore, the increase in internal mobility experienced in Spain between 1840 and 1870 has been heavily (although not exclusively) driven by the two largest cities that not only increased their relative size in the Spanish economy, but also their importance as the main destinations for migrants. In the case of males, Madrid was responsible of more than half (53%) of the growth in average distance travelled between 1841 and 1870, while Barcelona represented more than one-third (33.6%) of the total. Therefore, the two largest cities of the country represented more than 86% of the increase in average male distances during the whole period, a value that is also considerably higher than their demographic weight in the sample (20% for Madrid and 13% for Barcelona). In the case of women, their influence was even larger with Madrid representing more than 70% of the increase in average distances and Barcelona more than 19%. From the rest of locations that experienced increases in average male and female distances, only Linares in the south did it above its demographic weight. The reason was its dynamism attracting migrants connected with the intense development of a flourishing mining industry in the city and the consequent demand of workers. On the other hand, although they also experienced demographic growth, traditional regional economic centres like Zaragoza, Valencia, Burgos or La Coruña lost relative importance as poles of attraction. Locations like Barcelona were able to extend their reach beyond their traditional sources of migration within Catalonia to more distant regions, while the opposite happened in cities like La Coruña, Zaragoza, Vitoria or Valencia where long-distance migrants diminished. The divergent trends followed by different cities is explained by the rapid growth that Spain experienced in the mid-nineteenth century, when new opportunities appeared for cities like Madrid or Barcelona, but the still significant transport costs made the situation more difficult for many other locations (Ayuda et al. 2010:286). Beltran Tapia and de Miguel Salanova suggest that by 1930 Madrid and Barcelona accounted for almost half of all the domestic migrants while other parts of the country remained stagnant (Beltran Tapia and de Miguel Salanova, 2017:103).[12] Our data confirm this process of concentration that the literature identifies in the late nineteenth century, revealing that it was well underway decades before.

As explained above, the information in the censuses from 1877 onwards only recorded if individuals arrived from a different province, but not from which one. Marriage records on the other hand also allow us to track the exact province of origin. Figure 5 presents the percentage that each province of origin represented in the stock of migrants for the whole period.

Asturias in the north represents the largest group in the stock of domestic migrants between 1841 and 1870, with almost a six per cent of the total, followed closely by Toledo in the centre and at a larger distance by Tarragona and Lerida in Catalonia. The cases of Toledo, Tarragona and Lerida can be easily explained by

[12] The existence of growth poles draining resources from the rest of the country is a usual feature at the time in industrialising peripheral economies like Eriksson et al. also show in the case of Sweden and its main three cities (Eriksson et al. 2016:5).

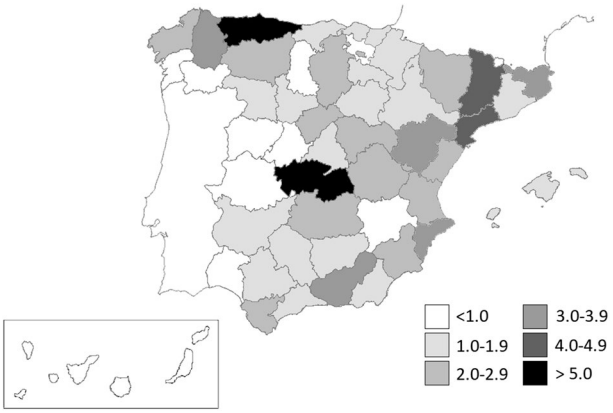

Fig. 5 Stock of migrants by province of origin as percentage of total, 1841–1870. *Notes* Percentage of the total stock of migrants by province of origin. *Source* Marriage records

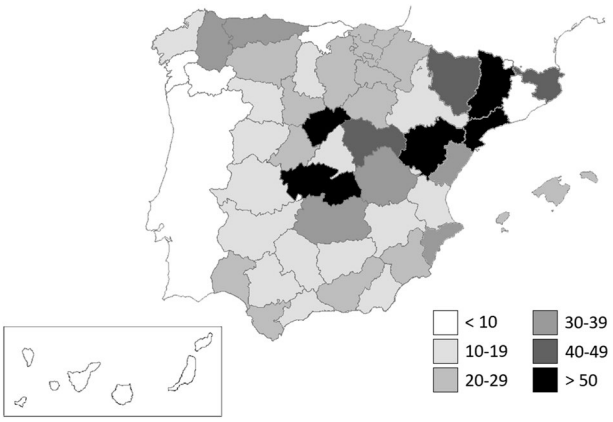

Fig. 6 Migrants per 1000 inhabitants per province of origin. *Notes* Average of four benchmarks of the number of total migrants per 1000 inhabitants by province of origin. *Source* Marriage records

the geographical proximity of the three provinces to the two largest recipients of domestic migrants, namely Madrid in the first case and Barcelona in the other two. However, the case of Asturias is very different, as located in the northern cost of the country the province is far not only from the two main attraction poles, but also from other regional cities and separated from the rest of the country by important geographical barriers. Also as expected, distance played a role in the small number of migrants arriving from the Canary Islands that represent the smallest share.

The picture changes once we take into account relative movements considering the populations of the provinces of origin. Figure 6 presents the number of migrants per 1000 inhabitants by province of origin.

In relative terms, densely populated provinces like Asturias lose their preeminent position. The eight provinces with the highest stock migrants relative to their

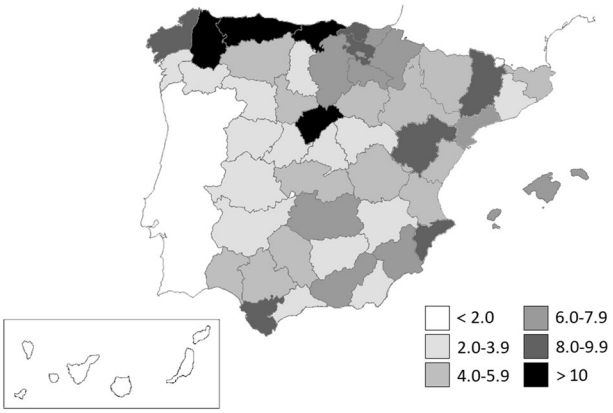

Fig. 7 Average distance travelled per capita, 1841–1870. Notes: average distance of four benchmarks of the total of kilometres travelled by migrants divided by the population of their province or origin. *Source* Marriage records

populations are either regions neighbouring with Madrid and Barcelona or close enough as to facilitate the movement of their workers to the two main cities. However, and as it was explained earlier, we can also measure how intensely the stock of migrants changed not just taking into account the populations of the provinces of origin, but also the average distance travelled. Figure 7 includes this factor adding up all the distances travelled during the whole period by province and then dividing it by their populations.

The inclusion of distance in our estimations shows that as expected, the provinces of the north of the country like Asturias, Lugo or Cantabria present higher mobility levels than those closer to the largest urban centres, with the only exception of Segovia near Madrid. It is interesting to note that the high mobility presented by some of the regions in the north of the country is not shared by some of their neighbours. A clear example is the clear difference between the four provinces of the region of Galicia in the northwest, where while Lugo and La Coruña present very high levels of relative mobility, Orense and Pontevedra do not seem to participate in the domestic flows of migrants so actively.

But, were all the main urban centres of Spain equally able to attract migrants from very long distances? The information from Fig. 3 on average distances in a selection of cities shows this was not the case. Tables 13 and 14 in the online appendix show the estimated distribution of the stock of migrants in 9 major cities by their province of origin in 1841 and 1870. With few exceptions like Madrid, most of the cities obtained their domestic migrants from nearby regions. Between 1841 and 1870, some of them experienced an involution while others prospered. Madrid, Barcelona, Valencia and Seville increased the share that migrants represented in their populations during the whole period, while it decreased in Burgos, La Coruña, Vitoria and Zaragoza in a process similar to the ones described above in terms of average distances travelled. Figures 8, 9 and 10 present the examples of Madrid, Barelona and Vitoria and show the provincial origins of their immigrants who arrived from a

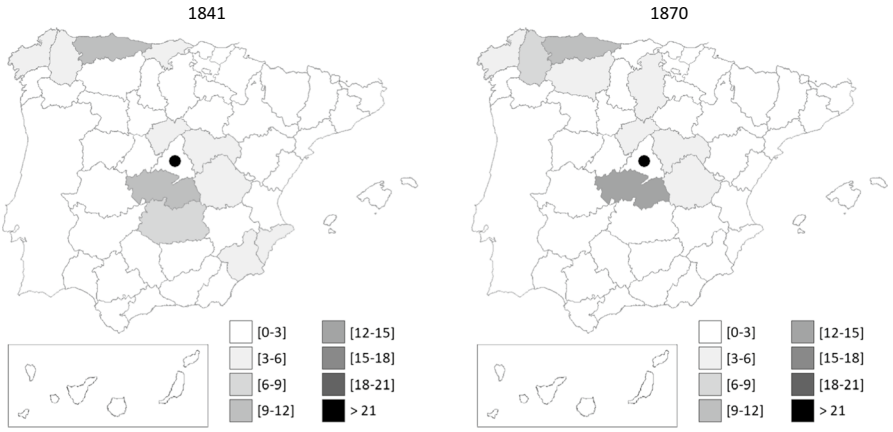

Fig. 8 Origin of migrants in Madrid that arrived from a different province. *Note* Percentage from the total number of migrants that moved from a different province. *Source* Marriage records

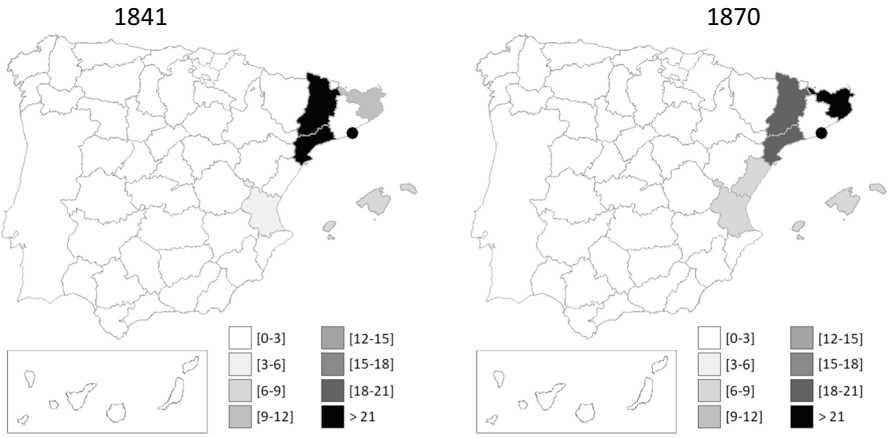

Fig. 9 Origin of migrants in Barcelona that arrived from a different province. *Note* Percentage from the total number of migrants that moved from a different province *Source* Marriage records

different province, where Madrid and Barcelona were chosen as the two main recipient locations and Vitoria as an example of a city that decreased its ability to attract long-distance migrants. The online appendix includes the same maps for all the major cities that were previously presented in Figs. 3 and 4.

Between 1841 and 1870, Madrid was not only able to maintain the arrival of migrants from distant provinces, but also to increase their share on its population from 59 to 64%. As in Madrid, Barcelona not only increased the share of migrants from a different province from 28 to 39%, but also reduced the percentage of migrants that arrived from the neighbouring provinces of Tarragona, Gerona and Lleida from 74 to 60%. Vitoria on the other hand decreased the share of migrants

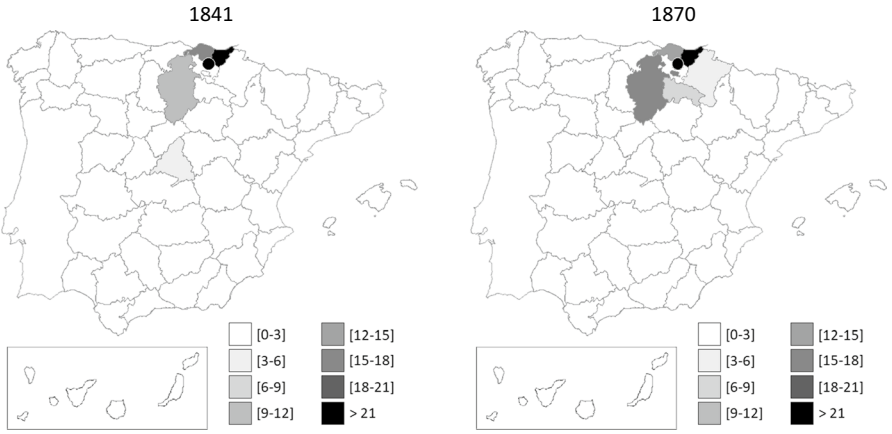

Fig. 10 Origin of migrants in Vitoria that arrived from a different province. *Note* Percentage from the total number of migrants that moved from a different province *Source* Marriage records

Table 3 Main recipients of domestic migrants in our sample. *Source* Estimations from marriage records and Prados de la Escosura et al. (2020) for population of Spain in 1841 and Prados de la Escosura (2017) for population in 1870

1841			1870		
	Percentage	Rate		Percentage	Rate
Madrid	12.8%	59.3	Madrid	19.1%	64.3
Barcelona	4.7%	27.9	Barcelona	7.1%	38.3
Zaragoza	3.4%	44.0	Valencia	2.5%	22.0
Seville	2.6%	18.6	Seville	2.4%	23.0
Valencia	1.9%	20.9	Zaragoza	2.1%	32.2
Malaga	1.6%	16.9	Malaga	1.2%	13.6
Spain	100%	5.4	Spain	100%	7.4

Note Percentage of total estimates the percentage that the city represented in the total amount of domestic migrants estimated for Spain. Rate is the rate of migrants in the city per 100 inhabitants

from a different province from 38 to 32%, who also arrived from closer regions at the end of the period. Similar trends to Madrid are observed in the cities that showed more dynamism like Seville, and the same behaviour that Vitoria showed is also present in those that fell behind like Burgos, La Coruña or Zaragoza.[13]

Following Silvestre (2005b), we selected the main recipients of domestic migrants in 1841 and 1870 in our sample that are presented in Table 3.[14] As expected, the

[13] The maps with the provincial origins of migrants in the eight cities are available in the online appendix.

[14] We should take into account that some large recipients of domestic migrants like Cadiz are not included in our sample because the marriage records only survived for some years in the 1860s. From the available marriage records in 1865, we estimated that Cadiz had a stock of around 26,000 immigrants from a different province, a figure that would put it close to Seville and Valencia.

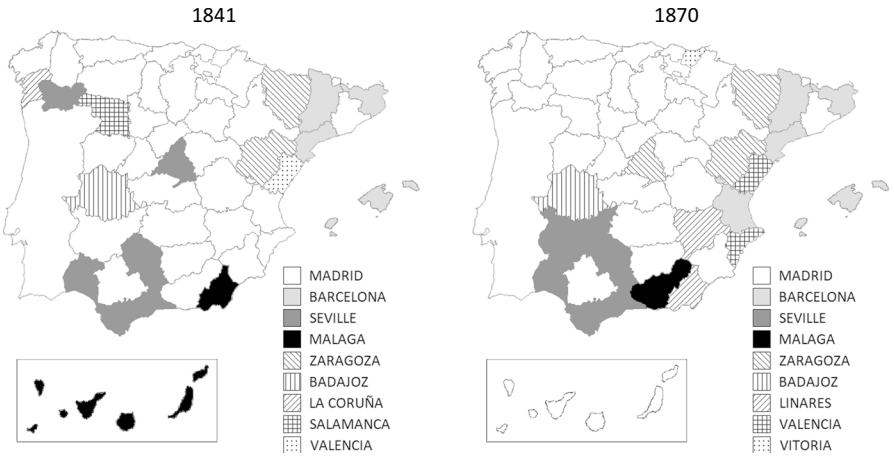

Fig. 11 First choice of destination by province. *Source* Marriage records. (Ceuta and Melilla are not shown in the map. In 1841, their first choice were Malaga and Madrid, respectively. In 1870, they were Madrid for Ceuta and Malaga for Melilla)

cities of Madrid and Barcelona are the largest rates and represent 17.5% of all the domestic migrants in Spain in 1841 and 28.2% in 1870. The most significant changes in the main destinations during the period is the decline of Zaragoza from the third to the fifth position, with an important decrease in the rate of migrants per 100 inhabitants. Malaga also loses ground while Seville decreases its relevance but improves its rate of migrants while Valencia is able to improve both.

We can also identify the main destinations for each province for the stock of migrants that is included in our sample. In order to do so, we located the place in the sample that received the largest amount of migrants from every province. Figure 11 presents the results where we can confirm the pre-eminence of Madrid as the major destination of domestic migrants. Taking into account the 50 provinces of Spain and the two autonomous cities (Ceuta and Melilla), Madrid was the main destination for 31 regions, followed by Seville with six and Barcelona with four. The relevance of Madrid persisted at the end of the period, and by 1870, it was still the main destination of 30 regions followed by Seville with 6 and Barcelona with 5.[15] The appearance of Linares in 1870 reveals the importance that the modernisation process in Spain had in the internal migratory movements. The city became a major mining centre and quadrupled its population between 1841 and 1870, mainly attracting a large amount of domestic migrants from neighbour areas in a process fostered by heavy international investments.

[15] As explained before in the text, our sample does not include some key destinations that were important in their regions like Cadiz or Bilbao, due to the disappearance or practically incomplete existence of the civil registry of marriages. We believe that if they could be included some of the provinces around them that in our sample, choose Madrid as main destination would have chosen them instead. In any case, we also believe that the pre-eminence of Madrid as major destination would not change, as Silvestre (2005a:168) proved that was the case in 1877.

Table 4 Stock of migrants per 100 inhabitants, 1841–1930

	Men	Women	Total		Men	Women	Total
1841	6.5	3.9	5.4	1887	8.8	7.3	8.0
1850	6.8	4.4	5.6	1900	9.6	8.5	9.0
1860	8.1	5.3	6.7	1910	9.7	8.8	9.2
1870	8.6	6.1	7.4	1920	10.3	9.5	9.9
1877	8.6	6.8	7.7	1930	12.4	12.5	12.4

Source Estimations where the stock of migrants for 1840, 1860 and 1870 was calculated from marriage records and for the following years extracted from the official censuses. See online appendix 4 for a detailed description of the estimation

Summarising, the increase in the migratory movements that took place in Spain between 1841 and 1870 were geographically asymmetrical, with growth poles that clearly dominated the process and where most of the traditional urban centres lost ground. The larges rates of internal migration were found in the provinces near to these growth poles like Toledo and Segovia near Madrid or Lerida and Tarragona close to Barcelona. Both cities, especially Madrid, became the largest recipients of the stock of domestic migrants and the preferred destinations for most of the country including distant provinces beyond their own hinterlands. Our results show that the pre-eminence of the capital and the rise of Barcelona that the literature observes in 1877 was the continuation of a process that started with the modernisation of the country decades before.

5 A long-term picture of internal migrations

How do these new estimations change our view of what we knew about internal migrations in Spain in the 19th century? As explained above, population censuses from 1877 onwards only recorded the percentage of the population that arrived from a different province. We used this estimate in our benchmark years between 1841 and 1870 to link our results to the censuses. Using this proxy, Table 4 shows our estimation of the stock of migrants per 100 inhabitants in Spain between 1841 and 1930.

The results suggest that the process was not linear and that male mobility was relatively low during the periods 1840–1850 and 1870–1887. However, this sluggish performance contrasts with the intense growth that was experienced between 1850 and 1870 that was particularly strong during the first decade. In the case of women, the process before 1887 is more linear and as for males intensifies after 1850. If we take into account the growth in the total stock of migrants by year as shown in Fig. 12, we can find surprisingly high mobility levels between 1850 and 1870. In fact, it is not until the 1920s that the growth rates in the stock of migrants reach levels similar to those experienced between 1850 and 1860. Therefore, this first wave of internal migrations does not seem to be connected with the construction of the

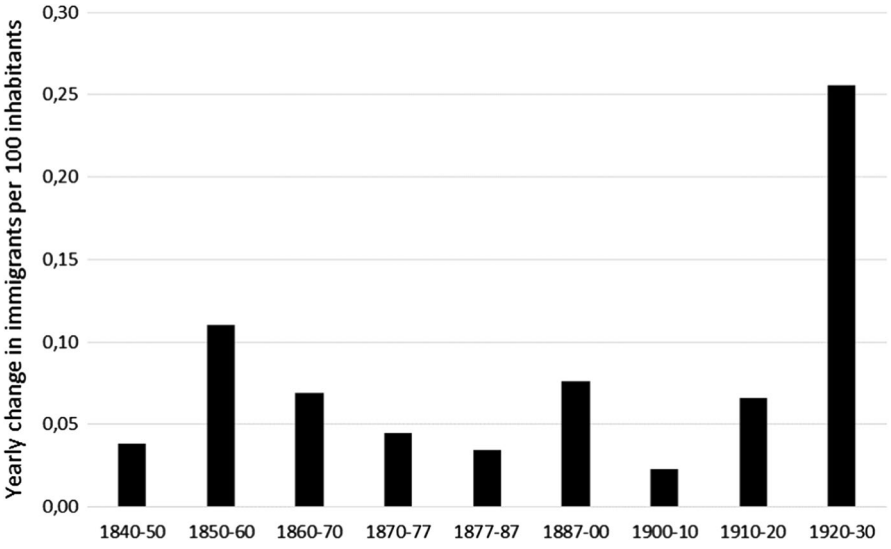

Fig. 12 Yearly increase in the stock of migrants per 100 inhabitants, 1840–1930. *Source* Estimates from marriage records population censuses 1877–1930. See online appendix for a detailed description

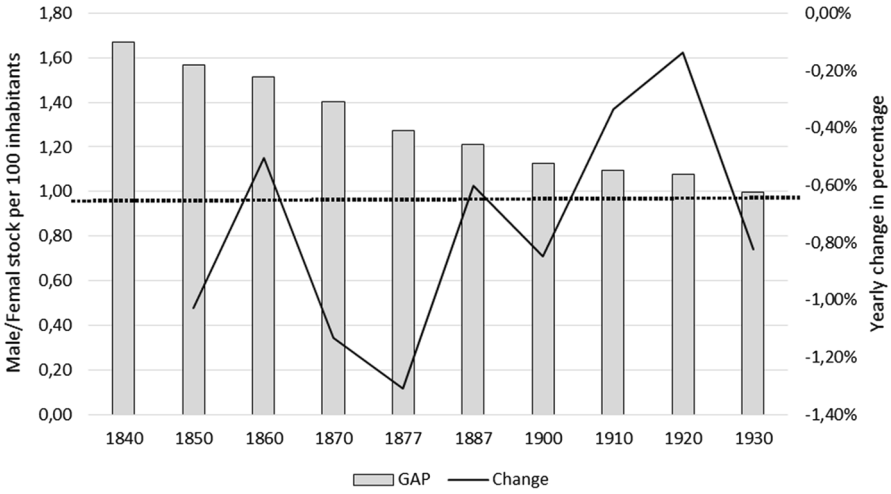

Fig. 13 Migratory gender gap, 1840–1930. *Note* The gap was estimated as the ratio between the stock of male and female migrants per 100 inhabitants. *Source* Same as Fig. 12

railroad network in Spain that took place mainly after 1860 (Herranz-Loncán 2008, p. 190).

We can also extend our analysis of the migratory gender gap combining our national estimates before 1877 with the information from the censuses afterwards. Figure 13 shows the change of the migratory gender gap estimated as the ratio between the stock of male and female migrants per 100 inhabitants. If in 1840, the

stock of male migrants was 67% higher than the stock of female migrants, the gap had completely disappeared by 1930. We can also observe that the process was very intense before 1877 when as Fig. 13 shows, we can find the phases of more intense convergence. In fact, although the period 1840–1877 only contains 41% of the years, more than 59% of the gender gap reduction took place during those first decades of intense transformation of the Spanish economy.

We can advance some conjectures to explain the decline of the gender gap during the period under analysis and the intense growth of the stock of migrants in the 1850s. The development that Spain experienced during the period analysed created new opportunities for women in the fast growing urban areas. This was surely the case in other countries that were experiencing a similar transformation. Lee (2005: 439) suggested that the rapid growth of some regions in England and Germany created new opportunities that were especially beneficial for female migrants. Female participation in the Netherlands was indeed higher in areas where personal, professional and public services were more relevant (Boter and Woltjer (2020:16). Bras (2003:220) argued that the reason was the rise in the urban middle-income classes that demanded female migrants to work in the domestic service. The evidence suggests that this was the case, and for instance, 46% of all female migrants in Bremen, 43% in Liverpool and 79% in Antwerp worked as domestic servants (Lee 2005:441; Greefs and Winter (2016:71). Immigrants from rural areas had high incentives to work as domestic servants, because the job offered them food and shelter in a new and hostile environment. In Madrid, by far, the largest city of the country, domestic servants grew from less than 24,000 in 1846 to almost 45,000 by 1860. Their demand was so high that their share in Madrid's fast growing population increased between both years from 10 to 14.3% (Sarasúa 1994a: 71). As the demand of servants increased, the domestic service in the capital also feminised as the records of the *Caja de Ahorros de Madrid* -a local savings bank that among others focused on domestic servants—reveal. If between 1839–43 the bank recorded as new clients 186 male and 245 female servants, between 1859 and 63 the numbers had increased to 1741 and 4082, respectively (Sarasúa 1994a:240). By 1905, 75% of the female immigrants in Madrid who worked did it as domestic servants where employees were overwhelmingly female (Pallol Trigueros et al. 2010:150). Female immigrants in the capital also found an emerging niche working as wet nurses, a position where migrants from the distant northern provinces were especially well considered (Sarasúa 1994a:160).

Therefore, all the available evidence points to the rise in new chances derived from the increasing wealth in the most dynamic urban areas, as job opportunities were provided in a sector where female workers were in high demand. This new situation that did not exist before at the same scale allowed women to become more mobile joining the long-distance migrations that their male counterparts already enjoyed. This explanation would fit in the 'democratisation' of long-distance migration defined by Greefs and Winter (2016:76), who also observe a similar reduction in the migratory gender gap in Belgium between 1850 and 80 and a 'feminisation' of migrants. They argue that new job opportunities combined with a reduction in transport and information costs made possible the movements of female migrants that were not feasible before.

We believe that a similar process could explain the increasing mobilisation of female migrants in Spain and also the high rates of mobility for both genders in the 1850s. As we have described, the new job opportunities were there, especially for women, but did transport and information costs decrease at the same time facilitating the movements? Nogues-Marco et al. estimated the evolution of information costs in Spain between 1825 and 1874, concluding that they decreased sharply in the 1840s in an improvement that was nationwide. The authors suggest that this was consequence of the modernisation of inland road transport that not only became faster, but also safer (Nogues-Marco et al. 2019:22–23). This fact is particularly relevant in the kind of migration that we are analysing, as it focuses not on short-distance transfers from the hinterlands of the main cities, but on long-distance migrations. The improvement in road transportation was particularly good in the 1850s, coinciding with the surge in domestic migrations that we observe in our sample (Nogues-Marco et al. 2019:22). These improvements would help to explain how domestic migrants started to move in large numbers even before the construction of modern transport infrastructures like the railroad. Worsening conditions for rural industries and the potential adverse effects of the land confiscations of the mid-1850s reinforced the process. Therefore, we cannot disentangle this process from the rapid economic and social transformations that Spain was experiencing at the time. The fast urban development and the improvements in the transport system provided the perfect conditions for this 'democratisation' of long-distance migrations. As consequence, increasing numbers of male and especially female migrants pushed from rural areas could now find an alternative life in the cities.

6 The dynamics behind internal migrations

Our data show that internal migrations in Spain present very different dynamics depending on the locations and regions analysed. Therefore, we decided to study if these different dynamics could be consequence of changes in the traditional determinants of migrations. Silvestre (2005a) studied the determinants of internal migrations in Spain during the 1920s. He concluded that both pull and push factors were important explaining the internal labour movements in Spain. Wages, urbanisation levels and agrarian productivity in the places of origin had a negative impact in outmigration, while the amount of young population and the share of labour force in agriculture had a positive one. On the pull factors side, he concluded that wages in the destination and the share of non-agrarian labour force attracted more migrants, while longer distance discouraged the movements. During her study of international emigrants from Spain, Sanchez-Alonso also showed that factors like wages, the economic dynamics of the destination or education levels were important to explain the differences in mobility levels (Sánchez-Alonso 2000a, b).

In order to study if the determinants of domestic migrations changed over time, we decided to replicate the model that Silvestre (2005a) applied to the migrations between 1920 and 1930 using our data for the mid-nineteenth century. However, although the proxies included in our model are slightly different, they will address the same pull and push migratory factors analysed by Silvestre. The dependent

variable will be the same and measure the change in the stock of migrants from each province in each location relative to the size of the population of the provinces of origin between two benchmark years. In relation with the independent variables, during our period of analysis (especially the first two decades), we do not count on wages at provincial level as Silvestre does for the early twentieth century. Therefore, instead of using rural wages in origin and unskilled construction urban wages in the destination as push and pull factors, we decided to use the professions of the migrant's fathers in origin and the professions of the migrants in the destination. In order to transform professions in a continuous variable, we used the Standard International Occupational Prestige Scale established by Treiman (1977) and updated in Ganzeboom and Treiman (1996). The SIOPS is considered a universal index that can be used for any place and period of time, as Treiman found that prestige hierarchies were invariant though space and time (Houpt and DiPetre 2006, p. 2).[16] The higher the SIOPS score, the higher the socio-economic status of the profession. Therefore, we will use the average score of the profession of the migrant's fathers as a substitute of wages in the province of origin, and the average score of the migrant's profession after they moved as a substitute of wages in the destination. We believe that these two variables could be a more precise estimation of the socio-economic status that migrants could face in their place of origin and the destination.[17]

We will also use the distance between the capitals of the provinces of origin and the location of destination as proxy of transport costs and the stock of migrants from the province of origin in the destination to account for the effects of migration chains. Finally, instead of considering the labour share of the non-agrarian economy as a whole, we will include a variable with the share of the secondary sector and another one with the share of services. The reason is that the effect of both sectors can be very different. Authors like Camps suggest that long-distance migrants had problems to access jobs in manufacturing, and that those positions were mainly occupied by migrants within short distances (Camps 1997). We estimated the sectorial shares from the occupations of the grooms in the marriage records of each municipality each benchmark. In all the cases, we use the values for the independent variables observed in the first benchmark and observed their effect in the change of the stock of migrants during the following decade. The construction of the variables is explained in detail in the online appendix. Table 5 shows the results of the models after using the same OLS specification as Silvestre (2005a).

The results show the same signs in all the coefficients that Silvestre obtained for the domestic migrations in the early twentieth century, with the only exception of the average SIOPS score in the destination that does not seem to be significant. On the other hand, the average SIOPS of the fathers of the migrants has as expected a

[16] The scale has been used to support the validity of different estimators of social prestige in the past like HISCAM, showing indeed a very high correlation between both indexes (Lambert et al. 2013, p. 86).

[17] The low levels of intergenerational socio-economic mobility observed during this period in Spain, especially in the lowest social classes, implies that the profession of the father is a very good proxy of the one the son would have achieved if he had not migrated (Santiago-Caballero 2018). In the case of the average SIOPS score in the destination, they are indeed the ones observed for the domestic migrants in each location and therefore more representative than an average wage of a specific sector.

Table 5 Determinants of internal migrations (OLS)

	1840–1850		1850–1860		1860–1870	
Dep variable: Log migrations	Model I	Model II	Model I	Model II	Model I	Model II
SIOPS score gap destination/origin	1.04**		0.77***		0.51***	
	(2.2)		(3.1)		(3.5)	
Distance	−0.0011***	−0.0011***	−0.0007***	−0.0007***	−0.009***	−0.0009***
	(−6.9)	(−7.1)	(−4.4)	(−4.5)	(−6.31)	(−6.7)
Migrants stock	0.014***	0.014***	0.011***	0.011***	0.010***	0.010***
	(6.2)	(6.4)	(4.6)	(4.76)	(8.32)	(8.44)
Secondary sector in destination	0.004	0.010***	0.001	0.003	−0.009**	0.005
	(1.2)	(2.9)	(0.2)	(1.1)	(−2.4)	(1.4)
Services sector in destination	0.010***	0.019***	0.012***	0.019***	0.007**	0.013***
	(3.5)	(5.6)	(1.6)	(5.4)	(2.3)	(4.4)
Average SIOPS origin		−0.046***		−0.018**		−0.030***
		(−4.0)		(−2.1)		(−3.98)
Average SIOPS Destination		0.002		−0.014		−0.011
		(0.1)		(−1.4)		(−1.0)
Observations	452	452	391	391	358	347
R2	0.34	0.38	0.32	0.34	0.36	0.44
F-test	0.00	0.00	0.00	0.00	0.00	0.00

*, ** and *** denote significance at 10, 5, and 1% levels, respectively. T-statistics in brackets. Robust standard errors

negative impact in migratory movements as does its combination with the SIOPS score of the migrants in the destination in the ratio between both presented in Models I. Distance is negatively correlated with migrations highlighting the importance of transport costs, while the stock of migrants from the same province has an expected positive effect. Labour shares in the secondary and services sector have different effects. The effect of the share of the secondary sector is different depending on the period and the specification, while the share of services is consistently positive. We believe that the non-conclusive effect of the secondary sector is related with the problems pointed out above by authors like Camps (1997) and also by the fact that manufacturing industries tended to be labour saving, while on the other hand, the character of services as a labour intensive sector provided more opportunities for migrants.

In terms of the evolution over time of the effects of the pull and push factors, we observe that the ratio between the SIOPS score of the migrants in destination and their fathers in origin tends to lose importance as did the stock of migrants from the same province and the share of services. The role of distance on the other hand remains relatively unchanged or shows at best a slight decrease compared to its impact in the first decade analysed.

7 Conclusions

The central decades of the nineteenth century are a key period in the economic history of Spain. The modernisation of the country included rapid industrialisation, quick economic growth, development of transport and communications technologies, increasing domestic and international economic integration and institutional reforms influenced by the liberal revolution. On the other hand, the amount of information that we have on those key decades is far from being perfect. This paper has attempted to shed some light on the period putting a special emphasis on the study of internal migrations, a field practically unexplored in Spain in preindustrial times at national levels.

This paper provides new evidence from a representative sample that includes most of the main urban centres of Spain as well as a range of middle and small locations with a wide range of economic structures, from very large cities based on services, to industrial locations, rural areas and mixed economies. We believe that marriage records, previously used in the literature to estimate internal migrations, are a good source to estimate changes in internal labour mobility and also provide additional information that can help us to understand the different dynamics observed across Spain.

Our results indicate that internal migrations were relatively stable between 1841 and 1850, and that it was between 1850 and 1860 when we observe an intense increase in labour mobility that included not only larger numbers of migrants moving, but also larger average distances been travelled. The comparison between the stock of male and female migrants also provides interesting insights. However, the process was regionally asymmetrical, and it was clearly dominated by the rise of the two largest urban economies, Madrid and Barcelona that attracted by far the largest

number of migrants and by 1870 also those who had longer distances travelled. Although other cities like Seville, Badajoz or León were also able to attract more migrants, most of the traditional economic centres of Spain lost ground as poles of attraction.

The process however was not uniform and showed periods of fast and slow mobility. One of the most interesting results is the unexpected high mobility found in the 1850s that would only be surpassed by the migratory movements that took place in the 1920s. The study of the migratory gender gap also reveals interesting conclusions. If by 1930, the gender gap had been finally eliminated, it was between 1841 and 1877 when most of the decrease took place. Therefore, the process of modernisation that the Spanish economy lived between 1840 and 1870 also had long-lasting social effects, and by 1870, female migrants had been able to quickly catch up with their male counterparts.

The analysis of the determinants of internal labour mobility shows that the traditional push and pull factors that characterised domestic migrations in Spain in the early twentieth century had the same effect in the internal migrations that we observe from the mid-nineteenth century. The differences between incomes in origin and in the destination, migration chains and the labour share of services had a positive impact, while distance and expected incomes in origin had a negative one. We also observe that the impact of migration chains and the opportunities provided by the services sector diminished over time, as did the relative incomes between the locations of origin and the final destinations.

The radical transformation that Spain experienced in the mid-nineteenth century had profound economic and social effects that were also behind the domestic migratory movements that we observe between 1841 and 1870. The reallocation of rural industries to urban areas and the growth of new jobs in the cities provided the opportunities and the incentives to migrate. At the same time, transport and information costs suffered a considerable decrease that started in the 1840s, being particularly intense in the 1850s coinciding with a significant increase in internal mobility. All combined, the new situation offered the perfect conditions for a 'democratisation' of long-distance migrations that widened the base of male and especially female migrants leaving the countryside. Therefore, the intense changes that we observe from 1877 onwards and intensified in the first decades of the twentieth century, far from new, were a clear continuation of a nonlinear process that had already started decades before.

8 Primary sources

Alicante: Marriage records for the years 1843, 1850, 1860 and 1869 retrieved from: Familysearch.org.

Alpera: Church marriage records for the years 1841, 1842, 1850, 1860 and 1870 retrieved from: Familysearch.org.

Alzira: Marriage records for the years 1841, 1842, 1850, 1860, 1866 and 1867 retrieved from: Familysearch.org.

Archidona: Marriage records for the years 1841, 1850, 1851, 1860, 1861 and 1869 retrieved from: Familysearch.org.

Aspe: Marriage records for the years 1841, 1843, 1844, 1859, 1860 and 1869 retrieved from: Familysearch.org.

Avilés: Marriage records for the years 1846, 1847, 1851, 1861 and 1870 retrieved from: Familysearch.org.

Badajoz: Marriage records for the years 1841, 1850, 1860 and 1870 from the municipal historical archive of Badajoz.

Barcelona: Marriage records for the years 1842, 1849 1865 and 1876 retrieved from: Familysearch.org.

Burgos: Marriage records for the years 1841, 1842, 1843, 1847, 1854, 1855, 1861, 1862, 1869 and 1870 from the municipal historical archive of Burgos.

Cuenca: Marriage records for the years 1841, 1842, 1843, 1849, 1850, 1851, 1859, 1860, 1861, 1867, 1868, 1869 and 1870 from the municipal historical archive of Cuenca.

Elche: Marriage records for the years 1841, 1850, 1860 and 1870 retrieved from: Familysearch.org.

Gerona: Marriage records for the years 1841, 1843, 1850, 1860, 1868 and 1869 retrieved from: Familysearch.org.

Igualada: Marriage records for the years 1841, 1850, 1860, 1867, 1868 and 1869 retrieved from: Familysearch.org.

Jerez de la Frontera: Marriage records for the years 1841, 1850, 1860 and 1870 retrieved from: Familysearch.org.

Jijona: Marriage records for the years 1841, 1842, 1843, 1844, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869 and 1870 from the municipal historical archive of Jijona.

La Coruña: Marriage records for the years 1841, 1842, 1843, 1850, 1860, 1868 and 1869 retrieved from: Familysearch.org.

León: Marriage records for the years 1841, 1842, 1849, 1850, 1860, 1861, 1868 and 1869 retrieved from: Familysearch.org.

Linares: Marriage records for the years 1841, 1842, 1850, 1851, 1860, 1861, 1869 and 1870 retrieved from: Familysearch.org.

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