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Internal migrations in Spain, 1877–1930

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Industrialisation in European countries caused an increase in both internal migration and emigration. Internal migrants were even more numerous than overseas emigrants. However, few empirical studies have sought to explain internal migrations. This article examines the causes and effects of internal migration in Spain with the aim of answering some of the questions debated in the literature. The results show that internal migrations in Spain were driven by economic forces. Moreover, the lag in rural population transfer can be explained by the scant pull of industrial and urban destinations. The article also shows that internal migrants differed in some respects from the people who emigrated overseas. Finally, the impact of internal migration on labour markets is measured.

1. Introduction

International migrations during the nineteenth and early twentieth-century era of industrialisation and globalisation are well known, thanks to the recent literature that has analysed the channels, the causes, and the impact of inter- and intra-continental emigration (Hatton and Williamson 1994, 1998; O´Rourke and Williamson 1999; Chiswick and Hatton 2003). In the case of European emigration to the New World, this literature shows that the mass emigration 'life cycle' – the rise and subsequent decline of national emigration rates – can be explained by a combination of demographic and economic variables. The fundamentals were demographic pressure, rapid industrialisation at home, real wage gaps, and the incentives generated by previous emigrants. The impact of mass emigration on labour markets at home and abroad is also known. Labour was transferred from labour-abundant Europe to the labour-scarce New World. With some exceptions, mass migration was the main source of real wage convergence between origin and destination countries, or at least prevented further divergence between large economies such as Britain and the United States. The phenomenon of migration also contributed to a reduction of differences in land prices and rents.

European industrialisation also affected internal migrations. While some pre-industrial patterns (such as temporary, seasonal, rural-rural, and short distance migrations) survived far into the nineteenth century, industrialisation and structural change produced a new, more permanent type of migration with a higher proportion of medium and even long distance movements to urban and industrial destinations (see for instance, Lucassen 1987, Leboutte 1993, Baines 1994a, Postel-Vinay 1994). Moreover, despite problems of definition and measurement, and taking into account national differences in the timing of industrialisation, it seems probable that internal European migrations would have increased in the nineteenth and early twentieth centuries (Baines 1994a).[1] Although the issue of internal migrations during European industrialisation has given rise to a copious historical literature, economic and empirical analyses of most countries are still lacking, with practically the only exceptions being England and Wales and Germany.

Economic historians have analysed the main issues regarding internal migrations in late nineteenth-century Britain.[2] The relationship between emigration and internal migration has been a key issue in studies of European migration. For Britain, Baines (1985, 1994a, 1994b, 1994c) has convincingly shown that there was no significant general relationship between the two kinds of migration. That is to say, there were cases where emigration and internal migration rates moved in opposite directions, but the two followed the same pattern in others. In this regard, Boyer and Hatton (1997) and Hatton and Williamson (1998) argue that the degree to which emigration and internal migration were or were not competing alternatives depended on how changes in the two kinds of migration responded to changes in the pull of home and overseas destinations. These destinations may not have been viewed as substitutes by potential migrants, but migration finally responded to the strongest pull. Conversely, potential migrants may have viewed the two destinations as substitutes, but both kinds of migration would increase if economic expansion affected destinations at home and abroad.

Various models also show that most internal out-migrants in Victorian Britain were young – predominantly between 15 and 30 – and their origins were more rural than urban (Baines 1985, Williamson 1990, Friedlander 1992).[3] Using variables for origins and destinations, the model proposed by Boyer (1997) and Boyer and Hatton (1997) confirms that internal migrations were driven by economic incentives such as the benefits derived from real

[1] An inverted U pattern similar to the evolution of international emigration has been suggested for internal migration. For Germany, Hochstadt (1999) shows that internal migration rates fell from the early twentieth century onwards. See Baines (1994a) for references to other countries.

[2] See Boyer and Hatton (1997) for a complete survey of studies and topics.

[3] Long (2002) uses a new micro data base to show that migrants were not among the poorest in their origins.

wage and expected income gaps, and the costs of moving and job search. The same fundamentals are to be found in the extensive literature on the causes of internal migrations in developing countries that has grown up since the 1950s.[4] Macro migration functions (based on censuses and similar aggregate data) for developing countries reveal significant effects for economic variables, reflecting the benefits and the costs of moving. The advent of a recent, more sophisticated microeconomic literature based on surveys has confirmed the relevance of economic forces (Lucas 1997).

Economic analyses of nineteenth-century internal migrations in Britain have considered effects on labour markets. According to models of the determinants of internal migrations, the response of migrants to wage gaps suggests that migrations worked to erode wage differentials between high- and low-wage areas. However, substantial wage gaps persisted. It has been argued that strong supply and demand forces, in particular shifts in labour demand counteracted the impact of migrations and that this explains the persistence of wage gaps (Boyer 1997, Boyer and Hatton 1997). Furthermore, internal migrations may in fact have had a weak impact on wage integration in some regions. Boyer and Hatton (1994) estimate the degree of labour market integration between pairs of regions and find that the labour markets of some regional pairs were poorly integrated. Nevertheless, as Boyer (1997) shows using a partial equilibrium approach, migrations may play only a minor role in wage convergence and yet be associated with strong wage changes in regions with large out- or in-migration rates.

Meanwhile, Grant (2000) deals with the determinants and impact of internal migrations in Germany between 1870 and World War I. Among other issues, the author shows that German migrants were driven by economic incentives. Demographic conditions and the share of the active population employed in agriculture had positive effects on out-migration. However, pull factors such as the rise in the demand for labour and increased wages in industries and services were also crucial to the rise in migration rates. Grant also shows that internal migrations contributed to stabilising urban markets.[5]

The purpose of this article is to provide a new case study to answer some of the questions debated in the international literature on internal migration. What was the relationship between emigration and internal migration in the Spanish case? The no-substitute relationship found in Britain makes sense if we consider that, in general, both home and overseas destinations expanded in the mid-nineteenth century. However, mass international emigration

[4] Lucas (1997) offers a complete and recent survey. Also, see the comments by Mazumdar (1987) and Hatton and Williamson (2003) on African rural-urban migration.

[5] Other empirical studies in historical contexts include Newman (1981) for Germany (1880–1910), and Söderberg (1985) for France, Great Britain, Prussia, and Sweden (1860–1910).

from Spain happened later, as was the case in other Latin countries. Does this mean that potential Spanish migrants substituted overseas for home destinations? Another relevant issue is the type of migrant. Were Spanish migrants, as in other cases, young and predominantly rural? Were they the poorest or the least skilled? Did Spanish migrants respond to economic forces? How did they choose their destinations? These questions are particularly relevant in the case of Spain since some economic historians have suggested sociological reasons – low dynamism, conservatism, risk aversion – to explain low migration rates during Spanish industrialisation. Finally, what was the impact of rising internal migration rates during the early decades of the twentieth century? Is the size of this phenomenon comparable to the impact of migration in more advanced economies such as Britain or Germany?

The rest of this article is organised as follows. Section 2 describes the evolution and spatial distribution of internal migrations. Section 3 analyses the determinants of out-migration and its relationship with overseas emigration, while Section 4 deals with the determinants of the choice of destination. Section 5 discusses several methods of estimating the impact of migrants on labour markets. Section 6 summarises the main conclusions.

2. Internal migrations in Spain before the Civil War

Rural out-migration on a significant scale in Spain goes back to the 1860s. Thus, historians have argued that early industrialisation may have had some impact on employment prospects in the countryside (Erdozáin and Mikelarena 1996). Rural artisans and peasant families, who allocated a part of their labour to rural industry (especially textiles, metal working and transport), may have migrated in response to changes in the regional distribution and concentration of manufacturing during the nineteenth century.[6] However, it would be wrong to assume that previous rural and urban populations were 'immobile'. Pre-industrial and industrialising societies may have had high mobility rates, mainly based on temporary or seasonal migrations, generally over short distances. In the case of Spain, a number of studies have demonstrated the importance of seasonal or temporary mobility in the nineteenth century. These involved three main types of movements: between agricultural areas, to pre-industrial cities, and to expanding early industrial centres (Reher 1990, Camps 1992, Gómez-Díaz and Céspedes 1996, Arbaiza 1998, Florencio and López-Martinez 2000, Sarasúa 2001).

[6] See Tirado *et al.* (2002) and Rosés (2003) for the concentration of Spanish manufacturing.

Table 1. *Permanent internal migrations in Spain.*

	Migrations	Share of total population (%)
1877–1887	369,424	2.2
1888–1900	428,253	2.0
1901–1910	565,830	2.9
1911–1920	583,123	2.8
1921–1930	968,581	4.3

Notes: Internal migrations$_{t-1,t} = \text{BAP}_t - (\text{S} \times \text{BAP}_{t-1})$; where $t-1$ and t are the corresponding census dates; BAP represents Born in Another Province, and S is a coefficient representing the decennial census survival rate, given by the following ratio: Population aged 10 years and over in census year t/Population in previous census year $t-1$, the value for each period being 0.81 for 1878–1887, 0.82 for 1888–1900, 0.82 for 1901–10, 0.84 for 1911–20 and 0.86 for 1921–30. The share of total population was calculated using the average population for each period.
Sources: Own calculations based on the corresponding Population Censuses.

The size of permanent internal migrations can only be estimated on a consistent spatial basis from the 1870s onwards. Historical studies of permanent internal migrations at the macro level (as well as early research on developed and developing countries) use information about population enumerated in a place *j* at time *t* born in place *i*. These data on 'lifetime' migrants allow researchers to estimate flows of migrants from *i*-origins to *j*-destinations between two census dates. In the Spanish case, 'Born in Another Province' (BAP) data are available from 1877. Table 1 shows the evolution of internal migrations using inter-census flows.[7] Between 1877 and 1900, low internal migration rates coincide with low emigration rates. The rising trend of internal migrations in the two decades between 1900 and 1920 occurred at a time when emigration also rose sharply, particularly up to 1914 (Sánchez-Alonso 1995, 2000a, 2000b). Internal migration, however, reached a peak in the 1920s, practically doubling earlier levels, precisely when overseas emigration had lost its force because of the disruption of international labour markets (Hatton and Williamson 1998; O´Rourke and Williamson 1999; Chiswick and Hatton 2003).[8] The Spanish Civil War (1936–39) and its economic and social consequences in the 1940s abruptly broke the ascending path of internal migrations.

The high share of active population employed in agriculture in the nineteenth century (stable at around 72 per cent until 1910) and even during

[7] Spanish statistics offer no information on the distribution per BAP age groups, making it impossible to apply the Baines' (1985, ch. 4) method of estimating the number of migrants who died during the decade, which would allow a more precise appraisal of migration flows as proposed by Boyer (1997). When faced with this situation, the usual recommendation is to employ the global survival rate of the census (United Nations 1970).

[8] The stock of BAP between 1877 and 1930 increased from 7.9 to 12.3 per cent of the population.

the early decades of the twentieth century (63 and 51 per cent in 1920 and 1930) raises the question of why the countryside did not transfer more people to non-agricultural sectors.[9] Interpretations of low migration rates fall into two main groups of supply- and demand-based arguments.

Supply based interpretations have stressed the low demographic and productive dynamism of agriculture as the main explanation for the absence of structural change. High migration rates would only have been possible towards the end of the century, when the arrival of foreign grain put pressure on agricultural labour in Spain and elsewhere in Europe (Nadal 1975, ch. 3; 1984, ch. III; Tortella 1987, 1994, ch. 1).[10] Nevertheless, high protective tariffs would have prevented a large exodus (Tortella 1994, chs. 1 and 2). Supply-based interpretations have also suggested sociological factors such as resistance to mobility, conservatism and risk aversion as possible explanations for low migration (Sánchez-Albornoz 1977, p. 18; Tortella 1994, p. 7; Carmona and Simpson 2003, pp. 92 and 115). The more elaborate institutional arguments proposed by Simpson (1995a, ch. 8, 1995b) and Carmona and Simpson (2003, ch. 3) focus on land tenure. According to these authors, access to land ownership or the possibility of future access, especially in Andalusia where landless labourers were predominant, could explain why labour was reluctant to leave the countryside, despite higher urban wages. This would also explain the large number of temporary rural-urban migrants. Thus, aspirations to move up the *agricultural ladder* (that is, to obtain a farm) led part of the labour force to consider migration to the cities as a temporary option.

On the other hand, demand-based interpretations (sometimes proposed by the same authors) have focused on low urban dynamism and the lack of pull of industry and services until the 1920s (Nadal 1975, 1984; Sánchez-Albornoz 1977; Pérez-Moreda 1985, 1987; Tortella 1987, 1994; Maluquer de Motes 1987; Simpson 1995a, 1995b). In particular, Prados de la Escosura (1988, chs. 1 and 3, 1997) has pointed out that the weakness of industrialisation would help to explain why labour was not released at a higher rate until the 1920s, taking into account supply-side factors such as institutions or low levels of agricultural productivity. Similar explanations have also been suggested in recent works by Sánchez-Alonso (2000a) and Rosés and Sánchez-Alonso (2003, 2004).[11] In fact, a crude comparison between internal migration inter-census rates shown in Table 1, and GDP

[9] Shares of agricultural population taken from Erdozáin and Mikelarena (1999).

[10] According to this explanation, increasing poverty was a determining factor in the rise of emigration at the begininning of the twentieth century (Nadal 1975, ch. 3, 1984, ch. III; Maluquer de Motes, 1987; Tortella, 1994, ch. 1). More recent and empirical work by Sánchez-Alonso (2000a, 2000b) has, however, demonstrated that emigration was income-constrained in a poor country like Spain.

[11] It has been argued that tariffs in themselves are insufficient to explain the lack of higher rural out-migration (Simpson, 1997; Sánchez-Alonso, 2000a).

growth rates elaborated by Prados de la Escosura (2003, p. 154) for similar periods, suggests that the dramatic increase in internal migrations could be associated with the acceleration of economic growth.[12]

In an international comparison, the same demand-based interpretation has been used to explain low internal migration rates in France. Although some French economic history suggested that peasants were reluctant to leave the farm, Sicsic (1992) argued that modest rates of industrialisation in fact generated only weak labour demand. Moreover, the evolution of internal migrations in Spain was similar to other Southern European countries where industrialisation arrived late. In the case of Portugal, the percentage of the population born in another district seems to be stable from 1910. However, Lisbon's pull continued to increase (Baganha and Marques 1996). The case of Italy is more similar to Spain. The internal migration rate in Italy increased sharply during the 1920s, also due in part to the fall in emigration overseas caused by the disruption of the international labour market (Treves 1976, Sori 1979, ch. 11).

The spectacular growth of the Spanish economy in the 1920s drove the development of industries with a greater pull for migrants, such as construction. However, all industries and services attained high growth rates.[13] Economic historians have sometimes been sceptical about the insertion of unskilled agricultural workers in some industries in the early twentieth century. For instance, applying a microeconomic approach at factory level in Sabadell (Barcelona), Camps (1997) finds that migrants may have had difficulty entering industries such as textiles, where new skill requirements implied that labour recruitment was confined to nearby industrial areas. However, research in the city of Barcelona based on the 1930 register of inhabitants (*padrón*) shows that in-migrants were relatively well established in middle-wage occupations across a range of industrial and service sub-sectors, although they were under-represented in the highest-wage occupations (Oyon *et al.* 2001).[14] Another important industrial destination was Vizcaya, where the pull was based on the expansion of mining and metal working.[15] For instance, Arbaiza (1998) argues that technological

[12] GDP growth rates at factor cost are: 0.74 for 1873–93, 0.31 for 1883–92, 0.79 for 1892–1901, 0.65 for 1901–13, 0.82 for 1913–20, and 2.55 for 1920–29.

[13] Annual sectoral GDP growth rates during the 1920s were: agriculture: 1.52; industry: 5.2; construction: 6.46; services: 4.42 (Prados de la Escosura, 2003, p. 201).

[14] The pull from Barcelona increased in distance from the late nineteenth century (Arango, 1976). Oyon *et al.* (2001) show that the first influx of migrants from the rest of Cataluña, Aragón and the Community of Valencia were easily absorbed. In contrast, the poorer migrants from distant origins such as the provinces of Murcia and Almeria usually filled low-wage occupations. In any event, the first influx accounts for 63 per cent of total in-migration, compared to 16 per cent for migrants from Murcia and Almeria (Silvestre, 2001, Table A2).

[15] These industries were clearly male-biased. A common female-biased industry during the period under study was domestic service. Dubert (1999) and Sarasúa (2001) describe the

changes in the metal industries from the beginning of the twentieth century facilitated the absorption of low skilled migrants, resulting in a reduction of temporary migration.[16] Spain also experienced some rural-rural movements, in which migrants from rural areas moved to agricultural jobs in more prosperous provinces. This is the case of rural Catalonia, where the gaps left by rural-urban migrants to Barcelona were filled by migrants from the neighbouring provinces (Aracil *et al.* 1996). In any case, the pull from rural areas decreased during the 1920s.[17]

Two final features of internal migrations should be considered. First, there is the tendency to spatial concentration of in-migration. Two great areas of influence consolidated around Madrid and Barcelona. In Appendix 1, Spain is split into the six macro-regions proposed by Róses and Sánchez-Alonso (2004). Barcelona basically pulled migrants from the Mediterranean provinces, four provinces of the Ebro Valley (21 to 24), and the Andalusian province of Almeria (Arango 1976, Silvestre 2001). Madrid, on the other hand, drew in people from North and South Castile and some of the northern provinces (Silvestre 2001). By 1930, the provinces of Madrid and Barcelona accounted for 45.8 per cent of the total stock of 2,189,450 BAP. Sevilla and Vizcaya, the other two large centres of attraction, lagged far behind and their areas of influence were largely restricted to adjacent provinces. The pull of other destinations gradually faded away.

The second salient feature is the fact that out-migration from Andalusia, the poorest part of the country, was low. The column headed 'Observed' in Table 4 shows regional out-migration rates for the 1920s. The two regions with rates clearly below the national average value of 64.67 out-migrants per thousand population were Andalusia and North. The northern provinces exhibit the highest overseas emigration rates, although this was only the case for some coastal provinces of Andalusia (Sánchez-Alonso 1995, 2000b). Only the censuses of 1920 and 1930 supply data on the origin of BAPs, and therefore it is not possible to estimate out-migrant flows before the 1920s. Residuals obtained from the inter-census balance method for previous decades reflect only slightly negative or even positive migratory balances for the provinces of Andalusia and South Castile over one or more decades (Mikelarena 1993).[18] In fact, some of these provinces (particularly Albacete,

process of feminisation and ruralisation of domestic service, referring to different cases in Spain and Europe.

[16] For the same destination, García-Abad (2003, ch. 4), also shows a trend towards deskilling of in-migrants between the 1880s and 1920–35.

[17] See further discussion in this Section on the pull from the agrarian provinces of Andalusia. In Portugal, rural-urban migration was confined to Lisbon and Oporto. The remaining migrations were driven by the agricultural expansion in the south (Baganha and Marques 1996).

[18] The inter-census balance method consists of estimating the difference between census (total) population growth and the natural increase (births less deaths). This 'indirect'

Ciudad Real, Córdoba and Jaén) had a considerable pull for rural migrants, who could find agricultural work especially on the large estates or *latifundios* (Gómez-Díaz and Céspedes 1996, Florencio and López-Martínez 2000, Carmona and Simpson 2003).

The negative impact of *latifundios* and, in general, of unequal distribution of land on permanent and medium- and long-distance migration and, conversely, the pull exerted by large estates on short-distance migrants was argued by Bernal (1985) long ago. Similarly, Gallego (2001) has proposed that the reason for the existence of low medium- and long-distance migration rates from the South could be the extent of labour demand for agricultural jobs on large estates for a significant part of the year. Thus, rural-rural migration between southern provinces was based on the recruitment of wage labourers (receiving low but more-or-less constant incomes) and small farmers accessing supplementary employment. By contrast, the more numerous small farmers of Northern Spain did not usually have the chance of finding work on large estates. Their response was to seek non-agricultural labour markets, and one or more members of the family would migrate to supplement or substitute agricultural incomes.

3. Determinants of out-migration

Internal migrations in Spain accelerated in the 1920s. Up to that time it seems reasonable to suppose, in view of similar experiences in countries such as France, Italy and Portugal, that the modest pace of industrialisation was the main reason for low internal migration rates. In contrast to the case of London, potential destinations at home did not really increase their pull until the second or the third decade of the twentieth century, and, as Tortella (1987) has pointed out, overseas emigration (mainly to Argentina, Brazil, Cuba and Uruguay) was the most plausible alternative for potential migrants. Econometric estimations of the determinants of provincial emigration by Sánchez-Alonso (1995, 2000b) suggest, however, a substitute nature of emigration and internal migration. The relationship between emigration and the urbanisation rate, a proxy for the pull of nearby cities, is found to be negative and strongly significant. International emigrants presented a clear profile. Spanish emigration was income constrained because workers found it difficult to finance the move. Furthermore, emigration rates tended to be higher not only in high-wage but also in the most advanced provinces (that is, those with the lowest shares of agricultural labour). Literacy also had

indicator has two main flaws: it includes both internal migrations and emigration, and it does not serve to assess direction of flows.

a strong positive impact on migration rates.[19] In short, the higher costs and risks associated with overseas emigration determined the type of emigrant.

The aim of this Section is to ask whether the characteristics of international emigrants also apply to internal migrants. Unfortunately, the lack of data means that an econometric model cannot be calculated before the 1920s. However, it was in this decade when internal migrations really intensified. *A priori*, we may expect a type of migrant with different socioeconomic characteristics, who is basically poorer, probably more agricultural and less skilled. The impact of push or supply-based potential determinants is analysed first, without for the time being considering the destinations chosen and the intensity of the choice. This restriction is equivalent to assuming that the conditions of the destinations and the displacement costs are the same for all origins (Boyer and Hatton 1997). However, such a condition makes it possible to examine the common features of the provinces from which the population was pushed to a greater or lesser degree, and compare results with those obtained by Sánchez-Alonso (1995, 2000b) for overseas emigration.

Migration is not solely a function of conditions in the sending region, so in a second model (discussed in the next Section) we take account of the criteria determining the choice of a specific destination in terms of the costs and benefits associated with the option chosen, displacement and insertion in a given location. In both models, the dependent variable is based on the BAP data supplied by the only two consecutive censuses (1920 and 1930), which offer disaggregated information on the origins and destinations of out-migrants/in-migrants. The object, then, is to estimate the decade-long flow of out-migrants in the first model and in-migrants in the second.[20] The use of BAP data implies that the model focuses on permanent rather than seasonal or temporary migration.

The sources and methods used to construct the variables included in the out-migration model are presented in Appendix 2. Column 1 of Table 2 includes four main fundamentals (Hatton and Williamson 1998, ch. 3; Chiswick and Hatton 2003).[21] According to various studies (cited in the Introduction), an abundant stock of young people (POP) may be a significant

[19] Sánchez-Alonso confirms previous results by Hatton and Williamson (1998, ch. 3) with regard to the unimportance of demographic forces in explaining emigration in Spain.

[20] For England and Wales, several studies have used the existing stock at a given date rather than the flows (a choice that would also be possible here). However, as Boyer and Hatton (1997) indicate, this method tries to explain the accumulation of migrants in a given location on the basis of the value of specific independent variables at a given moment in time and, therefore, the result may be biased.

[21] The two models (Tables 2 and 5) are estimated by ordinary least squares. Potential endogeneity bias is not considered since all independent variables refer to the beginning of the period under estimation.

Table 2. *Determinants of provincial internal out-migration, 1920–1930.*

Dependent variable: Log $OUTMI_{i,n-i}$	(1)	(2)	(3)	(4)	Mean
Constant	−0.155	0.370	0.771	0.784	
	(−0.09)	(0.23)	(0.54)	(0.56)	
Population, 11–30 age group, 1920 (POP)	0.076*	0.066*	0.084**	0.078*	35.65
	(1.88)	(1.70)	(2.15)	(1.89)	
Share of labour force in agriculture, 1920 (AGLF)	0.008**	0.009**			64.94
	(2.45)	(2.62)			
Urbanisation rate, 1920 (URB)			−0.011**	−0.011**	29.13
			(−3.32)	(−3.42)	
Agricultural real wages, 1920 (WAG)	−0.008	−0.024	−0.019	−0.016	5.03
	(−0.38)	(−1.03)	(−0.82)	(−0.68)	
Out-migrant stock, 1920 (STO)	0.008**	0.006**	0.006**	0.006**	125.70
	(8.75)	(7.63)	(6.72)	(6.56)	
Change in literacy, 16–30 age group, 1900–1920 (LIT)		0.111	0.245	0.239	1.32
		(0.44)	(1.08)	(1.05)	
Agricultural output per worker, 1920 (PRO)		−0.00001	−0.0001*	−0.0001*	3100.60
		(−0.23)	(−1.82)	(−1.75)	
Land tenure system, 1920 (LAND)				0.002	73.60
				(0.68)	
Overseas emigration, 1919–1920 (OVER)		−0.026**	−0.036**	−0.033**	4.59
		(−3.23)	(−4.30)	(−3.53)	
Adjusted R^2	0.708	0.758	0.780	0.778	
F-statistic	29.44**	21.99**	24.84**	21.49**	
N = 48					

Notes: * Significant for values of $p < 0.10$; ** Significant for values of $p < 0.05$. Equations estimated by Ordinary Least Squares. *t*-statistics in brackets. White standard errors. Canary Islands are not included. AGLF and URB appear in separate equations due to their high correlation, −0.67.
Sources: Appendix 2.

determinant of out-migration.[22] The relative importance of the agricultural sector, proxied by the share of the labour force in agriculture (AGLF), has usually been considered as an indicator of economic backwardness and, in the case of overseas emigration, as a limiting factor on population outflow (Hatton and Williamson 1998, ch. 3; Sánchez-Alonso 2000b). In the case of internal migrations, however, migrants were predominantly from rural areas (also see the Introduction). During a period of intense structural change such as the case analysed in this article, the existence of a surplus of agricultural labour could have contributed significantly to expulsion. The next variable is the level of real agricultural wages (WAG). In principle, it might be assumed

[22] For Spain, see the importance of young out-migrants in, for example, Reher (1990, ch. 7), Camps (1992) and Arbaiza (1998). From a theoretical point of view, the higher expected returns of investment in migration by the younger population are shown in Sjaastad (1961).

that this variable would be inversely related to migration, in the sense that people moved to wealthier areas. However, poverty was a limiting factor of Spanish overseas emigration (Sánchez Alonso 2000a, 2000b). Finally, the existence of previous out-migrants (STO) reflects the transmission of information on opportunities in potential destinations, assistance with the costs of moving, job and accommodation search, and so on (Massey 1990, Dunlevy 1993).

Columns 2 to 4 extend the set of potential variables. With respect to the level of literacy (LIT), it has traditionally been argued that a skilled population is more likely to be mobile (Sandberg 1982). It is possible that this relationship was stronger in the case of overseas emigration, in which distance, risks, bureaucratic requirements and cultural change were usually greater. In any case, *a priori*, the higher the level of literacy, the better job prospects and earnings are likely to be. The inclusion of agricultural output per worker (PRO) seeks to complement the information on the standard of living, while the proportion of wage earners in the agricultural sector is used as a proxy for the land tenure system (LAND). According to the literature on Spanish agricultural history (cited in Section 2), the extent of wage relationships in the countryside is an indicator of the existence of abundant agricultural jobs, particularly in large estates. That is, a high concentration of land ownership is one of the arguments used to explain the retention and even attraction of labour in the South. The more concentrated is land ownership (and, therefore, the higher is the proportion of wage labourers in the agricultural sector), the lower is the incentive to out-migrate. The overseas emigration rate (OVER) is also introduced to help assess the relationship between the two types of migration. In particular, this variable will show whether substitution between the two kinds of migration remained when the growing pull of internal destinations made internal migration a clear alternative to emigration throughout Spain. Finally, because the model uses data at the provincial level, the rate of urbanisation (URB) has been included to control for the existence of nonagricultural job opportunities close to the place of origin and the disincentive that these might represent for migration to other provinces.

The percentage of variations in internal out-migration rates explained by the variables considered is high. It thus appears that the high proportion of young people (POP) and the share of the labour force in agriculture (AGLF) had an important influence on internal out-migration.[23] This surplus labour was less likely to migrate if there was a choice of nearby nonagricultural employment, as shown by the negative correlation between the urbanisation rate (URB) and out-migration. The two income-level variables (WAG and

[23] The rate of natural increase lagged 20 years was also considered as an alternative to the stock of young people (Easterlin 1961). The effect on out-migration was also positive but not significant.

PRO) are negatively correlated with out-migration, though only PRO is significant at the 10 per cent level in columns 3 and 4. Similarly, the positive contribution of the literacy rate (LIT) is not significant.[24] The variable represented as the land tenure system (LAND) seems to have had no significant impact on out-migration, and it even has the wrong sign.[25] The existence of previous migrants (STO) increases the incentive to migrate, and the inverse relationship between overseas emigration (OVER) and internal migration reinforces the idea that they were substitutes. If we compare these results with those obtained by Sánchez-Alonso (2000b) for overseas emigration, it emerges that the provinces with the highest internal migration had a different profile from those contributing to overseas emigration. Internal out-migration was mainly determined by large surpluses of young, not necessarily skilled, agricultural labour. Again by contrast with overseas emigration, which is generally costlier, internal migration was not constrained by lack of income, although no strong evidence is found that the poorest provinces had the highest levels of internal migration.

One factor that might challenge the hypothesis of a substitution relationship between the two kinds of migrations is stage migration. For Britain, Baines (1985, ch. 9) found that the extent of rural-urban stage migration, previous to emigration, was relatively small, with the exception only of South Wales. For Spain, this is also suggested by Sánchez-Alonso (1995, p. 47), who cites official publications. On the other hand, Moya's (1998, chs. 1 and 3) microeconomic research on villages located in four northern provinces (Pontevedra, Vizcaya, Navarra and Barcelona) suggests that rural-urban staging prior to emigration was very common. The magnitude of these initial movements is, however, difficult to estimate because provincial emigration data refer to the emigrant's last residence, not to his/her place of birth. As Sánchez-Alonso (2000b, p. 739) remarks, 'In an age of transoceanic migration, this inevitably introduced a bias in favor of coastal provinces'. Taking into account Moya's research strategy and findings, a macro-approach is used to estimate the extent of these movements. For this purpose in-migration rates at province level are calculated first (Appendix 3). Second, in Table 3, emigration rates for three dates are regressed on in-migration rates with the aim of establishing whether provinces sending emigrants had previously received internal in-migrants.

[24] Following Sánchez-Alonso (2000b), this variable is introduced in changes. Several combinations of age groups (from 7 to 20, 25 or 30; from 11 to 20, 25 or 30; from 16 to 20, 25 or 30; and from 7, 11 or 16 upwards) and lagged inter-census variations were taken into account, but the impact was not significant in any case.

[25] One problem with this proxy is that it does not include the use of sharecropping arrangements. Contracts of this kind were particularly common in the north of Spain, where some employers were employed by others. The impact of a similar variable on overseas emigration presents the expected negative sign, but it is not significant at usual levels (Sánchez-Alonso 2000b).

Table 3. *Internal in-migration and overseas emigration.*

Dependent variable: Log Overseas emigration	1889 (1)	1912 (2)	1920 (3)
Constant	0.542 (0.73)	2.283** (2.96)	1.186* (1.71)
Log Internal in-migration, 1877–1887	−0.082 (−0.31)		
Log Internal in-migration, 1900–1910		−0.199 (−0.79)	
Log Internal in-migration, 1910–1920			−0.267 (−1.11)
R^2	0.002	0.013	0.028
N =	44	48	45

Notes: * Significant for values of $p < 0.10$; ** Significant for values of $p < 0.05$. Equations calculated by Ordinary Least Squares. *t*-statistics in brackets. The number of cases depends on the number of provinces with zero emigration or negative internal in-migration rates that could not be transformed into logs. Gross rate of overseas emigration, 1888–90, 1911–13, and 1919–21, per thousand population in 1887, 1910, and 1920 respectively.
Sources: Sánchez Alonso (1995, pp. 292–3), for the emigration rates, and Appendix 3.

Results at the macro level show no positive or significant relationship between the two flows. If this approach is correct, stage migration was probably small.

Finally, Table 4 uses the coefficients obtained in Table 2, col. 2, and average values for the variables, to show the impact of each determinant of out-migration at the regional and national levels. Among the regions with the lowest rates of out-migration, Andalusia suffered from relatively high demographic pressure (POP), but its lower levels of past migration (STO) may have inhibited migration. North clearly shows an overseas emigratory pattern (see STO and OVER). Among the regions with the highest rates of out-migration, Table 4 reveals the importance of past or chain migration (STO) in Ebro Valley and North Castile. Wage impacts (WAG), which are not significant, are either high or low in regions with different levels of out-migration. This issue is considered in the next Section.

4. Determinants of the choice of destination

This Section seeks to establish whether migrants were driven by differences in economic conditions. The model described takes into account the costs associated with the choice of destination, displacement, and insertion on arrival. Given the high concentration of the migrant stock in Spain around 1930, the model analyses migration from each place of origin to the twelve most attractive in Spain, which accounted for 70.3 per cent of immigration.[26]

[26] Alicante is the only major destination in 1930 that is not among the top twelve in 1920.

Table 4. *Impacts on out-migration, 1920–1930.*

Region	Cons.	POP	AGLF	WAG	STO	PRO	LIT	OVER	Predicted	Observed
Andalusia	0.37	2.44	0.59	−0.13	0.55	−0.02	0.15	−0.09	49.43	51.89
		(61.3)	(15.0)	(3.3)	(13.9)	(0.5)	(3.7)	(2.4)	(100)	
Ebro Valley	0.37	2.31	0.65	−0.16	1.17	−0.03	0.15	−0.03	87.34	93.29
		(51.4)	(14.4)	(3.5)	(26.0)	(0.7)	(3.3)	(0.7)	(100)	
Mediterranean	0.37	2.38	0.53	−0.14	0.72	−0.03	0.17	−0.07	53.12	61.02
		(58.7)	(13.2)	(3.4)	(17.9)	(0.8)	(4.1)	(1.8)	(100)	
North	0.37	2.37	0.58	−0.12	0.44	−0.04	0.15	−0.39	30.51	33.17
		(58.1)	(14.2)	(2.8)	(10.8)	(1.0)	(3.6)	(9.5)	(100)	
North Castile	0.37	2.22	0.70	−0.09	1.19	−0.03	0.13	−0.10	84.46	87.31
		(49.7)	(15.7)	(1.9)	(26.7)	(0.7)	(2.9)	(2.3)	(100)	
South Castile	0.37	2.32	0.68	−0.09	0.74	−0.03	0.14	−0.01	64.08	61.70
		(57.9)	(16.8)	(2.3)	(18.5)	(0.7)	(3.4)	(0.3)	(100)	
Total	0.37	2.34	0.62	−0.12	0.81	−0.03	0.15	−0.12	57.80	64.67
		(55.9)	(14.9)	(2.9)	(19.3)	(0.7)	(3.5)	(2.9)	(100)	

Notes: The impact of each factor is obtained by multiplying the coefficients of Table 2, col. 2 by the mean values. Predicted impact = [exp(sum of all factors) × exp(one half of the estimated error variance)]. The latter term of the product is necessary when the dependent variable is expressed in logs. Observed is the mean value of the dependent variable. Percentage contribution in brackets.
Sources: See text.

Variables are described in Appendix 4. The wage gap between origins and destinations (WG) is the ratio between bricklayers' wages at destinations and agricultural wages at origins.[27] This assumes that the average wage of an urban bricklayer is representative of the kind of low skilled urban jobs to which migrants would have the easiest access. The distance variable (DIS) reflects displacement costs in a broad sense. Thus, it includes the journey costs, the cost of entering a new labour market and seeking a job, the income foregone during the transition period, 'psychological' costs, and so on (Schwartz 1973). The 'friends and relatives effect' between an origin and specific destination is also estimated (STO). A fourth variable was also included to reflect differences between destinations, given that not all had the same pull. Thus, the percentage share of the nonagricultural active population (DESAGLF) at each destination is used to approximate the existence of more or fewer job opportunities in both the industrial and service sectors. According to Simpson (1995b), this variable rather than wages may have been the decisive factor determining migration.

Table 5 shows the main results. Columns 1 and 2 confirm that migrants responded to economic incentives. Internal migration responded both to the wage gap (WG) and to the displacement costs (DIS), including job search, accommodation, and so on (STO). Furthermore, the findings confirm the importance of other pull factors such as job opportunities in nonagricultural employment (DESALGF). Columns 3 and 4 show the strong pull of the destinations from another point of view. They also confirm the relative unimportance of wages in origins found in Section 3. With the inclusion of the variable WG in cols 1 and 2, we have considered that the wage conditions of the origins and the destinations act symmetrically. That is to say, potential migrants had the same amount of information on origins and destinations, and responded in the same way to changes in both labour markets (Gabriel *et al.* 1993). However, if the impacts of wage incentives in the places of origin (ORIWAG) and destinations (DESWAG) are considered separately, they are found to act asymmetrically and, in this particular case, pull seems to have had greater strength than push.

Table 6 repeats the simulation reflected in Table 4. In this case, the impact of each determinant on in-migration is estimated for the top twelve destinations. The simulation uses the coefficients from Table 5, col. 2. Despite its lower predictive power, the model still offers relevant findings. First, Table 6 confirms the importance of non-agricultural employment as probably the main force driving migration. Tables 5 and 6 show that wage gaps were a significant determinant of migration, although small wage gaps in Spain may have inhibited migration.[28] Second, the cost of moving was high.

[27] Unfortunately, no unemployment data exist to estimate expected income gaps.

[28] Rosés and Sánchez-Alonso (2003) show that wage gaps were small in comparison with other countries.

Table 5. *Determinants of the choice of provincial internal destination, 1920–1930.*

Dependent variable: Log $INMI_{i,j}$	(1)	(2)	(3)	(4)	Mean
Constant	−0.003	−2.129**	−0.049	−2.524**	
	(−0.01)	(−8.63)	(−0.14)	(−7.73)	
Real wage gap, 1920 (WG)	0.229**	0.249**			1.62
	(3.58)	(4.89)			
Distance (DIS)	−0.002**	−0.003**	−0.002**	−0.003**	620.67
	(−7.64)	(−11.71)	(−8.44)	(−12.91)	
In-migrant stock, 1920 (STO)	0.051**	0.033**	0.049**	0.029**	8.12
	(6.87)	(5.66)	(6.79)	(5.49)	
Destination share of nonagricultural labour force, 1920 (DESAGLF)		0.048**		0.050**	55.35
		(13.08)		(14.27)	
Origin wage, 1920 (ORIWAG)			−0.088**	−0.088**	5.04
			(−2.62)	(−3.16)	
Destination wage, 1920 (DESWAG)			0.139**	0.185**	6.92
			(3.54)	(6.55)	
Adjusted R^2	0.475	0.616	0.484	0.636	
F-statistic	151.92**	201.72**	118.44**	176.04**	
N = 502					

Notes: ** Significant for values of $p < 0.05$. Equations estimated by Ordinary Least Squares. *t*-statistics in brackets. White standard errors. The Canary Islands are not included.
$N = [(47 \times 12) - 62]$: 47 origins by the 12 top destinations less 62 cases in which the number of migrants resident in destination *j* and born in origin *i* fell during the period 1920–30 taken as a whole.
Sources: See Appendix 4.

This finding helps to explain why out-migration from the poorest provinces in the south was low, although their inhabitants had the most to gain from the move. The provinces of Andalusia and South Castile were far away from the six main northern destinations of Barcelona, Vizcaya, Guipúzcoa, Zaragoza, Valladolid and Santander. Meanwhile, if some Andalusian provinces were among the top destinations, and other Mediterranean destinations such as Valencia and Alicante were not so far from the South, the impacts reflected in Table 6 show that the costs of moving to any of these places were also high. Sevilla, Cordoba, Valencia and Alicante exhibit the highest percentage contributions for this limiting factor, and Cádiz is above the average for the twelve destinations. Madrid is, in fact, the only exception. However, if we compare the two great destinations, Madrid and Barcelona, Table 6 suggests two models of in-migration. Barcelona offset high moving costs with high wages, whereas Madrid compensated lower wage gaps with the incentive of its location in the geographic centre of the country. In any event, distance as a proxy to a set of moving costs appears to be a significant inhibiting factor

Table 6. *Impacts on in-migration, 1920–1930.*

Destination	Constant	Wage gap	Distance	Stock	Non agri. lab. force	Predicted	Observed
Madrid	−2.13	0.31	−1.29	0.96	3.93	14.17	20.12
		(4.8)	(19.9)	(14.9)	(60.5)	(100)	
Barcelona	−2.13	0.59	−2.17	0.75	4.00	6.80	18.86
		(7.9)	(28.9)	(10.0)	(53.5)	(100)	
Vizcaya	−2.13	0.35	−1.76	0.31	3.80	4.23	3.00
		(5.7)	(28.3)	(4.9)	(61.2)	(100)	
Sevilla	−2.13	0.39	−2.09	0.15	2.26	0.57	2.25
		(8.0)	(42.9)	(3.0)	(46.2)	(100)	
Guipúzcoa	−2.13	0.26	−1.79	0.13	3.05	1.48	1.82
		(5.0)	(34.2)	(2.4)	(58.4)	(100)	
Valencia	−2.13	0.44	−1.68	0.14	1.89	0.63	1.80
		(10.7)	(40.4)	(3.4)	(45.6)	(100)	
Zaragoza	−2.13	0.63	−1.42	0.17	1.68	0.83	1.11
		(16.2)	(36.3)	(4.4)	(43.1)	(100)	
Valladolid	−2.13	0.23	−1.27	0.11	2.00	0.82	1.05
		(6.3)	(35.2)	(3.0)	(55.4)	(100)	
Cádiz	−2.13	0.32	−2.22	0.07	3.05	0.96	1.01
		(5.7)	(39.2)	(1.03)	(53.7)	(100)	
Alicante	−2.13	0.41	−1.84	0.03	1.97	0.50	0.77
		(9.6)	(43.2)	(0.8)	(46.3)	(100)	
Santander	−2.13	0.49	−1.77	0.08	2.47	1.02	0.76
		(10.1)	(36.7)	(1.7)	(51.5)	(100)	
Córdoba	−2.13	0.35	−1.85	0.08	1.70	0.37	0.74
		(8.7)	(46.5)	(2.0)	(42.7)	(100)	
Total	−2.13	0.40	−1.74	0.27	2.66	1.40	4.85
		(7.9)	(34.3)	(5.3)	(52.5)	(100)	

Notes: The impact of each factor is obtained by multiplying the coefficients of Table 5, col. 2 by the mean values. Predicted impact = [exp (sum of all factors) × exp (one half of the estimated error variance)]. The latter term of the product is necessary when the dependent variable is expressed in logs. Observed is the mean value of the dependent variable. Percentage contribution in brackets.
Sources: See text.

for migration, although it has not usually been considered in the Spanish literature.

5. Labour market impact

Migration affected almost a million people during the 1920s (see Table 1). What was its impact on the labour market? In this Section, two methods are applied to analyse the effects of the increase in labour migrations. Section 5.1 uses the model of regional labour markets linked by migration, as proposed by Boyer and Hatton (1994). In Section 5.2, a partial-equilibrium approach

is applied to assess the effect of migration on wage changes, particularly in origins and destinations where the number of migrants was large.

5.1. Migrations and labour market integration

Wage convergence is only one possible consequence of migrations.[29] As Boyer and Hatton (1997) remark, market integration cannot be identified with wage convergence, given that the wage gap between two locations could diverge despite the proper functioning of the labour market, if the factors that condition the demand for and supply of labour do not coincide. To put it another way, wage convergence is possible in the absence of labour mobility if labour supply and demand tend towards equality. Moreover, a global approach that takes into account all provinces at the same time may hide partial convergence processes between regions. In order to determine whether this is so, this Section provides a model of regional labour markets linked by migration as proposed by Boyer and Hatton (1994). The model is based on the estimation of time series models describing wage evolutions between pairs of regions. Without specific data on annual migration flows, this approach tests whether migrations contribute to integration. This is an *error correction model* that reflects the degree to which common short-run forces affect both labour markets (such as external shocks in the demand for and supply of jobs) and the tendency towards a long-run equilibrium wage relationship.[30]

The model was estimated based on the fairly complete daily series of agricultural and building industry wages included in the Statistical Yearbooks for the period 1914–1931, disaggregated on a provincial basis.[31] These wages were considered representative for origins and destinations respectively. Wage data was then grouped according to the division of Spain into the six macro-regions proposed by Rosés and Sánchez-Alonso (2004) and

[29] Using the methodology proposed by Barro and Sala-i-Martin (1995), Rosés and Sánchez-Alonso (2004) describe an intense process of wage convergence from the middle of the nineteenth century to 1930. However, the authors show that migration did not contribute substantially to the convergence process. I replicated the convergence analysis for the 1920s, with some differences with regard to the proxy used for migrations, to obtain similar results.

[30] See Boyer and Hatton (1994) for the complete model.

[31] Some unavailable observations were interpolated. Nominal wages were adjusted by cost of living indices calculated by Rosés and Sánchez-Alonso (2004) for 1914, 1920, 1925, and 1930. Thus, wages between 1914 and 1919 were adjusted by the 1914 index; for the period 1920–24, by the 1920 index; for the period 1925–29, by the 1925 index; and for 1930 and 1931, by the 1930 index.

comparisons were made between pairs.[32] The results for all pairs of regions in each labour market are shown in Table 7. Following Boyer and Hatton (1994), a time trend and an intercept were included. Short-run ($\Delta \log w_{j.t}$) and long-run ($\log(w_i/w_j)_{t-1}$) integration coefficients are respectively positive and negative as expected. The significant sign of the coefficient for the $\Delta \log w_{j.t}$ term in all cases except one (row 9) suggests that common shocks arising from changes in labour demand or supply were important in both origin and destination labour markets. The sign of the $\log(w_i/w_j)_{t-1}$ coefficient is not always significant, showing that not all of the regions are integrated in the long run with each other.

Two regions, Andalusia and North, stand out for their weak integration. In the agricultural market, Andalusia is only integrated in the long run with the two Castiles (rows 4 and 5). In the building industry market, Andalusia is not integrated in the long run with Mediterranean or North, while the latter is only strongly integrated with Southern Castile, and weakly with Northern Castile. These results are consistent with the evolution of regional migration rates. Both North and Andalusia had relatively low rates of internal out- and in-migration. By the second and third decades of the twentieth century, Andalusian provinces had lost a significant part of their pull for southern migrants, as shown by the migratory balances calculated by Mikelarena (1993) and the in-migration rates given in Table 4 (col. 'Observed').[33] Except for Andalusia and North, short and long integration coefficients between the other regions tend to be high and significant. There are ten pairs of regions with both coefficients significantly different from zero in agriculture and eleven in the building industry. In any event, these findings suggest that the national wage convergence process was compatible with either strong or weak regional labour market integration.

5.2. Migrations and wage elasticity of labour demand

A further method of determining the importance of internal migration is to estimate wage changes in origins and destinations produced by the redistribution of workers. In other words, it is possible to estimate what the level of wages would have been if no migration had occurred (for instance, Williamson 1990, Boyer 1997). For this purpose, it is first necessary to estimate the labour force participation of migrants, and, second, to estimate

[32] The order of integration of the data series was considered first. All the series are stationary in levels, with the only exception being the agricultural wage in Andalusia, which is stationary in first differences. Results for this series should therefore be viewed with caution.

[33] Temporary in-migrations in the South evolved in a similar manner. By 1930, various northern provinces such as Guipúzcoa, Barcelona, Madrid, Vizcaya, or Zaragoza, had significant numbers of both permanent and temporary in-migrants.

Table 7. *Regional labour market integration, 1914–1931.*

Dependent variable: Δ logw_i, Regions i, j	Intercept	Time	Δlog$w_{j,t}$	log$(w_i/w_j)_{t-1}$	R^2	DW
			A. Agricultural wages			
(1) And-Ebr	−0.03	0.30	0.92**	−0.33	0.71	1.14
	(−0.42)	(0.06)	(5.39)	(−1.22)		
(2) And-Med	−0.00	−0.10	0.84**	−0.12	0.74	0.70
	(−0.03)	(−0.19)	(5.98)	(−0.71)		
(3) And-Nor	0.06	−0.44	1.03**	−0.26	0.69	1.04
	(0.91)	(−0.73)	(5.03)	(−1.54)		
(4) And-NoC	0.06	1.13**	0.71**	−0.59**	0.88	0.95
	(1.48)	(2.01)	(9.59)	(−3.20)		
(5) And-SoC	0.16*	−0.21	0.61**	−0.71**	0.65	1.63
	(1.97)	(−0.35)	(2.91)	(−2.96)		
(6) Ebr-Med	0.03	−0.52	0.84**	−0.39*	0.79	1.60
	(0.52)	(−0.99)	(6.75)	(−1.80)		
(7) Ebr-Nor	0.12	−0.68	1.00**	−0.40*	0.75	1.83
	(1.61)	(−1.23)	(5.29)	(−1.94)		
(8) Ebr-NoC	0.13**	0.98	0.55**	−0.57**	0.74	2.13
	(2.18)	(1.45)	(5.23)	(−3.24)		
(9) Ebr-SoC	0.31**	−0.47	0.20	−0.81**	0.63	2.68
	(3.43)	(−0.75)	(0.92)	(−4.35)		
(10) Med-Nor	0.09	−0.17	1.24**	−0.36**	0.87	1.50
	(1.73)	(−0.46)	(8.79)	(−2.13)		
(11) Med-NoC	0.10*	1.10	0.63**	−0.43**	0.80	2.05
	(1.79)	(1.44)	(6.41)	(−2.59)		
(12) Med-SoC	0.25**	0.54	0.73*	−0.81**	0.62	2.16
	(2.70)	(0.76)	(1.84)	(−3.64)		
(13) Nor-NoC	0.01	0.73	0.45**	−0.27*	0.62	2.08
	(0.13)	(1.07)	(4.48)	(−1.95)		
(14) Nor-SoC	0.06	0.53	0.41**	−0.59**	0.50	2.39
	(0.95)	(0.89)	(2.21)	(−3.12)		
(15) NoC-SoC	0.04	−0.07	0.53**	−0.15	0.67	1.97
	(0.46)	(−0.07)	(3.72)	(−0.48)		
			B. Building wages			
(16) And-Ebr	−0.12**	0.47	1.07**	−0.70**	0.83	2.02
	(−2.10)	(1.20)	(7.90)	(−2.69)		
(17) And-Med	−0.11**	0.11	1.33**	−0.35	0.87	1.76
	(−2.07)	(0.31)	(9.06)	(−1.71)		
(18) And-Nor	−0.04	0.03	1.05**	−0.29	0.84	1.48
	(−0.95)	(0.07)	(7.64)	(−1.18)		
(19) And-NoC	−0.03**	0.51	0.89**	−0.71**	0.84	1.68
	(−0.75)	(1.21)	(5.89)	(−2.52)		
(20) And-SoC	0.10	−0.00	0.76**	−0.91**	0.75	1.67
	(1.67)	(−0.01)	(3.88)	(−3.29)		
(21) Ebr-Med	−0.05	−0.93*	1.09**	−0.90**	0.84	1.81
	(−1.46)	(−1.88)	(7.97)	(−2.88)		
(22) Ebr-Nor	0.02	−0.31	0.88**	−0.31	0.78	1.81
	(0.53)	(−0.69)	(6.62)	(−1.51)		

Table 7. *Continued.*

Dependent variable: Δ logw$_i$, Regions i, j	Intercept	Time	Δlogw$_{j,t}$	log(w$_i$/w$_j$)$_{t-1}$	R^2	DW
(23) Ebr-NoC	0.08	0.04	0.71**	−0.61**	0.72	2.11
	(1.58)	(0.09)	(4.71)	(−2.81)		
(24) Ebr-SoC	0.24**	−0.52	0.66**	−0.83**	0.71	1.92
	(2.96)	(−1.18)	(3.92)	(−3.53)		
(25) Med-Nor.	0.05	−0.11	0.74**	−0.27	0.81	1.74
	(1.43)	(-0.38)	(7.34)	(−1.69)		
(26) Med-NoC	0.07*	0.13	0.69**	−0.28*	0.78	1.56
	(1.96)	(0.34)	(6.35)	(−1.73)		
(27) Med-SoC	0.22**	0.21	0.64**	−0.62**	0.73	2.05
	(2.98)	(0.59)	(4.83)	(−3.00)		
(28) Nor-NoC	0.03	0.61	0.88**	−0.57*	0.84	1.82
	(0.97)	(1.20)	(7.79)	(−2.06)		
(29) Nor-SoC	0.22**	1.58	0.78**	−1.10**	0.84	1.87
	(3.64)	(1.66)	(6.24)	(−4.17)		
(30) NoC-SoC	−0.12*	0.52	0.92**	−0.76**	0.88	2.24
	(−1.97)	(1.52)	(9.81)	(−2.59)		

Notes: Number of observations: 18. * Significant for values of $p < 0.10$; ** Significant for values of $p < 0.05$; t-statistics between brackets. And = Andalusia; Ebr. = Ebro Valley; Med. = Mediterranean; Nor = North; NoC = Northern Castile; SoC = Southern Castile. DW = Durbin-Watson statistic. Pairs of regions (i, j) that show both Δlogw$_{j,t}$ (short-run) and log(w$_i$/w$_j$)$_{t-1}$ (long-run) coefficients significant at usual levels are shown in bold type
Sources: See text.

demand elasticities for labour in origins and destinations. In Table 8, it is assumed that the labour force participation of migrants is equal to the labour force participation for the total population. Average labour force participation for each macro-region is multiplied by out-migration rates, and labour force participation for the two main destinations (Madrid and Barcelona) by in-migration rates.[34] An alternative 'reduced' estimate is provided for the two destinations, considering only the origins with the greatest push.[35] The second step consists of specifying the labour demand elasticity, that is to say, the wage elasticity of labour demand holding all other inputs fixed. There are no estimates in historical contexts in the Spanish case. A range of estimations has therefore been assumed based on various empirical studies for different aggregations (basically, countries, groups of countries and large industries) and alternative methods.

[34] Labour force participation for total population at provincial level has been calculated on the basis of the Population Census of 1920.

[35] The main area of influence in the case of Barcelona is described in Section 2. In the case of Madrid, 'reduced' includes eight provinces from North Castile (all provinces except León), five provinces from South Castile (all provices except Badajoz and Albacete), one province from North (Santander), and one province from Andalusia (Jaén). These provinces were selected according to data provided by Silvestre (2001).

Table 8. *Estimation of the effect of migrations on wages, 1920–1930.*

				Assumed elasticity of labour demand				
				−0.15	−0.75	−1.0	−1.6	−2.0
Region	Out-mig. rate (per cent) 1920–1930	Average TLFPR 1920	Corrected Out-mig. rate					
				Estimated effect				
Andalusia	5.2	66	3.4	−1	−3	−3	−5	−7
Ebro Valley	9.3	67	6.3	−1	−5	−6	−10	−13
Mediterranean	6.1	68	4.1	−1	−3	−4	−7	−8
North	3.3	62	2.1	0	−2	−2	−3	−4
North Castile	8.7	64	5.6	−1	−4	−6	−9	−11
South Castile	6.2	67	4.1	−1	−3	−4	−7	−8
Total	6.5	66	4.3	−1	−3	−4	−7	−9
Destination	In-mig. rate (per cent) 1920–1930	TLFPR 1920	Corrected In-mig. rate					
				Estimated effect				
Madrid	2.0	62	1.2	0	−1	−1	−2	−2
Madrid reduced	4.5	62	2.8	0	−2	−3	−4	−6
Barcelona	1.9	69	1.3	0	−1	−1	−2	−3
Barcelona reduced	6.2	69	4.3	−1	−3	−4	−7	−9

Notes: Corrected migration rates results from multiplying migration rates by the total labour force participation rate (TLFPR). The estimated effect results from multiplying corrected migration rates by the assumed elasticity of labour demand. The estimated effect has been rounded without taking decimals into account.
Sources: See text.

Table 8 provides estimates assuming five different values for the wage elasticity. The highest (–1.6 and –2.0) are the long-run elasticities in nonagricultural and agricultural markets assumed by Boyer (1997) for England and Wales between 1861–1901. The first was estimated by Williamson (1990, pp. 92–6) for the British nonagricultural sector in 1841 using a general equilibrium model. The second is assumed by Boyer (1997) considering that the elasticity of labour demand in agriculture was somewhat larger. The lowest (–0.15 and –0.75) are the 'reasonable confidence interval' in developed economies proposed by Hamermesh (1993, ch. 3), and they are based on a review of more than seventy empirical studies.[36] The value of −1 is used to complete the sensitivity analysis.

Assuming, for instance, the intermediate value of labour demand elasticity, −1, the average wage would have been around 4 per cent lower/higher than its actual level in origins/destinations. In regions with the greatest out-migration rates, the impact would have been around 10 per cent, or even greater, if

[36] Studies based on industries or firms do not substantially alter the confidence interval (Hamermesh 1993).

higher elasticities are considered for agricultural wages, following Boyer.[37] Despite the lack of more accurate data, this tentative exercise suggests similar impacts to the British case. Taking into account that only one decade is considered, these estimates give values not very far from those found by Boyer for four decades, 32 and 24–28 per cent for out-migration and in-migration in London respectively.

6. Conclusions

Similarly to the French debate described by Sicsic (1992), the Spanish literature abounds with arguments concerning the reasons why internal out-migrations were not greater and, hence, why structural change was not swifter. As Prados de la Escosura (1997, p. 92) remarks, 'why out-migration from rural areas did not take place earlier and was not more intense is a key question in the historical debate concerning the underdevelopment of Spain'. Some scholars have stressed supply-based approaches related to the backwardness of agriculture, and sociological or institutional factors to explain the matter. This article, while recognising that the supply side cannot be ignored, defends demand-based factors as providing the best explanation for low out-migration rates.

A simple comparison with other European countries suggests that internal migrations were associated with industrialisation and economic growth. Therefore, as in other Southern European countries, the rise in out-migration occurred in the twentieth rather than in the nineteenth century. While it is true that the alternative of overseas emigration remained, this option was not available to all potential migrants. The work of Sánchez-Alonso (1995, 2000a, 2000b) shows that income constraints were a powerful factor preventing greater overseas emigration. This factor defined a specific emigrant profile. Emigrants were relatively skilled people who tended to come from the least economically backward regions. The present article shows that the profile of internal migrants was different. Internal migrants were predominantly unskilled and drawn from poor and rural areas. The lack of data prevents a more detailed depiction of migrants from the nineteenth century. Nevertheless, the models estimated in this and other studies appear to confirm that a substitution relationship did exist between internal and overseas out-migration at an earlier date.

Internal migrants reacted to economic stimuli, just as the overseas emigrant did. Leaving aside the hypothesis that Spanish workers may have

[37] Impacts are greater if the assumption of 90 per cent is accepted directly as the labour force participation rate of migrants. This is the procedure followed by Boyer (1997) for England and Wales. For the case of in-migration in Vizcaya in 1880–1900 and 1920–35, García-Abad (2003, ch. 4), shows labour force participation rates of over 90 per cent. My own unpublished data for the case of in-migration in Zaragoza reveal similar rates.

been somehow reluctant to move, this article shows that internal migrants responded to the economic differences created when growth really took off. The standard factors, comprising wage and employment gaps and the costs of moving and job search, account for much of this migration. The prospects of non-agricultural employment were particularly relevant. As shown in recent studies, however, Spanish rural-urban wage gaps were small, a factor that may have prevented the emergence of higher migration rates.[38]

Another interesting feature of the phenomenon is that out-migration from the most impoverished areas of Southern Spain was relatively low. The arguments proposed in the literature to explain why those who had the most to gain did not out-migrate to the industrial centers focus, once again, mainly on supply-based factors. The most significant of these is the demand for farm labour on the great estates. In the analysis of the 1920s, this factor does not seem to have played an important role, although it is probable that it would have done in earlier decades, when the primary sector in the south was more dynamic. In any event, an alternative explanatory factor is offered here, which has as yet hardly been considered. This is the cost of moving. The importance of distance on migration, first remarked by Ravenstein (1885), is clearly relevant in the case of the southern provinces of Spain, which were far away from the main destinations, and particularly from those located in the northeast of the country. Distance should thus be regarded as a proxy for a set of financial and physical costs, as well as for information on labour markets at potential destinations.

This article also considers the impact of the spectacular increase in internal migration during the 1920s. Although the effect of rising internal migration on wage convergence has been shown to be insignificant, these population movements did act as an integrating force on several regional labour markets. Meanwhile, Andalusia and North, the two regions that were least involved in such internal migrations, exhibit a marked lack of labour market integration with other regions. Finally, if we consider the impact of migrations on wages at origins and destinations, it seems that these would have been similar to those calculated by Boyer (1997) for Britain, although the paucity of available data in the Spanish case means that only a tentative estimate is possible.

[38] For a further discussion of small wage gaps, see Simpson (1995b) and Rosés and Sánchez-Alonso (2003). Many migrants regarded the move to the cities as something temporary in view of the high agricultural wages that could be earned in the summer months, when labour demand was at its highest. Thus, temporary migrations did not appear to decline in the 1920s, which was the peak period for permanent migrations. Based on population census figures (between 1877 and 1930), temporary in-migrants represented around 3 per cent of the total population.

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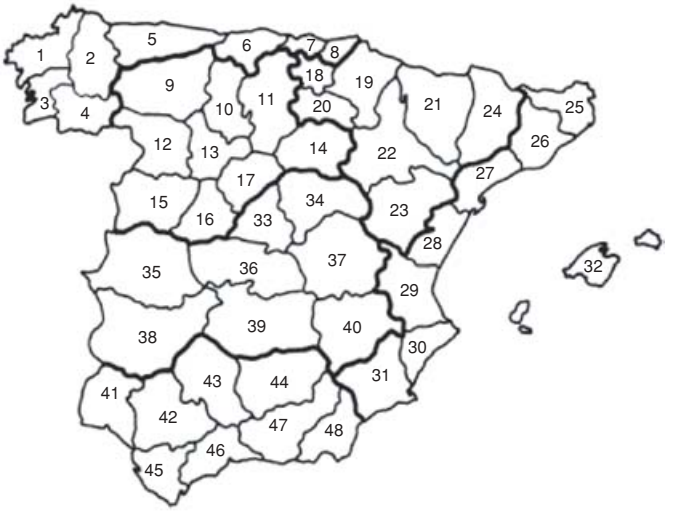
Appendix 1. Regions and provinces

Region	Province	Region	Province
North	1 La Coruña	Mediterranean	25 Gerona
	2 Lugo		26 Barcelona
	3 Pontevedra		27 Tarragona
	4 Orense		28 Castellón
	5 Oviedo		29 Valencia
	6 Santander		30 Alicante
	7 Vizcaya		31 Murcia
	8 Guipúzcoa		32 Baleares
North Castile	9 León	South Castile	33 Madrid
	10 Palencia		34 Guadalajara
	11 Burgos		35 Cáceres
	12 Zamora		36 Toledo
	13 Valladolid		37 Cuenca
	14 Soria		38 Badajoz
	15 Salamanca		39 Ciudad Real
	16 Avila		40 Albacete
	17 Segovia	Andalusia	41 Huelva
Ebro Valley	18 Alava		42 Sevilla
	19 Navarra		43 Córdoba
	20 Logroño		44 Jaén
	21 Huesca		45 Cádiz
	22 Zaragoza		46 Málaga
	23 Teruel		47 Granada
	24 Lérida		48 Almería

Notes: The Canary Islands are not included. See map below for the location of provinces.
Source: Rosés and Sánchez-Alonso (2004).



Appendix 2. Expulsion model variables (Table 2)

$OUTMI(1920–1930)_{i,n–i} = [SO(1930)_{i,n–i} – (S(1920–1930) \times SO(1920)_{i,n–i})]/POP(1920)_i$, where SO is the stock of out-migrants born in the province *i* that reside in the rest of the provinces *n–i*; S is the census survival coefficient between 1920 and 1930; and POP is the total population of the province *i*. Measured per thousand population. All the components are obtained from the Population Censuses of 1920 and 1930.

POP: Percentage of the population aged between 11 and 30. Own calculations from the Population Census of 1920.

AGLF: Percentage of the active male agricultural population. Own calculations from the Population Census of 1920.

URB: Percentage of the population living in municipalities of 5,000 inhabitants or more in 1920. Taken from Luna (1988).

WAG: Average daily male nominal agricultural wages taken from the Statistical Yearbook of 1920. These nominal wages have been adjusted by the purchasing-power-parity (PPP) price indices for a common market of goods estimated by Rosés and Sánchez-Alonso (2004).

STO: Out-migrant stock per thousand population. Own calculations from the Population Census of 1920.

LIT: Percentage of the population aged between 16 and 30 able to read and write (or only read), variation between 1900 and 1920. Own calculations from Population Censuses.

PRO: Agricultural output per worker in 1920. Own calculations using various published and unpublished sources and data from Domingo Gallego and the other members of the *Grupo de Estudios de Historia Rural*. In order to check the robustness of the procedure, the agricultural output per worker was also calculated for 1910 and compared with previous estimations by Simpson (1994) for that date. The correlation between the two series was 0.92.

LAND: Land tenure system proxied by the percentage of wage earners in the agricultural labour force. Own calculations from the Population Census of 1920.

OVER: Gross rate of overseas emigration per thousand population, 1919–1920. Taken from Sánchez-Alonso (1995, pp. 292–3).

Appendix 3. In-migration rates, 1877–1887, 1900–1910, 1910–1920 (Table 3)

$INMI(t–1, t)_{i,n–i} = [SI(t)_{i,n–i} – (S(t–1, t) \times SI(t–1)_{i,n–i})]/POP(t–1)\ i$, where SI is the stock of in-migrants that reside in the province *i* born in the rest of the provinces *n–i*; S is the census survival coefficient between *t–1* and *t*; and POP is the total population of the province *i*. Measured per thousand population. Own calculations from Population Censuses.

Appendix 4. Variables of the choice of destination model (Table 5)

$INMI(1920–1930)_{i,j} = [SI(1930)_{i,j} – (S(1920–1930) \times SI(1920)_{i,j})]/POP(1920)_{i.}$, where SI is the stock of in-migrants born in the province *i* that reside in province *j*;

S is the census survival coefficient between 1920 and 1930; and POP is the total population of the province *i*. Measured per thousand population. Own calculations from the Population Censuses of 1920 and 1930.

WG: Wage gap between the average wage of bricklayers in the destinations and the average agricultural wage in the origins. Taken from the Statistical Yearbook of 1920. Deflated as explained in WAG (Appendix 2).

DIS: Distance by rail between provincial capitals according to the criteria described in Silvestre (2001). The correlation between this distance and the aerial is 0.96.

STO: Migrant stock at destination *j* in 1920 born in origin *i*, and then divided by the total population of the origin *i* in that year. Expressed in per thousands terms. Own calculations from the Population Census.

DESNAGLF: Percentage of the nonagricultural active population at destination in 1920. Own calculations from the Population Census.

ORIWAG: Agricultural wages in origins, 1920.

DESWAG: Building wages in destinations, 1920.