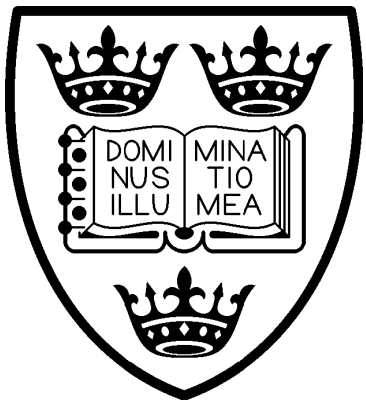

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LABOUR AND WAGES IN PRE-INDUSTRIAL CATALONIA

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LABOUR AND WAGES IN PRE-INDUSTRIAL CATALONIA

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Abstract

This paper examines labour's organisation and labour's reward in Catalonia before the first Industrial Revolution. Using new quantitative evidence on urban wages, it first shows that agricultural and urban real wages did not decrease during the last five decades of the pre-industrial period, despite increasing commodity prices. Secondly, it performs an econometric test that shows that wage responses reflected a condition of labour market integration, with occupational and spatial mobility. New data on the characteristics of immigration in Barcelona have been assembled to reinforce previous findings, and to provide new information on the push factors that inclined labourers to migrate. The paper's aim is both to test issues long discussed in the literature on labour markets (taking Catalonia as the case study), and to provide new data that may help future research.

LABOUR AND WAGES IN PRE-INDUSTRIAL CATALONIA

1. Labour and wages in Catalonia in the eighteenth century

In the nineteenth century, Catalonia underwent an industrial revolution with no precedent in any other Spanish region. The origins of Catalan industrialisation are to be found in the agricultural transformation beginning in the seventeenth century. In order to take advantage of the new international trade circuits centred in the Atlantic, the lands along the Mediterranean coast had specialised in vines, favoured by an increase in wine prices relative to those of wheat. Wine exports paid for those products imported from north and central Europe, mainly wheat, textiles and fish, and at the same time they served as a platform for Catalan trade penetration into America and Spain's interior market.

Those regions where the soil was not suitable for vines specialised in cereals and manufacture, stimulated in turn by increases in demand that expanded viticulture generated. In the eighteenth century this specialisation encouraged the concentration of manufacturing activities in central Catalonia, where an important rural industry, mainly devoted to the production of wool, developed. On the other hand, viticulture specialisation generated incomes which, both through increasing demand and through capital investment, contributed to the emergence of the calico-printing industry.[1] This new cotton manufacture appeared in Barcelona around the 1730s, and grew over the second half of the century. Although there were some calico-printing factories outside Barcelona, it was mainly in this city that this industry concentrated. In 1784, 80 of these factories were in Barcelona and 14 in other towns in Catalonia. In 1792, Barcelona imported 1,144 tons of raw cotton and 882 tons of spun yarn, which equalled 16% of British needs.[2] However, the definitive impulse to industrialisation was yet to come, for despite the important changes described, the level of

[1] When referring to calico printing, the terms *industry* and *manufacture* will be used indiscriminately, although the sector was not a modern industry. Similarly, the term *factory* will be applied to the centres of production of printed calicoes, which formally are not modern factories but unmechanised workshops.

[2] Vilar, 'La Catalunya industrial', p. 9.

mechanisation of the Catalan industry was still very low. In 1802, the banning of the import of spun yarn was a decisive incentive to complete the integration of spinning in the production processes and accelerate mechanisation. The adoption of steam power in 1832 was a step towards modern industrial growth.[3]

In the context of the changes described above, the number of workers mobilised by the textile industry gradually increased. A questionnaire sent to the manufacturers in 1784 shows that the labour force employed in Barcelona's calico-printing factories was of 8,638 workers.[4] Barcelona's population in 1787 was estimated at 92,385 inhabitants, which means that the cotton industry concentrated in Barcelona employed, by the end of the eighteenth century, almost 10% of its total population.[5] New calico-printing factories were established every year, and the number of this kind of establishment in Barcelona increased from 42 in 1770 to 113 in 1786, nearly trebling in 16 years.[6] According to contemporaries, the growth of the textile sector was also having effects on the agricultural labour supply, where producers were facing a 'lack of hands' due to 'the attraction that the numerous calico-printing factories in the city exercised on the inhabitants of the country'.[7] Calico-printing factories, thus, served (or were seen) as a catalyst for major changes taking place in other sectors' labour supply. However, none of the existing studies analysing labour organisation and working conditions in the calico-printing factories have carried out a comparison with labour conditions in other regions,[8] and no attempts have been made to model the links between wages in these factories and wages paid in agriculture.

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[3] Nadal, *El fracaso;* Vilar, *Catalunya dins l'Espanya moderna;* Torras, 'Especialización agrícola'.

[4] Data from the 'Census of Manufactures of 1784', reproduced in Miguel López, *El censo de Manufacturas*, p. 43.

[5] Sánchez, 'Les activitas econòmiques' p. 48.

[6] Thomson, *A Distinctive Industrialization*, p. 230.

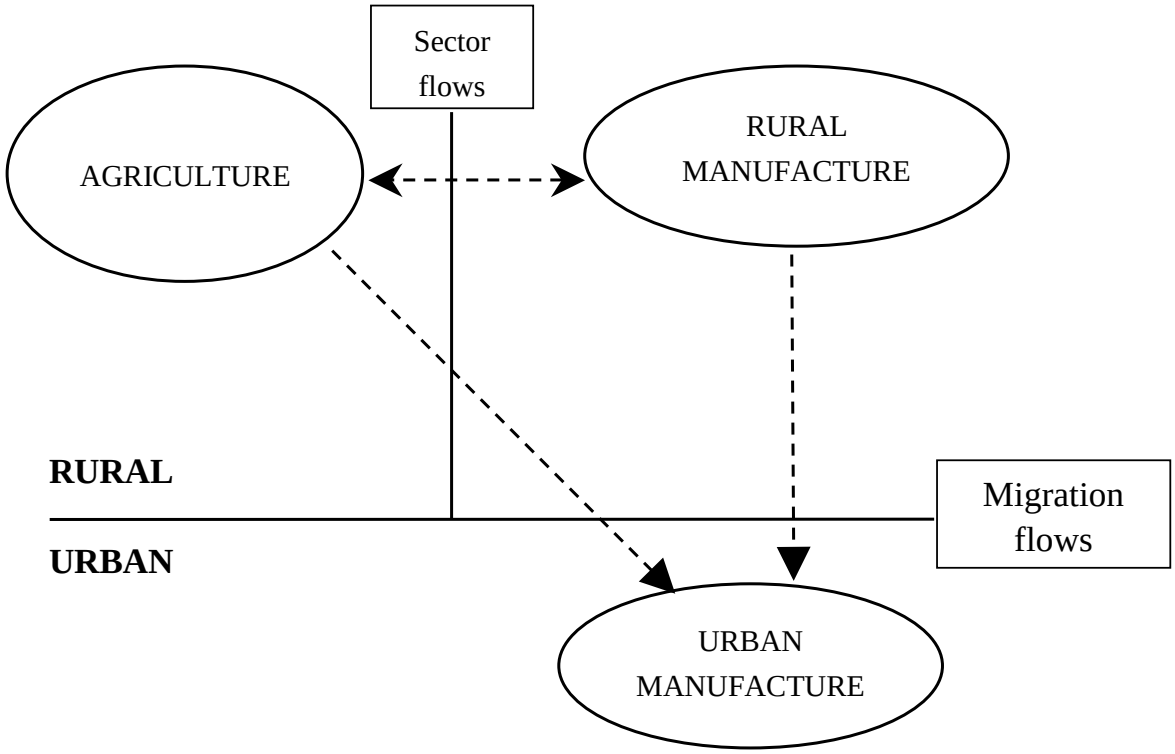
[7] Vilar, *Catalunya dins l'Espanya Moderna*, II, pp. 520–23 (the translation of the quotations is mine).

[8] Vicente, 'Artisans and work', studies the characteristics of labour in the Sirés factory to illustrate the artisan character of work in this manufacture. Ayala, 'Condiciones de trabajo', describes, through the study of wages in the Sirés factory, the high division of labour and high turnover observed in this factory.

Labour organisation

The framework within which the study of labour markets in Catalonia will be investigated is shown in Diagram 1. The diagram can be considered both at the geographical and at the sectorial level. Geographically, a distinction has been made between the countryside (represented by the two upper spheres) and the town (in the lower sphere). The two essential economic sectors considered are agriculture and textile manufacture: whereas the former is mainly confined to the rural areas, the latter is important both in certain rural locations and in Barcelona.

Diagram 1: Labour market organisation



I

The degree of implantation of the rural industry in a zone depended largely on the kind of agriculture of the area. The expansion of vines, mainly along the Mediterranean coast, altered the behaviour of peasant families. The vineyards did not always substitute for other crops, but interspersed among them or occupied lands that were not previously cultivated. The juxtaposition within a re-

gion of different crops moderated the seasonal changes of labour demand in agriculture. This brought an intensification of work, which was not expressed in the use of more labour per unit of surface but in the higher regularity of agricultural labour throughout the year. The lower seasonality of those purely agricultural tasks reduced the ability of peasant families to commit to other activities. Of course, other influential factors should be considered, the most important one being the conditions under which land was cultivated: the more stable the relation with the land, the less the availability for other activities. On the other hand, high viticulture specialisation also created new jobs related to the production and bottling of wines and eau-de-vie. Therefore, the conditions were not favourable for the establishment of industrial activities, which required a rural labour force that could be more easily mobilised in other areas.

Examples from other European regions show that wine country was generally unfavourable for rural industry. Mendels shows, for the case of Southern Anjou, how rural textiles and winegrowing were almost incompatible with one another, due to the fact that viticulture occupied its labour more constantly: the vineyard and the loom were substitutes, not complements.[9] This correlation was underlined by contemporaries. For example an officer of the Town Hall of Montblanc (a Catalan winegrowing region) said, in 1780, 'the extinction of wool production was caused mainly, and almost exclusively, by people's dedication to vineyard growing'.[10] In those zones where vines were not appropriate, like the pre-Pyrenees and Central Catalonia, agriculture mainly consisted of small farms devoted to cereal production. These small properties were not sufficient to ensure the subsistence of peasant families, who needed to sell their labour to the textile manufacturers that settled there in search of cheap labour. This is the relation represented by the double arrow in the diagram, from agriculture to rural manufacture. Jan de Vries stressed that proto-industry involved the recruiting of marginal farmers and agricultural labourers, who would otherwise qualify as potential migrants. Furthermore, he noted that although enrolment into rural industrial work could have involved short-distance migration for some, it was usually a process of social rather than physical mobility.[11] Moreover, the flows of labour from one sector to another can be found not only within the same area, but also within a family, where several members could be working in one sector and the rest in the other. Even individuals could combine hours of work in both sectors in a way that most suited their needs. It is easy,

[9] Mendels, 'Seasons and Regions', p. 184.

[10] Torras, 'L'economia catalana', p. 26.

[11] de Vries, *European Urbanization*, p. 220.

for example, to find voices both complaining for the attraction that rural manufactures exercised for women, therefore preventing them from working in agriculture, and also stating that manufactures would not find workers during the harvest, because all women were working there. In several letters sent in May–June 1803 by the manager of a rural factory to the owner in Barcelona, it is stated that 'every single day there are spinners who don't come to work, and those who come are late (...), but fortunately the harvest will finish soon.'[12]

These attitudes need to be understood within the context of family strategies and through the analysis of the economy of the peasant family, in which the head of the family decided which members of the family would be working in the factories and found ways (absenteeism in the first place) to reconcile manufacturing production with the needs of the agricultural cycle.[13] Documenting the transfer of labour from agriculture to rural manufacture and vice versa would require data on women and child labour employment as well as family budgets and family earnings, which are not available. Moreover, wages in this sector were not paid on a time basis but according to piecework rates, which may show high variation depending on the type and quality of the fabric produced. The different total hours of work provided by different members of the family and across families adds further heterogeneity to the earnings of rural families. Moreover, combining agricultural and manufacturing labour was not the only mechanism available for rural workers to preserve their independence. Migration to the city centres was regularly seen as an escape from the pressures of the rural environment. It could be permanent or temporary, and it helped rural families through the remittances from the migrant worker. When the marginal product of the potential migrant was lower than his marginal consumption, migration could release the family economy from a burden, even without remittances.[14] The importance of this rural industry has been stressed in the debate around proto-industrialisation. Due to the complexity of the organisation of labour within this framework, however, proto-industry will be left out of our analysis of the labour markets, which will be mainly centred on agricultural and urban labour, to which we now shall turn.

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[12] Arxiu Històric de la Ciutat de Barcelona, Fons Comercial, B297. Translation by the author.
[13] Woolf, *The Poor in Western Europe,* p. 82.
[14] Woolf, *The Poor in Western Europe*, p. 70, states that 20,000 peasants from the Piamonte would yearly abandon their villages for six or nine months to work somewhere in Italy or France, and would go back home with no money saved.

II

Some of the characteristics of Catalan agriculture and its labour force have been introduced throughout the description of rural manufacture. Catalan farms were predominantly of small or median size, and lands were cultivated under a complex system of property rights.[15] The relation between men and land in Catalonia is best understood in terms of tenancy, not property. In general, the tenure was set for short periods and could therefore be renewed under the terms which best suited the landowners. Such conditions were adapted to the changing prices of the products and to the changing demand for land, a process that favoured the landowners and worsened the position of the growers.

The proportion of wage labour engaged in agricultural activities is unknown. Pierre Vilar emphasises the existence of a proletarian labour force that, at the bottom of the Catalan social structure, offered its labour alternately to agriculture or industry according to the going wage.[16] The evidence seems to suggest that agricultural labourers were hired in a spot labour market. Agreements arising from this form of contracting were, due to the seasonality of agricultural tasks, short-term, therefore freeing labourers when activity was low. During the harvest, however, the increase in the demand for labour might have shifted bargaining power in favour of the workers. These characteristics can be observed in a report written in 1787 by the mayor of Vilafranca del Penedès (a wine-producing region), in which he describes the way landowners hired labourers and the complaints arising from the latter's behaviour:

> I have observed that the labourers of this village go together early in the morning to the square, where the landowners are looking for them to offer them a day of work, and stay there talking, slacking, haggling over the daily wage, and wasting their time until the landowners accept the wage proposed; even after this the labourers go back to their houses to have breakfast, so that when they arrive in the fields it is at least 9am in winter and 7am in summer. (...) The labourers should agree upon the wage with the landowner the previous night, when landowners are looking for them, but they just answer that they will talk about it the next morning at the square.[17]

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[15] What follows on property rights and its consequences is taken from Fontana, *La fi de l'Antic Règim*, pp. 63–4.

[16] Vilar, *Catalunya dins l'Espanya moderna*, II, p. 559.

[17] Archivo General de Simancas, Gracia y Justicia, legajo 336.

The excerpt above also gives hints of the bargaining power held by the workers, due to the labour shortage and to the existence of alternative forms of employment. For example, it arises from the same report that some of these wage labourers had a property under tenancy:

> When labourers arrive at the square in the morning, they have already been working four or five hours in their fields, for which reason they are tired and do not offer the maximum effort to the landowner.

This implies, on one hand, that agricultural labourers were not entirely dependent on a wage, and on the other hand, that revenues from their farms were probably insufficient and required additional earnings. The situation of such agricultural labourers was largely subject to the requirements of production, which depended itself on the fluctuations of a demand that came mainly from international markets. For such workers, the alternative to the instability of agricultural labour in places where there had been no industrial development was migration to more prosperous areas, especially urban centres, and at the head of these stands Barcelona.

III

When in 1787 Arthur Young arrived in Barcelona, after having travelled through France and the Northwest of Catalonia, he wrote:

> I have not seen, since I left Paris, a city that projects such a big activity around; and when one thinks that Barcelona is nothing else than the capital of a province, and that Paris is the capital of a kingdom, the difference is absolutely in favour of the first.[18]

In the 70 years preceding Young's journey, Barcelona's population had more than trebled, and it represented 10% of Catalonia's population (of around 900,000). Barcelona was first and foremost a trading centre, a port from which products were exported to European and American markets and imports were distributed to the interior of Catalonia. Moreover, the population concentrated in Barcelona meant that it was an important centre of consumption of food, raw materials and manufactures, either imported from abroad or produced in the regional markets. Another distinctive feature of the city was the calico-printing

[18] Young, *Viatge a Catalunya, 1787,* p. 62. A Catalan edition of Young's text has been used, the translation is mine.

industry: Barcelona contained nearly all of Spanish calico printing, and, by the 1780s, this represented the largest concentration of calico printing in Europe.[19]

Textile printing was the sector with fastest growth in several European countries before the spread of the Arkwright water-frame and the advent of the factory system in cotton spinning.[20] The growth of this industry brought many changes to the organisation of labour. For the first time, tens (and hundreds in some cases) of labourers worked under the same roof under managerial supervision to take advantage of the economies of scale secured by the division and co-ordination of the different tasks. The importance of the calico printing factories in Barcelona was such that in 22 May 1784 the Town Hall forbade the construction of more factories, claiming that the existing number was already excessive. The number of people attracted to these factories, said the report, was such that many of them could not find accommodation, causing the increase of house rents and overpopulation of the city.[21] Entrepreneurs defended the contribution of calico-printing factories to the growth of the city, and their main argument against the ban referred to the large amount of people from both sexes who would be unemployed if such prohibition became effective.

The weight of calico printing factories within the urban labour market appears from the evidence presented above to have been high. Clearly, the urban economy relied on many different activities that gave employment to a large and diverse number of occupations. The hypothesis investigated in this paper, nonetheless, is that the textile industry can adequately represent changes that occurred within the urban labour market, and contributes additionally to the analysis of labour market evolution as textile was the leading sector in the long period of industrialisation, and the catalyst for structural change in the local economy. Returning to the diagram on page 4, research will focus on the urban sector, where the arrows converge. The first step will be to elaborate a series of wages for workers in the calico printing factories; these will be compared to already published agricultural wages. Secondly, a test for labour market integration between different geographical areas will be carried out. Finally, new sources will be used to obtain a general view on the characteristics of immigration in Barcelona.

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[19] Thomson, *A Distinctive Industrialization*, p. 59.

[20] See Chapman and Chassagne, *European Textile Printers*, for a survey on the role of calico printing in the eighteenth century and for a comparison on British and French printing industries. For a study on Barcelona's calico-printing factories, see Thomson, *A Distinctive Industrialization*.

[21] Biblioteca de Catalunya, Fons Erasme de Gònima, 44/4.

Labour's reward: nominal and real wages

There was not a single wage for calico-printing labourers. The large labour force that worked for the calico-printing factories was organised on the basis of an extensive division of labour, and wage rates differed among categories.[22] However, a line can be drawn between hard physical work (washing cloths, or carrying, stretching and folding them) and precision work (designing, engraving the blocks and the rollers, and printing the fabrics).[23] I have targeted the first group because this is the only position in the factory that an immigrant with no specific skills could aspire to, and we are here interested in urban wages as an incentive to migration. The tasks done by these men, known as *men of the meadow* in the factory documents, did not differ much from those of an agricultural labourer: besides some manipulation of the cloths, which had to be exposed under the sun and were spread out on the grass in the meadow, the rest of the tasks involved activities as simple as levelling out the sand.

The accountant registered wages paid in calico printing factories in notebooks, some of which are conserved in Barcelona's archives. The main advantage of the source is its regularity and uniformity, both across factories and across time. Each week the name of the labourer, the category to which he belonged, the number of days worked and the weekly amounts paid were registered. Calico-printing factories were unmechanised workshops where management and discipline already had a leading role in the organisation of production. In the 'meadow', work started at sunrise and continued as long as there was natural light. The length of the working day may have prevented the men of the meadow from involving regularly to any other paid activity, which would mean that the wage accounted for most, if not all, of the earnings of these labourers. This is important, for in pre-industrial societies wages and earnings can differ so much as to invalidate any analysis based only on the first.

An important problem of the source is, however, that does not record the perquisites perceived by the labourers, which should be counted as part of labour's reward. A part of the wage might have been paid in kind. Lunch, for example, could have been provided to labourers within the factory. The large size of the factories and the many different rooms they had lead us to think that some labourers (especially the night watchmen and those workers who had recently arrived in Barcelona) could even find accommodation within the factory.

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[22] A memorandum drawn up in 1780 identified eighteen different categories of individuals, which regularly tended to form the total of workers that composes a calico-printing manufacture (Sánchez, *Les activitats econòmiques*, p. 175).

[23] Chapman and Chassagne, *European Textile Printers*, p. 176.

This saving is not negligible. Badosa has estimated that the lower band of housing rents in 1788 was between 45 and 75 Catalan pounds a year. [24] As we will see, the average daily wage of an unskilled labourer in this same year was 13.35 *sous* (a *sou* is a twentieth of a Catalan pound). If there were 260 working days, the annual income of this labourer would be 173.55 Catalan pounds. Therefore, between a 26% and a 42% of the budget would go to housing. From this point of view, then, the range of perquisites that complemented the salary can make a big difference.

Still, it is argued here that the calculated wage rates are indicative of the evolution of unskilled labour's reward in calico-printing factories. The wage rate is at least a proxy of the average daily income that a worker got for a specific task. The range of the sample studied further reinforces the strength of the results. More than 40,000 entries on daily wages have been collected covering the period from 1772 to 1816. The factories for which there is information available, and the years they cover, are specified in Table 1 (the name of the factory is the surname of the founder).

Table 1. Sources of the data on urban unskilled labourers' wages

Years	**Factories**			
1772–78	Ribas		Sirés	Pujadas
1779–84				
1785				
1786–8	Ribas	Gònima	Sirés	
1789–90				
1791			Sirés	
1792–4				
1795–8				
1799				
1800–6	Rull			
1808		Gònima		
1814–16		Gònima		

NOTE: Gònima documents are kept in the Archive of the Biblioteca de Catalunya. The rest are in the Arxiu Històric de la Ciutat de Barcelona. Details are given in the bibliography.

[24] Badosa: "Els lloguers" .

The number of labourers in the meadow of each of the factories varied each week. The average ranged from 11 in the factory of Magí Pujadas to 40 in the factory of Erasme de Gònima. In order to obtain a final wage rate for each year, and given that wages differed among factories (differences could be of up to a 10%), the method applied has been the following. I have recorded all entries keeping the daily wage as the unit of measure and have taken the average for each year. I have used the cumulative annual growth rate of the period for which wages were unknown to extrapolate data.[25] Next, I have constructed a chained index where the base years are those when a factory enters or leaves the sample.[26] This chained index is then set to 1791 = 100 (a year that provides information from most factories), and is then used to recalculate the annual wage rates. Indexes are shown in Table 2 and plotted in Figure 1.

Table 2. Unskilled labourers' daily wages in the calico-printing factories of Barcelona (1772–1816) (1791 = 100)

Year	Nominal wages	Real wages
1772	33.93	33.93
1773	49.95	54.24
1774	51.33	62.35
1775	53.50	61.19
1776	63.73	70.63
1777	65.25	59.95
1778	65.54	63.76
1779	65.14	63.09
1780	68.48	78.31
1781	67.90	83.90
1782	68.33	70.63
1783	71.59	68.72
1784	75.14	72.13
1785	80.13	71.19
1786	100.16	94.87
1787	102.11	109.77

[25] According to $Wt = Wo\ (1+r)^t$.

[26] 1772, 1779, 1785, 1786, 1789, 1791, 1792, 1795, 1799, 1800, 1808.

1788	96.54	93.92
1789	104.17	84.51
1790	91.91	74.57
1791	100.00	100.00
1792	105.00	99.01
1793	93.92	58.20
1794	109.88	64.73
1795	131.81	66.53
1796	133.05	67.31
1797	138.66	83.04
1798	142.01	94.83
1799	131.38	71.69
1800	124.82	78.01
1801	121.54	80.90
1802	130.43	68.06
1803	128.97	74.94
1804	159.87	101.39
1805	130.14	71.20
1806	122.49	72.75
1807	122.71	82.19
1808	122.34	79.47
1809	122.05	105.81
1810	121.76	72.92
1811	121.54	46.09
1812	121.25	29.93
1813	120.96	58.18
1814	120.74	81.38
1815	135.38	80.19
1816	151.78	85.20

SOURCES: Barcelona series, see text and Table 2 above. Both agricultural series are taken from Garrabou et al., 'Preus del blat'

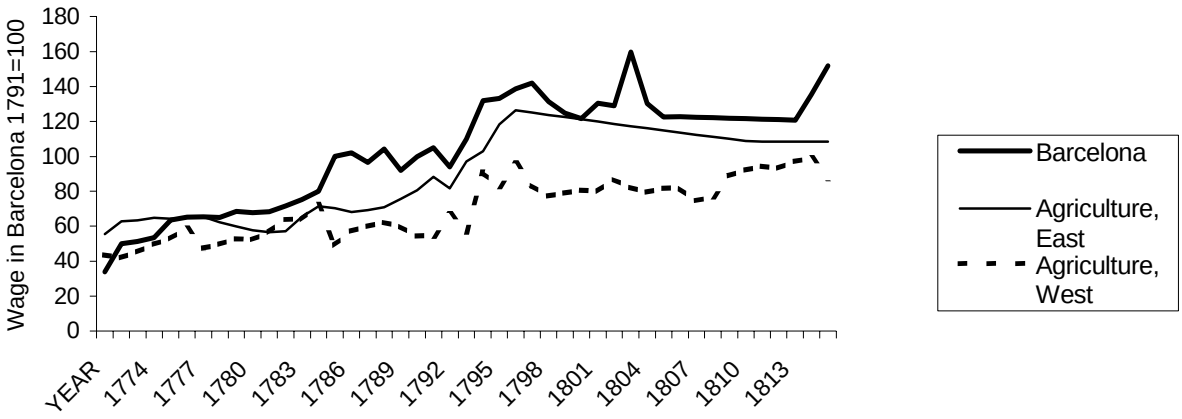


Figure 1. Agricultural and urban nominal wages
in Catalonia (1772–1816)

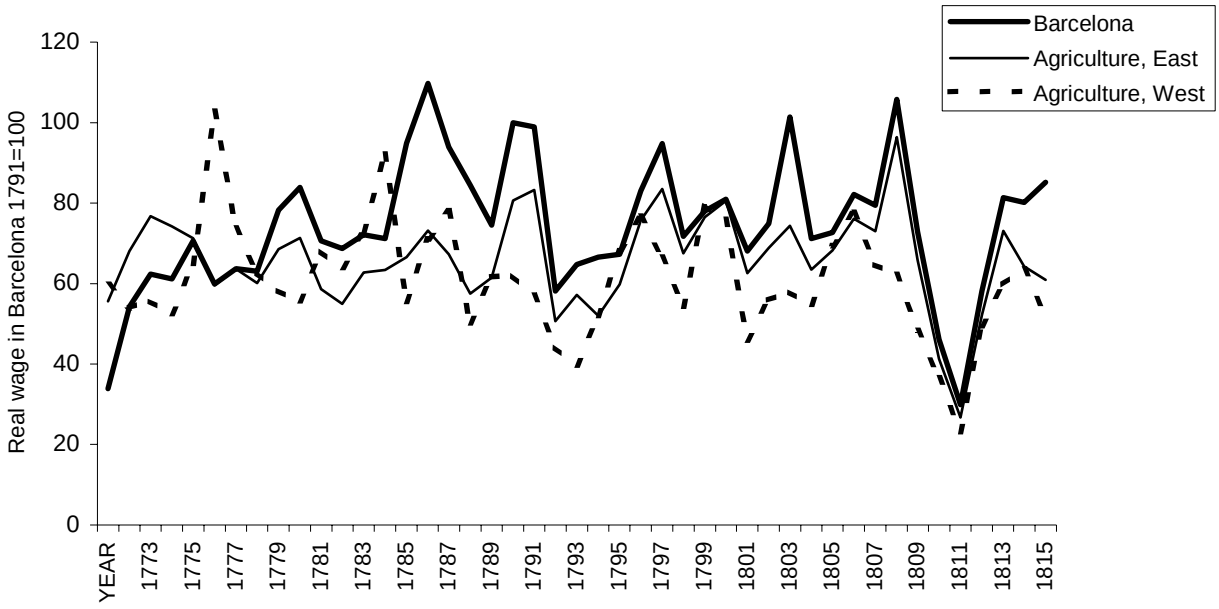
SOURCES: Barcelona series, see text and Table 2 above. Both agricultural series are taken from Garrabou et al., 'Preus del blat'

Figure 1 shows the evolution of the nominal wages index in Barcelona and compares it to daily agricultural wages in two regions, the East and the West. In broad terms these two regions match with agricultural specialisation in two different crops: most of the lands of the East were devoted to winegrowing, whereas in the lands of the west it was cereals that were mainly cultivated. The areas whose economy has been previously described as a combination of agriculture and manufacture do not exactly fit in any of the zones.

The most prominent feature of the figure is the clear increase of nominal wages along these more than forty years. Nominal wages nearly double in the two agricultural regions, and there is a fivefold increase of the urban wage. The relevance of these results, however, is relative: in a period of high inflation as the one studied here, an increase in wages could just reflect an increase in commodity prices. Similarly, the existence of rural-urban nominal wage gaps does not allow reaching definitive conclusions, for the real wage is the relevant piece of evidence.

The empirical problems associated with the calculation of real wages have

been underlined elsewhere.[27] The definition of an adequate cost of living index for a society is already complex, but the scarcity of data available for pre-industrial economies further complicates the task. It has been argued that for the pre-industrial age the price of the most widespread type of cereals is acceptable as a measure of purchasing power.[28] Therefore, wheat, the most popular



of bread grains, has been chosen here as proxy for the cost of living. Nominal wages of each of the three regions presented above have been deflated with the price of wheat in these regions, and the outcome is the series of real wages plotted in Figure 2.

Figure 2. Agricultural and urban real wages
in Catalonia (1772–1816)

SOURCES: See text and Figure 1 for wages. Price of wheat series are taken from Garrabou et al., 'Preus del blat', pp. 422–60, and Feliu, Precios y salarios

[27] Scholliers, *Real Wages,* directly tackles methodological problems of the formation of the wage. Scholliers and Zamagni, *Labour's Reward,* is a compilation of case studies.
[28] Scholliers, *Labour's Reward*, p. 10.

A first glance at the series shows that, despite sharp short-run variations, the level of real wages did not vary. The trend line is a flat one for all regions, the result of a combination of increasing nominal wages and increasing prices of foodstuffs. The sharp fall after 1808 and its subsequent recovery reflect a situation of war. The conclusion to be retained is that at the beginning of the nineteenth century, after several inflationary decades and with a population that had more than trebled, Catalonia's real wages might not have risen, but had resisted any fall, this indicating that the economy had evaded the Malthusian trap.

The striking coincidence of the evolution of urban real wages and agricultural wages in the East arises from the fact that the wheat prices series are almost identical, for both regions bought cereals from the West. The series in the West, in its turn, shows a very interesting evolution where two phases can be distinguished. First, wages in the West are clearly divergent from the other two series in the short-run. From the mid-1780s, however, similar variations in the short-run occur in the three markets. A detailed observation shows that up to the mid-1780s the evolution of real wages in the East and in Barcelona eventually followed that of the West. We may suppose that there was a lagged reaction to changes in the price of wheat. Nonetheless, already in the 1780s, the period after which the eastern and urban markets react shortens to become almost zero. This might suggest, in fact, a higher integration of the commodity markets.

Since we are interested in the functioning of the labour market, it is the evolution of wage gaps between farm and city that we should pay attention to. Economic historians have been worried about the existence of real wage gaps between farm and city employment and their causes.[29] The main argument, developed by Everett Hagen at the end of the 1950s, is that these wage differentials are the result of unbalanced growth in the derived demand for labour. Rapid industrialisation creates an excess demand for labour in urban sectors, while lagging labour demand in agriculture creates an excess supply in rural sectors. Since migration is never adequate to clear fully these two markets in any one year and thus the unbalanced growth persists, a disequilibrium wage distortion emerges. However, both Williamson in his article (which relies on data for the United States between 1890 and 1941) and Boyer and Hatton in theirs are more inclined to conclude that wage gaps between farm and city are a result of equilibrium earnings differentials as described by the Todaro model, which adjusts the agricultural–urban wage ratio by the rate of unemploy-

[29] Williamson, 'What Explains Wage Gaps'

ment.[30] Differences in the probability of experiencing unemployment affect expected incomes and would influence the equilibrium wage ratio. There are no data available for unemployment in eighteenth century Catalonia, but an adequate specification of the cost of living index might account for the real wage gaps between regions observed in Figure 2. Had housing costs been included, higher costs of living in the city would have reduced the wage gap. Still, the scarcity of data should not prevent us from trying to find an answer on whether labour markets "failed" or not. The next chapter will use a framework developed by Boyer and Hatton to test this hypothesis.

[30] The migration equation as set by Todaro is $M_a = \mu [\log(W_u/W_a) + \log (1–U)]$, being Ma the net farm emigration rate, W_u and W_a urban and agricultural wages, and U the urban unemployment rate.

2. Rural and urban markets integration

In an article published in 1997, Boyer and .Hatton provide a framework within which to study the factors that determine individual decisions to migrate.[31] Unsurprisingly, the different empirical studies analysed and performed in this article, mainly referring to late nineteenth century England and Wales, find that migrants responded to economic incentives, moving from low-wage agricultural counties to high-wage urban areas. The wage was a factor (but not the only one) affecting the decision to migrate. The distance between the origin and destination, and the existence of a previous stock of migrants from the same village (friends or relatives who could facilitate integration into the city) also counted.

Many studies have viewed migration as a problem of individual decision making. The main idea behind this approach is that migration is an investment, with costs and returns. Depending on the subjective predictions of the potential migrants and on the available information for them, they decide whether or not to move. Typically, migrants are young single adults. This pattern has to be understood in the light of the rationality framework mentioned above. By moving when they are single, they are free from burdens, mainly children, which would undermine the returns from migration. By moving when they are young, they are facing more years ahead to get the returns of migration. It therefore follows that urban centres with high migration inflows should present higher proportions of young adult population than those regions with positive outmigration rates.

[31] Boyer and Hatton, 'Migration and labour market integration'.

Table 3. Urban and rural age distributions in Catalonia, 1787 (in percent)

Age group	Urban	Rural
0–7	14.40	21.27
7–16	13.19	17.74
16–25	19.56	13.92
25–40	26.39	18.95
40–50	15.01	12.74
50 +	11.45	15.37

SOURCE: Elaborated from the census of Floridablanca as published in Iglésies, El cens del comte de Floridablanca *(1787). Under the label of* rural, *there are in fact both villages and towns, for it accounts for all Catalonia except for Barcelona. Therefore, it can be assumed that without the inclusion of those towns the percentage of older population in rural areas would be even bigger.*

Table 3 compares the age distributions in Barcelona and in the rest of Catalonia. The age groups are those corresponding to the answers given to the census of Floridablanca in 1787. Barcelona's shares of both very young people (under 16) and old people (over 50) are lower than in the rest of the country. Furthermore, the percent of Barcelona's population aged sixteen to forty, who are those more able to work, is 45.95%, nearly half of the population of the city, whereas this proportion is only a third (33.87%) in the rural environment, confirming that Barcelona must have received considerable migration inflows. Williamson has carried the same exercise for the British case (although for purpose of comparison with Third World countries).[32] Williamson found that the share of people in their 20s and 30s in London in 1861 was almost 34%, a figure which seems to be similar to the one for Barcelona at the end of the eighteenth century. Larger shares of young adults, Williamson says, imply lower dependency rates, higher per capita incomes, and higher labour participation rates, which can help to explain the dynamism of the city. In the long run, this young–adult bias would increase the ability of the cities to satisfy their growing labour force requirements by natural increase, thus diminishing their need for more immigrants. In the short-run, migration of young adults to the cities might have also eased interregional factor market disequilibria induced by the Indus-

[32] Williamson, 'Migrant Selectivity'.

trial Revolution.[33] The concerns for the failure of factor markets have similar origins than those for the existence of wage gaps between the farm and the city, already outlined above. Migration is put on a level with labour mobility, wage convergence and labour market integration, and the absence of any of them is seen as a threat to economic growth and a feature of backwardness. However, the relationship between these variables is not so straightforward. As Boyer and Hatton have put it, labour market integration and wage convergence are not the same thing. Divergence can occur if trends in labour demand dominate the supply response or if the rate of natural increase in one region is permanently higher than in another.[34] They have developed a model based on labour demand and supply in two labour markets (*i, j*) linked together by migration. [35] The model yields the following relationship, where W are wages:

$$\Delta logWit = \beta_0 + \beta_1 \Delta logW_{jt} + \beta_2 log(W_i/W_j)_{t-1} + v_t$$

Shocks to labour demand and labour supply are subsumed in the error term v_t. Coefficient β_1 expresses the degree to which there are common forces affecting both labour markets; it is expected to be positive and would be close to 1 for two symmetric regions. Coefficient β_2 is a measure of the degree of integration of the two markets and it is expected to be negative since it contains the labour demand elasticity (the change in labour demand due to a change in wages), which is negative.

Taking the three Catalan regions already used for the description of wages, Table 4 examines the time series relationships between the combination of pairs of these regions.

[33] Williamson, 'Migrant Selectivity', p. 300.

[34] Boyer and Hatton, 'Migration and labour market integration'.

[35] Boyer and Hatton, 'Regional labour market integration'. The development of the model is shown in the Appendix, pp. 103–4.

Table 4. Labour market integration in Catalonia (1770–1816)

Region i, j		Const.	ΔlogWjt	Log $(Wi/Wj)_{t-1}$	Time	R_2	DW
	(1)	–0.05	0.71	−0.54		0.36	1.94
		(2.82)	(4.75)	(3.84)			
Agriculture West,	(2)	–0.02	0.73	−0.62	−0.17	0.38	1.90
Barcelona		(0.72)	(4.93)	(4.16)	(1.47)		
	(3)		0.71	−0.61	−0.24	0.36	1.88
			(4.91)	(4.14)	(3.16)		
	(1)	0.02	0.56	−0.52		0.49	1.79
Agriculture East,		(1.84)	(5.91)	(4.26)			
Agriculture West	(2)	0.00	0.56	−0.55	0.08	0.49	1.78
		(0.21)	(5.96)	(4.34)	(0.91)		
	(1)	–0.02	0.89	−0.25		0.88	1.98
Agriculture East,		(3.07)	(17.64)	(3.42)			
Barcelona	(2)	–0.02	0.89	−0.25	0.00	0.88	1.98
		(1.83)	(17.43)	(3.23)	(0.08)		

/t/statistics are in parentheses

Row (1) shows the basic error correction model as expressed in the equation above. In all cases the coefficients obtained from the regression (excluding the constant term) show the expected signs and are statistically significant at a 5% level. The three regions exhibit evidence of integration (the coefficients on $log(W_i/W_j)_{t-1}$ are not very small in any of the cases), although the strongest integration is found in the East with the West and, oddly, in the more distant West with Barcelona.

Row (2) presents a variant of the basic model as suggested by Boyer and Hatton.[36] It might not be appropriate to assume that the constant term can be treated as such. It can be shown that the constant term depends on the migration elasticity, the demand factors (such as technical progress or price outputs) and

[36] Boyer and Hatton, 'Migration and labour market integration', p. 723 and Boyer and Hatton, 'Regional labour market integration', p. 99.

the rate of natural increase in region *i*.[37] If the latter, for example, were accelerating in rural regions, there would be a negative and significant time trend component in the model. Row (2) adds to the regression a time trend which is not significantly different from zero in any of the cases and which has little effect on the other coefficient estimates, except for the case of West with Barcelona, in which the constant loses significance. Therefore, a further modification for this case is presented in row (3), in which the constant term is eliminated and the time trend kept. The loss of explanatory power of this new model is negligible and the significance of the coefficient of the time trend proves that for this case some of the variables assumed as constant might not be so. This result is consistent with the population literature and with the specification of the model. A negative time trend might reflect an increasing rate of natural increase or a deceleration of demand for labour in rural areas. For the latter, which could be a consequence of decelerating rates of technical progress and capital accumulation, no solid data are available. However, there is evidence that this zone showed, throughout the eighteenth century, rates of population growth higher than those recorded for Barcelona, both due to high fertility rates and to immigration.[38] Moreover, it was in the period between 1781 and 1800 that 29% of the natural population growth of the whole century occurred, suggesting that population changes over time must have influenced wage rates evolution.

The positive sign of the coefficient on the $\Delta \log W_{jt}$ term (β_1 in the equation) suggests that common shocks arising from changes in labour supply or demand were important in regional labour markets. It is likely that these arose on the demand side: the three regions considered coincide in broad terms with the three product markets (grain, wine and cotton) interlinked in the first chapter. As has been already explained, wine specialisation would generate rents that increased the demand for cotton. A production increase in both sectors required the specialisation of the west in cereals to provide food to the east of Catalonia;

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[37] The constant term is defined as $(n_{it} - \Delta D_{i\,t} - \gamma_i k_{it})/\alpha_i$, where n is the rate of natural increase, D are factors other than wages increasing demand, k are non-wage advantages for migration and α_i is the labour demand elasticity. Therefore, if the rate of population growth increased over time or labour demand growth slowed down, the term would need a negative correction term dependent on time. Note that the model used in the text is adapted from Boyer and Hatton, 'Regional labour market integration' and not from Boyer and Hatton, 'Migration and labour market integration', where due to modifications the constant term equals $(r - n)/\alpha$, and where subsequently the same circumstances analysed above would be reflected in a positive time trend coefficient.

[38] Vicedo, *Les terres de Lleida*.

therefore, the demand for labour would grow in parallel. Moreover, both wine and cotton demand depended largely on an external factor, international trade. Fluctuations in international demand might explain the high coefficient on the $\Delta \log W_{jt}$ term for the East with Barcelona regression.

The test carried out above shows that there is no reason to deny the partial integration of labour markets. Therefore, the mobility of population is not an exclusive feature of already industrialised economies; even in pre-industrial societies labour reallocated to different sectors and regions. Still, little is known about the causes determining this mobility: was migration a transfer of labourers from low-wage areas to high-wage areas? Did *pull* factors prevail over *push* factors to determine labour flows? Wages alone cannot answer these questions. In the next chapter I will turn to a new kind of source to provide a different approach to some characteristics of the immigrants in Barcelona: where they came from, which were their occupations and what were their social origins. These new results will allow for a better understanding of the nature of migration in Catalonia, and will add further hypotheses, which go beyond wages, about the factors that drew migrants to the city.

3. Immigrants in Barcelona: origin and occupation

In the absence of municipal registers of the population at the end of the eighteenth century, the sources chosen here for the study of the nature of migration are documents linked to marriage registers. When complete information is provided, some of these documents give the name of the bride, the groom, and of their parents, the place of birth of the parties and the occupations of the males: that is, of the groom, his father and the father of the bride. For the case of those married in Barcelona, some of these documents, the marriage files, are kept in the Diocesan Archive of Barcelona, and have not been yet used for the period under study here, although Camps used them to study migration in the mid- and late-nineteenth century.[39]

The source does not cover the whole immigrant population. The sample only refers to immigrants getting married in Barcelona, which restricts it to young singles (or widows, who only represent a 2.7% of the sample) moving to the city. Consequently, few deductions can be made about family strategies. It has already been argued that most migrants were young single males because the costs of migration for them were lower, and therefore the bias that the sample might have is reduced. There is, however, another limitation: marriage can be assumed to involve a permanent link to the city and a sign of settlement, so that migration hereafter refers to permanent migration, unless otherwise stated. Immigrant women have been included, although with few exceptions no occupation is provided for them. Table 5 shows the region of origin and the occupational sector of immigrants in Barcelona.

[39] E. Camps, *La formación del mercado de trabajo*.

Table 5. Origin and occupation of immigrants in Barcelona (1770–1830)

REGION / SECTOR	Agriculture	Artisans	Surgeons	Trade	Construction	Army	Fishing&Navy	Professionals	Domestic service	Textiles	Others	Not available	TOTAL	%	Ic
1. - Alt Camp							1	1		2		1	5	1.67	0.78
2. - Alt Empordà		1						4		1			6	2.00	0.55
3. - Alt Penedès				1								1	2	0.67	0.51
4. - Alt Urgell										1		2	3	1.00	0.90
5. – Anoia		1	1							4		6	12	4.00	2.36
6. – Bages				1	1				1	7		4	14	4.67	1.84
7. – Baix Camp	1	1		1			1		1	4	2	10	21	7.00	2.08
8. – Baix Ebre												1	1	0.33	0.25
9. – Baix Empordà			2	2				1				3	8	2.67	0.93
10. – Baix Llobregat		2		1					1	1		2	7	2.33	0.56
11. – Barcelonès	1	1		1	2	1	1			1	1	8	17	5.67	0.52
12. – Berguedà		2	1		1	1			1	3		2	11	3.67	2.81
13. – Cerdanya			1		1							1	3	1.00	1.13
14. – Conca de Barberà		1	1					1				2	5	1.67	1.04
15. – Garraf												4	4	1.33	1.61
16. – Garrotxa								1		2		2	5	1.67	0.79
17. – Gironès			1							1		2	4	1.33	0.48
18. – Maresme	1	3	1	1			3	2		2	1	7	21	7.00	2.04
19. – Osona		1	1	1	1	1				1	2	7	15	5.00	1.41
20. – Pallars Jussà								1				1	2	0.67	0.61
21. – Pallars Sobirà												1	1	0.33	0.36
22. – Priorat	1				1							1	3	1.00	0.91
23. – Ribera d'Ebre												1	1	0.33	0.48
24. – Ripollès										1		1	2	0.67	0.37
25. – Segarra		1			1							4	6	2.00	1.55
26. – Segrià	1	1										1	3	1.00	0.35
27. – Selva		1			1		1	2					5	1.67	0.79
28. – Solsonès								1		1		2	4	1.33	1.96
29. – Tarragonès			1		3		1			2	1	1	9	3.00	1.41
30. – Urgell	1	1	3						1	3	1	2	12	4.00	2.87
31. - Vall d'Aran	1		1										2	0.67	1.58
32. – Vallès Occidental												2	2	0.67	0.54
33. – Vallès Oriental		1		3	1					1		7	13	4.33	2.22
Catalonia	7	18	14	12	13	3	8	14	5	38	8	89	229	76.3	
Rest of Spain	1	3	2		1	4		2	3	3	8	15	42	14.0	
Foreign countries	1	2		6	1	1	1		2	4	2	9	29	9.67	
TOTAL	9	23	16	18	15	8	9	16	10	45	18	113	**300**	100	
Total percentage	3	7.67	5.33	6	5	2.67	3	5.33	3.33	15	6	37.67	100		
Excluding N/A	4.8	12.3	8.6	9.6	8.0	4.3	4.8	8.6	5.4	24	9.6	-	100		

There are three main geographical divisions in Table 5: Catalonia, the rest of Spain, and foreign countries, representing 76.3%, 14%, and 9.7% of the immigrants' origins respectively. Catalonia has been divided according to *comarques*, a denomination that refers to the historical Catalan administrative regions. The first question we may want to answer is where immigrants came from. More specifically, one may want to know whether distance acted as a deterrent. Literature on internal migration has showed that distance between origin and destination, a proxy for cost of migration and for information concerning job opportunities, had a strong negative effect on migration.[40] The distance between Barcelona and the places of origin of the immigrants in the sample has been recorded from a map to scale. The resulting correlation coefficient between distance from Barcelona and the number of immigrants from a location is –0.12, which is negative as expected, but too weak to be conclusive. The two variables have been plotted in Figure 3, which allows for a better approach to the nature of their relationship.

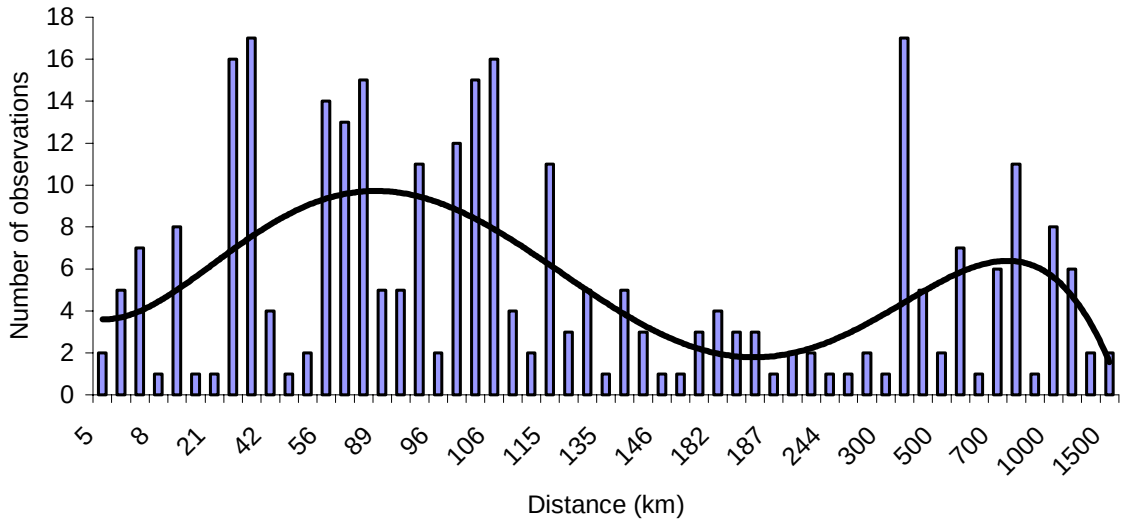


Figure 3. Distance and migration to Barcelona

SOURCES: For immigrants and their origins, marriage registers (see text). Distance has been calculated from a map to scale.

[40] Boyer and Hatton, 'Migration and labour market integration', p. 710.

Figure 3 shows a clear bimodal distribution that presents a first and higher peak around the 90 kilometres and a second and lower peak close to 1,000 km. The long distance covered by some migrants is surprising. From Table 5, we had already seen that nearly 25% of the immigrants came from outside Catalonia, a high proportion for a pre-industrial society. A recent study of migration to Paris in the nineteenth century shows a similar bimodal distribution and links it to two types of mobility, differentiated by the skill level: those migrants covering long distances, the authors say, come from a higher social status and have higher professional qualifications.[41] Among those who come to Barcelona there are traders, army officials or qualified artisans. But we also find agricultural workers and domestic servants, and the confirmation of the hypothesis put forward for the case of France will need further research.

In studying migration, our main interest lies in labourers from Catalonia. In order to study Catalan internal migration it is necessary to have an indicator that allows for the comparison of the results and that shows immigration in relative terms. Therefore, an intensity coefficient (*Ic*) as defined by Enriqueta Camps has been chosen to indicate the presence of Catalans in Barcelona.[42] The coefficient is calculated as follows:

$$Ic = (Ir/Ps) / (Pr/Pc)$$

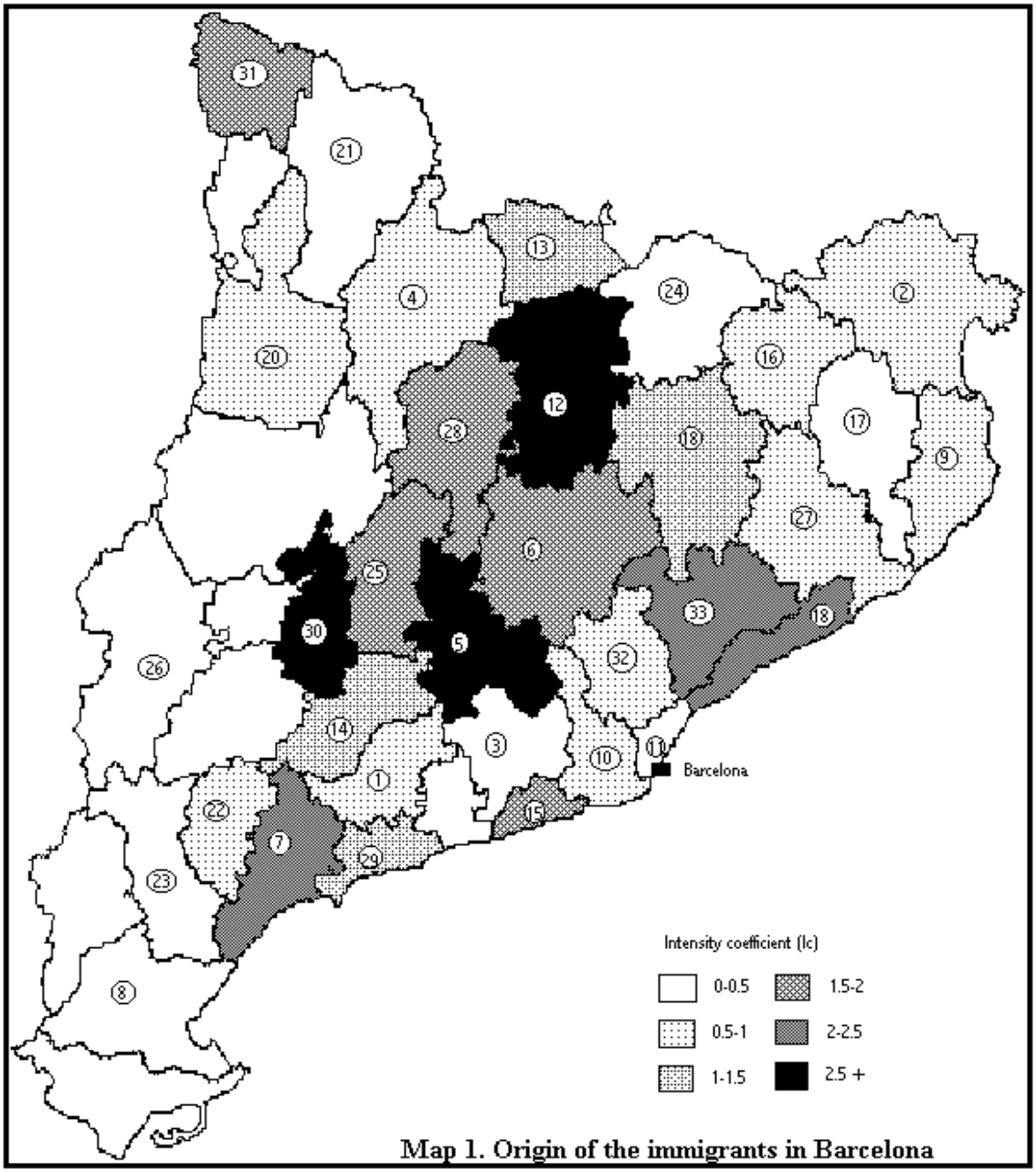
Ir is the number of immigrants from the region *r* found in the sample, P*s* is the population of the sample, and *Pr* and *Pc* are the population of the region *r* and of Catalonia according to the census of 1787. The first two are data shown in Table 5. The population for each region has been calculated adding up the data for individual villages in the census of Floridablanca (1787),[43] which provides the figure for the total population of Catalonia. When *Ic* equals 1, the population of the region is equally represented in Barcelona and in Catalonia. When *Ic* is bigger (smaller) than 1 it indicates that the immigrate population from a specific region is more (less) than proportionally represented in Barcelona. The intensity coefficients for the Catalan regions are drawn in Map 1, from which we can infer some characteristics of the type of immigration in Barcelona.

[41] Bourdieau et al., 'Migrations et transmissions inter-générationnelles'.

[42] Camps, *La formación del mercado de trabajo,* p. 247.

[43] Iglésies, *El cens del comte de Floridablanca*.

Map 1



Map 1. Origin of the immigrants in Barcelona

The area showing higher intensity coefficients, which corresponds to Central Catalonia, is the zone where rural industry was concentrated. The proportionally high presence of immigrants from this zone can be explained, on one hand, by the easier access that their inhabitants had to sources of information on job opportunities in Barcelona, since the city merchants often travelled there to bring raw fabrics or pick up the manufactured ones, as well as to find new workers. It was relatively easy for the inhabitants of these rural zones to communicate personally with potential employers. On the other hand, the protoindustrial character of these areas gave advantages to their inhabitants as potential migrants, for it provided the training and skills that might allow them access to better-qualified jobs. These zones showing higher outmigration match with the areas with a higher number of wool looms according to a survey carried out in 1764,[44] and these zones would also be, later in the century, prime producers of cotton.[45] Moreover, if one looks again at table 5, it can be observed that the sector of origin of the higher proportion of immigrants is textiles, which accounts for 15% of all the immigrants recorded or 24% of those for whom an occupation is known. Manufacturing seems to be, therefore, the main sector of origin of the migrant population.

The results found are not contradictory with the outcome of labour market integration found in the previous chapter, in which it was assumed that there were movements from agriculture to urban textile industry. The nature of the source analysed here show results that only refer to permanent migrants, whereas the type of migration implicit in the model of labour market integration does not need to be permanent. In fact, due to the seasonality of agricultural tasks, it is probable that wage differentials varied according to different periods during the year, and migrations in one or another direction also followed this seasonal component.

Furthermore, it could be the case that the occupation of origin in the birthplace of the immigrants to Barcelona captured in the sample was agriculture, and that therefore sector mobility existed. This information is not available from my sources. But it is possible to have a better knowledge of the position of the migrants in their birthplaces just by looking at the occupations of their fathers. Table 6 shows in percentage terms, the occupation of the fathers of the immigrants captured in the sample, distinguishing between men and women. Clearly, the most represented sector is agriculture, which demonstrates, at least

[44] As shown in a map by Torras, reproduced in Fontana, *La fi de l'Antic Règim*, p. 70.
[45] Okuno, 'Entre la llana i el cotó'.

if looking at a previous generation, the peasant family background of urban immigrants.

Table 6. Occupation of the father of the immigrants in Barcelona (percent)

Occupation	Men's fathers	Women's fathers
Agriculture	30%	24%
Others	–	3%
Artisans	18%	22%
Surgeons	6%	3%
Trade	9%	8%
Construction	6%	3%
Army	3%	3%
Fishing & Navy	4%	5%
Professionals	9%	13%
Textiles	14%	18%

SOURCES: Archive of the Diocese of Barcelona. See text.

These results are similar to those found by Camps in her detailed study on labour and migration in nineteenth-century Catalonia.[46] One of Camps findings is that there were almost no transfers of labourers from the agricultural to the industrial sector, and that the supply of industrial labour tended to come already from manufacture, as we have seen for the eighteenth century. She establishes the probability that a peasant becomes a textile labourer around 5% in 1845–60. Nonetheless, Camps says, this hypothesis is challenged when the variable under observation is the transfer of occupations from fathers to sons: for the same period, the probability that the son of a peasant becomes a textile worker is around 40%.

More likely, due to the proto-industrial character of the regions with higher outmigration rates, in their birthplaces migrants were employed both in agriculture and in the textile industry. In the absence of better opportunities in their regions, and taking advantage of the communications with the textile merchants from Barcelona, many of them might have left to look for prosperity in the city. Changes within the textile sector may have also contributed to the exodus of

[46] Camps, *La formación del mercado de trabajo,* pp. 123–132.

proto-industrial population, for as the century advanced some phases of textile production were being concentrated in factories in Barcelona, provoking a de-industrialisation effect in some proto-industrial villages. As has been pointed out in the first chapter, the banning of the import of spun yarn in 1802 accelerated mechanisation, and this process may have contributed to increase under-employment in rural zones. Table 7 shows again percentages of the occupation of origin of immigrants in Barcelona, but distinguishing for those married in 1770 and those married in 1830.

Table 7. Occupation of the immigrants in Barcelona, 1770–1830

	1770	***1830***
SECTOR	***%***	***%***
Agriculture	5.3	3.2
Artisans	7.9	12.8
Surgeons	21.1	3.2
Trade	2.6	7.4
Construction	2.6	12.8
Army	7.9	5.3
Fishing & Navy	2.6	3.2
Professionals	5.3	5.3
Domestic services	15.8	1.1
Textiles	13.2	35.1
Others	15.8	10.6
TOTAL	100	100

SOURCE: Archives of the Diocese of Barcelona. See text

Some of the changes that can be observed along these six decades deserve attention. In the first place, there is a sharp decrease in the migrants who declare themselves as surgeons or workers in domestic service. The high proportion of surgeons recorded in the sample, which justified the creation of a separate category for them, is due to the foundation in Barcelona, in 1760, of the Royal Surgery College, which was both a regulatory body and the exclusive educational institution for surgery. Therefore, anybody who wanted to learn the profession and to acquire the status of surgeon had to come to Barcelona, which explains the increase in the flow of surgeons to the city in the years after the

creation of the College. In second place, Table 7 shows considerable increases in the flows of migrants who said that they were working either in construction or in textiles. These changes are linked to the process of urbanisation and industrialisation in Barcelona, whose economy had been recovering during the 1820s from the crisis of the beginning of the century and from the War of Independence (1808–1814), and was following a growth path that had to reach its maximum during the second half of the century. It may be assumed, therefore, that the figures of immigrants of both sectors kept rising in the following decades. Growth was a *pull* factor that attracted workers to the city. However, the increase in the flow of textile labourers also reinforces the hypothesis put forward above on the deceleration of growth in many proto-industrial zones at the beginning of the nineteenth century, which might have acted as a *push* factor in rural areas. Many industries in these areas could not recover from the disruption to foreign demand caused by the war against England and the damage of the War of Independence. In La Anoia, for example (region number 5 in the map), the number of workers employed by the wool industry fell by half between 1770 (4,000 labourers) and 1799 (2,130).[47]

For many rural regions industrialisation brought, on one side, the advantages of additional earnings through the appearance of small manufactures and the downward pressure on resources that this meant. However, the population growth that was triggered by proto-industrialisation was later faced with stagnating or decreasing proto-industrialisation, and the younger generations in rural areas were forced to migrate to urban industrial centres because they could not find employment in their birthplaces. The manufacturing origin of urban immigrants was not a characteristic exclusive to Catalonia. In Germany, for example, a prominent feature of areas of heavy emigration was also a well-developed cottage linen industry.[48]

The results obtained from the marriage registers show that wages alone, acting as pull factors for rural migrants, cannot fully explain why many labourers were leaving their birthplaces in search for other opportunities in the city. Unemployment or underemployment in rural zones where there was a mixed agricultural and industrial economy may have acted as a strong push factor. Moreover, there is evidence that many of these labourers could be trying to escape from a position of poverty. A study of the most important poor relief institution in Barcelona, which took in people from all over Catalonia, shows that the occupation of origin of most of those seeking assistance was the textile industry

[47] Torras i Ribé, 'Trajectòria d'un procés d'industrialització frustrat', p. 178.

[48] Hatton and Williamson, *The Age of Mass Migration*, p. 16.

(20% for the period 1762–1805, ahead of 17.50% who declared themselves agricultural labourers), and the proportion had been increasing over time: the presence in this institution of textile workers, or of women whose fathers were so, rose from 16.5% before 1773 to 26.3% in 1805.[49]

If we turn back to Figure 1 in the first chapter, it appears that the rural areas (where agricultural and manufacture activities cohabited) were those experiencing the biggest shock to their traditional structures in the long way to industrialisation. Rural labourers were trapped between the requirements of an expanding urban economy and the links to the land that had traditionally been their means of subsistence. On one hand, this just meant increasing choices for the inhabitants of proto-industrialised areas. It is clear that the weakening of craft guilds and the expansion of job opportunities in Barcelona allowed some rural labourers to choose to leave their villages in search for promotion prospects in the city, as the analysis of wages has reflected. Moreover, as Pat Hudson and Stephen King have suggested, commercial domestic textile manufacturing in rural zones offered employment to people who would otherwise have been forced to migrate, and therefore it helped to fix people on the land and within their established communities.[50] On the other hand, the acceleration of mechanisation, and the slow destruction of established proto-industrial forms of manufacture in favour of urban concentration, acted as *push* factors of a type of migration that does not seem prompted by choices but by constraints, as indicated by data obtained on immigrants in Barcelona.

[49] Carbonell, *Sobreviure a Barcelona*, pp. 196–9.

[50] Hudson and King, 'A Sense of Place'. The authors' analysis is based on the study of two manufacturing townships, Sowerby and Calverley, and the cut off point for the study are the 1820s because it is precisely this decade that marks an acceleration in urban concentration of manufacture.

4. Conclusions

In this paper the goals have been to describe labour market organisation and to provide and use new data for the analysis of labour market integration and labour flows in pre-industrial Catalonia at the turn of the nineteenth century, during the decades leading to the first Industrial Revolution.

The first chapter provided a framework within which labour markets in pre-industrial economies could be understood and studied. In particular, it stressed the need to differentiate exclusively agricultural rural areas from rural zones broken up into rural agriculture and rural manufacture. The nature and direction of labour flows (between regions or between sectors) has also been given a determinant role in the formation of labour supply. Then I focused on labour's reward in two sectors, agriculture and industry. This comparison has been possible due to the calculation of wage figures for unskilled industrial labourers in Barcelona from primary sources, a series that was previously not available. The comparison of both nominal and real wages has raised several issues. It has shown that in spite of high demographic and food price growth rates, nominal wages increase was sufficiently large to maintain real wages stable in the long-run, with the implications this had for the population's standard of living and the formation of domestic demand. It has also suggested the existence of both nominal and real wage gaps between farm and city, which would reflect a labour market disequilibrium. Inaccuracy of data, has been argued, might account for some of these gaps, but too little was known about labour market functioning.

The second chapter carried out a test for labour market integration in Catalonia using wage data previously described and an economic model developed by Boyer and Hatton. The picture arising from labour market study in industrialising Catalonia is not one of segmented markets, immobile workers and inefficient wage gaps. Instead, the results suggest labour market integration, and the specific results of the economic model find a historical explanation once they are analysed. The findings here support the idea that labour markets worked before the advent of the Industrial Revolution.

In the third chapter, I have resorted to marriage registers to approach the origin of the immigrants in Barcelona, both geographical and occupational. The results point to the importance of proto-industrial zones in understanding the regional set of changes brought out by industrialisation. It has been argued that demographic and economic changes did act, in the long run, as *push* factors in these areas, and forced people to migrate to the city, where they did not always

reach a better social status. These are conjectures that need further research and require more supporting arguments, which are beyond the scope of this paper.

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