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Spanish Land Reform of 1932**

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The question of land access and the Spanish Land Reform of 1932

Abstract¹

Spanish land reform, involving the break-up of the large southern estates, was a central issue during the first decades of the twentieth century, and justified for economic and political reasons. We employ new provincial data on landless workers, land prices and agrarian wages to consider if government intervention was needed because of the failure of the free action of markets to redistribute land. Our evidence shows that the relative number of landless workers decreased significantly from 1860 to 1930 before the approval of the 1932 Land Reform during the Second Republic (1931-36). This was due to two interrelated market forces: the falling ratio between land prices and rural wages, which made land cheaper for landless workers to rent and buy land plots, and structural change that drained rural population from the countryside. Given that shifts in factor prices were helping workers gain access to land, the economic arguments for reform by the 1930s remain unclear.

Keywords: land markets; structural change; land prices; landless peasants.

JEL Codes: N54; N53; Q15.

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¹ Jordi Domenech, Manuel Henriques, Markus Lampe and Pilar Nogues Marco make valuable comments. Earlier versions of this paper were presented at Agrilmetrics Conference (Zaragoza) and Iberometrics Conference (Oporto). The usual disclaimer applies.

Two views of land reform dominate the literature today.² On the one hand, advocates of a 'government-initiated' land redistribution argue that the free operations of land and tenancy markets in developing countries are not conducive for social equity or economic efficiency. Powerful landowners employ their capacity to coerce and distort markets to extract economic rents from tenants, peasants and labourers, and land sales simply exacerbate inequality and rural poverty by concentrating land in the hands of the wealthy few.³ According to this view, markets observed historically across countries have often failed to reduce the skewed land distribution, and a political reform is required to redistribute land to small farmers to increase both overall production and welfare.⁴ By contrast, an alternative literature is sceptical of this kind of redistributive intervention because it often worsens social conflicts or fails to improve efficiency and social equity.⁵ These policymakers and academics prefer instead 'market-oriented reforms', expecting that a well-functioning land market will generate a 'spontaneous' redistribution of land from inefficient to efficient producers.⁶

These two alternatives have contradictory views on the scope for land redistribution. For those favouring a government-initiated land reform, the objective is the creation of a society of small family-owned farms which allows owners to be independent of labour markets. By contrast market-oriented reformers prefer workers to have access to land ownership or tenancy, but without necessarily abandoning labour markets. In particular, they consider that the allocation of time between self-cultivation and labour market participation is spontaneously and efficiently produced by the free action of rural factor markets, while the ownership of even a small plot of land benefits peasants because it can be used as credit collateral and act as insurance during downturns.

² Although writers as diverse as Arthur Young in the late eighteenth century and Lenin at the beginning of the twentieth century associated agrarian progress with large estates, many development economists today argue that the lower transaction costs associated with using labour make the family farm more competitive in most forms of agriculture. Interestingly, family farms are possible under both direct land ownership and different types of tenancy (Allen and Lueck, *The Nature of the Farm*).

³ Deininger, 'Land markets'.

⁴ Binswanger et al., 'Power, Distortions, Revolts.'

⁵ De Janvry et al. 'Access to Land' and Otsuka, 'Efficiency and equity'. Empirical studies suggest that market-orientated land reforms have been more successful than government initiated land redistribution in several developing countries (Barham et al., 'Agro-Export production'; Deininger et al., 'Comparing Land Reform and Land Markets'; Deininger et al. 'Determinants and Consequences').

⁶ Market-oriented reforms include the better definition of property rights, the elimination of restrictions to the free operation of factor markets, the development of credit markets for small peasants, and other similar measures to enhance market participation.

The European historical experience is illuminating for the current and the historical debate because attempts were made to implement both types of reforms. In Western Europe, market-oriented reforms predominated and landless workers gained access to land over the early decades of the 20th century. By contrast, government-initiated reforms were widespread and land redistributed among landless peasants in Eastern Europe.

Like other Western European countries, the Spanish countryside experienced a classical market-oriented land reform during the last decades of the eighteenth century and the first half of the nineteenth century with the so-called Liberal land reforms. However, from the early decades of the twentieth century, there were political demands for a government-initiated reform to redistribute land from large landowners to landless peasants, which culminated in legislation during the Second Republic (1931-9).⁷ Broadly speaking, this land reform was justified on economic and political grounds. Specifically, it was argued that land markets hindered economic development given that they did not work properly, and that large landowners enjoyed excessive political power and subverted democracy.

This article considers to what extent agrarian markets allocated land to landless workers in the decades prior to the Civil War.⁸ The Spanish debate has been hampered by the absence of information on access to land, and this paper is the first that provides quantitative evidence to explain long-run changes in the numbers and regional distribution of landless peasants.⁹ It shows that the number of landless workers halved from about two million to less than one million between 1860 and 1930, while the numbers of farm tenants and owners increased from 1.6 to 2.2 million people over the same period.¹⁰ Landless peasants declined in relative numbers from 56 to 30 per cent of agrarian workforce between 1860 and 1930.

This paper also shows that these substantial changes in the Spanish countryside were not driven by a government-initiated land redistribution program, but rather were the result of two interrelated market forces that were also active in other Western European countries. On the one hand, many landless peasants became land owners or tenants. Changes in relative factor prices, namely the ratio between rural wages and land prices, were behind this 'genuine' process of land access. Several factors could account for the decrease in relative land prices, including a substantial expansion of farm land; the first globalization,

⁷ For the evolution of the Spanish agriculture during the period, see Clar and Pinilla, 'The contribution of agriculture' and Simpson, *Spanish agriculture*.

⁸ Therefore, we do not consider the political reasons for land reform.

⁹ Two different estimates using slightly different methodologies but with similar results exist for Andalusia: Acosta Ramírez et al., *Socialismo y democracia*, p.56; Grupo de Estudios Agrarios, *Propiedad y explotación*, p.86.

¹⁰ Due to data constraints, Galicia, the Basque Country and the Canary Islands, regions that had more landlords and tenants than other parts of Spain, are excluded. Furthermore, data does not allow us to separate between different forms of tenancy and ownership.

which increased competition in national and export agrarian markets; the action of the Engel's law (namely the decline, in relative terms, on the amount of money spent on farm products as incomes increase); and structural change, which increased the ratio between wages and land rents. On the other hand, structural change favouring industry and services, urban growth, and foreign and internal migrations reduced the size of the rural population and number of landless workers. However, without the more efficient and active land market created by the liberal land reforms, none of all these external forces could allow landless peasants to become tenants or landowners.¹¹

The intensity and the causes of this dramatic transformation varied over time and space. The rate of growth in the number of owners and tenants slowed over the seventy years, even dipping marginally in the last two decades, while the drop in landless workers accelerated over the same period. Interestingly, there were substantial differences between those provinces that would be affected by the Republican land reform in the early 1930s and those that were not.¹² In the land reform provinces the rate of growth in the number of tenants and landowners accelerated over the entire period, while the opposite holds true for the non-reform provinces. In the case of landless workers, the two regions also followed different paths: in the non-reform provinces, the numbers of landless workers decreased over the entire period, while they only began to fall significantly during the period from 1910 to 1930 in the land reform ones. Migration and structural change were much less important in the land reform provinces than in the rest of Spain, while in several land reform provinces (mainly those situated in Western Andalusia and Extremadura), the large size of mean plots made access to land extremely difficult for landless peasantry.

The remainder of the paper is organized as following. The next section looks at the historical experience of land reform in Europe and Spain. Section three provides basic information about the evolution of the Spanish rural economy during the period and presents new evidence on the number of landowners, tenants and landless workers. The following section discusses the reasons for the fall in the total of landless workers employing evidence on relative factor prices and a novel decomposition method. Section five analyses why landless workers were so pervasive in Extremadura and western Andalusia. The last section concludes.

I

Europe experienced substantial economic growth and underwent profound structural change over the half century prior to the 1930s Depression. The switch from a traditional Malthusian economy, where a growing population led to rising food prices, higher farm rents and depressed wages to that of an

¹¹ Land sales and prices responded quickly to market stimulus and land prices were driven by fundamentals, suggesting that Spanish land markets were efficient and competitive. Carmona and Rosés, 'Land markets'.

¹² The list of provinces under the land reform is discussed in section 3.

industrial society which combined high wages (produced by economic growth and emigration) with cheap imports of foods and beverages, posed significant new challenges to the farm sector.¹³ In Western European countries that embraced free trade and industrialization, land rents fell rapidly and landless workers either abandoned the sector entirely, or found it easier to rent and buy land.¹⁴ In Eastern European countries, change was more limited, in part because industrialization was slower, but also because governments often protected landowners more by rising tariffs, slowing their need to make adjustments. However, during the interwar period, many governments in Eastern Europe initiated significant land reforms, usually for political reasons.¹⁵ Given the extent of these transformations, it would be surprising if Spanish landownership did not also change during this period.

The Spanish governments, as elsewhere in Europe, had a long history of intervention in land markets. In particular, the so called 'Liberal land reforms', stretching from the late eighteenth to the early twentieth centuries, can be considered as a prototypical market-oriented reform which aimed at defining better private property rights and eliminating restrictions to the free operation of product and factor markets.¹⁶ Feudal rights were abolished, together with restrictions on the grain trade, labour contracts and sale of land (strict family settlement). Many of the old forms of land tenancy that complicated the definition of property-rights were simply abolished and private property established. Furthermore, to alleviate budgetary problems and provide for military and infrastructure expenditure, successive governments auctioned off Church and municipal properties.¹⁷ In all, according to one estimate, between 1766 and 1924, some 18.4 million hectares of state, church and municipal lands, equivalent to 36 per cent of Spain's area, changed hands.¹⁸

¹³ See, O'Rourke and Williamson, 'From Malthus to Ohlin'; and Denison and Simpson, 'Agriculture'.

¹⁴ On the British Isles see, Beckett and Turner, 'End of the Old Order?'; Douglas, *Land, People and Politics*; Guinnane, *The vanishing Irish*, p.41; Thompson, *English Landed Society* and 'The land market, 1880-1925'. For the Western European countries see Doving, *Land and labor*, p.122; Koning, *The failure of agrarian capitalism*, pp.81-3; and Van Zanden, 'The First Green Revolution', p. 216.

¹⁵ See, Jörgensen, 'The Inter-War land Reforms', and Roszkowski, *Land Reforms*.

¹⁶ García Sanz. 'Introducción'; Peset, 'Dos ensayos'.

¹⁷ There is considerable debate about the economic and social effects of the sale of common lands (Beltran Tapia, 'Commons' and 'Social and Environmental Filters'). This absence of land redistribution was interpreted negatively by the literature (Carrión, *Los latifundios*, 75; Costa, *La fórmula*; Fontana, *La Desamortización*; Garrabou, 'Derechos de propiedad'; Nadal, *El Fracaso*; Pérez Picazo, *El Mayorazgo*; Robledo, *Economistas y reformadores*; Ruíz Torres, 'Del Antiguo al Nuevo Régimen'; Villares, 'Agricultura'), but recently this view has been challenged (Carmona and Simpson, *El laberinto*).

¹⁸ Pan-Montojo 'Los Liberalismos y la Agricultura', p.139; Rueda, 'La sociedad rural', p.636. While this paper helps to identify the aggregate contribution of these changes on the numbers of landless, it cannot comment on the contribution of individual policies.

Yet despite the significance of these changes, and a substantial secondary literature that documents them, there is little consensus among specialists as to their impact on the growth of agricultural production or, and what concerns us here, changes to land distribution. Reformists from the turn of the twentieth century started to demand government intervention to break up the *latifundios* (large estates) which they were regarded as obstacles not just to increasing farm output, but also for economic development. According to Pascual Carrión, arguably the most influential reformer in the early 1930s, the large estates were poorly cultivated, and landowners charged high rents and paid starvation wages due to their monopolistic power as, in southern Spain, just 0.6 per cent of holding accounted for 52 per cent of the total area, and 38 per cent of taxable income, while those of over 250 hectares represented 41 per cent of the total area and 28 per cent of taxable income.¹⁹ The poor statistical information available to the Republican governments made it difficult for them, as it has done for historians, to understand long-run changes in landownership. However, recent studies suggest that, as in other European countries, landownership was becoming less concentrated over time, although the literature fails to identify between the relative importance of government legislation and movements in factor and commodity prices in explaining change. López Ontiveros and Olmo, for example, show that the average size of *latifundios* in the province of Cordoba declined from about 2,000 hectares in the mid eighteenth century to 1,300 hectares a century later, and falling to 700 hectares by the 1930s.²⁰ At the other end of the scale there is also some evidence that the numbers of small holders increased from the mid-nineteenth century, although the loss of common rights inevitably made some poorer.²¹

During the first years of the Second Republic between 1931 and 1933, major reforms affecting labour and land markets were approved by parliament.²² This legislation increased rural labour's bargaining power by providing for collective bargaining in the countryside and obliging farmers to hire a minimum number of workers,²³ while tenants obtained rent reductions and security of tenure unless they were in arrears with their payments. There was also a major attempt at land reform, which promised to settle large numbers of landless workers through compulsory land purchases by the state. Only 4,309 families had being settled on 24,203 hectares by the end of 1933.²⁴ The reasons for the failure of land reform have been widely debated in the literature, but not the economic rationale for carrying out such a

¹⁹ Carrión *Los latifundios*; Malefakis, *Agrarian Reform*, p. 19.

²⁰ López Ontiveros and Olmo, *Propiedad de la Tierra*, p. 45.

²¹ Acosta Ramírez et al. *Socialismo y democracia*; Bernal, *La propiedad de la tierra*; González de Molina, 'Minifundismo y gran propiedad' and 'La tierra y la cuestión agraria'; Fernández Paradas 'Los repartos'.

²² Malefakis, *Agrarian Reform*; Robledo, *Economistas y reformadores* and 'Política y Reforma Agraria'.

²³ This measure led to rural conflict between local peasants and temporary migrant workers. See, Domenech, 'Rural Labour Markets'.

²⁴ Malefakis, *Agrarian Reform*, p.281

measure in the first place.²⁵ In particular the question of why market forces, which had been supposedly effective in allowing landless workers access to large estates in other western European economies but not in southern Spain, has been totally ignored.

II

Table 1 offers information on the amount of arable land, male workers (in full time equivalent – hereafter FTE) in agriculture, and land in hectares per FTE, to help understand long-run changes in the Spanish countryside.

[TABLE 1]

Both the area of cultivated land (from 11.4 to 22 million hectares) and the number of agrarian workers (from 2 to 4 million) practically doubled between 1800 and 1931. During the first half of the nineteenth century, the expansion of cultivation took place mainly on wasteland and forestry but from the 1860s it also began to replace pastures, which decreased from 8.8 million hectares to about 7 million by 1931. Both the area of olives and vines increased from the early nineteenth century, but while prosperity in viticulture peaked in the late 1880s and the area then fell because of phylloxera, the extension of olives continued to grow until the 1930s. Interestingly, the ratio between cultivated land and agrarian workers was highest in both 1800 and 1931, and experienced a slow decline over the nineteenth century until the 1890s, followed by a relatively fast recovery. The combination of more land per worker and higher output per hectare led to labour productivity increasing by 51 per cent between 1890 and 1930.²⁶

What happened to land ownership during this period of dramatic changes in the Spanish countryside? As Spanish historical sources offer only limited information, it has been necessary to calculate the number of landowners, tenants, and landless workers.²⁷ The 1860 population census allows

²⁵ The classical reference is Malefakis, *Agrarian Reform*. Authors have attributed the failure of the land reform to landlord resistance, bottom-up mobilization of the landless peasantry, revolution, and civil war.

²⁶ Simpson, *Spanish agriculture*, p.26.

²⁷ As we have already noted, our sources do not allow us to separate between owner and tenants. However, there are several reasons to think that this does not invalidate our analysis, as incentives for tenants differed strongly to those of landless workers. First, tenants shared more characteristics with owners than with landless workers since they had direct control over production and the organization of work. Specifically, tenants (like owners) could run family farms, own trees, work animals, machinery and livestock, as well as use their harvest as collateral to access credit markets. Second, private ownership by 1928 accounted for two-thirds of all Spanish land, and the different forms of tenancy just a third (Carmona and Simpson, *El laberinto*, pp. 63-64). Third, tenancy was sometimes the first step on the “farm ladder”, and therefore tenants were often younger than landowners (Wright, ‘American Agriculture’). Finally, research on developing countries shows that tenancy helps reduce rural poverty and increase rural

the possibility to compute directly the numbers of landowners and tenants in each province, but the remaining censuses (1890, 1910 and 1930), give only the total numbers employed in agriculture.²⁸ Information is available however for the total number of landless workers for the year 1933 in the peasants survey (*Censo de campesinos*)²⁹ conducted by the Republican authorities. As the *Censo de campesinos* does not cover all judicial districts, the number of landless peasants in each province is calculated by extrapolating the information that is available, to other villages in the same district where it is missing. This process allows an estimate for landless peasants for all provinces in 1933 except the Basque Country, Navarre, Galicia and the Canary Islands (which are excluded from the calculations). The number of owners and tenants in 1930 is then calculated by deducting our estimate for landless workers from the total agricultural workforce.³⁰

For 1890 and 1910 a more elaborated method is employed. Land tax records give us the quantity of taxpayers (owners and tenants) for the years 1855, 1890-91, 1907 and 1930.³¹ However, given the characteristics of this historical source, a single landowner or tenant could be counted several times in the statistics if they owned plots in different municipalities, a problem which was especially acute in those provinces where land was heavily fragmented, or where there was a high density of municipalities.³² To correct for this bias, we divide the ratio between the number of owners and tenants and the (observed) number of taxpayers by province in the years 1860 and 1930. We interpolate linearly these two correction coefficients for 1890 and 1910. Then, we estimate the number of landowners and tenants for 1890 and 1910 by multiplying these correction coefficients for the number of taxpayers in 1890-91 and 1907

wages (Besley and Burgess, 'Land Reform'). The expansion of tenancy therefore can be seen as strongly associated with rural progress and, sometimes, with the expansion of family farms.

²⁸ Prados de la Escosura and Rosés, 'Human Capital and Economic Growth'.

²⁹ The data is published in Espinoza Guerra et al., 'Estructura social'.

³⁰ This method is likely to bias upwards the number of landless peasants: first, because the government officials registered landless peasants in places where they were more abundant (so the data is particularly detailed and rich for Southern Spain) and, second, because workers did not have register that they owned land. This resulted in several provinces that the initial version *Censo* was deemed unreliable by the Madrid government and was later revised downward (we use in all our calculations the latest available version). For these problems, see Espinoza Guerra et al., 'Estructura social'.

³¹ Taxpayers are found in *Estadística de los presupuestos*.

³² The recorded number of landowners was strongly correlated with the number and size of municipalities in any given province. The regression of the relative numbers of taxpayers (taxpayers divided by agrarian male working population) on the average area of farm land by municipality gives a coefficient of -0.4 with an adjusted R² of 0.27 and F-test of 16.83. The number of taxpayers exceeded the number of rural families in provinces where the number of municipalities was exceptionally large. This problem was relatively unimportant in the Southern Spain, as most people lived in agro-towns which made it difficult for owner-cultivators to have land plots in more than one municipality.

respectively. Finally, the number of landless workers is obtained as a residual by deleting from the agricultural workforce the estimated number of landowners and tenants.³³ The main results of our estimations are presented in table 2 and table 3 below.

[TABLE 2]

[TABLE 3]

The Republican land reform was not intended for the whole country, but rather for three provinces of Western Spain – hereafter Extremadura (Badajoz, Caceres and Salamanca), the eight in Andalusia (Almeria, Cadiz, Cordoba, Granada, Huelva, Jaen, Malaga and Seville), and three in La Mancha (Albacete, Ciudad Real and Toledo). These ‘land reform provinces’ are grouped in four regions (Extremadura, Eastern and Western Andalusia, and La Mancha), and the ‘non-land reform’ provinces in another four (Ebro Valley, Mediterranean, Northern and Central Castile).

According to our calculations, the number of Spanish farm workers with access to land as owners and tenants increased by more than half million people from 1860 to 1930 (Table 2). From 1860 to 1890, the numbers increased in every region, suggesting that following the Liberal land reforms, many workers gained access to land. This trend continues in the next period (1890-1910), except in Extremadura, and Northern Castile, where the numbers of farm workers with land access fell slightly.³⁴ In the last period (1910-1930), the number of owners and tenants fell in all regions except in La Mancha, Eastern and Western Andalusia. Therefore the *absolute* numbers of owners and tenants before the Civil War peaked in 1930. In *relative* terms, the number of owners and tenants grew in all Spanish regions during every period, even those subject to the 1932 Republican land reform. To be more explicit, by 1930, 76.7 per cent of farm workers had access to land in non-reform provinces and 61.3 per cent in reform provinces. The region with the lower proportion of landlords and tenants was Western Andalusia, but even here landowners and tenants still represented 54.4 per cent of the farm population. In other words, our data shows that it was landowners and tenants rather than landless peasants that were the characteristic features of the Spanish countryside, especially in the 1930s.

The increase in the number of landowners and tenants contrasts with that of landless workers which, over the 70 years considered here, decreased from around two million to less than one million (Table 3). The numbers fell in each period, but the most significant drop took place during the last (1910-

³³ Many landless workers, as well as small landowners and tenants, were also employed in the industrial and service sectors during some months of the year (Prados de la Escosura and Rosés, ‘Sources of Long-Run Growth’). In addition, a high proportion of workers were not attached to a particular farm but migrated in search of seasonal employment (Silvestre, ‘Temporary Internal Migrations’).

³⁴ Northern Castile was the region that most suffered from the late nineteenth century grain invasion and at the same time the phylloxera epidemic severely damaged its vineyards. García Orallo, ‘Hacienda Pública Española’.

1930), when more than half million landless disappeared.³⁵ This change is even more dramatic in relative terms, as the number of landless workers plummeted from 56 per cent of the total male agrarian workforce in 1860, to 30 per cent in 1930. Overall, this new quantitative evidence suggests that the justification for a nation-based land reform was less in the 1930s than at any time during the period under discussion.

This national picture masks important regional differences, especially in the timing of the fall in the number of landless workers. In the non-reform provinces, the decline was continuous over the seventy years, but in the land reform provinces a significant decline occurs *only* after 1910. Therefore, it is worth considering in more detail the situation of provinces subject to the 1932 land reform. In the La Mancha provinces of Albacete, Ciudad Real and Toledo, the number of owners and tenants increased significantly, from 70,000 people in 1860 to 180,000 by 1930, while the numbers of landless labours fell from 135,000 to 83,000 over the same period, and agricultural workers with access to land increased from 34 per cent of the total in 1860 to 68 per cent in 1930. A similar situation can be observed in Eastern Andalusia (Almeria, Granada, Jaen and Malaga), where landless workers accounted for 58 per cent of the agrarian workforce in 1860, but only 35 per cent seventy years later.

The situation in Extremadura (Badajoz, Caceres and Salamanca) and Western Andalusia (Cadiz, Cordova, Huelva and Seville) was less favourable for landless workers. In Extremadura, the numbers of owners and tenants decreased slightly between 1890 and 1930, but the proportion of landless never fell below 40 per cent, although absolute numbers plummeted from 170,000 to 127,000 between 1910 and 1930. Western Andalusia was the region where the landless problem was greatest, reaching 45 per cent in 1930, and the province worst affected was Cadiz, with two-thirds of the agrarian population without land. However, and in contrast to Extremadura, the number of landless workers fell sharply from 1890 to 1910 but not between 1910 and 1930. Surprisingly, more than half of all the provinces under the land reform law had experienced a substantial fall in the numbers of landless workers between 1860 and 1930, suggesting that rural markets were allowing farm workers access to land in most areas of Spain.

III

A simple analytical framework can show how market forces and institutional reforms shaped access to land in Spain from the Liberal reforms to the 1930s. The fact that previous research has shown the competitive nature of Spanish rural labour and land markets³⁶ during the period considered here

³⁵ Spain's population grew from 17.5 to 23.5 million between 1890 and 1930.

³⁶ On the one hand, Rosés and Sánchez-Alonso, 'Regional wage convergence' and Silvestre, 'Internal migrations' showed that labour markets were competitive and responded to urban labour demand stimulus, while on the other hand, Carmona and Rosés, 'Land markets' showed that Spanish land markets

allows a perfect competition model of rural labour markets to be used rather than an imperfect competition model.³⁷

[FIGURE 1]

Figure 1 illustrates the effects of demand and supply shifts in Spanish agrarian labour markets: the x-axis presents the relative quantities (measured in hours or FTE male workers) of the owners and tenants, and landless (wage) workers ($\text{Quantity}_{\text{OT}}/\text{Quantity}_{\text{LL}}$), while the y-axis shows the relative income of the two groups (\mathbf{r}/\mathbf{W}). Labour and land markets are connected by rents, with relative rent increases (decreases) being translated into land prices / wage ratios increases (decreases).³⁸

In this analytical framework, relative supply shifts between owners-tenants and landless workers are directly linked to changes in the supply of land. The initial situation for the land market is before the Liberal reforms, when institutional constraints allowed only a small part of the total available land to be traded, and hence supply (\mathbf{S}) for owners and tenants was quasi-fixed and inelastic. In this situation, any demand shift would result in substantial price increases. For example, in the absence of the reforms, the important population growth of the first half of the nineteenth century and the growing international demand for Spanish foodstuffs, is likely to have shifted demand upwards (\mathbf{D}'), resulting in large increases in remuneration for landowners with equilibrium at point 1.³⁹ With the reforms however, the amount of land that could be bought and sold increased significantly, allowing supply to move to the right (\mathbf{S}'), and facilitating the increase in the cultivated area from 11.4 million hectares in 1800 to 16 million in 1860 (Table 1). Land became less inelastic since agrarian land expansion followed market forces.⁴⁰ For this reason, we hypothesize that agrarian demand shift did not result in large rents rises, but that these increased only slightly or maintained their values (equilibrium at point 2), despite the fact that the agrarian

were competitive, regionally integrated and land prices mimic movements in agrarian prices (that is, they were efficient).

³⁷ However, using any versions of the standard imperfect markets of the Harris-Todaro model for developing economies, strengthens, and not weakens, our reasoning. In the Harris-Todaro model, rural out-migration occurs as a consequence of the gap between the actual agrarian wage and the expected urban wage (for example, Harris and Todaro, 'Migration' and Brueckner and Zenou, 'Harris-Todaro'). With a rural labour market failure (such as a labour demand monopsony), the wage gap increases, and the amount of rural out-migration required to equilibrate the market becomes greater. Similarly, rural land market failures reduce rural workers' incomes, encouraging larger migration outflows to equilibrate markets. Access to land is therefore in this model is an alternative mechanism to rural exodus.

³⁸ Rent and land prices were fully integrated in Spain during the period. Therefore, it was a unitary elasticity between rents and land prices (Carmona and Rosés, 'Land markets').

³⁹ Pérez Moreda, 'Spain's Demographic Modernization' and Simpson, *Spanish agriculture*, ch.3.

⁴⁰ Carmona and Simpson, *El laberinto*.

workforce grew faster than the expansion in cultivation (agrarian FTE male workers grew from about 2 million to 3.6 million). In the second half of the nineteenth century, especially from the 1890s, land demand shifted downwards (**D''**) due to several concomitant factors including increasing foreign competition in agrarian markets, rural out-migration, and the action of the Engel's law.⁴¹ At the same time, the expansion of land under cultivation continued and land supply shifted to the right again (**S''**). In fact the area of cultivated land grew from 16 to 22 million hectares between 1890 in 1931 (Table 1). Consequently, one can confidentially expect that the relative price of land to decrease substantially (equilibrium at point **3**).

According to this analytical framework, a substantial decrease in the ratio between land prices (rents) and wages during the first third of the twentieth century is likely to be observed.⁴² The following figures show the evidence:

[FIGURE 2]

Figure 2 shows that relative land prices fell significantly over the period, both when access to land is measured by dividing land prices by male wages, and when divided by an estimated mean family income. With both measures, the minimum was reached in 1929, with ratios halving. This suggests that movements in factor prices were helping landless workers to rent and buy land across Spain over almost all the period.

[FIGURE 3]

[FIGURE 4]

Figures 3 and 4 give a more detailed picture of the evolution of the ratio between male agrarian wages and land prices, first in the non-reform provinces and then the land reform ones. The two figures share the same declining trend, but some regional differences merit further consideration. In the case of the non-reform regions, the case of Northern Castile is interesting as it was the region with the lowest ratio but did not experiment any improvement during the period. By contrast, both the Mediterranean region and Ebro Valley experienced substantial gains, with the ratio of the latter matching that of Northern Castile by the end of the period. The same declining trend is observable among the labour

⁴¹ Gallego and Pinilla, 'Del librecambio'; O'Rourke, 'The European Grain Invasion'; Simpson, *Spanish agriculture*, caps. 9 and 10; Sánchez-Alonso, *Las causas de la emigración española*; Silvestre, 'Internal migrations'. The influence of Engel's law is observed on the evolution of relative agrarian prices, with the ratio between the agriculture deflator and the GDP deflator growing from 1860 until 1885, and then falling until the Second Republic. The calculations are available from the authors and based on national accounting data. Prados de la Escosura, *El progreso de España*, cuadro A.4.6, pp. 356-362.

⁴² Unfortunately, data on land prices is of poorer quality or unavailable for earlier periods, and the analysis is restricted to the 30 years before the Second Republic.

reform provinces, although the minimum ratios were reached earlier, in 1919, and then maintained during the remaining years of the series. In all cases the falling trends are impressive. For example, in Western Andalusia the average number of male work days required to buy the mean plot declined from 1503 in 1908 to 674 by 1919 (a two-thirds reduction in just a decade), and in Eastern Andalusia, the ratio falls from 998 days in 1908 to 384 days in 1919. Similar trends are observable in La Mancha and Estremadura.

[TABLE 4]

Table 4 completes the information furnished in Figures 3 and 4, and shows several alternative measures of land access for the two periods, 1908-1919 and 1920-1931. The first column displays the total number of male working days necessary to accumulate sufficient money to buy the average sized plot; the next, the number of days needed to purchase a single hectare; and finally the amount of family working days required to buy a plot. At the extremes, in 1908-1919, more than 1,200 work days was needed for the average plot in Western Andalusia, against just 242 days in Northern Castile. However, many small plots were sold in all regions, and the most days required to purchase a single hectare was the Mediterranean (404 days) and the least in La Mancha (113). Daily family income is computed by assuming that a family is formed by four persons (a couple and two children) and under the assumption that wives worked half the hours than males; and children a quarter. Western Andalusia again is the region where the cost of a plot was highest, requiring close to 900 days, against 232 in Ebro Valley, and 163 in Northern Castile.

In the following period (1920-1931), the situation improved for workers everywhere. By 1931 a family needed to work only two-thirds of what it had done 1908 to buy land, and the fact that rural wages increased during the Second Republic while farm-gate prices were stagnant or fell, suggests that the downward trend continued after 1931.⁴³ However, Western Andalusia and Estremadura remained as the two regions where average land plots were the most expensive (about 1,100 days of male work in Western Andalusia and more than 600 days in Estremadura).

It is interesting to determine whether the decline in landless workers observed in Tables 2 and 3 occurred because they moved up the farm ladder by becoming tenants or owner-occupiers, or whether labourers left agriculture altogether in search of employment in the industrial and service sectors, or emigrated. The first case requires either that the supply of new land for cultivation increases faster than the agrarian population as happened between 1890 and 1931 (Table 1), or existing farms were subdivided among several owners or tenants. This sub-division is not independent from the adoption of new products and new forms of agrarian production which were more labour intensive.⁴⁴

⁴³ Palafox, *Atraso económico y democracia*.

⁴⁴ For the increase in subleasing and sharecropping with cereals in the 1920s in Andalusia (Naredo et al., 'La crisis de las aparcerías' and for Estremadura (Carmona and Simpson, 'Los contratos de cesión').

A series of back-of-the-envelope calculations are made to disentangle the contribution of each of these two forces to explain the growth in workers who made the transition from landless to owners and tenants. Under the assumption that the propensity to leave agriculture is identical with individuals regardless of whether they had access to land or not, the “net” reallocation of landless workers between T and T-1 ($N_{T,T-1}$) can be decomposed in:

$$(1) N_{T,T-1} = E_{T,T-1} + [\theta_{T-1}QL_{T,T-1}],$$

where $\theta_{T-1} = QLL_{T-1}/QL_{T-1}$ is the proportion of people without access to land (QLL) over total agricultural employment (QL). The second term ($E_{T,T-1}$), which is obtained as residual, is equal to the ‘genuine’ reallocation from landless to owner or tenant (that is, the number of landless workers who become landowners or tenants) and the last term on the left is the expected change in the quantity of landless workers if the proportion of people with and without land does not vary from one period to the next (that is, the change in number of landless workers due to demographic change and migrations). The calculations of this equation are collected in table 5 below:

[TABLE 5]

Table 5 shows interesting insights into the decline in the number of landless workers (the negative values). The main explanation of the change in the number of landless workers in each period considered (1860-90, 1890-1910, and 1910-30) was their ‘genuine’ reallocation to owners and tenants. In the last period, this change was also accompanied by a sizable move of landless workers out of agriculture. The results are consistent with the substantial literature that has underlined the absence of labour pull from cities and industry and services before the period 1910-1930.⁴⁵ Our aggregate result also confirms that the Liberal land reform also allocated land to landless peasants.

In the non-reform provinces during the first period (1860-1890) (Panel A), the substantial decline in the numbers of landless peasants can be almost fully attributed to their gaining access to land, as the role of migration and demographic change was very limited (in the two Castilian regions demographic change actually increased the number of landless peasants). The decline in the number of landless workers from 1890 to 1910 was also dominated by the ‘genuine’ reallocation, although demographic change and migration now played a more important role, except in the Mediterranean region, where it produced an increase in the numbers of landless workers. Finally, in the period 1910-1930, migration-demographics and ‘genuine’ reallocation played equal roles in the rapid decline in the numbers of landless.

In the regions that experienced the Republican land reform the situation is more nuanced (Panel B). In the first period (1860-90), the ‘genuine’ shift of landless workers to self-cultivators took place in all regions, but was significantly less important than in the non-reform ones, and was partly offset by population growth. For example, in La Mancha, the numbers of landless workers increased because of population growth, although some gained access to land. Similarly, in Extremadura and Western

⁴⁵ Rosés and Sánchez-Alonso, ‘Regional wage convergence’; Silvestre, ‘Internal migrations’.

Andalusia, demographic growth was positive and reduced the net land reallocation. In the period 1890-1910, the number of landless workers grew in all reform regions except Western Andalusia, where genuine land reallocation exceeded demographic change. Even in land abundant Extremadura, the number of owners and tenants declined. The situation changed significantly in the last period (1910-1930), as all regions experienced a substantial reduction in the number of landless workers. Contrary to what happened in the previous periods and with the exception of Western Andalusia, the increase in number of self-cultivators was accompanied by demographic decline. However, on a less optimistic note, this demographic contraction was less important than found in non-reform provinces.

IV

The previous sections have shown that the landless in Extremadura and Western Andalusia were less likely to gain access to land than that elsewhere in Spain (Tables 2 and 3). These regions were characterized by a slow conversion of landless workers to tenants and landowners, and sometimes with a growing labour supply and slow rural exodus. Furthermore, over large areas there was no farm ladder. In traditional rural societies, most landless workers owned few assets in their late teens, but opportunities existed for them to accumulate savings to eventually rent a small plot and then become landowners in their own right.⁴⁶ As these regions shared the overall pattern of declining land price / wage ratios (Figures 3 and 4), it is unlikely that landowners' market power, or the failure in land markets accounted for this slower transformation of land ownership.⁴⁷ Therefore, what explains the lower levels of 'genuine' reallocation between landless peasants and farmers if relative land prices were falling? And why were landless workers less likely to migrate or switch into the industrial or service sectors?

In our view, natural resources endowments and the subsequent agrarian specialization explain farm workers' limited access to land in southwest Spain. In the absence of irrigation, large areas were ideal for extensive cereals cultivation, resulting in larger than average plot sizes (Table 4).⁴⁸ This type of cultivation had proved to be very competitive from mid-nineteenth century and, especially during the interwar year period, new labour-saving machinery promised to further increase the efficiency of the large

⁴⁶ Alston and Ferrie, 'Time on the Ladder'; Wright, 'American agriculture'. Large numbers of workers in Northern Castile and Galicia from the late nineteenth century emigrated for a few years to earn money to purchase land and work animals, and establish themselves on the farm ladder. Villares, *Historia de Galicia*.

⁴⁷ Previous research has convincingly showed that southwest land markets were efficient and integrated as in the rest of Spanish. See, Carmona and Rosés, 'Land Markets'.

⁴⁸ Alternative explanations for the larger than average plot sizes in Extremadura and Western Andalusia are the institutional heritage of the Spanish Reconquista and the early privatization of common lands during the 19th century Liberal reforms. However, these two factors were also present in Eastern Andalusia and La Mancha where access to land worked better and plots were smaller.

estates, reinforcing their competitive advantages over smaller farms.⁴⁹ In fact, the agronomists' reports following the 1932 Land Reform showed that most confiscated estates were well cultivated given the factor and commodity prices of the period, and agronomists made few suggestions for improvements.⁵⁰

The traditional response to land scarcity in the Mediterranean agriculture was to plant olives or vines that thrived in dry areas on relatively poor quality land, and required little capital but large amounts of labour, allowing the landless to accumulate assets.⁵¹ Conditions were ideal in eastern Andalusia, and the significant growth of olives helps explain the faster decline of workers in this region compared to the western Andalusia and Estremadura, while the same was true with viticulture in La Mancha.⁵² Neither option was possible during the Second Republic given the substantial fall in farm prices for these crops.

In addition, the long summer droughts made farming highly seasonal with heavy labour demand peaks during harvest periods and long idle periods (on average, annual agrarian employment were often less than 150 days).⁵³ This has three unintended consequences: rural labour living permanently in southwest Spain had part-time employment in other sectors, such as transportation, construction or mining; southern estates attracted a substantial amount of temporary labour from the rest of Spain during harvest periods;⁵⁴ and most of the population lived in 'agro-towns' rather than being dispersed across the countryside, which made labour-intensive cultivation difficult in lowly populated areas. For all these reasons, it is unlikely that southwest Spain had enough land for allocating all rural families as full-time independent farmers.⁵⁵

Finally, the evolution of agrarian production did not encourage emigration from southwest Spain.⁵⁶ In fact, over the half century prior to the Second Republic, the demand for farm labour appears to have grown roughly in line with the size of the farm population, and real wages increased from the early

⁴⁹ Labour syndicates centred their demands on changes in land ownership, not the use of machinery.

⁵⁰ López Ontiveros and Mata, *Propiedad de la tierra* and Simpson and Carmona, 'Too many workers'. For landowners, the subdivision of their estates into small plots for rental or sharecropping had substantial transaction costs, as they had to deal with large numbers of asset-poor and often illiterate tenants, who lacked access to capital markets.

⁵¹ Simpson, *Spanish agriculture*, 70-3.

⁵² The area of olives doubled in eastern but stagnated in western Andalusia between 1911-5 and 1931-5.

⁵³ One estimate (Simpson, 'Technical change', p. 16) gives an annual average of 128 days of farm work for the provinces of Cadis, Cordoba, Jaen and Seville in 1926-35.

⁵⁴ Bernal, 'La llamada crisis finisecular'.

⁵⁵ Simpson and Carmona, 'Too many workers'.

⁵⁶ The low migration and reallocation of agrarian workers in Western Andalusia and Estremadura has been widely discussed in the literature. See, for example, Paluzie et al., 'Migrants and market potential'; Pons et al., 'Testing the New Economic Geography'; Silvestre, 'Internal migrations'; Sánchez-Alonso, *Las causas de la emigración*, Ch.6 and 'Those who left'.

twentieth century.⁵⁷ In the decades before the 1920s, these two regions were still attracting labour from other parts of Spain, some of whom found employment in agriculture.⁵⁸ Therefore, the inhabitants of these regions failed to form the necessary migration networks with other regions and, in particular, with the main destinations in northwest Spain, which increased the costs of migration and insertion in labour markets at the destination.⁵⁹

V

Spanish legislators often justified the 1932 land reform on the grounds of the failure of the free action of markets to redistribute land. This paper, while not questioning the widespread hardships in many rural areas, does suggest that access to land was much more fluid and widespread than most contemporaries and indeed historians have believed. The number of landless workers fell dramatically, from about 2 million in 1860 to less than one million by 1930, while the share of male agricultural workers with access to land grew from about 44 to 69 percent.

The role of land markets was central to this reduction in the amount of landless peasants, although the reallocation of landless labour from agriculture to industry and services was also important. Market forces helped farm workers acquire land, as the ratio between land prices and wages in Spain decreased by a 47 percent between 1908 and 1929. When the question of access to land is considered as a regional rather than a national problem, the number of landless farm workers fell in all the land-reform regions between 1910 and 1930, and other evidence suggests that living standards also increased over the same period.⁶⁰ Employment opportunities, although limited, appear not to have changed significantly in the half century prior to the Civil War and real wages showed a tendency to improve.⁶¹ Indeed, it could be argued that the fact that farm wages rose faster than both land rents and farm gate prices, the real agrarian problem over much of Spain was related to the problems associated with the small family farm, rather than the landless. All in all, the evolution of the Spanish countryside during the first third of the 20th century had more similitudes with the countries of Western, than to the Eastern European, ones.

⁵⁷ Simpson, *Technical change*.

⁵⁸ Bernal, 'La llamada crisis finisecular'.

⁵⁹ Rosés and Sánchez-Alonso, 'Regional wage convergence'. Several studies have showed that the major urban centres attracted migrants from the neighbouring provinces. Paluzie et al., 'Migrants and market potential'; Pons et al., 'Testing the New Economic Geography'; Silvestre, 'Internal migrations'.

⁶⁰ Rosés and Sánchez-Alonso, 'Regional wage convergence'.

⁶¹ Acosta Ramírez et al., *Socialismo y democracia*; Rosés and Sánchez-Alonso, 'Regional wage convergence'; Simpson, 'Technical change'.

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Table 1. Evolution of cultivated land and agrarian workers in Spain, 1800-1931

	Arable Land (1)	Vines and tree Crops (2)	Cultivated Land (3)	Pastures (4)	Total Land (5)	Full-time Equivalent Workers (6)	Total Land per FTE (7)	Cultivated land per FTE (8)
1800			11,450			1,996.5		5.74
1820			12,520					
1834			12,920					
1860	13,912	2,100	16,012	8,839	24,851	3,568.2	6.96	4.49
1890	12,939	2,890	15,829	8,274	24,103	3,871.6	6.23	4.09
1900	14,889	2,933	17,822	8,073	25,895	4,022.3	6.44	4.43
1910	15,793	3,091	18,884	7,683	26,567	4,112.1	6.46	4.59
1922	16,887	3,390	20,277	7,458	27,735	4,095.5	6.77	4.95
1931	18,015	3,949	21,964	6,963	28,927	3,826.5	7.56	5.74

Notes: All data on land in thousands hectares and labour in thousand FTE male workers. Tree crops include vineyards, olive trees and fruit trees. Pasture assumed to represent 29.5 percent of ‘prados, dehesas y montes’ (meadows, pastures and mountains) in Spanish land censuses. This percentage was obtained for 1973 by Simpson, *Spanish agriculture*, and has been applied to throughout the considered period. Cultivated land is the sum of arable land and tree crops.

Sources:

Land: 1800-1834: crude estimates that include tree crops, by Garrabou and Sanz, ‘La agricultura española’, appendix 4. B, 191. 1860: Garrabou and Sanz, *ibid.*, Tab. 16 and 19. 1890-1931: GEHR, ‘El sector agrario’, 107.

Labour: Prados de la Escosura, *El Progreso de España*, background calculations.

Table 2. The number of Owners and Tenants in Spain, 1860-1930 (in 000)

A: Non-Reform Provinces	1860	1890	1910	1930
Ebro Valley	180.0 (42.5%)	238.7 (59.9%)	263.1 (71.0%)	231.1 (75.5%)
Mediterranean	386.5 (44.4%)	476.0 (55.3%)	567.7 (61.9%)	526.7 (73.8%)
Northern Castile	415.1 (51.4%)	494.9 (56.8%)	488.2 (66.9%)	420.5 (80.7%)
Central Castile	101.6 (46.2%)	122.4 (52.9%)	133.5 (62.1%)	136.1 (79.4%)
Non Reform	1,083.2 (46.7%)	1,322.1 (56.4%)	1,452.5 (65.1%)	1,314.5 (76.7%)
B: Reform Provinces				
La Mancha	69.8 (34.0%)	78.9 (34.3%)	108.7 (40.3%)	179.6 (68.4%)
Estremadura	148.3 (45.5%)	208.0 (56.8%)	206.5 (54.8%)	185.4 (59.4%)
Eastern Andalusia	184.9 (41.7%)	202.5 (45.7%)	235.6 (46.5%)	309.5 (64.8%)
Western Andalusia	96.6 (25.9%)	126.9 (32.3%)	187.7 (47.5%)	227.9 (54.4%)
Reform	499.7 (37.1%)	616.4 (43.1%)	738.5 (47.7%)	902.4 (61.3%)
Spain	1,582.9 (43.1%)	1,948.5 (51.4%)	2,191.0 (58.0%)	2,216.9 (69.6%)

Notes: Subject to rounding errors. We only consider male agrarian workers and our figures differ from those of table 1 since we do not adjust to Full time equivalent workers. We have grouped the provinces as follows. Non-Reform - Ebro Valley (Lerida, Logroño, Huesca, Saragossa, and Teruel); Mediterranean (Gerona, Barcelona, Tarragona, Castellon, Valencia, Alicante and Murcia); Northern Castile (Asturias, Santander, Zamora, Leon, Valladolid, Palencia, Burgos, Soria, Segovia); and Central Castile (Cuenca, Guadalajara and Madrid). Reform – La Mancha (Albacete, Ciudad Real and Toledo); Estremadura (Badajoz, Caceres, and Salamanca); Eastern Andalusia (Almeria, Granada, Jaén, and Málaga); Eastern Andalusia (Cadiz, Cordoba, Huelva and Sevilla). The Canary Islands, Galicia, Navarre and the Basque Country have been excluded in the calculations due to data problems.

Sources: see text.

Table 3. The number of Landless workers in Spain, 1860-1930 (in 000)

A: Non Reform Provinces	1860	1890	1910	1930
Ebro Valley	243.9 (57.5%)	159.9 (40.1%)	107.6 (29.0%)	75.2 (24.5%)
Mediterranean	483.5 (55.6%)	385.4 (44.7%)	349.1 (38.1%)	187.4 (26.2%)
Northern Castile	392.5 (48.6%)	376.1 (43.2%)	241.6 (33.1%)	100.6 (19.3%)
Central Castile	118.5 (53.8%)	108.8 (47.1%)	81.3 (37.9%)	35.3 (20.6%)
Non Reform	1,238.4 (53.3%)	1,030.3 (43.6%)	779.7 (34.9%)	398.5 (23.3%)
B: Reform Provinces				
La Mancha	135.7 (66.0%)	150.9 (65.7%)	161.0 (59.7%)	82.8 (31.6%)
Estremadura	177.9 (54.5%)	158.0 (43.2%)	170.1 (45.2%)	126.7 (40.6%)
Eastern Andalusia	258.9 (58.3%)	240.7 (54.3%)	270.6 (53.5%)	168.2 (35.2%)
Western Andalusia	276.4 (74.1%)	265.7 (67.7%)	207.5 (52.5%)	191.2 (45.6%)
Reform	849.0 (62.9%)	815.3 (56.9%)	809.2 (52.3%)	568.9 (38.7%)
Spain	2,087.4 (56.9%)	1,845.5 (48.6%)	1,588.8 (42.0%)	967.4 (30.4%)

Notes and sources: see table 2.

Table 4. The Access to Land in Spain: Regional Differences, 1908-1931

A: Non reform	1908-1919			1920-1931		
	(1)	(2)	(3)	(1)	(2)	(3)
Ebro Valley	391	265	257	243	191	169
Mediterranean	708	404	498	401	224	290
Northern Castile	242	401	154	246	373	159
Central Castile	421	234	270	322	169	220
Overall	435	356	293	302	269	208

B: Reform	1908-1919			1920-1931		
	(1)	(2)	(3)	(1)	(2)	(3)
La Mancha	696	113	480	483	78	325
Estremadura	706	132	439	642	135	448
Eastern Andalusia	689	212	457	527	157	389
Western Andalusia	1,259	175	873	1,104	152	798
Overall	857	163	577	707	134	505

Spain	582	289	392	444	222	312
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Notes: (1) Average days of male work to buy the mean plot. (2) Average days of male work to buy one hectare. (3) Average days of family work (under the assumption than females and children work half hours than males) to buy the mean plot. See table 2.

Sources: See Figure 2.

Table 5. The Determinants of the evolution of the number of Landless Workers, 1860-1930 (in 000)

	1860-1890			1890-1910			1910-1930		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A: Non Reform									
Ebro Valley	-14.8	-69.4	-83.9	-11.2	-41.1	-52.4	-18.7	-13.7	-32.4
Mediterranean	-4.7	-93.4	-98.1	24.7	-61.0	-36.3	-77.2	-84.5	-161.7
Northern Castile	30.8	-47.2	-16.4	-61.0	-73.6	-134.5	-69.0	-71.9	-141.0
Central Castile	5.9	-15.7	-9.8	-7.7	-19.7	-27.4	-16.4	-29.6	-46.0
Non Reform	17.5	-225.7	-208.2	-55.1	-195.5	-250.6	-181.4	-199.8	-381.1
B: Reform									
La Mancha	16.0	-0.8	15.2	26.2	-16.1	10.1	-4.4	-73.8	-78.2
Estremadura	21.7	-41.6	-19.8	4.5	7.5	12.0	-29.1	-14.3	-43.4
Eastern Andalusia	-0.4	-17.8	-18.3	34.2	-4.3	29.9	-15.2	-87.1	-102.3
Western Andalusia	14.5	-25.2	-10.8	1.7	-59.9	-58.2	12.6	-28.9	-16.3
Reform	51.8	-85.5	-33.7	66.7	-72.8	-6.0	-36.2	-204.1	-240.3
Spain	69.4	-311.2	-241.9	11.6	-268.3	-256.7	-217.5	-403.9	-621.4

Notes: (1) Demographic change and workers reallocation between sectors and/or provinces; (2) Reallocation from landless workers to owners/tenants (a positive value indicates the contrary); (3) Total change in the number of landless workers. See table 2.

Sources: see Table 2.

Figure 1. Demand and Supply Shifts in Spanish Rural Labour Markets, c. 1850 - 1931

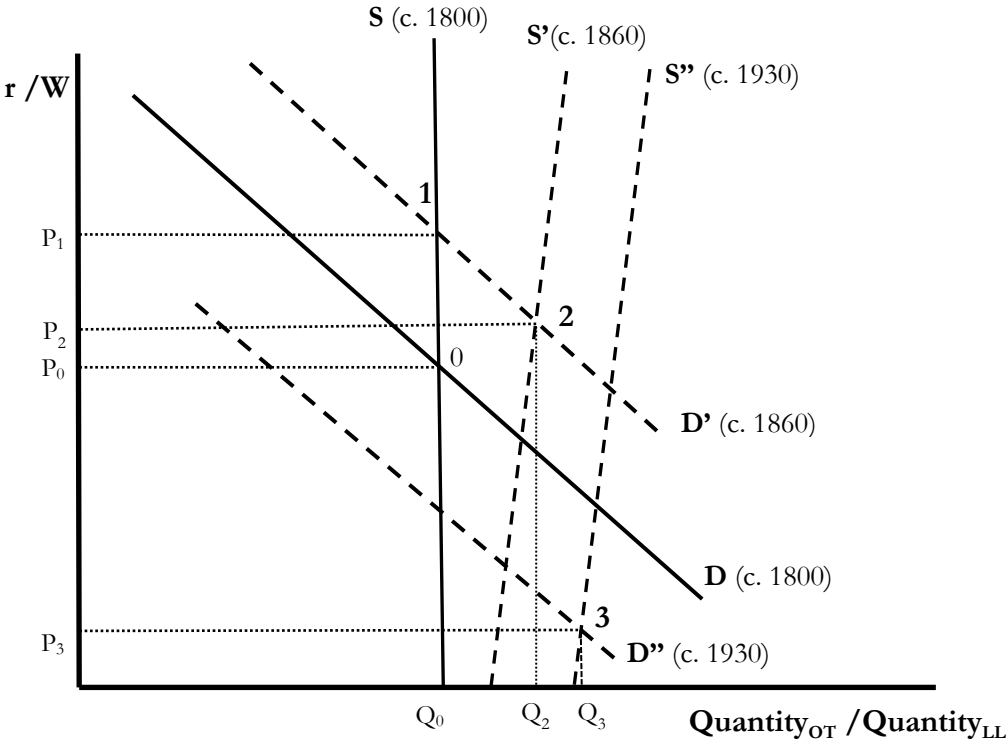
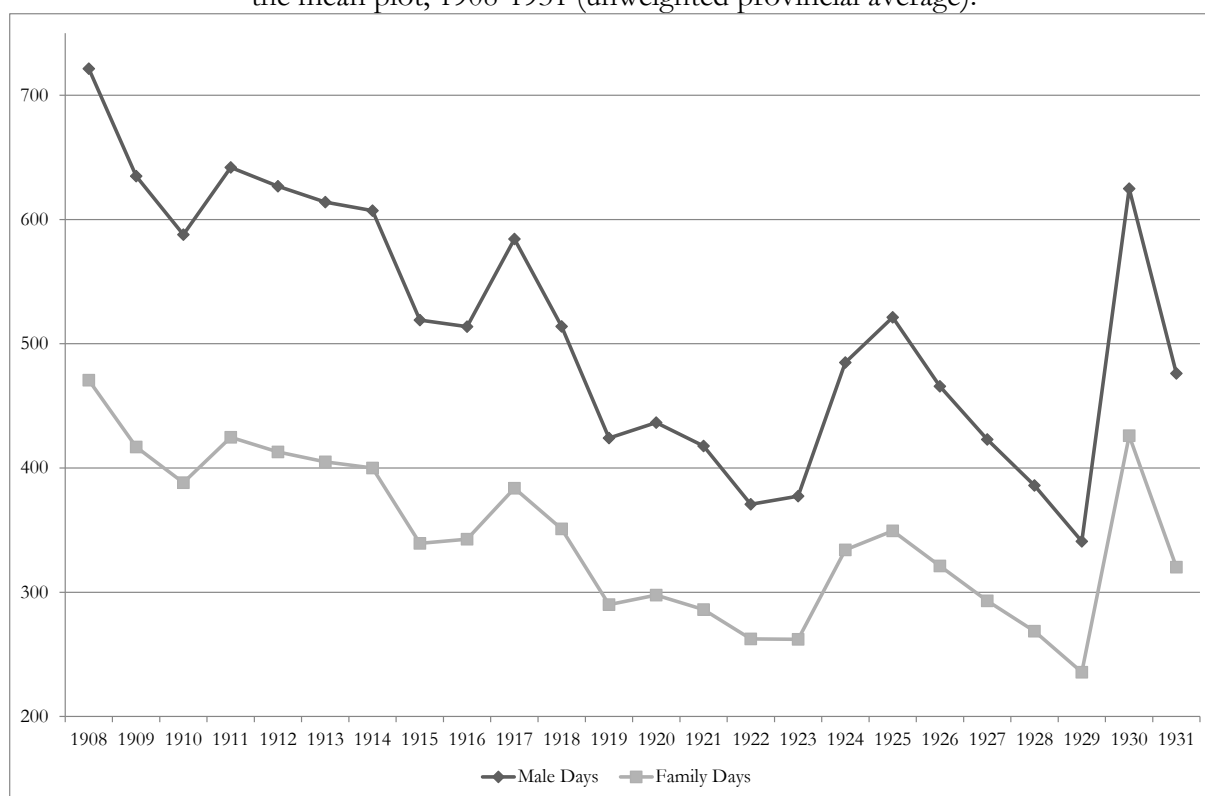


Figure 2. Access to land: Average family and male days of work necessary for buying the mean plot, 1908-1931 (unweighted provincial average).



Notes: see text.

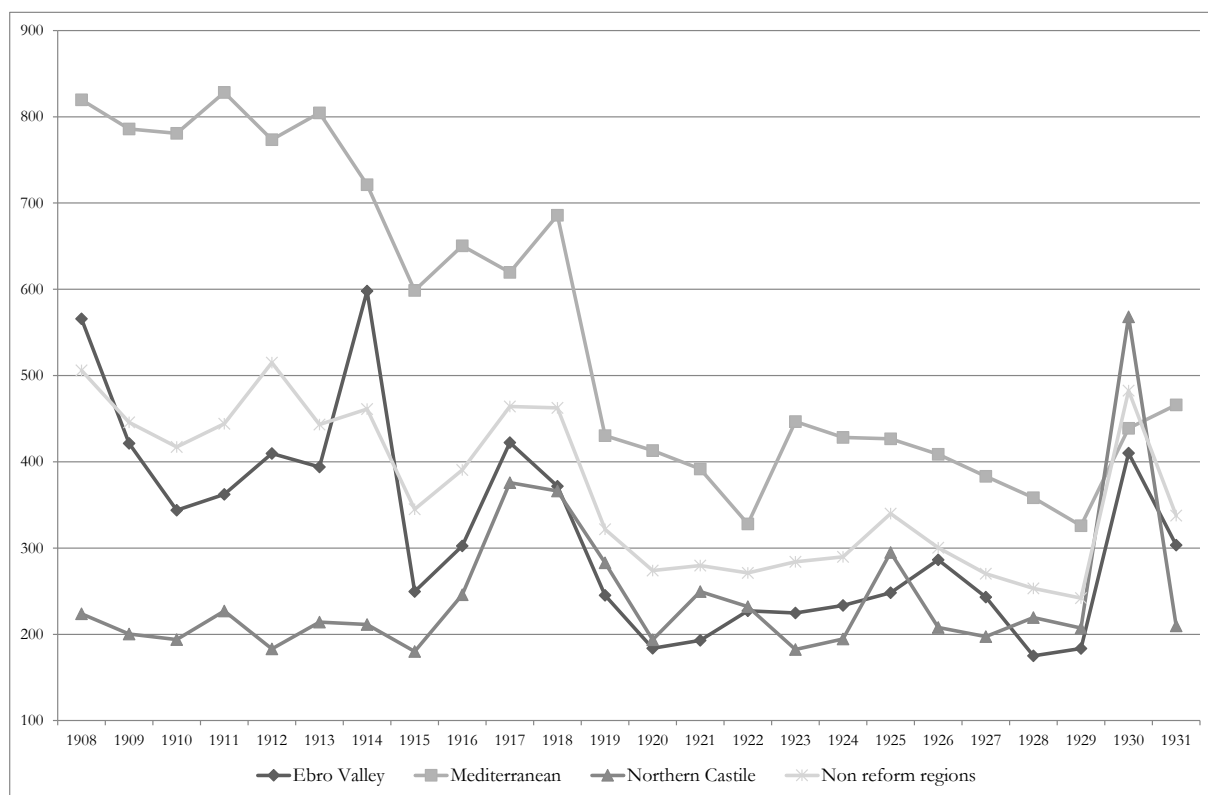
Sources:

Land Price data: Annual data is provided by the property register yearbooks (*Anuario de la Dirección General*) from 1904, the year that regular publication began, to 1934 when the series is interrupted (until the mid-1940s). Information is grouped by provinces (49), and includes the number and total value of farms registered by reason of sale, inheritance, gift, mortgage and first registration, and allows us to estimate the nominal average price of plots in each province. These nominal prices are converted into real (base 1910) prices using the rural provincial deflator (Carmona and Rosés, 'Land markets').

Real Wages: Wage data are drawn from Spanish Yearbooks (*Anuario estadístico de España*) for the corresponding years (Rosés and Sánchez-Alonso, 'Regional wage convergence'). Nominal wages are converted into real wages using the rural provincial deflator (base 1910).

Rural provincial deflator: The rural cost-of-living deflator is constructed using price data from the Instituto de Reformas Sociales (Carmona and Rosés, 'Land markets').

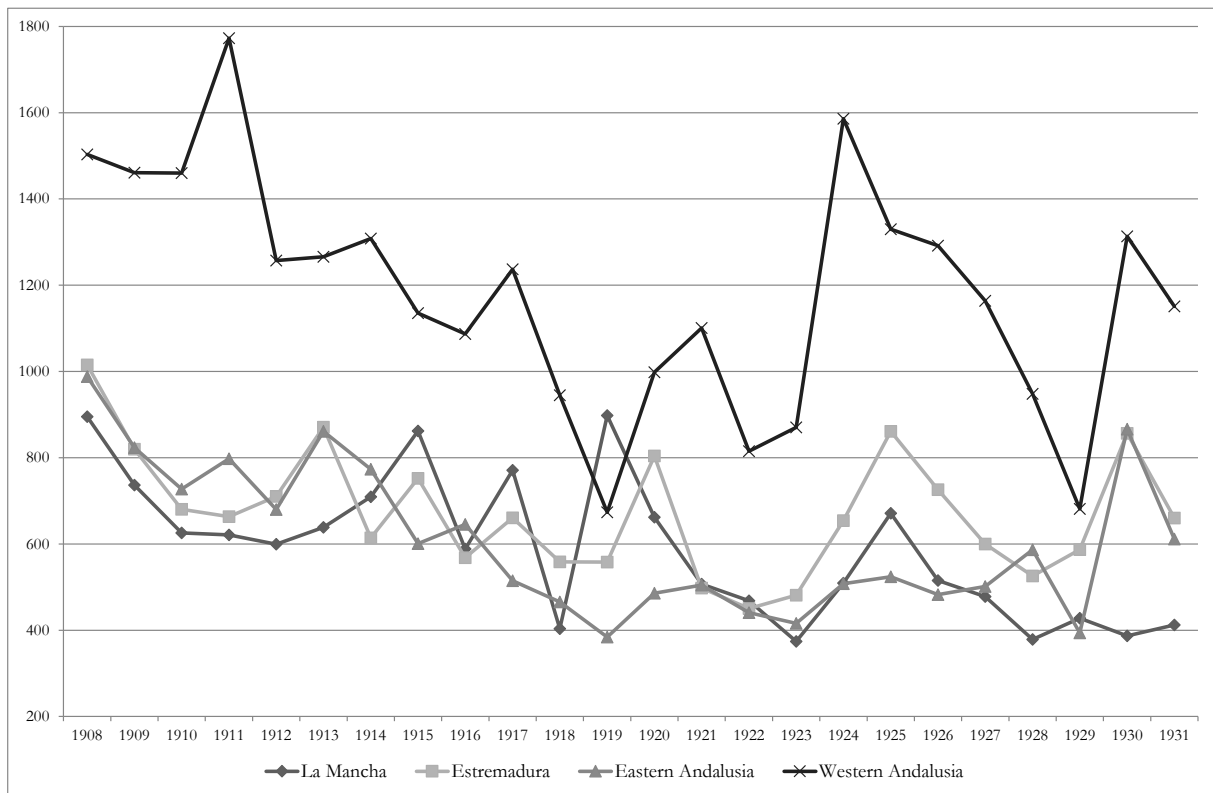
Figure 3. Access to land (Non reform provinces): Average male days of work necessary for buying the mean plot, 1908-1931 (unweighted provincial average).



Notes: see text.

Sources: see Figure 2.

Figure 4. Access to land (Land Reform Provinces): Average male days of work necessary for buying the mean plot, 1908-1931 (unweighted provincial average).



Notes: see text.

Sources: see Figure 3.