

## Commons and the Standard of Living Debate in Spain, 1860-1930

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### Abstract

Biological living standards stagnated or even declined during the transition to modern economic growth. Although income per capita was increasing, other indicators, such as mortality rates or heights, portrayed a completely different image. This paper adds to the standard of living debate by analysing the potential effect of the privatisation of common lands. Although highly controversial regarding its impact on the modernisation process itself, its contribution to human welfare has somewhat received much less attention. Focusing on the Spanish experience, this paper exploits geographical variation over time by collecting a panel dataset at the provincial level on three different periods: 1860, 1900 and 1930. The empirical analysis shows that the persistence of these collective resources is related with higher life expectancy and heights, particularly during the second half of the 19<sup>th</sup> century. Biological human welfare also seems to have been negatively influenced by the progressively decreasing role that local communities played on the management of these resources. The survival of common lands in some regions provided peasants with mechanisms different from the market, thus making the transition to a market economy more socially sustainable.

— Oh! –he replied raising both arms simultaneously–, that, my friend, is this village's greatest wealth! That's the *Common Field* ... It belongs to each and every one of the neighbours (J. M. Pereda, 1895, *Peñas Arriba*, p. 193).

### 1. Introduction

The standard of living debate has revealed the deterioration in welfare suffered by many people in the transition from traditional to modern economies (Floud and Steckel, 1997; Komlos, 1998; Easterlin, 1999). Although income per capita was increasing, other indicators, such as mortality rates, life expectancy or heights, puzzlingly portrayed an image of stagnating or deteriorating wellbeing in the early phases of modern economic growth, especially among the lower classes of the population. The development process, reflected in rapid industrialisation and urbanisation, generated negative externalities which, in an era where government intervention was practically

nonexistent, were overcome only slowly due to an increasing awareness on the role of the public sector in improving the health environment. Apart from assessing the direct impact of economic modernisation on human wellbeing, the literature has also stressed that health also influences economic development (Fogel, 2004; Arora, 2001).

This paper adds to the standard of living debate by analysing the potential effect of the privatisation of common lands. Although highly controversial regarding its impact on the modernisation process itself, its contribution to human welfare has received much less attention. Traditional historiography has positively regarded privatization as a precondition to foster economic growth (North and Thomas, 1977). However, the negative view surrounding the communal regime, whose paradigmatic example is the ‘tragedy of the commons’ (Hardin, 1968), has been challenged by a new wave of empirical research that considers common property regimes to be efficient and sustainable, thus reevaluating the role that common resources had for the local communities that managed them (Ostrom, 1990; Allen, 1992; De Moor *et al*, 2002)<sup>1</sup>. Regarding the British case, although privatisation has often been considered one of the main drivers of the agricultural revolution (Chambers and Mingay, 1966; Overton, 1996), Allen (1992) shows that enclosures did not increase efficiency but caused a massive redistribution of income from peasants to large landowners. Likewise, other authors emphasize that the enclosure movement prevented poor households from keeping livestock and other animals on the commons, thus eliminating an important source of complementary income and accelerating the proletarianisation of the agricultural labour (Humphries, 1990; Neeson, 1993)<sup>2</sup>.

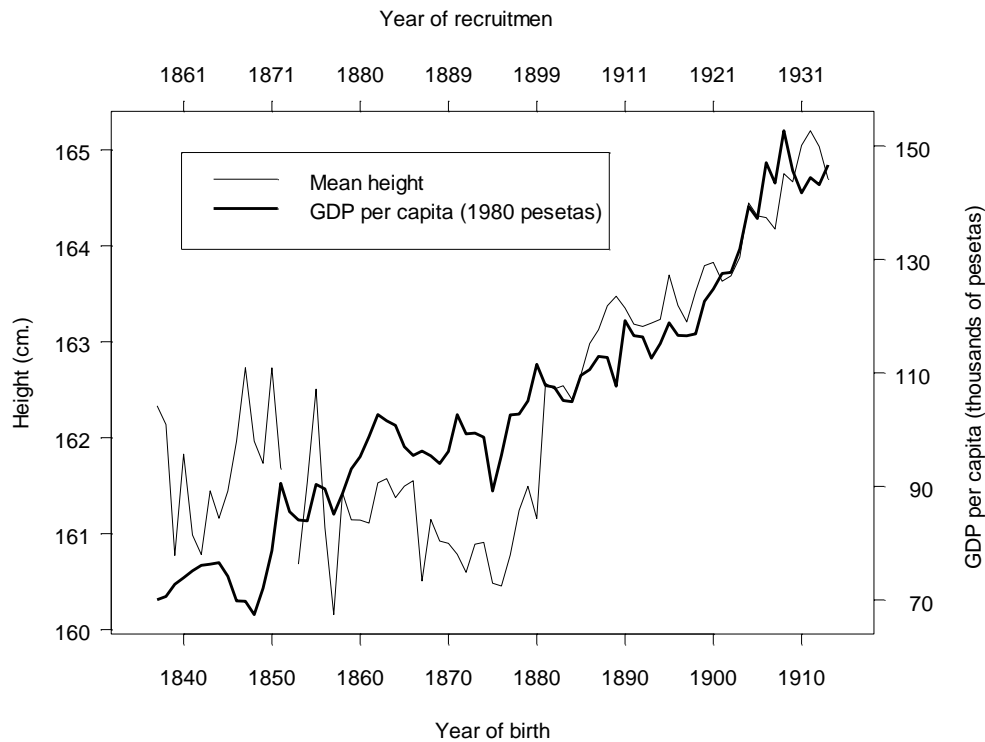
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<sup>1</sup> Contrary to Hardin’s (1968) belief, historical commons across Europe were not open-access resources doomed to overexploitation, but were subject to clear regulations, thus preserving their social and ecological sustainability (De Moor, 2009, 4-10).

<sup>2</sup> This view, nonetheless, has been contested by Clark and Clark (2001).

Drawing on the Spanish case as field laboratory, this article aims to shed some light into this long-standing debate. The evolution of human wellbeing in Spain closely follows the wider international experience given that the development process carried out throughout the 19<sup>th</sup> century had ambiguous effects in the standard of living of its population. As shown in Fig. 1, in a context of steady economic growth, biological living standards stagnated or even declined between 1850 and 1880 (Reher *et al*, 1997; Martínez-Carrión and Pérez Castejón, 2000). Worsening living conditions and increasing spread of diseases, in a context of insufficient diets due to low agricultural productivity, are seen as the main causes behind this process. These indicators reversed this negative trend from the late 19<sup>th</sup> century onwards, and particularly so during the first decades of the 20<sup>th</sup> century, in response to improvements in diets and general living conditions, thus strengthening the connection between incomes and biological living standards.

FIG. 1. HEIGHTS AND INCOME PER CAPITA IN SPAIN, 1860-1930



Source: Martínez-Carrión and Pérez Castejón (2000).

Common lands were a key component in the organic-based Spanish preindustrial economy (Iriarte, 2002). Apart from providing pasture to support livestock, which in turn supplied agriculture with fertiliser and workforce, commons constituted a source of complementary income by providing animal proteins, wood, and fuel, among other products, including the possibility of temporary cropping. Likewise, common lands played a fundamental role in the finances of local institutions, which was particularly important given that municipalities were responsible for the provision of basic public services and establishing the level of local taxes. However, the transformations caused by the transition to capitalism, and the emergence of a new liberal state, triggered the gradual dismantling of the communal regime throughout the 19<sup>th</sup> and early 20<sup>th</sup> centuries. The degree of common land persistence was nonetheless fairly uneven depending on the region being analysed (GEHR<sup>3</sup>, 1994), thus turning the Spanish experience into an ideal case study on which to base this research.

In order to test the distinctive impact of common lands on biological standards of living, this paper exploits geographical variation over time by collecting a panel dataset at the provincial level on three different periods: 1860, 1900 and 1930. The empirical analysis not only shows that commons were at least as efficient as private lands before 1860, but also that the persistence of these collective resources was related to higher life expectancy and heights, particularly during the second half of the 19<sup>th</sup> century. Biological human welfare also seems to have been negatively influenced by the progressively decreasing role that local communities played on the management of these resources, thus supporting the claims defended by Ostrom (1990). The rest of the paper is organised as follows. The next section discusses the historical evidence regarding biological standards of living and the potential role that common lands played

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<sup>3</sup> Grupo de Estudios de Historia Rural.

in this context. Section 3 describes the methodology employed to test the hypothesis outlined here whereas section 4 reports the results of the empirical analysis. Finally, the last section presents the conclusions.

## **2. Standards of living and common lands**

Spanish biological standards of living were among the worst in the European continent throughout the 19<sup>th</sup> century. Mortality rates, for instance, especially infant and childhood mortality, were dramatically high (Pérez Moreda, 1999, 10). In a context of low agricultural productivity and inadequate transportation, these negative outcomes were the result of subsistence crises, chronic malnutrition and the effect of diseases and epidemics (Tortella, 2000, 33). Moreover, although income per capita was growing steadily, at least from the middle of the 19<sup>th</sup> century, biological living standards, measured by mortality rates or heights, stagnated or, in some cases, declined between 1850 and 1880 (Reher *et al*, 1997; Martínez-Carrión, 2002)<sup>4</sup>. Recent research shows that the evolution of height and levels of economic development in Spain was not correlated during the initial stages of modern economic growth but became closely linked during the period between 1900-1920 (María-Dolores and Martínez-Carrión, 2011, 34). The decline in biological living standards during the middle decades of the 19<sup>th</sup> century in Spain, and its subsequent rapid improvement from the late 19<sup>th</sup> century, has been related to economic factors that affected real incomes and the effects of increasing market integration (Martínez-Carrión and Pérez-Castejón, 1998; Martínez Carrión, 2002; Moreno-Lázaro, 2006). In the absence of adequate public sanitation, urbanisation and industrialisation processes also negatively affected living standards,

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<sup>4</sup> Regional and local studies in diverse areas of the Peninsula confirm these trends (Colomé, Sagner and Vicedo, 2002; Moreno-Lázaro, 2006; Cámara, 2009; Ramón Muñoz, 2009; García Montero, 2009; Hernández and Moreno, 2009; Martínez-Carrión and Puche-Gil, 2009).

although it seems that the low dynamism of Spanish cities cushioned their potentially negative impact on health (Pérez-Moreda, 1999, 18; Martínez-Carrión and Moreno-Lázaro, 2007).

The pattern of biological welfare indicators was also geographically different, especially between Northern and Southern Spain. Quiroga (1998, 378) analysed differences in heights between Spanish provinces in 1920 and concluded that variation reflected population pressure, income levels and economic structure<sup>5</sup>. However, income differences do not fully explain the regional differences in mortality rates during the second half of the 19<sup>th</sup> century. Climatic factors were also an important factor (Cusso and Nicolau, 2000, 529). Humid regions seem to have enjoyed an ecological advantage regarding the impact of digestive infectious diseases, which is one of the main factors behind the extremely high childhood mortality rates. Coastal provinces are also seen as favouring heights (Gómez-Mendoza and Pérez-Moreda, 1995, 85). Likewise, social and institutional factors also mattered. Regions where land ownership was more evenly distributed have also been linked to better biological living standards (Martínez-Carrión, 2002). Apart from its impact on productivity and income levels, education also influenced heights by facilitating improvements in hygiene and nutritional habits (Quiroga, 2003, 615-617). Lastly, a more dispersed population may have also reduced the diffusion of infectious diseases (Cusso and Nicolau, 2000, 246).

However, the potential effect of the privatisation of common lands on biological standards of living has hardly been stressed, either in the longitudinal studies or in the cross-sectional analyses. Although abundant evidence connecting this process to the deterioration of living standards has been found in regional studies, this issue is rarely

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<sup>5</sup> Inequality in income distribution between professional groups showed the expected sign but was not significant, perhaps due to multicollinearity problems (Quiroga, 1998, 378).

mentioned when making wider generalisations at the national level<sup>6</sup>. This fact is surprising given that the disentailment process has been considered one of the most important events in the Spanish economic history (Simón Segura, 1973, 293). Fuelled by ideological and fiscal pressures, a massive privatisation of collective lands was carried out during the 19<sup>th</sup> century and the early 20<sup>th</sup> century (Balboa, 1999; Jiménez Blanco, 2002; Iriarte, 2002)<sup>7</sup>. This process involved not only a redefinition of land property rights, but also the way in which these resources had been traditionally used. According to Tortella (2000, 51), the dismantling of common lands was a measure that ‘touched almost every aspect of social and economic life’, from the distribution of wealth and income, or the impact on production and productivity, to the repercussions for the Treasury, both at the local and the national level. However, and most importantly for the purpose of this paper, neither the pressures created by the market, nor those generated by the state, were completely successful, and thus the outcome of the process, in terms of common land persistence, was quite different depending on the geographic area we analyse (GEHR, 1994)<sup>8</sup>.

By promoting individual property rights and land markets, the liberal reforms were expected to provide better incentives for investing in land, as well as allocating land to those farmers who will make a better use of these resources<sup>9</sup>. However, although

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<sup>6</sup> See Martínez Carrión (2002), Escudero and Simón (2003, 550) and Gallego (2007) for exceptions. For regional analyses which explicitly link the liberal land reforms with declining biological living standards see Cámara (2009) and Ramón-Muñoz (2009). Likewise, recent research on the commons, mostly at the regional or local level, has strongly pointed out the negative economic and social consequences that the privatisation of common lands involved (Iriarte, 1998; Moreno, 1998; Linares, 2001; Ortega-Santos, 2002; Serrano, 2005; Lana, 2008). However, their conclusions have not yet found their way into the wider literature.

<sup>7</sup> According to Rueda (1997, 61), around 6.7 million hectares became private between 1855 and 1924. Although less known, the end of the 18<sup>th</sup> and the first half of the 19<sup>th</sup> century also witnessed an important privatization process, the ‘silent disentailment’, which may have affected around 5.3 million hectares.

<sup>8</sup> The explanation for this regional diversity on the persistence of common lands has been attributed to the institutional and environmental context, together with the level of market penetration that characterised the different rural societies. See also Balboa (1999), Jiménez Blanco (2002) and Iriarte (2002).

<sup>9</sup> The possibility of using land freed of institutional constraints as collateral would reinforce these advantages (Deininger and Feder. 2001, 299).

the disentanglement brought into cultivation idle or underutilised land, thus increasing agricultural production, productivity remained low (Simpson, 1995; Clar and Pinilla, 2009). The loss of common lands may have negatively affected agricultural productivity because it meant a reduction of pastures and, subsequently, of livestock density, thus reducing the availability of manure and workforce (Del Moral Ruiz, 1979, 14)<sup>10</sup>. In the context of a traditional agriculture, these inputs were crucial and there is evidence that livestock density indeed declined throughout the 19<sup>th</sup> century (Simpson, 1989).

The privatisation process itself could have also negatively affected standards of living, especially for the poorer households, through different ways. On the one hand, collective lands constituted a fundamental source of complementary income by providing pasture, wood, fertiliser and fuel, together with the possibility of temporary cropping (Iriarte, 2002). This mechanism was extremely important since commons contributed to achieve a minimum level of caloric intake and a higher level of animal protein consumption (Jiménez Blanco, 2002, 146). Meat, milk and egg consumption is positively related to health and stature (Cusso and Nicolau, 2000, 245; Martínez-Carrión and Puche, 2010, 177). The combined effect of the loss of common rights and the decline in livestock production are likely to have reduced the consumption of animal proteins per capita (Martínez Carrión, 2002, 37; Cámara, 2009, 59-60). The widespread conflict and resistance that privatisation generated, especially among the least favoured groups, strongly points to the crucial role that commons played on securing the subsistence of rural households and the negative impact that privatisation had on their living standards (Cobo, Cruz and González de Molina, 1992; De la Torre and Lana,

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<sup>10</sup> The testimonies of the contemporaries on this issue are plentiful. An official report about the province of Teruel in mid-19th century is highly eloquent: ‘every first-quality land is already under cultivation; ... and even some plots which should only be employed as pasture or waste land have unfortunately been ploughed and now they are useless for either of them’ (quoted in Del Moral Ruiz, 1979, 35). See also Sánchez Salazar (1995) and Gómez Urdañez (2002).



2000). This behaviour was also reflected on the *Guardia Civil*'s reports of illegal uses on the remaining commons, especially wood and firewood theft and unauthorised pasturing, which were geographically concentrated in those regions where the dismantling of the communal regime had been more intense (GEHR 1999, 150-152).

On the other hand, the role that commons played in the finances of local institutions should also be stressed. The monetary income derived from the cession of use rights on the commons constituted a fundamental component of the municipal budget (Bernal, 1978; García and Comín, 1995; Iriarte, 2003). In 1858, common lands covered 32.4 per cent of the ordinary municipal budget (García and Comín, 1995, 95)<sup>11</sup>. These figures, nonetheless, reflect the national average and hide the importance of the commons in those municipalities that had preserved them, especially in the rural areas<sup>12</sup>. The privatisation of these collective resources meant that municipalities lost a crucial source of income<sup>13</sup>. The provision of public goods and services, including schooling, medical care and poor relief, was thus clearly affected (Bernal, 1978; Iriarte, 2003). Likewise, in order to manage the loss of revenue from common lands along with increasing expenditures on these new public services, municipalities raised local taxes, especially affecting poorer households due to the regressive nature of a fiscal system mostly built around taxing consumption goods (Del Moral Ruiz, 1984, 150; García and

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<sup>11</sup> Furthermore, the income arising from the renting of common lands did frequently not appear in the municipal budgets, so these figures would be a minimum approximation (Del Moral, 1986, 746). In addition, commons were not only a source of revenues to municipalities but could be used as a guarantee when applying for credit (Bernal, 1978, 307; Iriarte, 2003, 245).

<sup>12</sup> In the province of Seville, for instance, despite being one of the areas that most suffered privatization prior to the *Disentailment Act* of 1855, the income generated by the commons still provided the 100 per cent of the ordinary revenue in 66 per cent of the municipalities in 1849 (Bernal, 1978, 307). In the four municipalities studied by Iriarte (2003, 243) in Navarra, the importance of the commons in the local budget ranged from 20 to 59 per cent in the period 1926/35.

<sup>13</sup> According to the legal text, 20 per cent of the sale value would directly go to the state, while the remaining 80 per cent would belong to the municipalities now transformed in perpetual and inalienable public debt yielding a 3 per cent annual return. Although these rents were intended to compensate municipalities for the loss of these resources, the debt quickly depreciated and the payments were not often honoured (García Sanz 1985, 28).

Comín, 1995, 91; Linares, 2006)<sup>14</sup>. Iriarte (2003, 250) shows that higher levels of income coming from the commons were related to both a lower municipal fiscal burden on the neighbours and higher levels of social spending.

Apart from the direct impact on human welfare that the possibility of resorting to the commons provided, other indirect mechanisms may have played a role as well. The way through which privatisation was implemented is likely to have increased, or at least consolidated, the concentration of landholding by an elite, thus contributing to social polarisation and the proletarianisation of agricultural labour, although this outcome may have depended on the previous structure of land ownership (Rueda Herranz, 1997). A more equal redistribution of land would have promoted a farmers' middle class with a higher consumption capacity (Nadal, 1987, 63). Likewise, land purchases may have diverted capital that would have otherwise been invested in modernising farms or in the industrial sector (Simón Segura, 1973, 300). Lastly, the communal management of these resources enhanced social cohesion and local cooperation (Iriarte, 1998; Gallego, 2007). In this sense, the social networks built around common lands facilitated the diffusion of information and the building of mutual knowledge and trust, thus promoting social capital (Beltrán, 2012).

To sum up, the dismantling of communal resources triggered off a chain of negative outcomes, likely having affected human welfare in rural areas. In this sense, privatisation processes often eliminate the institutions that support a market economy, especially in developing regions where market failures are widespread and the state is absent (Timmer, 2002, 1490).

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<sup>14</sup> The Treasury set the state's fiscal needs, which were then apportioned between regions and municipalities. If the municipal budget did not meet these requirements, local taxes had to be increased. This outcome was by no means unexpected for contemporaries. The parliamentary debates carried out between 1835 and 1855 about the convenience of privatising common lands reflect the concern that depriving local communities from these resources would necessarily force municipalities to increase local taxes, negatively affecting the lower classes (Gómez Urdañez, 2002, 144).

### 3. Methodology and data

A panel data set at the provincial level has been collected at three different time periods (1860, 1900 and 1930) in order to analyse the impact of the privatisation of common lands on biological standards of living during the transition to modern economic growth in Spain. The use of life expectancy and heights as indicators of human welfare has a well-established tradition within the literature (Floud and Steckel, 1997; Easterlin, 1999; Arora, 2001; Fogel, 2004). These indicators are especially useful when studying developing countries where statistics about income or other economic indicators are often unreliable and/or large informal sectors are present. These biological measures capture net nutritional levels and health better than income measures since they not only account for the effect of diets, but also for the impact of the disease and working environment, including the effect of public sanitation and health systems. Life expectancy at birth provides a measure of long-term population health by adding up the extent of disease-generated deaths. Adult heights, apart from genetic factors, reflect the cumulative net nutritional status from conception to maturity. Data for these variables, originally generated from vital statistics and conscripts records, have been collected from different published sources (Dopico, 1987; Dopico and Reher, 1998; Gómez-Mendoza and Pérez-Moreda, 1985; Quiroga, 2002)<sup>15</sup>.

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<sup>15</sup> I would like to thank the authors for kindly sharing their data. While life expectancy is derived from life mortality tables based on parish registers, stature information comes from military conscripts. It should be noted that the data on heights is not perfectly comparable between the three periods. Firstly, while data on 1860 comes from the summary statistics provided by the Army, information on 1900 and 1930 comes from sampling individual recruitment files. In order to increase the sample size, the average of the periods 1896-1904 and 1926-1934 is employed for 1900 and 1930 respectively. Secondly, data in 1860 may be downwards biased because a monetary redemption was allowed. Another concern is that conscripts were measured at different ages: the age of recruitment was 20 years-old between 1859 and 1906, except for the period 1885-1899 during which conscripts were measured at age 19, and then increased to 21 years-old in 1907 onwards. However, these modifications in the recruitment age hardly changed the trend in heights (Martínez-Carrión and Moreno-Lázaro, 2007, 151). Lastly, there is missing information on heights for some of the provinces, so the sample size is slightly smaller than for life expectancy.

It is important to note that migration may have biased these indicators. Cusso and Nicolau (2000, 544) argue that emigrating abroad implied a considerable investment and, therefore, healthier migrants, who have more opportunities abroad, will not appear in the statistics, thus downward biasing average height estimates in sending regions. Conscript records in a high-migration area, such as Castile-Leon, show that 21 per cent of rural conscripts emigrated to America at the end of the 19<sup>th</sup> century and their average height was 1.9 cm higher than those who remained behind (Martínez-Carrión and Moreno Lázaro, 2007, 156)<sup>16</sup>. Internal migration may have also generated a selection bias (Hernández and Moreno-Lázaro, 2009, 159). In order to account for this bias, internal and international migration rates will be included in the analysis using data from Mikelarena (1993)<sup>17</sup>.

Common lands are measured as the proportion of common lands over the total provincial area (GEHR, 1994; Artiaga and Balboa, 1992)<sup>18</sup>. The stock of common lands already showed a wide regional variation in 1860. The privatisation that took place from that date onwards under the General Disentailment Law accentuated these differences, especially from 1860 to 1900. Sales were much less important during the first decades of the 20<sup>th</sup> century. However, the welfare of the rural communities was influenced not only by the availability of common lands, but also by the way these resources were managed (Jiménez Blanco, 2002, 146). The communal regime in Spain involved two main types of access to the land: a direct but regulated access for all members of the community (*comunales*) or a temporary cession of use rights to particular individuals in

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<sup>16</sup> Low heights in Galicia could also be the result of extremely high desertion rates since around one third on the conscripts deserted (Cusso and Nicolau, 2000, 544).

<sup>17</sup> Migration rates are measured as net migration flows. The available data does not perfectly fit the time periods employed here. The flows between 1878-1887, 1888-1920 (average of three different sub-periods) and 1921-1930 are employed to account for 1860, 1900 and 1930 respectively.

<sup>18</sup> Drawing on Iriarte (2002), this article identifies common lands as those lands that were collectively managed at the local level, in spite of their ownership being collective, municipal or public. Also in Gómez Urdañez (2002), Serrano (2005) and Gallego (2007). See Beltrán (2010, 38-39) for a more detailed explanation of this issue. Unfortunately, data is not available for the Basque Country.

exchange for a monetary income (*proprios*). The privatisation process affected both their property rights and the way these resources were used. The proportion of private use rights over the remaining commons grew over time (GEHR, 1999, 136). To account for this distinction, common lands are also split up into two variables by taking into account the fraction of total user-rights which was being enjoyed privately or collectively (GEHR, 1991)<sup>19</sup>.

The panel data collected allows carrying out an econometric analysis to assess the distinctive impact of common lands on the standards of living. A fixed-effects model controls for time invariant province-specific factors, partly solving the omitted variable problem, which is so pervasive in cross-sectional analyses. This model also allows for the inclusion of time fixed effects to account for both the process of economic development itself, together with the technological and institutional advances in relation to biological wellbeing which were implemented from the late 19<sup>th</sup> century onwards. These would include improved nutrition, better public and personal sanitation, decontamination of food and water, improved housing, or advances in medical technology, among others. In this regard, interacting the variable of interest with time-period dummies also permits to assess whether the effect of common lands varied over time as the Spanish economy developed.

The main potential concern here is the omitted variable bias arising from variation both across provinces and over time. Both common land privatisation and changing biological wellbeing could also be the result of another time-variant unobserved factor, thus affecting our estimates. Other processes were unfolding during this period which may be correlated with privatisation and human welfare. In order to overcome this

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<sup>19</sup> In order to avoid unexplained short-run variations in the data, the average proportion of collective practices over the periods 1861-70, 1903-13 and 1920-32 is used to account for the years 1860, 1900 and 1930 respectively.

problem, a host of controls which take into account other potential determinants of life expectancy and heights is included in the analysis. The potential effect of income per capita on biological living standards is considered by using recent estimates of gross domestic product at the provincial level taken from Rosés *et al* (2010)<sup>20</sup>. Demographic pressures are proxied by population density (Nicolau, 2005; INE, 2001). Urbanisation and industrialisation are measured as the proportion of population living in cities bigger than 5,000 inhabitants and the per capita gross value added by non-agricultural activities per capita (Tafunell, 2005; Rosés *et al*, 2010). Structural change is measured by the proportion of the male active population working on agriculture (Erdozain and Mikalerena, 1999)<sup>21</sup>. The effect of changes in land ownership, as a proxy of inequality, is assessed through the fraction of landowners over the agricultural active population (Dirección General del Instituto Geográfico y Estadístico, 1863; 1922)<sup>22</sup>. Finally, literacy rates are also employed in order to account for the potential effect of education (Núñez, 1992).

#### 4. Results

Table I reports the results of fixed-effect regressions estimating the impact of the stock of common lands on either life expectancy or heights. All regressions also include time dummies. Columns (1) and (5) present the baseline specification. Columns (2) and (6) introduce the variable of interest interacted with time-period dummies to allow the

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<sup>20</sup> Population figures are taken from Nicolau (2005).

<sup>21</sup> The lack of consistency between censuses regarding female working population advices to rely only on male workers when accounting for the importance of agriculture, a usual procedure in Spanish historical literature (Erdozain and Mikalerena, 1999; Nicolau, 2005; Pérez Moreda, 1999; Prados de la Escosura, 2008). Consistency between censuses also recommends using data of 1877 instead of 1860. It seems nonetheless that the population distribution did not change much between 1860 and 1877, while there was enough variation between 1877 and 1900. Likewise, the strange figures found in some provinces in 1930 also recommend to employ an average between 1920, 1930 and 1940 to account for that date. See also the comments of Erdozain and Mikalerena (1999, 107-108) on this issue.

<sup>22</sup> Unfortunately, data on land ownership is only available for 1860 and 1920. Therefore, linear interpolation is employed to estimate that figure for 1900 and the data on 1920 is used for 1930.

effect of common lands to vary over time as the Spanish economy developed. In addition, internal and international migration rates are included in column (3) and (7) to account for their potential bias on the dependent variables. The remaining columns further test the robustness of the results by including the series of controls explained above, which take into account other potential determinants of human wellbeing.

TABLE I. COMMONS AND BIOLOGICAL LIVING STANDARDS

	Dependent variable							
	Life Expectancy				Heights			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Common Lands	0.13* (0.08)	0.12* (0.07)	0.13* (0.07)	0.05 (0.05)	0.00 (0.05)	0.00 (0.04)	0.00 (0.04)	0.02 (0.05)
CL*d_1900		0.05* (0.03)	0.05* (0.03)	0.06** (0.03)		0.06*** (0.02)	0.06*** (0.02)	0.06*** (0.02)
CL*d_1930		-0.01 (0.03)	-0.01 (0.03)	-0.02 (0.04)		0.05*** (0.01)	0.05*** (0.01)	0.05* (0.02)
d_1900	6.29*** (0.80)	5.29*** (1.00)	5.05*** (1.09)	-0.12 (1.39)	0.72 (0.48)	-0.37 (0.66)	-0.36 (0.66)	-0.52 (1.14)
d_1930	21.56*** (0.81)	21.54*** (1.04)	21.29*** (1.16)	10.62*** (2.67)	2.95*** (0.49)	2.04*** (0.47)	2.04*** (0.50)	1.78 (2.18)
Migration	No	No	Yes	Yes	No	No	Yes	Yes
Controls	No	No	No	Yes	No	No	No	Yes
Observations	137	137	137	137	124	124	124	124
R-squared	0.96	0.96	0.96	0.97	0.56	0.62	0.62	0.66

Robust standard errors between brackets; \*, \*\*, or \*\*\* denotes significance at 10, 5 or 1 per cent level. All regressions include provincial fixed effects. For simplicity, the intercept is not reported. Migration refers to both internal and international migration rates. Controls include income per capita, population density, agricultural population, urbanisation, industrialisation, land ownership and literacy.

The results evidence that there was no influence, neither positive nor negative, of common lands on biological living standards before 1860. Common lands were not less efficient than private lands before that date, thus supporting the revisionist literature on this issue (Allen, 1992; 2003; De Moor, 2009). However, the estimated impact of common lands on biological living standards is shown to be positive and statistically significant after that date. The explanation behind this change can be related to the tighter control that local communities exerted over the sale of these resources before the

*General Disentailment Act* in 1855. The role played by the central government during the first half of the 19<sup>th</sup> century limited itself to establishing the legal framework that allowed municipalities to freely dispose of their patrimony (Jiménez Blanco, 2002; Gómez Urdañez, 2002). It has been argued that sales and distribution of common lands carried out during this period also often ended up benefiting small and middle-sized local farmers (Jiménez Blanco, 2002, 149-150)<sup>23</sup>. It was not until the so-called Madoz Law, when privatisation was already quite advanced in certain areas, when the liberal state became actively involved in the process by forcing municipalities to sell their commons. Most land was then publicly auctioned to the highest bidder, thus benefiting the well-off that could bid on them (Tortella, 1987, 45)<sup>24</sup>. As a result, local communities lost control over who gained from these land transfers, which allowed wealthy individuals, often coming from outside the community, to appropriate resources that were being more fairly distributed before.

To illustrate the impact of the privatisation on biological living standards, it should be noted that common lands went from representing around 25.6 per cent of the total Spanish area in 1860 to 17 per cent in 1900. The estimates obtained here imply that, on average, the privatisation process is associated with a reduction in life expectancy by around 0.5 years and stature by around 0.5 centimetres during that period. Although these may seem low values, it should be stressed that life expectancy was only 29.8 years in 1860, increasing to 35 years in 1900, while heights only increased by 1.1 centimetres during this period. In Toledo, for an example where

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<sup>23</sup> It is worth mentioning that, in the highly unstable first half of the 19<sup>th</sup> century, the liberal movement was well aware of the advantages of the civil disentailment to increase the number of land owners and thus widen the social support to the revolution against absolutism (Gómez Urdañez, 2002, 139-140).

<sup>24</sup> Moreover, plots were not parcelled up and payments were required in cash, thus preventing small farmers from participating in the bids (García Sanz 1985, 28; Jiménez Blanco 2002, 150). Likewise, the use of public auctions also facilitated that foreigners could participate in the sales. Sales were carried out through simultaneous public auctions both in Madrid and in the village where the plot was located (Linares, 2001, 26).



privatisation was more intense (21 per cent of the land became private between 1860 and 1900), the effect was much more dramatic. Life expectancy would be reduced by around 1.3 years and heights stunted by 1.3 centimetres. These estimates, reflecting only the population average, should be also taken as a lower bound, especially in areas where access to resources was highly unequal, since the bottom-half of the distribution relied comparatively more on the commons to obtain a crucial complement for their incomes.

In relative terms, the impact of common lands on human wellbeing is much greater in the case of heights than in life expectancy<sup>25</sup>. Likewise, while the effect on life expectancy had already disappeared in 1930, the positive influence of the commons on heights was still visible in the period prior to the Civil War. This situation is due to the different ways in which both common lands themselves and the evolution of the Spanish economy affected life expectancy and heights. It is likely that the nutritional complement which commons supplied, particularly in terms of animal proteins, had a larger and more persistent impact on heights than on life expectancy, whose determinants were more strongly influenced by the improvements in the disease environment<sup>26</sup>. In this regard, advances in medical technologies, together with the increasing importance of the state in providing a healthier environment, made the contribution of the commons to life expectancy less and less necessary over time.

The coefficients of the time dummies illustrate that as the country developed, biological standards of living greatly improved, especially during the first decades of the 20<sup>th</sup> century. In this sense, it is especially interesting to discuss the relative impact of

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<sup>25</sup> A one standard deviation decrease in the stock of common lands reduced stature by 0.4 standard deviations, while life expectancy decreased by 0.1 standard deviations.

<sup>26</sup> Although life expectancy and heights are related because both are influenced by the nutritional status and the disease environment, the relative impact of each of these elements on these different measures of health is likely to be different. See Arora (2001, 703-705) for a discussion on these two indicators.

the modernisation process and the increasing role of the state by comparing the coefficients of the time-period fixed effects before and after including the host of controls in the model. In columns (3) and (7), the time dummies capture the combined impact of both processes. The results show that even though life expectancy increased throughout the whole period, the improvements were much larger during the first decades of the 20<sup>th</sup> century<sup>27</sup>. Increases in heights, on the other hand, are only visible between 1900 and 1930. Columns (4) and (8) add the set of controls reflecting the ongoing modernisation process reflected in growing incomes and higher urbanisation or industrialisation levels, together with increasing literacy rates and other factors affecting living standards. Interestingly, the effect of the time dummy for 1900 on life expectancy is no longer significant which means that the weak advances prior to that date were not due to increasing public intervention but to better economic conditions. However, the coefficient in 1930 is not only highly statistically significant, but it also remains historically important after including controls, thus implying that the role of the state on augmenting life expectancy was crucial during the first decades of the 20<sup>th</sup> century<sup>28</sup>. This finding, consistent with other research (Dopico and Reher, 1997), supports the idea that the first stages of economic modernisation were not so beneficial for human welfare, being only the active intervention of the state the key factor able to overcome the negative externalities arising from demographic pressures, urbanisation or industrialisation. Mostly available only from the beginning of the 20<sup>th</sup> century onwards, the new technologies of disease control, including efforts to educate the public on this

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<sup>27</sup> While life expectancy increased by an average of around 5 years between 1860 and 1900, it grew by around 16.2 years between 1900 and 1930.

<sup>28</sup> According to these estimates and holding the influence of the commons fixed, the role of the state accounts for around 10.6 of the 21.3 years by which life expectancy increased between 1860 and 1930 (column 4). Given that the control variables account for all the 5.05 years of increase between 1860 and 1900 (column 3), it can be concluded that increasing government intervention accounts for around two thirds of the improvements between 1900 and 1930.

matter, were not implemented by the market but by government action (Easterlin, 1999). On the other hand, given that the effect on heights of the time dummy in 1930 disappears when controls are included, increasing statures, only visible after 1900, were not related to state intervention but to improved economic conditions. These diverse patterns point again to the different relative importance that the disease environment and diets had in influencing mortality rates and heights mentioned above. In this sense, significant improvements in Spanish diets, especially regarding the consumption of meat, milk and eggs, were only achieved during the first decades of the 20<sup>th</sup> century (Simpson, 1995, 180-181).

Lastly, it is important to note that the welfare of these communities was not only influenced by the availability of common lands, but also by the way these collective resources were managed. As explained above, the communal regime in Spain involved two main types of user-rights: a direct but regulated access for all members of the community or a temporary cession of use rights to particular individuals in exchange for a monetary income. Table II reports the estimates when common lands are split up into two types depending on whether they were being exploited collectively or privately. While column (1) and (4) report the baseline specification, columns (2) and (5) introduce the variables of interest interacted with time-period dummies to allow the effect of common lands to vary over time and the remaining columns add the set of controls which account for other potential determinants of human well-being.

TABLE II. TYPES OF COMMONS AND BIOLOGICAL LIVING STANDARDS

	Dependent variable					
	Life Expectancy			Heights		
	(1)	(2)	(3)	(4)	(5)	(6)
Collectively-used Common Lands	0.01 (0.04)	0.01 (0.04)	-0.05 (0.04)	-0.02 (0.03)	0.01 (0.02)	0.00 (0.02)
Col. CL *d_1900		0.09*** (0.03)	0.07** (0.03)		0.07*** (0.02)	0.08*** (0.02)
Col. CL *d_1930		-0.01 (0.04)	-0.04 (0.05)		0.08*** (0.02)	0.09** (0.04)
Privately-used Common Lands	0.10* (0.06)	0.18** (0.08)	0.10 (0.07)	-0.03 (0.05)	0.04 (0.05)	0.06 (0.05)
Priv. CL *d_1900		-0.12 (0.10)	-0.11 (0.09)		-0.05 (0.08)	-0.05 (0.08)
Priv. CL *d_1930		0.01 (0.10)	-0.00 (0.09)		-0.02 (0.05)	-0.01 (0.06)
d_1900	5.18*** (0.72)	5.09*** (1.14)	-0.15 (1.37)	0.60 (0.41)	0.26 (0.68)	-0.27 (1.13)
d_1930	20.17*** (0.75)	20.21*** (1.11)	8.94*** (2.44)	2.82*** (0.37)	2.38*** (0.46)	1.73 (2.22)
Migration	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	No	Yes	No	No	Yes
Observations	137	137	137	124	124	124
R-squared	0.96	0.96	0.97	0.56	0.64	0.68

Robust standard errors between brackets; \*, \*\*, or \*\*\* denotes significance at 10, 5 or 1 per cent level. All regressions include provincial fixed effects. For simplicity, the intercept is not reported. Migration refers to both internal and international migration rates. Controls include income per capita, population density, agricultural population, urbanisation, industrialisation, access to land and literacy.

These estimates confirm the previous findings and clarify the picture portrayed above regarding the redefinition of property rights. On average, it was those user-rights enjoyed collectively, not the user-rights rented out to individuals, the ones which positively affected life expectancy and heights, thus stressing the importance of common rights in complementing households' incomes. Again, while no relationship is found between the different types of user-rights and living standards before 1860, the persistence of collective practices over the remaining common lands after that date is shown to be positively related with life expectancy and heights. Interestingly, prior to that date, local communities independently managed these resources, thus benefiting

their own neighbours when deciding both the forms of use and who enjoyed access to them. However, from the *Ley de Montes (Uplands Act)* of 1863 onwards, both the central government and the market began to actively influence the administration of these resources (Jiménez Blanco, 2002, 155; Balboa, 1999, 119, 124; Iriarte, 2002, 25). Private-use rights over the remaining commons not only progressively grew in importance, but also were increasingly subject to external regulations designed by forestry engineers and granted through public auctions. As a result, local communities partly lost control over the management of the commons and the progressive dismantling of collective-use rights increasingly involved the presence of powerful individuals or private firms that monopolised access to these resources<sup>29</sup>.

## 5. Conclusion

Common lands played a crucial role in the functioning of the rural communities in Spain. They constituted a source, among other different goods and services, of pasture, wood, fertilizer and fuel, together with the possibility of temporary cropping. The commons were indeed a crucial element of a system in which agricultural activity was completely integrated with cattle breeding and forestry. They also represented a critical asset for the local municipalities given that they were an important source of income. Although privatisation *per se* may have not been negative for economic growth, the way the liberal land reform was carried out in Spain, regarding both its distributional impact and its timing, had negative consequences for the standard of living of a large part of the population.

On the one hand, both the redefinition of property and user rights carried out between 1860 and 1900 mostly benefited a small elite, thus preventing an important part

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<sup>29</sup> Iriarte (1998, 133) stresses that this process undermined the social consensus over the management of the remaining common lands and increased both social conflict and the illegal use of these resources.

of the population from enjoying the benefits that commons used to provide. In this sense, undermined by the penetration of market incentives and the increasing intervention of the central government, local communities lost control over both the sales themselves and the management of the remaining commons. This process had a negative influence over how these resources were exploited and who enjoyed access to them, thus supporting Ostrom's (1990) thesis about the efficiency of the local management of collective resources. It is regrettable that the political heirs of the liberal Constitution of 1812 did not observe its preamble which stressed the risks of privatising communal lands and advocated the respect of local autonomy when managing those resources: 'the neighbours of the villages are the only people who know how to promote their best interests and nobody better than them is able to adopt the appropriate measures'<sup>30</sup>.

On the other hand, the timing of the process is also of considerable importance for two main reasons. First of all, the potential benefits of the privatization may not be fully achieved unless society has reached a determined level of development. Modernising agriculture requires not only financial resources, but also enough economic incentives to carry out those investments. Secondly, the negative effects of the dismantling of the communal regime can only be limited if either a wide array of market opportunities exists or, alternatively, if a new set of institutions is built to substitute the functions that the commons fulfilled for the local community. Unlike the Poor Laws in Britain, no compensation measures for landless peasants were deployed despite the privatisation of common lands. On the contrary, while state intervention in public health only slowly began to influence living standards during the first decades of the 20<sup>th</sup> century,

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<sup>30</sup> Quoted in Gómez Urdañez (2002, 139).

privatisation imposed a terrible shock on local institutions, which became both incapable of providing basic public services and were forced to increase the tax burden.

In conclusion, standards of living depended on the whole array of possibilities that peasant families could rely on. The persistence of collective resources in some regions provided peasants with mechanisms different from the market and made the transition to a market economy more socially sustainable, an outcome completely different from what happened in other areas, especially in the south of Spain. This view is not only compatible with the idea that the privatisation of common property was not a vital component of the agricultural revolution, but also points to the negative consequences of this process for the standards of living of the rural populations. Therefore, the choice followed by liberal governments of speeding up the transition to capitalism by urging the privatization of common lands may prove to have been mistaken.

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