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PATTERNS OF IBERIAN ECONOMIC GROWTH IN THE EARLY MODERN PERIOD¹

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Abstract

Around 1500 Spain and Portugal were among the most affluent nations in the world, and had income levels which were similar to those of other Western European countries. Three hundred years later the Iberian economies had lost their economic supremacy and fell behind all the main European powers. When did the first two global empires in history lose their hegemony to become secondary actors? What were the foundations of the collapse that explains the divergence from northwestern Europe? In this chapter we address these issues and describe what we now know about the long-term trends of Iberian economies between 1500 and 1800.

Keywords: Early modern comparative growth, regional dynamics, agriculture, trade, industry

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1. Introduction

In the late middle ages, Western Europe was the richest region of the world, and Spain and Portugal were, even in the least favorable estimations, at average Western European income levels.² Three hundred years later, the Iberian economies had lost considerable ground and fell behind all the main European powers. In this chapter, we describe the comparative aggregate performance of the Spanish and Portuguese economies during the early modern period. First, we present the evolution of incomes per capita and the changes experienced in the main sectors of these economies. Second, we discuss the regional dynamics to reveal whether the general trends present were common or whether we can find significant internal differences. Finally, we study the Spanish and Portuguese cases in a broader context, comparing their incomes per head with those of the main European powers. This reveals the moment when the Iberian countries diverged from northwestern and central Europe.

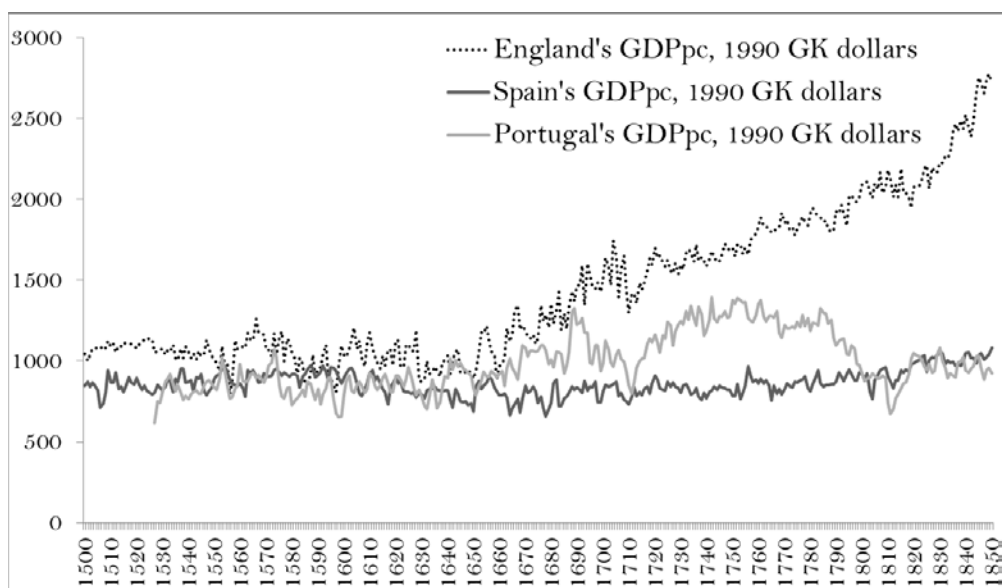


Figure 1. GDP per capita in constant, 1990 “international” Geary-Khamis dollars for Spain, Portugal, and England, 1500-1850. Sources: for Spain, Alvarez-Nogal and Prados de la Escosura (2013); for Portugal, Palma and Reis (2019); for England, Broadberry et al (2015). In the latter case, levels are extrapo-

² See Broadberry et al (2018, p. 989) for evidence that Europe was already ahead by 1500. In section 4 we discuss comparative Western European GDP per capita levels in detail. For a discussion of methodologies and sources used to build premodern GDPs, see Jong and Palma (2018) and Palma (2020).

lated backwards from the 1870 level for Great Britain, with growth rates corresponding to the borders of England until 1700 and Great Britain afterwards.

Before diving into details, we provide some background on the overall performance of Iberia, by comparing with it with that of England (Figure 1).³ The divergence started relatively late – the English economy only took off relative to Spain from the mid-seventeenth century, and relatively to Portugal from the late seventeenth century.⁴

In Spain, the sixteenth century was a period of sustained but slow economic growth, with flourishing production of raw wool that was also exported to international markets, at the same as the country forged its empire (Álvarez-Nogal and Prados de la Escosura, 2013).⁵ Spain was especially affected by the seventeenth century crisis, when increasing fiscal pressure hit urban economies and together with environmental deterioration reduced agrarian production (Álvarez-Nogal et al. 2016). It would not be until the eighteenth century that sluggish growth would resume, although by the end of the century income per capita was still below the maximums reached two hundred years before.

As for Portugal, there was persistent growth in per capita incomes for long periods of time from the early sixteenth century onwards, but especially during c. 1630-1755, despite this being a period of population growth (Palma et al. 2019). The dynastic union of 1580-1640 was a period of convergence of Portuguese per capita incomes with those of Spain. In 1580, Portugal stood at 725 Geary–Khamis (GK) “international” 1990 dollars per head, compared with Spain’s

³ These numbers result from the recent efforts of economic historians who have collected much quantitative information from primary and secondary sources. They are far from set in stone, since their construction implies multiple methodological and data-related challenges (Jong and Palma 2018, Palma 2019). But they are certainly much better than the only alternative, the “guesstimates” of Maddison (2006, p. 249), who writes: “I assumed a growth rate of Spanish GDP per capita of 0.25 per cent a year from 1500-1600, no advance in the seventeenth century, and some mild progress from 1700 to 1820. I adopted a similar profile for Portugal”. We now know that this last assumption, for instance, does not work well. As Figure 1 shows, Spanish and Portuguese early modern macroeconomic history was considerably different.

⁴ In Figure 1, the levels for England for 1700-1850 in fact correspond more rigorously to Great Britain. If the line is indeed interpreted in this fashion, linking the indexes in 1700 and continuing to go back in time means implicitly assuming that Scotland grew at the same rates as England prior to 1700. Given that the growth data is only available for the borders of England prior to 1700 and Britain thereafter, there is no perfect solution to this problem. However, any adjustment that could make to the English series would lie within the reasonable margins of error which must be attributed to the series shown in Figure 1. Since there is less uncertainty about trends than levels, we prefer to call the line “England” to emphasize that there was no growth in that territory over the 1500-1650 period.

⁵ However, production of woolen textiles (as opposed to raw wool) declined.

920. By contrast, by the Restoration of the Portuguese Monarchy in 1640, Portugal was richer, at 895 GK “international” 1990 dollars per capita, compared with Spain’s 819. The first half of the eighteenth century was a period of relatively fast imperial and commodity-driven growth, which also interacted positively with agricultural productivity (Costa et al 2015). However, the second half of the eighteenth century was characterized by a period of no growth, in turn followed by fast decline from about 1790. The process of decline would continue persistently (with only a partial recovery around 1810–20) well into the nineteenth century (Palma and Reis 2019).

While knowing the timing of divergence does not give us direct answers with regards to the causes, it is sufficient to exclude some hypotheses. For example, for both Spain and Portugal, the divergence comes too late to have any medieval origins, whether cultural or institutional. At the same time, it comes too early, in both countries, in order for the Napoleonic Invasions to be blamed. However, perhaps Iberia’s macroeconomic performance vis-à-vis England is not so surprising in view of the fact that Spanish and Portuguese political institutions became visible worse than those of England from the middle of the seventeenth century (Henriques and Palma 2019). In fact, it is remarkable that there is such a good temporal match between the timing of the political and economic divergence. The reasons for that political shift are yet to be understood in full.

2. Spain

Overall, the study of Spanish economic history has been framed by the notion of a poor economy in decline. But recent work has suggested that far from being a backward economy, Spain was already an affluent nation (by the standards of the time) prior to early modern imperial expansion (Álvarez-Nogal and Prados de la Escosura 2007, 2013; Álvarez-Nogal et al 2016). The new estimations of preindustrial GDP in Spain are based on the use of urbanization rates for the estimation of the secondary and tertiary sector and on indirect and direct estimations of agricultural production. Although they use different sources, these different studies show consistent results which define very similar long term trends. However, we should note that far from being a homogeneous economy, Spain was the combination of a number of regions that often presented very different economic experiences, following trends that overtime became

particularly divergent between its interior and periphery. Figure 2 shows a map of early modern Spain.



Figure 2. Map of Spain. Early modern regional divisions as presented in Álvarez-Nogal and Prados de la Escosura (2007).

Output per head was relatively high in Spain in the mid-fourteenth century, but the effects of the Black Death in Spain were very different to those observed in other countries in Europe. In the Spanish case, instead of improving output per capita, the demographic shock produced a significant decline. The Malthusian pressures that were present in other parts of Europe did not exist in Spain, which was characterized by a low demographic pressure economy. The Black Death not only diminished the already scarce labor available, but also destroyed the market networks that existed in the country (Alvarez-Nogal and Prados de la Escosura 2013). The sixteenth century was in turn a period of recovery and by the 1590s Spain had almost recovered the output per capita reached in the mid-fourteenth century. However, the seventeenth century crisis hit Spain particularly hard, and output per capita fell rapidly once more, in a decline that continued until the end of the century.

The contraction of the Spanish economy was the result of a combination of internal and external factors. Climate change that took place in the late-sixteenth century, and that extended its effects during the first half of the seventeenth century, had remarkably negative effects in Spain (Alvarez-Nogal et al. 2016). The so-called ‘initial oscillation’ reduced temperatures and increased floods, with a consequent significant impact on the agrarian economy (Barriendos 1994; Rodrigo et al. 1999). At the same time, the enormous increase in military expenditure led the king to stop payments to the bankers in Genoa between 1575 and 1577, affecting local bankers and small merchants. The country also suffered monetary instability from the 1590s onwards, namely due to the devaluation of the *vellón*.⁶ The urban centers were hit particularly hard and the market economy that had emerged during the sixteenth century was destroyed.⁷ During the eighteenth century, Spain was finally able to achieve steady sluggish growth, but it was not until the middle of the nineteenth century that the country was able to recover the output per capita levels of the mid-fourteenth century.⁸

2.1. Income per capita

The territories that currently form Spain were far from been a unified ecosystem: they were neither a unified economy nor a single political entity. Part of the explanation behind the different regional growth paths is related to the different institutions that dominated the territories that form current Spain. Land distribution was more equal in the northern coast from Galicia to Navarre and produced more egalitarian societies. The situation was different in the *Meseta* where lords were able to exercise higher coercive power against peasants often through the election of officials in key administrative positions, while the existence of large *latifundia* in the south increased inequality. In Aragon the power of the lords was almost total and the influence of the King limited, offering less room to peasants to organise their own production, a situation similar to Valencia where lords also had a great independence from the King. In Catalonia on the other hand, institutional changes derived from the late sixteenth century decreased

⁶ Between 1566 and the early 1580s Spanish coinage had a considerable amount of silver (*vellón rico*). But while from the 1580s to 1596 it had 8 grams of silver per coin, this fell to only 1 gram during 1596-1598, and continued to fall thereafter, especially after 1602.

⁷ The increase in fiscal charges in Castile in the wake of the revolt of the Comuneros was also significant. The *alcabalas*, a tax that had to be collected by the cities in Castile, was doubled, new taxes for the consumption of goods like wine, meat and oil were introduced (Alvarez-Nogal et al. 2016).

⁸ For an alternative hypothesis about the reasons for Spanish decline, see Grafe (2012).

the power of the lords and made the continuation of bad practices more difficult (Yun Casalilla 2019, p.30). Inheritance systems also played a key role in the distribution of economic assets. Indivisible inheritance dominated large areas including the Crown of Aragon and most of the north, while inheritance laws in the rest of the country imposed a more equal distribution of assets (Ferrer Alòs 2011, p.268). The regions of the Crown of Aragon also made extensive use of *enfiteusis* (lifelong leases on land) which provided stability for peasants, encouraged investments and gave peasants more control over their production.

Therefore, the large climatic, economic and institutional diversity present at the time meant that the economic history of Spain during the modern age should be framed within the existence of regional economic histories.

	New		Old Castile			Balearic		
	Spain	Castile	Andalusia	Murcia	/Leon	Valencia	Islands	Catalonia
1530	87	99	114	90	90	97	128	88
1591	93	150	93	96	93	94	134	79
1700	83	110	109	105	70	72	146	89
1750	80	154	101	98	62	79	110	73
1787	81	143	100	93	61	85	97	100
1857	100	145	117	78	82	95	133	128

Table 1. Total output per head (Spain in 1857 = 100). Source: Álvarez-Nogal and Prados de la Escosura (2007)

The growth of the sixteenth century was dominated by the regions of the interior where the economic expansion took place thanks to dynamic urban economies and wool trade that at the same time increased the demand of a more diversified agrarian economy. The environmental limitations of the interior pushed peasants to look for alternative sources of income in activities like transports that helped and reinforced trade and the system of fairs (Yun Casalilla, 2019, p. 109). New Castile was also heavily influenced by the presence of Madrid (declared the capital of the country in 1561), which, according to some authors, determined the economic fate of the whole region (see for instance Ringrose 1983, p. 15). As Table 1 shows, GDP per capita grew rapidly between 1530 and 1591 presenting the highest growth rates of all the regions with an average yearly growth rate of 0.69 per cent. Without the economic push of the capital

and less room for agrarian expansion, the growth in Old Castile was more moderate. The peripheral regions present a much differentiated growth pattern in the long term. In the eastern coast and in contrast to the interior, both Catalonia and Valencia show a moderate decrease of their income per capita levels during the sixteenth century that lasted longer in the case of Valencia. In the south, Andalusia did not benefit as much as the interior from the growth experienced in the sixteenth century, and in fact income per capita levels decreased between 1530 and 1591.

The seventeenth century crisis was harder in those regions that had grown more during the previous century. In the interior, New Castile had declined considerably by 1700, and although the crisis was not as hard in Old Castile, it lasted longer and the recovery did not appear until the eighteenth century. In the periphery, the crisis was milder in Catalonia and Valencia, although the recovery in the latter region would take longer than in the former. In Andalusia the seventeenth century was a period of growth that although moderate, contrasted with the sharp decline experienced in the interior and also in other peripheral territories.

The different recovery rates that followed the seventeenth century crisis mark the beginning of a little divergence within the Spanish economy with the rise of the periphery and the relative decline of the interior. By 1700 Catalonia had already recovered the income lost during the crisis and although Valencia had to wait longer, it also presented a very intense recovery during the eighteenth century. The expansion was also intense in the case of New Castile in the first half of the eighteenth century but stopped abruptly afterwards, while Old Castile remained immersed in a long period of stagnation with income per capita levels in 1787 well below those achieved in 1591. The lack of a growth pole like Madrid, and especially the disintegration of the urban networks including the collapse of Valladolid, deepened the crisis (Yun Casalilla, 1990, p. 569). The resilience that Andalusia displayed to the effects of the general crisis weakened in the eighteenth century that was a period of stagnation with income per capita remaining relatively stable.

2.2. National trends in agriculture

The lack of official records for premodern times makes necessary the use of alternative sources for the estimation of agrarian production. The payment of the tithe, usually ten per cent of the output generated by each producer, has been extensively used by economic histori-

ans to estimate long term changes of agrarian production in the past. We should however take into account that its payment became less common in the late eighteenth century, and after the Napoleonic invasion the source becomes very unreliable. Nonetheless, the source is a solid option to proxy low swings in the agrarian sector, particularly in the case of Spain where the amount of information available is higher than for other countries. Figure 3 shows the estimation of total production in Spain using tithe series between 1500 and 1800. The estimation includes a wide range of products including the three that dominated Spanish agriculture (grain, olive oil and wine), as well as other sectors like livestock or vegetables.⁹

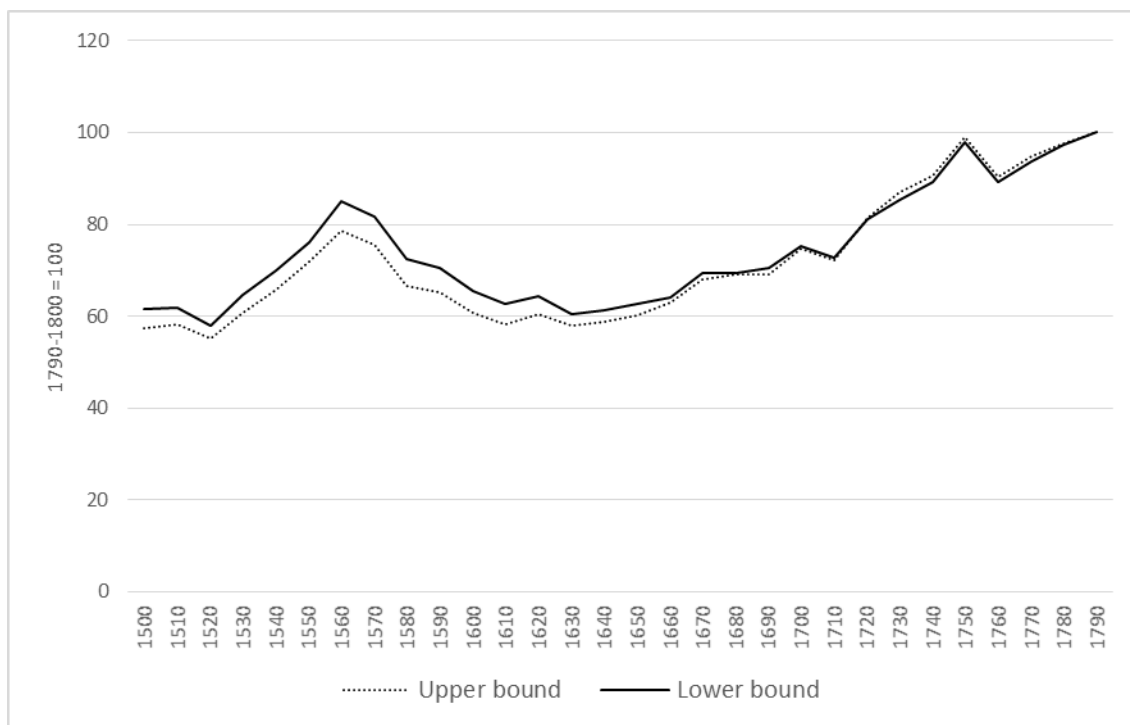


Figure 3. Agricultural output in Spain, 1500-1800. Sources: Álvarez-Nogal et al. (2016)

Total production increased between 1500 and 1800, although there were clear long term swings within the period. Agrarian production in Spain increased between 1500 and the 1570s, with a growth that was particularly intense during the second half of the century. The primary sector experienced a severe contraction during the following decades that coincide with the general crisis of the seventeenth century where Spanish agrarian output continued to decline until the first decade of the century. A period of relative stagnation followed, until growth resumed in the mid seventeenth century and continued peaking in the 1750s to suffer a

⁹ For a detailed description of the series used and the products included, see Álvarez-Nogal et al. (2016).

quick contraction and later recovery. Nonetheless, by 1800 total agricultural production had barely recovered the maximum levels achieved fifty years before.

If we take into account the evolution of population to estimate Spanish agrarian output in per capita levels, the long term trends and particularly the levels present some important differences. Figure 4 shows the estimation of agrarian output per head using tithe records.

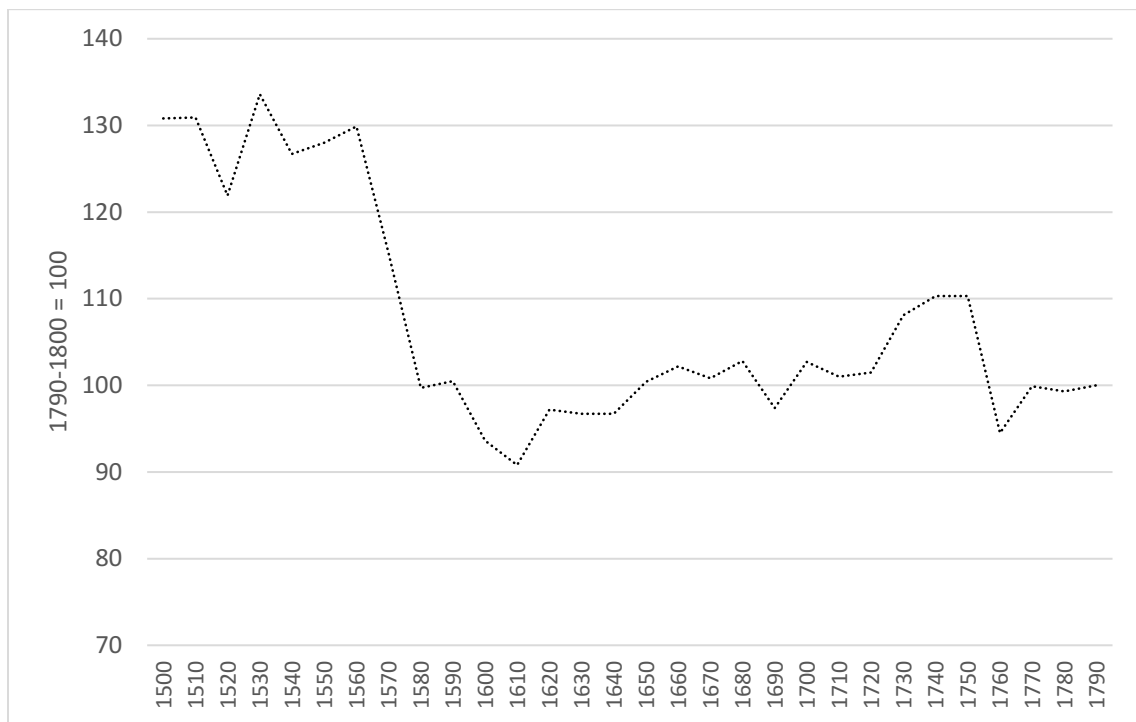


Figure 4. Agricultural output per head in Spain, 1500-1800. Sources: Álvarez-Nogal et al. (2016)

In per head terms, agrarian production remained relatively stable during most of the sixteenth century, although it experienced a sharp decline during the last decades which lasted until the first decades of the seventeenth century. A process of recovery took place until the 1750s followed by a decline. Therefore, we can distinguish three main features in Spanish agriculture between 1500 and 1800. The first one is that the maximum levels of agrarian production per head in Spain were reached in the early sixteenth century, the second is the sharp contraction that followed until the seventeenth century, and the third is that the slow recovery that was not enough to recuperate the levels achieved in the late sixteenth century.

The early affluence achieved by Spanish agrarian producers was also manifested relative to other European economies. In the first decades of the sixteenth century, agrarian output per capita was around 20 per cent higher than in Holland and almost 40 per cent higher than in Britain (Álvarez-Nogal et al. 2016, p. 466). The success of agriculture in Spain during the sixteenth century can be understood linked to the development of the urban economies that driven by domestic and international trade, increased the demand of primary products and fostered the development in the countryside. However, since the late sixteenth century, the rampant fiscal pressure that was especially hard in the cities, monetary instability and the alteration of international trade due to the increasing political conflicts, had a devastating effect in the trade networks that were the engine of urban wealth.¹⁰

Between 1500 and 1800, economically active population moved together with agrarian production per capita. This suggests that far from been subjected to Malthusian forces, Spanish agriculture could be better defined as a frontier economy. Therefore, demographic shocks like the one suffered in the seventeenth century instead of benefiting output per worker, dismantled a system where the collapse of the urban economies decreased agrarian production not only in absolute but also in per capita terms. The situation was worsened by a deterioration of climatic conditions that as consequence of the effects of the Little Ice Age became colder and wetter in key periods of agrarian recession, like from the late sixteenth to mid seventeenth century or the second half of the eighteenth century (Rodrigo et al. 2001). The combined forces of an urban economy pushed to its limits, unfavourable climatic conditions, and the rural spill-overs from the economic and institutional negative effects of American silver (Palma 2019) produced a deep crisis in Spanish agriculture that would not recover in centuries.

2.3. Regional trends in agriculture

Climate played a vital role in the creation of different regional agrarian systems in Spain and helps us to understand the different patterns followed at regional level. A large region occupying most of the northern coast from Galicia to Navarre enjoyed high rainfall levels that allowed the development of animal husbandry and helped peasants on the event of harvest failures. Lower rainfall levels and a more extreme climate in the interior developed a system of dry crops and livestock dominated by large flocks of sheep that was controlled by the *Mesta*, a key

¹⁰ See Álvarez-Nogal and Chamley (2014, 2016), Ruiz Martín (1968) and Álvarez-Nogal (2005).

institution created to maintain and control the production of wool. The milder ecosystem in the Mediterranean coast made possible the creation of a mixed system with a more diversified agriculture.

Although we can find some general trends, the evolution of agrarian production in Spain at regional level between 1500 and 1800 also presents important differences. The growth that took place during the sixteenth century was dominated by the areas in the eastern Mediterranean coast and also New Castile. New crops gained importance in the Mediterranean coast including rice, sugar, mulberry trees or wine that in areas of Valencia represented up to one fifth of total production each (Furio, 1995, p. 279). The growth in New Castile was possible thanks to the combination of large portions of uncultivated land and migratory movements from the northern regions that participated in the harvests of wheat and silk (Yun Casalilla, 2019, p. 127).

Andalusia and the eastern Mediterranean were also the regions where the agrarian crisis appeared first and was more intense during the last decades of the sixteenth century, while the fall in agrarian production began later and was harder in the interior. The crisis was especially hard in Old Castile, where the dismantling of the urban trade networks was more intense (Garcia Sanz, 1982, p. 376). The north on the other hand, presented a very different and distinctive pattern during the seventeenth century, characterised by a growth that was possible thanks to the introduction of new products like maize that also allowed the expansion of arable lands that were not so suitable for traditional crops (Bilbao Bilbao and Fernández de Pinedo, 2018, p.123). The large presence of animal husbandry mitigated part of the crisis while the increase of fiscal pressure was less damaging thanks to the high levels of self-consumption (Yun Casalilla 2019, p. 425).

The eastern Mediterranean recovered quickly during the second half of the seventeenth century and until 1800 presented higher growth rates in agrarian output than the interior, supported by local demographic growth (Palop Ramos, 1982, p. 410). Catalonia experienced a rapid increase of viticulture from the late seventeenth century encouraged by exports to England and the introduction of more efficient contracts like the *rabassa morta* (Carmona and Simson, 1999). Following the expansion of irrigated land, agriculture also diversified in Valencia with the extension of rice, wine and mulberry trees that in certain areas occupied almost half of all cultivated land (Furio, 1995, p.327). The damaged from the expulsion of the Moriscos was quickly

compensated thanks to the repopulation through internal migrations. The crisis of the seventeenth century was longer in the interior and Andalusia that also presented lower growth rates than the peripheries during the following century. Therefore, between the mid seventeenth century and 1800 a process of divergence took place between a more dynamic periphery and the interior of the country.

2.4. Secondary and tertiary sectors

Urbanisation rates, commonly used in the literature to proxy the evolution of the secondary and tertiary sectors, increased in Spain during the sixteenth century thanks to the development of domestic and international trade, particularly of wool and also to the imperial expansion. A decline that was especially sharp in the Crown of Castile took place during the seventeenth century and was connected with the dismantlement of the trade networks, partially consequence of the increasing taxation that was especially hard in the Castilian cities. The recovery that followed after 1700 was very intense and on average, by 1750 Spain had recovered the urbanisation levels of 1591. However, the national averages hide the existence of regional dynamics where the economic centre of the country moved from the interior to the periphery (Figure 5).

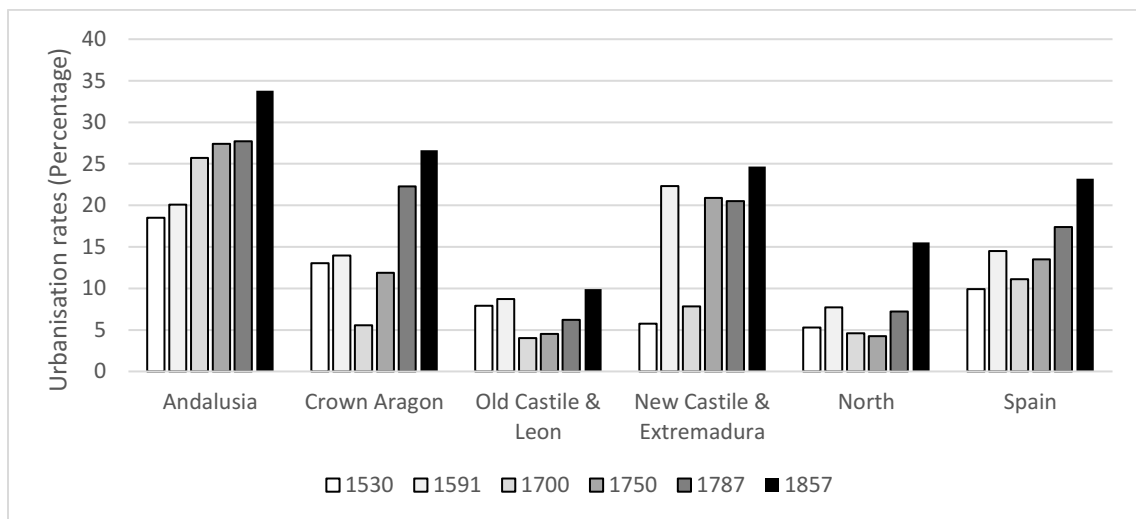


Figure 5. Urbanisation rates in Spain, 1530-1857. Source: created from Álvarez-Nogal and Prados de la Escosura (2007).

The sixteenth century was dominated by the pre-eminence of the interior and particularly by the role of its urban and trade networks. In New Castile urbanisation rates increased

from 6.7 per cent in 1530 to more than 24 per cent in 1591 in a process that followed the expansion of the agrarian sector that was also important in the case of Extremadura. Textile production linked to wool experienced an intense growth in cities like Cuenca that with Segovia probably became the largest textile producers in the Iberian Peninsula thanks to its privileged position within the *Mesta* system (Reher, 1990, p. 16). The increase of urbanisation levels in Old Castile was more moderate, as it was in the periphery like Catalonia, Valencia and Aragon that present a modest growth during the sixteenth century starting from already very high levels in the case of the first two. There were important improvements in key sectors like trade in the coast that increased in the area thanks to the improvements in security against the actions of northern African pirates and the increasing connections with Genoa and its merchants (Furio, 1995, p. 285). On average, the regions of the north also present small increases in urbanisation with the exception of Navarre where it more than doubled. In the south, Andalusia also increased the share of the population living in urban areas, as in the case of Catalonia and Valencia from already very high levels.

The impact of the seventeenth century crisis was felt in all the regions with the only exception of Andalusia, where the cities from the coast, particularly Seville and later Cadiz, benefited from the expanding empire. The decline was sharp in the interior, especially in Extremadura and Old and New Castile that suffered the collapse of the trade networks and increasing taxation. The manufacturing growth poles that dominated the expansion of the sixteenth century almost disappeared, as the case of Cuenca where in 1721 there were almost 1,485 houses abandoned and in ruins (Reher, 1990, p. 16). In the periphery the effects of the seventeenth century crisis were hard, particularly in Valencia were delayed in the case of Catalonia. Urbanisation remained stable in Catalonia until 1700, while in the case of Valencia the percentage of urban population decreased sharply during the seventeenth century crisis. Silk manufacturers in Valencia were particularly hit by the expulsion of the *moriscos* that were key on its production (Gonzalez Enciso et al., 1992, p. 123). Aragon showed very similar trends to Catalonia and especially Valencia. The northern regions present a decrease that on the other hand was not as hard as in the interior.

The recovery that followed the general crisis reinforced the divergence that took place in the agrarian sector between a stagnating interior and a dynamic periphery with the only exception of New Castile, where the growth of Madrid compensated the decrease of other tradi-

tional urban centres. In Old Castile and Extremadura the recovery of the eighteenth century was so slow that it would not be until 1857 that both regions would reached the urbanisation levels achieved in 1591. In large areas of Castile urban centres lost ground, and a ruralisation process took place with the primary sector increasing its weight in the cities (Marcos Martín, 2000, p. 513). In addition to the quantitative loss, textile manufacturers in cities like Segovia or Palencia also had to reduce the quality of their products to adapt them to a different market (Garcia Sanz, 1985, p. 18). In the periphery the recovery was very intense in Catalonia, Valencia and Aragon, particularly during the eighteenth century when urbanisation rates grew rapidly to historical maximum levels by the end of the century. While fiscal pressure increased particularly in the Crown of Castile, cities in Catalonia or Valencia were not taxed as much as those in the interior allowing a more efficient allocation of disposable capital (Yun Casalilla, 2019, p. 428). The experience in the north was diverse with Galicia stagnating, Navarre presenting a moderate growth and the Basque Country experiencing a very intense growth especially during the second half of the eighteenth century. Although the growth of urbanisation rates in Andalusia decreased, the region maintained a steady increase.

Summarising, activity in the secondary and tertiary sector present significant regional differences that as in the case of agriculture moved the economic centre of Spain from the interior to the periphery. The long-lasting effects of the seventeenth century crisis in the cities of the interior and the sluggish recovery that followed contrasted with the quick and intense recovery that was experienced in the periphery, reinforcing the effects of the little divergence within the Spanish economy.

3. Portugal

While the literature in economic history has long considered Portugal to have been backward and in decline, or at least stagnation, during the early modern period (see for instance Allen 2005 or van Zanden 2009), actual data on GDP or real wages did not exist until recently. Using a large dataset for prices, wages, and rents taken from the archives of a variety of institutions, such as hospitals and monasteries, and representative of the whole country, Palma and Reis (2019) have recently put together the first GDP series for Portugal from 1527 and 1850.¹¹

¹¹ In contrast to the Palma and Reis (2019) approach which is based on data from contemporary sources, Maddison (2006, p. 249), simply assumed his figures for Portugal, as we have noticed.

Regional trends did not usually differ markedly from the national trend, though there are some caveats. Figure 6 shows the location of the four regions used in the construction of the national GDP by Palma and Reis (2019): the hinterlands of the country's main cities, Porto, Coimbra, Lisbon, and Évora. In turn, Figure 7 shows the Consumer Price Index (CPI) for these 4 regions, and Figure 8 the skilled real wage indexes. These figures show that commodities and labor markets were highly integrated in Portugal.

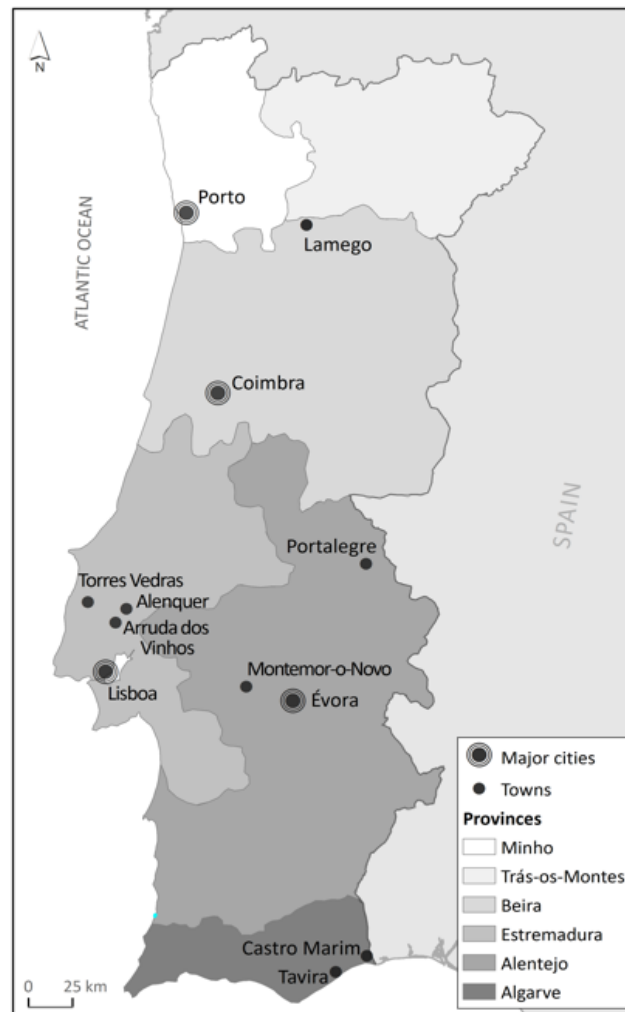


Figure 6. Map of Portugal. The borders correspond to the eighteenth century provinces, and the map indicates locations referred to in Palma and Reis (2019), which is also the source for this figure.

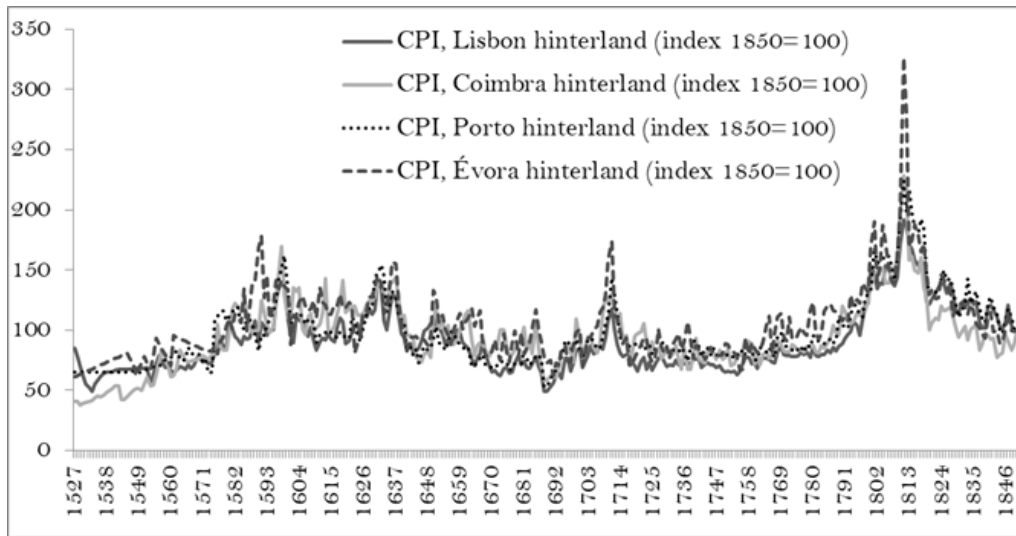


Figure 7. CPI for 4 regions of Portugal, 1527-1850. Source: Palma and Reis (2019)

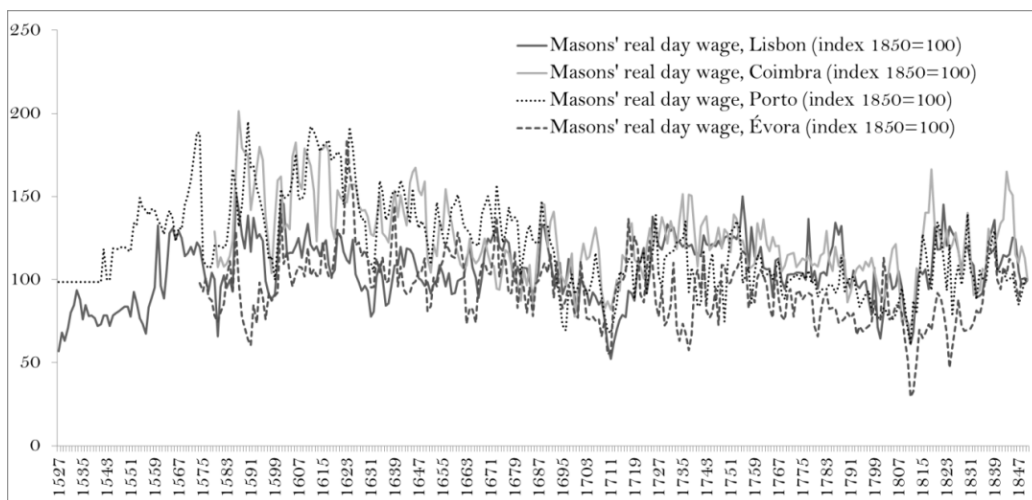


Figure 8. Skilled real wages for 4 regions of Portugal, 1527-1850. Source: Palma and Reis (2019)

3.1. Income per capita

Figure 9 shows Portugal's GDP per capita in constant prices. Portugal's macroeconomic history was highly nonlinear, far from an oversimplified Malthusian situation. The late middle ages corresponded to a favorable situation (Henriques and Reis 2019, Henriques et al 2019, Cardoso and Garcia 2009) which was followed by a period of decline lasting until about 1550. It's important to notice from the outset that Portugal's economy did not perform particularly

well during the sixteenth century, even if this may seem surprising to those who feel that trade associated with the overseas empire must have had central importance. This is easily explained by the very small volumes of that trade by comparison with the overall size of the economy (Costa et al 2015).

Intensive (per capita) output growth is clearly noticeable since the 1630s, but a 3rd degree polynomial suggests that it may have started earlier, in the last quarter of the sixteenth century.¹² Remarkably, economic growth was accompanied by demographic growth until the mid-eighteenth century, when returns from the imperial economy were at its peak (Palma et al 2017; Costa et al 2015).¹³ Around the time of the 1755 earthquake, Portugal stopped growing, though income levels stayed at comparatively high plateau; then in the 1790s a persistent period of decline began, and this was to continue well into the nineteenth century. As a consequence, Portugal was to become Western Europe’s poorest country by 1850. Portugal’s process of modern economic growth only started a century later, in the 1950s.

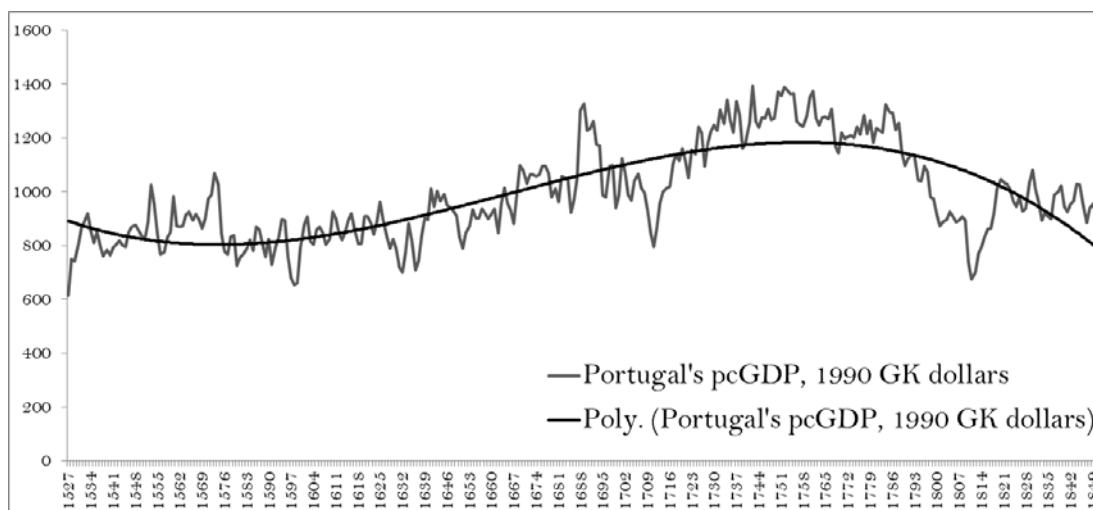


Figure 9. Portugal’s GDP per capita, in constant prices (“international” 1990 Geary-Khamis dollars). Source: Palma and Reis (2019).

¹² As is often the case with historical data and methods, there is some uncertainty about the exact timings.

¹³ Modern tests of the Malthusian model and its variations have relied primarily on the Wrigley-Schofield demographic data for England, one of the main available sources of annual national data on population stocks for a pre-modern economy. But Portugal underwent about 200 period years of growth of both population and income per capita (Palma et al 2019, Palma and Reis 2019). The combination of intensive and extensive growth is uncommon in premodern economies, as it is a feature of modern economic growth (Kuznets 1966, p. 34-85 and Broadberry et al 2015, p. 3).

It is difficult to pin the exact reasons for the dismal performance of the Portuguese economy from the mid-eighteenth century onwards.¹⁴ One proximate reason must have been the fact that the engines of much of the growth during the previous decades were exhausted, but no new sources of growth appeared. Progress had been driven by the effects of maize on agriculture, by the boom generated by Brazilian growth and perhaps by the lagged effects of some earlier institutional progress.¹⁵ The imperial economy also had an increasing impact as time went by, but commodity-driven growth could not last forever, and was indeed put to a sudden stop with the opening of Brazil's ports to direct international trade in 1808, followed by the loss of Brazil itself in 1822. Additionally, Portugal's productive specialization and other internal conditions did not favor the development of a formalized schooling system, which became increasingly important for more successful European economies as the nineteenth century rolled in. In turn, economic geography favored more central regions of Europe. Finally, institutional evolution was not favorable from the late seventeenth century onward (Henriques and Palma 2019), a development which was caused at least partially by an institutional resource curse caused by discovery of the Brazilian gold (Macedo 1982; Palma 2019).¹⁶

3.2. National trends in agriculture

The most important factor underlying Portugal's positive growth performance from around 1600 until the mid-eighteenth century was the extent of structural transformation. Table 2 shows the remarkable progress which took place over the 1600-1750 period.¹⁷ As column 4 shows, the percentage of the population working in the secondary and tertiary sectors grew from 31% in 1600 to a remarkable 47% in 1750. This progress, however, not sustained. As late as 1800 it was still at 45% but it then declined to only 33% by 1850. This process of "de-

¹⁴ One popular explanation concerns the differentially negative effects of the Catholic religion compared with, for instance, Protestantism. It is to be noted, however, that Portugal had a numeracy rate close to the most advanced countries in Europe as late as the eighteenth century (Stolz et al. 2013, pp.562-4). This situation was to change drastically in the nineteenth century.

¹⁵ A series of legal reforms (*Ordenações Manuelinas*), which were progressively issued from 1512 to 1605, encouraged the standardization of weights and measures, and may have prompted specialization gains from additional market integration. It is not clear how much these legal changes were enforced, since the laws were periodically reissued – a sign of previous limited enforcement. Furthermore, a regional diversity of weights and measures persisted well into the nineteenth century.

¹⁶ There were also notable problems of judicial enforcement (Rodrigues 2019), though more comparative evidence on this matter, from an international perspective, would be welcome.

¹⁷ Ribeiro da Silva and Carvalho (2017), using a different methodology and sources as compared with Table 2, nevertheless reach similar conclusions both in terms of magnitude and timing of structural change.

industrialization” (which, to be rigorous, also represented a decline of the service sector) is the most salient feature of the Portuguese macroeconomic history, and it largely determined the fall in GDP per capita observed in the late eighteenth century and for much of the first half of the nineteenth. Structural change would fail to take place for a long time. Going beyond the years of Table 2, the percentage of the population working outside agriculture continued comparatively low, at 34% in 1862 and 1890, only growing to 37% by 1900. As late as 1911, it was still considerably lower than it had been in 1750, at 39%.¹⁸

	(1)	(2)	(3)	(4) = (1) + (2)	(5) = (1) / (4)
	Urban	Rural Non Agricultural	Agricultural	Total Non-Agricultural	Urban/Total Non- Agricultural
1500	0.155	0.169	0.676	0.324	0.479
1550	0.151	0.161	0.688	0.312	0.485
1600	0.132	0.173	0.695	0.305	0.432
1650	0.124	0.239	0.637	0.363	0.343
1700	0.125	0.286	0.589	0.411	0.304
1750	0.173	0.291	0.535	0.465	0.373
1800	0.162	0.289	0.549	0.451	0.359
1850	0.176	0.155	0.669	0.331	0.531

Table 2. Portugal’s population shares by total by occupation. *Note:* Urban corresponds to population >5,000. *Source:* Palma and Reis (2019).

The principal alteration in Portugal’s agriculture over the early modern period consisted of the gradual replacement of pastoral by arable production (Reis 2017, p. 174), the rise of wine and oil production, and an important shift from wheat, rye and millet to American corn (maize).¹⁹ During an initial period, in the two or three decades following 1500, there was a tendency for incomes to decline, a trend shared with some other European economies. This corre-

¹⁸ The percentages for 1862, 1890, 1900, and 1911 are from Reis (2005).

¹⁹ Costa et al. (2015, 2018), Magalhães (2010). We note in passing that the shift from animal to grain production corresponds to a shift from a land to a labor intensive mode of production, which suggests increased population pressure on the land (Henriques and Reis 2019).

sponded to continued population catch-up from the post-bubonic plague population levels. In the absence of sufficient trade, technical or institutional change, incomes fell.²⁰

Agriculture, which in the fifteenth and early sixteenth centuries had been predominantly pastoral (Medeiros 1993) gradually switched to arable, a change in which – given individuals’ taste for variety in food intake – they were only willing to incur since it was a way to feed more people without improvements in technology. From the mid-sixteenth century onward, incomes tended to grow both intensively and extensively for around 200 years. This was caused by a combination of factors of varying degrees of importance. Land clearances were capital-intensive and appeared to have played a significant role. They led to more intensive usage of the land and hence to higher levels of production. The introduction of maize also took place in this period, and spread considerable, especially in the north of the country (the Douro region).

By the early eighteenth century, several irrigation projects were needed to allow for the expansion of maize and viticulture. These often required considerable fixed costs to be implemented. The gold windfall may have helped finance these projects, as it affected people’s income both directly through remittances and indirectly through higher land-labor ratios resulting from the emigration of people to Brazil in the context of the gold rush. The cash which was available for investments was complemented by a vibrant credit market, which lasted until about the time of the 1755 earthquake (Costa et al. 2018).

Wine cultivation also expanded considerably in the Douro region following the 1703 Methuen treaty with England – a treaty which was closely related to the incoming gold windfall (Macedo 1982, p. 45), and which concerned military and geopolitical matters as much as trade in a strict sense. The increased availability of means of payment increased incomes both directly and also indirectly, by decreasing the transaction costs of participating in the market, allowing for a more monetized and specialized economy. For a few decades, at least, the net effects of the gold windfall were positive. But this was not to last (Palma 2019).

The economic expansion boom up to the 1755 earthquake was followed by a period of stagnation which lasted until the 1780s. Afterwards, a period of persistent decline was initiated, continuing well into the nineteenth century, with a noticeable short-lived rebound only during

²⁰ The returns from the empire were growing but were still too small at this point to matter a great deal (Costa et al 2015).

the 1810s. This decline had multiple causes. From the mid-eighteenth century onwards, many of the previous sources of growth became progressively exhausted: gold remittances declined, further expansion of maize was not possible, and the privileged wine export to England came to an end. Eventually, following the invasion by Napoleon's troops in 1807, the court escaped to Brazil. As a delayed but direct consequence of the latter, that empire was lost in 1822. The loss of Brazil, albeit sooner or later inevitable, may have at the time mattered a good deal, in light of the fact that, according to one estimate, severing colonial trade around 1800 would lead to a real wage between one fifth and one fourth lower than that observed (Costa et al 2015).

While in several parts of the European periphery the increased usage of iron agricultural improvements was a source of growth from the eighteenth century (Edvinsson 2013), the evidence which exists for parts of Portugal suggests their usage was still limited well into the nineteenth century (Fonseca and Reis 2011). And while some internal industries became less competitive in a Dutch-disease type scenario as the result of the windfall (Macedo 1982, p. 55-56), the negative effects of institutional change started to be felt, and these political changes were likely to have been at least as important as the strictly economic aspects (and to have had repercussions for the latter). The eighteenth century experienced unfavorable institutional change, with the Cortes not meeting over the entire century, in sharp contrast with what had happened in previous centuries (Henriques and Palma 2019). But the possible role of political economy factors in arresting the development of the economy after the mid-eighteenth century has been subject to different, and sometimes conflicting, interpretations in the Portuguese literature. Pereira (2009) claims, unconvincingly, that the 1755 earthquake led to benevolent political changes; see Madureira (1997) for contrary evidence. In turn, Macedo (1982) argues that the windfall of Brazilian gold had negative consequences, though not much detail is given. Palma (2019) shows that Spain and Portugal, being first-order receivers of the American windfall, did suffer from Dutch disease and institutional resource curse as a consequence.

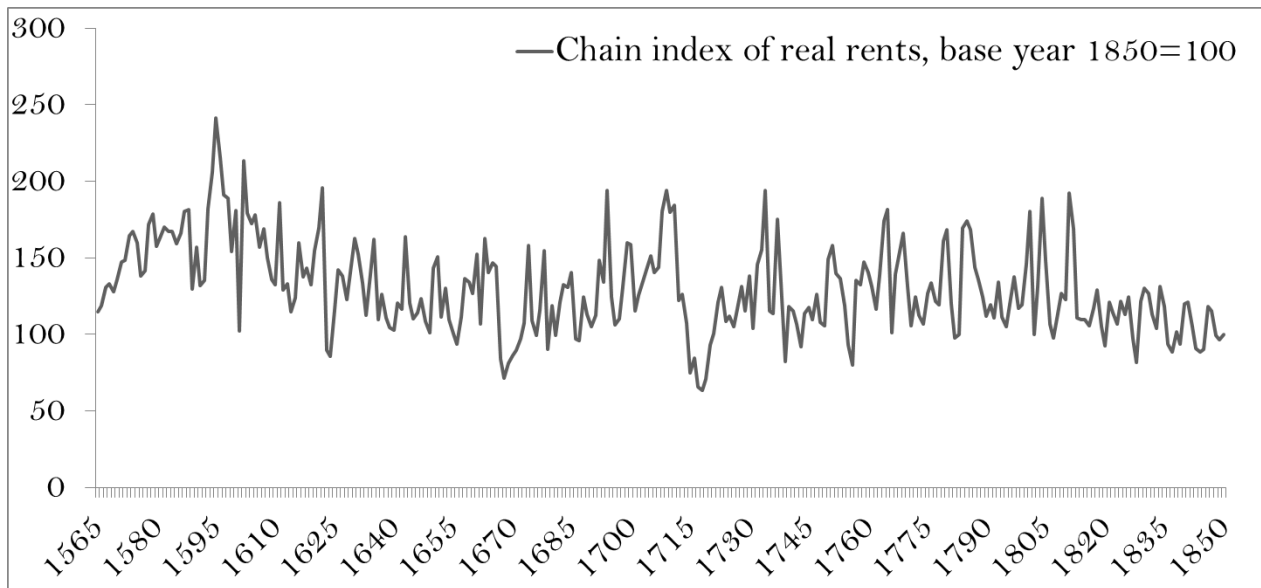


Figure 10. Land rents index for 1565–1850, in constant prices. Source: Palma and Reis (2019), which for nominal rents rely on two series consisting of cash rents from large commercial estates, with leases between 3 and 10 years. These correspond to the Archive of the Hospital of All Saints in Lisbon (ten estates), and set of 32 estates in Alentejo (Santos 2003); see Reis (2017) for details. The nominal amounts were spliced and deflated by the CPI of Palma and Reis (2019).

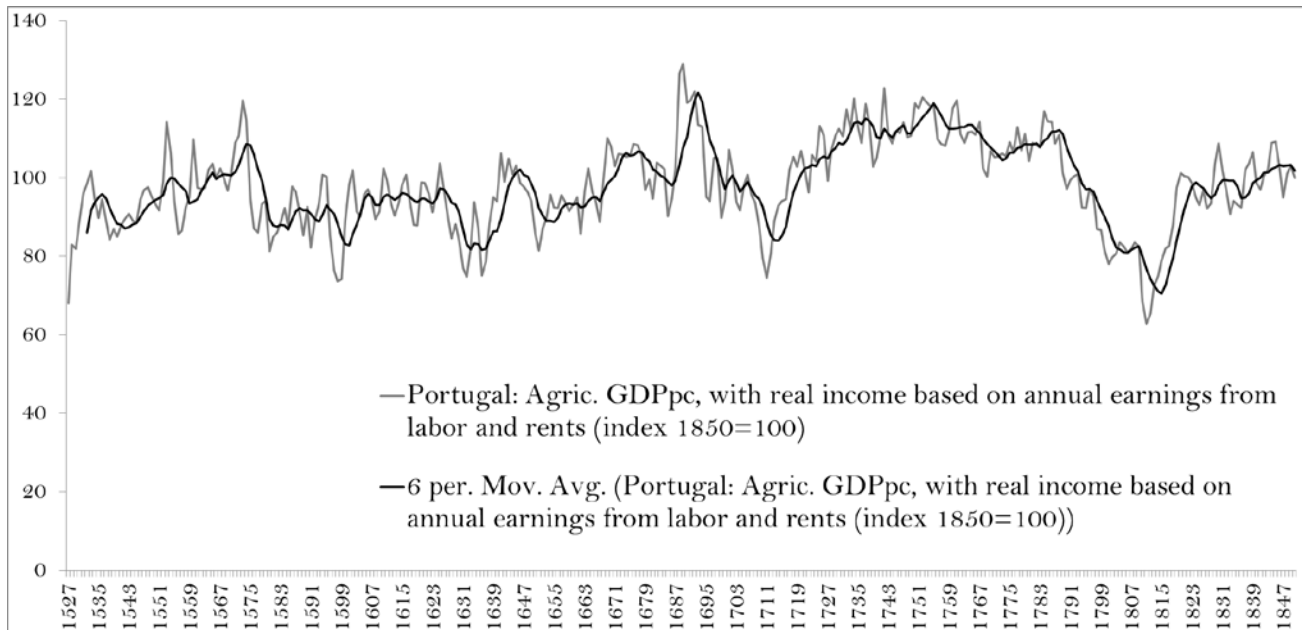


Figure 11. Index of agricultural GDP per capita for 1527–1850, in constant prices. Source: Palma and Reis (2019).

3.3. Secondary and tertiary sectors

Portugal underwent considerable structural transformation during 1600-1750: the percentage of people working outside agriculture went from 31% to 46% (Table 2, column 3). The transformation was gradual. As previously mentioned, there was economic growth from the last quarter of the sixteenth century until about 1690. This was largely due to structural change: the percentage of workers outside agriculture rose to 41% by 1700 (Table 2, column 3). After 1690 Portugal entered a period of decline which lasted less than two decades, before growing considerably until around the time of the 1755 earthquake, when the share of workers outside agriculture stood at a remarkably high 46%.

Incomes per head then declined a little but stayed at a comparatively high plateau, before starting to fall precipitously from the 1780s, a decline which would continue for until the 1810s. This was followed by a partial, short lived recovery, but then incomes per person stayed constant in the following decades. Still, as late as 1800, the percentage of workers outside of agriculture was 45%. Over the first half of the nineteenth century there was a return to agriculture, with this percentage falling to 33% by 1850 (Table 2, column 3).

The productive structure of the Portuguese economy did not change dramatically during the early modern period but neither was it static. Industry consisted of wool and linen textiles, leather, construction and all the other provisions for the necessities of daily life. Luxuries and manufactured exports occupied secondary positions, though they began to enjoy an increasing role during the eighteenth century. In the tertiary (services) sector, apart from the normal contribution of transport, trade, administration and shipping in such economies, it is worth noting the significant element of colonially oriented activity.²¹

Portugal's industry had at times enjoyed a moderate degree of success but two factors hampered its future growth. First, it had often enjoyed access to privileged overseas markets, first and foremost Brazil; this access began to be disrupted from the 1790s by the geopolitical situation, and was further hampered by the opening of Brazil's ports to trade with Britain in 1808. Privileged access ended once with Brazil's independence in 1822. Secondly, the part of Portugal's industry which was directed at the internal market had often been located in the provinces, a side effect of the 1703 Methuen treaty (Macedo 1982). The small size of the inter-

²¹ For a revision of the contribution of the colonial empire to the domestic economy, see Costa et al. (2015).

nal market then combined with the relatively low levels of urbanization and lack of structural transformation to prevented agglomeration gains which were becoming increasingly important elsewhere in Europe.

4. Comparisons

4.1. Iberian comparative performance

The comparative performance of the two Iberian economies, shown in Figure 1, suggests that while both economies ended up in a similar position in the very long run, they followed rather different trends as time went by. They started from similar levels around 1550. Spain's economy performed better than that of Portugal in the third quarter of the sixteenth century, but the period of the 1580-1640 dynastic union was one of convergence: Portugal grew and Spain declined. By the time of the restauration of the Portuguese monarchy in 1640, Portugal's per capita income was higher.²² Then during the second half of the seventeenth century, Spain's economy began to decline, in absolute as well as comparative terms. The economy stagnated until about 1750, but it started growing afterwards, a process which was to continue at modest rates but without significant interruptions into the nineteenth century. In Portugal, by contrast, incomes grew much faster in the first half of the eighteenth century, then stagnated, and then decline set in, and this continued into the nineteenth century. While Portugal was able to achieve higher income levels than Spain during most of the century, Spain achieved higher output per capita than Portugal around 1810, and the countries continued to diverge thereafter.

4.2. International comparisons

We now shift the discussion from index-based measures to comparison of income levels.²³ There are two options. The most standard is to use 1990 "international" (GK) dollars (Table 3). This method ("Maddison's method") starts with a benchmark and moves back using constant price per capita growth rates. The results in Table 3 are shown using the benchmark at which each each given volume indexes series ends. For instance, for England/Britain, the

²² When interpreting the results discussed in this subsection one should keep in mind that while there is considerable uncertainty about income levels, we can place high confidence in general trends.

²³ There is much more uncertainty about levels than trends (Jong and Palma 2018).

Broadberry et al (2015) series ends in 1870, so we are using the 1870 benchmark.²⁴ Due to index number problems, this can sometimes give rather different results from what one would obtain by linking these “premodern” series with later series. Take Spain as an example. The Álvarez-Nogal and Prados de la Escosura (2013) series stop in 1850. Using the 1850 benchmark together with volume indexes, Spain’s income per capita level in 1500 becomes 846 “international” dollars of 1990. This is clearly above subsistence, but relatively low by Western European standards. However, using an apparently similar methodology leads to a higher level, 912 “international” GK dollars of 1990.²⁵ As another example, consider Sweden. While in Table 3 we give 853 GK dollars of 1990 for Sweden in 1600, an apparently similar alternative would lead to much lower levels, only 761 “international” GK dollars of 1990 in the same year.²⁶

The alternative to the Maddison method is the indirect method of Prados de la Escosura’s (2000), which we call the Prados method. This is shown in Table 4.²⁷ Using the 1850 relative levels from Prados de la Escosura’s (2000) as the baseline implies that during the sixteenth century Spain and Portugal were among the richest economies of Western Europe, second only to the small republics of northern and central Italy. As previously explained, by 1600 Portugal had lost ground but Spain was still able to retain a considerable income per head, higher than the levels observed in France or England. The seventeenth century saw the origin of the small divergence between the Iberian economies and those in the ‘core’ of Europe, as output per capita fell considerably in the case of Spain and stagnated in Portugal, while it increased in all the major economies of the continent except the Netherlands. The latter was nonetheless able to maintain its considerable advantage over the southern economies. Finally (and despite Portugal’s temporary boom during the period 1700-1755), overall the Iberian recovery of the eighteenth century was too short lived and not strong enough to close the gap with the richest countries in Europe by 1800.

²⁴ We use the benchmark which Broadberry et al (2015) use for Britain in 1870. This differs from Maddison’s (2006) lower benchmark for the United Kingdom in 1870. It makes sense to exclude Ireland since the volume indexes do not include it, and it was much poorer than the rest of the United Kingdom (Britain).

²⁵ This alternative consists of taking per capita GDP at current Euro in 1990, converted to 1990 Geary-Khamis dollars with the Purchasing Power Parities of the International Comparison Program, projected back using Prados de la Escosura’s (2017) indexes for 1850-1990, and linking them in 1850 to those of Álvarez-Nogal and Prados de la Escosura (2013). See also Prados de la Escosura (2016).

²⁶ This alternative consists of going back from Sweden’s 1990 benchmark using data from The Conference Board, Total Economy Database for 1950-1990, linked with the Schön and Krantz (2012) data for 1560-1950.

²⁷ While more common, the GK method has a number of disadvantages (Prados de la Escosura 2000, Deaton and Heston 2010, Allen 2013). For example, Álvarez-Nogal and Prados de la Escosura (2013, p. 36) show that using the GK method, in 1850 the price level for Spain would have been 109 (relative to UK =100), which suggests that Spanish real GDP per capita is probably under-estimated for that benchmark.

	England	Holland	Germany	France	Italy	Spain	Sweden	Portugal
1500	1,041	1,454	1,146	935	1,367	846	1,195	1,125
1550	1,014	1,798	—	809	1,278	891	1,125	836
1600	1,037	2,662	806	901	1,216	893	853	790
1650	887	2,691	948	965	1,247	668	941	830
1700	1,513	2,105	939	992	1,317	814	1,357	987
1750	1,753	2,355	1,050	1,010	1,367	783	1,061	1372
1800	2,097	2,609	986	1,045	1,216	916	930	916
1850	2,718	2,355	1,428	1,597	1,321	1,079	1,171	923

Table 3. Output per capita in Western Europe (1990 Geary-Khamis “international” dollars), using the Maddison method. Sources: Annual growth rates from the following sources. For England, Broadberry et al (2015); for Holland, van Zanden and van Leuween (2012); for Germany, Pfister (2011); for France until 1789, Ridolfi (2016); for Italy, Malanima (2011); for Spain, Álvarez-Nogal and Prados de la Escosura (2013); for Sweden, Schön and Krantz (2012) and Krantz for 1500-1560. For Portugal, Henriques et al (2019) for 1500-1527, and Palma and Reis (2019) for 1527-1850. The levels in this table are calculated by applying these volume indexes to benchmarks corresponding to the endpoint year of each index. In the case of England, figures correspond to the volume indexes of England before 1700 and Great Britain afterwards applied to the 1870 level of Great Britain (Broadberry et al 2015, pp. 375-376). In the case of Holland, borders correspond to Holland until 1800 and the Netherlands for 1850; a benchmark for 1807 was used for the data prior to 1800 (van Zanden and van Leuween 2012, p. 121), and the 1850 level is from Smits et al (2000). The other benchmarks are from Maddison (2006) and correspond to 1820 for France (with additional assumptions; see Ridolfi 2016, p. 196), 1850 for Germany, Spain, and Portugal, and 1913 for Italy and Sweden. The 1800 level shown for France in the table is Ridolfi’s 1789 level. For France in 1850, the level is that given in Álvarez-Nogal and Prados de la Escosura (2013, p. 23). Italy corresponds to north and central Italy only; Germany corresponds to the present-day borders of Germany.

While during the first half of the nineteenth century all the main economies of Western Europe increased their output per head, the decrease experienced by Portugal meant that the country fell considerably behind. The case of Spain was different in absolute but not in relative terms. Although GDP per capita levels increased in Spain, the growth was much slower than that achieved by the main European economies. Therefore, the Iberian economies were not able to take advantage of the first industrial revolution in the way that most of north-western Europe did, increasing the gap and therefore the divergence between the south and the north that had already started in the seventeenth century.

	England	Holland	Germany	France	Italy	Sweden	Spain	Portugal
1500	1,060	858	1,137	1,160	1,578	835	1,160	1,415
1550	1,060	858	-	-	1,485	812	1,253	951
1600	1,006	1,578	789	1,160	1,392	835	1,230	905
1650	924	1,601	-	-	1,438	-	951	951
1700	1,495	1,253	928	1,253	1,508	1,230	1,114	1,137
1750	1,658	1,392	1,044	1,276	1,578	951	1,067	1,578
1800	2,039	1,554	974	1,299	1,392	928	1,253	1,044
1850	2,718	1,833	1,415	1,810	1,531	1,206	1,485	1,067

Table 4. Output per capita in Europe (1990 Geary-Khamis “international” dollars), using the Prados method. Purchasing power parities are from Prados de la Escosura (2000, p. 24) and the 1850 benchmark in 1990\$ for England is that of Great Britain (GB); borders are treated as in Table 3. Sources: Álvarez-Nogal and Prados de la Escosura (2013), except Sweden in 1500, which we obtain through a similar method, and Portugal, which we obtain by applying the 1850 benchmark of Prados de la Escosura (2000) to the data from Palma and Reis (2019) until 1527 and Henriques et al (2019) for 1500-1527. Italy’s 1860 level assumed to be that of 1850. We transformed the relative levels by using the UK to GB ratio of 0.85 (where the UK level for 1850 is from Maddison 2006, p. 437).

5. Conclusion

Recent research in the long term evolution of income per capita in Iberia has challenged the traditional view of Spain and Portugal as perpetually backward and underdeveloped economies.²⁸ The use of new archival material such as wages, rents or tithes has shown that in fact, by 1500 Spain and Portugal were among the richest regions in Europe. It is also the case that – unlike the claim of Acemoglu, Johnson and Robinson (2005) – by 1500 the Iberian economies did not have “worse” institutions than England or the Netherlands. Henriques and Palma (2019) show that a political divergence is noticeable from the mid-seventeenth century, hence taking place before the Glorious Revolution of 1688-9, which several scholars identify as the watershed moment which prompted the English economy forwards (e.g. North and Weingast 1989).

In the Spanish case, the levels reached in the sixteenth century corresponded to a recovery from the long and deep crisis that followed the Black Death, an event which had severe consequences, destroying the foundations of a frontier economy that had already reached significant income levels by the mid-thirteenth century. However the recovery experienced reversed in the seventeenth century, when Spain suffered a considerable contraction of her economy. The recovery started in the last decades of the seventeenth century and continued during the following, a process that speeded up during the first decades of the nineteenth century, when Spain was finally able to recover the income per capita levels reached before the Black Death.

Although Portugal started from a very similar income level, it followed a very different trend. During the first half of the sixteenth century, the Portuguese economy suffered an intense crisis that halved income levels. The crisis was followed by a quick recovery that lasted until the mid-seventeenth century, when the economy entered again in a period of recession. The first decades of the eighteenth century were again a period of strong and sustained growth when Portugal was able to match and surpass the income levels reached around 1500. However, the recovery did not last long and from the second half of the eighteenth century, the Portuguese economy declined, losing most of the advances achieved during the early modern period.

²⁸ A Malthusian view of permanent stagnation is also not appropriate, though it is true that by 1800 these economies were not considerably better-off than they had been 300 years earlier.

Therefore, we conclude that, in the long run, we cannot observe a common growth pattern in the Iberian economies, in opposition to Maddison (2006, p. 249), who considered that the economies of Spain and Portugal were similar. The sixteenth century was a period of divergence when Spain moved forward and Portugal fell behind most of the time, a situation that reversed during the last quarter of the century when the crisis in Spain set it and the growth in Portugal matched the income levels in both countries before 1640. The Portuguese economy experienced a stronger and more intense recovery during the first half of the eighteenth century, being able to obtain a higher output per capita than her Spanish counterpart. However, the takeoff did not last for long, and between 1750 and 1850 Spain moved forward and Portugal lost ground. In the case of Portugal, the twists and turns of history have been truly remarkable. Preliminary estimates by Henriques et al (2019) suggest that it took until the middle of the eighteenth century for Portugal to recover the income per capita levels of the mid-fourteenth century. Perhaps even more remarkably, it was not until the 1920s that the country would be able to enjoy the income per head levels of the mid-eighteenth century.

The comparison with the main economies of north-western Europe shows that, as explained before, Spain and Portugal were among the most affluent nations. Their relative position, especially with the largest economies, did not change much during the sixteenth century. The small divergence between Iberia and the main economies of Europe only finally started in the seventeenth century for Spain, and only as late as the mid-eighteenth century for Portugal. It speeded up during the late eighteenth and nineteenth centuries, when the effects of the first industrial revolution were already clear in the 'core' of the European economy, but were weakly felt in Spain and Portugal. By 1850, the relative position of Iberia in Europe had changed radically compared to the situation in 1500, and both Spain and Portugal had fallen from the top to the bottom of the income distribution.

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