



## **The Maddison Project**

### **RECONSTRUCTION OF REGIONAL AND NATIONAL POPULATION USING INTERMITTENT CENSUS-TYPE DATA: THE CASE OF PORTUGAL, 1527-1864**

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# RECONSTRUCTION OF REGIONAL AND NATIONAL POPULATION USING INTERMITTENT CENSUS-TYPE DATA: THE CASE OF PORTUGAL, 1527-1864<sup>1</sup>

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## Abstract

Modern tests of the Malthusian model and its variations have relied almost exclusively on the Wrigley-Schofield demographic data for England, the only available source of annual national data on population stocks for a premodern economy. In this paper, we provide evidence for another such economy, early modern and nineteenth century Portugal. For this, we use a new sample of parish-level annual statistics up to the first modern census of 1864. All six major regions of the country are considered. We combine this information with intermittent census-type data on population stocks to arrive at annual regional and national population stock estimates for this period. Hence we offer a new methodological contribution for the construction of population stocks over the very long run. This methodology can be used in situations in which there is limited availability of local annual gross flows but some intermittent information about stocks is obtainable.

Keywords: long-run demographic reconstructions, early modern and nineteenth century Portugal

JEL codes: C65, J11, N33

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## 1. Introduction

In this paper we use a new methodology which combines a limited supply of annual parish-level data for births and deaths with census-type data to arrive at annual regional and national population estimates. We use Portugal as our case study, but our methodology is more widely applicable. The period covered goes from 1527 to the first modern census (1864). The standard of comparison in this genre is the justly famous reconstruction of England's population by Wrigley and Schofield (1989, 1998) whose estimates nonetheless suffer from two major disadvantages, as recognized by the authors themselves. Firstly, they lack any information regarding population stocks before the nineteenth century. This means that earlier population levels have to be inferred from parish-level information about flows combined with a mathematical technique known as backward projection which relies on strong assumptions. Secondly, religious non-conformity and a consequent lack of national registration coverage is an impeding factor in reaching satisfactory regional estimates (Wrigley and Schofield 1989, p. 10). Neither of these problems has been rectified in their most recent attempt, and it does not seem that it will be possible to do so in the near future (Wrigley and Schoelfield 1998).

By comparison, Portugal enjoys clear advantages in both respects. Thanks to an overwhelming degree of religious uniformity, we are able to avoid entirely the large gaps in information at both the intra- and inter- parish levels of observation which beset the English case. In addition, the existence, at reasonable intervals, of independent national benchmarks for population stocks allows the construction of initial population levels directly rather than having to infer them as mentioned. Moreover, since both sources are available to a satisfactory degree already during the sixteenth century, this makes for dependable national and regional series going as far back as that epoch. Evidently, while England's parish records used by Wrigley-Schofield estimates are widely considered to be the best available surviving records – Deaton (2013, p.81) for instance, writes that "they provide by far the best record that we have for any country before about 1750" – this may not be in fact the case.

The annual information we use comes, in part, from a large body of dispersed parish data previously gathered by other researchers and, for the rest, from new primary material specially collected for this purpose. The intermittent population counts that we also employ are well-known compilations from printed sources and

have been closely scrutinized by scholars for their quality. The desired annual levels of population, nationally and per region, are obtained by combining information regarding true stocks and parish-level flows, by means of a new methodology which also takes into account child mortality and emigration.

There are several motivations for carrying out this exercise. One is that detailed, comprehensive demographic information is of interest to historians in its own right. Another is that it can be a critical tool in all kinds of social and economic analytics, allowing, for example, the detailed scrutiny of Malthusian hypotheses.<sup>2</sup> A third is that in Portugal (and in many other countries) there are enormous gaps between the few data points for which there is trustworthy information about the population stock. Hence, to draw a population curve by simply linearly interpolating between them, as is often done, does not produce sufficient identifying variation for the series to be usable in statistical analysis. Finally, it makes it possible, for the first time, to recognize and account for variations in the regional long term patterns of Portugal's demography. This will enable us, for example, to complement the analysis in Palma and Reis (2016), where we focused on the broader macroeconomic facts of Portugal's history, and used an earlier version of micro data produced here as an input.<sup>3</sup>

During nearly all of the period considered, Portugal was divided into six provinces for administrative, judicial and political reasons and we will follow here this tradition too. They are: Entre-Douro-e-Minho, Trás-os-Montes, Beira (sometimes divided in Beira Interior and Beira Litoral), Estremadura, Alentejo (also known as Entre-Tejo-e-Odiana) and Algarve.<sup>4</sup> These units were created not only for important practical purposes – particularly administrative and military – but came to be generally regarded as having their own persistent cultural and economic identities, even after their abolition in 1832.<sup>5</sup>

At a glance, there was considerable variation across these regions in terms of size, density and degree of urbanization. The north of the country was always more

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<sup>2</sup> Such studies normally require annual data, which is why they are almost exclusively done using English data. For an exception (which relies on vital dates, not stocks), see Fernihough (2013). See also Chiarini (2010). Population studies for countries other than England are usually based on benchmarks at non-annual frequencies or rely on strong assumptions; see Pfister and Fertig (2010), Del Panta and Livi Bacci (1980), Dupâquier (1980), Edvinsson (2015), Galloway (1988, 1994).

<sup>3</sup> For a pioneering effort of this kind which links demographic patterns with political and institutional circumstances, see Hespanha (1994).

<sup>4</sup> Figure 1 below shows the outlines of these various provinces.

<sup>5</sup> See Hespanha (2010) and Oliveira (2015).

populous than the south and this difference increased steadily from the sixteenth to the nineteenth centuries, as happened also, of course, with their respective densities. By contrast the south was always more urbanized (Marques 1992, p. 234)<sup>6</sup>. Population grew briskly during the period under consideration. Total inhabitants rose from around 1.130 million in 1527, the earliest national figure available, to 3.830 million in 1864, our terminal point. This implied an increase in population density from 14.7 to 43.0 residents per square km, both of which figures are close to the European norm of the times, that is, respectively 14.0 and 49.6 (Malanima 2009).

We confine our efforts here to mainland Portugal. The significant variance in the social and economic characteristics of the overseas territories under its rule indeed renders this highly advisable. It means we ignore current research on locations such as the Atlantic islands of Madeira and the Azores, and the far-flung land mass which comprised the vastness of the Portuguese Empire in Asia, Africa and America prior to the early nineteenth century.<sup>7</sup>

## **2. The data**

As noted previously, our study rests on two types of data. Its cornerstone is a set of population counts which were assembled at irregular intervals on a national scale, on the basis of information obtained at the lowest level of public administration, mostly the parish.<sup>8</sup> The second consists of a country-wide sample of demographic flows constructed from the birth and death registers of its parishes and covering different time spans according to data availability.

### **2.1 Population stocks**

Regional and national population counts are surprisingly numerous in this period. After all, this was for most of the time a pre-statistical society which lacked both the widespread quantitative mentality and the organizational capacity to undertake such policies. Yet the 18th century alone witnessed six major efforts of this

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<sup>6</sup> The south was led by Lisbon, a metropolis on a European scale: by the late eighteenth century it was the fourth city in Europe (Bairoch 1976).

<sup>7</sup> Important work on the demographic history of the Azores and Madeira archipelagos has been carried out by Norberta Amorim and her collaborators. See Amorim (1992 and 1999) and Santos and Matos (2013). On the empire, recent research has developed fast too and the results are summarized by Matos (2015 and 2016).

<sup>8</sup> Of the six counts we shall be using here, only the so-called *Numeramento da População de 1527-32* did not refer to parishes but instead to municipalities, villages, hamlets and “places”.

sort.<sup>9</sup> Usually these were responses to specific needs of government – financial, military, religious and, less often, administrative.<sup>10</sup> Their degree of success was often not high and the quality of the evidence they yielded varied accordingly. Nevertheless, they have been used extensively by historians to analyse the long term evolution of Portugal’s demography. It is out of this pool of possibilities that we have selected the six population enumerations on which the construction of our population series will be founded. They correspond to the years 1530, 1700, 1758, 1801, 1849, and 1864.

Table 1 provides us with a comprehensive view of the current state of knowledge in this respect. It comprises a heterogeneous collection which displays our preferred stocks alongside the better-known and more influential guesstimates by historians. Although most items do not meet our standards of accuracy, we find it useful to show them here for the sake of comparison with our own results.

Year	Population (m)	Estimate type	Source
1500	1.00	Historians’ guesstimate	Rodrigues (2008, p.176)
1530	1.13	Household count ( <i>numeramento</i> )	Dias (1998, p.16)
1580	1.2	Historians’ guesstimate	Rodrigues (2008, p.176)
1639	1.35	Historians’ guesstimate	Magalhães (1988, p. 22)
1640	1.4 - 1.5	Historians’ guesstimate	Serrão (1975)
1695	2.05	Historians’ guesstimate	Pinto et al (2001, p. 395)
1700	2.10	Historians’ guesstimate	Godinho (1980, p.19)
1706-12	2.35	<i>Corografia</i>	Rodrigues (2008, p. 253)
1729	2.64	Historians’ guesstimate	Magalhães (1998)
1732	2.14	Historians’ guesstimate	Godinho (1955, p. 302)
1750	2.36	Historians’ guesstimate	Pinto et al (2001)
1758	2.53	National survey of parishes	Magalhães (1988, p. 28)
1768	2.41	Historians’ guesstimate	Godinho (1955, p. 302)
1798	2.97	Military census	Serrão (1970)

<sup>9</sup> Serrão (1993); Chorão (1987).

<sup>10</sup> An interesting case is the count of 1527-32. The crown based on its results the sweeping administrative reform which brought into existence soon after the country’s division into provinces and the abolition of the old *comarcas* of the fourteenth century.

1801	2.89	Census	Silveira et al (2001)
1819	3.01	Historians' guesstimate	Matos and Marques (2002)
1835	3.06	Historians' guesstimate	Rodrigues (2008, p. 331)
1849	3.41	Census	Silveira et al (2001)
1864	3.83	First modern published census	Censo (1868)

Table 1. Benchmark national population stock estimates.

Our choice of population stocks is based on a number of characteristics which they have in common and which are highly relevant because of their positive effect on the robustness of the estimation. The first is the fact that they were carried out by a central agency – the state, the church or a combination of the two. The exception was the *Corografia* (1706-12)<sup>11</sup>, which, as we shall see, displays nevertheless an adequate capacity for this implementation. In every case, these counts were carried out according to standard, uniform procedures and a universal plan, thus ensuring an appreciable uniformity in our results.

The second feature is that in every case complete coverage was one of the chief goals. As a result, we may trace any parish in our sample to any benchmark year so that neither national nor regional totals are distorted by omissions on this account. The third is that the objectives pursued by these counts tended to be general-purpose in nature, rather than subject-specific. Essentially they focused on the size and distribution of the population, not on other less appealing objectives (from the population's point of view) such as recruitment or fiscal needs. Popular resistance to these enquiries and its nefarious impact on data reliability can be assumed to have been on a lesser scale and would have induced less bias.

The fourth aspect to consider is the stability of the units under observation. From the sixteenth to the nineteenth centuries, the size and configuration of Portuguese parishes rarely changed, few of them were broken down into smaller units, and those that were extinguished were even less common (Hespanha, 1994).<sup>12</sup> Practically all the localities in our sample can therefore be tracked for more than three

<sup>11</sup> In the case of the *Corografia*, the author was a single, private author. He employed, however, a large number of helpers in the provinces and must have had a plan, given the uniform nature of his many local descriptions. Costa, the compiler, reports having made several trips around the country to check his facts.

<sup>12</sup> As can be seen from the data appendix, by 1500 most of these parishes were already two or three hundred years old and thus evinced a high degree of persistence. This picture changed only with the arrival of the Liberal state in the first half of the nineteenth century. Many borders were then re-drawn and many parishes were either divided or absorbed into other ones. See Silveira et al. (2001).

hundred years since the early sixteenth century without risk of reductions or augmentations in population being the artificial result of administrative changes.

A brief synopsis of these six essential tools will make the above points clearer. The earliest of them, commonly known as the *Numeramento da População*, was ordered by King John III and was the first ever national census in Portugal.<sup>13</sup> Its stated aim was simply to know “how many families live in the cities, towns and places of the realm (...)”. It took from 1527 to 1532<sup>14</sup> to complete owing to resistance on the part of lay and clerical lords who refused the census-takers’ entry into to their lands. Data from it are irretrievably lost for the city of Lisbon and the province of Algarve. Like all population counts prior to 1801, its result is given in hearths (*fogos*) rather than inhabitants; and parishes, unusually, were not the territorial unit of reference.

The second count, commonly known as the *Corografia*, came almost two hundred years later. It is found amidst the pages of the three-volume Corography of the Kingdom of Portugal. This was an immense repository of miscellaneous information regarding the country’s geography, history, orography and hydrography, as well as the genealogies of the country’s notables, the nobility of the principal buildings, the distances between localities, and the intricacy of jurisdictions, taxes and feudal dues (Costa 1706-1712). Significantly for us, it contains a reckoning of the households in each one of the vast majority of the country’s parishes. Given some uncertainty about dating the collection of this evidence, we have assumed it corresponds to the year 1700, following Silva (2001)’s suggestion. Its author, António Carvalho da Costa (1650-1715) was a cleric and a distinguished astronomer who spent many years on this book, travelling extensively around the country to check his sources and enlisting the help of numerous local correspondents. Although criticised by many, it soon became a work of reference and a model for subsequent corographies and descriptions of eighteenth century Portugal.<sup>15</sup>

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<sup>13</sup> The printed sources for this count are Colaço (1934) and Freire ([1903-16] 2001). Valuable historiographic analysis of this fundamental document is found in Dias (1996) and Rodrigues (2008).

<sup>14</sup> Owing to the need for a single year for dating its output, we have chosen to ascribe its values to the mid-point year of the quinquennium, i.e. 1530.

<sup>15</sup> For recent scholarship both for and against this monumental work, see Hespanha (1994) and Santos (2003), respectively. For an excellent introduction, see Silva (2001) in the digitalized version available at <http://www.cidehusdigital.uevora.pt/corografia/>.



Our third source has the familiar designation of *Memórias Paroquiais* and was started and completed in 1758.<sup>16</sup> Local enquiries were carried out for the 4,123 parishes then in existence by the priests on the orders of Pombal, the king's first minister. The aim was to secure detailed knowledge of the country's geographic, demographic, orographic, hydrographic, historical, economic and administrative affairs. The exercise was organized according to a plan containing a total of sixty written questions (Rodrigues 2008; Silbert 1966). The main difference vis-à-vis the *Numeramento* and the *Corografia* is that the *Memórias* generally quantified population by the number of hearths but at times counted also inhabitants. These were divided into adults; children under 7; and children between 7 and 14 years of age.<sup>17</sup> Since these categories were used erratically, however, it is not advisable, when employing this tool, to use anything but hearths or households.

The shift into the nineteenth century and the emergence of a statistical era in Portugal (Sousa 1995) accelerated census taking and changed its character significantly by gradually professionalizing this activity. During the next sixty-four years, our three last reliable population counts took place in 1801, 1849 and 1864 – the last of them having been the first one ever to be published in Portugal. The purpose by now was simplified to merely creating a demographic record, albeit a much more complex one than before, including features like gender, age and civil status. The most important innovation from the point of view of the present study was the switch to the systematic counting of individuals, although hearths still continued to be in use. At the same time, the fundamental unit of observation continued to be the parish, thus allowing us to carry on our series safely through to 1864 without loss of consistence.

Although our set of six national population counts provides a sturdy framework for the present study, some flaws in it have also to be recognized and assessed. Two are especially important. One, of a more systematic nature, is the heterogeneity of how population was counted – hearths versus individuals – which makes it particularly difficult to link up raw data from before and after 1800. The other

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<sup>16</sup> The manuscript *Memórias Paroquiais* have been preserved in full at the National Archives and can be accessed electronically and cartographically at [atlas.fcsh.unl.pt/cartoweb35/atlas/apresentacao.html](http://atlas.fcsh.unl.pt/cartoweb35/atlas/apresentacao.html). A considerable part of them are in print: most of the erstwhile provinces of Entre-Douro-e-Minho, Trás-os-Montes, Beira and Alentejo. A predecessor publication of 1747-1752 covered only parishes with names starting with the letters A to C.

<sup>17</sup> For a careful explanation of how and why these groups were established, see Oliveira (2002). For a juridical rather than a religious approach to the construction of these age categories, see Hespanha (2010).

arises from the fact that despite the good overall coverage of these counts, gaps were present in some parishes and may have affected their results.

In the first case, the solution is to establish a conversion factor which will transform hearth estimates into population tallies in order to produce findings which are fully comparable. Historically, such ratios have varied quite a lot across space and time and this is due to the impact on them of fairly complex exogenous influences. On the other hand, it is not implausible that much of this variance was random and may have led ultimately to a rough cancelling out of disparities. In this instance, using a constant converter throughout the study would not imply serious bias, if it was properly chosen in terms of its representativeness.

<b>DATE</b>	<b>RATIO</b>	<b>Source</b>
<b>1700</b>	3.3	Hespanha (1994)
<b>1541-6</b>	3.5	Dias (1996)
<b>17c</b>	3.5-4.0	Santos (2003)
<b>16c-19c</b>	3.6	Miranda (1993)
<b>1849</b>	3.8	Censo 1849 cited by Silveira (2001)
<b>1801</b>	3.9	Censo 1801 cited by Silveira (2001)
<b>early 19 c</b>	4.0	Silbert (1966)
<b>1864</b>	4.0	Censo 1864 (1868)
<b>17 c.</b>	4.0	Godinho (1980), Magalhães (1988)
<b>18c</b>	4.0	Oliveira (2002)
<b>16-18c</b>	4.0	Amorim (1973, 1987)
<b>1798</b>	4.0	Serrão (1996, vol. VI)
<b>17c.</b>	4.0-5.0	Dias (1996)
<b>general</b>	4.0-6.0	Rebello da Silva cited by Silbert (1966)
<b>1541-7</b>	4.1	Dias (1996)
<b>17c.</b>	4.3-4.6	Dias (1996)
<b>15-16 c.</b>	4.5	Rau cited by Hespanha (1994)
<b>1527</b>	5.0	Hespanha (1994)
<b>1789</b>	5.0	Soares de Barros cited by Silbert (1966)

Table 2. Population per hearth ratio, 16<sup>th</sup>-19<sup>th</sup> centuries.

In table 2 we have collected a large assortment of ratios used in a variety of studies, periods and situations. Which is likely to be the best? Several aspects of this display are worth noting. One is that there is indeed a considerable spread, with a range that went from 3.3 to 6.0. The second is that the dispersion of these values does not suggest the presence of a time trend which might lead to systematic distortion in the population estimate from the sixteenth to the nineteenth centuries. The third is that the best estimates for this quotient came from the period 1801-1864. They were thus calculated using what for then were state-of-the-art procedures and were based on the largest sample possible. All three of them are close to 4.0. Finally, it is striking that the mode of the sample is 4.0 persons per hearth and ratio values are bunched up in the interval between 3.5 and 4.5 persons. Bearing this evidence in mind, our choice of a conversion factor of 4.0 per hearth for the period under consideration does not seem hard to accept.<sup>18</sup>

A second kind of flaw was the possibility of gaps or serious errors in the reported population stock of particular parishes. If these were to be at all frequent this could seriously undermine the robustness of our methodology. They could arise for a variety of reasons. Parish priests, who were the “statistical agents” employed by the state at this time to count its subjects, were not unknown to simply omit recording the required information. Moreover, although a cultural elite in the countryside, priests could sometimes administer parish records carelessly and make mistakes. Thirdly, for the historian, small, ancient and obscurely-named parishes can be hard to trace across time and identify in the population counts.<sup>19</sup>

The impact of these shortcomings was not negligible but turned out less problematic than one might have supposed. One reason is that in many such situations it has been possible to resort to other primary sources, of a regional but similar nature, and replace the missing or distorted evidence with their help. The replacement data may not coincide chronologically with the gaps in the stocks but are close enough to effect the compensation and save us from distorting our conclusions.<sup>20</sup> We rely on such proxies, for instance, in the few cases for which we are unsure about the exact geographic reach of a place, as there could have been an administrative boundary

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<sup>18</sup> This result is very similar to Spanish ratios; See Drelichman and Gonzalez-Agudo (2014) and Calderon-Fernandez et al (2017).

<sup>19</sup> This arises particularly in the case of the *Numeramento da População* statistics of 1527-32.

<sup>20</sup> The appendix Figure A1 and Tables A1 and A2 summarize to what extent the seventy one localities of this study needed corrections of this sort and how well these substitutions functioned.

change at a later date.<sup>21</sup> The substitutions we have made were entirely concentrated in the initial three national population stocks – those which relate to 1530, 1700 and 1758.<sup>22</sup> For the period prior to 1801, gaps in the known stocks were not trivial, but we were almost always able to resort to additional lesser population counts. These enabled us to bring down “effective gaps” from 30% to a reasonable 11% per cent of total counts (table 3).

	Number	% of total counts
<b>Total effective counts</b>	150	0.70
<b>Total gaps</b>	63	0.30
<b>total replacements</b>	40	0.19
<b>residual gaps</b>	23	0.11
<b>N=213</b>		

Table 3. Summary of gaps and replacements made.<sup>23</sup>

## 2.2. Gross flows

Gross demographic flows are the raw material which allows us to transform the intermittent evidence from our stock counts into estimates of total annual population. Altogether, we use information from seventy one parishes, the geographic position of which is shown in Figure 1.<sup>24</sup> They vary considerably in size, from quite small, especially in the earlier years in which some have less than one hundred individuals, to large ones, with several thousand parishioners. While we do not have data on the country’s biggest cities – Lisbon and Porto<sup>25</sup> – just as Wrigley and Schofield (1989, 1998) do not have on London – we have it for quite a few major urban

<sup>21</sup> Table A1 in the online appendix maps these gaps over the entire period under consideration and shows the replacements which we made.

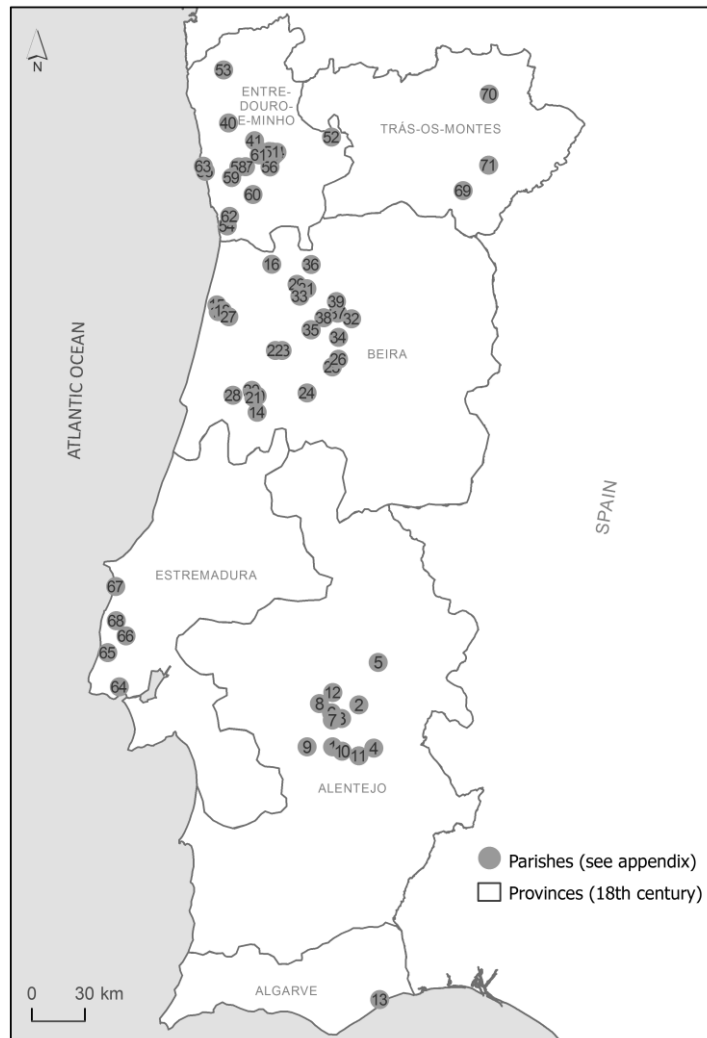
<sup>22</sup> The last three counts (shown as cols. 9, 10 and 11 of Table A1 in the online appendix), as expected, were free from irregularities of this sort and were the main cause for the remarkably high overall average of counts per parish (col.12). Part I of Silveira et al (2001, vol.1) demonstrates the technical superiority of the 1801 and 1849 censuses.

<sup>23</sup> See Table A1 of the appendix for details (in particular, cols. 1 to 8).

<sup>24</sup> Out of a total of about 4,100 in 1801 (Silveira 1801). From the late sixteenth century onward our sample always corresponds to a significant percentage of the total population: in 1590, 1.8%, in 1700, 2.3%, in 1801, 1.8%; and in 1849, 1.9%.

<sup>25</sup> Studies of single parishes, let alone of the whole of Lisbon are scarce. Godinho (2007) for the Sé and Neto (1967) for the Mercês and Santa Catarina parishes are hardly representative of the roughly forty parishes which comprised the entire city. For Porto, Osswald (2008) relates to births and deaths in the seventeenth century but does not supply any raw data of the kind needed for the present analysis.

centers such as Aveiro, Coimbra, Évora, Póvoa de Varzim, Vila do Conde and Viseu. Most parishes do not cover the entire period and, as might be expected, more data survives for later periods. About half of our parishes only start after the sixteenth century.



**Figure 1.** Location of parishes. For the list of parishes, see table A3 of the appendix. Sources: For the provincial boundaries, which refer to the 18<sup>th</sup> century, Marques and Dias (2003). For the location the parishes, we used Project Historical Atlas, available at: <http://atlas.fsh.unl.pt/cartoweb35/atlas.php?lang=pt>

Gross flows are simply count data of the number of births and deaths that are registered in a given year as having occurred in a certain parish. To produce them we have used information from all the available secondary sources that to our knowledge exist, and have further filled in gaps by collecting additional primary source material ourselves, for regions and time periods for which we deemed the existing ones

inadequate.<sup>26</sup> The online appendix to this paper furnishes the entire list of parish-level sources used to obtain the data.

### 3. The methodology

While our aggregate annual estimates go as far back as 1530, it is important to realize that at different times the weight of the evidence varies. As usual, the evidence is thinnest for the periods further back; for the first half of the sixteenth century all the evidence we have comes from five parishes – Bobadela, Lagares, Enxara do Bispo, Lourinhã and Vila do Conde. In later periods, data becomes much more abundant.<sup>27</sup> Our total of seventy one parishes forms an unbalanced panel; many of which go from the sixteenth to the nineteenth century.<sup>28</sup>

In our data set, all stocks (e.g. population levels) refer to beginning-of-period quantities, while flows, e.g. births, correspondingly refer to quantities which apply to the duration of the year in question. In a few, rare cases we had to make assumptions about missing data,<sup>29</sup> but in calculating the regional estimates there are no interpolations; all data correspond to observed annual variation.

#### 3.1. Why is a correction needed for the data?

Starting with any given (hypothetically) known stock, simply summing up gross flows (i.e. reported births minus deaths) over time would lead to a biased estimate of population stocks at any given moment. This becomes noticeable by the time that the next stock is observable. The reason for the bias (usually leading to an overestimate) is that measured net births do not account for two important factors which affect true net flows: migration and unrecorded child mortality.<sup>30</sup> Since we are mostly considering rural areas in this study, in practice migration numbers were

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<sup>26</sup> In the case of several secondary sources, their authors only present the data in graph form without showing the raw data in tabular form. In one of them, only three year averages are given. See Amorim (1983-4). Obviously both cases are of no use to us. At times, we decided not to use a parish because the coverage was too short or too far from the periods for which “preferred” stocks are known. For *S. Martinho da Árvore*, for example, we have benchmarks for 1530 and 1700 and therefore cannot employ it because the only available flow covers 1616-1685.

<sup>27</sup> The coverage dates for each province are given in the appendix.

<sup>28</sup> For the much bigger country that England was, the standard study aggregates the contents of 404 parish registers for a period of 330 years, many of which are incomplete (Wrigley, and Schofield 1989).

<sup>29</sup> We used a five-year moving average for the single missing cells and eight years for longer periods.

<sup>30</sup> Unrecorded child mortality corresponds to children who died before they were 7 years old and then were not recorded by the parish priest as dead, though they had been recorded at birth. These deaths are sometimes known to us, but more often than not they are not, which requires an adjustment.

almost always positive in net terms, leading to a negative non-observable flow.<sup>31</sup> Since the true value of population is known at intervals, however, it is possible to partially correct for such biases by adjusting the residual.

### 3.2. Net flows

As discussed in the previous subsection, it is necessary to make corrections to the gross population flows, namely with respect to non-observable flows that need to be accounted for. The mapping of the number of baptisms and burials contained in the parish registers into actual births and deaths is no simple matter; Wrigley and Schofield (1989) spend no less than five chapters describing their methodology about how to deal with this issue. Here we can afford to be more parsimonious as the superior features of the Portuguese data allow for simpler – and much more credible – mathematical calculations.<sup>32</sup> The anchoring provided by the 1527-32 *Numeramento da População* allows us to make sure that no cumulative errors occur as we move back in time. This is a matter of serious concern in the English case, which, due to lack of alternative options, takes as a maintained assumption that no emigration whatsoever was taking place.<sup>33</sup>

In the case of our estimates, one option would be simply to assume that the residual is uniform across the board between benchmarks. Instead, we explicitly consider which items compromise those non-observables. The first and principal source of under-registration in deaths, as mentioned, is of children who were less than 7 years of age and whose absence from the death register was due to their not having yet been admitted to any sacrament. They were thus present in the birth register but omitted from the death records.<sup>34</sup> The second source of under-registration was migration. We will now consider each in turn.

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<sup>31</sup> The danger of simply calculating stocks backwards using flows can be illustrated by the fact that for several parishes such a naïve adjustment would lead to negative population stocks by the early seventeenth century. Even for those for which such clear nonsense does not occur, the values are usually too low compared with those of the *Numeramento da População* of 1527-1532.

<sup>32</sup> Since several pre-1800 stocks are available, and because sample selection is much less of an issue than in England, our estimates for Portugal rely on much weaker assumptions – hence allowing for more credible conclusions.

<sup>33</sup> It is fortunate that we are able to sidestep these limitations since both back projection and generalized back projection methods are well known to present problems when migration rates are not negligible. This would surely be the case of Portugal.

<sup>34</sup> The issue here is that while recorded births correspond to baptisms, the death of young children was not recorded since they had not reached the age of confession and anointing of the sick and so their death could not be certified by the priest. See Santos (2003, pp. 164-5), Oliveira (1990, 2002), Miranda (1993) and Amorim (1987).

We estimate the true number of deaths as the total of recorded deaths plus the number of deaths up to the age of 7. For the few cases in which this information is available, we use it. For the rest, we estimate deaths under the age of 7 in accordance with the distribution for the first period for which this is known (Table 4).<sup>35</sup>

	Percentage of deaths
<b>&lt;1 year</b>	0.16
<b>1 to 4 years</b>	0.14
<b>years 4 to 6</b>	0.02
<b>died &lt;7 total</b>	0.33

**Table 4.** Mortality distribution by classes of age born in Urgeses (Guimarães), 1793-1819. Source: Amorim (1987, p. 276).

A separate, less important but related issue concerns the underestimation of births. Under-registration of births happens when the child died before receiving baptism (Santos 2003, p. 164-5). Baptisms occur immediately or shortly after birth since in accordance with Christian beliefs this would save the child's soul from original sin should death occur early on. While this was the twentieth-century practice, for earlier periods transportation difficulties were more of an issue. We know that at least for one region, 3% of children died before baptism (Alves 1986, p. 135). For most regions quantitative data is lacking, but we do know that at least some newborns who died before baptism were not registered (Santos 2003, p. 165.) We have no way of knowing how representative these pieces of evidence are, and the first one certainly seems a bit high by comparison with widespread Christian practices; indeed, social norms forced baptism to happen within a week of birth (Costa 1994).

All considered and except where we have definite evidence to the contrary, we assume all births were registered. We therefore make a correction to deaths only. What is important to realize here is that unlike with the underestimation of deaths, here the total flows are correct since the newborns that died before baptism were not recorded at all, and hence do not appear in our measure of either births or deaths. The few cases of known mortality of children under this age, as a percentage of total births were as shown in table A1 of the online appendix.

A final issue concerns emigration, about which we have no direct information.<sup>36</sup> Census and census-type information about stocks serve as checks which anchor the estimated quantities based on flows. We estimate unobserved emigration flows residually as the difference between the observed population stock at the end of a period and the estimate which would be given by sequentially adding the difference between births and corrected deaths. For instance, we know that 10,465 people lived in

<sup>35</sup> Additionally, unspecified measurement errors are also surely present at times. In practice this will be bundled here with the migration part of the residual. In the cases where the parish registers include child mortality, we make no adjustments, as none is needed.

<sup>36</sup> For general views but sparse information, see Godinho (1978), Magalhães (1988) and Livi-Bacci (2002).



the city of Guimarães in 1700. If we then repeatedly add corrected net population growth to this number, we obtain 13,755 inhabitants in 1758. However, the census-type data we have for that year reveals only 8,066 people lived there at this date. The difference presumably corresponds to net outflows due to migratory movements, including emigration, the latter in particular during the period of the gold rush to Brazil during the eighteenth century.<sup>37</sup> When possible, we cross-check that the result is broadly in line with the masculinity ratio – the ratio of men to women at a given moment – since it is always young men who emigrate disproportionately. In Figure 2 we show an example of the resulting correction we have made to deaths.

In some instances, information about births is available much earlier than that about deaths. When information about deaths is missing for just a few years, we proxy it by using a moving average; but in most cases, we simply ignore this information and start the series when both are available. Earlier information about births still presents useful information on the Malthusian preventive check – by far the most important one, at least in a European context (Nicolini 2007) – even in the absence of analogous information about deaths, but we leave the investigation of this for future research.

### 3.3. Discussion of sample selection issues

The basic assumption which we make is that the parish information that we have is representative: we assume data is missing at random. This is true both with regard to the choice of the particular parishes that we happen to have information about, and for the cases for which we have either births or deaths missing for a few years. In the latter case, the implicit assumption is that this was due to some event such as a priest who happened to be or have become lazy for exogenous reasons, as opposed to a plague which led to overstraining resources and caused registers to stop being updated.<sup>38</sup> As noted above, the Church kept a quite tight monitoring system in place and this was reflected in the fact that missing data occurs quite rarely.

We have been careful to make sure that our parishes correspond to fixed geographical units over time. We stick to this rule even when it means sacrificing some data. For sure, this could be a form of sample selection, as older regions – those within city walls for instance – are selected in favour of new or growing regions. If much of the demographic increases happened in new localities<sup>39</sup>, it could seem that we underestimate population growth. This problem is minimized by several facts. Firstly, perhaps in part due to a long tradition of political and cultural uniformity, in Portugal the parish-level denomination of places has shown remarkable continuity over time (Hespanha 1994 and the foundation dates of parishes in the online appendix). Secondly,

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<sup>37</sup> By the eighteenth century, the empire was having a non-negligible effect on the mother economy; Costa et al (2015) estimate that in the heyday of colonial expansion, eliminating the economic links to empire would have reduced Portugal's per capita income by at least a fifth.

<sup>38</sup> If births or deaths are missing in a given year, we extrapolate from an un-weighted average of the corresponding 5 surrounding years.

<sup>39</sup> Some people are born in the traditional areas but die elsewhere, sometimes in new locations, often after having moved there following marriage. So migration, seasonal or otherwise, was not just to the empire, but also to other parts of the country as well.

there is no a-priori reason to believe that new locations would have concentrated most demographic growth. Thirdly and most importantly, our residual correction to flows is based on observed population stocks at certain benchmarks which automatically accounts for any “invisibles” such that the population is correct at the next observable benchmark – hence at worse only some intervening high-frequency variation is lost.

Wrigley and Schoelfield (1989) recognize that their data have frequent omissions. By contrast, such occurrences are rare, if occasional, in the Portuguese case. The quality of the parish registers was rigorously scrutinized by the church through a system of “episcopal visitations” (*visitações*)<sup>40</sup>, a form of monitoring which covered the religious life of each community, including the behavior of the priests and the keeping of the parish books. A delegate of the bishop would visit each locality in person, and make sure, among other things, that the local priest was keeping with his obligations (Faustino 1998, p. 68-74). For our purposes the important point is that he was obliged to register baptisms and deaths correctly, the former immediately after occurrence, and could be punished by the church hierarchy should he fail to do so.<sup>41</sup>

#### 3.4. Calculation of our baseline annual stock estimates

Consider two arbitrary moments  $t$  and  $t+j$  for which the population stocks are known. Then, for any  $1 \leq i \leq j$ , the annual stock for that year is given by

$$p_{t+i} = p_{t+i-1} + b_{t+i} - d_{t+i} - \sum_{k=0}^7 \delta_{t+i-k} b_{t+i-k} - e_{t+i}$$

such that for  $0 \leq i \leq j$ . Here,  $p$  stands for the population stock (all stocks refer to beginning-of-period quantities),  $b$  is number of recorded births in that locality, and  $d$  is the number of recorded deaths. The expression  $-\sum_{k=0}^7 \delta_{t+i-k} b_{t+i-k}$  corresponds to a child mortality correction which takes the form of a MA(7) process, where each coefficient is calibrated based on the available distribution (Table 4).<sup>42</sup> Finally,  $e_{t+i}$  is a residual, which we interpret as a measure of the net emigration.<sup>43</sup>

$$e_{t+i} = e(i, j) = \frac{cp_{t+j} - p_{t+i}}{j - i}$$

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<sup>40</sup> In the parish of Calvão, for instance, visitations were often yearly, and happened at least once every three years. They were carried out randomly (Faustino 1998, p. 69). For the experience of the diocese of Coimbra, see Carvalho and Paiva (1989).

<sup>41</sup> Priests who did not follow the rules were liable to pecuniary fines (Oliveira 2002). These were enforced.

<sup>42</sup> Notice this applies even when it  $t+i-k < t$ , that is when  $i-k < 0$ , which means that there is a “spillover” from the previous births into the current period estimates.

<sup>43</sup> Though in fairness, being a residual, it could also be capturing mismeasurement in any of the other variables or functional assumptions. Note that emigration is here defined negatively; this is because most of the time it is positive. In the eighteenth century, we observe large positive residuals, which add credibility to our method since it is known that this was a period of large-scale emigration to Brazil.

where  $cp_{t+j}$  is not the observed population at time  $t+j$ , but instead the counterfactual stock which would have occurred should net emigration have been zero. In other words, the residual  $e_{t+i}$  is a constant that varies for each new pair of benchmarks but not within any given pair;  $j$  is the number of intervening periods. Figure 3 shows an example of the resulting estimates for one of the 71 parishes.

#### 4. Regional estimates

In order to arrive from local-level annual stocks to regional annual estimates, two complementary procedures were used. First, we calculated the respective weights of the parishes used to reconstruct the population of a region at each moment for which we can observe this information directly.<sup>44</sup> In order to aggregate regional estimates into a weighted national estimate, we used the regional shares from Rodrigues (2008, p.177 and 257; see also Serrão 1993) and Matos and Marques (2002, p.17). We then interpolated between the weights given to each parish, and used the resulting annual weights to aggregate local estimates into regional ones. As parishes move in and out of our sample according to when the data is available, we also annually adjusted the weights accordingly as well. For example, if one regional estimate is being based on four parishes but a fifth comes in, the weights of the other four are adjusted downwards, in a proportion that depends on the weight of the new parish which has come in. This is always possible to do since while flow data are not always available for a given province, we always have some earlier stock benchmark which we can use to calculate the regional weights. In figure 4, we show the resulting population estimates for each region.

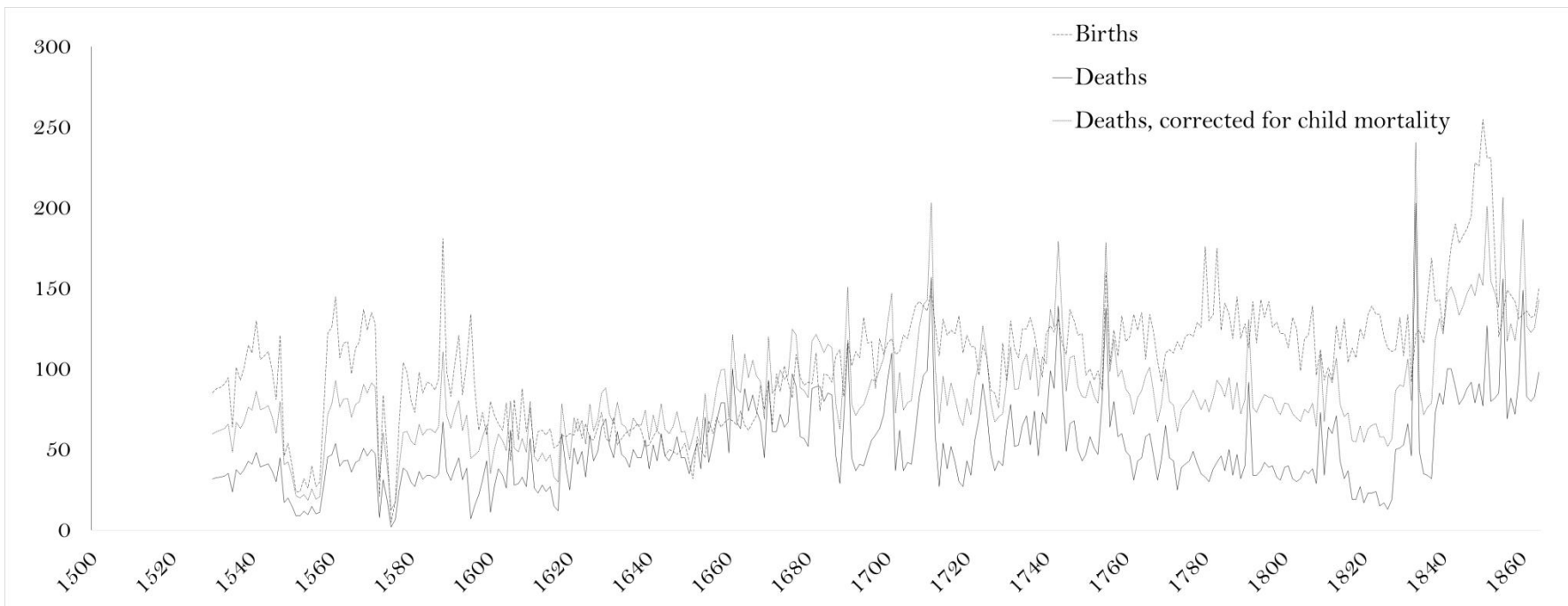
#### 3. National estimates

We now estimate the annual population stock by simply aggregating the regional-level information about stocks, where each region is weighted according to its importance. While in computing the regional estimates we have used no interpolations at all, when inflating these numbers into an aggregate estimate we have used a minimal degree of interpolations on either the beginning or the end of some of the regional estimates. This is done in order to avoid capturing spurious variation provoked by the sudden entrance or exit of parishes with different demographic behavior (this is always done for periods for which other regional estimates with “true” high frequency variation also exist for the period at stake).<sup>45</sup> In Figure 5 we present the result of our aggregation of the regional data, as well as the population stocks known from the hearth counts and censuses and the historians’ benchmark guesstimates from Table 1.

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<sup>44</sup> This usually coincides with the moments at which we can observe the local stocks as well.

<sup>45</sup> The full list of parishes and periods for which this was done is very short: *Viseu* (interpolated 1840 to 1863), *Guimarães* (1530 to 1579) and *Ventosa* (1530 to 1558). In the case of *Barcarena*, the migration residual for 1588-1619 is assumed to be equal to that of 1620-1706.



**Figure 2.** Births, deaths, and deaths corrected for child mortality for the village of São João Baptista de Vila do Conde. Source: entry D.16 (Vila do Conde), online-appendix.

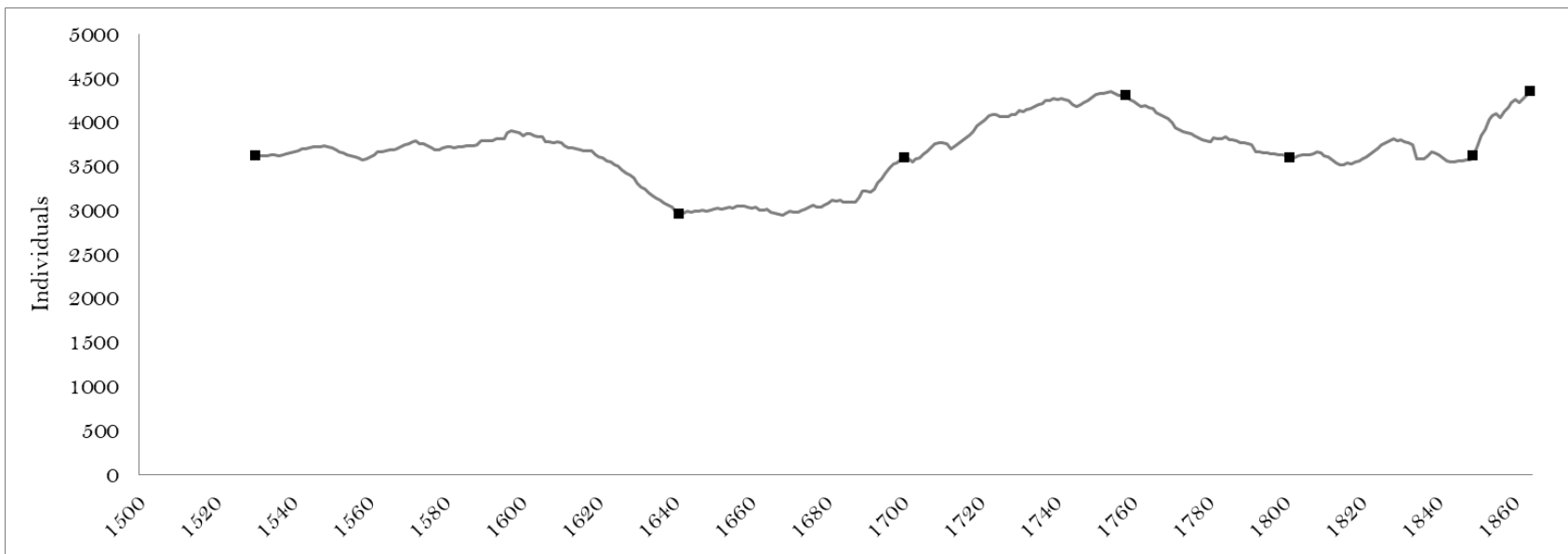


Figure 3. Estimated stocks for São João Baptista de Vila do Conde. Source: Entry D.16 (Vila do Conde), online-appendix.

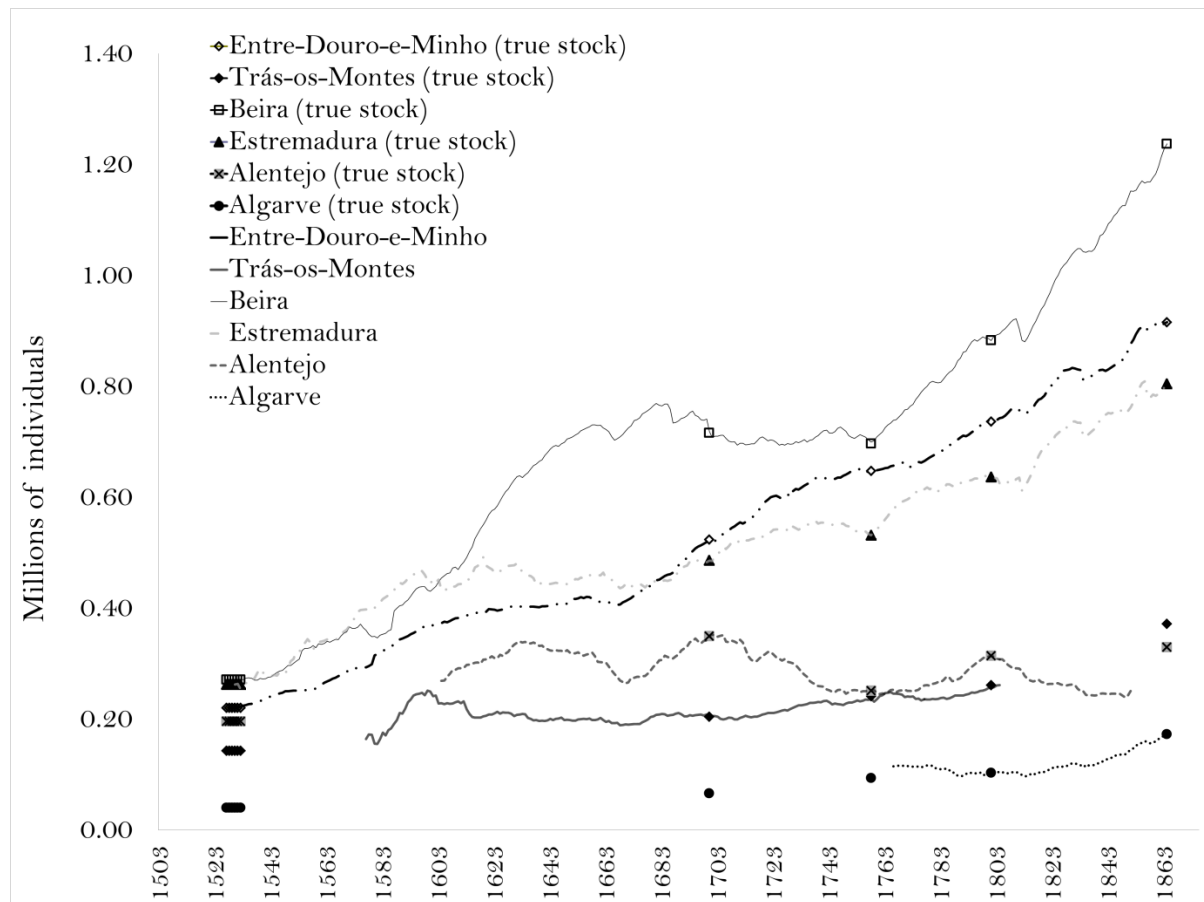


Figure 4. Regional estimates, 1527-1864. Source: our calculations; see text.

## 6. Conclusion

In this study we have reconstructed Portugal's annual population for 1527-1864 at the local, regional, and national levels. Our study presents key advantages over the seminal Wrigley and Schofield (1989, 1998) studies for England. We are fortunate to have several usable "census-type" estimates, which together with the new mathematical methodology which we propose here, permits the reconstruction of population under much lighter assumptions than those required by the back projection techniques used by Wrigley and Schofield. This is fortunate as using such techniques would lead to biases in the estimates, given that both back projection and generalized back projection methods are well-known to present problems when migration rates are not negligible<sup>46</sup> – as is surely the case of Portugal. We have critically discussed the quality of our data. While not perfect, we have strived to incorporate all the relevant information that, to the best of our knowledge, is available, while considering alternatives when some of the sources did not seem reliable.

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<sup>46</sup> See for instance, Wrigley and Schofield (1989, p. xvi-xvii). We leave a more detailed study of emigration to future work. We note that the residual can be further refined through consideration of archival materials on shipping at the national level (*Marco dos navios*) and of masculinity ratios at the parish level.

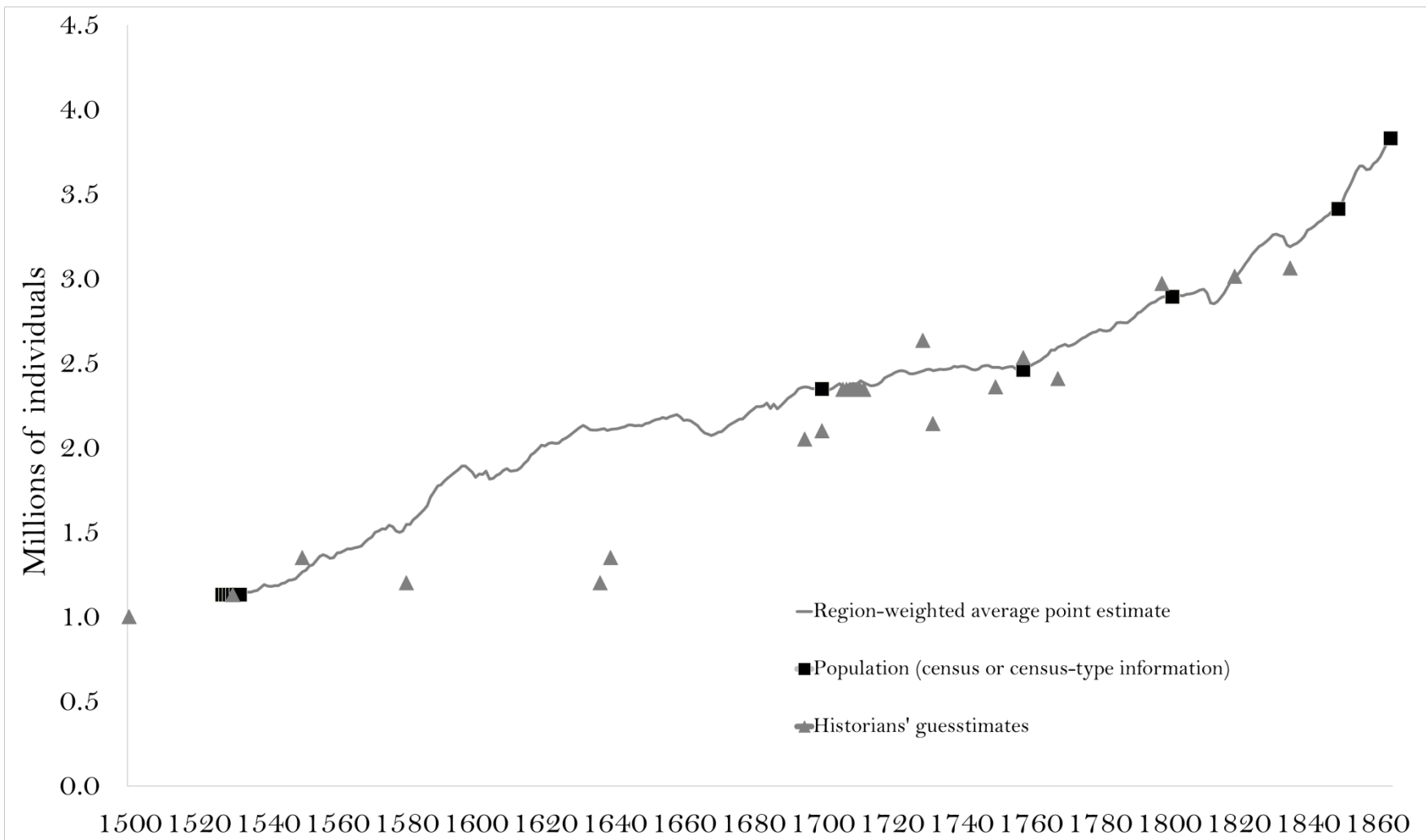


Figure 5. Source: the grey line corresponds to our calculations; for the previous stocks, see Table 1.



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## Online appendix to

### “RECONSTRUCTION OF REGIONAL AND NATIONAL POPULATION USING INTERMITTENT CENSUS-TYPE DATA: THE CASE OF PORTUGAL, 1527-1864”

N. Palma, J. Reis and M. Zhang

In this appendix, we describe the data sources and show graphs for the dynamic evolution of population at the parish level, for the six regions of the country, as well as the particular assumptions used in each case when needed.

#### A. Alentejo

##### A1. S. Marcos da Abóbada (Évora) (1720-1851)

**Location:** the province of Alentejo and the archbishopric of Évora. A small rural parish in the hinterland of the city and municipality of Évora. Presently in the district of Évora, the parish dates back to *circa* 1555.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1700:** No data. Santos (2003, 173) considers Costa (1706-1712) unsuitable for the region of Évora.

**1720: 132** Santos (2003, pp.188-9).

**1758: 256** *Memórias Paroquiais*, cited in Santos (2003, pp. 188-9).

**1801: 286** Silveira (2001).

**1849: 367** Silveira (2001).

**1864: 300** Censo (1868).

**Source for births and deaths:** Santos (2003).

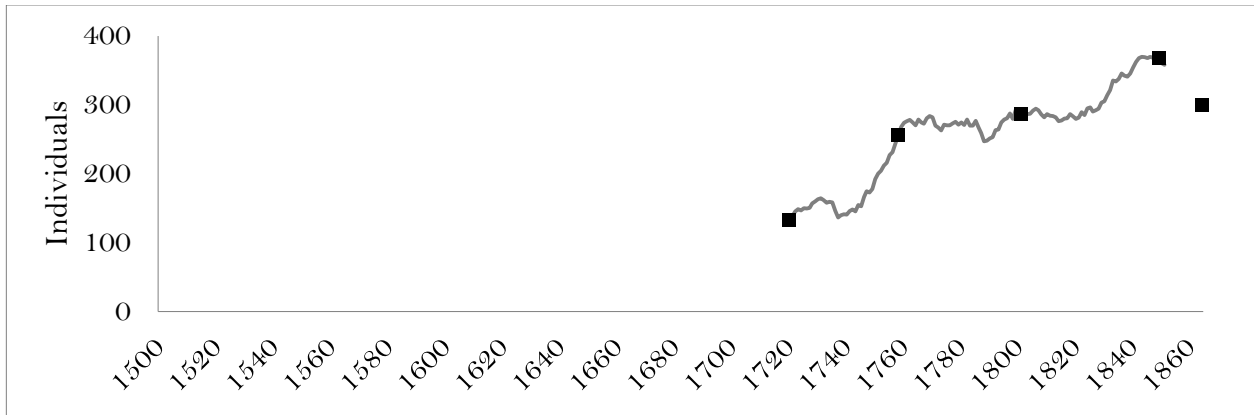


Figure A1. S. Marcos da Abóbada (Évora)

A2. S. Miguel de Machede (Évora) (1720-1851)

**Location:** the province of Alentejo and the archbishopric of Évora. A small rural parish in the hinterland of the city and municipality of Évora. Presently in the district of Évora, its origins go back to before 1500.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1700:** No data. Santos (2003: 173) considers Costa (1706-1712) unsuitable for the region of Évora.

**1720:** **784** Santos (2003, pp. 188-9).

**1758:** **1,200** *Memórias Paroquiais*, cited in Santos (2003, pp. 188-9).

**1801:** **1,446** Silveira (2001).

**1849:** **1,479** Silveira (2001).

**1864:** **1,466** Censo (1864).

**Sources for births and deaths:** Santos (2003).

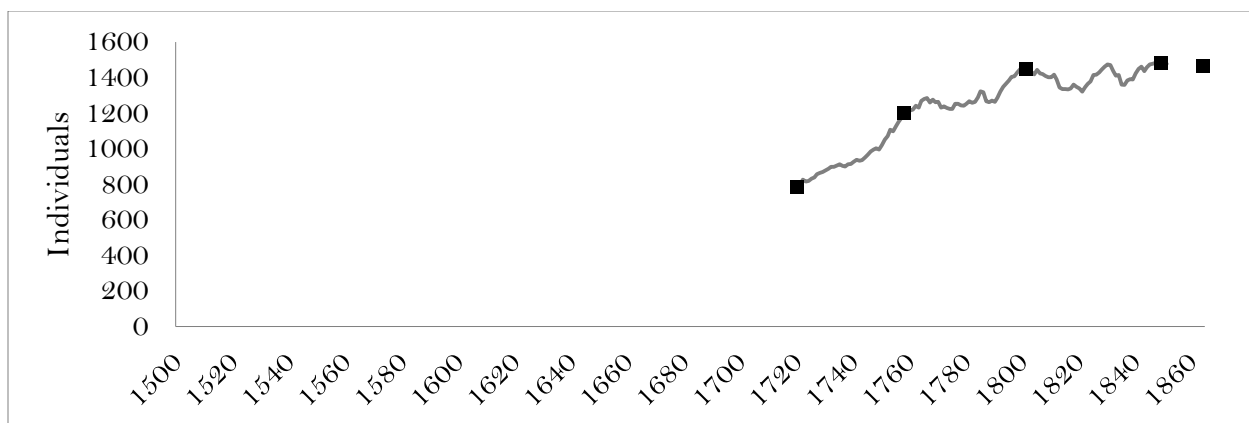


Figure A2. S. Miguel de Machede (Évora)

### A3. S. Matias (Évora) (1720-1851)

**Location:** the province of Alentejo and the archbishopric of Évora. A small rural parish in the hinterland of the city and municipality of Évora. Presently, in the district of Évora. Its origins lie in the sixteenth century.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1700:** No data. Santos (2003, p. 173) considers the use of the *Corografia* of Costa (1706-1712) unsuitable for the Évora region.

**1720: 496** Santos (2003, pp. 188-9).

**1758: 600** *Memórias Paroquiais*. Cited in Santos (2003, pp.188-9).

**1801: 485** Silveira (2001).

**1849: 521** Silveira (2001).

**1864: 484** Censo (1868).

**Source for births and deaths:** Santos (2003).



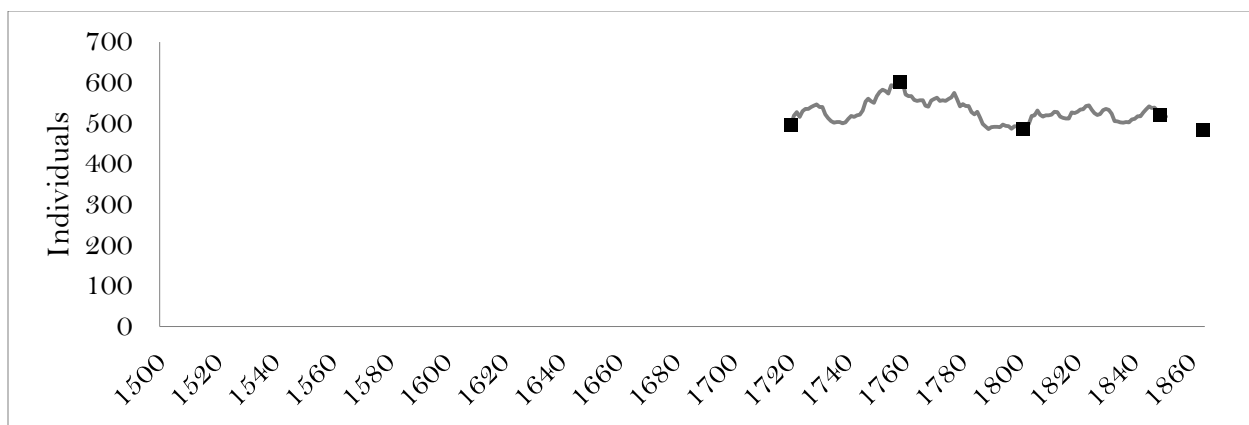


Figure A3. S. Matias (Évora)

A4. S. Vicente do Pigeiro (Évora) (1720-1851)

**Location:** the province of Alentejo and the archbishopric of Évora. A small rural parish in the hinterland of the city and municipality of Évora. Presently in the district of Évora. Its origin is unknown.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level

**1700:** No data. Santos (2003: 173) considers the use of the *Corografia* of Costa (1706-1712) unsuitable for the Évora region.

**1720: 332** Santos (2003, pp.188-9).

**1758: 364** *Memórias Paroquiais*, cited in Santos (2003, pp. 188-9).

**1801: 352** Silveira (2001).

**1849: 351** Silveira (2001).

**1864: 440** Censo (1868).

**Source for births and deaths:** Santos (2003).

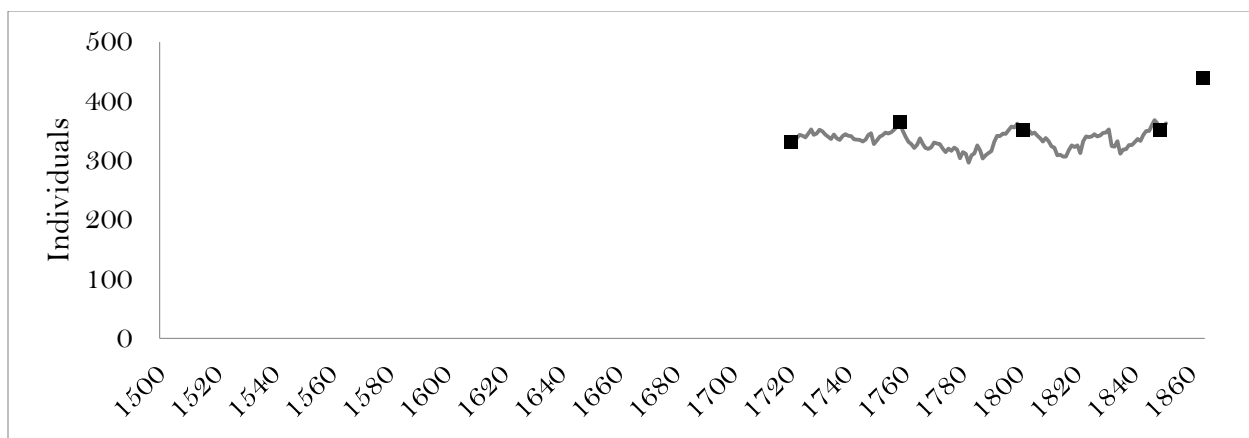


Figure A4. S. Vicente do Pigeiro (Évora)

#### A5. S. Maria do Castelo (Évora) (1604-1851)

**Location:** In the province of Alentejo and the archbishopric of Évora. One of the two urban parishes in the small fortified town of Évora Monte, the other one being S. Pedro do Castelo. Presently in the district of Évora, its parish church dates back to 1359.

**Population stocks** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1604:** **252** Serrão (1974) cited by Serrão (2003, p.188) and interpolated using 1720 data.

**1700:** No data. Santos (2003, p.173) considers Costa (1706-1712) unsuitable for the region of Évora.

**1720:** **424** Santos (2003, pp. 188-9).

**1758:** **724** *Memórias Paroquiais*. Cited in Santos (2003, pp. 188-9).

**1801:** **1,532** Silveira (2001).

**1849:** **570** Silveira (2001).

**1864:** **1,181** Censo (1868).

**Source for births and deaths:** Santos (2003).

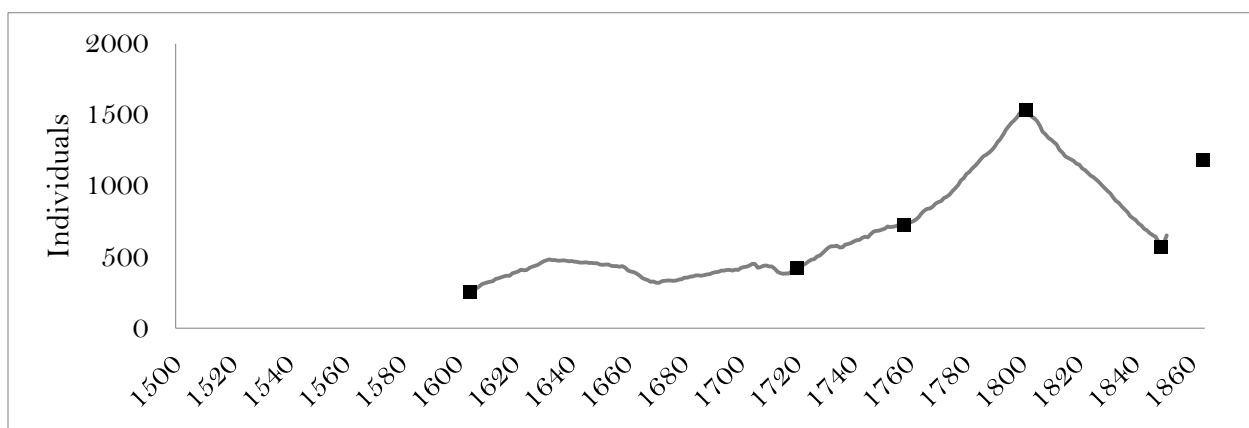


Figure A5. S. Maria do Castelo (Évora)

#### A6. S. Pedro do Castelo (Évora) (1604-1851)

**Location:** in the province of Alentejo and the archbishopric of Évora. One of the two urban parishes in the small fortified town of Évora Monte, the other one being S. Maria do Castelo. Presently, in the district of Évora, its parish church dates back to 1320.

#### **Population Stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1604:** **348** Serrão(1974) cited by Santos (2003, p.188) and interpolated using 1720 data.

**1700:** No data. Santos (2003, p. 173) considers the use of the *Corografia* (1706-1712) of Costa unsuitable for the Évora region.

**1720:** **288** Santos (2003, pp.188-9).

**1758:** **360** *Memórias Paroquiais*. Cited in Santos (2003, p.188).

**1801:** **380**. Santos (2003, p.188) gives this figure without clearly explaining how it was obtained We opt for this statistic given the careful scholarship of this source and because the census of 1801 (Silveira 2001) does not provide a separate statistic for this parish.

**1849:** **409** Silveira (2001).

**1864: 498** Censo (1868).

**Source for births and deaths:** Santos (2003).

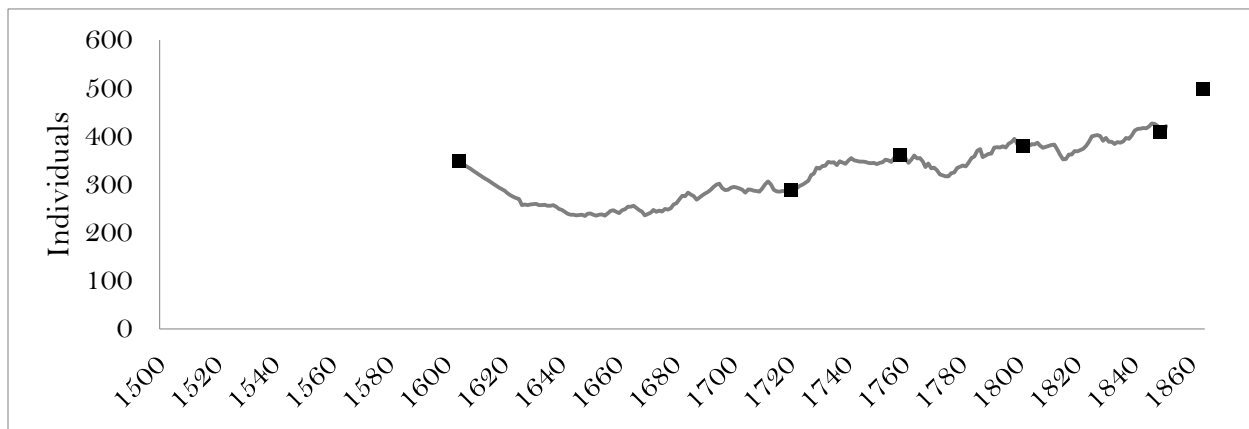


Figure A6. S. Pedro do Castelo (Évora)

#### A7. Nossa Senhora da Boa Fé (1720-1851)

**Location:** in the province of Alentejo and the archbishopric of Évora. A small rural parish in the hinterland of the city and municipality of Évora. Presently, in the district of Évora. Its origins go back to the second half of the fourteenth century but the actual parish church was probably built in the early sixteenth.

**Population stock** (number of inhabitants):

**1530:** No data available. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1700:** No data. Santos (2003: 173) considers the *Corografia* of Costa (1706-1712) unsuitable for the region of Évora.

**1720: 276** Santos (2003, pp. 188-9).

**1758: 336** *Memórias Paroquiais*, cited in Santos (2003, pp. 188-9).

**1801: 380** Silveira (2001).

**1849: 321** Silveira (2001).

**1864: 346** Censo (1868).

**Source for births and deaths:** Santos (2003).

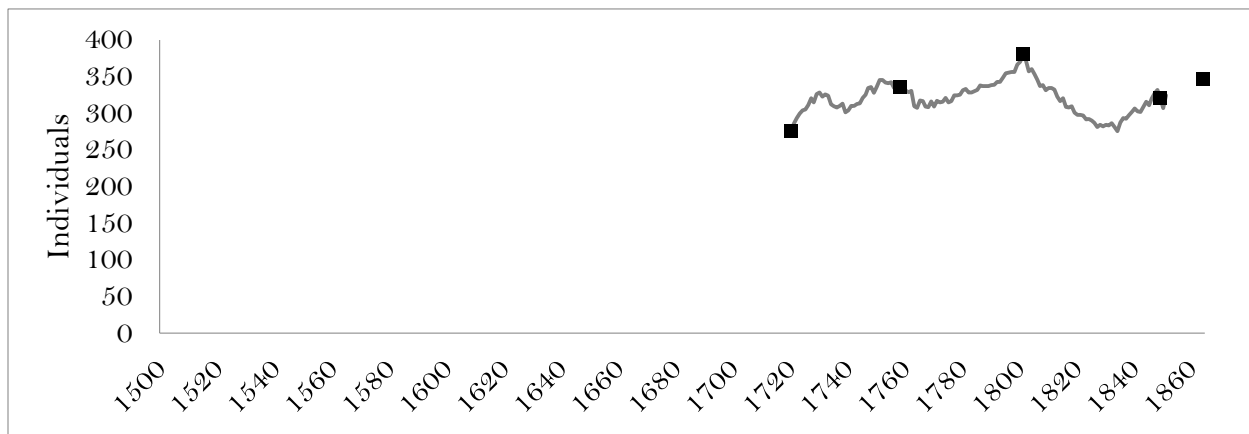


Figure A7. Nossa Senhora da Boa Fé (Évora)

#### A8. Nossa Senhora da Graça do Divor (Évora) (1720-1851)

**Location:** in the province of Alentejo and the bishopric of Évora. A small rural parish in the hinterland of the city and municipality of Évora. Presently, in the district of Évora, the earliest reference to its existence dates back to 1556.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1700:** No data. Santos (2003, p. 173) considers the *Corografia* of Costa (1706-1712) unsuitable for the region of Évora.

**1720: 252** Santos (2003, pp. 188-9).

**1758: 628** *Memórias Paroquiais*. Cited in Santos (2003, pp. 188-9).

**1801: 707** Silveira (2001).

**1849: 588** Silveira (2001).

**1864: 572** Censo (1868).

**Source for births and deaths:** Santos (2003).

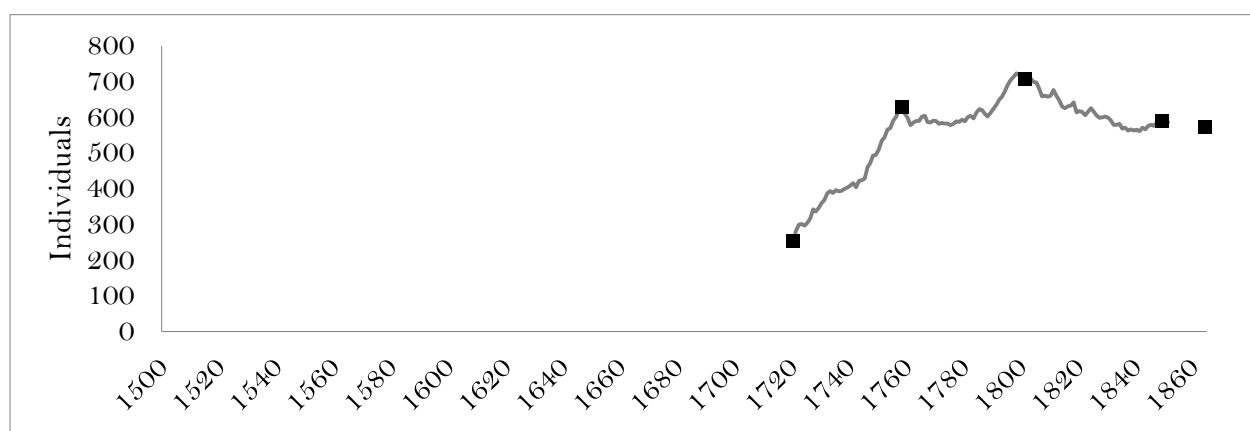


Figure A8. Nossa Senhora da Graça do Divor (Évora)

A9. S. Brás do Regedouro (Évora) (1720-1851)

**Location:** in the province of Alentejo and the archbishopric of Évora. A small rural parish in the hinterland of the city and municipality of Évora. Presently in the district of Évora, the earliest reference to its parish church goes back to 1536 but its origins are much older.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1700:** No data. Santos (2003, p. 173) considers the *Corografia* of Costa (1706-1712) unsuitable for the region of Évora.

**1720:** **236** Santos (2003, pp. 188-9).

**1758:** **272** *Memórias Paroquiais*. Cited in Santos (2003, pp. 188-9).

**1801:** **178** Silveira (2001).

**1849:** **176** Silveira (2001).

**1864:** **186** Censo (1868).

**Source for births and deaths:** Santos (2003).

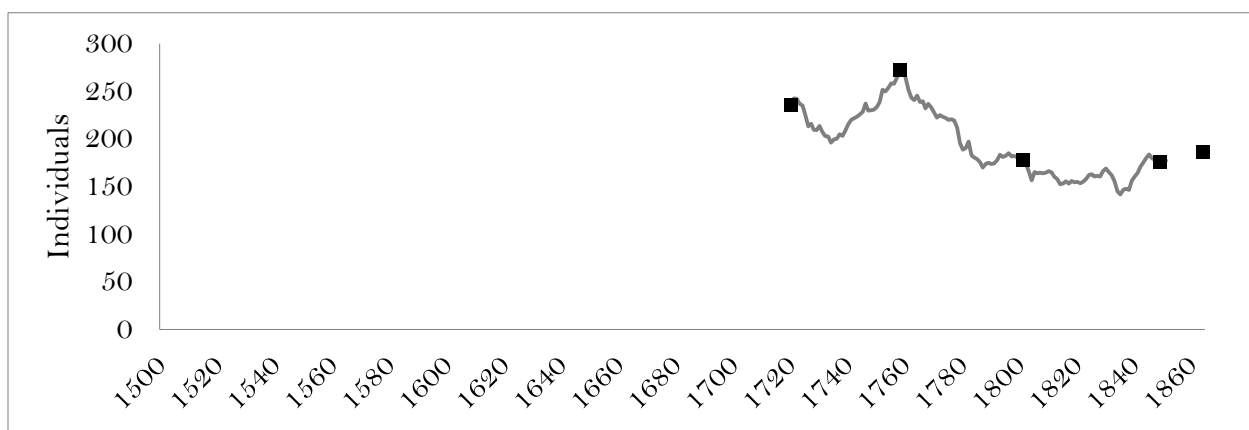


Figure A9. S. Brás do Regedouro (Évora)

#### A10. Torre de Coelheiros (Évora) (1720-1851)

**Location:** the province of Alentejo and the archbishopric of Évora. A rural parish in the hinterland of the city and municipality of Évora. Presently in the district of Évora, this parish was instituted in 1535.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1700:** No data available. Santos (2003, p. 173) considers the *Corografia* of Costa (1706-1712) unsuitable for the region of Évora.

**1720:** **256** Santos (2003, pp. 188-9).

**1758:** **300** *Memórias Paroquiais*. Cited in Santos (2003, pp.188-9).

**1801:** **327** Silveira (2001).

**1849:** **284** Silveira (2001).

**1864:** **1,054** Censo (1868).

**Source for births and deaths:** Santos (2003).

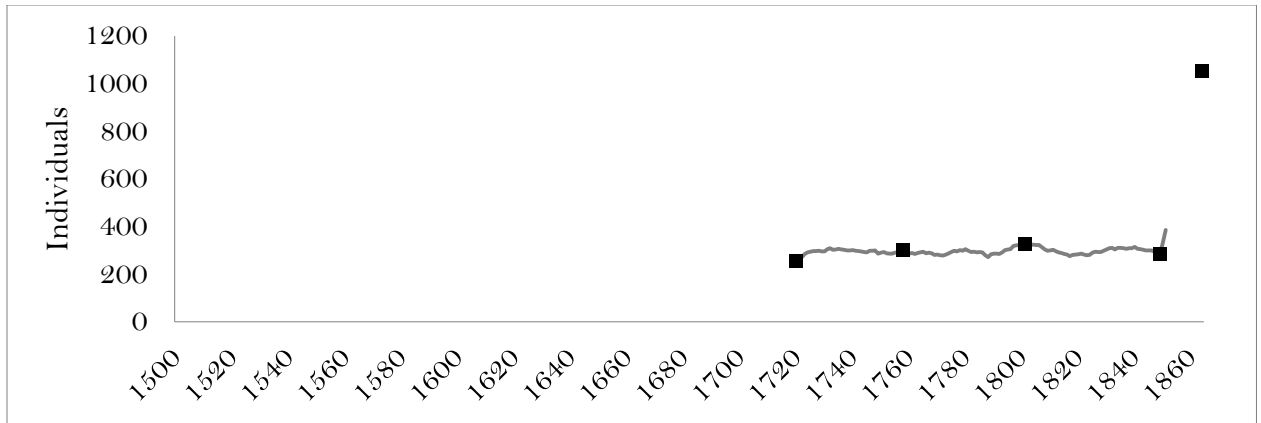


Figure A10. Torre de Coelheiros (Évora)

#### A11. Monte do Trigo (Évora) (1720-1851)

**Location:** in the province of Alentejo and the archbishopric of Évora. A rural parish in the municipality of Portel. Presently in the district of Évora, the parish existed in the 16th century though the settlement dates back to the 13th century.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1700:** No data. Santos (2003, p. 173) considers the *Corografia* of Costa (1706-1712) unsuitable for the region of Évora.

**1720:** **432** Santos (2003, pp. 188-9).

**1758:** **720** *Memórias Paroquiais*. Cited in Santos (2003, pp. 188-9).

**1801:** **679** Silveira (2001).

**1849:** **774** Silveira (2001).

**1864:** **913** Censo (1868).

**Source for births and deaths:** Santos (2003).



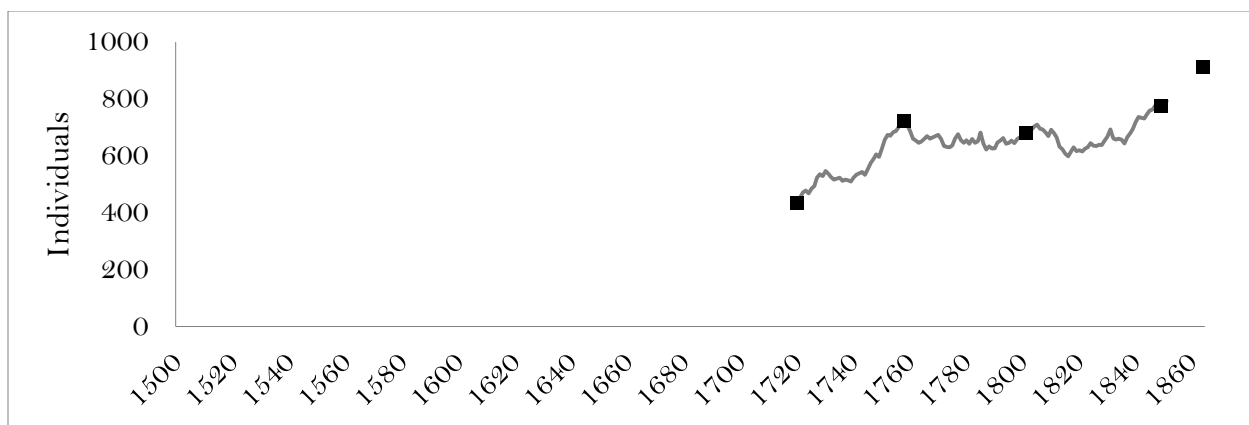


Figure A11. Monte do Trigo (Évora)

### A12. Igrejinha (Arraiolos) (1700-1851)

**Location:** in the province of Alentejo and the archbishopric of Évora. A rural parish in the municipality of Arraiolos, at present it lies in the district of Évora. Its parish church was initially built in the sixteenth century.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover localities in Alentejo at the parish level.

**1700:** **200** From Costa (1706-1712) cited by Santos (2003, p.188).

**1720:** **180** Santos (2003, pp. 188-9).

**1758:** **524** *Memórias Paroquiais*, cited in Santos (2003, pp. 188-9).

**1801:** **743** Silveira (2001).

**1849:** **807** Silveira (2001).

**1864:** **918** Censo (1868).

**Source for births and deaths:** Santos (2003).

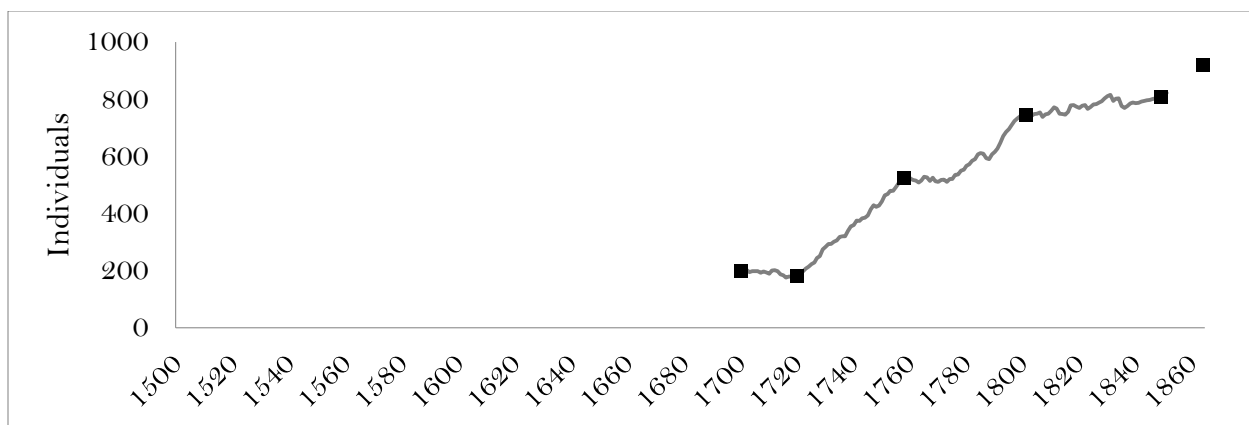


Figure A12. Igrejinha (Arraiolos)

## B. Algarve

### B1. Conceição de Tavira (1766-1864)

**Location:** the province of Algarve and the bishopric of Faro. A coastal fishing parish in the municipality of Tavira. Presently it lies in the district of Faro. The date of its creation is unknown but the parish was already in existence by 1518.

**Population stock** (number of inhabitants):

**1530:** No data. The *Numeramento da População* does not cover Algarve.

**1600:** **600** Pinto (1996, p.17).

**1700:** No data. No mention in in the *Corografia* of Costa (1706-12).

**1758:** **968** *Memórias Paroquiais*, cited in Pinto (1996, p.17).

**1801:** **486** Silveira (2001).

**1849:** **1,040** Silveira (2001).

**1864:** **1,680** Censo (1868).

**Source for births and deaths:** Pinto (1996).

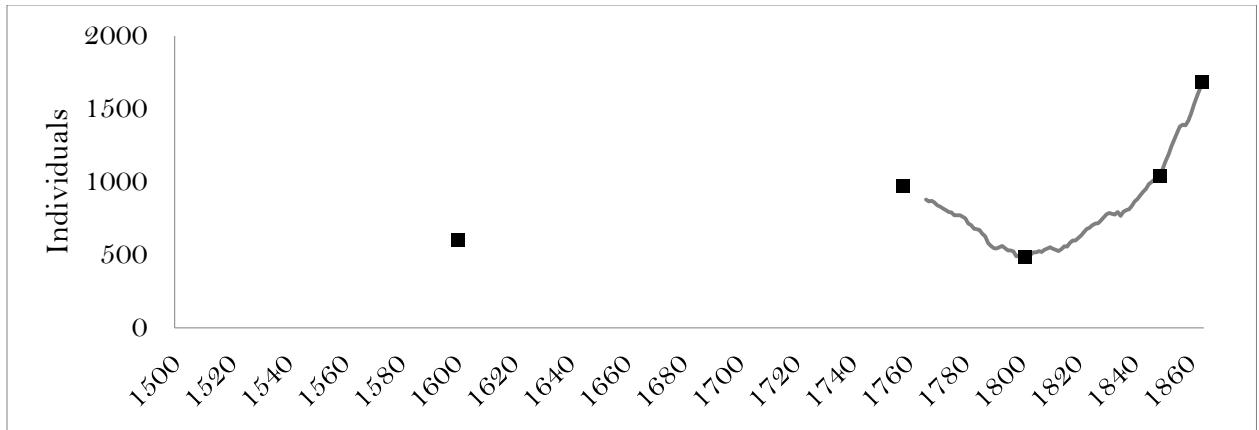


Figure B1. Conceição de Tavira

## C. Beira

### C1. Almalaguez (Coimbra) (1560-1864)

**Location:** the province of Beira and the bishopric of Coimbra. A small rural densely-populated parish in the hinterland of the city and municipality of Coimbra. At present, it lies in the district of Coimbra. Originally a Moorish settlement, its earliest traces in Portuguese history date from the 12<sup>th</sup> century, as an outpost of the Reconquista.

**Population stock** (number of inhabitants):

**1530: 216.** From the *Numeramento da População*, cited in Oliveira (1972).

**1607: 400,** a fiscal indicator suggested by Oliveira (1972).<sup>47</sup>

**1700: 544** From Costa (1706-12).

**1758: 1,800.** From *Memórias Paroquiais*, cited in Capela (2011).

**1801: 1,962** Silveira (2001).

**1849: 2,005** Silveira (2001).

**1864: 2,176** Censo (1868).

<sup>47</sup> "Tax paying families are not synonymous with hearths [...] but they come close" (Oliveira 1972, p.180).

**Source for births and deaths:** Arquivo da Universidade de Coimbra, Registos Paroquiais, Almalaguês: Baptismos – Livros 1-5; Óbitos – Livro 1; Mistos – Livro1.

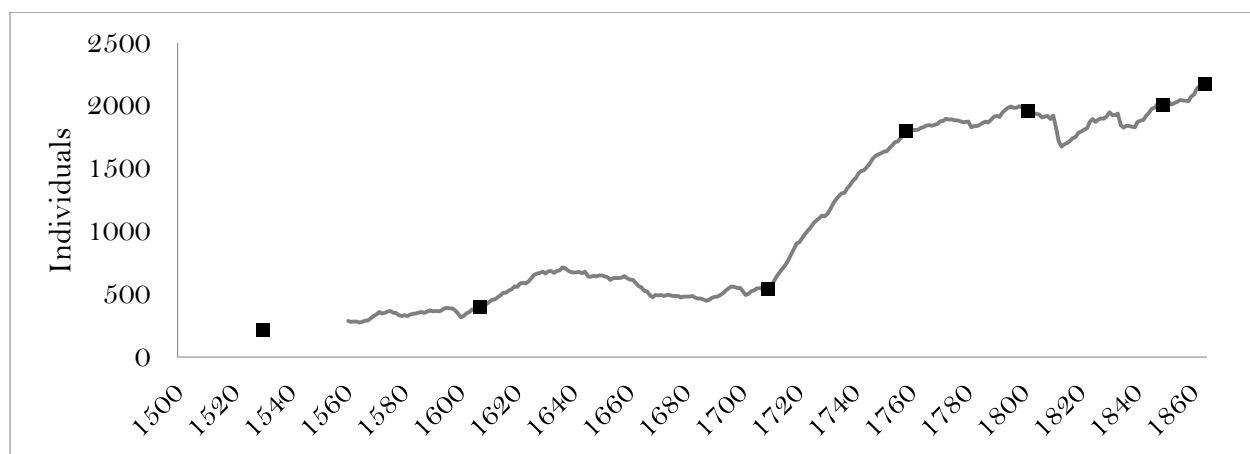


Figure C1. Almalaguez

### C2. Vera Cruz (Aveiro) (1695-1801)

**Location:** the province of Beira and the bishopric of Aveiro, after the latter was broken off from the bishopric of Coimbra in 1776. One of the urban parishes of the city and municipality of Aveiro. It presently lies in the district of Aveiro. It came into existence in 1572 when the parish of S. Miguel, which previously occupied the whole city, was divided into four smaller parishes.

**Population stock** (number of inhabitants):

**1530:** no data. Santa Cruz did not exist at this date.

**1685:** **1,820** Amorim (1996).

**1700:** no data available in Costa (1706-1712).

**1721:** **1,540** Amorim (1996).

**1775:** **1,360** Amorim (1996).

**1801:** **929** Silveira (2001).

**1849:** by amalgamation, Vera Cruz no longer in existence.

**1864:** by amalgamation, Vera Cruz no longer in existence.

**Source for births and deaths:** Amorim (1996).

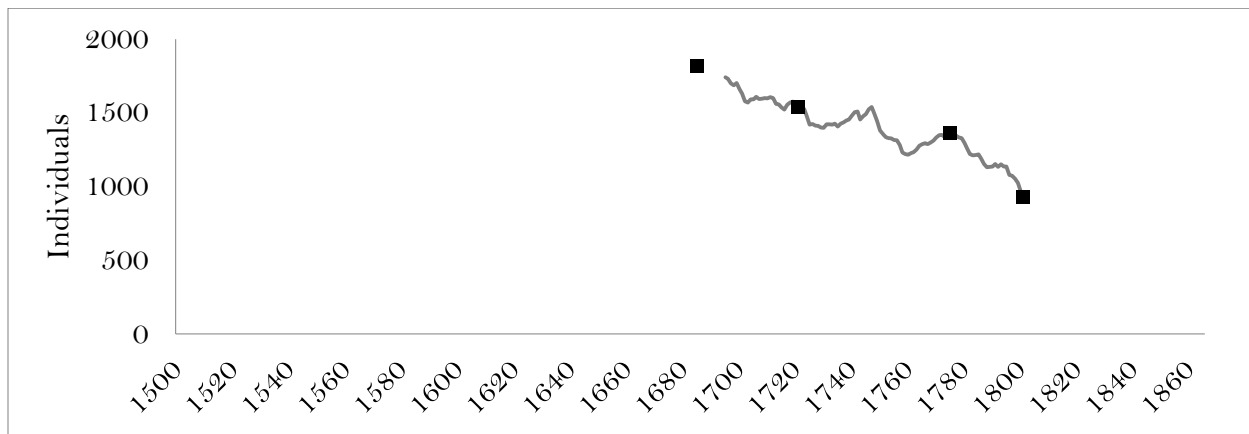


Figure C2. Vera Cruz (Aveiro)

### C3. S. Miguel (Aveiro) (1695-1801)

**Location:** the province of Beira and the bishopric of Coimbra until 1776, and after that the bishopric of Aveiro. It was the single urban parish of the city and municipality of Aveiro, dating back to the 11<sup>th</sup> century and the Reconquista. It was divided into four smaller urban parishes in 1572 – Vera Cruz, Apresentação, Espírito Santo and S. Miguel, which together constituted the city of Aveiro. In 1835, it ceased to have a separate existence and joined the parish of Espírito Santo to form that of Glória.

**Population stock** (number of inhabitants):

**1530:** No data. S. Miguel at this date does not correspond to its later post-1572 form.

**1685:** 1,800 Amorim (1996).

**1700:** no data available in Costa (1706-1712).

**1721:** 1,480 Amorim (1996).

**1775:** 964 Amorim (1996).

**1801: 895** Silveira (2001).

**1849:** by amalgamation, S. Miguel no longer in existence.

**1864:** by amalgamation, S. Miguel no longer in existence.

**Source for births and deaths:** Amorim (1996).

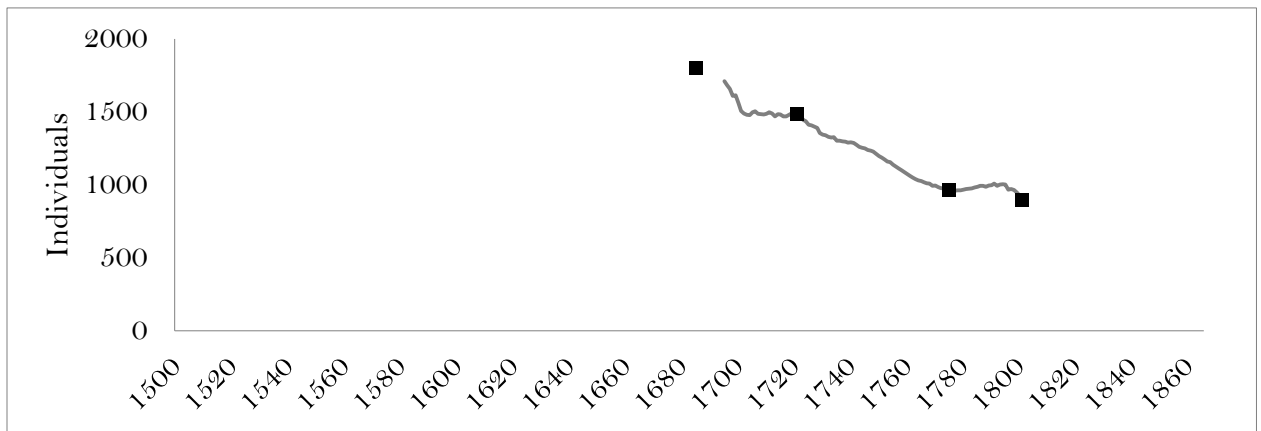


Figure C3. S. Miguel (Aveiro)

#### C4. Apresentação (Aveiro) (1695-1801)

**Location:** the province of Beira and the bishopric of Aveiro, after the latter was broken off in 1776 from the bishopric of Coimbra. One of the urban parishes in the centre of the city and municipality of Aveiro. At present it lies in the district of Aveiro. It came into existence in 1572 when the parish of S. Miguel, which previously comprised the whole city, was divided into four parishes.

**Population stock** (number of inhabitants):

**1530:** No data. Apresentação did not exist then.

**1685: 1,480** Amorim (1996).

**1700:** no data available in Costa (1706-1712).

**1721: 956** Amorim (1996).

**1775: 888** Amorim (1996).

**1801: 882** Silveira (2001).

**1849:** by amalgamation, Apresentação no longer in existence.

**1864:** by amalgamation, Apresentação no longer in existence.

**Source for births and deaths:** Amorim (1996).

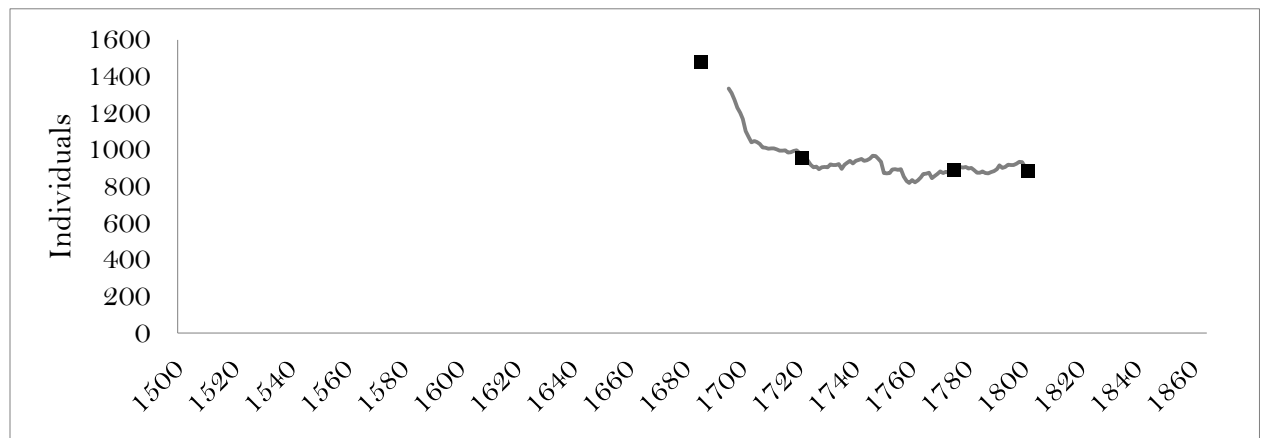


Figure C4. Apresentação (Aveiro)

#### C5. Espírito Santo (Aveiro) (1695-1801)

**Location:** the province of Beira and the bishopric of Aveiro, after the latter was broken off in 1776 from the archbishopric of Coimbra. One of the four urban parishes in the city and municipality of Aveiro. Presently, it lies in the district of Aveiro. It came into existence in 1572 when the parish of S. Miguel, which previously occupied the whole city, was divided into four smaller parishes.

**Population stock** (number of inhabitants):

**1530:** No data. Espírito Santo did not exist yet.

**1685: 1,500** Amorim (1996).

**1700** no data available in Costa (1706-1712).

**1721: 1,480** Amorim (1996).

**1775: 1,452** Amorim (1996).

**1801: 1,162** Silveira (2001).

**1849:** by amalgamation, Espírito Santo no longer in existence.

**1864:** by amalgamation, Espírito Santo no longer in existence.

**Source for births and deaths:** Amorim (1996).

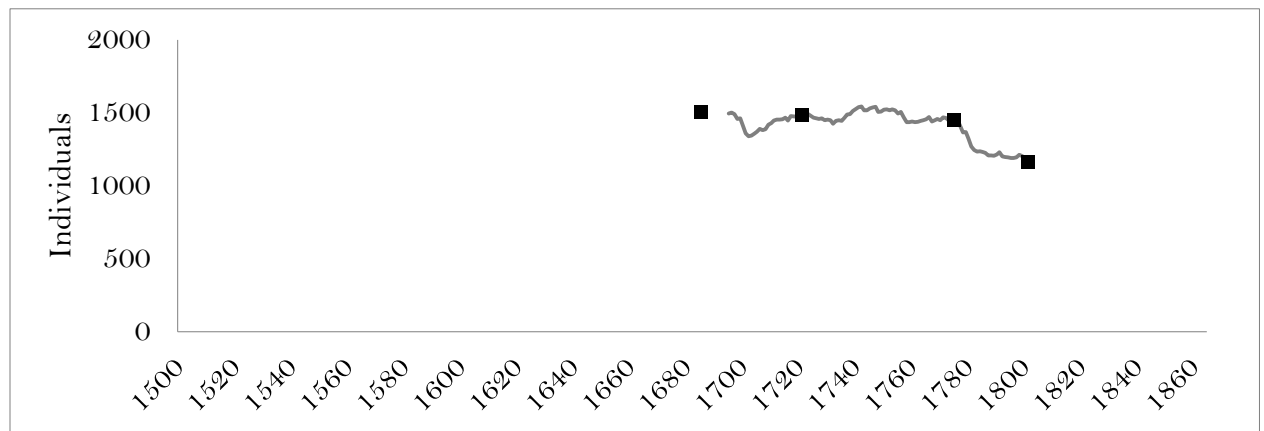


Figure C5. Espírito Santo (Aveiro)

#### C6. S. Bartolomeu (Coimbra) (1610-1709)

**Location:** in the province of Beira and the bishopric of Coimbra. One of the eight urban parishes of the city and municipality of Coimbra. Presently, it lies in the district of Coimbra. The earliest reference to the parish church dates from the mid 10<sup>th</sup> century.

**Population stock** (number of inhabitants):

**1530:** No data. Not available in the *Numeramento da População*.

**1610:** **1,166** a fiscal indicator suggested by Oliveira (1972).

**1700:** No data. (Costa 1706-12).

**1758:** **1,552** *Memórias Paroquiais*, cited in Capela (2011).

**1801:** **1,453** Silveira (2001).



**1849: 1,224** Silveira (2001).

**1864: 3,293** Censo (1868).

**Source for births and deaths:** Data kindly supplied by António de Oliveira.

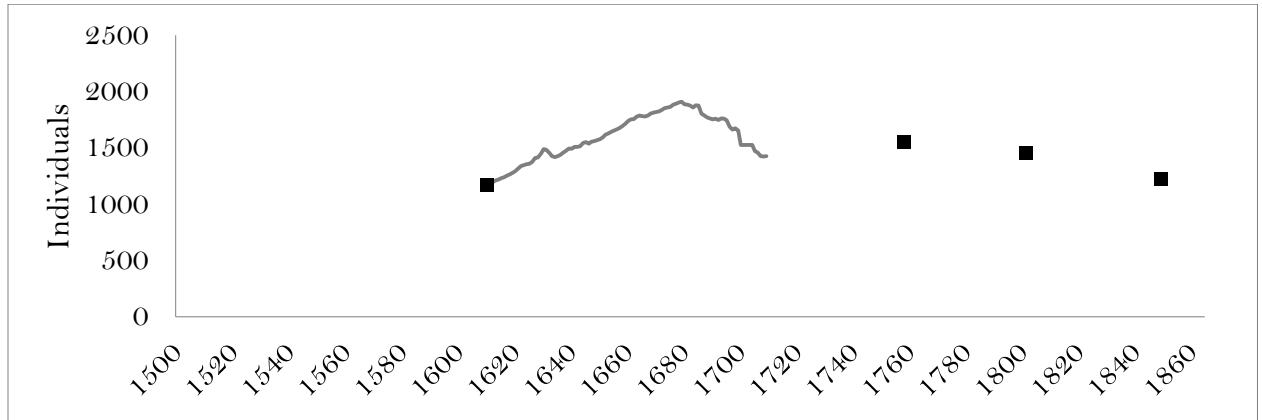


Figure C6. S. Bartolomeu (Coimbra)

#### C7. S. Cruz (Coimbra) (1607-1709)

**Location:** The province of Beira and the bishopric of Coimbra. One of the eight urban parishes of the city and municipality of Coimbra. Presently, it lies in the district of Coimbra. The earliest reference to the church dates from the mid 10<sup>th</sup> century but the parish was instituted in only 1131, when the great monastery of Santa Cruz was built.

#### **Population stock** (number of inhabitants):

**1530:** No data. Not available in the *Numeramento da População*.

**1607: 859** A fiscal indicator suggested by Oliveira (1972).

**1700** No data. (Costa 1706-12).

**1758: 912** *Memórias Paroquiais*, cited in Capela (2011).

**1801: 2,353** Silveira (2001)

**1849: 1,860** Silveira (2001).

**1864: 3,213** Censo (1868).

**Source for births and deaths:** Data kindly supplied by António de Oliveira.

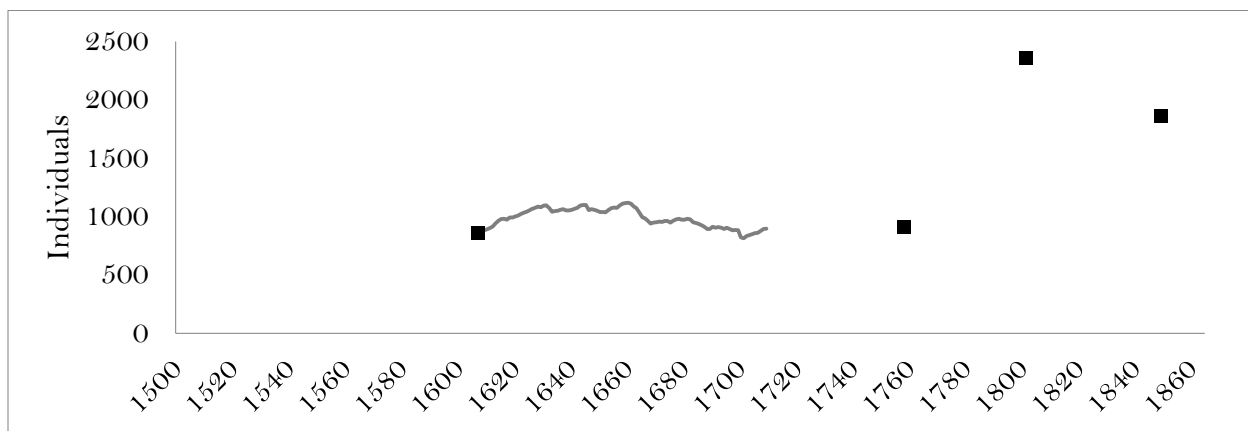


Figure C7. S. Cruz (Coimbra)

#### C8. Sé (Coimbra) (1610-1709)

**Location:** The province of Beira and the bishopric of Coimbra. The leading parish of the eight urban parishes of the city and the municipality of Coimbra. Presently, it lies in the district of Coimbra. The See of Coimbra was built some time after the year 1139.

**Population stock** (number of inhabitants):

**1530:** No data. Not available in the *Numeramento da População*.

**1610:** **463** a fiscal indicator suggested by Oliveira (1972).

**1700:** Not available (Costa 1706-12).

**1758:** **3,168** *Memórias Paroquiais* cited in Capela (2011).

**1801:** **2,995** Silveira (2001).

**1849:** Not available. Silveira (2001).

**1864:** **3,499** Censo (1868).

**Source for births and deaths:** Data kindly supplied by António de Oliveira

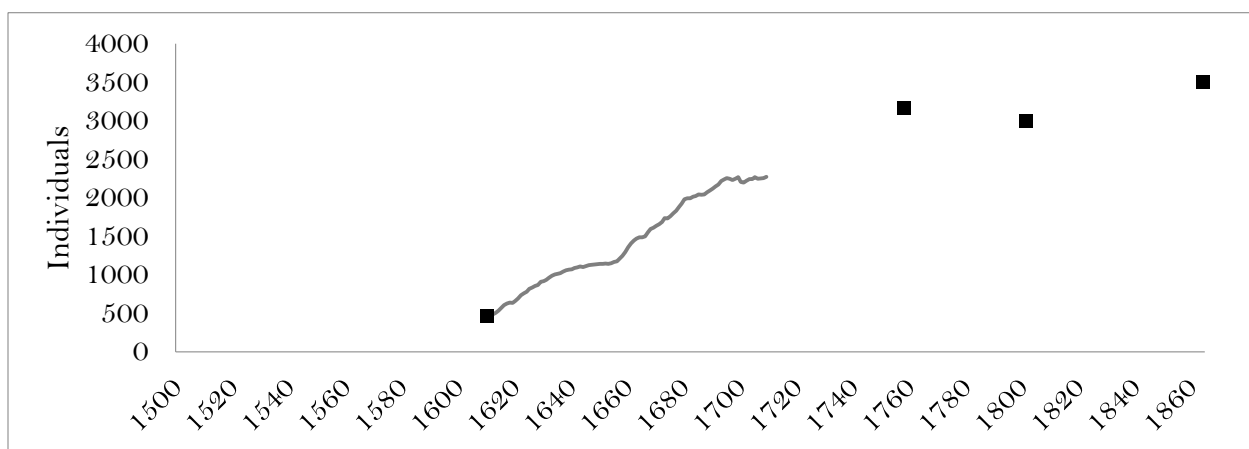


Figure C8. Sé (Coimbra)

### C9. Santiago (Coimbra) (1709-1610)

**Location:** The province of Beira and the bishopric of Coimbra. One of the eight urban parishes of the city and municipality of Coimbra. Presently, it lies in the district of Coimbra. The parish church was built *circa* 1200.

#### **Stock of population** (number of inhabitants):

**1530:** No data. Not available in the *Numeramento da População*.

**1610:** **1,312** A fiscal indicator suggested by Oliveira (1972).

**1700:** No data. (Costa 1706-12).

**1758:** **1,200** *Memórias Paroquiais*, cited in Capela (2011).

**1801:** **1,793** Silveira (2001).

**1849:** **1,461** Silveira (2001).

**1864:** **3,449** Censo (1868).

**Source for births and deaths:** Data kindly supplied by António de Oliveira.

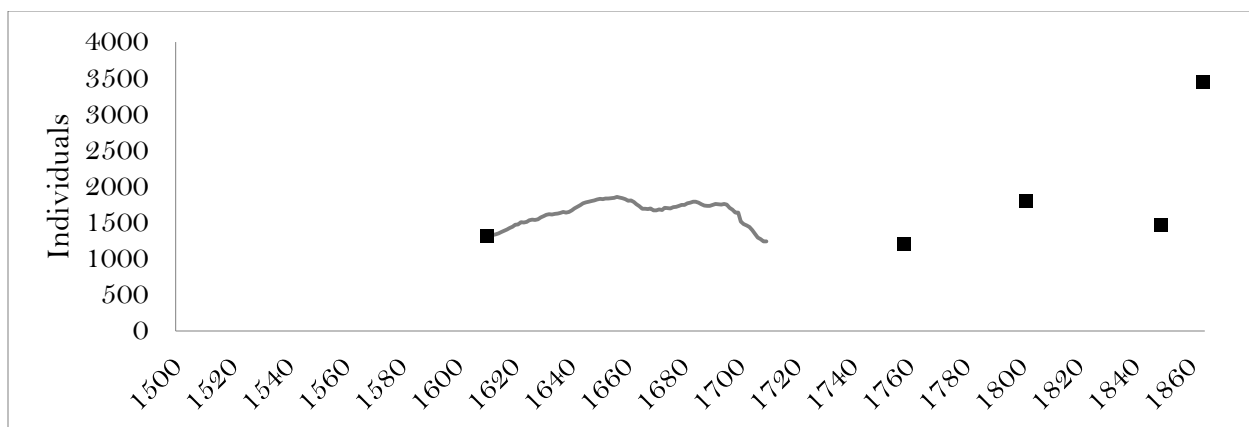


Figure C9. Santiago (Coimbra)

#### C10. Santa Justa (Coimbra) (1610-1709)

**Location:** the province of Beira and the bishopric of Coimbra. One of the eight urban parishes of the city and municipality of Coimbra. Presently, it lies in the district of Coimbra. The parish was founded sometime in the 11<sup>th</sup> century.

**Population Stock** (number of inhabitants inhabitants):

**1530** No data. Not available in the *Numeramento da População*.

**1610: 859** a fiscal indicator suggested by Oliveira (1972).

**1700:** No data. (Costa 1706-12).

**1758: 1,400** *Memórias Paroquiais* cited in Capela (2011).

**1801: 1,461** Silveira (2001).

**1849: 1,246** Silveira (2001).

**1864:** Not shown in Censo (1868).

**Source for births and deaths:** Data kindly supplied by António de Oliveira.

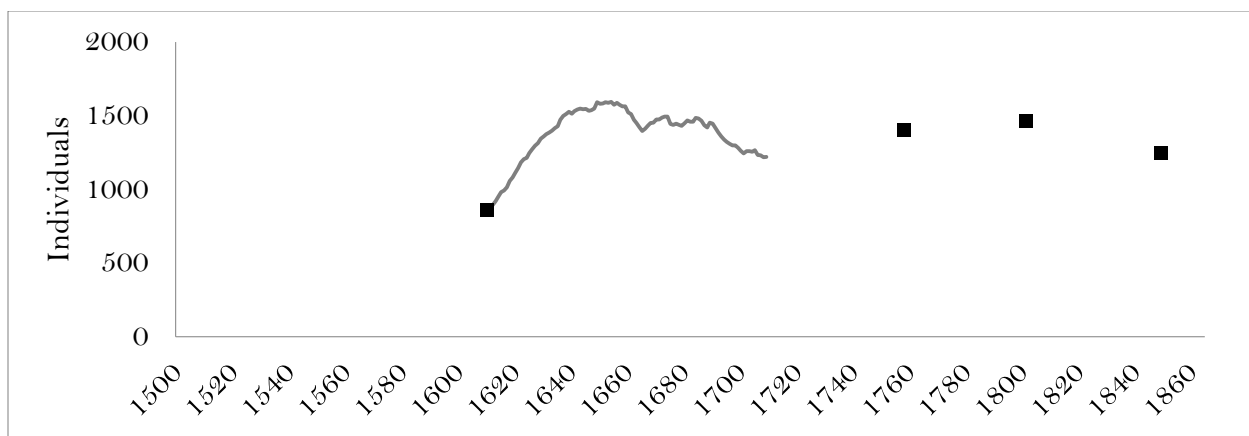


Figure C10. S. Justa (Coimbra)

C11. S. Pedro (Coimbra) (1610-1709)

Location: The province of Beira and the bishopric of Coimbra. One of the eight urban parishes of the city and municipality of Coimbra. Presently, it lies in the district of Coimbra. The earliest reference to its parish church dates from the mid 10<sup>th</sup> century. The parish was founded in 1131.

**Population stock** (number of inhabitants):

**1530:** No data available in the *Numeramento da População*.

**1610: 412** A fiscal indicator suggested by Oliveira (1972).

**1700:** No data (Costa 1706-12).

**1758: 1,652** *Memórias Paroquiais*, data in Capela (2011).

**1801: 2,631** Silveira (2001).

**1849: 2,473** Silveira (2001).

**1864:** This parish merged into another in 1855.

**Source for births and deaths:** Data kindly supplied by António de Oliveira.

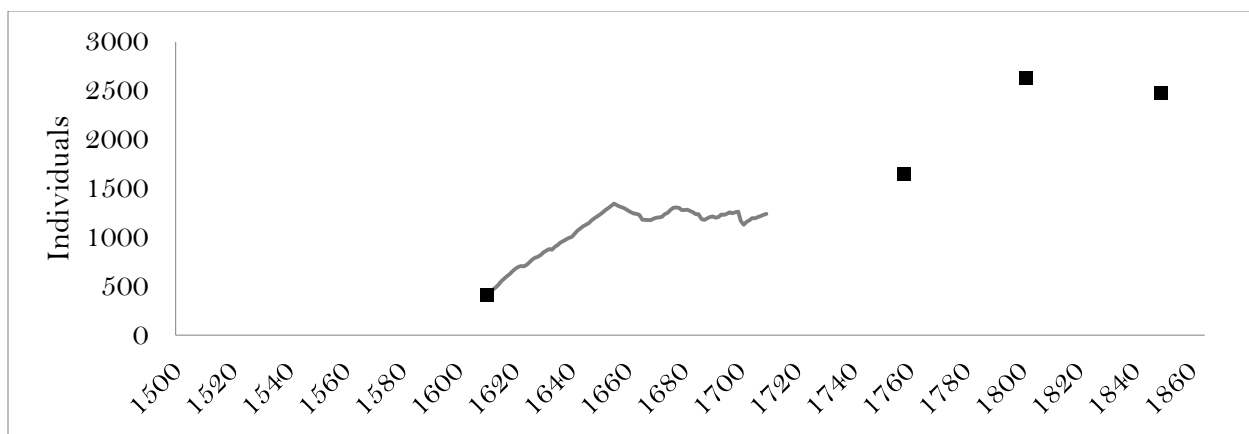


Figure C11. S. Pedro (Coimbra)

C12. Nossa Senhora da Graça de Bobadela (Coimbra) (1530-1864)

**Location:** In the province of Beira and in the bishopric of Coimbra. A small rural parish in the municipality of Oliveira do Hospital. Presently, it lies in the district of Coimbra. It received its municipal charter in 1256 and lost this status in 1836.

**Population stock** (number of inhabitants):

**1530: 504** From *Numeramento da População*, cited in Colaço (1934).

**1700: 400** Costa (1706-12).

**1758: 408** *Memórias Paroquiais*, cited in Capela (2011).

**1801: 634** Silveira (2001).

**1849: 888** Silveira (2001).

**1864: 848** Censo 1868).

**Source for births and deaths:** Arquivo Distrital de Lisboa: Bobadela – B1 to B3 (births), O1 to O3 (deaths) and M1 to M2 (mixed registers).

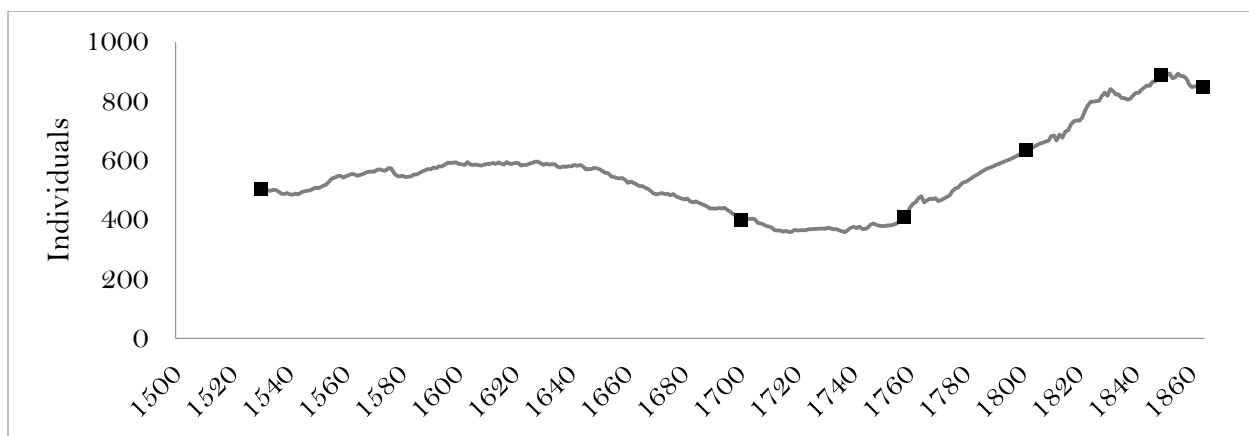


Figure C12. Bobadela (Coimbra)

C13. Nossa Senhora da Conceição de Lagares (Coimbra) (1554-1864)

**Location:** the province of Beira and the bishopric of Coimbra. A small rural parish in the hinterland of the city and municipality of Coimbra, which presently lies in the district of Coimbra. It was given a municipal charter in 1514 but there is no indication as to when the parish came into existence.

**Population stock** (number of inhabitants):

**1530: 296** From the *Numeramento da População*, cited in Colaço (1934).

**1700: 800** From Costa (1706-12).

**1758: 400** *Memórias Paroquiais*, cited in Capela (2011).

**1801: 635** Silveira (2001).

**1849: 1,124** Silveira (2001).

**1864: 1,264** Censo (1868).

**Source for births and deaths:** Arquivo Distrital de Lisboa, Lagares, Registos Paroquiais: Baptismos, B1-B4; Óbitos, O1-O8; Mixtos, M1-M2.

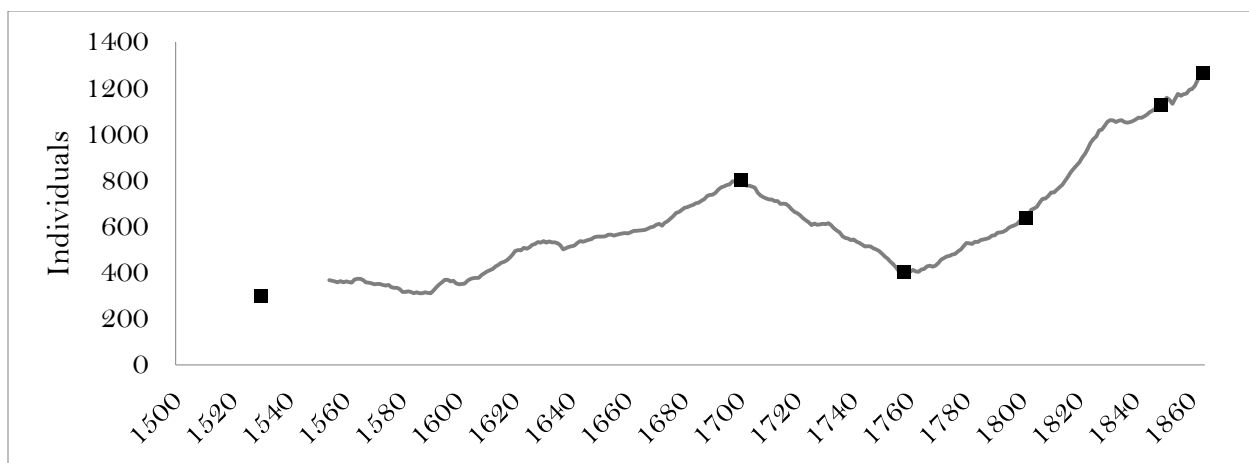


Figure C13. Nossa Senhora da Conceição Lagares (Coimbra)

#### C14. Eixo e Oliveirinha (1666-1864)

**Location:** The province of Beira and the bishopric of Coimbra. A rural parish in the hinterland of the city and municipality of Aveiro, which presently lies in the district of Aveiro. While its name appears for the first time in documents in 1050, its municipal charter dates back to 1516.

**Population stock** (number of inhabitants):

**1530: 436** From *Numeramento da População*, cited in Colaço (1934).

**1700: 1,920** From Costa (1706-12).

**1758: 3,000** *Memórias Paroquiais* cited in Ferreira (2001).

**1801: 2,855** Silveira (2001).

**1849: 3,197** Silveira (2001).

**1864: 3,501** Censo (1868).

**Source for births and deaths:** Ferreira (2001).



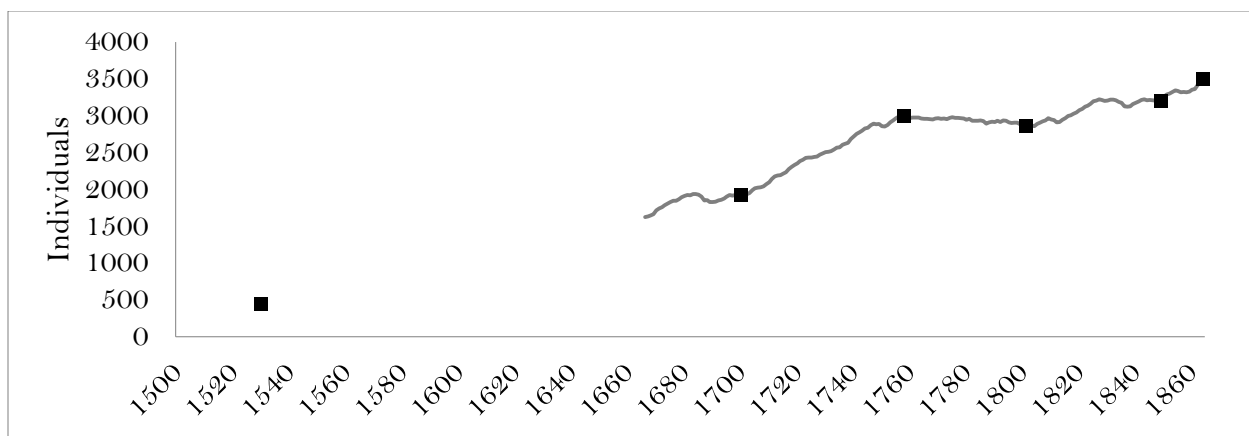


Figure C14. Eixo e Oliveirinha

### C15. S. Martinho da Árvore (1616-1686)

**Location:** The province of Beira and the bishopric of Coimbra. A rural parish in the suburbs of the city and municipality of Coimbra, which presently lies in the district of Coimbra. There is no evidence for the date of the creation of this parish but it is believed to be more than five centuries old.

**Population stock** (number of inhabitants):

**1530: 172** From *Numeramento da População*, cited in Colaço (1934).

**1700: 460** From Costa (1706-12), cited in Gaivão (1974).

**1758: 448** *Memórias Paroquiais*, cited in Gaivão (1974).

**1801: 442** Silveira (2001).

**1849: 367** Silveira (2001).

**1864: 365** Censo (1868).

**Source for births and deaths:** Gaivão (1974).

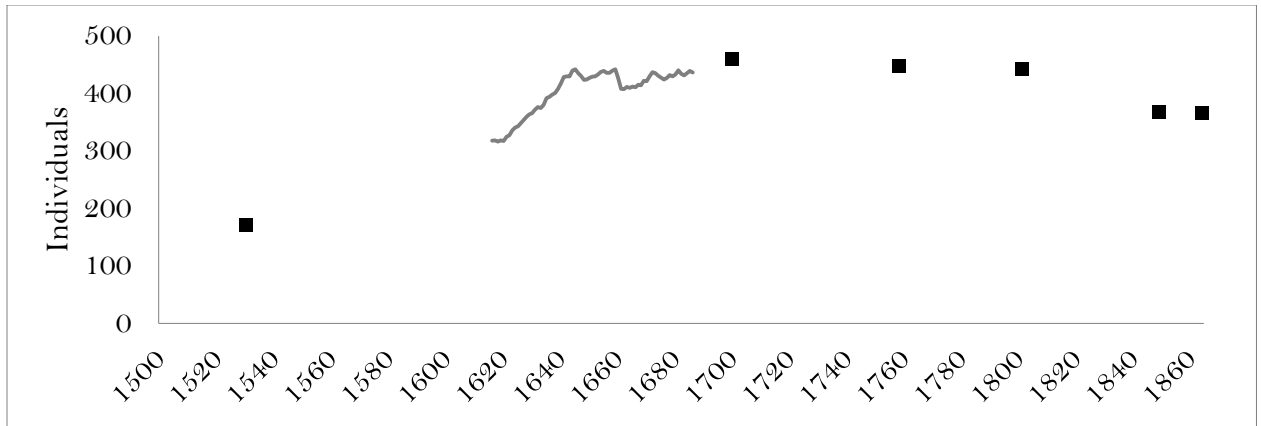


Figure C15. S. Martinho da Árvore

C16. S. João Baptista de Lourosa (Viseu) (1587-1700)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of this city. At present, it lies in the district of Viseu. The parish church goes back to 912 and was built by Christians living under Moorish rule.

**Population stock** (number of inhabitants):

**1530: 376** From *Numeramento da População*, cited in Colaço (1934).

**1700: 1,040** From Costa (1706-12).

**1758: 1,400** From *Memórias Paroquiais*, cited in Capela (2010).

**1801: 1,459** Silveira (2001).

**1849: 2,076** Silveira (2001).

**1864: 2,538** Censo (1868).

**Source for births and deaths:** Oliveira (1990).

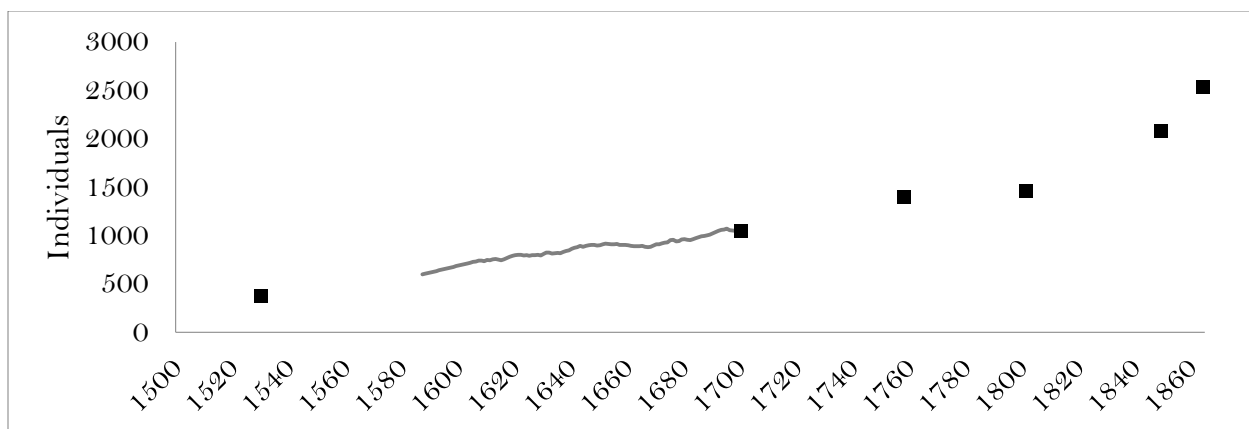


Figure C16. S. João Baptista de Lourosa (Viseu)

C17. S. Maria de Tondela (Viseu) (1700-1840)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of Viseu, at present it lies in the district of Viseu. The historical origins of the parish are obscure but go back at least to the 13th century.

**Population stock** (number of inhabitants):

**1530: 52.** From the *Numeramento da População*, cited in Colaço (1934).

**1700: 1,080** From Costa (1706-12).

**1758: 1,048** From *Memórias Paroquiais*, cited in Capela (2010).

**1801: 1,400** Silveira (2001).

**1849: 1,353** Silveira (2001).

**1864: 1,682** Censo (1868).

**Source for births and deaths:** Oliveira (2002).

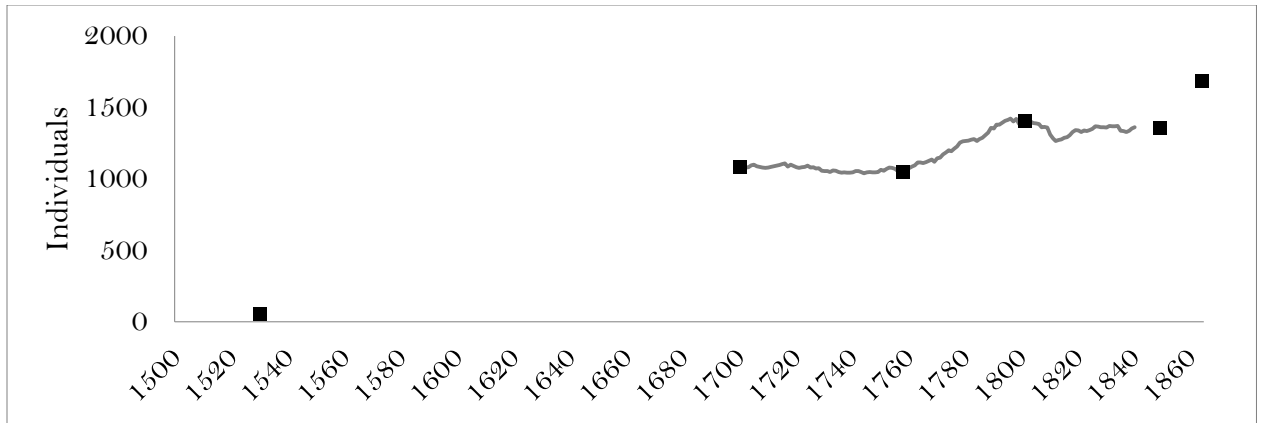


Figure C17. S. Maria de Tondela (Viseu)

C18. S. Pedro do Sul (Viseu) (1700-1840)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of this city, with celebrated thermal springs, it presently lies in the district of Viseu. Its parish church existed already between 1092 and 1098. It received its municipal charter in 1152.

**Population stock** (number of inhabitants):

**1530: 624** From the *Numeramento da População*, cited in Colaço (1934).

**1700: 1,320** From Costa (1706-12).

**1758: 1,284** From *Memórias Paroquiais*, cited in Capela (2010).

**1801: 1,967** Silveira (2001).

**1849: 1,860** Silveira (2001).

**1864: 2,440** Censo (1868).

**Source for births and deaths:** Oliveira (2002).

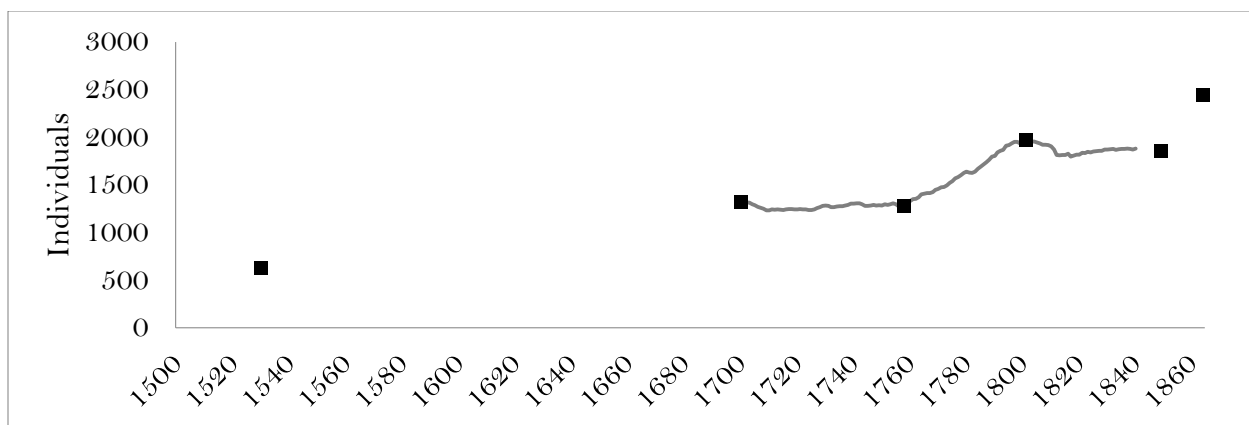


Figure C18. S. Pedro do Sul (Viseu)

C19. S. Julião de Mangualde (Viseu) (1700-1840)

**Location:** In the province of Beira and bishopric of Viseu. A rural parish in the hinterland of this city, formerly known as Zurara or Azurara da Beira, which presently lies in the district of Viseu. It received its first municipal **charter** in 1102.

**Population stock** (number of inhabitants):

**1530: 148** From *Numeramento da População*, cited in Colaço (1934).

**1700: 1,840** From Costa (1706-12).

**1758: 2,036** From *Memórias Paroquiais*, cited in Capela (2010).

**1801: 2,754** Silveira (2001).

**1849: 3,154** Silveira (2001).

**1864: 4,162** Censo (1868).

**Source for births and deaths:** Oliveira (2002).

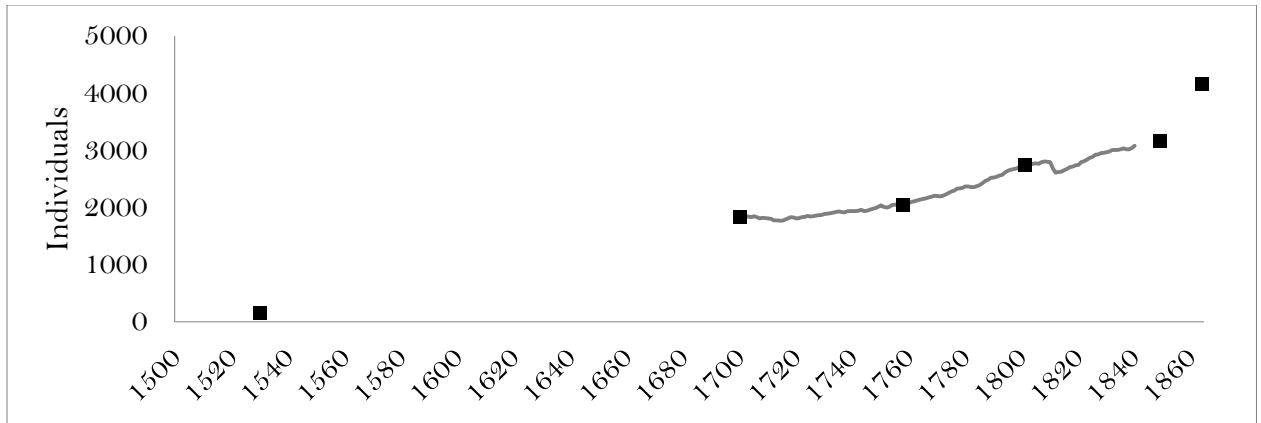


Figure C19. S. Julião de Mangualde (Viseu)

C20. S. Maria de Vouzela (Viseu) (1700-1840)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of this city, which presently lies in the district of Viseu. Its parish church was constructed between the 12th and the 13th centuries.

**Population stock** (number of inhabitants):

**1530: 292** From the *Numeramento da População*, cited in Colaço (1934).

**1700: 560** From Costa (1706-12).

**1758:** No data in *Memórias Paroquiais*, see Capela (2010).

**1801: 424** Silveira (2001).

**1849: 624** Silveira (2001).

**1864: 716** Censo (1868).

**Source for births and deaths:** Oliveira (2002).

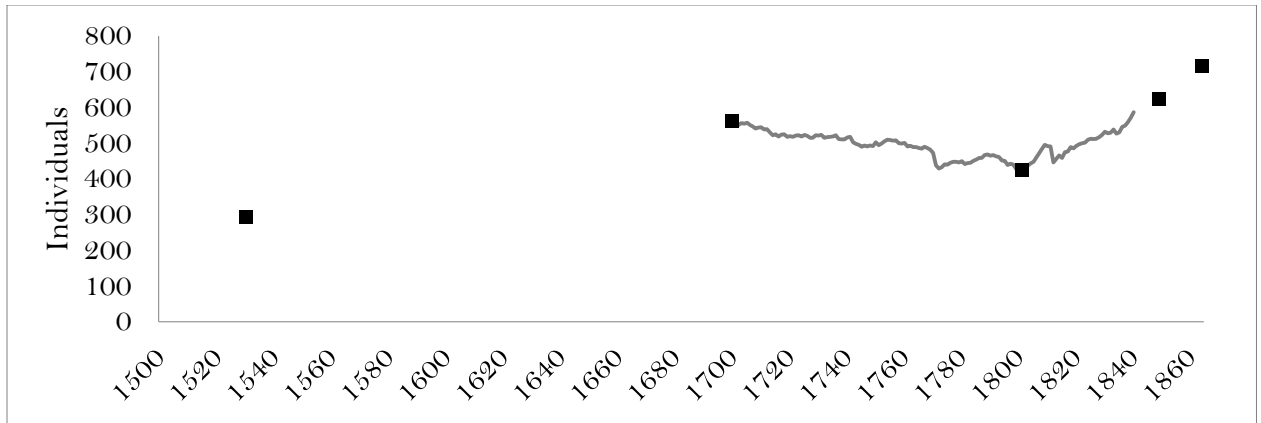


Figure C20. S. Maria deVouzela (Viseu)

C21. Nossa Senhora da Conceição de Nelas (Viseu) (1700-1812)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of this city, which presently lies in the district of Viseu. It has not been possible to gather information about the historical background of this parish.

**Population stock** (number of inhabitants):

**1530: 124** From the *Numeramento da População*, cited in Colaço (1934).

**1700: 680** From Costa (1706-12).

**1758: 980** From *Memórias Paroquiais*, cited in Capela (2010).

**1801: 1,262** Silveira (2001).

**1849: 1,857** Silveira (2001).

**1864: 2,198** Censo (1868).

**Source for births and deaths:** Oliveira (2002).

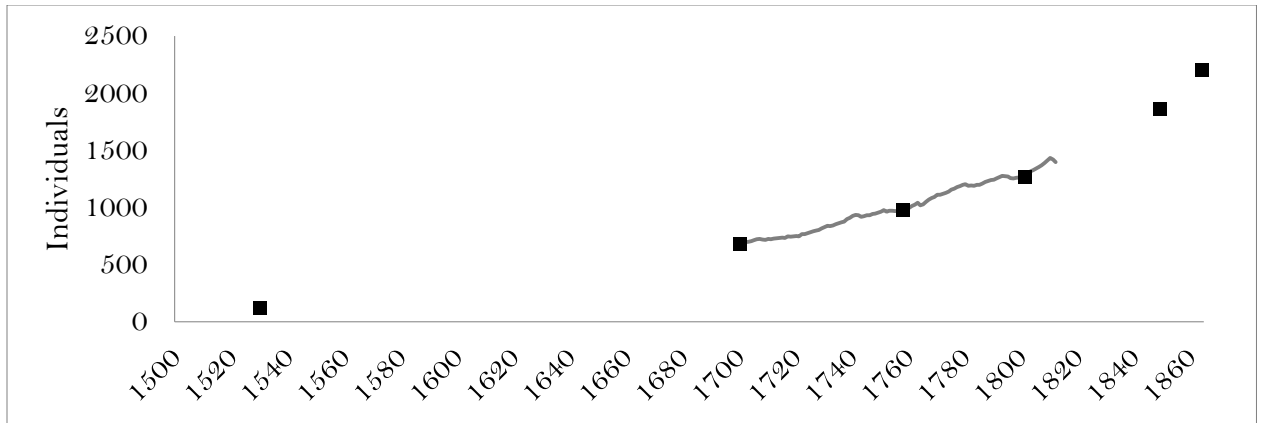


Figure C21. Nossa Senhora da Conceição de Nelas (Viseu)

C22. Canas de Sabugosa (Viseu) (1700-1840)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of this city, close to Tondela. Its earlier designation was Canas de Santa Maria. At present, it lies in the district of Viseu. The parish church was built and endowed by the wife of D. Afonso Henriques, the first king of Portugal (12th century).

**Population stock** (number of inhabitants):

**1530: 80** From the *Numeramento da População*, cited in Colaço (1934).

**1700: 920** From Costa (1706-12).

**1758: 1,032** From *Memórias Paroquiais*, cited in Capela (2010).

**1801: 961** Silveira (2001).

**1849: 1,246** Silveira (2001).

**1864: 794** Censo (1868).

**Source for births and deaths:** Oliveira (2002).



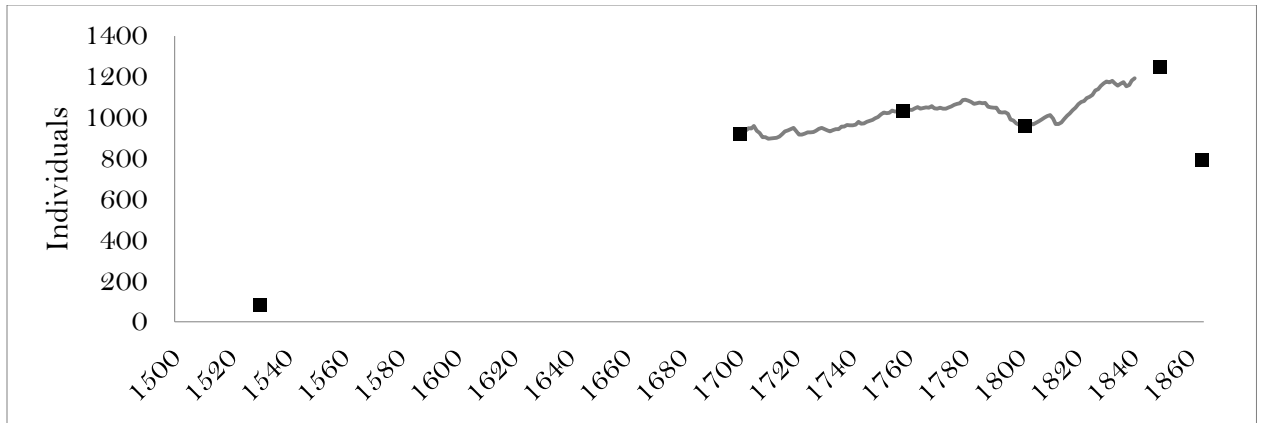


Figure C22. Canas de Sabugosa (Viseu)

### C23. Santos Evos (Viseu) (1587-1700)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of this city, which lies in a remote corner of the district of Viseu. Little is known about this parish, except that it began to be settled in the 13th century.

**Population stock** (number of inhabitants):

**1530: 32** From the *Numeramento da População*, cited in Colaço (1934).

**1700: 424** From Costa (1706-12).

**1758:** the available observation in the *Memórias Paroquiais* cited in Capela (2010) is clearly an outlier and has not been used.

**1801: 670** Silveira (2001).

**1849: 760** Silveira (2001).

**1864: 1,102** Censo (1868).

**Source for births and deaths:** Oliveira (1990).

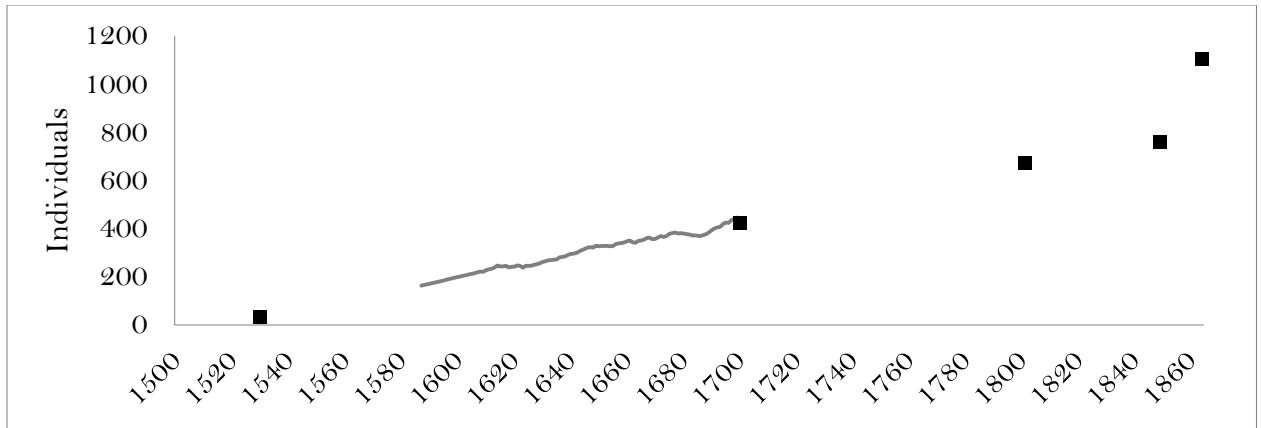


Figure C23. Santos Evos (Viseu)

C24. Nossa Senhora da Graça de Fragosela (Viseu) (1587-1700)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of this city, which presently lies in the district of Viseu. Little is known about its historical antecedents.

**Population stock (number of inhabitants):**

**1530 172** From the *Numeramento da População*, cited in Colaço (1934).

**1700 704** From Costa (1706-12).

**1758: 720** From *Memórias Paroquiais*, cited in Capela (2010).

**1801: 781** Silveira (2001).

**1849: 876** Silveira (2001).

**1864: 1,153** Censo (1868).

**Source for births and deaths:** Oliveira (1990).

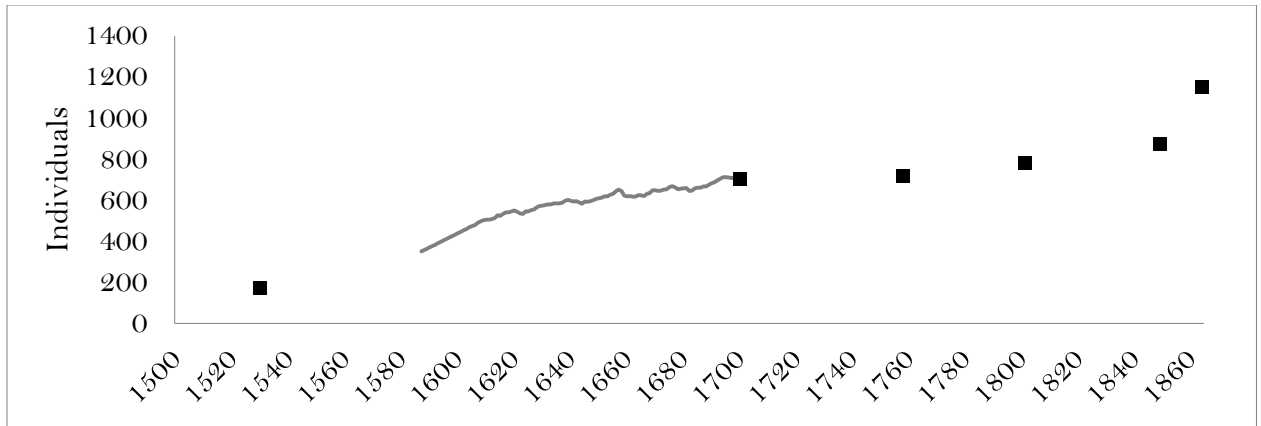


Figure C24. Nossa Senhora da Graça de Fragosela (Viseu)

### C25. Vila Chã de Sá (Viseu) (1587-1701)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of this city, which presently lies in the district of Viseu. Little is known about its historical antecedents, except that there were transactions in land and windmills there after 1258 and that the parish was instituted before the 17th century.

**Population stock** (number of inhabitants):

**1530: 236** From the *Numeramento da População*, cited in Colaço (1934).

**1700:** No data, no reference to this parish in Costa (1706-12).

**1758: 296** From *Memórias Paroquiais*, cited in Capela (2010).

**1801: 447** Silveira (2001).

**1849: 704** Silveira (2001).

**1864: 721** Censo (1868).

**Source for births and deaths:** Oliveira (1990).

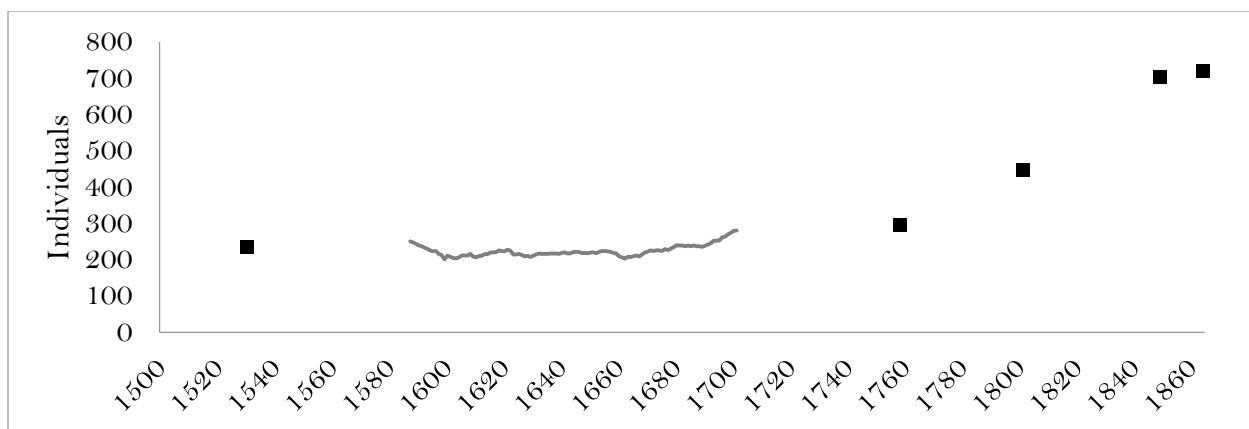


Figure C25. Vila Chã de Sá (Viseu)

C26. Nossa Senhora da Conceição de Mundão (Viseu) (1587-1700)

**Location:** The province of Beira and the bishopric of Viseu. A rural parish in the hinterland of this city, it presently lies in the district of Viseu. Mundão is mentioned in medieval documents since the mid-13th century but its parish was instituted only in 1510.

**Population stock** (number of inhabitants):

**1530: 116** From the *Numeramento da População*, cited in Colaço (1934).

**1700: 320** From Costa (1706-12).

**1758: 204** From *Memórias Paroquiais*, cited in Capela (2010).

**1801: 447** Silveira (2001).

**1849: 519** Silveira (2001).

**1864: 641** Censo (1868).

**Source for births and deaths:** Oliveira (1990).

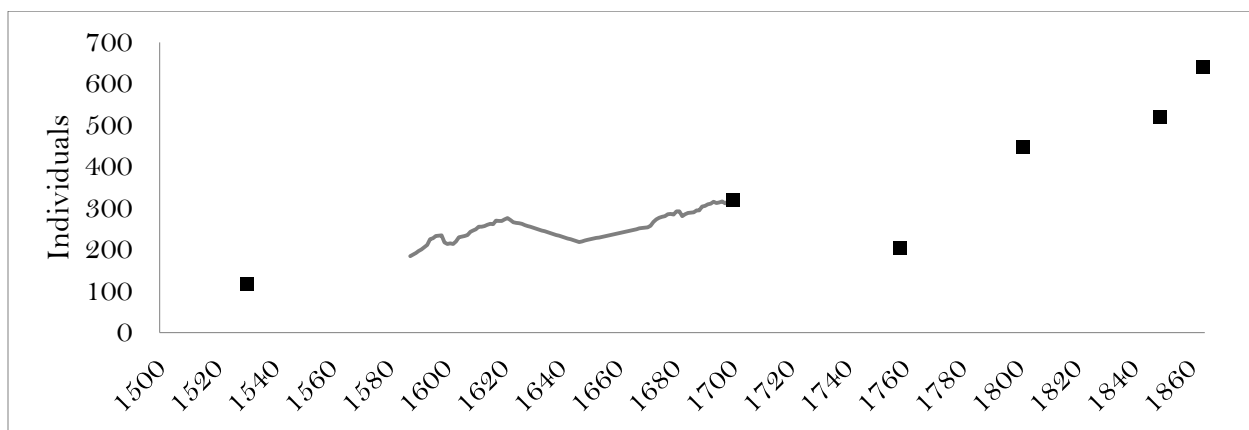


Figure C26. Nossa Senhora da Conceição de Mundão (Viseu)

## D. Entre-Douro-e-Minho

### D1. Alvito S. Pedro (1570-1864)

**Location:** The province of Entre Douro e Minho and the archbishopric of Braga. A rural parish comprising two parts - Alvito and Ginzo - close to the city of Barcelos. It belongs at present to the district of Braga. No information exists regarding the origins of this parish.

**Population stock** (number of inhabitants):

**1530: 196** From Miranda (1993), citing the *Numeramento da População*.

**1700: 320** From Costa (1706-12).

**1758: 300** From *Memórias Paroquiais*, cited by Miranda (1993).

**1801: 230** Silveira (2001).

**1849: 289** Silveira (2001).

**1864: 349** Censo (1868).

**Source for births and deaths:** Miranda (1993).

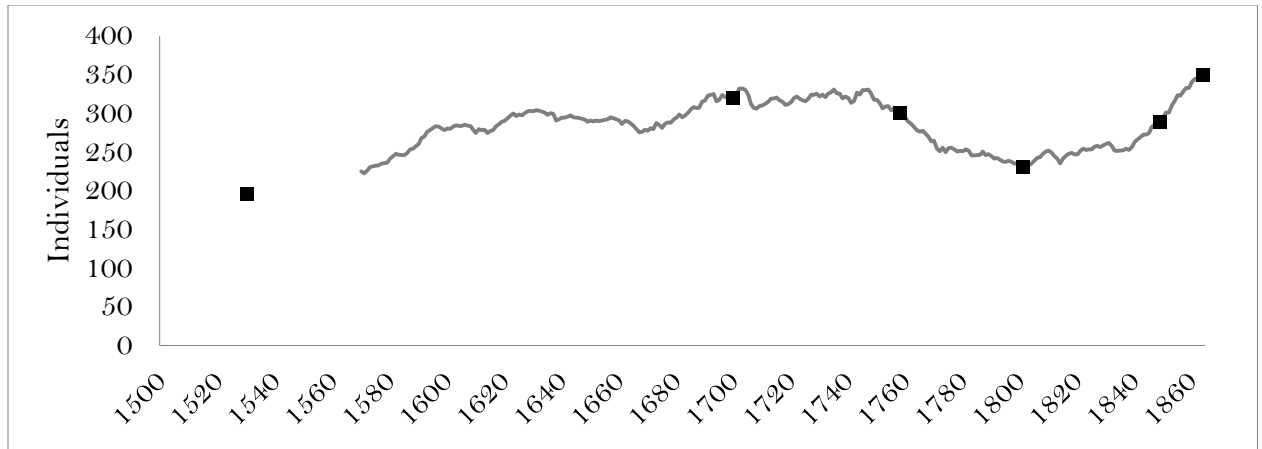


Figure D1. Alvito S. Pedro

### D2. Santiago de Esporões (1700-1864)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish close to the city of Braga and belonging at present to the district of Braga. Originally a pre-roman fortress town, the parish was first established in the 12th century, some of it with stone from the mosque of Cordoba, and renewed in the early 16th.

**Population stock** (number of inhabitants):

**1530:** No data in the *Numeramento da População*, in Freire (1903-1916), vol. III.

**1700: 260** From Costa (1706-12).

**1758: 525** *Memórias Paroquiais*, cited in Capela (2003).

**1801: 501** Silveira (2001).

**1849: 350** Silveira (2001).

**1864: 558** Censo (1868).

**Source for births and deaths:** Data kindly supplied by Maria Hermínia Barbosa.

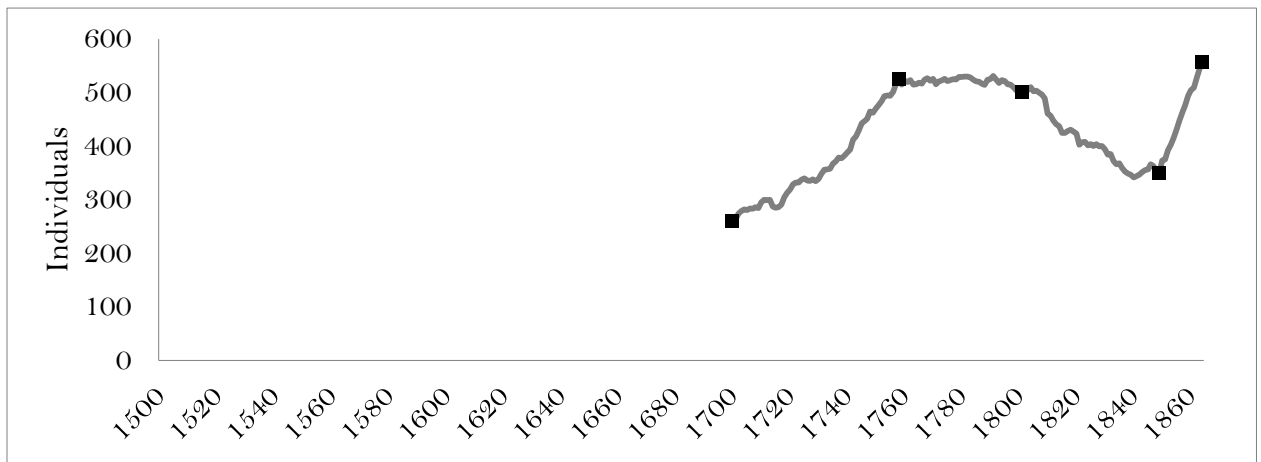


Figure D2. Santiago de Esporões

D3. S. Eulália de Fermentões (Guimarães) (1580-1820)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish close to the city of Guimarães, it now belongs to the district of Braga. Originally a pre-roman fortress town, the parish existed already in 1061.

**Population stock** (number of inhabitants):

**1530: 204** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700: 360** From Costa (1706-12).

**1758: 453** *Memórias Paroquiais*, cited in Capela (2003).

**1801: 651** Silveira (2001).

**1849: 785** Silveira (2001).

**1864: 813** Censo (1868).

**Source for births and deaths:** Amorim (1987).

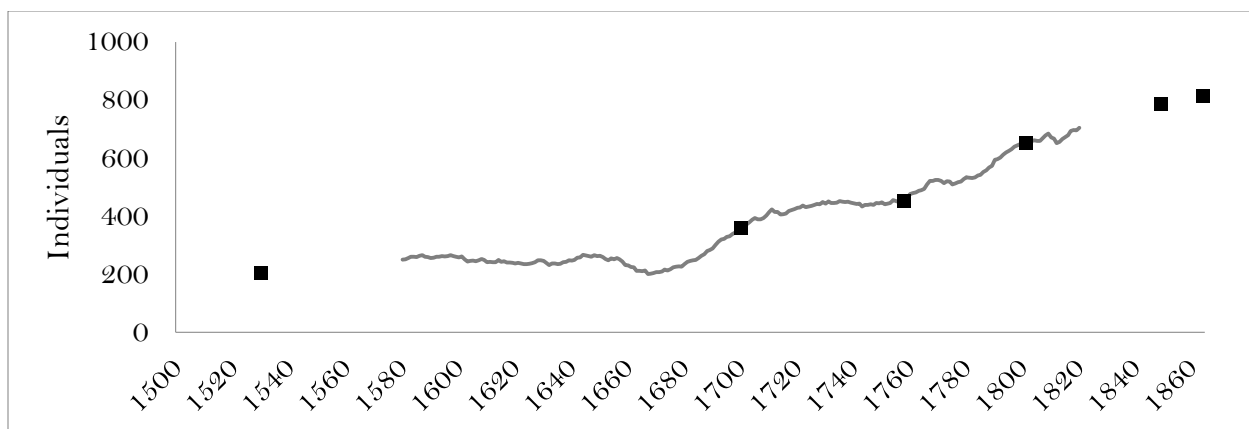


Figure D3. S. Eulália de Fermentões (Guimarães)

D4. Costa (Guimarães) (1700-1820)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish close to the city of Guimarães, it now belongs to the district of Braga. Originally a pre-roman fortress town, the parish existed already in 1061. The foundation of the parish dates back to 1145 and was laid by the first queen of Portugal.

**Population stock** (number of inhabitants):

**1530:** No data in the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700:** 80 From Costa (1706-12).

**1758:** 208 *Memórias Paroquiais*, cited in Capela (2003).

**1801:** 353 Silveira (2001).

**1849:** 439 Silveira (2001).

**1864:** 456 Censo (1868).

**Source for births and deaths:** Amorim (1987).



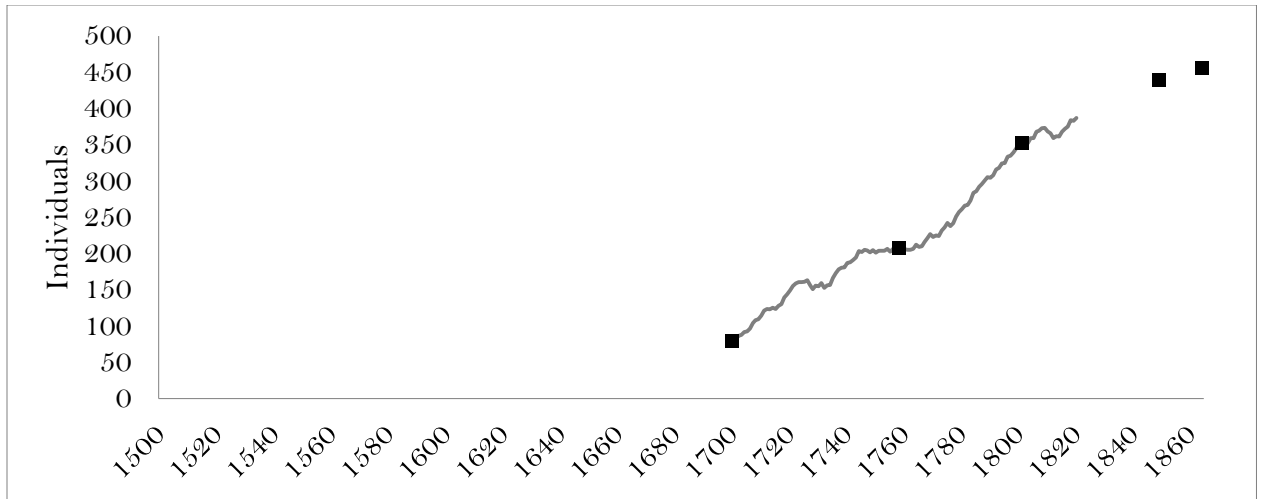


Figure D4. Costa (Guimarães)

D5. S. Romão de Mesão Frio (Guimarães) (1580-1820)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish close to the city of Guimarães, it now belongs to the district of Braga. The origins of this parish are not known.

**Population stock** (number of inhabitants):

**1530: 120** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700: 300** From Costa (1706-12).

**1758: 184** *Memórias Paroquiais*, cited in Capela (2003).

**1801: 329** Silveira (2001).

**1849: 386** Silveira (2001).

**1864: 428** Censo (1868).

**Source for births and deaths:** Amorim (1987).

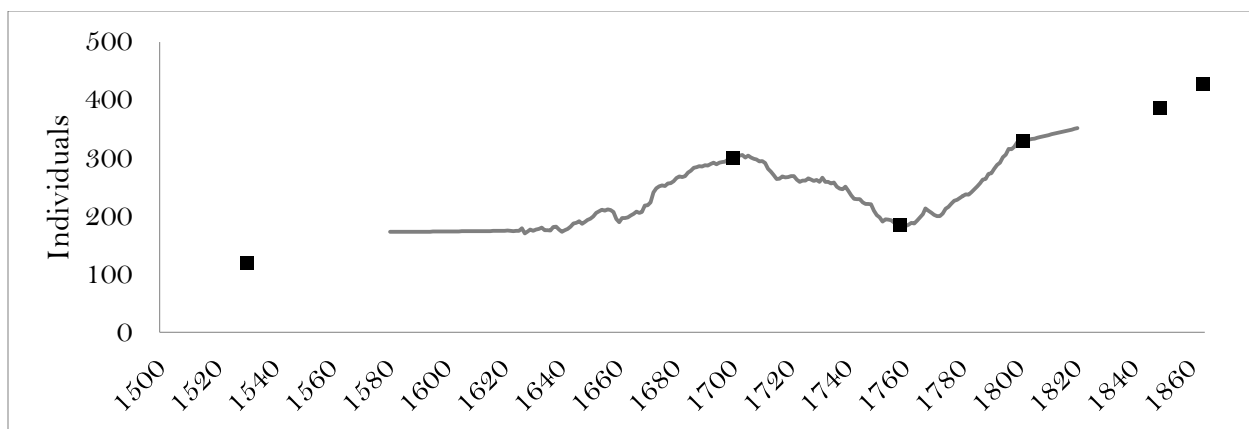


Figure D5. S. Romão de Mesão Frio (Guimarães)

D6. S.Estevão de Urgeses (Guimarães) (1580-1820)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish close to the city of Guimarães, it now belongs to the district of Braga. The earliest references to this parish in documents date back to 1220.

**Population stock** (number of inhabitants):

**1530: 128** From the *Numeramento da População*, cited in , cited in Freire (1903-1916), vol. III.

**1700: 320** From Costa (1706-12).

**1758: 456** *Memórias Paroquiais*, cited in Capela (2003).

**1801: 436** Silveira (2001).

**1849: 617** Silveira (2001).

**1864: 648** Censo (1868).

**Source for births and deaths:** Amorim (1987).

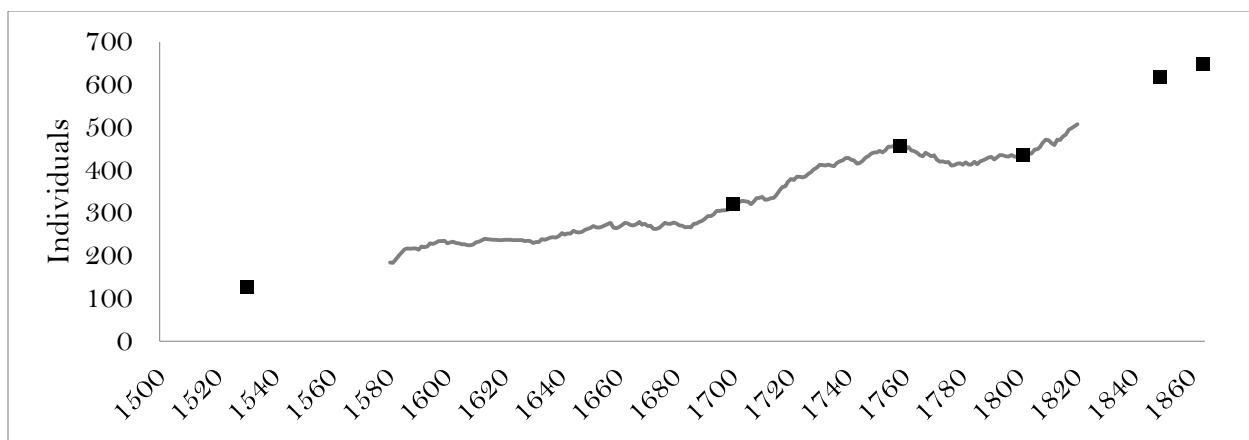


Figure D6. S. Estevão de Urgeses (Guimarães)

D7. Oliveira do Castelo (Guimarães) (1726-1820)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. One of the four urban parishes of the city of Guimarães, it now belongs to the district of Braga. The earliest mention of this parish dates back to 1139.

**Population stock** (number of inhabitants):

**1530:** No data in the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700:** Mentioned in Costa (1706-12) but not quantified.

**1726: 3,060** Craesbeeck' Memoirs (1726) cited in Amorim (1987).

**1758: 2,756** From *Memórias Paroquiais*, cited in Capela (2003).

**1801: 2,450** Silveira (2001).

**1849: 2,938** Silveira (2001).

**1864: 3,400** Censo (1868).

**Source for births and deaths:** Amorim (1987).

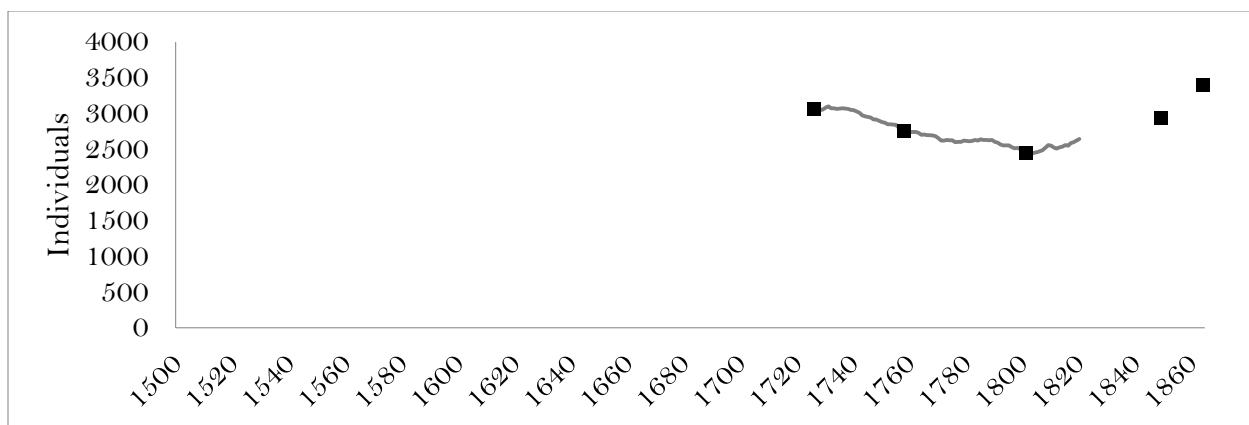


Figure D7. Oliveira do Castelo (Guimarães)

D8. S. Sebastião (Guimarães) (1726-1864)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. One of the four urban parishes of the city of Guimarães, it now belongs to the district of Braga. It appears to have been founded sometime in the 13<sup>th</sup> century.

**Population stock** (number of inhabitants):

**1530:** No data in the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700:** No data; mentioned in Costa (1706-12) but not quantified.

**1728:** **1,726** Craesbeeck' Memoirs (1726) cited in Amorim (1987).

**1758:** **1,688** *Memórias Paroquiais*, cited in Capel (2003).

**1801:** **2,120** Silveira (2001).

**1849:** **2,047** Silveira (2001).

**1864:** **2,418** Censo (1868).

**Source for births and deaths:** Amorim (1987).

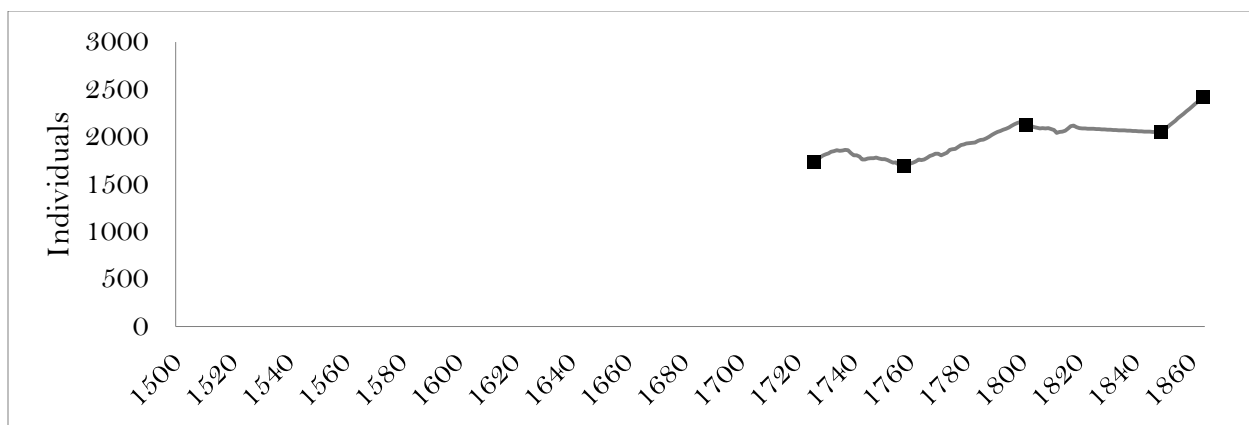


Figure D8. S. Sebastião (Guimarães)

D9. S. Paio (Guimarães) (1580-1820)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. One of the four urban parishes of the city of Guimarães, it now belongs to the district of Braga. The origins of this parish go back to the 13<sup>th</sup> century.

**Population stock** (number of inhabitants):

**1530: 288** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700:** No data; mentioned in Costa (1706-12) but not quantified.

**1726: 1,560** Craesbeeck' Memoirs (1726) cited in Amorim (1987).

**1758: 2,348** *Memórias Paroquiais*, cited in Amorim (1987).

**1801: 1,959** Silveira (2001).

**1849: 1,662** Silveira (2001).

**1864: 1,935** Censo (1868).

**Source for births and deaths:** Amorim (1987).

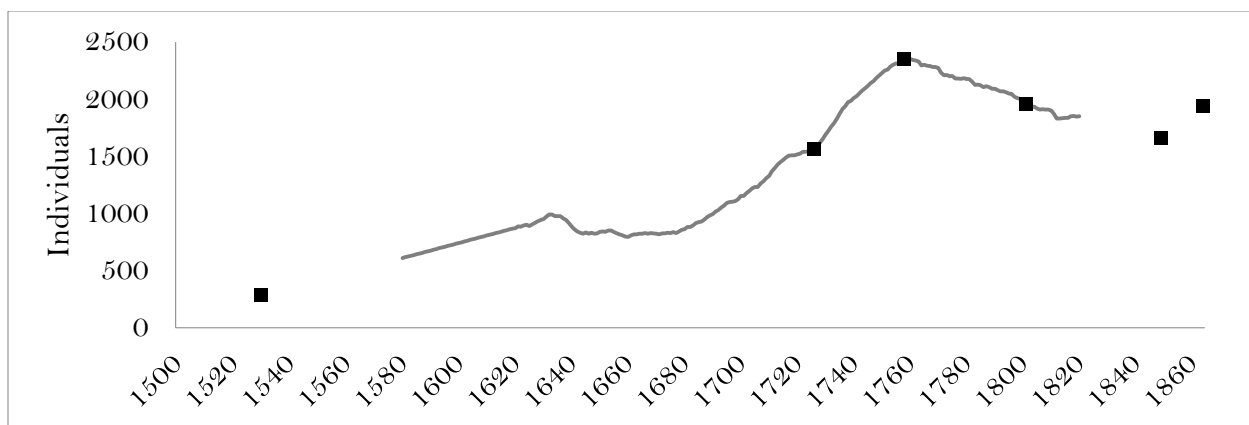


Figure D9. S. Paio (Guimarães)

D10. Castelo (Guimarães) (1758-1820)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. One of the four urban parishes of the city of Guimarães, it now belongs to the district of Braga. Already in existence around the early 12th century, it is believed that the first king of Portugal was baptised in this parish.

**Population stock** (number of inhabitants):

**1530: 236** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700:** No data; mentioned in Costa (1706-12) but not quantified.

**1758: 68** *Memórias Paroquiais*, cited in Amorim (1987).

**1801: 48** Silveira (2001).

**1849: 68** Silveira (2001).

**1864: 139** Censo (1868).

**Source for births and deaths:** Amorim (1987).

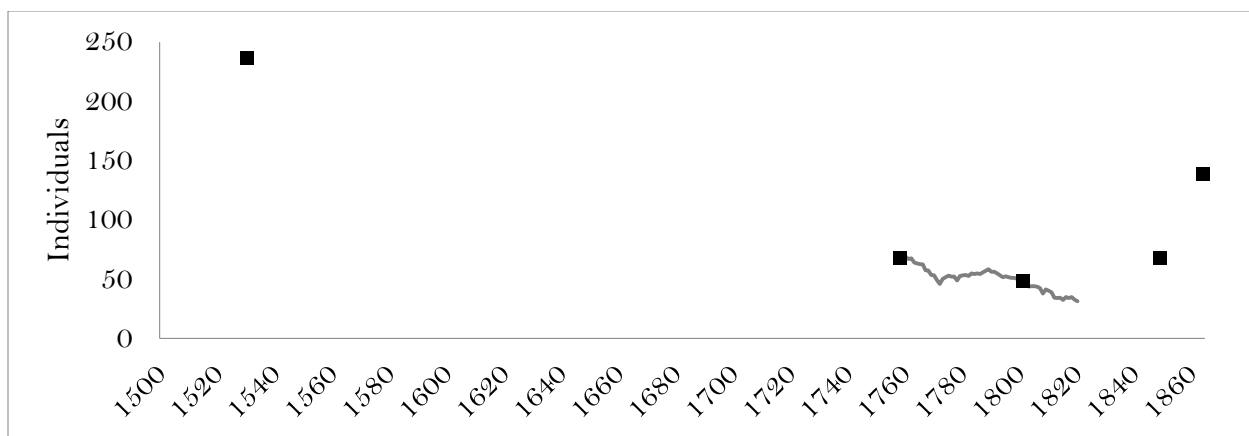


Figure D10. Castelo (Guimarães)

D11. S. Tiago de Creixomil (Guimarães) (1580-1820)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A suburban parish of the city of Guimarães, it now belongs to the district of Braga. In 959 Creixomil was already a well-organized settlement, whose owner gave it his name. The general belief is that the parish existed before the foundation of Portugal (1140).

**Population stock** (number of inhabitants):

**1530: 160** From the *Numeramento da População*, , cited in Freire (1903-1916), vol. III.

**1700: 840** From Costa (1706-12).

**1758: 1,300** From *Memórias Paroquiais*, cited in Capela (2003).

**1801: 1,024** Silveira (2001).

**1849: 1,059** Silveira (2001).

**1864: 1,579** Censo (1964).

**Source for births and deaths:** Amorim (1987).

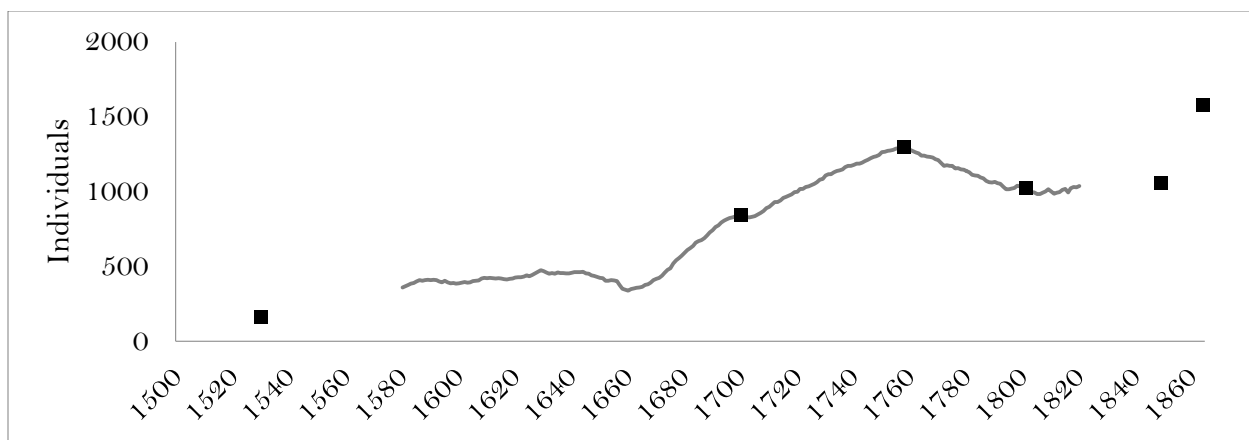


Figure D11. S. Tiago de Creixomil (Guimarães)

D12. S. Pedro de Azurem (Guimarães) (1580-1820)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A suburban parish of the city of Guimarães, it now belongs to the district of Braga. The first mention of the parish dates back to the middle of the 10th century.

**Population stock** (number of inhabitants):

**1530: 100** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700: 400** From Costa (1706-12).

**1758: 840** From *Memórias Paroquiais*, cited in Capela (2003).

**1801: 890** Silveira (2001).

**1849: 620** Silveira (2001).

**1864: 1,029** Censo (1864).

**Source for births and deaths:** Amorim (1987).



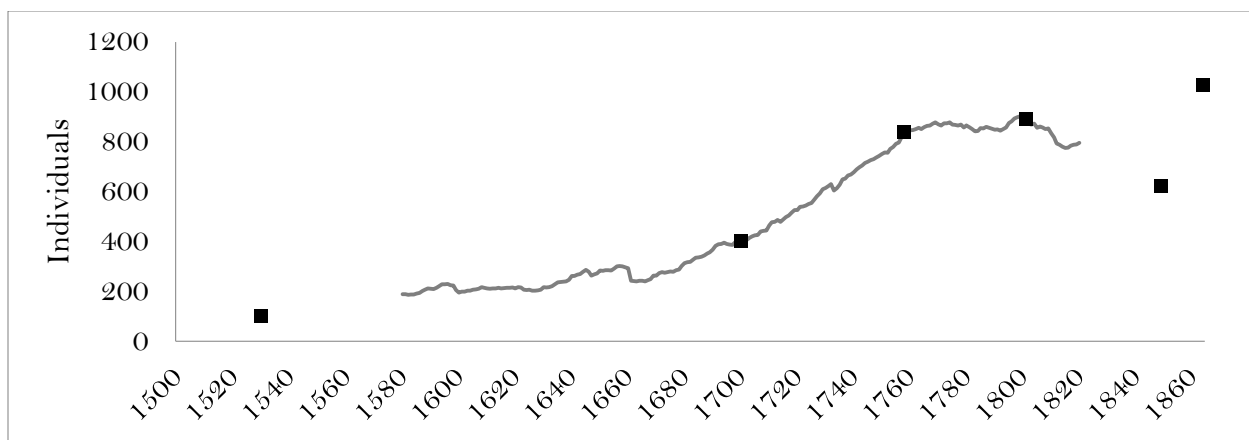


Figure D12. S. Pedro de Azurem (Guimarães)

D13. S. Marinha de Gontinhães (1624-1864)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A fishing parish close to the town of Caminha, it now belongs to the district of Viana de Castelo. The first mention of Gontinhães dates back to 1258, when the parish belonged to the bishopric of Tui, in Spain.

**Population stock** (number of inhabitants):

**1530: 304** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700: 800** From Costa (1706-12), cited in Rego (2012).

**1758: 876** From *Memórias Paroquiais*, cited in Rego (2012).

**1801: 842** Silveira (2001).

**1849: 1,066** Silveira (2001).

**1864: 1,215** Censo (1868).

**Source for births and deaths:** Rego (2012).

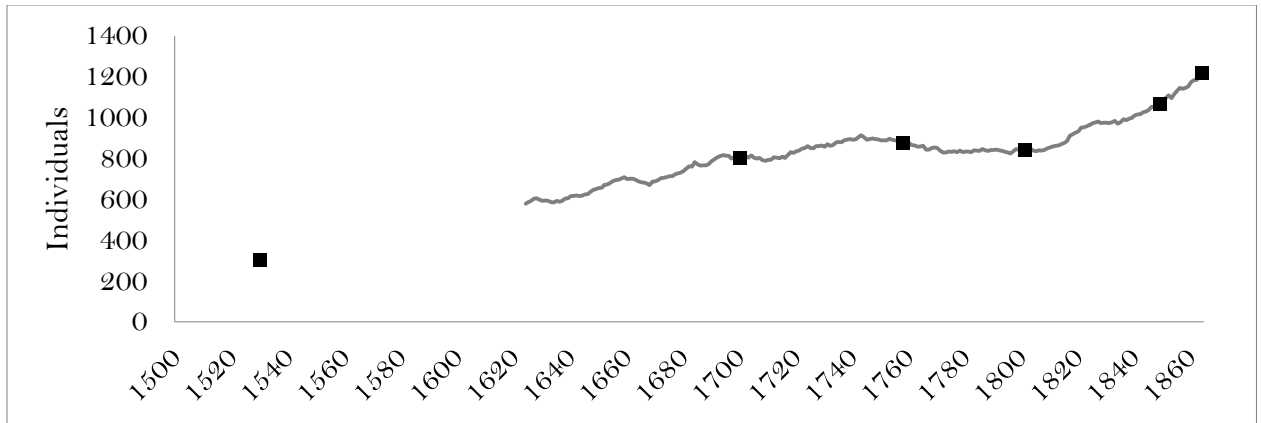


Figure D13. S. Marinha de Gontinhães

#### D14. Santiago de Romarigães (1640-1864)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish close to the town of Paredes de Coura, it belongs at present to the district of Viana do Castelo. Its origins as a parish lie somewhere between the 12th and the 13th centuries. As a community, however, they belong to the period of the Reconquest.

**Population stock** (number of inhabitants):

**1530: 132** From the *Numeramento da População*, cited in Santos (1999).

**1700: 460** From Costa (1706-12).

**1758: 436** *Memórias Paroquiais*, cited in Santos (1999).

**1801: 448** Silveira (2001).

**1849: 486** Silveira (2001).

**1864: 544** Censo (1868).

**Source for births and deaths:** Data kindly supplied by Carlota Santos.

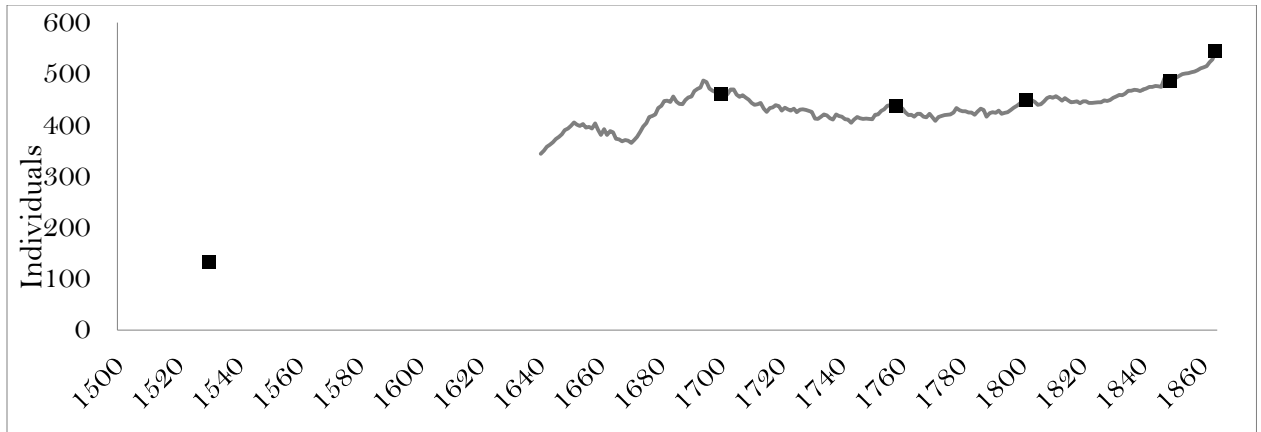


Figure D14. Santiago de Romarigães

D15. S. João Baptista de Canelas (1589-1808)

Location: The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish close to the port of Vila Nova de Gaia, it now belongs to the district of Braga. The first mention of the parish dates back to the middle of the 10th century.

**Population stock** (number of inhabitants):

**1530: 168** From the *Numeramento da População*, cited in Costa (1994).

**1700: 840** From Costa (1706-12), cited in Costa (1994).

**1758: 720** From *Memórias Paroquiais*, cited in Costa (1994).

**1801: 970** Silveira (2001).

**1849: 1,031** Silveira (2001).

**1864: 1,285** Censo (1868).

**Source for births and deaths:** Costa (1994).

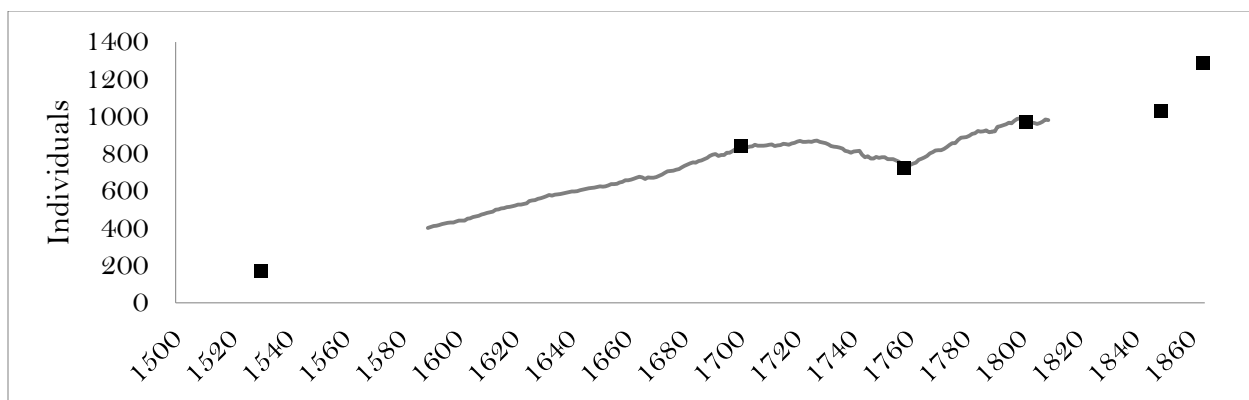


Figure D15. S. João Baptista de Canelas (1589-1808)

D16. S.João Baptista. de Vila do Conde (1595-1640)

**.Location:** The province of Entre-Douro-e-Minho and the bishopric of Porto. An important port and fishing centre close to Porto, the second largest city of Portugal, it now belongs to the district of Porto. The first documentary mention of Vila do Conde dates back to the early 13th century.

**Population stock** (number of inhabitants):

**1530: 3,620** From the *Numeramento da População*, cited in Polónia (1999).

**1620: 2,964** From Polónia (1999).

**1700: 3,600** From Costa (1706-12).

**1758: 4,312** From *Memórias Paroquiais*, cited in Polónia (1999).

**1801: 3,604** Silveira (2001).

**1849: 3,620** Silveira (2001).

**1864: 4,356** Censo (1868).

**Source for births and deaths:** Data kindly supplied by Cristina Giesteira, of the Arquivo Municipal de Vila do Conde, under the CEDOPORMAR group.

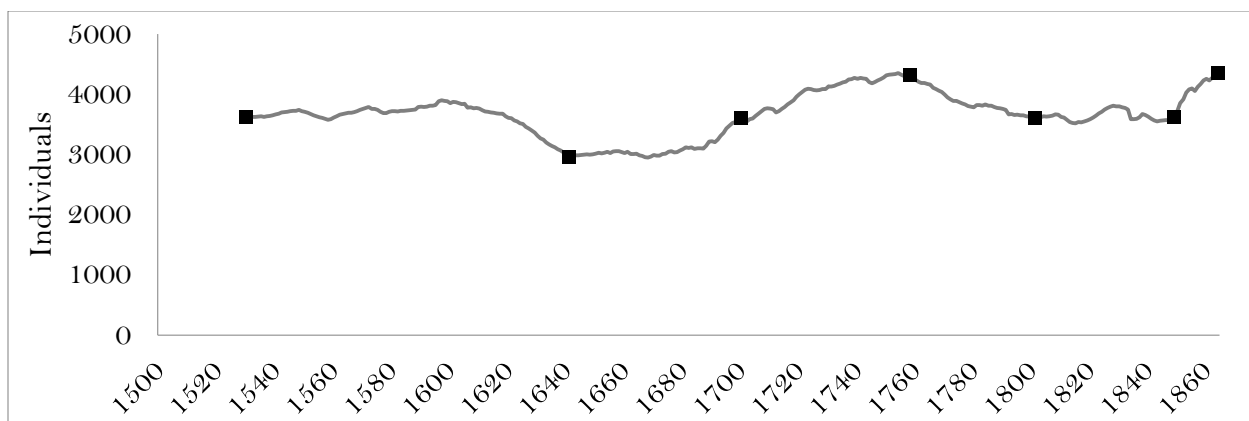


Figure D16. S.João Baptista de Vila do Conde

D17. S. João das Caldas (1588-1864)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish rich in mineral waters and close to the city of Guimarães, it now belongs to the district of Braga. The first mention of this parish dates back to the time of the Visigoths, who had a church there in the 6th century. It was solidly established by the early 13th century.

**Population stock** (number of inhabitants):

**1530: 96** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700: 280** From Costa (1706-12).

**1758: 404** From *Memórias Paroquiais*, cited in Capela (2003).

**1801: 448** Silveira (2001).

**1849: 584** Silveira (2001).

**1864: 712** Censo (1868).

**Source for births and deaths:** Ferreira (2001).

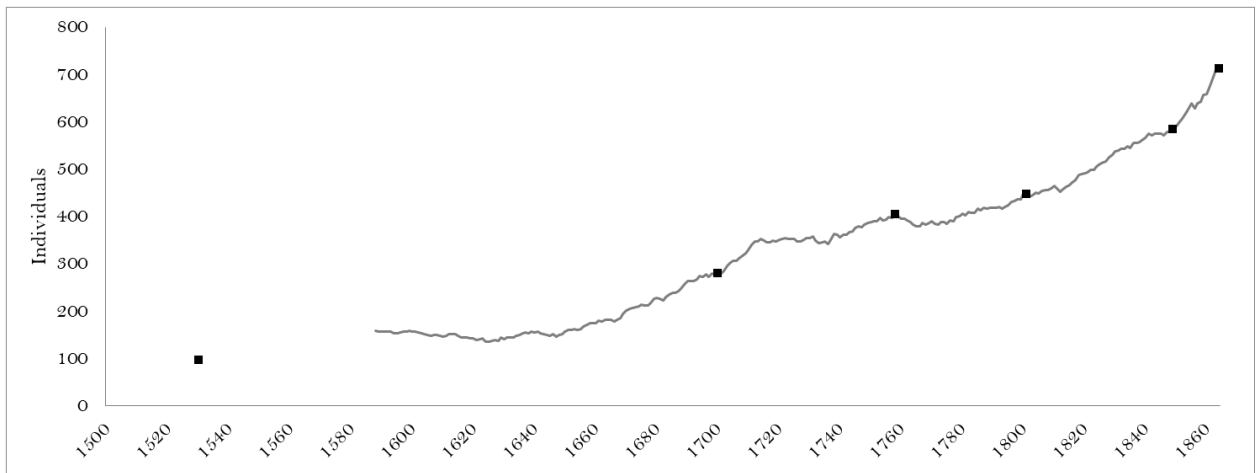


Figure D17. S. João das Caldas

D18. S. Martinho de Ávidos (1623-1864)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish in the county of Famalicão, it now belongs to the district of Braga. The earliest written reference to this parish dates back to the middle of the 13th century.

**Population stock** (number of inhabitants):

**1530: 240** From the *Numeramento da População*, cited in Leite (1999).

**1700: 360** From Costa (1706-12).

**1758: 312** From *Memórias Paroquiais*, cited in Leite (1999).

**1801: 386** Silveira (2001).

**1849: 296** Silveira (2001).

**1864: 449** Censo (1868).

**Source for births and deaths:** Leite (1999).

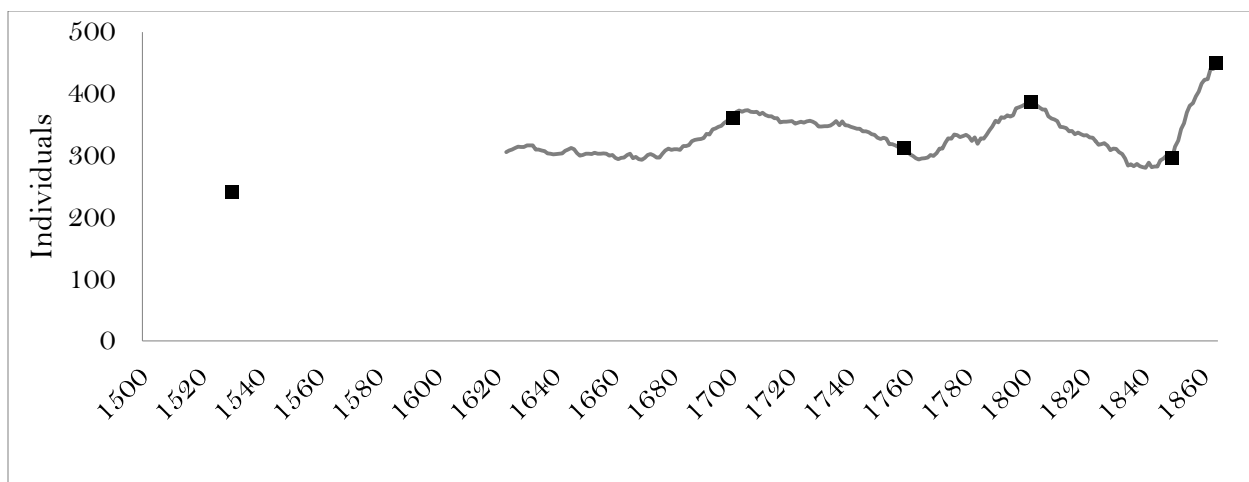


Figure D18. S. Martinho de Ávidos (1623-1864)

D19. S. Pedro de Esmeriz (1597-1864)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish in the county of Famalicão, it now belongs to the district of Braga. The earliest written reference to this parish dates back to the middle of the 13th century.

**Population stock** (number of inhabitants):

**1530: 104** From the *Numeramento da População*. cited in Freire (1903-1916), vol. III.

**1700: 280** From Costa (1706-12).

**1758: 260** From *Memórias Paroquiais*, cited in Soares (1987).

**1801: 229** Silveira (2001).

**1849: 373** Silveira (2001).

**1864: 546** Censo (1868).

**Source for births and deaths:** Soares (1987).

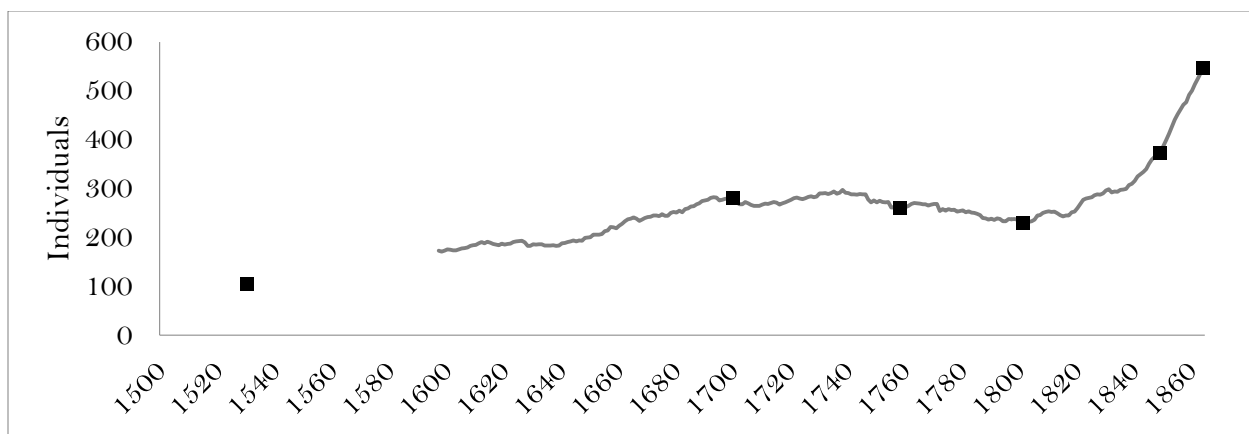


Figure D19. S. Pedro de Esmeriz (1597-1864)

D20. S. Tiago de Bougado (1650-1849)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish in a suburban área close to Porto. It now belongs to the district of Porto. Originally a Roman township, the parish had gained a clear identity by the middle of the 13th century.

**Population stock** (number of inhabitants):

**1530: 228** From the *Numeramento da População*, cited in Alves (1986).

**1621: 521** From Alves (1868, p.56)

**1700: 744** From Costa (1706-12).

**1758: 1,016** From *Memórias Paroquiais*, cited in Alves (1986).

**1801: 768** Silveira (2001).

**1849: 1,138** Silveira (2001).

**1864: 1,413** Censo (1868).

**Source for births and deaths:** Alves (1986).



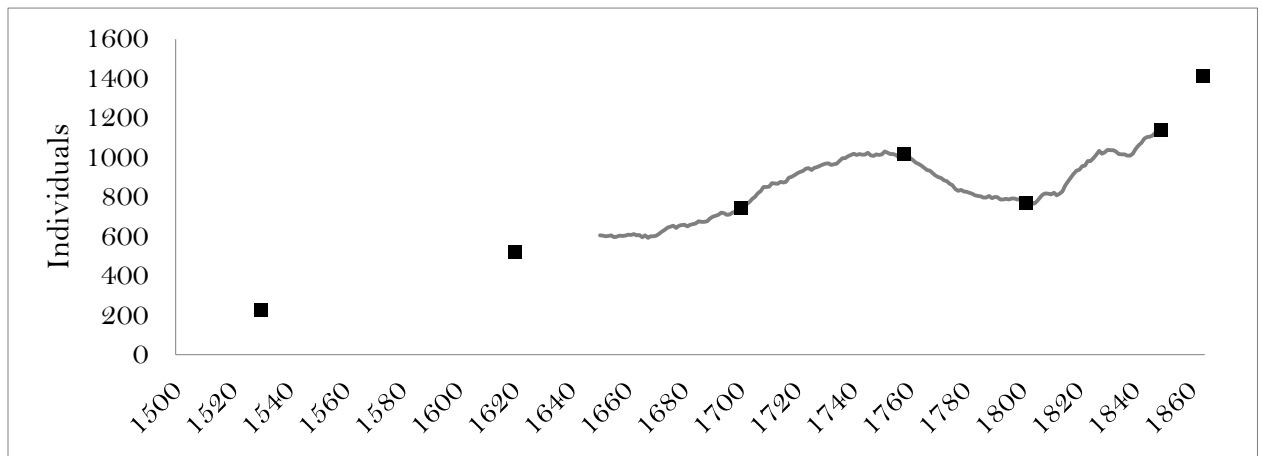


Figure D20. S. Tiago de Bougado

#### D21. S. Tiago de Lordelo (1624-1851)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish in an area close to the town of Barcelos. It now belongs to the district of Braga. Although believed to have emerged in the visigothic era, firm evidence regarding this parish only exists from early in the 12th century.

**Population stock** (number of inhabitants):

**1530: 232** From the *Numeramento da População*, cited in Janeiro (1987).

**1700: 384** From Costa (1706-12).

**1758: 520** From *Memórias Paroquiais*, cited in Janeiro (1987).

**1801: 779** Silveira (2001).

**1849: 26** Silveira (2001).

**1864: 961** Censo (1868).

**Source for births and deaths:** Janeiro (1997).

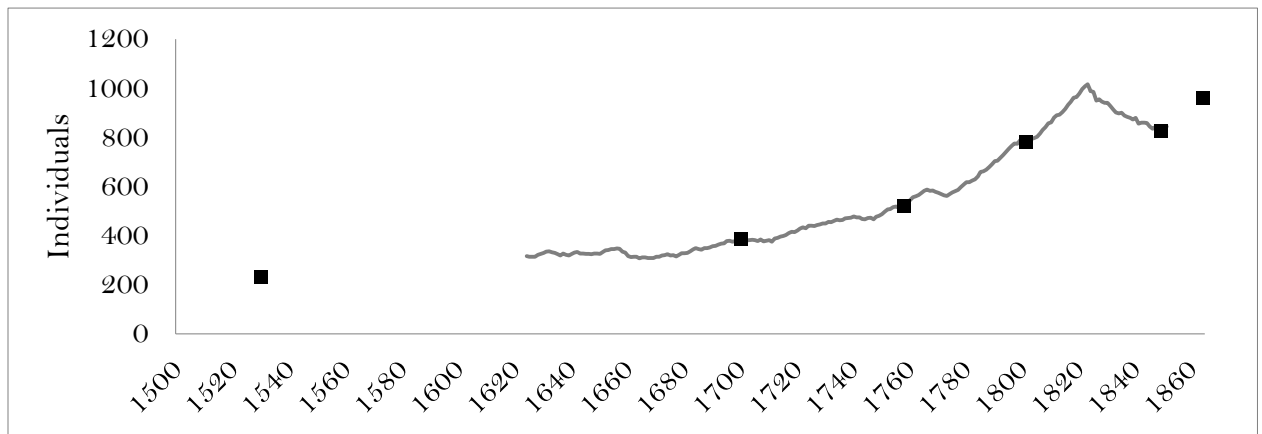


Figure D21. S. Tiago de Lordelo

D22. S. Tiago de Ronfe (1651-1864)

**Location:** The province of Entre-Douro-e-Minho and the archbishopric of Braga. A rural parish in an area close to the town of Guimarães. It now belongs to the district of Braga. Originally a Roman *villa*, it is mentioned for the first time in the Christian era in a document of 1033.

**Population stock (number of inhabitants):**

**1530: 164** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700: 840** From Costa (1706-12).

**1758: 776** From *Memórias Paroquiais*, cited in Capela (2003).

**1801: 779** Silveira (2001).

**1849: 826** Silveira (2001).

**1864: 961** Censo (1868).

**Source for births and deaths:** Scott (1999) using data furnished by Norberta Amorim.

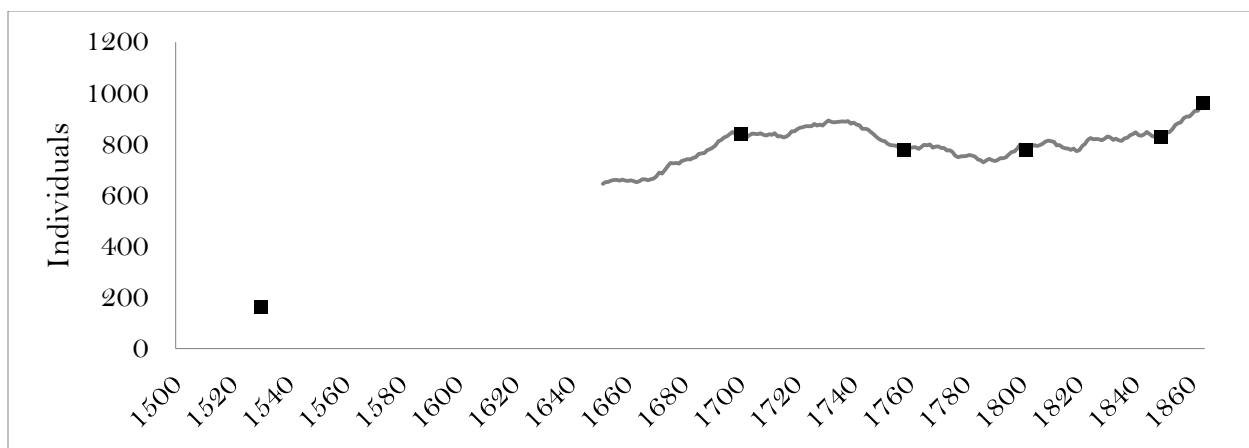


Figure D22. S. Tiago de Ronfe

D23. S. Miguel de Oliveira do Douro (1700-1825)

**Location:** The province of Entre-Douro-e-Minho and the bishopric of Lamego. A rural parish belonging to the municipality of Cinfães and not to be confused with the parish of the same name near the mouth of the river Douro. It now belongs to the district of Viseu. Originally a Roman villa, it received a municipal charter already in the mid-13th century.

**Population stock** (number of inhabitants):

**1530: 256** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700:** Data unavailable in Costa (1706-12).

**1758: 1,388** From *Memórias Paroquiais*, and cited in Capela (2010).

**1801: 1,919** Silveira (2001).

**1849: 1,783** Silveira (2001).

**1864: 2,376** Censo (1868).

**Source for births and deaths:** Oliveira (2002).

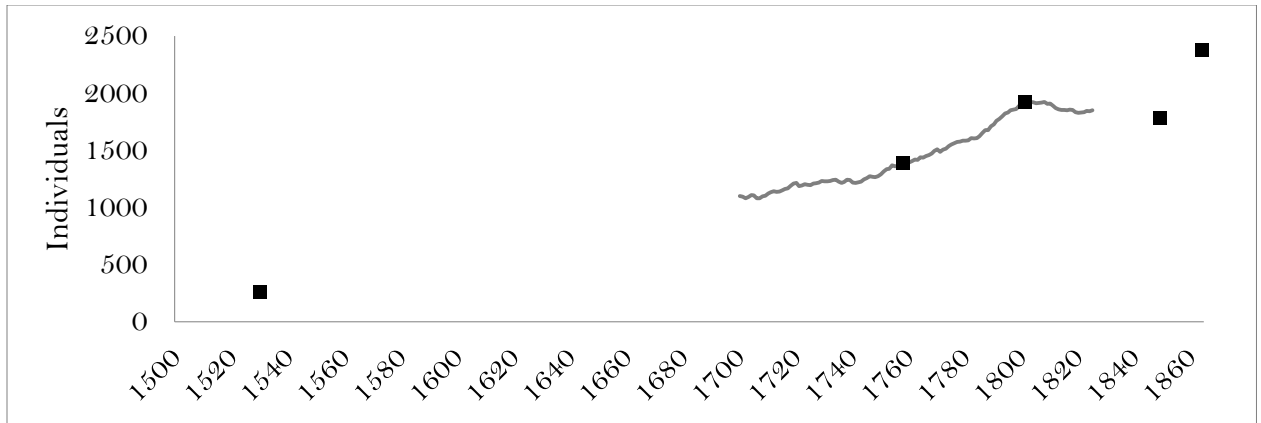


Figure D23. S. Miguel de Oliveira do Douro

D24. Nossa Senhora da Póvoa de Varzim (1700-1864)

**Location:** The province of Entre-Douro-e-Minho and the bishopric of Porto. A busy port for trade and fishing north of the mouth of the river Douro. It now belongs to the district of Porto. Already during the Roman occupation it was a significant urban centre, which increased its wealth during the 16th century on the basis of its vigorous naval industry. The earliest reference in writing to Povoia de Varzim dates back to the 10th century.

**Population stock** (number of inhabitants):

**1530: 428** From the *Numeramento da População*, cited in Freire (1903-1916), vol. III.

**1700: 400** From Costa (1706-12).

**1758: 1,740** From *Memórias Paroquiais*, and cited in Capela (2009).

**1801: 4,671** Silveira (2001).

**1849: 8,959** Silveira (2001).

**1864: 10,090** Censo (1868).

**Source for births and deaths:** Data kindly supplied by Cristina Giesteira (CEDOPORMAR).

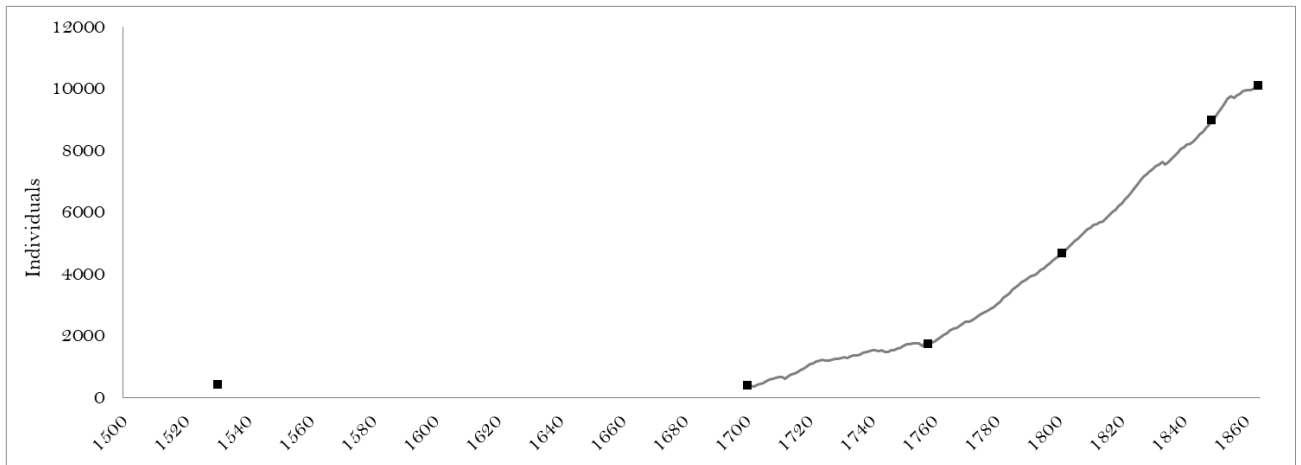


Figure D24. Nossa Senhora da Conceição da Póvoa de Varzim

## E. Estremadura

### E1. S. Pedro de Barcarena (1620-1864)

**Location:** The province of Estremadura and the archbishopric of Lisbon. A busy rural parish in the hinterland of Lisbon, its prosperity has derived from agriculture, fishing and gunpowder manufacturing, from the 14th century. It now belongs to the district of Lisboa. During the Roman occupation it was a significant urban centre. In the Christian era it increased its wealth further and in the 16th century did so on the basis of a vigorous naval industry.

**Population stock** (number of inhabitants):

**1530:** No data found in the *Numeramento da População*, cited in Freire (1903-1916), vol. VI.

**1620: 976** From Oliveira (1620).

**1700: 1,552** From Costa (1706-12).

**1758: 1,504** From Arquivo Nacional da Torre do Tombo: Barcarena, Lisboa - Memórias paroquiais, vol. 6, nº 31, p. 203 a 204.

**1801: 1,691** Silveira (2001).

**1849: 1,372** Silveira (2001).

**1864: 1,355** Censo (1868).

**Source for births and deaths:** Arquivo Distrital de Lisboa, Registos Paroquiais, Barcarena: Baptismos – B1 to B7; Óbitos – O1 to 4.

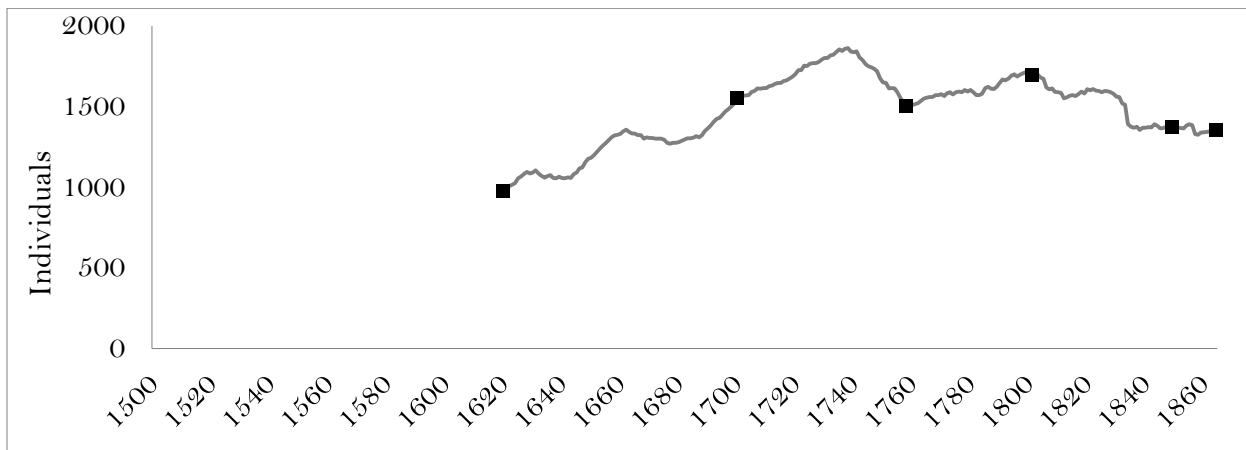


Figure E1. S. Pedro de Barcarena

E2. Nossa Senhora da Assunção de Cheleiros (1604-1864)

**Location:** The province of Estremadura and the archbishopric of Lisbon. A rural parish in the hinterland of Lisbon, in the municipality of Mafra. It now belongs to the district of Lisboa. Its first municipal charter was awarded in 1195 and renewed in 1516.

**Population stock** (number of inhabitants):

**1530: 224** From the *Numeramento da População*, cited in Freire (1903-1916), vol. VI.

**1700: 480** From Costa (1706-12).

**1758: 400** From Arquivo Nacional da Torre do Tombo: Cheleiros, Lisboa - Memórias paroquiais, vol. 11, n<sup>o</sup> 305, pp. 2123 a 2126.

**1801: 489** Silveira (2001).

**1849: 583** Silveira (2001).

**1864: 698** Censo (1868).

**Source for births and deaths:** Arquivo Distrital de Lisboa, Registos Paroquiais, Cheleiros: Baptismos – B1/B7; Óbitos – O1/O2; Mixtos – M1/M3.

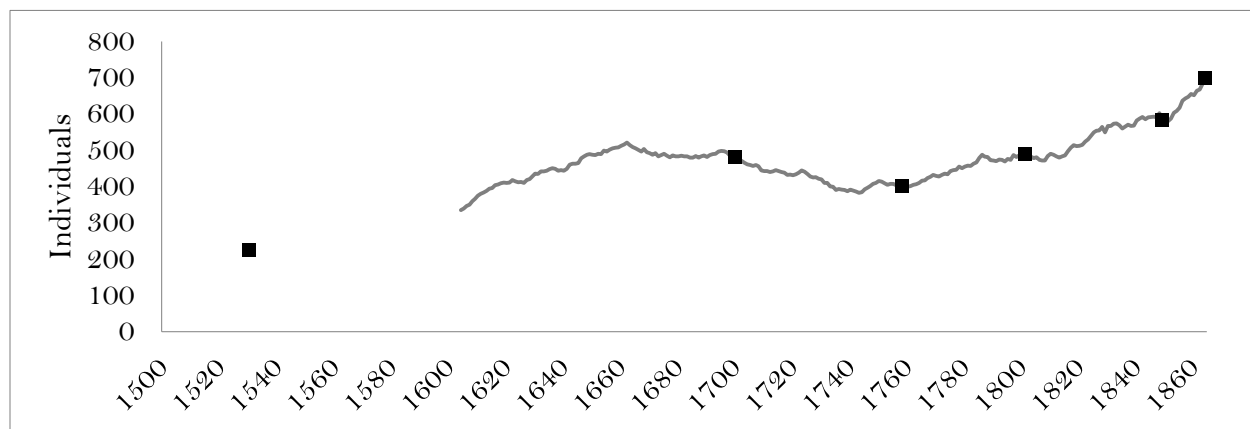


Figure E2. Nossa Senhora da Assunção de Cheleiros

E3. Nossa Senhora da Assunção de Enxara do Bispo (1530-1864)

**Location:** The province of Estremadura and the archbishopric of Lisbon. A rural parish in the hinterland of Lisbon, in the municipality of Mafra composed of two fractions – Enxara do Bipo and Enxara dos Cavaleiros. At present it belongs to the district of Lisboa. The parish church was reconstructed in 1519 on the remains of an earlier church which was originally a mosque and went back to the 11th century.

**Population stock** (number of inhabitants):

**1530: 168** From the *Numeramento da População*, cited in Freire (1903-1916), vol. VI.

**1700: 340** (interpolated) This parish is in Costa (1706-12)

**1758: 360** From Arquivo Nacional da Torre do Tombo: Enxara, Lisboa - Memórias paroquiais, vol. 13, nº 25, pp. 211 - 220.

**1801: 1,393** Silveira (2001).

**1849: 1,992** Silveira (2001).

**1864: 1,636** Censo (1868).

**Source for births and deaths:** Arquivo Distrital de Lisboa, Registos Paroquiais, Enxara do Bispo: Baptismos – B1/B10; Óbitos – O1/O6; Mixtos – M1/M6.

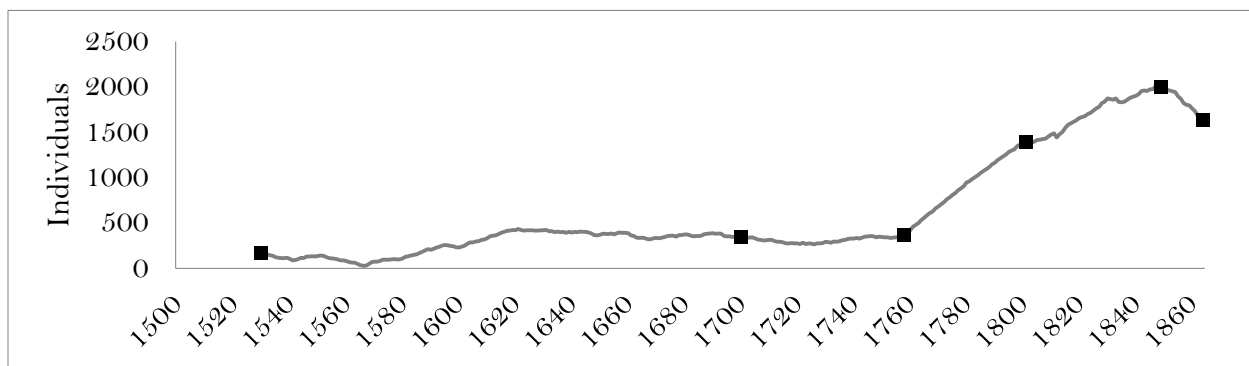


Figure E3. Nossa Senhora da Assunção de Enxara do Bispo

E4. S. João da Lourinhã (1530-1864)

**Location:** The province of Estremadura and the archbishopric of Lisbon. A rural parish in the hinterland of Lisbon, one of the most prosperous of the region, near the town of Torres Vedras. At present it belongs to the district of Lisboa. Lourinhã received a municipal charter in 1160, from the first king of Portugal.

**Population stock** (number of inhabitants):

**1530: 520** From the *Numeramento da População* cited in Freire (1903-1916), vol. VI.

**1700: 800** From Costa (1706-12).

**1758: 1,940** From Arquivo Nacional da Torre do Tombo: Lourinhã, Lisboa - Memórias paroquiais, vol. 42, n° 148, p. 78.

**1801: 2,293** Silveira (2001).

**1849: 2,571** Silveira (2001).

**1864: 3,302** Censo (1868).



**Source for births and deaths:** Arquivo Distrital de Lisboa, Registos Paroquiais, Lourinhã: Baptismos – B1/B28; Óbitos – O1/O18; Mixtos – M1/M9.

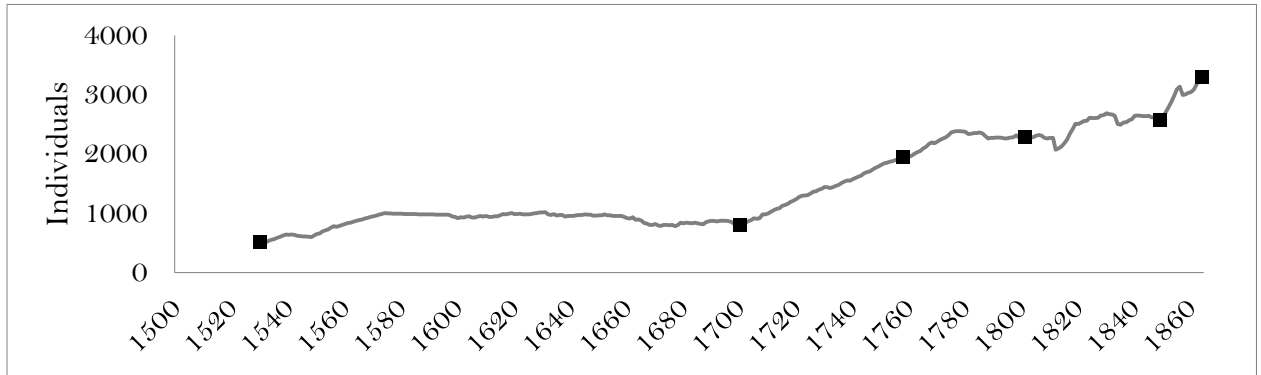


Figure E4. S. João da Lourinhã

E5. Nossa Senhora das Virtudes da Ventosa (1558-1835)

**Location:** The province of Estremadura and the archbishopric of Lisboa. A rural parish close to the city of Alenquer, it belongs at present to the district of Lisboa. The parish existed already in the 14th century and was probably founded after 1259.

**Population stock** (number of inhabitants):

**1530: 336** From the *Numeramento da População* cited in Freire (1903-1916), vol. VI

**1700: 580** From Costa (1706-12).

**1758: 957** in Arquivo Nacional da Torre do Tombo, Memórias paroquiais, Ventosa - Lisboa, vol. 39, n° 126, p. 717 - 720.

**1801: 1,806** Silveira (2001).

**1849: 1,817** Silveira (2001).

**1864: 1,871** Censo (1868).

**Source for births and deaths:** Arquivo Distrital de Lisboa, Registos Paroquiais de Lisboa, Ventosa (Alenquer): Baptismos – livros B1-B9; Óbitos – livros O1-O8; Caixas Mistas – Livros M1-M3.

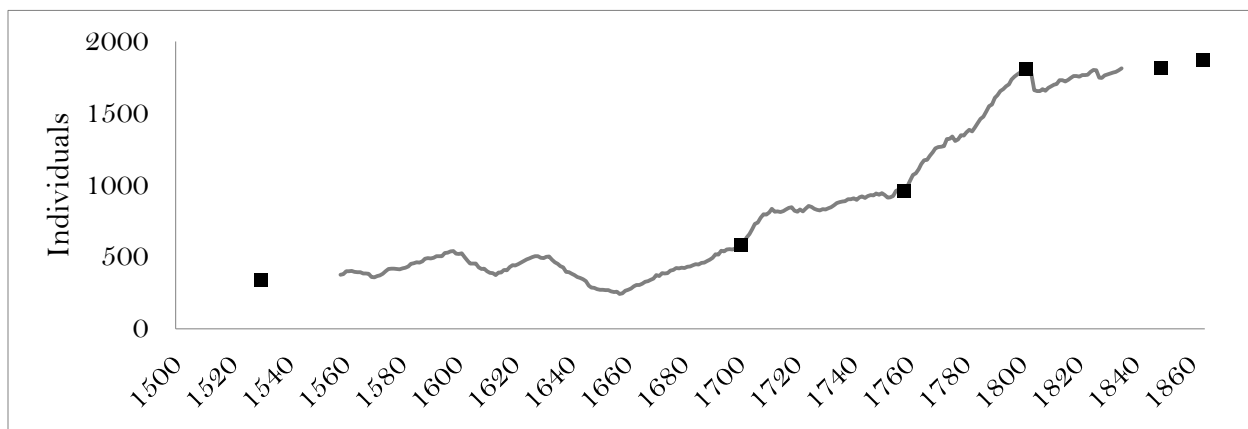


Figure E5. Nossa Senhora das Virtudes da Ventosa (1558-1835)

## F. Trás-os-Montes

### F1. Nossa Senhora da Oliveira da Cardanha (1574-1801)

**Location:** The province of Trás-os-Montes and the archbishopric of Bragança. A rural parish close to the town of Torre de Moncorvo, and belonging at present to the district of Bragança. Originally a pre-roman fortress town, the first written references to Cardanha are found in official documents of 1143.

**Population stock** (number of inhabitants):

**1530: 152** From the *Numeramento da População*, cited in Freire (1903-1916), vol. VII.

**1700: 320** From Costa (1706-12).

**1758: 332** *Memórias Paroquiais*, cited in Capela (2007).

**1801: 318** Silveira (2001).

**1849: 325** Silveira (2001).

**1864: 489** Censo (1868).

**Source for births and deaths:** Amorim (1980).

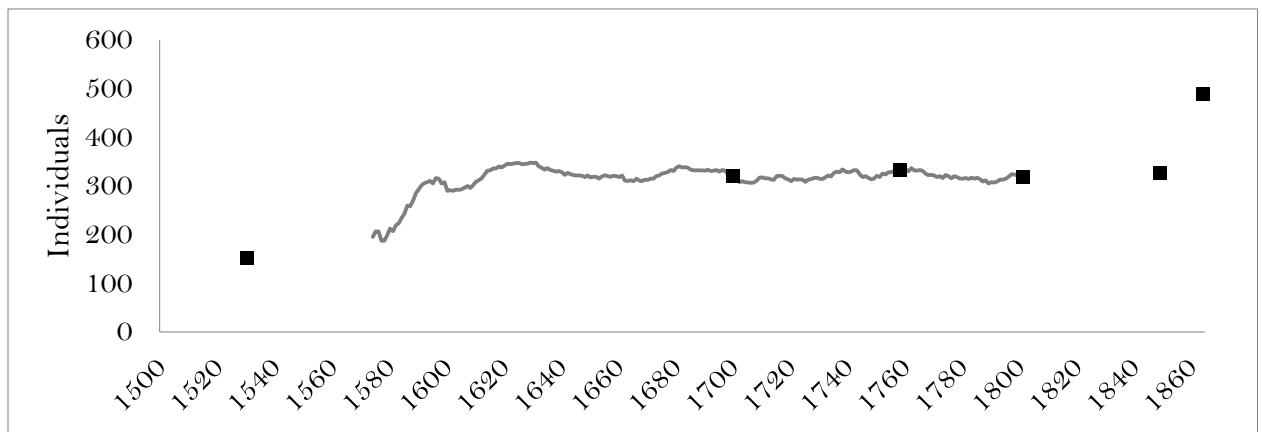


Figure F1. Nossa Senhora da Oliveira da Cardanha (1574-1801)

F2. Nossa Senhora da Assunção de Rebordãos (1610-1800)

**Location:** The province of Trás-os-Montes and the archbishopric of Bragança. A rural parish close to the town of Bragança, and belonging at present to the district of the same name. The municipal charter was conceded in 1208 and it received a castle soon after.

**Population stock** (number of inhabitants):

**1530: 404** From the *Numeramento da População*, cited in Freire (1903-1916), vol. VII.

**1700: 512** From Costa (1706-12).

**1758: 460** *Memórias Paroquiais*, cited in Capela (2007).

**1801: 397** Silveira (2001).

**1849: 463** Silveira (2001).

**1864: 638** Censo (1868).

**Source for births and deaths:** Amorim (1973).

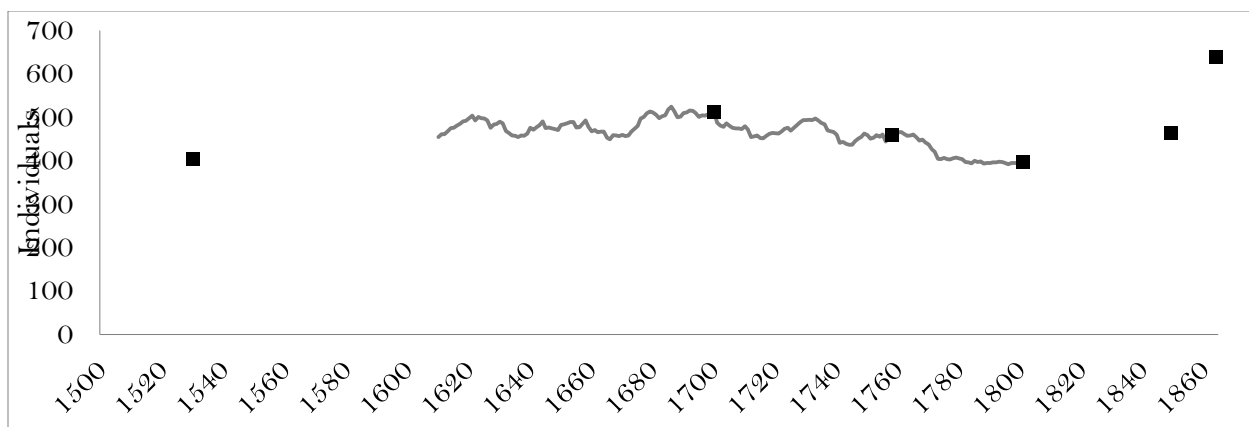


Figure F2. Nossa Senhora da Assunção de Rebordãos (1610-1800)

F3. S. Vicente de Castro Vicente (1691-1801)

**Location:** The province of Trás-os-Montes and the bishopric of Bragança. A rural parish close to the town of Mogadouro, it presently lies in the district of Bragança. Castro Vicente was originally a pre-roman fortress town and received its municipal charter in 1305. The parish is a medieval foundation.

**1530: 176** From the *Numeramento da População*, cited in Freire (1903-1916), vol. VI.

**1700: 360** From Costa (1706-12).

**1758: 384** From *Memórias Paroquiais*, cited in Capela (2007).

**1801: 491** Silveira (2001).

**1849: 589** Silveira (2001).

**1864: 789** Censo (1868).

**Source for births and deaths:** Afonso (1974).

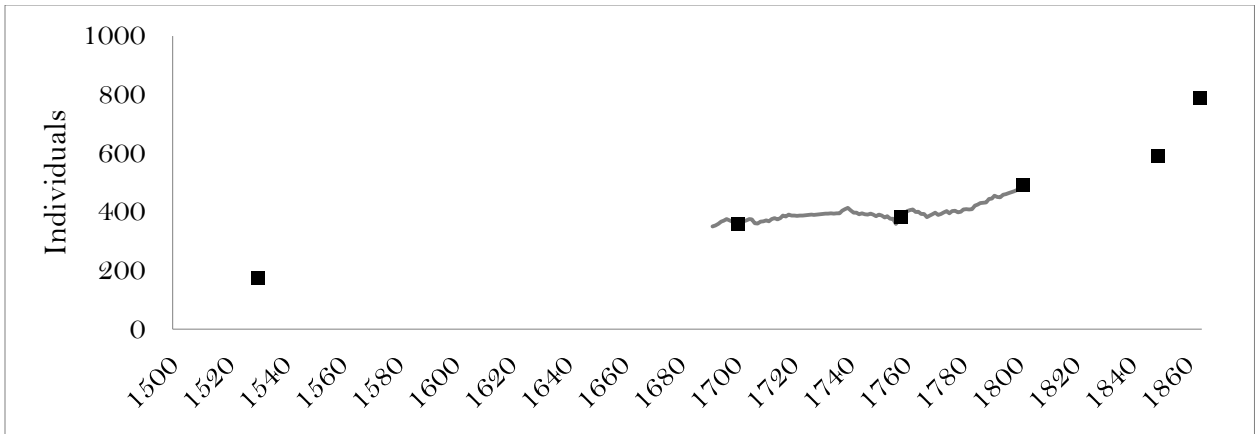


Figure F3. Castro Vicente

Additional tables (for online publication only)

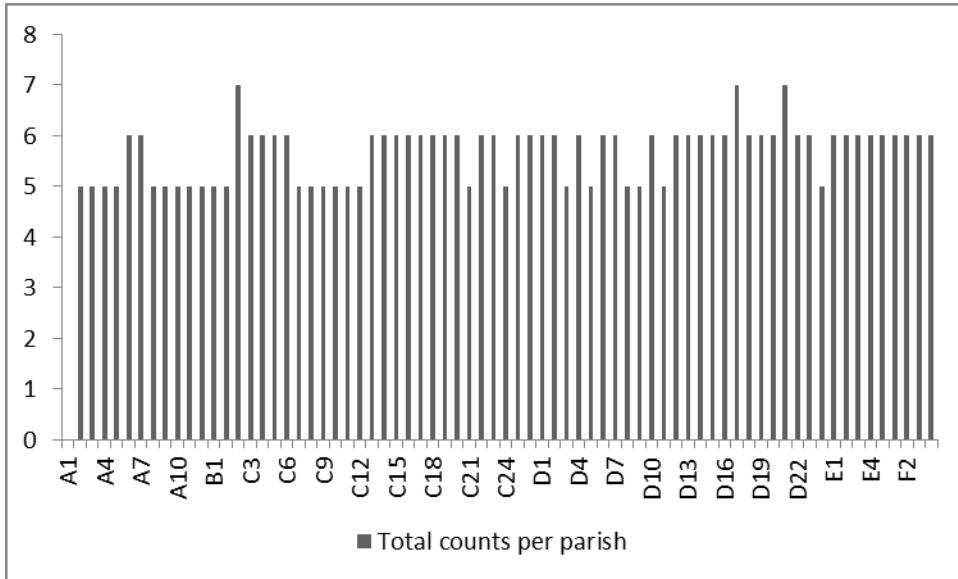


Figure A1. Total counts per parish.

	<b>Child deaths as a percentage of births</b>	<b>Period</b>	<b>Source</b>
<b>Viseu (Oriental plus Occidental)</b>	43.2%	1821-33	Oliveira (2002)
<b>Resende</b>	37.6%	1775-92	Oliveira (2002)
<b>Almeida</b>	40.5%	1700-1828	
<b>Guimarães (Urgeses)</b>	32.7%	1793-1819	Amorim (1987, p. 278)
<b>Guimarães (Oliveira)</b>	42.0%	1741-1748	(Amorim, 1987, p. 280)
<b>Guimarães (urban area)</b>	46.4%	1650-1719	Amorim (1987, p.278)
<b>Guimarães (urban area)</b>	46.6%	1710-1760	Amorim (1987, p.279)

Table A1. Known child mortality rates

<b>Parish</b>	<b>1530</b>	<b>1600*</b>	<b>1612*</b>	<b>1685*</b>	<b>1700</b>	<b>1720*</b>	<b>1758</b>	<b>1775*</b>	<b>1801</b>	<b>1849</b>	<b>1864</b>	<b>Total counts per parish</b>
<b>A1</b>						X	X		X	X	X	5
<b>A2</b>						X	X		X	X	X	5
<b>A3</b>						X	X		X	X	X	5
<b>A4</b>						X	X		X	X	X	5
<b>A5</b>		X				X	X		X	X	X	6
<b>A6</b>		X				X	X		X	X	X	6
<b>A7</b>						X	X		X	X	X	5
<b>A8</b>						X	X		X	X	X	5
<b>A9</b>						X	X		X	X	X	5
<b>A10</b>						X	X		X	X	X	5
<b>A11</b>						X	X		X	X	X	5
<b>A12</b>						X	X		X	X	X	5
<b>B1</b>		X					X		X	X	X	5
<b>C1</b>	X	X			X		X		X	X	X	7
<b>C2</b>				X		X		X	X	A	A	6
<b>C3</b>				X		X		X	X	A	A	6
<b>C4</b>				X		X		X	X	A	A	6
<b>C5</b>				X		X		X	X	A	A	6
<b>C6</b>			X				X		X	X	X	5
<b>C7</b>			X				X		X	X	X	5
<b>C8</b>			X				X		X	A	X	5
<b>C9</b>			X				X		X	X	X	5
<b>C10</b>			X				X		X	X	A	5
<b>C11</b>			X				X		X	X	A	5
<b>C12</b>	X				X		X		X	X	X	6
<b>C13</b>	X				X		X		X	X	X	6



<b>C14</b>	X		X	X	X	X	X	6
<b>C15</b>	X		X	X	X	X	X	6
<b>C16</b>	X		X	X	X	X	X	6
<b>C17</b>	X		X	X	X	X	X	6
<b>C18</b>	X		X	X	X	X	X	6
<b>C19</b>	X		X	X	X	X	X	6
<b>C20</b>	X		X		X	X	X	5
<b>C21</b>	X		X	X	X	X	X	6
<b>C22</b>	X		X	X	X	X	X	6
<b>C23</b>	X		X		X	X	X	5
<b>C24</b>	X		X	X	X	X	X	6
<b>C25</b>	X		X	X	X	X	X	6
<b>C26</b>	X		X	X	X	X	X	6
<b>D1</b>	X		X	X	X	X	X	6
<b>D2</b>			X	X	X	X	X	5
<b>D3</b>	X		X	X	X	X	X	6
<b>D4</b>			X	X	X	X	X	5
<b>D5</b>	X		X	X	X	X	X	6
<b>D6</b>	X		X	X	X	X	X	6
<b>D7</b>				X	X	X	X	5
<b>D8</b>				X	X	X	X	5
<b>D9</b>	X			X	X	X	X	6
<b>D10</b>	X				X	X	X	5
<b>D11</b>	X		X	X	X	X	X	6
<b>D12</b>	X		X	X	X	X	X	6
<b>D13</b>	X		X	X	X	X	X	6
<b>D14</b>	X		X	X	X	X	X	6
<b>D15</b>	X		X	X	X	X	X	6
<b>D16</b>	X	X	X	X	X	X	X	7

<b>D17</b>	X			X		X		X	X	X	6
<b>D18</b>	X			X		X		X	X	X	6
<b>D19</b>	X			X		X		X	X	X	6
<b>D20</b>	X	X		X		X		X	X	X	7
<b>D21</b>	X			X		X		X	X	X	6
<b>D22</b>	X			X		X		X	X	X	6
<b>D23</b>	X					X		X	X	X	5
<b>D24</b>	X			X		X		X	X	X	6
<b>E1</b>		X		X		X		X	X	X	6
<b>E2</b>	X			X		X		X	X	X	6
<b>E3</b>	X			X		X		X	X	X	6
<b>E4</b>	X			X		X		X	X	X	6
<b>E5</b>	X			X		X		X	X	X	6
<b>F1</b>	X			X		X		X	X	X	6
<b>F2</b>	X			X		X		X	X	X	6
<b>F3</b>	X			X		X		X	X	X	6
<b>effective counts</b>	42			43		65		71	71	71	
<b>gaps</b>	29			28		6					Mean
<b>replacements</b>		4	9	4		19		4			5.69

Table A2 Gaps and counts in all population counts. \* refers to population counts used as replacements.

<b>Alentejo</b>	
1 A1. S. Marcos da Abóbada (Évora)	37 C24. N. S. da Graça de Fragosela (Viseu)
2 A2. S. Miguel de Machede (Évora)	38 C25. Vila Chã de Sá (Viseu)
3 A3. S. Matias (Évora)	39 C26. Mundão (Viseu)
4 A4. S. Vicente do Pigeiro (Évora)	<b>Entre-Douro-e-Minho</b>
5 A5. S. Maria (Évora Monte)	40 D1. S. Martinho de Alvito S. Pedro e Ginzo (Braga)
6 A6. S. Pedro (Évora Monte)	41 D2. Santiago de Esporões (Braga)
7 A7. Boa Fé (Évora)	42 D3. Santa Eulália de Fermentões (Braga)
8 A8. Divor (Évora)	43 D4. Santa Marinha da Costa
9 A9. S. Brás do Regedouro (Évora)	44 D5. S. Romão de Mesão Frio
10 A10. Torre de Coelheiros (Évora)	45 D6. Urgeses (Guimarães)
11 A11. Monte do Trigo (Évora)	46 D7. Oliveira dos Castelo (Guimarães)
12 A12. N.S. Consolação Igreja (Évora)	47 D8. S. Sebastião (Guimarães)
<b>Algarve</b>	48 D9. S. Paio (Guimarães)
13 B1. N.S. da Conceição de Tavira (Faro)	49 D10. S. Miguel do Castelo (Guimarães)
<b>Beira</b>	50 D11. S. Miguel de Creixomil
14 C1. São Tiago de Almaguez (Coimbra)	51 D12. Azurem (Guimarães)
15 C2. Vera Cruz (Aveiro)	52 D13. S. Marinha de Gontinhães
16 C3. S. Miguel (Aveiro)	53 D14. Santiago de Romarigas
17 C4. N.S. da Apresentação (Aveiro)	54 D15. S. João Baptista de Canelas
18 C5. Espírito Santo (Aveiro)	55 D16. S. João Batista de Vila do Conde
19 C6. S. Bartolomeu (Coimbra)	56 D17. S. João das Caldas
20 C7. S. João da Santa Cruz (Coimbra)	57 D18. S. Martinho de Ávidos
21 C8. Sé (Coimbra)	58 D19. S. Pedro de Esmeriz
22 C9. S. Tiago (Coimbra)	59 D20. S. Tiago de Bougado
23 C10. Santa Justa (Coimbra)	60 D21. Santiago de Lordelo (Braga)
24 C11. S. Pedro (Coimbra)	61 D22. Santiago de Ronfe (Braga)
25 C12. N. S. da Graça Bobadela (Coimbra)	62 D23. Oliveira do Douro
26 C13. N.S. Conceição Lagares (Coimbra)	63 D24. Póvoa de Varzim
27 C14. Eixo e Oliveirinha (Aveiro)	<b>Estremadura</b>
28 C15. S. Martinho da Árvore (Coimbra)	64 E1. Barcarena
29 C16. S. João Baptista de Lourosa (Viseu)	65 E2. Cheleiros
30 C17. Santa Maria de Tondela (Viseu)	66 E3. Enxara do Bispo
31 C18. S. Pedro do Sul (Viseu)	67 E4. Lourinhã
32 C19. S. Julião de Mangualde (Viseu)	68 E5. Ventosa
33 C20. S. Maria de Vouzela (Viseu)	<b>Trás-os-Montes</b>
34 C21. N.S. da Conceição de Nelas (Viseu)	69 F1. Cardanha
35 C22. S. Maria de Canas Sabugosa (Viseu)	70 F2. Rebordãos
36 C23. S. Isidoro dos Santos Evos (Viseu)	71 F3. S. Pedro de Castro Vicente (Bragança)

Table A3. Full list of parishes

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