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inequality? Italy and the Low Countries  
compared, ca. 1500-1800**

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## **Was there a ‘Little Convergence’ in inequality? Italy and the Low Countries compared, ca. 1500-1800**

### **Abstract**

The question of how economic inequality changed during the centuries leading up to the industrial revolution has been attracting a growing amount of research effort. Nevertheless, a complete picture of the tendencies in economic inequality throughout pre-industrial Europe has remained out of our grasp. This paper begins to resolve this problem by comparing long-term changes in inequality between Central and Northern Italy on the one hand and the Southern and Northern Low Countries on the other hand. Based on new archival material, we reconstruct regional estimates of economic inequality between 1500 and 1800 and analyze them in the light of the Little Divergence debate, assessing the role of economic growth, urbanization, proletarianization, and political institutions. We argue that different explanations should be invoked to understand the early modern growth of inequality throughout Europe, since several factors conspired to make for a society in which it was much easier for inequality to rise than to fall. We also argue that although there was apparently a ‘Little Convergence’ in inequality, at least some parts of southern and northern Europe diverged in terms of inequality extraction ratios.

### **Keywords**

Economic inequality; early modern period; Sabaudian State; Florentine State; Italy; Low Countries; Belgium; The Netherlands; inequality extraction; wealth concentration; fiscal state; proletarianization

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The question of how economic inequality changed during the centuries leading up to the industrial revolution has been attracting a growing amount of research effort. Nevertheless, a complete picture of the tendencies in economic inequality throughout pre-industrial Europe has remained out of our grasp. This paper begins to resolve this problem by comparing long-term changes in inequality between Central and Northern Italy on the one hand and the Low Countries on the other hand.

Such a comparative perspective has gained in significance by recent insights from the debate on the so-called ‘Little Divergence’ in Europe during the centuries preceding the Industrial Revolution. This Little Divergence refers to the exceptional economic trajectory of Northwestern Europe compared to the rest of the continent (and to Italy in particular, until then the most advanced area) from the end of the medieval period onwards. In both real wages (Allen 2001) and GDP per capita (Broadberry et al 2011; Van Zanden and Van Leeuwen 2011; Prados de la Escosura 2012; Pleijt and Van Zanden 2013) Northwestern Europe diverged from Southern, Central and Eastern European areas well before the onset of the Industrial Revolution – that is, at about the same time the ‘Great Divergence’ with Asia also began. Thus, many economic historians argue that understanding the Little Divergence might lead to important insights into the fundamental causes of the Great Divergence, and of the Industrial Revolution itself. The most frequently invoked explanations for the Little Divergence are international (Atlantic) trade (Allen 2001; Acemoglu et al 2005), human capital formation (Baten & Van Zanden 2007), epidemiological factors (Alfani 2013b), and institutional change. The last explanation comes in two guises: both institutions of a political nature, such as the rise of parliaments (North & Weingast 1989; Van Zanden et al 2010), and institutions related to social and demographic change (De Moor and Van Zanden 2010), have been invoked to account for the Little Divergence.

Until now, research on the economic history of Europe’s Little Divergence has been concerned almost exclusively with aggregate indicators of output or incomes, such as average growth rates in GDP per capita, or real wages. Yet we know very little about how these economic gains were distributed across society, and how this changed over time. The processes of social change that were *caused* by the Little Divergence, as well as those potentially at the *roots* of it, have remained largely hidden from view. It is to our knowledge of the social processes underpinning the economic development of early modern Europe that this paper seeks to contribute. The question that is of primary concern to us here is how the Little Divergence affected economic inequality differentially across Europe. Did inequality increase in the Northwestern European societies that went through a phase of sustained economic growth in the early modern period? And can we find, on the contrary, a concomitant decline in inequality in the regions that were characterised by economic stagnation or decline? In a sense, this is a reformulation of the classic hypothesis by Kuznets

(1955) that was adapted for the pre-industrial period by Van Zanden (1995): did economic growth in Northwestern Europe cause inequality to rise during the pre-industrial period, and did decline cause it to diminish?

In order to test for the effect of the Little Divergence upon the evolution of inequality in different regions of Southern and North-Western Europe, this paper presents and analyzes new empirical data on economic inequality with the help of a uniform methodology. The development of inequality in Central and Northern Italy (Tuscany and Piedmont, constituting the core areas of the Florentine State and the Sabaudian State respectively) is compared with that in the Low Countries – more specifically Flanders, Brabant and Holland, which from the late sixteenth century belonged to two distinct states. Somewhat surprisingly, this is the first time that a large-scale comparison in inequality across Europe has been attempted.

The evidence leads us to reject economic growth as a necessary causal factor for growing inequality in pre-industrial Europe. It might have been a sufficient one – for instance in the case of the Dutch Republic (van Zanden 1995) – but it was most certainly not the only one (Alfani 2010a; 2015). For other European regions, both in the North Sea area itself and in Italy, rival explanations can also prove sufficient. We examine three other distinct, but possibly complementary hypotheses for the growth in inequality across early modern Europe: demography and urbanization, the proletarianization process, and the rise of the fiscal-military state.

With regard to the role of institutions, we use the concepts of the ‘inequality possibility frontier’ and the ‘inequality extraction ratio’ introduced by Milanovic, Lindert and Williamson (2007; 2011) in order to better understand the nature and the implications of inequality growth. The results lead us to consider not only the ways in which the Little Divergence might have affected inequality across Europe, but also how a changing distribution of income in various parts of the continent might itself have helped to shape divergent economic trajectories - even if distribution superficially followed the same path everywhere. In other words, a similar increase in inequality (a ‘Little Convergence’), happening in different contexts, might have implied deeply different developments in terms of inequality extraction, thus possibly reinforcing the ‘Little Divergence’ in per-capita GDP and living standards.

### **1. Italy and the Low Countries in the Little Divergence: context**

Around 1500, Central-Northern Italy and the Low Countries were the most economically advanced areas of Europe, as revealed by indicators such as urbanization rates, economic output or aggregate living standards. However, from the sixteenth or the seventeenth century the two areas began to diverge - with the Low Countries making considerable relative gains

over the Italian states. In both Italy and the Low Countries, however, there was a non-negligible regional variation. The aim of this section is to briefly describe the main developments characterizing the four areas, as well as to present the source material used in the reconstruction of general trends in economic inequality.

Since the fall of the Roman Empire Italy had never been a politically unified country until the process of national unification in the second half of the nineteenth century. Even within the most advanced area (the North plus Tuscany) important differences existed in the level of development as well as in the trends and dynamics characterizing distinct regional states, whose main and foremost aim was to maintain their independence (Alfani 2013a, 114-5). Here we focus on two such states: the Sabaudian State, which by the early eighteenth century covered the whole of the current administrative region of Piedmont (and beyond), and the Florentine State which covered most of today's Tuscany.

Of all the Italian states, the Sabaudian State was the most successful during the early modern and modern periods - at least if we measure success as the ability to maintain substantial autonomy, to make sizeable territorial gains over time, and finally to spearhead the process of national unification which culminated in the proclamation of the Kingdom of Italy in 1861. The State progressively expanded from the West - the Alpine ancestral domains of the House of Savoy - to the East, towards the rich lowlands of the Po Plain. In the period covered by this article, Piedmont was already the heartland of the State, as also suggested by the decision of the Savoys to move their capital from Chambéry (nowadays in France) to Turin, in 1563. This decision followed the end of the Italian Wars (1494-1559), a very troubled period for the Italian states, many of which lost their independence or somehow fell under the Spanish sphere of influence (Alfani 2013a, 12-23; 112-24). As a matter of fact, by the middle of the sixteenth century only two Italian states were still capable of autonomous military action: the Republic of Venice and the Sabaudian State.

Given its expansionistic ambitions and success, the Sabaudian State is truly an exceptional case in the context of early modern Italy. Relatively neglected by international scholarship until recently, it is currently the object of much attention (see in particular Vester 2013). It is also the first region of Italy to be the object of a systematic study of long-term trends in economic inequality (Alfani 2009; 2010a; 2015), which makes it the perfect case to include in this study. Economic historians have underlined the importance of the policies introduced by the Savoys during the sixteenth century, and in particular the fiscal reforms which went a long way towards allowing the Sabaudian State to pay for its many wars (Stumpo 1979; Alfani 2013c). However, not even this particularly successful State was characterized by sustained economic growth throughout the early modern period. In the first half of sixteenth century it paid a particularly high price for the repeated confrontations between France and Spain. The seventeenth century, too, was a difficult century for the

Piedmontese population and economy, due to the damage caused by the terrible plague of 1629-30, possibly the worst affecting northern Italy since the Black Death (Alfani 2013b), by the civil war in 1638-42, and by the crisis and decline of many cities (Barbero 2008; Alfani 2015). The situation changed only during the eighteenth century, when the region showed an impressive agrarian, commercial, and proto-industrial dynamism, coupled with a growing influence over the Italian peninsula.

If the Sabaudian State is exceptional in being the most dynamic Italian pre-unification state, the Florentine State is instead the typical example of medieval and Renaissance splendour followed by relative sluggishness during the early modern period. In about 1500, when our study starts, the process of progressive expansion of the territories subject to the capital city of Florence, which had started with the conquest of Fiesole in 1125, was basically completed, except for the annexation of the Republic of Siena in 1555 (Fasano Guarini 1973; La Roncière 2010; Alfani and Ammannati 2014). After that, the territory under Florentine control remained unchanged until the end of the eighteenth century. It was administratively divided into two parts: the *Contado*, corresponding to the areas earlier acquired by Florence and subject to the stricter control of the capital city, and the *Distretto*, acquired later and also incorporating large and important cities like Arezzo and Pisa which were allowed greater autonomy, including in fiscal matters (Alfani and Ammannati 2014).

Seemingly, territorial stagnation went hand in hand with economic stagnation. In fact, after a complex sixteenth century when Tuscany became one of the main battlefields of the Italian Wars and Florence suffered repeatedly from political unrest,<sup>1</sup> the Florentine state showed clear signs of decline from the first decades of the seventeenth century. Here the decline would continue until the end of the eighteenth century (Carmona 1976; Malanima 1982; Goldthwaite 2009; Ammannati 2009).

The general literature on the Little Divergence has pointed out many possible explanatory factors for the relative decline of the main economic powers of the Italian Renaissance, among which the Florentine State is to be counted: the opening of the Atlantic trade routes which ‘trapped’ the Italian States in the Mediterranean (Braudel 1992; Acemoglu, Johnson and Robinson 2005), the inability of the guild system to renew itself when confronted with stronger northern competition (Cipolla 1968) or, more recently, the particular severity of seventeenth-century plague epidemics which brought the Italian economies towards lower growth paths (Alfani 2013b; Alfani and Percoco 2014). Although historians have underlined that this process is mostly to be understood as one of ‘relative’ and not ‘absolute’ decline (Sella 1997) and it has been argued that as late as the early seventeenth century it had not yet started (Alfani 2013a), it is quite clear that by the end of that century

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<sup>1</sup> The ruling Medicis were ousted from power twice, in 1494 and in 1527, and they only returned in 1531, when they managed to obtain the title of Dukes and consolidated their hold on the State.

central and northern Italy were no longer at the core of the European economy. Some areas of northern Europe had risen to preeminence instead - including the Low Countries.

'Low Countries' is the general denomination used for the region on the low-lying North Sea coasts with the deltas of the Rhine, Meuse, Scheldt and Ems rivers. Since the High Middle Ages its maritime orientation and large number of navigable waterways had already begun to turn the region into one of the most vibrant European economies North of the Alps. Despite a large and continuing degree of political fragmentation and widely diverging intra-regional developments, different parts of the Low Countries would continue to be among Europe's frontrunners in economic development until the nineteenth century (Blockmans 2010; Van Bavel 2010; Gelderblom 2013).

Already at the end of the medieval period the Low Countries were among the most densely populated and highly urbanized areas in Europe, and they would continue to be so throughout the early modern era. Economic success was based on the region's involvement in an early commercialised and intensive agricultural sector, large-scale industrial activity in textile production destined for worldwide exports, and international trade – passive, active, and colonial. Despite many regional differences and pockets of divergence, all this generally combined to endow the region with high figures of aggregate economic output, relatively high real wages, and a deep penetration of the market into the economy. This was achieved within the context of large political fragmentation in the absence of a strong central state, a conspicuous lack of a large land-holding class, and an institutional dynamic generated by inter-urban and inter-regional competition (Gelderblom and Jonker 2014). Since the region's experience of economic success can be contrasted with the process of relative decline in the Mediterranean economies, the Low Countries constitute a suitable region for studying the opposite side of the 'Little Divergence' in Europe (Allen 2001; 2003).

However, considerable regional variation existed within the Low Countries. During the high Middle Ages the core of economic development was situated in the southern provinces, particularly in the centres of urban textile (woollens) production such as Ghent, and in the main commercial hub for long-distance trade: Bruges (Murray 2005; Blockmans 2010). Around the end of the fifteenth century, political strife and geographic vagaries relocated the dominant commercial (and to a lesser extent industrial) activities northwards to Antwerp and its surroundings (a recent interpretation of this relocation in Gelderblom 2013). During the first half of the sixteenth century Antwerp would become the principal hub for trade in North-Western Europe, serving as a staple market for English textiles and Portuguese spices, but also stimulating industrial production within its own walls and hinterland (Van Der Wee 1963; Puttevils 2015). In the Eighty-Years War the Antwerp seaport would be closed following the Spanish re-possession of the city in 1585, and so international trade routes would shift northwards again, this time to Amsterdam and the rest of the Maritime



Dutch provinces in the Northern Low Countries. For the Southern Low Countries this would mark the end of a period of economic and urban growth, although a successful economic reconversion (towards regional trade in the case of Flanders; and high-quality luxury goods in the case of Brabant) postponed the onset of secular economic decline until the second half of the seventeenth century.

Nevertheless, from the end of the sixteenth century onwards, a pronounced contrast in the economic fortunes of the Northern and Southern Low Countries emerged. Whereas in the latter region the weight of rural proto-industry (linen) grew and urban production figures slowly dwindled, the towns in Holland were increasingly connected to new avenues of international trade or further expanded their industrial textile production (De Vries and Van Der Woude 1997, Emmer and Gommans 2012). Economic fortunes would reverse for both regions during the eighteenth century. In the Northern Low Countries the economy would stagnate at a high level of living standards, and remain relatively unchanged until its late industrialization around the end of the nineteenth century (Mokyr 1976). Yet in the Southern Low Countries, a new phase of rapid demographic growth from the middle of the eighteenth century went hand-in-hand with commercial expansion, retail growth, and modest forms of labour concentration in the form of (non-mechanised) workshops (*manufactures*) with at times hundreds of wage labourers (Dejongh and Segers 2001). Proper industrialization would start only from the beginning of the nineteenth century in Ghent and Aalst, and approximately two or three decades later in Bruges and Kortrijk. As parts of the Southern Low Countries were among the earliest industrializing areas on the Continent, the contrast with the Northern Low Countries – which was among the last to industrialize – is again particularly clear.

Since we will study patterns and trends of inequality in Flanders and Brabant (Southern Low Countries) on the one hand, and Holland (Northern Low Countries) on the other hand, we will be able to look at the influence of differences in economic growth, international commerce, and political and fiscal institutions upon levels of pre-industrial inequality within the North Sea area.

Recent studies have established changes in economic inequality during the late medieval and early modern periods in both Italy and the Low Countries (Alfani 2015; Alfani and Ammannati 2014; Ryckbosch 2014). Other recent works have involved Spain (Nicolini and Ramos Palencia 2013; 2015; Prados De La Escosura 2007; 2008; Santiago-Caballero 2011; Santiago-Caballero and Fernández 2013; García Montero 2015), Portugal (Reis and Martins 2012), Poland (Malinowski and Van Zanden 2015) and Turkey (Canbakal 2012). Yet despite the wealth of new evidence available, broad comparisons have still to appear. This article begins to fill this gap, by comparing four regions in two European areas: Piedmont and Tuscany in Southern Europe, and the Northern (Holland) and Southern Low Countries

(Flanders & Brabant) in Northwestern Europe. In this way we can analyse how changes in economic inequality diverged or converged during the process of economic divergence between the North and South of the continent. Yet at the same time we can also look more closely at divergence occurring within each area – for instance between the Southern and Northern Low Countries during the seventeenth century, or between Piedmont and Tuscany during the eighteenth. On the one hand, such a multi-layered comparison will allow us to assess the impact of several factors on the historical evolution of economic inequality: demography, urbanization, proletarianization, institutional development and state formation. On the other hand, the newly available data on long-term changes in inequality outside of Holland significantly alter Van Zanden’s (1995) conclusion that there was a trade-off mechanism between early modern economic growth and inequality.

## **2. Sources, data collection and methodology**

The trends in economic inequality presented in this article are based on different sources and approaches for the two European areas studied. The availability of sources largely dictates the approach adopted, which has resulted in two slightly different methodologies. In the case of Italy, the archival sources best suited to a systematic study of economic inequality during the early modern period are the property tax records known as *estimi*. These sources record different components of wealth, but at the very least always include real estate (lands and buildings). The sources we use here for the Sabaudian State are all *estimi*, very homogeneous across space and time, and they include only real estate. A more detailed analysis of these sources is provided elsewhere (Alfani 2015)<sup>2</sup>. In the Florentine domains the *estimi* system was also used for a long time - but in the *Contado* it was abandoned in 1427, when the famous *catasto* system was introduced (Herlihy and Klapisch 1985). The *catasto*, however, proved too complex to be managed effectively, so that from 1495 a third system, the *decima*, was introduced and maintained up until the end of the eighteenth century. This *decima* pertained to an annual tax of 10% on the income from real estate. Under the assumption that such income was proportional to the value of the real estate, there would be no difference, in distributive terms, in measures of inequality of income or wealth based on the *decima*. All the sources used here to measure Tuscan rural inequality are *decime*. Of the Tuscan cities included in our analysis, we used the aforementioned sources for Prato, while for Arezzo, which belonged to the *Distretto* and was awarded greater fiscal autonomy, *estimi* were available whose information is entirely comparable with that of our other Tuscan sources (see Alfani and Ammannati 2014).

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<sup>2</sup> For a general discussion of the characteristics of the Italian *estimi*, also see Pini 1981; Alfani and Caracausi 2009; Alfani and Barbot 2009.

In the case of Italy the ownership of real estate is thus taken as a *pars pro toto* for wealth inequality – and this as a proxy for economic inequality. Given the scarcity of direct income or wealth taxes in the Low Countries (exceptions in Zoete 1994, Zuijderduijn and De Moor 2012), a different approach has been taken here. In this case we focus on (imputed) expenditures on the consumption of real estate (land or housing) as a proxy for economic inequality. From the later Middle Ages until the end of the nineteenth century, the estimated value of houses was used as a common basis for personal taxation in cities in the Low Countries - and was thus explicitly taken as an external reflection of status and income. Today, economists and economic historians agree that housing consumption is closely tied to some measure of permanent income. This rests on the assumption that the income elasticity of demand for housing is not only close to this, but is also fixed in time (the issue was discussed at length in Williamson 1985, and Feinstein 1988).<sup>3</sup> Engel effects, independent developments determined by the supply-side of real estate on the housing market (both rental and sales), and socially-biased differentials in household size can at times disturb the direct reflection of (income) inequality through these sources, but such effects are unlikely to alter the direction of general trends and patterns.<sup>4</sup> Therefore, the housing taxes available are perhaps not ideal, but they are by and large suitable for tracing changes in income inequality through time. For the Southern Low Countries the data used are newly collected from the archives, while for the Northern Low Countries, we have relied upon the data on Holland gathered, analysed and published by Jan Luiten Van Zanden (Van Zanden 1995, Soltow and Van Zanden 1998).

Given the differences in the two approaches ('property' versus 'consumption'), it is to be expected that the inequality estimates produced for the Low Countries will be lower than those for Italy. This means that the analysis we present here is inherently limited to studying change over time, and comparing trends rather than absolute inequality levels between Italy and the Low Countries.

Moreover, some smaller shortcomings of the sources apply to both our analyses of Italy and the Low Countries. Firstly, property exempted from taxation is often invisible from our sources. This includes feudal land, which was very limited in the areas covered here, but also some specific parts of the property of religious institutions – for which the conditions of exemption varied across time and space. Yet even when exceptional sources provide us with information about property that was usually exempt, we removed it from our distributions in order to obtain time series of inequality measures as homogeneous as possible. The second and main shortcoming is that our distributions are truncated at the bottom - as many of the

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<sup>3</sup> For cities in the Low Countries, Hanus 2010 and Hanus 2013 tested the relationship between taxed house rents and income in the sixteenth century (and arrived at some important qualifications, considered in the next paragraph), while Ryckbosch 2012 tested the association between housing value and wealth in the eighteenth century.

<sup>4</sup> See Ryckbosch 2014 for a more extensive analysis of these potential biases.

poor, i.e. the absolute property-less, were by definition not included in Italian property records, and most of them boarded with other people or sublet and shared housing so that they do not appear in the registers of rental values of houses in the Low Countries either. As a consequence, all our measures of inequality are distorted towards a level lower than was actually the case. This is not a major issue when comparing inequality *trends* rather than levels, since there is no indication that this truncation changed over time. For a more detailed analysis of the shortcomings of the sources used, we refer to the existing literature (Alfani 2015 and Alfani and Ammannati 2014 for Italy; Van Zanden 1995 and Ryckbosch 2014 for the Low Countries).

The data collection for this study has been organised on a meso-level: for a selection of rural and urban communities the complete distributions have been collected. We have collected inequality estimations for a total of 71 communities, for several points in time between 1500 and 1800 (table 1).

*Table 1. An overview of the case studies and their respective sizes.*

	Holland	Flanders & Brabant	Piedmont	Tuscany
Cities, Large (> 20.000)	1	3		
Cities, Medium (10-20.000)	7	2	2	1
Cities, Small (5-10.000)	3	3	4	1
<i>Tot. Cities</i>	<i>11</i>	<i>8</i>	<i>6</i>	<i>2</i>
Rural districts & villages	12	10	12	11
<i>Total</i>	<i>22</i>	<i>18</i>	<i>18</i>	<i>13</i>

Notes: a list of all case studies, the number of households included in the fiscal records, as well as average and median rents per household, is presented in appendix A.

Table 1 indicates that we have aimed for a representative selection of sample cases, although source limitations presented some difficulties. For instance, in Piedmont the main city of Turin is missing due to the fact that when it acquired the status of capital in the sixteenth century, the medieval *estimi* were discontinued (Alfani 2015). The same is true for Florence in Tuscany, as from 1315 its citizens were spared direct taxation (Alfani and Ammannati

2014, 5). One effect of this is that (since both cities are likely to have been wealthier than the other communities) the Italian regional Ginis will be systematically distorted towards equality. The case of the Southern Low Countries suffers from the opposite problem, as we only have rural data for the last quarter of the sixteenth century – and for the evolution over time have to rely on the urban distribution.

*Figure 1. The areas studied*

Figure 1a. Italy

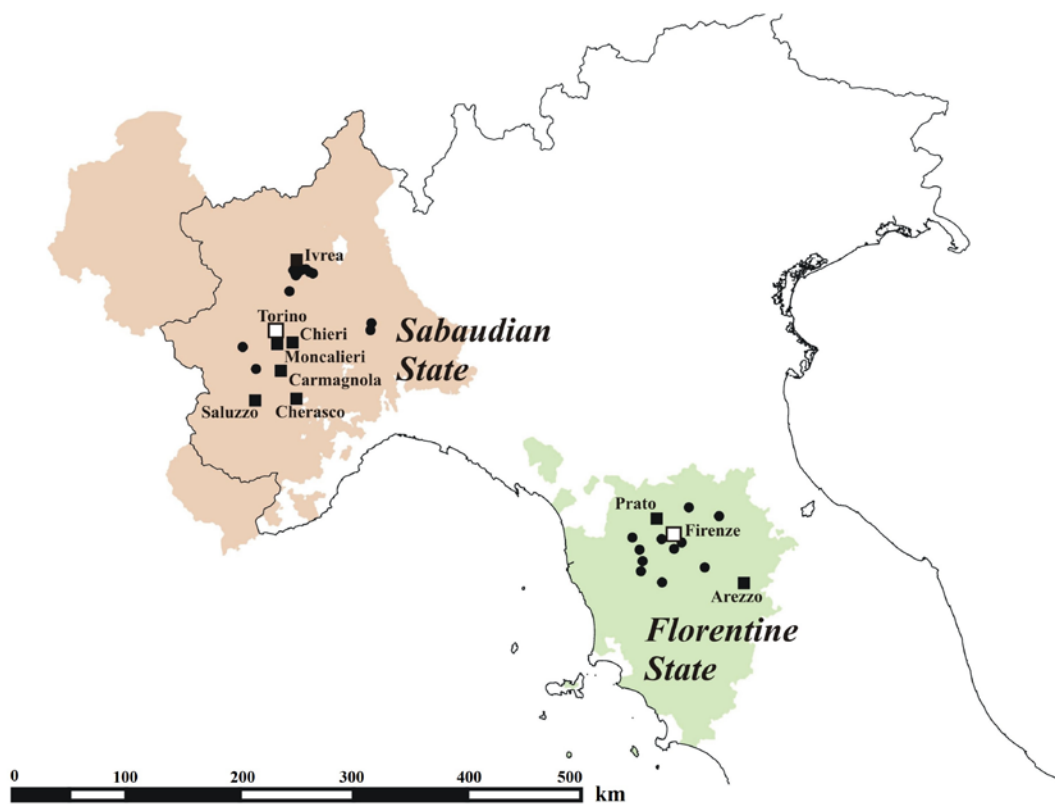
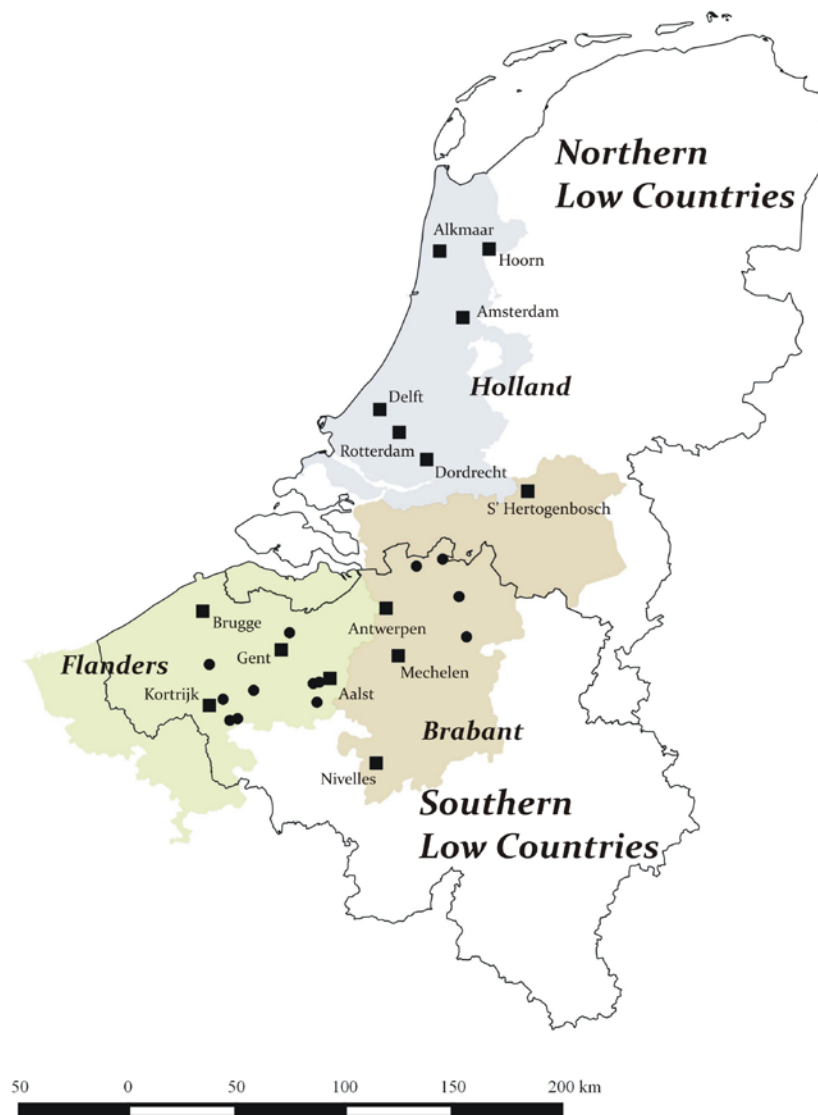


Figure 1b. Low Countries



In this paper, we focus on broad changes occurring in the long run and across entire regions. Consequently, we need to find a way to aggregate the local/communal data on inequality in order to obtain measures representative of larger spatial units. To do this, we use a method introduced by Alfani (2015) in his case study of Piedmont. To build regional measures of inequality it does not suffice to calculate averages of local Gini indexes or of other inequality measures<sup>5</sup>, as this would cause a loss of crucial information about between-community inequality. Instead, the methodology followed here constructs regional distributions starting

<sup>5</sup> Because of its widespread use, its straightforward interpretability, and its sensitivity to changes around the distribution modus, the Gini index has been chosen as the main tool for inequality measurement here (Champernowne 1974; Allison 1978; Cowell 2000). Their indices and other inequality parameters are available from the authors upon request.

from simplified, or 'fictitious' distributions modelled on information about deciles of income/wealth (the tenth decile - the rich - is modelled in greater detail, using information about the top 5% and top 1% wealthy). Using these fictitious distributions it becomes easier to solve weighting problems and issues of comparability across sources. First we construct separate urban and rural inequality series, and then weigh both based on the urbanization rate in each region and time period, using a procedure similar in principle to that described by Milanovic (2006) for calculating 'weighted international inequality'.

In some cases a lack of appropriate data required additional assumptions to be made. For Piedmont it was impossible to convert the values in the property tax registers of one community to another, except for the Canavese area in 1628-1649 – so we had to make the assumption that the urban-rural differential in average household wealth across Piedmont was the same as in the seventeenth-century Canavese. In Tuscany no such assumptions were necessary, except for the case of Arezzo, which (because of its larger degree of fiscal autonomy) presented similar problems. In this case the famous Florentine *catasto* of 1427 allowed us to estimate the relative average wealth between Arezzo, Prato, and the rural part of the *contado*. More problematic is the case of the Southern Low Countries, for which we have a very detailed and highly representative collection of small, medium-sized, and large cities – but no rural series that allows for a comprehensive reconstruction through time. For that reason we will limit some analyses in the following to the urban distribution data only. However, we also used the urban regional reconstruction together with guesstimates grounded in what information was available for rural areas, to produce a rough regional estimate also for the Southern Low Countries (see Appendix) - a series which has to be considered highly hypothetical and not as reliable as those we use for the other European regions.

A detailed explanation of the procedures and the choices involved in constructing the regional inequality estimates, as well as additional evidence in support of the assumptions made, is presented in the Appendix.

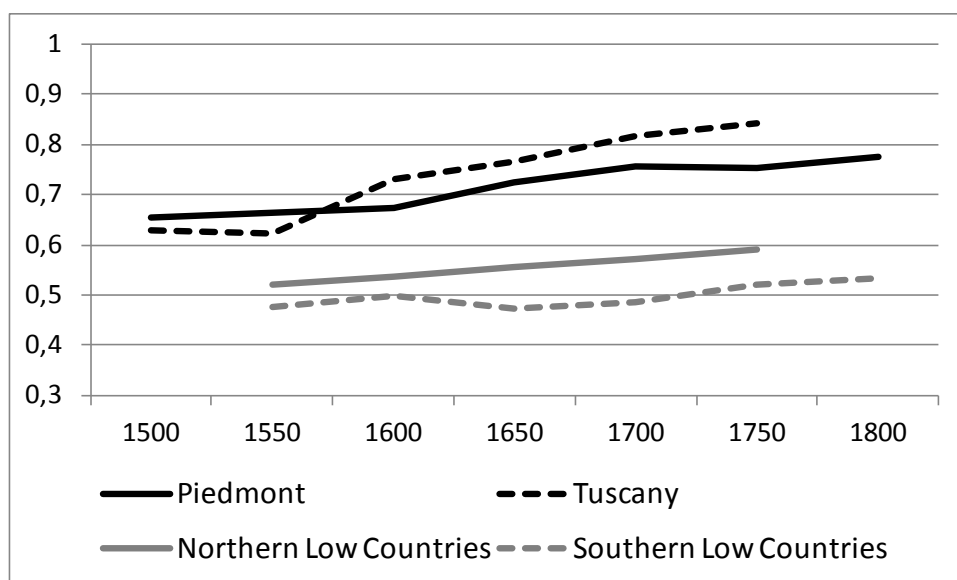
### **3. Regional inequality trends compared: description**

Our regional reconstructions of long-term inequality trends have been built with two objectives in mind: (i) capturing the regional trends (those that can be reconstructed starting from individual communities) and (ii) allowing for broad European comparisons. The first objective has been reached, as can be easily seen from the Appendix. Here we focus on the second, providing a brief descriptive comparison of long-term trends, and in section 4 we disentangle the main possible factors determining such trends, which we found were fairly common across the four European areas covered by this study as can be seen in figure 2. We present both the trends in the cities only (Figure 2a), and the overall regional reconstructions

based on both the urban and rural estimates (Figure 2b). We focus on the period 1500-1800, for which we have almost complete measures for all areas and which in this part of Europe was still strictly preindustrial. It is important to note that we focus on trends here, not on absolute inequality levels – as the latter might reflect differences in sources (which are fairly homogeneous between Piedmont and Tuscany, and between Southern and Northern Low Countries, but differ significantly between Italy and the Low Countries). The disparate measures of wealth inequality available for cities in the Low Countries (unlike the income inequality estimates used here) indicate levels that are roughly comparable to those in Italy.<sup>6</sup> There is thus no reason to assume that absolute levels of inequality in North-Western Europe were actually lower than in the South.

*Figure 2. Long-term trends in income inequality across Europe, 1500-1800 (Gini indexes of concentration)*

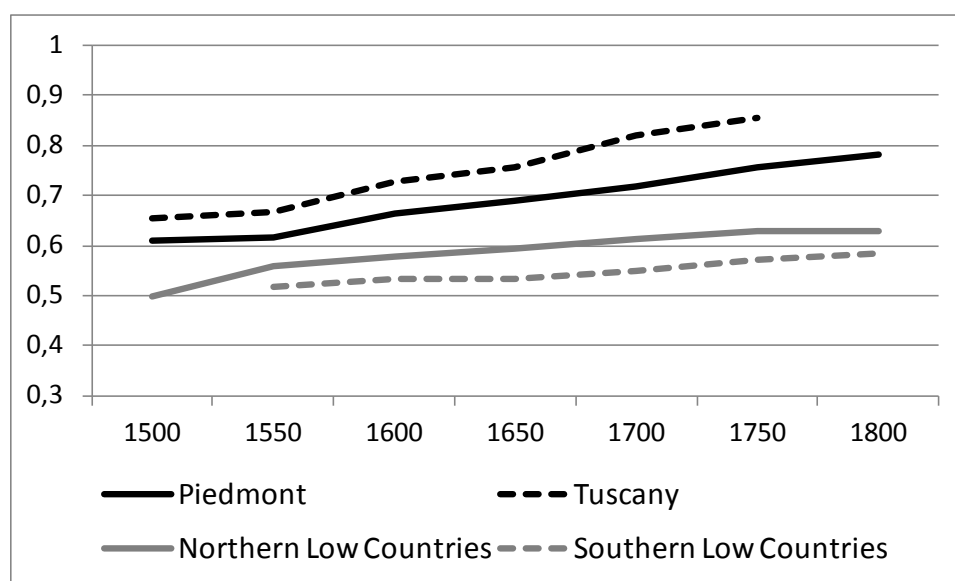
Figure 2a. Urban trends in inequality (Gini coefficients).



<sup>6</sup> For instance in Aalst estimates of wealth inequality based on probate inventories range between 0.67 and 0.72 in the 17th and 18th centuries. Estimates of wealth inequality based on fiscal sources in Alkmaar, Haarlem and Leiden in the 15th and 16th centuries range from 0.63 to 0.84 (Ryckbosch 2012, 119; Van den Berg & Van Zanden 1993, 203).



Figure 2b. Regional reconstructions of inequality (Gini coefficients).



Sources: see main text and Appendixes A and B

The regional reconstructions for Piedmont, Tuscany and the Northern Low Countries are all monotonically increasing from 1500 to 1800 – only that of the Southern Low Countries shows a large degree of stability during large parts of the seventeenth century. In the urban reconstruction there are also short phases of inequality decline, in Tuscany from 1550 to 1650 (although of almost insignificant size: from a Gini of 0.644 to 0.623), and in the Southern Low Countries from 1600 to 1650. This being said, the general picture is clearly one of increasing inequality everywhere (consider that the inequality increase in rural areas is even steeper over time than in the cities: see figure A4 in the Appendix for Tuscany and Alfani 2015 for Piedmont). This is a remarkable finding, given the expectation that inequality would be correlated with economic growth, and the stark differences in economic dynamism characterizing these regions in the period of the Little Divergence. As will be seen in the next section, no mono-causal explanation can be provided to explain this general trend towards higher levels of economic inequality.

Another interesting aspect to stress, is that the long-term increase in inequality seems to be driven by an increase in the share of the top rich. This is particularly striking since it perfectly matches what has been found for contemporary societies, with many recent studies of top incomes showing that changes at the top practically determine the overall inequality trend (Atkinson et al. 2011; Alvaredo et al. 2013). Unfortunately, the disparate source contexts and data available allow us to only include the Northern Low Countries in the regional reconstruction (Figure 3a), and the Southern Low Countries in the urban reconstruction (Figure 3b).

Figure 3. Share owned / earned by 10% top rich

Figure 3a. Cities only

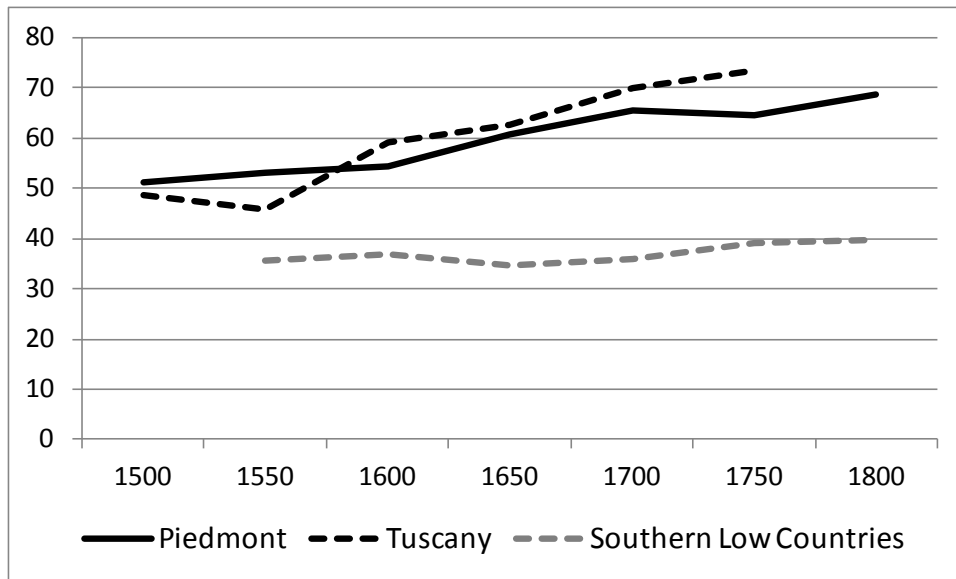
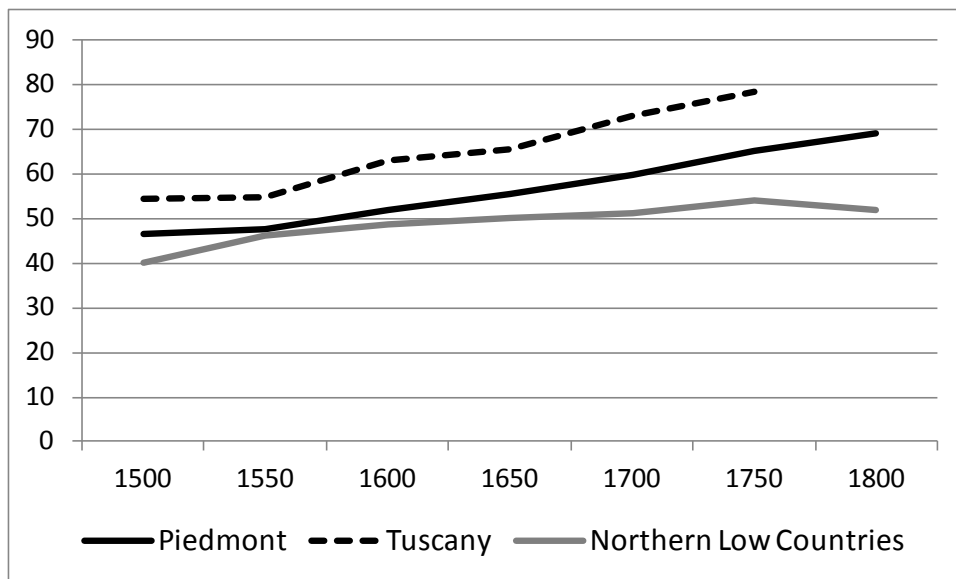


Figure 3b. Regional reconstructions



Sources: see main text and Appendixes A and B

#### 4. Explaining long-term economic inequality growth in Italy and the Low Countries

In this section, we consider possible factors that could have favoured inequality growth in our four case studies. We look at three different types of explanations: (i) economic growth and demographic factors, (ii) 'proletarianization' processes, and (iii) institutional and political factors.

### Economic growth and demographic factors

In his work on Holland, Van Zanden argued how the early modern growth in economic inequality there was 'over-explained' by economic growth (Van Zanden 1995, 661), and discussed three different ways in which economic growth could have promoted inequality growth: through (i) increasing urbanization, (ii) increasing skill premium, and/or (iii) changes in functional distribution of income. However, subsequent research suggested that economic growth could not have been the only causal factor explaining early modern inequality growth, as it occurred also in communities and in areas characterized, in at least part of the period, by economic stagnation or decline (Alfani 2010a; 2015; Alfani and Ammannati 2014; Ryckbosch 2014).

Yet this does not mean that economic growth did not contribute to the growth of inequality. We can attempt to test this more generally. A first possible indicator of economic growth is per-capita GDP, which has recently been the object of a considerable amount of new data collection (Bolt and Van Zanden 2014). Unfortunately, although estimates are available for both the Southern and Northern Low Countries, for Italy we only have an estimate for Central-Northern Italy as a whole. This raises the important concern that different states/regions in the area, like Piedmont and Tuscany, could have experienced very different trends compared to the 'average'. Due to the lack of better estimates at the regional level we used such reconstruction. However, in order to arrive at a better proxy of GDP per capita in Piedmont and Tuscany, we broke up the 'Central-Northern Italy' figures. While keeping the average equal to the Central-Northern Italy figures, we split it into two new series for Piedmont and Tuscany, based on the relative urbanization rates of both regions (see table 2).

*Table 2. Estimates of per-capita GDP, 1500-1850 (in 1990 Geary-Khamis dollars PPP)*

	Central-Northern Italy	Piedmont	Tuscany	Southern Low Countries	Northern Low Countries
1500	1533	1613	1453	1467	1454
1550	1459	1589	1329	1512	1798
1600	1363	1535	1191	1589	2662
1650	1398	1561	1235	1445	2691
1700	1476	1633	1319	1375	2105
1750	1533	1761	1305	1361	2355
1800	1363	1621	1105	1479	2609

Sources: The Maddison Project database (<http://www.ggdc.net/maddison/maddison-project/home.htm> consulted June 2015) for Central-Northern Italy, Southern Low Countries and Northern Low Countries, and own estimates for Piedmont and Tuscany based on regional urbanization rates (see below).

Just by looking at the table and by keeping in mind our regional reconstructions of inequality trends, it is apparent that changes in per-capita GDP are very imperfectly correlated to changes in inequality. For example, if we consider secular changes, in both Italian areas we covered overall inequality increased in the sixteenth, seventeenth and eighteenth centuries - but if we make the assumption that the available per-capita GDP estimates for Central-Northern Italy are more or less adequate to reflect changes in Piedmont and Tuscany,<sup>7</sup> we find an increase in GDP per capita only in the seventeenth century, while decline in GDP per capita occurred in the sixteenth and eighteenth centuries. Interestingly, even in the case of the Northern Low Countries, an indicator as per-capita GDP does not allow us to explain a constant growth in inequality - as per-capita GDP declined by 22% in the second half of the seventeenth century, while inequality continued to grow. Only in the seventeenth-century Southern Low Countries do we find a decline in per-capita GDP associated with a (small) decline in urban economic inequality. If, instead of GDP per capita, we had used the welfare ratios methodology introduced by Allen (2001, data at p. 428) we would have found a similarly erratic relationship with inequality change - although with the added problem of having to do so with estimates made available for some of the larger cities only.

Another popular indicator of economic growth is the urbanization rate (see for example Acemoglu et al. 2005; Alfani 2013b). Urbanization rates present the additional advantages of being easier to measure with actual archival data (while estimates of per-capita GDP tend to be, unavoidably, highly speculative), and of often being available also at a regional and sub-regional level. We were able to collect estimates of urbanization rates for all the four areas covered by this article, as reported in table 3.

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<sup>7</sup> In fact, this series for central-northern Italy, which has been produced by Malanima (2011), is probably adequate in reflecting change in GDP per capita in Tuscany, but much less so in Piedmont - as most of the information used to elaborate such series relates to Tuscany and Lombardy.

Table 3. Urbanization rates 1500-1850 (cities > 5,000 inhabitants)

	Piedmont	Tuscany	Southern Low Countries	Northern Low Countries
1500	23,3	21	34	16
1600	24,5	19	35	24
1700	22,9	18,5	34	34
1800	26,1	17,8	27	29
1850		19	44	

Sources: Alfani 2015 for Piedmont (new estimate for 1500); Breschi and Malanima 2002 for Tuscany; Blockmans 2010, p. 541; Klep 1981, 1988; De Vries 1984; Bairoch 1988; LokStat ([www.lokstat.ugent.be](http://www.lokstat.ugent.be))

Again, when looking at urbanization rates, we discover an absence of correlation with inequality change. In Italy, where inequality increased in both Tuscany and Piedmont in each century, we find urbanization decline in seventeenth- and eighteenth-century Tuscany as well as in seventeenth-century Piedmont. Specifically in the case of Piedmont, urbanization rates seem to reflect the trends described by the literature better than did the estimates of per capita GDP introduced above, as they suggest economic crisis or stagnation for the seventeenth century, and non-negligible dynamism in the eighteenth (Alfani 2015). In both the Northern and Southern Low Countries, decline in urbanization did not stop inequality growth in the eighteenth century. Again, only in the seventeenth-century Southern Low Countries do we find some evidence of decline in urbanization rates coupled with decline in urban economic inequality, but the changes in both variables are very small.

Something more should be said about demographic factors as possible causes of inequality increase. The literature provides plenty of evidence that within cities, population growth was associated with inequality growth (Herlihy 1978; Van Zanden 1995; Alfani 2010a; 2015; Alfani and Ammannati 2014; Ryckbosch 2014). During the early modern period, growth in the size of existing cities was the main driver of increasing urbanization rates (as very few new cities were founded), so growth in inequality within-cities is one of the ways in which urbanization could lead to inequality increase. Growth in urban populations was possible only when there was significant immigration from rural areas. Some micro-studies have shown how immigration acted as a kind of perpetual generator of inequality for cities, a process which became more intense after severe mortality crises, and - importantly - one which could occur even in the absence of significant economic growth, for example

simply because physical space to live in had opened within the city walls (Alfani 2010a; 2010b), as well as in the absence of growth in urban population/urbanization rates, as would be the case of a severe epidemic affecting cities but sparing rural communities. It has also been pointed out that the impact of emigration on inequality in rural areas is less clear, and that urban-rural interaction should possibly be the object of specific studies, as - at least in principle - emigration towards cities of surplus population could leave rural inequality unchanged, or even increase it (Alfani 2009). The micro-analyses needed to assess this issue properly are still too few to allow for any generalization, but the aforementioned mechanisms are exemplary of how demographic factors could have affected inequality change per se, and not through their possible influence on economic growth.

#### Inequality extraction and institutional explanations

The preceding analysis has indicated that economic development in itself is not the only, or perhaps even the main, determinant of changes in the level of income inequality in pre-industrial Europe. This finding directs our attention to other explanatory factors. Recent work on modern and current developments in inequality has similarly tended to discredit one-dimensional explanations that exclusively focus on economic performance. Increasingly, the impact of political events and processes – including sudden wealth shocks due to warfare, inflation, and redistributive policies – have reclaimed their place as causal factors (Piketty, Postel-Vinay et al. 2006; Atkinson, Piketty et al. 2011; Piketty 2013). For the study of pre-industrial societies, the concept of the ‘inequality possibility frontier’, and its derived notion of ‘inequality extraction’ developed by Branko Milanovic, have helped to refocus attention on political and institutional explanatory factors, which also featured heavily in Alfani's recent study of Piedmont (Alfani 2015).

The inequality extraction ratio aims to measure how much inequality is actually produced in a society, relative to the total amount of inequality that is physically possible within it (Milanovic 2006; Milanovic, Lindert et al. 2011; Milanovic 2013). This maximum feasible inequality is limited at the bottom by the physiological subsistence level, rather than by an income level of zero as in the case of a normal computation of the Gini coefficient. The maximum feasible Gini is thus determined by the maximum level of inequality that can be attained not by distributing the total amount of income produced in society but by distributing only the surplus amount remaining after deduction of the income needed to give all members a subsistence minimum. It represents a dystopian hypothetical society in which an infinitesimally small elite receives all the income, while the rest of the population lives at subsistence level. The maximum inequality can be written as:

$$G^* = 1 - \frac{s}{m}$$

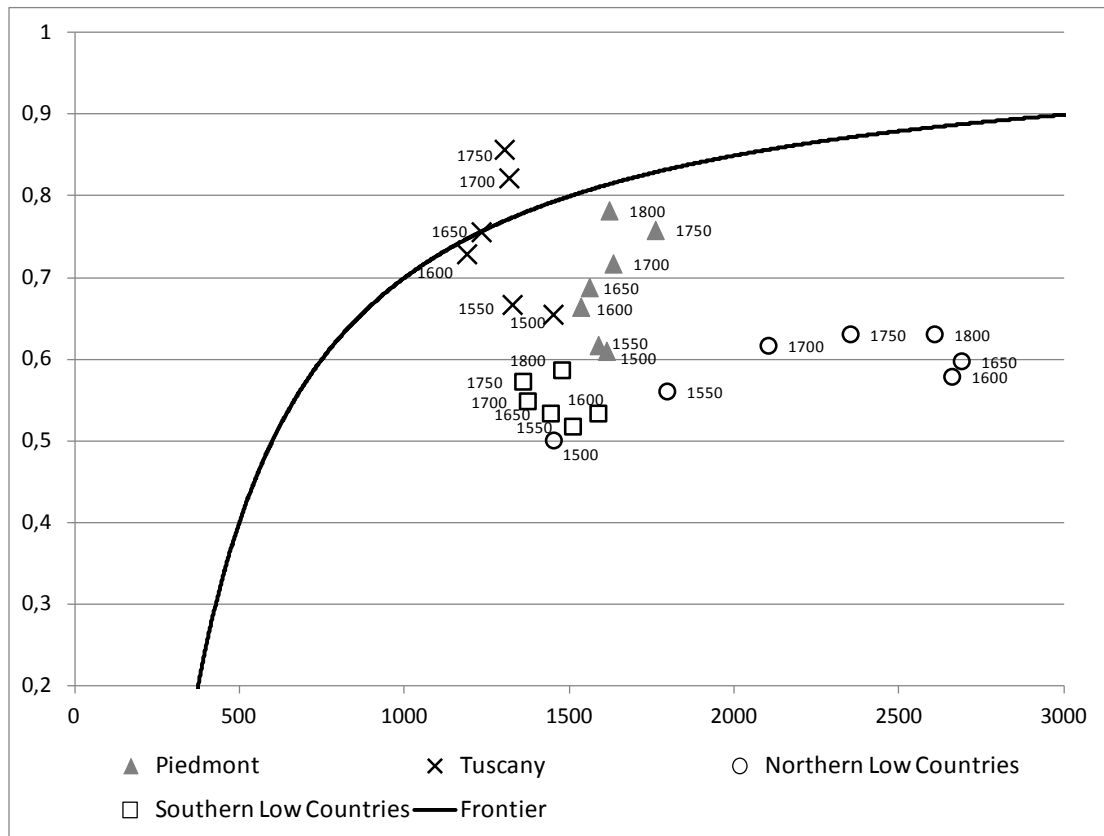
where  $s$  is the subsistence minimum, and  $m$  is the mean income in the economy. The inequality extraction ratio (IER) expresses the ratio between the actually measured Gini and this maximum feasible Gini. It can be expressed mathematically as:

$$IER = \frac{G}{G^*}$$

Applications of these concepts by others have shown that the IER can be a particularly useful translation of the Gini coefficient to the realm of political economy. For instance, the extraction ratio has been shown to be particularly strongly associated with exploitative regimes such as colonial states (Milanovic, Lindert et al. 2011). It has also been demonstrated that for the second half of the twentieth century the IER is a better predictor of civil war than either the Gini coefficient or GDP per capita (Milanovic 2013).

In this article, we will use the IER to initiate a political interpretation of the inequality developments in Italy and the Low Countries. Following the equations presented above, the maximum Gini can be derived for each of the regions studied based on the GDP per capita (here in its identity as mean income  $m$ ), and with the assumption of a stable physiological subsistence minimum  $s$  of \$300 in 1990 purchasing power parity (Milanovic, Lindert et al. 2011). Figure 4 shows the Gini coefficients for each of the regions relative to the inequality possibility frontier. This frontier plots the maximum Gini for each corresponding level of GDP per capita.

Figure 4. Early modern inequality and the inequality possibility frontier



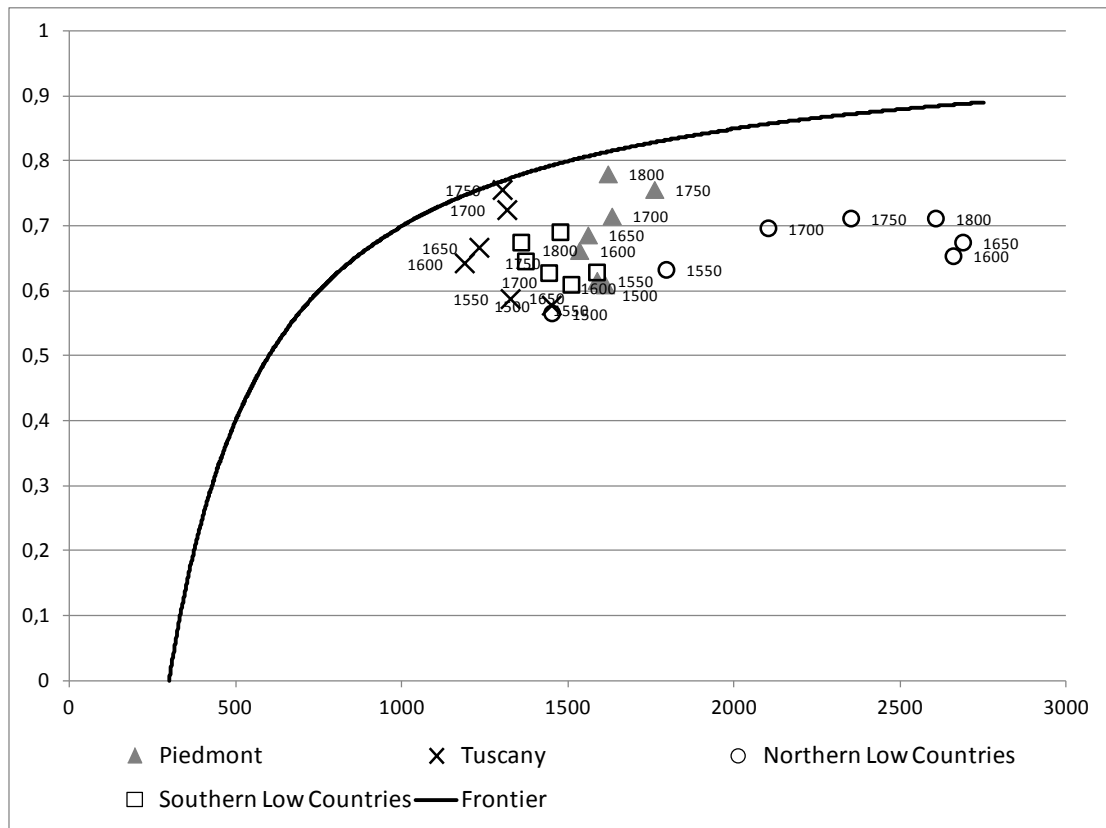
As has been mentioned above, it is hard to compare the inequality measures between the four regions, and interpretations based on the ‘absolute’ level of the Gini index might be unreliable due to the differences in the proxies used. Therefore a ‘relative’ representation of the results is preferable – both when comparing the series to one another, and when comparing each to the inequality possibility frontier. To achieve this, the four Gini and IER series have been converted to indices with 1550 as the base year. Moreover, the inequality levels have been recalculated based on the hypothetical scenario that at the beginning of the period under scrutiny the extraction was the same in all four regions, and that this extraction rate was situated at 76% - which is the level found by Milanovic, Lindert & Williamson (2011) for Holland in 1561 (Figure 5). This amounts to a somewhat unusual index where 1550 is the base year, and the base IER is 76 rather than 100.

In all four regions the inequality levels gradually moved towards the inequality possibility frontier, but far more clearly so in the regions characterised by relative economic stagnation: Tuscany, Piedmont, and to a somewhat lesser degree the Southern Low Countries. This is demonstrated even more clearly by the development of these extraction ratios (Figure 5b).

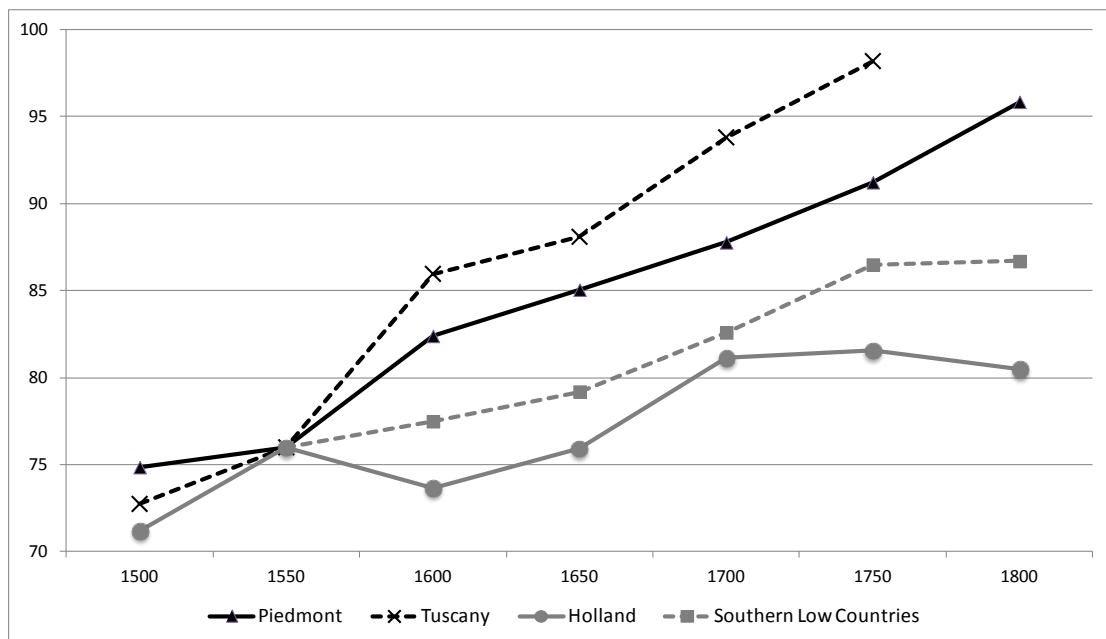


Figure 5. Inequality extraction, 1500-1800

5a. Converted Gini indexes (1550= 76% extraction ratios)



5b. Inequality extraction ratios (1550=76%)



Despite a superficial similarity in patterns of inequality between all four regions, there was in fact a large divergence in the inequality actually extracted from the population. By 1750, when we can calculate inequality extraction for all four regions, Tuscany was practically at the frontier with a 98% extraction ratio, i.e. 22 percent points over the 'original' 76% in 1550, while at the other extreme the Northern Low Countries had experienced an increase of just 6 percent points, with a tendency to decline afterwards. Piedmont and the Southern Low Countries (91% and 87% extraction respectively) were positioned in-between.

Studying inequality relative to its maximum potential directs attention to the fact that not all inequalities are generated by purely economic activities. The results presented here indicate that in explaining pre-industrial changes in inequality, attention should also be paid to those aspects of income inequality generated outside of the strictly commercial sphere. Two sources of inequality generation operating outside of the market merit particular attention for early modern Europe: (i) the gradual expropriation from their means of production of growing shares of Europe's labouring population, and (ii) the formation of the fiscal-military state.

#### *i. Proletarianization*

The hypothesis on the existence of an early modern proletarianization process is an old one, but it has received little attention in recent economic history. The basic idea, laid out most forcefully by Charles Tilly (1984), is that a growing share of the European population became proletarianized, that is to say: did no longer own any means of production, and thus became dependent on selling labour for wages. Tendencies towards early modern proletarianization of specific parts of the population have been identified in the rural enclosure movements, in the rise of putting-out systems in rural and urban proto-industrial production, in the phenomenon of subcontracting within guild-organised industries, and in the concentration of urban development in the hands of an increasingly small number of real estate developers.

Although proletarianization does not always lead to impoverishment or growing inequality, over the long term growing market dependence in the early modern world could have contributed to higher levels of inequality. The recent work of Thomas Piketty and collaborators has shown how the share of the population receiving capital incomes, versus that of those who only receive wages, might have largely determined long-term developments in inequality (Piketty and Zucman 2014). Especially in the context of low or no economic growth, total growth tends to be consistently outperformed by the return to capital, argues Piketty, which causes inequality to rise if that capital is distributed particularly unevenly. If, as several eighteenth- and nineteenth-century thinkers suspected, the early modern period had witnessed the gradual expropriation of (mostly) agricultural masses from their means of production, then it seems likely that the potential for inequality to rise increased during the

early modern period (see for instance Macpherson 1962). A classic historical study of these processes is Emmanuel Le Roy Ladurie's book on the French region of Languedoc, where periods of crisis during the early modern period repeatedly caused waves of wealth (land) concentration in the hands of a decreasing number of great landowners (Le Roy Ladurie 1966, 567-81).

On the evidence of the growing importance of rural proto-industries, the growth of putting-out industries in urban manufacturing, capital concentration in the real estate market, and the dwindling share of the population owning capital-yielding assets, it has been argued that the concentration of capital in ever fewer hands can be held accountable for the growth of inequality in the Southern Low Countries during the seventeenth and eighteenth centuries (Ryckbosch 2014). A similar process of proletarianization seems likely for the Northern Low Countries as well, although the strong economic growth there postponed the impact on inequality until the final quarter of the seventeenth century. Nevertheless, during the eighteenth century the Dutch economy was also characterised by chronic underemployment, increasing poverty, and migration of poor daylabourers as the result of a proletarianization process which had taken place over the course of the sixteenth and seventeenth centuries (De Vries & Van Der Woude 1997, pp. 724-741).

Also in Italy, the crisis of small peasant property with the subsequent concentration of wealth has been reported for many areas, especially from the second half of the sixteenth century when population pressure on the available resources became acute (Cattini 1984; Alfani 2013a, 76-7). Famines, like the terrible one which affected the whole of the Italian peninsula in 1590-3, accelerated the process (Alfani 2011). Specifically, the crisis of peasant property has been singled out as a possible factor contributing to inequality growth in Piedmont (Alfani 2015), while for Tuscany this aspect is more difficult to assess due to the earlier rise of urban ownership and the greater prevalence of sharecropping. However, although in Tuscany the concentration of land in the hands of rich urban elites started as early as the beginning of the fourteenth century, it continued in the following centuries (Alfani and Ammannati 2014). Additionally, although sharecroppers might have been better off in some respects, they were clearly in a more dependent, and potentially more fragile, position compared to peasant owners - at least if we take literally the late-medieval Florentine saying, that 'Those who have a house and farm might bend, but do not fall' (reported by Cherubini 1996, 66-7, our translation). Consequently, proletarianization processes could help to explain early modern inequality trends in Tuscany, too.

## *ii. The rise of the fiscal state*

It is a well-known feature of European history that during the early modern period a variety of state forms (empires, city-states and monarchies) competed with one another, and these multiple types would eventually converge towards national states by the nineteenth century (Tilly 1992). The growing cost of warfare increased the need for more permanent flows of financial means experienced by nearly all early modern states. In its turn, a larger and more efficient military allowed for concentration of coercive power, providing the means to impose a growing fiscal extraction. States sought to satisfy their financial necessities by adopting new institutional arrangements, of which a larger public debt and a more effective fiscal system were the most important. This process, commonly described as ‘the rise of the fiscal-military state’ (Bonney 1999; Yun-Casalilla & O’Brien 2012; Brewer 1990), was closely related to several aspects of early modern political and social life with a direct influence on matters of distribution and re-distribution. In fact, Guido Alfani (2015) has argued that the rise of the Sabaudian state as an important military power was one of the main determinants of inequality growth in early modern Piedmont.

All four regions studied here belonged to the famous and generally prosperous ‘urban belt’ of pre-industrial Europe, which formed the heartland of the regions closest to the city-state ideal-type. Although none of these regions would actually be autonomous city-states during the early modern period, their institutions remained steeped in a communal tradition, based on concepts of contractual citizenship, informed by a combination of medieval parliamentarianism and urban republicanism that constrained the power of the executive, and safeguarded property rights and urban mercantile interests (Van Zanden and Prak 2006, Prak and Van Zanden 2009, Yun-Casalilla 2012). Several historians have argued that this opposed them to the more coercive-intensive path taken by Europe’s nascent national states and monarchies such as France, Spain, and (to a lesser extent) England (North and Weingast 1989; Epstein 2000; Van Zanden and Prak 2006) - although admittedly, of all the Italian states, the Sabaudian State was the one to follow more closely the French and Spanish example. Nevertheless, also these highly urbanised regions witnessed tendencies towards state formation, the growth of public debt, and a gradual process that can be recognised as the rise of the fiscal state. Given the importance and scale of this process, it is not unreasonable to imagine that this might have had an impact on inequality trends in Italy and the Low Countries.

Although the distributional impact of early modern state formation has rarely been studied comprehensively, there were almost certainly several clear repercussions on the distribution and re-distribution of economic gains. Most obvious is the growth of fiscal pressure per capita in most European states. The real per capita tax burden doubled in France between 1600 and 1750, grew fourfold in England in the same period, and doubled in Holland

as well – but at a much higher level (De Vries and Van Der Woude 1997). Most medieval and early modern taxes were regressive in nature – which means that they taxed the poor proportionally more heavily than they did the rich. This was partly due to attempts to protect the private interests and property of those able to influence the decision-making in fiscal affairs, but also because excises on basic consumption goods often turned out to be relatively convenient to collect and enforce in the context of slight bureaucracies and policing forces. In the countryside taxes on land use and tithes tended to shift the tax burden towards peasants and farmers rather than landowners, while the latter (especially the clergy and nobility) often continued to be exempt from most taxes. In the cities, the bulk of revenue usually came from excises on such basic consumption goods as beer, cereals, and meat, which proportionally took a larger chunk out of the budget of the poor than of the rich.

Luciano Pezzolo has noted how in the principalities of Northern Italy, including the Sabaudian State and the Florentine State, the importance of indirect taxes on consumption increased considerably as taxable revenue from international commerce dwindled in the sixteenth and seventeenth centuries (Pezzolo 2012). Meanwhile, the Southern Low Countries has been described by Paul Janssens as a region characterised by a comparatively low, but nevertheless almost unbearable fiscal burden. Although taxes were distributed less arbitrarily than in neighbouring France, they weighed heavily on agriculture and the urban masses, whose incomes and labour productivity were low (Janssens 2012). In the eighteenth century approximately 55% of tax revenues came from consumption, complemented by approximately 40% from income from real estate, and less than 5% from property, salary and profit taxes combined (Janssens 2012).

Given the predominantly regressive nature of taxation in both Northern Italy and the Low Countries, the increase in the tax burden since the late middle ages tended to deepen existing income and wealth inequalities. The Dutch Republic is the odd one out in this story. Early modern political economy in the Northern Low Countries, after the Dutch Revolt, exhibited a long-term trend towards progressive taxation until the beginning of the nineteenth century. Particularly after the 1670s the growing importance of excises on luxury commodities and the real-estate tax made the Dutch fiscal system relatively progressive – and uniquely so in the early modern European context (De Vries and Van Der Woude 1997, Van Zanden and Prak 2006, Fritschy, 't Hart et al. 2012). This is at least one factor that helps to account for the slower growth of inequality extraction in the Northern Low Countries compared to Italy and the Southern Low Countries.

Yet, even regardless of the skewed distribution of the tax burden, the fiscal/financial system itself sorted distributional effects of its own. In Northern Italy, a clear ‘identification of interests between creditors and ruling elites’ came about in the early modern period (Pezzolo, 279-280). As both the regressive tax burden increased and a growing public debt

was consolidated, this implied the strengthening of a steady income flow from predominantly lower and middling social strata (taxable subjects) to those who were higher up in the income and wealth distributions (public creditors). The fiscal state then, tended to carry with it a tendency to strengthen the existing income gaps in society. Despite its relatively progressive tax base, this mechanism probably even helped to drive up inequality extraction in the Dutch Republic. During the eighteenth century about two-thirds of public expenditure went to interest payments (Fritschy, 't Hart et al. 2012).

The rise of the fiscal state also exerted indirect influence on the distribution of income. Since the early modern state did not concentrate on the provision of public goods, the re-distributive effect of public expenditure was very limited compared to modern states. After all, the largest expense categories, in Italy and the Low Countries alike, were warfare and building. Building did not have an obviously demonstrable distributive effect (Janssens 2012), while it has been argued that expenditure on warfare probably had clear inegalitarian distributive consequences (Alfani 2015), favouring military contractors and other members of the social and economic elite. Only a tiny fraction of expenditure went to social provisions such as poor relief, and this probably did not increase significantly during the early modern period (Prak 1999). Nevertheless, the Dutch Republic is again the exception, as De Vries and Van Der Woude have argued that poor relief in the Dutch Republic was distributed less restrictively and more generously than in other European countries (De Vries and Van Der Woude 1997). More recently, Van Bavel and Rijpma (2015) have estimated that during the early modern period, social spending in Holland might have been twice as large (as a share of per-capita GDP) that of Central-Northern Italy, and was also markedly higher than in the eastern part of what is currently Belgium. As a consequence, re-distribution through early welfare might have contributed in a non-negligible way to lower inequality extraction in the Northern Low Countries (Holland) compared to the other regions studied here.

Since early modern economic policy often involved significant concerted financial investments in defensive and military purposes, it is not unlikely that in this area the rise of the fiscal state stimulated concentration in commerce and industry – although specific research on the effect of mercantilist economic policy on the income distribution is largely lacking at this point. The case of the Dutch East India Company, where the huge profits from Asian trade were concentrated in the hands of a relatively small elite of stockholders and directors who were at the same time closely linked to political participation in the Republic as a whole, demonstrates the potential for income concentration offered by mercantilist states (Adams 2005).

Even though all four regions studied here had late-medieval economic and political institutions that were strongly rooted in ‘urban republicanism’, only the Dutch Republic would carry this tradition into the early modern period. Since in the Dutch Republic taxes

would become less regressive over time, even though the total fiscal burden was much larger, the effect of the rise of the fiscal state was probably less extractive than in the Southern Low Countries, the Sabaudian State and the Florentine State. Yet the impact on inequality could be even more indirect. Compared to the Southern Low Countries and Central-Northern Italy, the early modern Dutch Republic was characterised by stronger representative (parliamentary) institutions, and a stronger institutional constraint on the executive (Acemoglu, Johnson et al. 2005, Van Zanden, Buringh et al. 2012). Apart from the direct effects on the extractive nature of the fiscal state, secure property rights are believed to have a depressing effect on wage inequality. In a context of strong and secure property rights, the supply of skilled labour tends to be higher, which drives down the skill premium and wage inequality (Chor 2005, Van Zanden 2009).

Yet, perhaps causality also ran the other way. The beneficial Dutch institutional situation came about in a regional context where a rich and powerful feudal nobility had been conspicuously absent since the middle ages (Van Bavel 2004). Moreover, the rise of parliaments came about in the context of a society with high, and relatively widespread human capital. It is thus not inconceivable that the representative institutions emerging in the early modern Northern Low Countries were at least in part the result of a comparatively egalitarian social structure. If confirmed, this would mean that at least the timing of Galor & Moav's (2004) hypothesis on the beneficial impact of inequality on pre-industrial economic growth should be seriously reconsidered.

## **5. Discussion and conclusion**

The evidence produced in this article suggests that during the early modern period it was easier for inequality to rise than to fall. None of the explanations considered above are able to explain the growth of inequality in all four regions at once, which indicates that different mechanisms produced similar results. Economic growth, global trade, and urbanization seem the most likely explanations in the case of the Northern Low Countries, probably complemented by the emergence of a growing and segmented labour market in the eighteenth century. In the cases of Piedmont and the Southern Low Countries, we have singled out the rise of the fiscal state and its distributive consequences as crucial factors, which perhaps to a lesser degree also held for the case of Tuscany. The proletarianization of labour probably had the most direct influence on economic inequality in the Southern Low Countries, and maybe in Tuscany as well, although in a different way.

The rise of inequality was not the same everywhere: seemingly it was stronger in Italy than in the Low Countries. Even more clearly, the experience of inequality was not the same everywhere. The analysis of the extraction ratio has shown how extraction grew much

more, and was probably much higher by the end of the early modern period, in Tuscany and in Piedmont than in the Low Countries. Particularly the relatively low extraction ratio in the Northern Low Countries points to a different experience than the rising inequality with stagnant or declining living standards in the Southern Low Countries and Central-Northern Italy. We argued that a relatively progressive fiscal system and higher social expenditure might have contributed to contain inequality extraction in the Northern Low Countries.

What are the implications for the Little Divergence debate introduced at the beginning of this article? There was no clear trade-off between economic growth and inequality in early modern Europe. In an era where political, institutional, social, demographic and economic factors more often worked to raise inequality rather than to depress it, inequality tended to grow in most places, regardless of economic growth. Moreover, the case of the Northern Low Countries suggests that less extractive institutions and economic growth could very well go hand in hand, while in Central-Northern Italy the rise of the fiscal-military state in the absence (or almost) of economic growth produced significantly stronger increases in inequality extraction ratios. By itself, then, the Little Divergence had little effect on intra-regional levels of economic inequality.

Interest in economic inequality does not only exist for normative reasons and because of the presumed efficiency trade-off with economic growth. Many believe an interest in economic inequality to have functional purposes as well (Salverda, Nolan et al. 2009). Though the causes for it and experiences of it were diverse, inequality throughout North-Western and Mediterranean Europe grew, and it is important to consider what the consequences were for the area's economic growth potential. The economic literature on the causal link between inequality and growth is inconclusive, and points out both detrimental effects associated with inequality, and beneficial ones. In the historical literature on the origins of modern economic growth and also that of the industrial revolution, opposing views on the effect of inequality abound.

Traditionally it has often been assumed that finding sufficient fixed capital for large-scale industrial production was difficult during the early industrial revolution, and therefore a higher degree of concentration was required to allow for such investments. Although for decades now economic historians have argued that the capital requirements of industrialization were small, and that capital was relatively easy to find (Pollard 1964; Allen 2009; Vries 2014), this theory has recently been revived by Galor and Moav (2004). They argue that in a time when physical capital rather than human capital was crucial for the production process, inequality was good for growth.

Contrary to this position, most recent historical explanations assume that lower levels of inequality were beneficial for early industrialization and development. Unlike Galor and Moav, several economic historians now argue that human capital was already crucial in early



modern economic development – and since the total stock of human capital is potentially much larger when spread in a relatively egalitarian fashion, this strengthens the idea that inequality was bad for pre-industrial economic development (Baten and Van Zanden 2008; Buringh and Van Zanden 2009; De Pleijt and Van Zanden 2013). Others have argued that industrialization was sparked by Britain’s uniquely high wages, which suggests the presence of a large middle class (Allen 2011). ‘New institutional’ economists have similarly argued for the importance of a strong middle class in explaining industrialization, for instance because of their role in the emergence of favourable institutions in Western European cities and states (Acemoglu, Johnson et al. 2005). Finally, the concept of a ‘consumer revolution’ presupposes a middle class capable of producing a level of domestic demand sufficiently sizeable to spark economic growth (McKendrick 1982, Fairchild 1993, Berg 2004, De Vries 2008).

So what role then did inequality play in early modern European economic development? The evidence presented here suggests that developments in inequality, which were similar throughout Europe, cannot of themselves account for the Little Divergence. Inequality rose even in the success stories of early modern Europe - that's what we call the ‘Little Convergence’ in inequality. At the same time, in these successful areas inequality extraction rose, too – but not as much as in those places that went downhill or simply lagged behind after the Renaissance. As a consequence, the Little Convergence in inequality cloaks a Little Divergence in inequality extraction ratios between northern and southern Europe. Although it would probably be too far-fetched to argue that the pattern of inequality extraction across Europe was a causative factor of the Little Divergence in economic development, in time surely the more extractive societies emerging in the South might have encouraged the divergence to take root and to deepen, for example by constraining human capital accumulation and hindering the development of a large middle class, or simply by reducing trust in local and ‘national’ institutions. More comparative research is clearly needed to explore properly all these aspects, but our findings seem sufficient to put such a complex and debated phenomenon as the Little Divergence into a new perspective.

## **APPENDIX A: Construction of regional estimates**

In this Appendix we detail how we aggregated the local data on inequality in order to obtain measures representative of larger spatial units, using a method introduced by Guido Alfani (2015) in his case study of Piedmont. The methodology builds regional distributions starting from simplified distributions, modelled on information about deciles of income/wealth (the tenth decile - the rich - is modelled in greater detail, using information about the top 5% and top 1% wealthy, as it is usually found empirically that what happens to the top rich disproportionately influences the overall trend in terms of Gini values). The steps and assumptions undertaken to arrive at the aggregate estimates for all four regions studied in this paper are detailed below.

### Italy

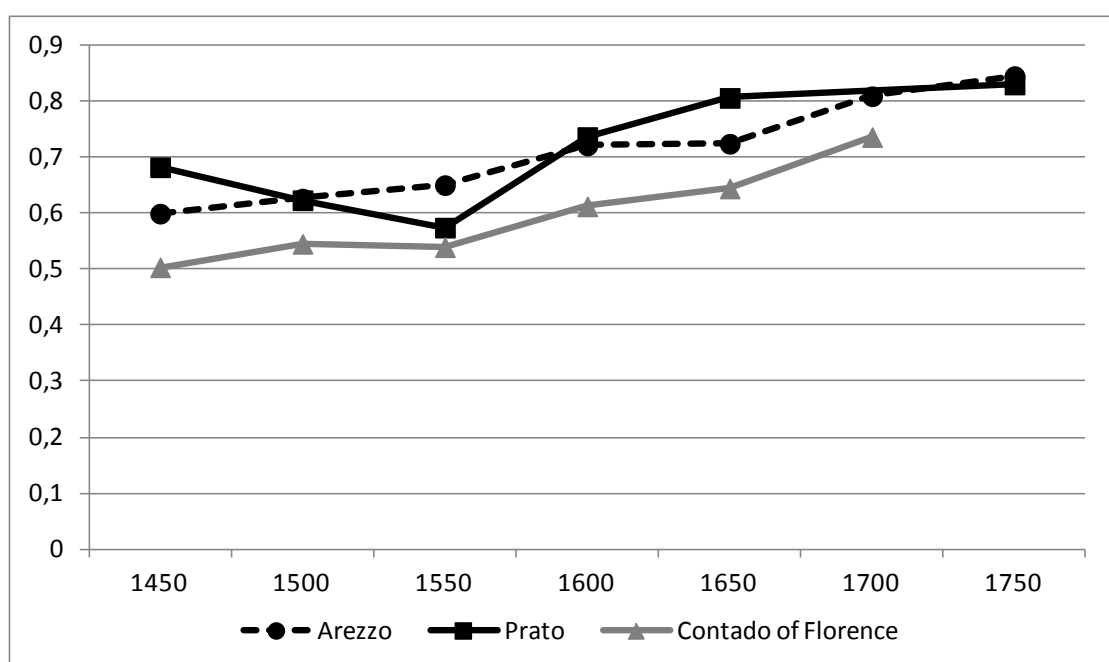
The time series of economic inequality in Piedmont/Sabaudian State has been introduced in an earlier study (Alfani 2015). Here we will only briefly recapitulate how it has been obtained. The series is based on the weighted combination of two separate distributions, each representative of different environments/contexts: urban and rural. To weigh the urban and rural distributions, a procedure similar to that described by Milanovic (2005) for calculating ‘weighted international inequality’ was used: on the grounds of estimates of the urbanization rates in Medieval and Early Modern Piedmont, the urban distribution was given a 25% weight until 1700, and 33% thereafter. This implied, for each year, building regional distributions in which urban entries corresponded exactly to the above shares of the total. Since it was impossible to convert the values recorded in the property tax registers from one community to another, except for the Canavese area in the period 1628-49, the assumption was made that the urban to rural differential in average household wealth across Piedmont was exactly the same as that to be found in the seventeenth-century Canavese. This is a strong assumption, but one that does not hinder the ability of the regional series to correctly reflect a common trend, visible from each single local series used to produce the regional series.

In the case of Tuscany, building a regional series is easier compared to the Sabaudian State, and requires us to make fewer assumptions. The Tuscan dataset comprises 11 rural communities and 2 cities (Prato and Arezzo). Prato and all the rural communities were part of the *contado* of Florence - i.e., the part of the Florentine state first conquered by the capital city. Thanks to this, throughout the period considered by this study the fiscal sources related to each of these communities were redacted according to homogeneous criteria, and using the same unity of measurement. Unfortunately this is not the case for Arezzo, as this important city was incorporated by the Florentine State only in 1384, and consequently was part of the

so-called *distretto*, in which each city maintained a large degree of fiscal autonomy. As a result, Arezzo's fiscal sources are usually expressed in local units of measurement, which despite our efforts and additional research proved impossible to convert reliably into the unit of measurement used in the *contado*. The exception is the famous Florentine *catasto* of 1427, which covered both *contado* and *distretto*. Thanks mostly to the detailed study of the *catasto* conducted by Herlihy and Klapisch (1985), we had readily-available data allowing us to estimate, at least for one year, the relative average wealth between Arezzo, Prato and the rural part of the *contado*.

The information we used is summarized in figure A1, where the trends of our rural times series, of Prato and Arezzo are compared. No elaboration has been made at this stage (the rural time series is calculated from distributions which are the simple aggregation of the distributions of our 11 rural communities), save for clustering the data around 50-year breakpoints to ease comparison of the trends. As explained in the main text (section 2), all the sources we use for the period 1500-1750 are *decime*, however in the following we also reconstruct a regional inequality measure for 1450 (not used in the main text) based on the *catasto*. As mid-fifteenth century *catasti* only included real estate (differently from the famous 1427 one), the information they provide is entirely analogous to that coming from the *decime* (Alfani and Ammannati 2014).

Figure A1. Inequality in Arezzo, Prato and in the *contado* of Florence, 1450-1750



The first step to build our regional time series was to convert our actual distributions into fictitious distributions of 100 elements each. This procedure caused only a minimal loss of information, as can easily be seen comparing the time series for the *contado* of Florence in Figure A1 with the fictitious distribution derived from it and presented below. The second step was to build separate series representative of the rural and urban environments. The rural series was readily available, for the reasons described above, but in order to obtain the urban series we needed to find a way of making the distributions of Prato and Arezzo directly comparable. To do this, we used the information provided by the 1427 *catasto*, which allowed us to establish that on average, Arezzo households were 1.325 times as rich as those from Prato. Information about average household wealth in 1427 Tuscany is summarized in table 1.

*Table A1. Average household wealth in the Florentine State (1427)*

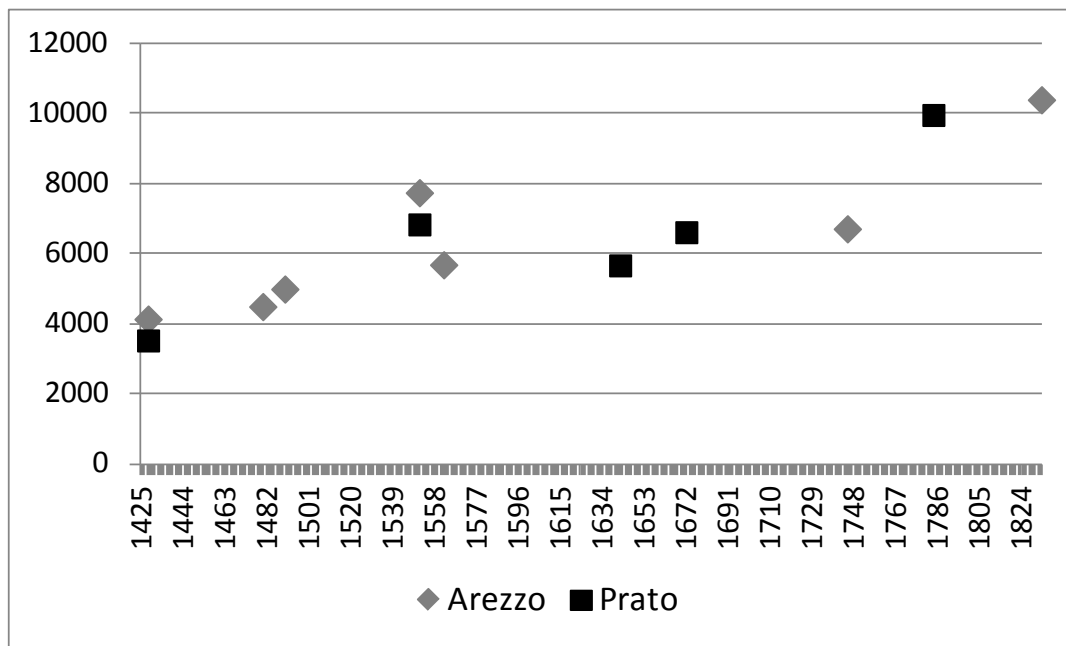
	Hearths	Average net taxable wealth per hearth
Florence	9,821	777
Arezzo	1,189	208.3
Prato	951	157.2
<i>contado</i> (excluding Prato)	25,615	52.6
Florentine State (overall)	59,770	197.3

Sources: our elaboration starting from data published by Herlihy and Klapisch (1985, 892) and by Fiumi (1968, 113).

In the absence of any other usable information, we had to assume that the relative average wealth of Arezzo and Prato remained constant over time. This is obviously a strong assumption - however not an altogether unrealistic one, given that the two cities seem to have followed largely similar paths of development over time, as suggested by a key indicator like

population size, which according to some studies (Herlihy 1978; Herlihy and Klapisch 1985) tends to be closely correlated to average household wealth, at least in relative terms. Interestingly, a similar conclusion was reached by Van Zanden (1995, 651) for the Northern Low Countries. Figure A2 charts the available information about the population of Prato and Arezzo in the period we consider. In particular, their relative size seems to have varied within a fairly tight band, with Arezzo being between 4 and 17% larger than Prato.

Figure A2. Population of Prato and Arezzo, 1393-1833



Sources: Alfani and Ammannati (2014, 8), with a few amendments and integrations

The third step was to build the overall distribution by weighting correctly the urban and rural distributions. This requires solving two separate issues: (i) estimating the average household wealth levels in urban and rural settings and (ii) defining the relative weight that the urban and rural distributions should have in the overall distribution. Regarding the first point, as will be remembered, the information concerning Prato is directly comparable to that of the rural communities as it was also part of the *contado*. The problem, then, arises due to the need to incorporate also Arezzo. The solution is fairly simple: as already explained, we devised a way to tie Arezzo to Prato thanks to data from the 1427 *catasto*. Subsequently, we compared average household wealth in our 11 rural communities to that of Prato. As all were part of the *contado*, we were able to estimate this at different points in time, and discovered that in the

period we considered the rural/urban ratio did not vary much, presenting however an interesting tendency to decline over time - rural households moved from being 29% as wealthy as urban households around 1450, to just 21% as wealthy around 1750. Figure A3 shows the exact weights we used over time.

*Figure A3. Rural/Urban average wealth ratio in the Florentine State, 1450-1750*

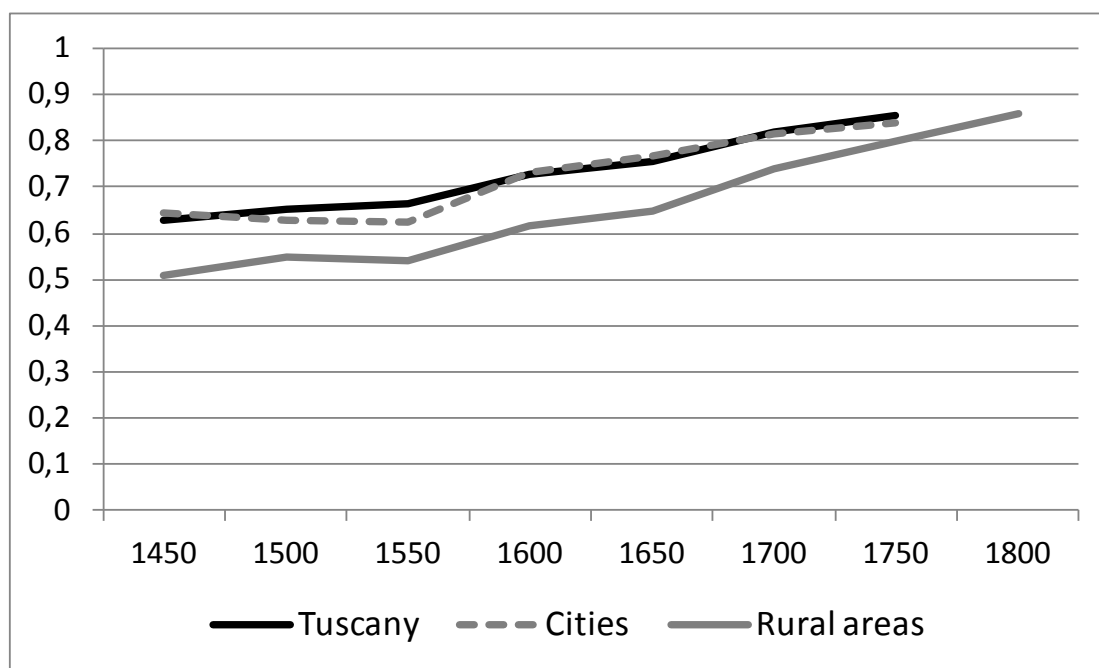


Notes: rural average household wealth has been measured on the 11 rural communities in our sample. 'Urban' average household wealth has been measured on Prato only.

Regarding the relative weight to be given to the urban and rural components in the overall distribution, we used the urbanization rates estimated by Breschi and Malanima (2002) for cities > 5,000 inhabitants: 15% in 1400, 21% in 1500, 19% in 1600, 18.5% in 1700 and 17.8% in 1800. Given the limited impact that such small changes would have in the aggregate distribution and for the sake of simplicity, we assumed a 20% urbanization rate constant over time. Consequently, in our overall distributions representative of the whole of the Florentine State we had to maintain a 4:1 urban-to-rural ratio. As we had 100-elements fictitious rural distributions, and 200-elements urban distributions (resulting from the merger of the 100-elements fictitious distributions of Prato and Arezzo), we built 1000-elements distributions representative of the Florentine State by copying in 8 times the rural distribution and once the urban distribution. The results, in term of Gini indexes, are shown in Figure A4 (in the

figure, the series related to 'rural areas' is the fictitious distribution modelled from the actual distribution for the Florentine *contado* shown in graph 1 - by comparing the two curves, it is clear that the process of reducing a larger distribution to a 100-elements one caused only a minimal loss of information, at least considering our purposes).

Figure A4. Inequality in Tuscany, 1450-1800 (Gini indexes of concentration)



The time series for Tuscany/Florentine State captures well the long-term trend which characterizes all its single components - from the urban and rural time series presented here, down to each single community-level time series as shown elsewhere (Alfani and Ammannati 2014). This is the main property that it had to show, as its purpose is simply to allow an adequate comparison of large areas. The trend, which is slowly growing or stagnating from 1450 to 1550 ca. and more clearly orientated towards growth thereafter, is discussed in detail in the main text. Here it will suffice to underline some aspects connected to the construction of the regional time series: (i) its trend follows more closely that of the rural series than that of the urban one, since the vast majority of the population lived in rural areas (which is reflected in the weights used); (ii) the level of the curve, in terms of Gini, is shifted upwards compared to the rural one due to the greater average household wealth of cities compared to rural communities. Both properties were to be expected and are entirely reasonable. These

properties also characterize the time series available for Piedmont/Sabaudian State, for the same reasons (Alfani 2015).

Compared to the reconstruction accomplished for Piedmont, there is both an advantage and a disadvantage in that of Tuscany. The advantage is that we had to make fewer assumptions - in particular, we could measure across time the rural-to-urban average household wealth ratio, instead of keeping it constant as was done for Piedmont, thus losing part of the variance. The disadvantage, is that our urban sample consists of just two cities, compared to the six used for Piedmont. However, given the above discussion, there is no reason to think that adding extra cities would have changed significantly our regional reconstruction - with one possible exception: Florence, the capital city.

The absence of Florence from our reconstruction is undoubtedly a major limitation, one that it shares with that of Piedmont, in which Turin was absent. For the Sabaudian State, it was impossible to include Turin due to the fact that when it acquired the status of capital in the sixteenth century, it also gained exemption from many tributes and the medieval *estimi* were discontinued. The same is true for Florence, as from 1315 its citizens were spared direct taxation (Alfani and Ammannati 2014, 5) and we have information about its wealth distribution only sporadically. In particular, Florence was comprised in the *catasto* of 1427, and it is possible to calculate that the average Florentine household was almost four times as wealthy as the Arezzo average household, and almost five times as wealthy as the one in Prato. The positive correlation between city size on the one side, household wealth and wealth concentration on the other side in 1427 Tuscany has already been analyzed in detail elsewhere (Herlihy 1978; Herlihy and Klapisch 1985; Alfani and Ammannati 2014). Here, it will suffice to discuss the consequences of the omission of the capital city from our reconstructions. A clear effect is that - under the reasonable hypothesis that capital cities are always wealthier than all other communities - the level of the regional series will be lower than real. In other words, our regional Ginis will be systematically distorted towards equality. If we make the assumption that (i) the relative average household wealth of capital cities, and (ii) their relative share of the urban population are constant over time, then the regional series will show exactly the same trend including or excluding the capital, the only difference being in their level.

This is, however, a strong assumption. In his study of Piedmont, Alfani discusses this point and suggests that including Turin in the reconstruction would presumably make even steeper the inequality growth characterizing, from ca. 1600, the urban series reconstructed for Piedmont and, to a lesser degree, the general aggregate series (Alfani 2015, Appendix). This is due to the fact that from the late sixteenth century, Turin was booming demographically



(differently from most other Piedmontese cities) so that we can expect its potential impact on overall urban inequality to have grown over time. The case of Florence, though, is quite different - as (i) the population grew much more slowly than in Turin and even declined a little during the seventeenth century<sup>8</sup>, and (ii) its share of the overall urban population of Tuscany, although large, was fairly constant over time (about 42% in 1500, 44% in 1600 then back to 42% in 1700. Our calculations based on the database published by Malanima 2005). Consequently, it seems reasonable to hypothesize that in the case of the Florentine State, the inclusion of the capital city would have made the slope of the aggregate curve a little steeper - similarly to Piedmont, but with a much smaller overall effect.

A more serious limitation of both reconstructions, is that they are structurally truncated: as in both Piedmont and Tuscany, the part of the poor who were entirely destitute of property does not appear in the tax records and is *de facto* invisible. The problem is somewhat limited by the fact that even tiny properties were recorded, so that by defining the poor as those having no taxable property at all, in the rare instances when we can calculate their prevalence they seem to have been no more than 8.5-9.5% of the overall population in early modern Piedmont (both in cities and villages) (Alfani 2015). However, they were much more abundant in Tuscany. In 1500 for example, thanks to exceptionally detailed sources it is possible to calculate that they were overall 30.6% of the population in the rural communities we used for the reconstruction, and 32.2% in Prato - but unfortunately, we could not obtain similar measures systematically for all the period considered, due to the unavailability of archival sources which would allow us to do so (see for details Alfani and Ammannati 2014). The implications of the absence of the bottom of the distribution have already been detailed in the papers that introduced the Piedmontese and Tuscan databases, and for reasons of synthesis we will simply refer to them for further details. Something more should be said, however, about the implications for the shape of the trends. The issue is in fact similar to the absence of the capital city: also in the case of the absence of the propertyless, (i) the result is a systematic distortion of the inequality measure towards equality, and (ii) this is a secondary concern, the possible effect on the slope of the curves being much more important. For Piedmont, Alfani argued, on the grounds of the general literature on poverty in Italy (Pullan 1978; Woolf 1988) that, as the prevalence of the poor seems to have increased during the early modern period, the tendency for inequality to increase from 1450 ca. would be even steeper (Alfani 2015). We will make the tentative hypothesis that the same is true for Tuscany.

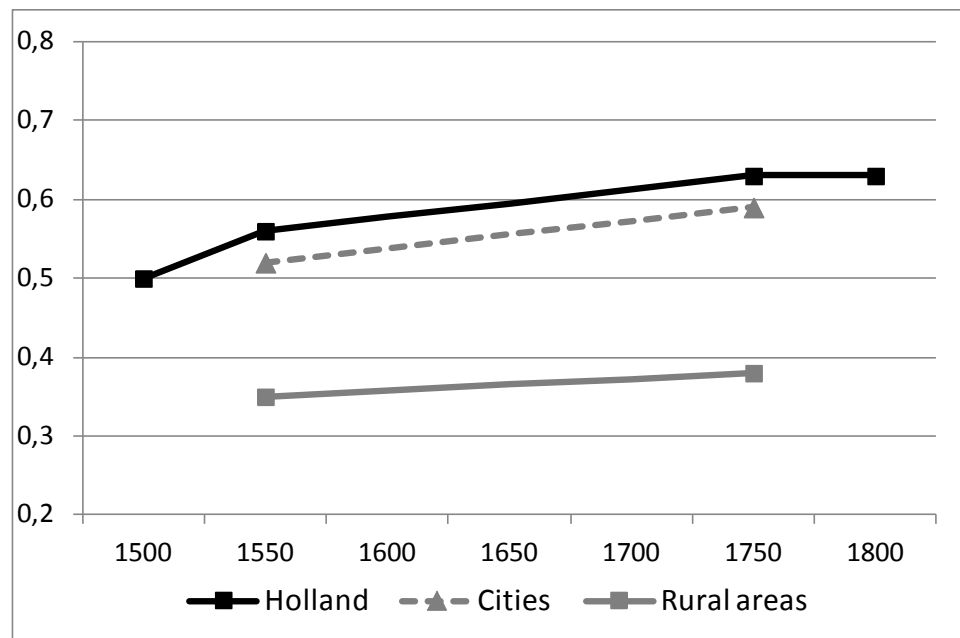
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<sup>8</sup> Florence had about 37,000 inhabitants in 1400, 50,000 in 1500, 75,000 in 1600, 72,000 in 1700 and 81,000 in 1800.

### The LowCountries

In the case of the Northern Low Countries (Dutch Republic) we rely upon the data published by Van Zanden (1995, 651-3). As we do not possess the original distributions that he used to calculate his inequality measures representative of the region of Holland, we could not in this case apply the same reconstruction method used for the other areas included in this study. Yet the results can be presented in a way that makes them perfectly comparable to the new results, particularly because the sources and the inequality measurements are largely the same as those used for the other regions. Figure A5 shows the inequality trends characterizing the Northern Low Countries. For reasons of synthesis, we refer directly to Van Zanden (1995) for a discussion of the source material used. Here it will suffice to note that for 1561 and 1732 there are inequality measures (in Gini coefficients) available for the whole region, and also for rural and urban areas separately. For 1514 and 1808 there are only aggregate measures available for the whole region. The underlying sources are very similar to the ones described in the main text (section 2) for the Southern Low Countries.

*Figure A5. Inequality in the Northern Low Countries (Holland), 1500-1800 (Gini indexes of concentration)*

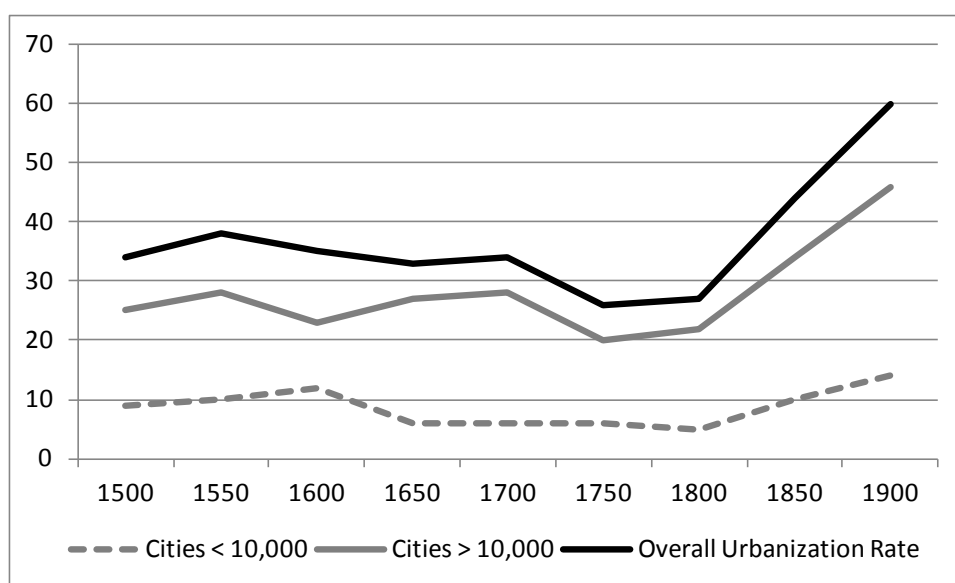


Sources: own elaboration from data published by Van Zanden (1995), 651-3

For the Southern Low Countries the data has been newly collected by the authors and others (and used here with kind permission), and is described in more detail by Ryckbosch (2014).

Because of the larger number of cities for which data was available, and given the higher degree of urbanization in the region, a more fine-grained modelling of the urban inequality distribution was deemed necessary. We settled on two partial distributions: one representative of large cities with at least 10,000 inhabitants (in our sample: Antwerp, Bruges, Kortrijk, Ghent and Mechelen), one related to small cities in-between 5,000 and 10,000 inhabitants (Aalst, Nijvel, and s' Hertogenbosch). The exact weighting of these two partial distributions was derived for each year taking into account the urbanization rates presented in figure A6 as well as the relative average housing value, according to the procedure described previously.

Figure A6. Urbanization rates in the Southern Low Countries, 1500-1800 (%).



Notes: Urbanization rates derived from Blockmans 2010, p. 541; Klep 1981, 1988; De Vries 1984; Bairoch 1988; LokStat ([www.lokstat.ugent.be](http://www.lokstat.ugent.be)).

Once again, in order not to lose between-cities variance, we used the available information on the rental values of houses in different cities to weight the fictitious distributions so that the average 'rent' calculated from each of them matched precisely that of the original distributions (a procedure identical in principle to that applied earlier to Tuscany). For cities > 10,000 inhabitants, we estimated conversion factors for each city using data for the reference years for which we had comparable information about rental value of houses in all the cities

we cover: 1650 and 1900<sup>9</sup>. For cities < 10,000 inhabitants, as information available was more fragmentary, we used estimates for Aalst 1550 and 1900 as representative of the entire group (which implies assuming the same average wealth in these cities; not an unreasonable assumption given their similar size and economic functions as provincial market towns). Linear extrapolation was used to fill in the gaps. Table A2 summarizes the weights used (expressed as proportions of the baseline, for which we took Mechelen, since we have good-quality and comparable information for all three dates: 1550, 1650 and 1900). For 1500, we assumed the same conversion factors as for 1550.

*Table A2. Urban average wealth ratios in the Southern Low Countries 1550-1900 (baseline= Mechelen).*

	1500	1550	1600	1650	1700	1750	1800
Aalst (small cities)	0.600	0.600	0.629	0.657	0.686	0.715	0.743
Kortrijk	0.894	0.894	0.894	0.894	0.901	0.907	0.913
Mechelen	1	1	1	1	1	1	1
Ghent	1.734	1.734	1.734	1.734	1.667	1.600	1.533
Bruges	1.107	1.107	1.107	1.107	1.144	1.180	1.216
Antwerp	1.929	1.929	1.929	1.929	2.198	2.468	2.737

Using these weights, we can reconstruct distributions representative of the small cities and the large cities separately, as well combine them to have a reliable distribution for all cities of the Southern Low Countries. Having obtained a time series representative of cities, we now need to assess the rural areas. Unfortunately, in the case of the Southern Low Countries (i) data available about rural areas is limited; (ii) such data as is available does not correspond to rental values of houses, and is therefore not directly comparable with that used for cities.<sup>10</sup>

<sup>9</sup> The actual year varies a little city per city. So for example, '1650' is in fact 1667 for Antwerpen, 1670 for Brugge, 1672 for Ghent, 1643 for Mechelen. Only for Kortrijk had we to look for comparable values farther back in time (1571). For '1900' instead we used data for the year 1890 for all cities.

<sup>10</sup> To this date no single comprehensive study of economic inequality in the countryside of the pre-industrial Low Countries has been undertaken. Agricultural historians have been interested mainly in issues of farm size and property structures, as a result of which there exists a large body of (very informative) publications with empirical data on landholding sizes and ownership structures (such as

The best source type for approximating rural income distributions is that which informs us on the (rental) value of land cultivated per household – which, for obvious reasons, can be assumed to approximate the income distribution rather closely. For only one pre-industrial period is this information relatively widely and reliably retrievable: the 1570s, when the Duke of Alba controversially imposed a direct tax on the value of land on the provinces of the Low Countries (Craeybeckx 1950; Maddens 1972). Registers of this tax have been preserved for a large number of villages throughout Brabant, Flanders, and Holland, and are known as the ‘*penningkohieren*’. All in all, the *penningkohieren* offer a fairly reliable way of reconstructing inequality levels in the countryside.<sup>11</sup> It is important to note that where the urban measures on rental housing values presented underestimations of inequality, the rural ones based on land value in use do not show the same degree of underestimation. In an agricultural society, the elasticity of total land value to income (since it is itself the prime source of household income) will have been much higher than the elasticity of housing values to income or consumption in towns. Hence the underestimation of inequality in the towns compared to the countryside, when working with these sources.

An analysis of 15 *penningkohieren* from for Flanders and Brabant has been undertaken – including villages in the ‘capitalist’ coastal area in the North West, the peasant-dominated sandy Inland part, the mixed agricultural region of Eastern Flanders, and the relatively undeveloped Campine area in Brabant (table A3). In total this yields a sample of 2,416 households, and can be considered to be as representative as possible for the countryside in the Southern Low Countries in general.

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percentages of leaseholds). Yet these findings are often hard to generalise, and even harder to relate to the measurement of economic inequality as has been common in economics and economic history (Curtis 2013). On the other hand economic historians of the Low Countries interested in issues of income or wealth inequality have paid attention to the countryside only in passing (there is no mention in Ryckbosch 2014 or Hannes & Vanhaute 2007. Van Zanden 1995 has a Gini coefficient for 12 villages in Holland, but does not deal with this in depth).

11 The total value of all land cultivated – both owned and leased – per household has been reconstructed for all case studies, and all households not occupying a homestead in the parish have been excluded, since these pertain to fragments of larger estates located outside of the parish boundaries.

Table A3. Economic inequality in the countryside: Flanders & Brabant, 1570-1580.

Province:	N. Villages	Households	Min. Gini	Max. Gini	Mean Gini
Brabant	4	604	0.502	0.548	0.521
West Flanders	7	1,289	0.531	0.658	0.590
East Flanders	4	523	0.516	0.754	0.639
Total	15	2,416			0.625

Sources: Municipal Archives Ghent, *Old Archives Town of Ghent*, series 28 and 28bis; E. Van Onacker 2014. Data has been gathered by Nick De Pauw, Wouter Ryckbosch, and Eline Van Onacker. The authors wish to express their gratitude to Tim Soens and Erik Thoen for their assistance in working with these sources.

As table 3A illustrates, there was a wide variety of local inequality levels across the countryside, ranging from 0.50 in the relatively uncommercialised Campine where large stretches of common land under cultivation persisted well into the early modern period, to 0.70 in the southern part of Inland Flanders, where highly commercialised smallholders coexisted with large-scale tenant farmers. Combined in a single rural distribution, representative of Flanders and Brabant at large, this results in a (relatively high) overall Gini coefficient of 0.625. In order to be able to compare this to the urban situation, one has to take the underestimation in the urban inequality data into account. Fragmentary data on the size of land holdings suggests a growing degree of rural polarisation in some parts of Flanders during the early modern period. Table A4 shows the distribution of estate sizes (i) according to a reconstruction for 1382 based on extensive confiscation records from the area of Kortrijk, (ii) the *penningkohieren* from of the 1570s for 115 parishes in East Flanders, and (iii) data from an agricultural census from 1895<sup>12</sup> for those same parishes.

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12 Published in De Belder & Vanhaute 1993.

Table A4. Distribution of size of landholdings in Eastern Flanders

	1-3 ha	3-5 ha	5-10 ha	10-20 ha	> 20 ha	N
1382	34 %	27 %	25 %	7 %	7 %	734
1570	39 %	20 %	23 %	12 %	6 %	4,974
1895	49 %	20 %	19 %	10 %	3 %	6,984

Sources: New calculations based on Sabbe 1936; Van Den Abbeele 1985; Pée 1969; De Belder & Vanhaute 1993.

Notes: All landholdings smaller than 1 ha (or one *bonnier* in the case of 1382) have been excluded from the analysis for reasons of comparability, since some of the source publications used here deal differently with landholdings smaller than 1 ha. The 1382 figures pertain to the region of Courtrai only, and solely relate to ownership, whereas the other two dates relate to all forms of use (both lease and ownership). Leasehold was still relatively rare during this period (Thoen and Soens 2008).

The number of smallholding exploitations increased markedly between the fourteenth and the nineteenth centuries. This occurred mostly at the expense of exploitations of middling size (3-10 ha), but also at the expense of the very large landholdings (>20 ha). This tendency towards growing inequality is also evident when we look at land *ownership*, rather than land value or size *in use*. Here again we have the confiscation records from 1382 at our disposal, the *penningkohieren* from the 1570s, and a cadastral source from the 1860s (table A5).

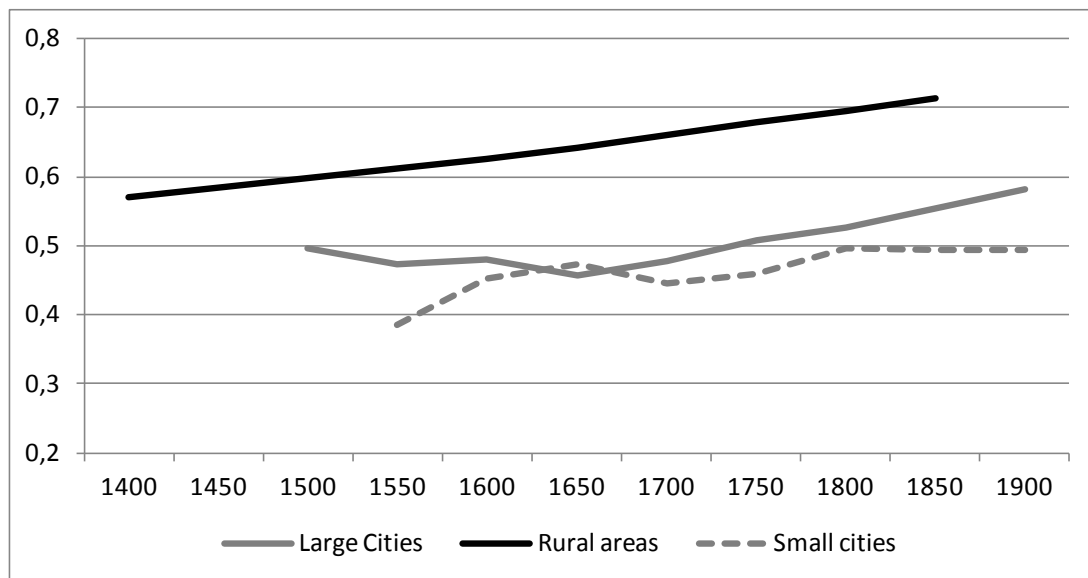
Table A5. Gini coefficients of land ownership (in value) in Flanders.

	1383	1570	1860
Region of Kortrijk	0.630	0.692	
Desteldonk		0.589	0.772
Aspelare		0.659	0.652

This table, preliminary and inconclusive as it is, suggests that inequality in land ownership rose in Inland Flanders (the region of Kortrijk) from the 14<sup>th</sup> to the 16<sup>th</sup> century. In fact, if we use the changes in inequality of land ownership between 1383 and 1570, and between 1570

and 1860 as a rough indicator, we can guesstimate total rural levels of inequality (figure A7): 0.569 for the last quarter of the 14<sup>th</sup> century, 0.625 for the last quarter of the 16<sup>th</sup> century, and 0.713 for the middle of the 19<sup>th</sup> century. Linear interpolation is used to provide estimates at other dates.

*Figure A7. Estimates of inequality in large cities, small cities, and the countryside in the Southern Low Countries.*



In a very tentative way, these glimpses throughout the late medieval and early modern period suggest that the rise in inequality experienced by rural communities was probably similar to that in the smaller cities of the region. The lack of detailed information on rural inequality between 1570 and 1800, and the inability to combine the rural distribution with the urban one (because of differences in the sources), prevents us from constructing a reliable regional distribution for the Southern Low Countries. Therefore, for most of the analyses involving the Southern Low Countries presented in this paper we will use only the urban distributions. Nevertheless, in some cases we will use a highly-hypothetical estimated regional series, which assumes (i) that the trends over time in the countryside are correctly represented by the aforementioned guesstimates, and (ii) that in year 1550, the difference in the Gini levels between the urban and regional series is the same as in the case of the Northern Low Countries, that is 0.04. Under these conditions, and taking into account the urbanization rates discussed above, we can weigh the Ginis for urban and rural areas to produce a regional estimate. This is, however, a much rougher method compared to that used for Piedmont,



Tuscany and the urban component of the Southern Low Countries, and it does not actually involve producing representative distributions. Consequently, it constrains the kind of analysis that can be performed (for example it does not allow calculating significant percentiles). Overall, the regional estimate for the Southern Low Countries has to be considered a highly hypothetical guestimate. Figure A8 presents the result, comparing it with the time series representative of all cities in the Southern Low Countries.

*Figure A8. Inequality in the Southern Low Countries, 1550-1850*



## APPENDIX B: Source references

The sources used for the regional reconstruction of inequality in Tuscany and in the Southern Low Countries are detailed below. The regional reconstruction for Piedmont is introduced in Alfani (2015) and the sources used are detailed there. The regional reconstruction for the Northern Low Countries is based on information published by Van Zanden (1995).

### Tuscany

#### *Arezzo State Archives*

##### *Libri della lira di città:*

- 17 (1501, Arezzo)
- 33 (1602, Arezzo)
- 43 (1650, Arezzo)
- 52 (1710, Arezzo)
- 55 (1751, Arezzo)
- 60 (1792, Arezzo)

##### *Catasto:*

- 307 (1427, Santa Maria Impruneta)
- 842 (1458, Gambassi)
- 846 (1458, Santa Maria Impruneta)
- 847 (1458, San Martino alla Palma)
- 852 (1458, Castelfiorentino, Monterappoli)
- 856 (1458, Poggibonsi)
- 859 (1458, Antella)
- 871 (1458, Cerreto Guidi)
- 883 (1458, Borgo San Lorenzo)
- 886 (1458, San Godenzo)
- 947 (1469, Castel San Giovanni)

##### *Decima repubblicana:*

- 272 (1504, Castelfiorentino)
- 274 (1504, Gambassi)
- 277 (1504, Poggibonsi)
- 281 (1504, Santa Maria Impruneta)
- 283 (1504, San Martino alla Palma)
- 289 (1504, Monterappoli)
- 299 (1504, Castel San Giovanni)
- 307 (1504, Antella)
- 325 (1504, Cerreto Guidi)
- 373 (1504, Borgo San Lorenzo)
- 377 (1504, San Godenzo)

##### *Decima granducale:*

- 5165 (1536, Santa Maria Impruneta)
- 5166 (1570, Santa Maria Impruneta)
- 5167 (1621, Santa Maria Impruneta)
- 5168 (1715, Santa Maria Impruneta)
- 5169 (1536, San Martino alla Palma)
- 5170 (1570, San Martino alla Palma)
- 5171 (1621, San Martino alla Palma)
- 5172 (1715, San Martino alla Palma)
- 5181 (1536, Castelfiorentino, Monterappoli)
- 5182 (1570, Castelfiorentino, Monterappoli)
- 5183 (1621, Castelfiorentino, Monterappoli)
- 5184 (1715, Castelfiorentino, Monterappoli)
- 5185 (1536, Gambassi)
- 5186 (1570, Gambassi)
- 5187 (1621, Gambassi)
- 5188 (1715, Gambassi)
- 5194 (1570, Poggibonsi)

- 5195 (1622, Poggibonsi)
- 5196 (1715, Poggibonsi)
- 5197 (1536, Antella)
- 5198 (1570, Antella)
- 5199 (1621, Antella)
- 5200 (1715, Antella)
- 5209 (1536, Castel San Giovanni)
- 5210 (1570, Castel San Giovanni)
- 5211 (1621, Castel San Giovanni)
- 5212 (1715, Castel San Giovanni)
- 5253 (1536, Cerreto Guidi)
- 5254 (1570, Cerreto Guidi)
- 5255 (1621, Cerreto Guidi)
- 5256 (1715, Cerreto Guidi)
- 5289 ( 1536, Borgo San Lorenzo)
- 5290 ( 1570, Borgo San Lorenzo)
- 5291 ( 1621, Borgo San Lorenzo)
- 5292 ( 1715, Borgo San Lorenzo)
- 5309 (1536, San Godenzo)
- 5310 (1570, San Godenzo)
- 5311 (1621, San Godenzo)
- 5312 (1715, San Godenzo)
- 5361 (1546, Prato)
- 5364 (1621, Prato)
- 5365 (1671, Prato)
- 5366 (1763, Prato)
- 5641 (1536, Poggibonsi)
- 5741 (1779, Castelfiorentino)
- 5742 (1779, Castelfiorentino)
- 5772 (1779, San Godenzo)
- 5773 (1779, San Godenzo)
- 5796 (1779, Poggibonsi)
- 5797 (1779, Poggibonsi)

### Southern Low Countries

#### *State Archives Brussels*

##### *Rekenkamer*

- 45699 (1382, Brugge)

#### *State Archives Antwerp*

##### *Oud Gemeentearchief Wuustwezel*

- Sectie 2 (1581, Wuustwezel). Courtesy of E. Van Onacker.

##### *Oud Gemeentearchief Gierle*

- 344 (1554, Gierle). Courtesy of E. Van Onacker.

#### *State Archives Kortrijk*

##### *Oud Stadsarchief Kortrijk*

- 784 (1686, Kortrijk)
- 342 (1761, Kortrijk)

#### *Municipal Archives Gent*

##### *Oud Archief Stad Gent*

- reeks 20, 15 (1492, Gent). Courtesy of M. Boone.
- reeks 153, 2 (1672, Gent)
- reeks 28, 1 (1572, Aalst)
- reeks 28, 34 (1572, Kortrijk; 1571, Kortrijk Buiten)
- reeks 28, 14 (1572, Desteldonk)
- reeks 28, 58 (1571, Pittem)
- reeks 28, 11 (1572, Deerlijk)
- reeks 28, 4 (1571, Avelgem)
- reeks 28, 78 (1571, Wannegem)
- reeks 28, 47 (1571, Moen)
- reeks 28, 15 (1572, Egem)

- reeks 28, 19 (1571, Erpe; 1571, Mere)
- reeks 28, 3 (1572, Aspelare)
- reeks 28bis, 2 (1556, Uxem)

### *Municipal Archives Antwerp*

#### *Gemeentearchief Antwerpen*

- 4833 (1584, Antwerp). Courtesy of Heidi Deneweth, Joeri Lersberghe, Marlene Gonzalez, based on Gil Degueldre, *Kadastrale ligger Antwerpen (1584-1585)*, 2013.

### *Municipal Archives Aalst*

#### *Oud Archief Stad Aalst*

- 265 (1602, Aalst)
- 264 (1672, Aalst)
- 269 (1705, Aalst)
- 273 (1742, Aalst)
- 277 (1791, Aalst)

### *Municipal Archives Mechelen*

#### *Oud Archief*

- serie K, 1 (1544, Mechelen). Courtesy of Maarten van Dijck / Jord Hanus.
- serie K, 3 (1579, Mechelen). Courtesy of Maarten van Dijck / Jord Hanus.
- serie K, 4 (1599, Mechelen). Courtesy of Maarten van Dijck / Jord Hanus.
- serie K, 6 (1643, Mechelen). Courtesy of Maarten van Dijck / Jord Hanus.
- serie K, n° 14 (1746, Mechelen). Courtesy of Maarten van Dijck / Jord Hanus.

### *Municipal Archives Nivelles*

- 268 (1525, Nivelles)
- 1382 (1667, Nivelles)
- 1194 (1680, Nivelles)
- 2224 (1800, Nivelles)

### *Municipal Archives Hoogstraten*

#### *Kerkarchief Minderhoute*

- H9 and H10 (1569, Minderhoute). Courtesy of E. Van Onacker.

### *Archives of the Abbey of Tongerlo*

- Sectie II, n° 896 (1659, Tongerlo). Courtesy of E. Van Onacker.

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