Economic crises and industrialisation in Southern Europe: the Valencian cloth-making town of Alcoi (1600 and 1800)*

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The most recent analyses of the causes of the industrial revolution and the process that led to it—what is now known as "pre-modern economic growth"—tend to focus on a specific factor on which to construct a generalised explanation. Therefore, we can find accounts focused on the beneficial role of the guilds,[1] the European Marriage Pattern (EMP),[2] or the wage differences between countries to explain Britain's precocity.[3] These generalisations give rise to two problems. On the one hand, the studies lose complexity when they focus on a small number of variables. On the other hand, there is a strong tendency to concentrate on large territorial aggregates and, particularly, on the North Atlantic economies, relegating regional or case studies to a secondary level.

However, the process that consolidated industrial capitalism was a widespread phenomenon. In more local contexts, we can observe the existence of "small industrial revolutions" in places very far from England or Belgium. In

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1. Hickson and Thompson (1991); Pfister (1998 and 2008); Epstein (1998, 2004 and 2008); Desmet and Parente (2014); Prak, Crowston, De Munck, Kissane, Minns, Schalk and Wallis (2020). Against this positive view of the role of the guilds see Ogilvie (2004, 2007, 2008 and 2019). A more nuanced view in Caracausi (2017).

2. De Moor and van Zanden (2010); Carmichael, De Pleijt, van Zanden and De Moor (2016); Foreman-Peck (2011); Foreman-Peck and Zhou (2018). See the critiques of Dennison and Ogilvie (2014 and 2016).

3. Allen (2009[a], 2009[b] and 2011). See also the controversy about this explanation in Humphries (2013); Allen (2015); Hatcher and Stephenson (2018); Humphries and Schneider (2019). The Catalan case has been recently analysed from this perspective in Martínez-Galarraga and Prat (2016).

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southern Europe, the Catalan case is one of the most significant and best studied.[4] However, the industrial districts in Catalonia were not alone in this process within the Spanish context. Another one was precisely the case analysed in this study: Alcoi. At the beginning of the nineteenth century, a successful industrialisation process took place in this Valencian town, which gave rise to the consolidation of an industrial district which still exists today.

The industrialisation process in the town of Alcoi is particularly relevant for several reasons. First, the precocity with which the mechanisation of the cloth-making industry began and the shift towards the factory system make it a unique case in Valencia and Spain.[5] The second reason is its size. Throughout the eighteenth century, it became Spain's leading producer of wool fabrics, manufacturing as much as 12,000 cloths per year at the beginning of the nineteenth century. Finally, as it developed autonomously, without the interference of external urban capital, it constitutes an excellent observatory for analysing the formation and consolidation of industrial capitalism. Until the booms in Sabadell and Terrassa began at the end of the 18th century, the case of Alcoi is probably the most representative of an endless number of small or medium-sized towns that, from the middle of the 17th century, took up the baton from the great urban centres of cloth production that had dominated until the end of the sixteenth century.[6] The growth of the 1700s converted this town, which had barely 1,300 inhabitants in the mid fifteenth century, into a fully urban municipality, with 13,654 inhabitants at the beginning of the nineteenth century. This figure doubled over the following fifty years, reaching 25,315 in 1857.[7]

Feudal Europe had characteristic short- and long-term economic dynamics.[8] This aspect will not be discussed in this paper as its general features are sufficiently well known. For the purpose of this study, it is sufficient to remember that these dynamics were governed, in the long term, by the volume of food produced and the technical and social conditions in which they were produced and distributed and, in the short term, by the year-on-year oscillations of the amount of food available. Therefore, agricultural activities determined social life as a whole and, particularly, the patterns of the production and distribution of food, energy, and the objects and services necessary for their reproduction.

4. Vilar (1962); Thomson (1992); Torras (2007); Marfany (2010 and 2012). The strong contrast between the evolution of Catalan manufacturers and the process that led to deindustrialization in the Crown of Castile may be seen in Nieto (2000 and 2015).

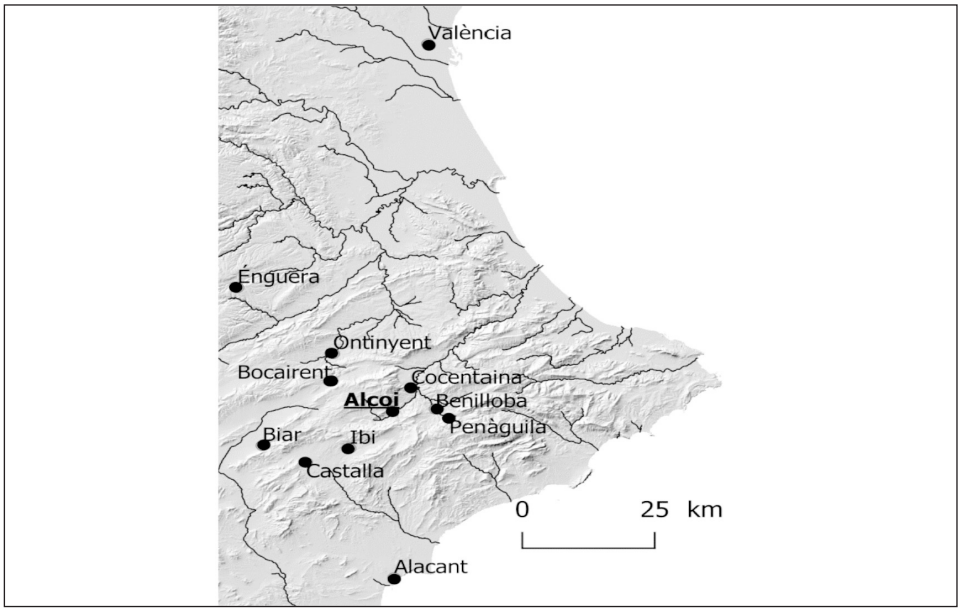
5. The first attempts at mechanisation date back to 1793 (Torró Gil, 1994[a]).

6. A phenomenon that can be observed both in the Crown of Castile and in the ancient territories of the Crown of Aragon. We can cite as examples studied the cases of Béjar (Ros, 1999), Astudillo (Hernández García, 2003), and Pradoluengo (Martín, 2007) in Castile, and Sabadell, Terrassa (Benaul, 1991), Manresa (Ferrer, 2011) and Igualada (Torras, 2007 and Marfany 2012) in Catalonia.

7. Torró Gil (2000), p. 30; Pérez Planelles (1807), p. 2; García Gómez (2016), p. 57.

8. Kriedte (1984).

FIGURE 1 ▪ *Places mentioned in the text*



These characteristics should be remembered when addressing the crises—and the ensuing transformations—of a non-agricultural activity, namely the cloth-making industry, in this case in a local context. In fact, the cloth-making industry of the town of Alcoi, whose origins date back to the fourteenth century, suffered two major crises, both at the turn of centuries; between the sixteenth and seventeenth centuries, and between the eighteenth and nineteenth, respectively.[9] They both occurred at the end of century-long growth periods and shared a series of common features. The overcoming of these crises contributed, in the long term in the case of the former and immediately in the case of the latter, to the formation of industrial capitalism in the town.[10] A comparison of the two growth patterns and their contradictions provide new perspectives on the reasons that explain the origins of capitalist industry, focusing on aspects relating to the type of goods produced, organisation of the production processes, labour productivity, and the evolution of costs, wages and profits.

9. For the Spanish context, Sebastián (2013); Llopis (2013); for the Valencian case, Ardit (1993), pp. 94-126.

10. On the role of the crisis of the end of the eighteenth century and beginning of the nineteenth century in the subsequent industrialisation, or deindustrialisation processes, see Kriedte, Medick, and Schlumbohm (1981), pp. 135-160; Berg (2005), pp. 84-99.

There is abundant documentation on the clothiers guild available from the year 1561 and on the weavers guild from 1590. From this information we can construct indicators regarding production. The data referring to the annual revenue earned from the *Dret de la Bolla* (Bolla Tax) has been particularly useful.[11] I have used the reconstructed series to elaborate the graphs of figures 2 and 3, and table 1, which show the evolution of the amounts of wool fabrics produced in the town between 1569 and 1832.[12] The graphs compare the evolution of the estimate of *varas castellanas* (= 0.836 metres) produced with the amount of pieces declared in the different sources—practically all of them have been drawn from the guild—. The differences reside in the fact that neither all of the cloths were the same length nor did the length of each cloth remain constant over time. This information does not tell us anything about the qualities produced. Neither does it reflect the quantity of cloth, given that it refers to linear measurements and not surface area or weight – the cloths were differentiated according to their width, amount of wool that they contained and the quality of the wool. The information regarding quality, which is absolutely crucial, will be analysed in the following sections. With these elements and thanks to the information available about prices, costs and productivity, I will attempt to gain a greater insight into the problems experienced in the manufacturing activities that the beginning of the mechanisation process and the consolidation of industrial capitalism after the Peninsula War resolved in a way which favoured a specific social group.

This paper, based on some of the issues discussed in my unpublished doctoral thesis, does not attempt to go beyond the comparative analysis of the two crises under study focusing on the previously mentioned topics. Although I will use the cloth production series and the guild documentation, the work is neither the reconstruction of a production index nor, even less, a study on the guild's framework and its evolution. These issues, as well as many others referred to, are always rasied to address the main problem or, in any case, to provide a context for the reader without any intention of go-

11. A '*bolla*' is a lead stamp which was attached to the cloths to guarantee their authenticity; in Catalonia, it was a royal tax. Torras (1984), pp. 113-27.

12. The information has been obtained from two different sources. First, from the books of records and accounts of the Gremi de Peraires; Arxiu de la Textil Alcoyana, S.A. (hereafter ATA), Libro 1.º, *Capítulos de la fábrica del año 1561, y concejos hasta 1590*; 2.º, *Concejos de la fábrica desde 1590 en adelante*; 6.º, *Cuentas de la fábrica desde 1732 hasta 1741, inclusive*; 8.º, *Acuerdos de la Fábrica desde 1716 hasta 1728, inclusive*; 9.º bis, *Acuerdos de la Real Fábrica de Paños de la villa de Alcoy, desde 1784 a 1804*; and, 10.º, *Juntas de la Real Fábrica de Paños de la villa de Alcoy desde 1805 hasta 1826*. The gap between 1742 and 1778 —due to a lack of documentation between 1742 and 1752, and not having references to the leases of this right in the ninth book of the guild archive— has been covered with the information obtained from the Arxiu Municipal d'Alcoi (hereafter AMA), XV.I.508 a 526, *Protocols de Tomàs Gisbert*, 1748-1772. The methodology for the reconstruction of the series and the detail of the sources in Torró Gil (2000), pp. 252-60 and 775-94.

ing deeper into it. Thus, the article is organised as follows. After a brief description of the origins of the cloth-making activity, I will then describe the features of the growth of the sixteenth century, the tensions and problems that it generated and how they arose and were resolved in the subsequent crisis. Then I will analyse the recovery experienced in the seventeenth century and particularly throughout the eighteenth century. I will finish with concluding remarks.

From the origins to the 16th-century growth

Although the earliest cloth-making organisation in the area is attributed to Alcoi—it appears that the *paraires* (clothiers) of Alcoi formed an *ofici* (craft) in 1316[13]—cloth-making was an industry that was spreading throughout the whole of Europe and the Region of Valencia was no exception.[14] Although high-quality production tended to be located in the city of Valencia, the activity spread across the whole country,[15] with a particular concentration in the interior mountain ranges where a low-quality cloth-making industry developed (figure 1). Judging from the known examples, some towns enjoyed fiscal benefits for trading in cloth and/or for sheep farming,[16] which indicates that the feudal powers—beginning with the monarchy itself—were not unaware of the advances being made in this activity. The agricultural structure, characterised by an early tendency to concentrate land ownership,[17] supplied surplus labour to be used in manufacturing. The concentration of the industry in these interior mountainous areas is explained by their relative specialisation in sheep farming,[18] which enabled easy and cheap access to the principal raw material. Finally, the availability of energy in the form of waterways used to power the fulling mills seems to have been a crucial determinant in the location of the industry.

This technical innovation, which expanded considerably from the first half of the thirteenth century,[19] constituted a fundamental differential element as

13. Torró Gil (1996), pp. XVIII-XXI.
14. This has been demonstrated in classic studies such as Carus-Wilson (1987) or R. S. Lopez (1976), pp. 130-138. For Spain as a whole, Gual (1967). On the origins of the so-called 'new draperies' during this period, Munro (1997). A more recent study on the Italian case can be found in Epstein (2000), pp. 106-146.
15. Cardon (1999), pp. 12-24; Navarro (2015).
16. We know that certain privileges were granted by the king to border towns—Alcoi, Cocentaina, Ontinyent or Penàguila—at the end of the thirteenth century and beginning of the fourteenth century. In the case of Alcoi they were renewed repeatedly. Bañó (1984), pp. 99-103; Piles (1969), pp. 31-32.
17. Torró Abad (1992), pp. 188-241.
18. Llibrer (2007), pp. 119-128; Torró Gil (2000), pp. 145-151.
19. Malanima (1988); Muendel (2005).

the places where it was possible to implement it enjoyed huge advantages. The number of *molins drapers* (fulling mills) grew exponentially throughout the fifteenth century and the first decades of the sixteenth century. In the case of Alcoi, the number of fulling mills grew from one at the beginning of the 1470s to four in 1477 and nine in 1516. Together, the main towns of the area—Alcoi, Biar, Cocentaina, Ontinyent, Penàguila and Bocairent—had a total of forty operating at full capacity in the 1520s.[20]

This strong growth, together with the demographic growth—which was much higher than the average for the Valencian Country during the 1400s[21]—is the principal indicator of the expansion of cloth production. Initially, it produced low-quality fabrics, generically known as *draps de la terra* (country cloths), but around the middle of the fifteenth century, a clear trend towards standardisation can be observed.[22] This, in turn, implied a higher degree of specialisation, with a subsequent division of labour and the capitalisation of the production process controlled by a minority of affluent craftsmen.[23] The early formation of guilds and the intense growth experienced until the final decade of the 1500s clearly indicates the dynamism of the sector.

It was precisely within this framework when the first guild ordinances were adopted. Those of Alcoi probably date back to 1497,[24] while in what seems to be the principal cloth-making centre of the area until the end of the sixteenth century, namely Ontinyent, clothiers formed a guild in 1518, followed by weavers in 1519.[25] This is highly important, given that the growth of the fifteenth and sixteenth centuries was not only quantitative. In contrast to the types of cloths produced in the fourteenth century—*frises*, *bèrries*, *burells*—, from the fifteenth century, new fabrics emerged that indicated standardisation—depending on the number of threads in the warp[26]—and a clear upward trend in terms of quality.

20. Mira (2000); Llibrer (2010).
21. Furió (1995), pp. 184-194; Torró Gil (2000), pp. 36-37 and 59-60.
22. Llibrer (2007), p. 155. Maybe a decisive point of inflection were the protectionist measures against Castilian cloths taken in 1467. Piles (1969), pp. 92-93. On the Castilian cloth-making industry of the late middle ages, an essential study is Iradiel (1974).
23. This would occur at the dawn of the second of the three phases described by Torras (1981), as the evolution of the pre-industrial cloth-making sector from production for personal consumption to production for the market in order to obtain profits.
24. Sanchis (1986), p. 38.
25. Terol (2002), p. 60. There is a significant chronological coincidence with the regulatory enforcement deployed by the Crown of Castile through the passing in 1500 of the *Ordenanzas Generales* (General Ordinances); see Asenjo (1991), or González Arce (2008).
26. This standardisation was manifested in the names of the fabrics. They began to be distinguished basically by the number of threads in the warp. For example, a *catorzè* in Catalan or a *catorceno* in Spanish was a cloth with 14 hundreds of threads, and so on; see Cardon (1999), pp. 353-369. I will respect the names of the cloths in Catalan before 1707 and subsequently use the Spanish terms. The system for classifying the cloths by the hundreds was used in Gloucestershire to establish the rate for weaving in the eighteenth century; Mann (1971), pp. 311-312.

This is a factor and a symptom of relevant changes. The quality of the fabric determined first the quantity and class of the raw materials that were used and, second, the complexity of the work process.[27] In other words, qualitatively superior fabrics required a higher initial outlay in the purchasing of raw materials, a higher level of technical skill in the different processes—with instruments and, above all, more expensive facilities—and a greater quantity of labour. Furthermore, the increase in prices which this generated implied a limit to the potential consumers and, therefore, the geographic area of suitable destination markets widened. This was also achieved through close interaction with these markets.[28]

This can explain the intense and growing capitalisation, with the subsequent emergence of economies of scale.[29] The production of fabrics, either aimed at satisfying the demand of distant markets—including Castile and Northern Africa during the 1500s[30]—or meeting the high qualities, required a high outlay on the purchase of raw materials and a very long capital turnover rate between the initial investment and the receipt of payment with the final sale. For this reason, some trades had an advantageous position within the work process and could end up controlling it entirely. They were usually craftsmen who performed certain finishing tasks—such as dyers[31]—who were in contact with the supply sources of the main raw material, or both at the same time—which seems to have been the case of the clothiers within the cloth-making industry—.[32] In particular, knowing the final price that the product would fetch on the market allowed them to calculate the difference between this price and the costs, and, therefore, they knew the profit that could be derived from financing and managing the whole process.[33] Thus, a small elite group emerged from the masters of these trades who undertook capital accumulation processes more frequently and intensely than the rest. Either through the putting-out system or directly employing wage-earning workers, these individuals directed the production and marketing of the majority of the goods that were produced.

27. In general terms, the technical production process corresponds to that described for England by Muldrew (2012), pp. 501-502; for the broadcloths or 'woollens' see also, Chorley (1997), and Kerridge (1985).

28. The information about changes in consumer preferences is highly valuable given that it is one of the keys that enables flexible adaptation to these changes, Sabel and Zeitlin (1985). On the application of this concept to the analysis of pre-industrial manufacturing, see Berg (1991 and 1993).

29. Thomson (1982), pp. 119-124.

30. On the commercial relations between the Region of Valencia and Northern Africa—mainly through Oran—see Franch (2008).

31. This circumstance is not infrequent, as shown in the case of Calw, in Württemberg; Ogilvie (1997). For Alcoi, there is documentation available until the mid-sixteenth century; Torró Gil (2000), p. 353.

32. Torras (1981).

33. Nell (1984), pp. 116-117.

From the institutional point of view there was a growing oligarchisation of the guild system. Within the guilds there was constant internal conflict between the wealthy masters—many of whom would progressively expand the ranks of the merchants—and the less advantaged ones who wished to maintain their independence as producers. This conflict was pushed outwards and caused clashes between the different guilds that shared jurisdiction over the same processes. Underlying all of these disputes was the need for the incipient capital owners to control the work. However, on the other side of the same coin, the guilds and their ordinances were indispensable as guarantors of the quality of outputs that had to be offered as homogeneous in the destination markets.[34] The technology used and the subsequent predominance of a production system carried out in the workers' homes would explain these demands.

This process culminated institutionally with the passing of the *Capítols y Ordinacions de l'Offiçi de Perayres de la vila de Alcoy* in 1561.[35] These "ordinances"—the first for which there is information regarding content—regulated the manufacture of cloths in the town and legally sanctioned the influence of a part of the clothiers over the production process.[36] In practice, the text compared the clothiers to those who would later be called *fabricantes* (manufacturers),[37] given that in its introduction it explicitly says that the regulation was made to benefit those who traded in cloth. Hence the extreme interest to control the work of all of the craftsmen who participated in the process—with express mention of: *perayres* (clothiers), *tintorers* (dyers), *cardadors* and *pentinadors* (combers), *filaneres* (spinning women), *teixidors* (weavers), *pilaters* (fullers), and *abaixadors* (shearers)—the great majority of whom were employed by others and worked from their own homes, although within the town. The authority of the clothiers over the other craftsmen was not limited to establishing the procedures of the rest of the crafts but also regulated the internal administration. Therefore, weavers, shearers and fullers—who should have chosen their own *veedors* (overseers)—were dependent *de iure* and *de facto* on the authority of the clothiers. Although the ordinances allowed people who were not members of guilds to manufacture, as long as they were not outsiders of the town, in practice the guild elite incorporated other actors

34. In my opinion, both the revisionism of the role of the guilds in the European pre-industrial economy and the criticism of this vision give rise to an error of perspective; see, for example, Hickson and Thompson, (1991); Pfister (2008), or the debate of Ogilvie (2008) and Epstein (2008). An alternative point of view can be found in Lis and Soly (2008).

35. *Foundations and Ordinances of the Clothiers' Craft of the town of Alcoy*, ATA, 1.º, ff. 1r-19r; transcribed and published in Torró Gil (1996), pp. 5-31.

36. Torró Gil (1994[b]), 191-201 y 206-207; Torró Gil (1996), pp. XXXVI-XL.

37. Or in the same period in Segovia, *mercaderes facedores de paños* (merchant cloth-makers); García Sanz (1987).

such as merchants, notaries or *ciutadans honrats*,[38] many of whom had obtained their new status by beginning as guild masters.

The contradictions of growth and crisis in the seventeenth century

The first available data from the Dret de Bolla come from 1569, which makes it impossible to know the trend of production before that date. However, the data relating to tax revenue from the *General del Tall del Drap*, which taxed the consumption of fabrics and not their production,[39] leads us to believe that growth in the sixteenth century was considerable. Between 1502-1504 and 1583-1586 the value of the fabrics sold in the area increased by an extraordinary 987.41 per cent at an annual rate of 2.9 per cent. Expressed by the value deducted from tax revenue for a type of wool product—shrouds, according to prices provided by Hamilton—,[40] in the three-year period 1514-1516 this would have represented 32,304 units, and 124,800 in the period 1598-1600—acquired at 1601-1603 prices—. That is, a growth of 286.32 per cent, at a cumulative annual rate of 1.6 per cent.

Assuming that the evolution of cloth production in Alcoi shared similar features to those that can be deduced from the *Tall del Drap* in the area, figure 2 and table 1 clearly show that production peaked in the mid 1570s. The maximum level was reached in 1576 with an estimated 86,400 *varas* (standard measurement of length), a production of around 2,400 cloths – 2,402 were declared in 1569—and that figure was not surpassed until 1731—. If we calculate the average *varas* produced in 1569, 1574, 1575 and 1576—the first four data sets available—and compare it with the following four, 1577-1580, production dropped from 82,206 *varas*—an average of around 2,283 cloths per year—to 59,040 (1,640 cloths/year); a reduction of 28.2 per cent. This situation prevailed throughout the decade of the 1580s, with only a brief recovery between 1594 and 1598 before falling again on the eve of the expulsion of the Moriscos (1609), and hit its lowest point after this event and the series reached its absolute minimum in 1614.[41] Although a slight recovery can be observed in the 1620s,

38. This was a legal status defined as "citizens living off rents" by Casey (1979), p. 45.

39. This tax could be translated as "Cloth Length Duty" and their informative value is limited, although it may be assumed that the majority of consumption in the area was supplied by products manufactured within that same area. The figures have been calculated by the author based on the conversion of the value of the tax revenue at the appraised value; Castillo (1993), p. 106.

40. Hamilton (1934), pp. 319-379.

41. The average value for the ten-year period 1611-1620 was obtained thanks to the estimated 36,746 *varas* of 1614, which represents a little over 1,330 cloths due to the progressive reduction in their length from 1590. However, the figure is ratified by the amount of looms in operation: 40 in the mid-1590s, 24 in 1603, 31 in 1611, but only 21 in 1612 and 20 in 1618. The subsequent recovery in the 1620s is also ratified by the number of looms, which oscillates dur-

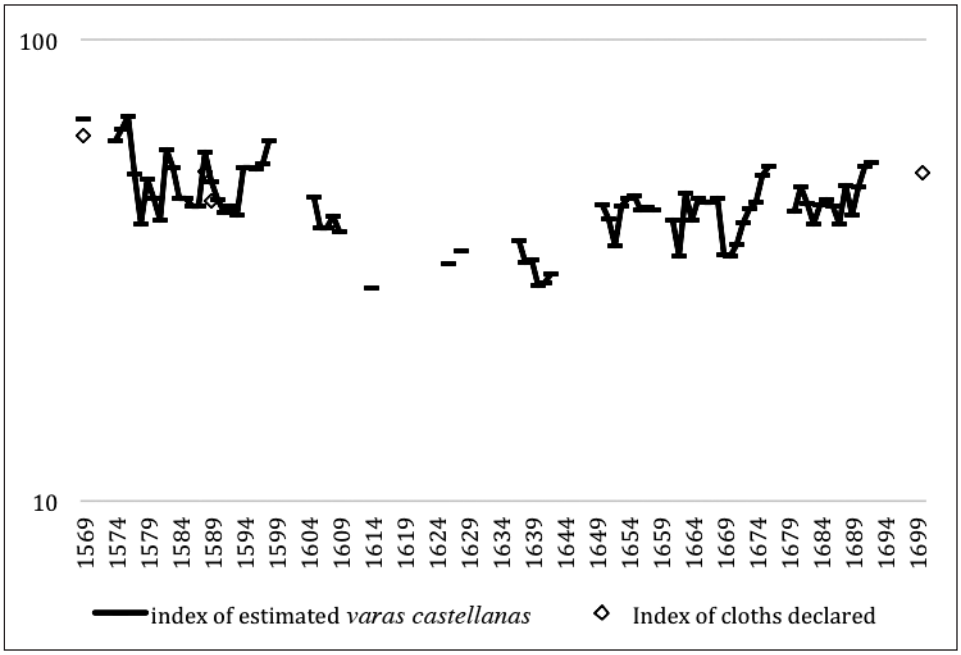
TABLE 1 ▪ *Average estimated decennial production in* varas castellanas

Decennials	Varas	Index	Cumulative annual growth (%)
1561-1570	85,392	72.14	
1571-1580	68,590.2	57.94	-2.167 %
1581-1590	60,911.2	51.46	-1.180 %
1591-1600	63,315	53.49	+0.388 %
1601-1610	51,592.3	43.58	-2.027 %
1611-1620	36,746.6	31.04	-3.336 %
1621-1630	42,809.8	36.16	+1.539 %
1631-1640	41,875.9	35.38	-0.220 %
1641-1650	44,234.6	37.37	+0.549%
1651-1660	53,915.8	45.55	+1.999 %
1661-1670	51,828.0	43.78	-0.394 %
1671-1680	56,152.1	47.44	+0.804 %
1681-1690	56,149.8	47.44	-0.001 %
1691-1700	68,090.6	57.52	+1.947 %
1701-1710			
1711-1720	47,706.7	40.30	-1.763 %
1721-1730	59,625.6	50.37	+2.255 %
1741-1750	118,373.0	**100.00**	+1.018 %
1751-1760	160,952.7	135.97	+3.120 %
1761-1770	214,694.7	181.37	+2.923 %
1771-1780	232,427.5	196.35	+0.797 %
1781-1790	321,237.9	271.38	+3.289 %
1791-1800	435,047.4	367.52	+3.079 %
1800-1810	576,010.5	486.61	+2.846 %
1811-1820	510,241.1	431.04	-1.205 %
1821-1830	635,086.6	536.51	+2.213 %

Source: Dret de Bolla, see n. 12, Torró Gil (2000), p. 266.

ing the period 1622-1632 between a minimum of 24 and a maximum of 27, with the only exception being the 20 looms of 1626. Until 1715, the main source of information on the looms in operation is the records of the *Gremi de Teixidors* (Weavers' Guild). Their only source of income was from the so-called *pesolades*: an annual payment for each *parat* loom, in operation throughout the whole year. ATA, 3.º, *Libro del Gremio de Texedores*, ff. 86v, 87v, 89v, 90v, 91r, 91v, 92v, 93v, 94v, 96r, 96v, 97r, 97v, 97v, 98r and 98v.

FIGURE 2 ▪ *Estimate of cloth production in Alcoi, 1569-1700 (100=1741-1750).*



Source: Dret de Bolla, see n. 12; Torró Gil, Ll. (2000), pp. 252-60 and 775-94.

there is no clear sign of a reactivation of the sector until the 1650s. Therefore, the key dates coincide with the agricultural crisis which began in 1570 and which, in this area, lasted until c. 1584, the plague of 1600, and the expulsion of the Moriscos.[42] However, although it seems obvious that these events had clear effects on production, in reality, it was the underlying contradictions in the century-long growth that explain the characteristics of the crisis and the orientation of the subsequent changes in the production and trade of cloths of Alcoi.

The fall in the quantity of fabrics produced was accompanied by a correlative decrease in their quality. This phenomenon can be clearly observed by comparing the types of cloth sold by the notary and guild master clothier Ginés Aiz to Joan Serrano, a *botiguer* (retailer) from Castalla, between 1605 and 1606, with the sales consigned in the protocols of three notaries of Alcoi between 1615 and 1619 (table 2).[43] The higher quality cloths (*setzens* and *vintidosens*) sold by Aiz before the expulsion of the Moriscos accounted for 38 per

42. Casey (1979), pp. 54-6 and 64-7; Ardit (1987); Torró Gil (1994b); Torró Gil (2000), pp. 189-190.

43. Although these are very small samples—barely 1.64% for the first one, and probably 6.4% for the second—, this impression is reinforced by the information from the guild records.

cent of total cloths and 46 per cent of their value. These percentages fell in the sales recorded between 1615 and 1619, to 17 and 34 per cent respectively. The simplest of the standardised qualities—*catorzens* cloths—grew strongly from 45 per cent in quantity and value to 68 per cent and 60 per cent, respectively, and other cheap varieties also emerged such as *flassades* (blankets), which had not been previously manufactured.

TABLE 2 ▪ *Types of cloths sold; 1605-1606 and 1615-1619*

Ginés Aiz cloth sales at Joan Serrano's shop (Castalla)
1605-1606

Types	Number (*alnes*)	%	Value (*sous*)	%
Vint-i-dosè/na	275.81	31.22	6,145	40.15
Setzè/na	60.25	6.82	879.15	5.74
Catorzè/na	398.00	45.06	6,906.33	45.13
Baieta (baize)	96.75	10.95	1,038	6.78
Taffeta (taffeta)	52.5	5.94	335	2.19
Flassada (blanket)	–		–	
Estamenya (serge)	–		–	
Llenç (linen)	–		–	
TOTAL	883.31		15,303.48	

Source: AMA, II.8.3, BC-204, 203: *Comptes particulars del notari Ginés Aiz*, ff. 6 r i v, 10 r.

Cloth sales at notarial protocols
1615-1619

Types	Number (cloths)	%	Value (*sous*)	%
Vint-i-dosè/na	7	8.13	7,690	21.89
Setzè/na	8	9.30	4,367	12.43
Catorzè/na	59	67.81	21,241.16	60.48
Baieta (baize)	3	3.48	794.7	2.26
Tafetà (taffeta)	–	–	–	–
Flassada (blanket)	7	8.13	840	2.39
Estamenya (serge)	1	1.16	120	0.34
Llenç (linen)	1	1.16	63.25	0.18
TOTAL	86		35,116.11	

Source: AMA, XV.I.210 a 212: *Protocols de Nofre Cantó*; 243 a 246: *Protocols i rebedors de Pasqual Pérez*; i 277 a 281: *Protocols de Miquel Valls*.

This process went on for at least the first half of the seventeenth century and was accompanied by the emergence of new fabrics that can be likened to the new draperies.[44] Information is available regarding the production of the so-called *raxetes*, also *raxes* or *razetes*, from 1631.[45] These were fabrics of a much lower quality as, despite their greater length—of between 25 and 83 per cent longer—, the wages paid for weaving them were much lower; it seems that they were not fulled, and the prices were much lower than the standardised cloths—60 per cent lower than a *catorzè* at around 1640.

We can place the beginning of the manufacture of linens or fabrics mixing wool and linen or the production of flannels within this same context—the latter had been manufactured before 1609—. These fabrics were called *exutes* (dry), that is, not fulled. The almost certain disappearance of the worsteds should also be considered within this process of the progressive reduction in quality in order to adapt to new market demands.

This adaptation, that would go on to have decisive consequences in the long term, was lengthy and not exempt from conflicts. Although we do not have enough information for the sixteenth century, regarding the evolution of the wages of construction workers and the comparison of data for Alcoi with that for Valencia,[46] also including textile wages, we can observe a marked stability in the nominal wages in the first two thirds of the century and a recovery until the 1520s, with another subsequent stabilisation. This translated into an accelerated drop in real wages, which was not contained until the period when the Moriscos were expelled. We are only able to understand this disparate evolution if we start from the hypothesis of divergence or even a clash in the evolution of wages and family income.[47] The fall in real wages would be compensated for by an increase in families' working hours and, when the crisis hit and this was no longer possible, workers began to exert upward pressure on nominal wages. The conflict between weavers, who became independent in 1590, and clothiers—described in detail elsewhere[48]—convincingly demonstrates this.

44. Torró Gil (2000), pp. 391-392.

45. The name is probably Italian. In fact, during the seventeenth and eighteenth centuries, Prato specialised in low quality cloth-making and mixing fibres, in the style of the new draperies. In the mid eighteenth century, the main types of cloth produced—a third of the total—were the *rascette*, Maitte (2001), pp. 40-48. It is also plausible that this was similar to the "cloth rashes" produced in the west of England and exported by the East India Company at the end of the seventeenth century; Mann (1971), p. 23.

46. Torró Gil (2000), pp. 289-297; Hamilton (1934), pp. 393-402.

47. On the pre-industrial wage and its types, see Sonenscher (1983). The paramount need to not confuse wages (particularly daily wages) with workers' incomes is the basis of the excellent critical compilation of Hatcher and Stephenson (2018).

48. Torró Gil (2004), pp. 170-174.

Wage pressure was coupled with an increase in the cost of the raw materials.[49] The price of an *arroba* (standard measurement of weight) of Segovian wool increased from 1.4 grammes of silver in 1518 to almost 3.6 in 1590. It remained at levels of close to three grammes, with some brief fluctuations, before increasing again to an average of above four grammes between 1642 and 1655. The maximum price reached in 1655—5.01 grammes—was not reached again until 1802. If we add the global fall in demand to these factors and its orientation towards cheaper types of fabric—given the greater elasticity of demand for manufactured goods as opposed to that for increasingly more expensive food—we have the full picture.

Judging from the example of the weavers, the responses of wage-earning workers was to erect institutional barriers and force an increase in wages. Between 1590 and 1628, the rate for weaving a *ram* of *vintidosè* increased from 5.15 grammes of silver to 6.33, that of a *setzè* from 3.28 to 5.18, and that of a *catorzè* from 2.81 to 4.03; [50] the increases were, respectively, of 23, 57, and 43 per cent. The workload—number of pieces produced—would have contracted in this period by at least one third. Furthermore, the weavers and some other dependent craftsmen could have benefited from the expulsion of the Moriscos in 1609, buying, at very good prices, land that was being sold by small owners who were repopulating the nearby towns that had become empty.[51]

The differences in the prices of cloths which I have been able to calculate between 1605-1606 and 1638-1647 from the sales recorded by the Aiz family,[52] indicate an increase of around five or six per cent on average, while the price of wool increased by 4.56 per cent in the same period. This implies that the variations in the prices of cloths seemed to depend on the evolution of the price of wool, which is obvious, as the result would be a fall in the profit margin. These margins were still very high in 1605—close to 70 per cent on average[53]—thus compensating selling patterns which implied sales on credit and, therefore, a high capital turnover time.[54]

49. The wool prices have been drawn from Phillips and Phillips (1997), pp. 309-319. For the references to prices and wages for the case of Alcoi and the calculations—conversions of nominal prices in grammes of silver—and methodology, see Torró Gil (2000), pp. 809-837.

50. A *ram* is the equivalent of 3.5 *alnes*. An *alna* would, in turn, be the equivalent of 1.2857142 *varas castellanas*. These quantities are equivalent in wheat to 0.47, 0.57 and 0.9 almuts (= 4.1875 litres) in 1590, and to 0.88, 1.13 and 1.58 in 1628, respectively. Local prices have been used (Torró Gil, 2017, pp. 175-172) in calculating the average for the five years around the date.

51. Torró Gil (1994[b]), 134-139. On the expulsion of the Moriscos and its consequences, Casey (1979); Ardit, (2018).

52. AMA, II.8.3, BC-204, 203: *Comptes particulars...*, ff. 6 r i v, 10 r and 62r to 84r. Except where otherwise indicated, from this point, references to qualities, prices, profits, etc. are drawn from this same source.

53. Torró Gil (2000), p. 371.

54. Thanks to the accounts of the Aiz family, we know, for example, that on 18 November 1605, Ginés sent Joan Serrano from Castalla a brown *vintidosè* which he had previously

The guild oligarchy that controlled textile production was threatened on three fronts. On the one hand, there was a contraction in demand, which was also shifting towards lower quality cloths. On the other hand, there was a double increase in costs: that of wages, which grew more than sale prices, and that caused by the increase in the price of raw materials. Its options were, therefore, to respond to the changes in demand, reduce costs and, particularly, reduce the turnover time of the capital invested. We have seen how demand adapted to the new, more affordable fabrics. This also contributed to the reduction in costs, given that the new types of fabric had a considerably lower production time, required cheaper raw materials as they were of a lower quality, and incurred lower fixed capital costs, as they made less use of fulling mills and other installations.

However, this was a double-edged sword, as it also gave rise to a reduction in entry barriers. It became easier to raise the capital necessary to start up a cloth-making enterprise. And the guild oligarchy contributed to this in two more ways. First, the guild used an enormous amount of money—resulting in a large debt—to construct a *tirador dels draps*.[55] The fact that the guild made this investment socialised these costs that, otherwise, would have had to be borne by these proto-capitalists. In the long term, however, the highly expensive construction work—beginning in 1590 and which was still unfinished in 1622, with an accumulated cost up to that moment of more than 30,000 grammes of silver—was to become a precious piece of heritage for all of the master clothiers. Furthermore, this oligarchy began a process of withdrawing the direct control of first production and later trade. This step backwards gave rise to the consolidation of a new group of masters who were most likely to have been financed initially by the former group.

After a few dark years, in the guild documentation throughout the 1640s and 1650s, the Alcoi cloth-making industry seemed to revive after 1660. Although there are no prosopographical studies that enable us to trace individual trajectories, at the beginning of the 1680s there is evidence of clear internal confrontations in the clothiers guild, which reinforced its monopoly over

bought from Pere Macià—in this case, the relationship between Aiz and Macià could be likened to a type of *Kaufsystem*—. The cloth had been purchased from Macià for 700.44 grammes of silver and was sold out by Serrano to Aiz at a value of 1,089.92 grammes in August 1606, as stipulated in the initial contract. The profit of 53 per cent was made nine months later. This time period increased considerably when the clothier managed the process from the beginning. Ginés noted that on 1 October 1604, *me posí a fer llana* ("I started making wool") and that on the 13 December of the same year, *se acabà un catorsé blanch* (a fourteenth 'hundreds' white was completed"); in other words, probably the simplest of the standardised cloths required a production time of around 75 days.

55. It was a specific construction with a tiled outdoor space and a porch where tenter frames were installed to dry and resize the cloth after the fulling process. Thanks to this facility the cloths were protected against dirt and could be viewed to see whether their characteristics met those stipulated by the guild ordinances. Torró Gil, (2000), pp. 388-389.

the control of production and sanctioned the entrance of newcomers to institutional positions of responsibility.[56] The old guild oligarchy of the end of the sixteenth century disappeared and was replaced by a new one formed by new members who made up the bulk of the large manufacturers, which quickly became successful after the passing of the ordinances of 1723 and the concession made by the Bourbons of the title of *Real Fábrica* (Royal Factory) to the clothiers guild at the beginning of the 1730s.

Proto-industrialisation and its limits

The most visible consequence of the crisis was a change in the spatial distribution of the manufacturing sector in the area. The map of the cloth-making industry was altered, as was the hierarchy of the different producing towns. Ontinyent became a second-tier centre, far surpassed by Bocairent and, particularly, Alcoi.[57] In towns such as Cocentaina, one of the main centres at the beginning of the sixteenth century, the activity ended up being little more than residual until it was included in the dispersed work area of the Alcoi manufacturers, when it developed a kind of autonomous activity at the end of the eighteenth century. Growth during the eighteenth century gave rise to a proto-industrial area which became an industrial district focused on textiles, and which still exists today.

After its reconversion and a moderate growth which accelerated in the final decades of the seventeenth century, the cloth-making industry still needed to recover from the devastating effects of the War of Succession. Initially, the new Bourbon regime eliminated the institutions of the Kingdom of Valencia and implemented a taxation system, the *Equivalente,* which implied a huge increase in the tax burden.[58] In the medium term, the incorporation of the region into the Crown of Castile generated new conditions for the Valencian economy. Although the impositions of the winning powers in the Treaty of Utrecht were particularly negative in terms of tariffs, they opened the doors to the Castile market after the removal of customs between the two kingdoms.[59] On the other hand, the Equivalente ended up as a fixed amount distributed locally, which eventually gave rise to an enormous reduction in its real value. Furthermore, except in the cities of Valencia and Alicante, the amount collected was proportional to private wealth, which represented a better distribution of the tax burden.

56. Torró Gil , (2000), pp. 394-98.
57. Hernández Marco (1987).
58. García Trobat (1999).
59. Torras (1998).

The loss of local autonomy, which was imposed through the *Nueva Planta* decrees,[60] together with the tendency in the reign of Carlos II to transfer competences over manufacturing activities to the Crown,[61] generated substantial profits for the guild elite. On the one hand, the first commissions for royal army uniforms date back to 1717 and,[62] on the other, the Absolutist State became omnipresent through the figure of the *Corregidor* (Chief Magistrate), who was the delegate of the *Real Junta de Comercio y Moneda* (Royal Council of Trade and Money) from 1747 until 1797. The actions of the monarchy, which replaced local councils as the highest authority, favoured the clothiers-manufacturers who, in contrast to what had happened in the sixteenth century, were excluded from the oligarchy holding local power which openly showed hostility towards their interests.[63] Therefore, the Clothiers Guild, which had approved new ordinances in 1723,[64] obtained a series of privileges from the monarchy in 1731 – clearly greater than those granted to their Valencian competitors[65] – in the form of tax exemptions and the title of *Real Fábrica de Paños*.[66]

The new ordinances regulated the production of cloths up to the *treintenos*, clearly indicating an increase in quality that would be a constant feature for the whole of the century. Towards the end of the century, the range of qualities extended to so-called superfine cloths, such as the *cuarentenos*. This constant innovation, resulting from close contact with the market and thus guaranteed knowledge of changes in consumer preferences, was deliberately supported by the guild, with a special focus on improvements and novelties in the dyeing and colouring processes. The growth of the eighteenth century resumed the same pattern as that of the sixteenth century, only with greater intensity: more distant markets, including the American market at the end of the century and a much more intense role of state demand;[67] higher quality[68] and diversity, and a much larger output. Capitalisation was more intense and the concentration much higher: already in 1744 an estimate of the *caudales y útiles* ('wealth and incomes') of the manufacturers revealed a strong

60. Giménez (1990).
61. Anes (1975), pp. 235-37.
62. Torró Gil (2000), pp. 911-913.
63. Romeo (1986).
64. Torró Gil (1996), pp. 57-72.
65. Hernández Marco (1976).
66. The title of *Real Fábrica* (Royal Factory) was usually granted to establishments promoted and financed by the monarchy itself, as in the case of Guadalajara or of individual manufacturers in Catalonia; González-Enciso (1980); Torras (1987) and (2007), pp. 127-158. The nobility, meanwhile, also practised this policy of exemptions in its own states, such as the cases of Béjar and Enguera; Ros (1999); Hernández Marco (1986).
67. Torró Gil (2001).
68. Changes in consumer preferences for textile products have been examined for the Catalan case by Torra (1997 and 2003).

inequality, given that of the 259 masters, 102—39.38 per cent—had no capital, while another 22—8.49 per cent—had an estimated capital of the equivalent of 1,002,540 grammes of silver, representing 56.5 per cent of the total.[69]

Overall growth from the end of the seventeenth century until the eve of the Peninsular War was almost 650 per cent. This growth—see table 1 and figure 3—was characterised by three strong increments: between 1726 and 1741—122.86 per cent or 5.5 per cent per year; between 1746 and 1763—136.87 per cent or 5.2 per cent per year; and between 1775 and 1809—176.32 per cent or an annual increase of 3.03 per cent—, followed by three brief recessions: 1742-1746, 1765-1769, and 1810-1815. This evolution, which placed Alcoi as the leading cloth-making centre at the beginning of the nineteenth century, gave rise to the spread of the industry across the neighbouring rural area from, probably, the 1730s. In 1743, the *Subdelegado* (Deputy) of the *Real Fábrica* in Alcoi informed that:

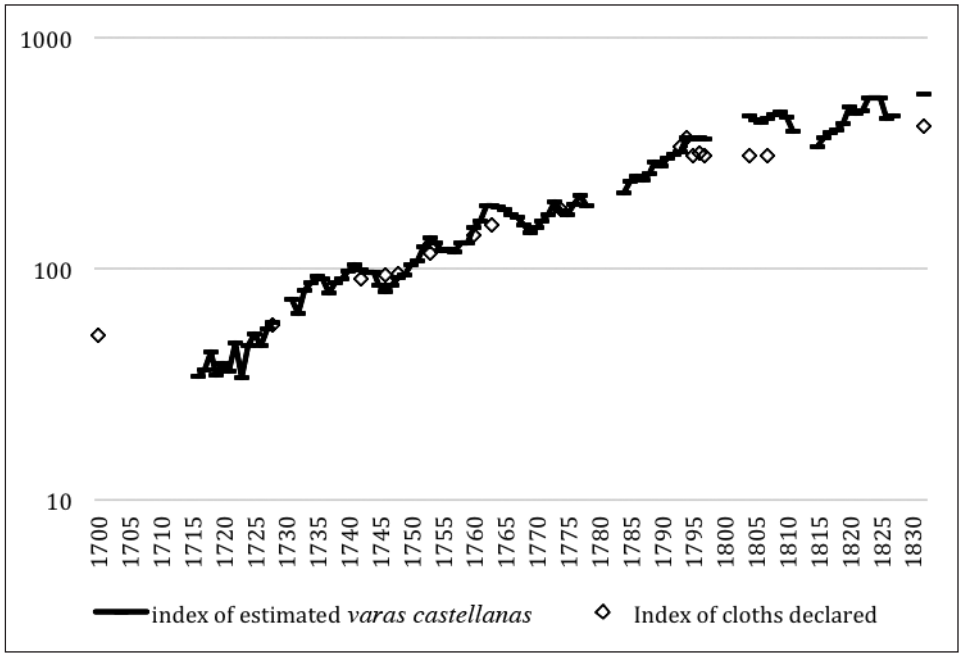
> […] the sum of all of the masters, officials, apprentices and other people employed in the operations of the factory amounts to 3,860, without counting the people who are employed in the villages of Ibi, Bocayrente, Benilloba and Cosentayna, and other places adjacent to this village who extract considerable quantities of dyed wool from here and then work in their villages and then return with the yarn for their manufacture.[70]

According to the same report, of the 3,860 employees in the town, 2,150 were women and children. That is, the quantitative and qualitative increase in production implied an increase in labour demand, which obliged the factories to recur to the rural workforce. In 1807, the enlightened townsman Pérez Planelles indicated that wool textile manufacturing employed 6,700 people in the town itself—of whom 2,482 were women—and 5,500 outside of the town, distributed between 42 "villages of the area".[71]

All of this generated different problems, which emerged in the final decades of the century and the beginning of the nineteenth century. On the one hand, the population growth gave rise to a considerable increase in the surface area farmed and,[72] at the same time, a much higher increase in energy needs due to the consumption of the textile manufacturing industry, particularly for the dyes. The scarcity of firewood became an acute problem from the mid eighteenth century and required constant investment by the *Real Fábri-*

69. ATA, 7.º *Diferentes minutas de memoriales* (folder): "Testimonio de lo arbitrado por caudales y útiles a los maestros fabricantes de la Real Fábrica de Paños de la Villa de Alcoy", s.f.
70. ATA, 7º: 9-V-1743, s.f.
71. Pérez Planelles (1807), p. 10.
72. Torró Gil (2005).

FIGURE 3 ▪ *Estimate of the cloth production in Alcoi, 1700-1832 (100=1741-1750)*



Source: Dret de Bolla, see n. 12; Torró Gil (2000), pp. 252-60 and 775-94.

ca in procedures that would save this dwindling input.[73] On the other hand, the price of raw materials increased sharply again. The price of wool remained stable—between 2 and 3 g. per *arroba*—from 1702 until 1765, when it began to climb, accelerating from c. 1787 to reach an average of 6.3 g. between 1802 and 1808.[74] Finally, the price of food also increased in the last third of the century, giving rise to pressure to increase wages.[75]

The cost of raw materials grew at a higher rate than cloth prices, which led to a constant decrease of the margin for wages and profits. The higher the quality of the fabrics, the greater the reduction of the margin.[76] Similarly to

73. Torró Gil (2000), pp. 432-433.
74. See note 50.
75. The increase in wheat prices also intensified in the 1790s; Torró Gil (2017). In this period, the nominal wages of employees of the Real Fábrica rose sharply. To give a couple of examples, the so-called *Fiel del Tirador*—responsible for the management and maintenance of the cloth dryer—received a stipulated annual wage of 246.4 grammes of silver in 1759. This amount increased to 912 grammes in 1785, and to 1,500 in 1794. The overseers, who received a stipend of 340 grammes of silver in 1723, were paid six times this amount in 1796; Torró Gil (2000), p. 831.
76. For a *veintidoseno* (twenty-two hundred threads), the cost of the wool, oil and soap used in its production would have represented 46 per cent in 1763, and 56 per cent in 1793; for a *treintaiseiseno* (thirty-six hundred threads), on the other hand, the proportions would have

the sixteenth century, fluctuations in the price of cloth did not seem to be determined by wage variations. Given that the growth implied the manufacture of higher quality fabrics, the increase in the quantity of labour had to be more than proportional to that of gross production. The estimates indicate that the *varas*/worker ratio could have increased by a minimum of 50 per cent between 1742 and 1807.[77] Although a part of this growth could be attributed to greater work intensity and an increase in the time used—particularly by spinning women and combers from outside of the town—a certain degree of progress in productivity cannot be ruled out.[78] However, the successive waves of growth and the constant resorting to the use of workers from outside of the town who were difficult to control and who had a low initial level of specialisation, gradually eroded these presumed profits.

The essential problem facing manufacturers was that of controlling the work process. Although institutional control over labour was increasing,[79] the escalation of the domestic system generated serious problems. As well as those that we can assume were related to the increasing costs of transport and management, the most serious referred to the theft of raw materials. In the ordinances—not approved—of 1784,[80] seven of the fifty-two chapters were devoted to expressly prosecuting the theft of wool. Those of 1803 were much stricter and added a whole range of control mechanisms and included oil or dyes in the list of stolen materials.[81] The clothiers who had become wealthy and were gradually becoming known as manufacturers had no difficulties in controlling the guild and, through the institutional umbrella of the *Real Fábrica*, the rest of the trades.

Although concern for thefts by dependent workers was a constant feature from c. 1740, within the context of the end of the century there was a rise in the number of incidents and in the measures taken to prevent these problems,

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been 40 per cent in 1763 and 76 per cent in 1804. On this and what follows, including sources and estimates, see Torró Gil (2000), pp. 316, 310-331, 809-811, and 828-833.

77. Torró Gil (2000), pp. 324-325.

78. The differences in productivity between the different manufacturing centres were crucial as a factor of competitiveness. This has been drawn from the information analysed by García Sanz (1994) regarding the difference in costs between the cloth-making industry in Segovia and the French centres of Abbeville and Carcassonne.

79. As shown by the renewed confrontation with the weavers, which culminated in the subsumption of their guild into that of the manufacturers in 1797, under the pretext of the "union" of the two guilds; Torró Gil (2004). Although they retained considerable negotiating power for almost the whole of the nineteenth century, they had already lost ground on an institutional level; Cuevas (1999).

80. Torró Gil (1996), pp. 87-102.

81. Torró Gil (2000), pp. 1088-1110. The problems were identical to those experienced by other European cloth-making centres, such as those in Great Britain, see the classic studies of Heaton (1920), pp. 418-421, or of Mann (1971), pp. 114 and 230. More recently: Styles (1983); and Hudson (1986), p. 58. See the considerations on the matter of Berg (2005), pp. 225 and 243.

which, judging from their repetition, seemed to have been unsuccessful.[82] From the abundance of declarations and regulations we can observe a great difference with respect to what occurred at the end of the sixteenth century: the difficulties facing the cloth-making industry in Alcoi at the end of the eighteenth century seem to derive from problems affecting supply—costs—rather than demand. Except for the occasional small setback, according to the available sources, the trend from 1784 was one of almost uninterrupted growth until 1809. The episodes of war during this period generated a double stimulus for the production of cloth: the demand of the army until c. 1795, and the effect of replacing imports caused by the discontinuance or reduction of trade with countries with which the monarchy was at war. It is precisely in this period, despite maritime traffic restrictions, when cloth from Alcoi gained a significant presence in the American market through Cádiz.[83]

The crisis that ensued was caused by the growth pattern and not by the fall in demand. Therefore, the solutions sought by manufacturers were directed mainly at reducing costs, particularly those derived from the organisation of work. On the one hand, they were faced with a continual increase in expenses generated by the distribution and collection of wool—dyed and carded for spinning the weft and only dyed in the case of the warp—. On the other hand, the faster growth in the demand for labour rather than supply led to frequent non-compliance with the terms of delivery by workers who were overwhelmed by the excessive amount of orders. Finally, continuous thefts of raw material—explained most probably by the low wages and the fact that they occurred in the context of domestic production represented —a triple problem: they increased costs, reduced the quality of the cloths, and favoured the emergence of competitors. In fact, inside and outside of the town—in neighbouring villages such as Cocentaina and Benilloba, particularly—modest producers emerged who purchased wool and other raw materials in the secondary market generated by these thefts and competed in advantageous conditions with the large manufacturers in the low quality fabric segments. This situation became notably worse after the decree of the freedom of production of 1789.[84] And, to make matters worse, other manufacturing activities were developed that competed for the labour demand, particularly the paper industry, although it was not the only one.

Given that the mechanisms to control the workforce were useless, manufacturers opted to implement innovations that saved raw materials and/or labour.[85] The main problem was the huge amount of labour employed in the

82. ATA, 9.º bis. *Acuerdos*…, in general.
83. Torró Gil (2001), pp. 161-165.
84. Torró Gil (2000), pp. 1044 et seq.
85. Idem, 478 et seq.

carding and spinning activities.[86] Carding for the weft would have been carried out in the *casas-fábrica* (factory houses)—a term that became more frequent from the end of the eighteenth century—of the employers. However, carding for the warp was much more dispersed. Spinning was even more so, and was performed exclusively by women and children. The first carding and spinning machines—the mechanical spinner, probably a jenny—were constructed by a local craftsman based on a model seen in operation in Cádiz in 1793.[87] Although we do not know the reasons why, these machines became widespread relatively quickly but soon fell into disuse.[88] The causes may perhaps reside in a combination of social resistance and difficulties adapting the machines to produce the type of thread necessary for the qualities demanded.

After the crisis brought about by the Peninsular War, production resumed its upward trend. However, it seems clear that Alcoi fabrics lost their position in the American market. This change most probably explains the definitive reconversion of production towards lower quality fabrics aimed at the domestic market, particularly Andalusia.[89] Within this context, the *Real Fábrica* redoubled its efforts to introduce machinery that would mechanise carding and spinning. The machines purchased in Bilbao in June 1818 were finally deemed suitable, which is shown by the violent Luddite reaction of 1821 and its defeat.[90] While limited to spinning, mechanisation paved the way and enabled, with some exceptions, continuity of business for the entrepreneurs who had dominated the trade within the context of the turn of the century.[91]

Conclusions

As we have seen, despite sharing a common pattern, the crises that terminated the century-long growth of the 1500s and the 1700s had very different results. Both of these growth periods were marked by a substantial increase in demand in terms of both quantity and quality. The structure of the cloth-making industry experienced increasing capitalisation, which led to a

86. On these issues, the following studies are illustrative: Endrei (1968); and Randall (1981), pp. 41-68.

87. Torró Gil (1994a).

88. A report from 1796 alludes to several "wool carding machines powered by water", Arxiu de la Parròquia de Sant Maure i Sant Francesc – Fons Extraparroquial (hereafter APSMSF-FE). G.3[186]: *Visita Real Fábrica de Paños*, 1796, eight-page notebook, s.f.

89. These characteristics and their economic consequences have already been analysed by Aracil and Garcia Bonafé (1974). See also Cuevas (1999), pp. 24-25. If, according to Pérez Planelles (1807), p. 10, the production was divided evenly between fine and ordinary cloths, in 1832, the fine cloths represented only 6 per cent of the total; APSMSF-FE. I.6. [657], "Datos estadísticos", 1832.

90. Revert (1965).

91. Cuevas (2000).

concentration of the purchase of raw materials and of the sale of finished goods, which became controlled by a small group. These 'entrepreneurs', emerging from the ranks of wealthier craftsmen, controlled the guild institutions and, through them, standardised production and disciplined a workforce that, on the whole, carried out their tasks with no direct supervision. This turned out to be the Achilles heel of this form of organising production.

The analysis shows, in my opinion, the weakness of monocausal models to explain the capitalist industrialisation process. For instance, the role played in this case by the guild framework seems difficult to reduce to the narrow scope established in the debate on this issue. In light of the case of Alcoi, an evaluation of the guilds—particularly those that regulated and controlled highly commercialised activities—according to their greater or lesser efficiency from the perspective of global economic growth, leads to a dead end. As a mechanism difficult to replace, within a framework of domestic production, to control labour and facilitate standardisation,[92] its role could end up favouring to a greater or lesser extent the different actors involved, usually with contradicting interests—depending on the work control logic in a specific technical context and with respect to output aimed at permanently evolving markets in terms of their preferences.

As I pointed out at the beginning of the article, these century-long cycles were determined by the agrarian pattern, both locally and at a more general level. The capacity of the agricultural sector to maintain a growing population and the processes of social differentiation which influenced its evolution were the driving forces of the growth in the demand for manufactured goods on the one hand, and the supply of labour for secondary activities on the other. Given that from a certain point this evolution occurred at the expense of a reduction in labour productivity, the demand for manufactured goods gradually diminished and the increase in agricultural prices affected the production costs of manufactured goods and their prices through wages and raw materials.

The market prices of cloths were determined by the average production costs among different manufacturing places, reflecting the trend in the average quantity of labour required to produce the goods, so local wage fluctuations affected exclusively profits and not the final price. Therefore, the increase in the value of raw materials caused by a decrease in labour productivity in the agricultural sector could have affected the profitability of the cloth-making business. While wages remained stable, profits tended to increase even when the added value grew less than prices. That said, from a certain point, any increase in wages or transaction costs would substantially erode profits. The pressure exerted to increase wages was not manifested intense while workers had possibilities of increasing their real income. The normal way to do this

92. Torras (1981); Aymard (1971).

was to increase the number of working hours of the family, which was only possible during times of growth. In addition, as we have seen, there may also have been a moderate upward trend in labour productivity. The limit would be reached when the fall in productivity of the agricultural sector led to prices increasing faster than the possibilities of increases in the incomes of the families engaged in cloth making. Then the workers would exert pressure to receive better wages, or in their absence—or deficiency—look for alternatives, which included the theft of raw materials and their subsequent sale, and this became an endemic problem in the domestic system. In one way or another, or both at the same time, the eventual outcome was a fall in profits.

There were significant differences between the crises that we have analysed in terms of the evolution of demand. The crisis at the end of the sixteenth century led to a considerable contraction of demand and, in the medium term, a reorientation towards cheaper and lighter cloths. The response of the Alcoi producers was a successful adaptation to this new situation. In the medium term, however, this facilitated the withdrawal of the guild elite from the business, and they were replaced by other craftsmen. In the long term it decisively contributed to the continuance of activity and the ability to take advantage of the possibilities generated by the growth of the end of the seventeenth century and the eighteenth century.

On the other hand, the context at the end of the eighteenth century and beginning of the nineteenth century did not affect the demand for Alcoi fabrics in the same way. The changes affected the qualities demanded and the destination markets, but they did not seem to affect the total volume. In this aspect, the manufacturers who controlled the guild system adapted successfully to these changes. The principal problems faced were of a different kind and affected profits through a strong increase in costs. Given their inability to influence the prices of raw materials, their only alternative was the reduction of costs derived from wages and the organisation of production.

The logical response—frequently repeated in the testimonial documents—was the concentration of processes under the direct supervision of the owners of the capital. This tendency, which also manifested in the sixteenth century, encountered two kinds of difficulties: social, and technical. The former consisted basically in the refusal of workers to accept the new situation, and the permanent conflict between clothiers and weavers clearly illustrates this. The resistance of the weavers prevailed until the definitive mechanisation of this process at the end of the nineteenth century.[93] Technical problems consisted in the unavailability of tools or machinery that would enable the concentration of the most demanding processes in terms of labour—carding and spinning, *a fortiori*—in the same place. When this was possible, at the end of

93. Cuevas (1999).

the eighteenth century, it was still necessary to find machines that would adapt to the technical demands of the products manufactured, on the one hand, and to overcome the resistance of the workers affected by them on the other. Once these problems had been resolved, the path towards the consolidation of industrial capitalism was expeditious.

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■

Economic crises and industrialisation in Southern Europe: the Valencian cloth-making town of Alcoi (1600 and 1800)

Abstract

Research on the development of industrial capitalism often overlooks the existence of successful industrialisation processes in southern Europe. The article analyses how the cloth-making industry of the town of Alcoi responded to the difficulties that it faced during two crises that occurred almost two hundred years apart. The first arose at the end of the sixteenth century and after the expulsion of the Moriscos in 1609. The second crisis began between 1809 and 1815, in the context of the Peninsula War. Both conjunctures caused serious difficulties to manufacturing activities that were resolved with the profound changes that would fundamentally affect the sphere of production. The study clarifies certain aspects with respect to the emergence of industrial capitalism in Alcoi in the early nineteenth century.

Keywords: proto-industrialisation, cloth making, economic crisis, guilds, mechanisation.

JEL code: N63, O14, E32.

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Crisis económicas e industrialización en el sur de Europa: la ciudad valenciana de Alcoi y los tejidos de lana (1600 y 1800)

Resumen

La investigación sobre el desarrollo del capitalismo industrial frecuentemente menosprecia la existencia de procesos de industrialización exitosos en el sur de Europa. El artículo analiza cómo la pañería de la ciudad de Alcoi respondió a las dificultades que enfrentó durante dos crisis que ocurrieron hace casi doscientos años. La primera surgió a fines del siglo xvi y después de la expulsión de los moriscos en 1609. La segunda crisis comenzó entre 1809 y 1815, en el contexto de la Guerra de la Península. Ambas coyunturas provocaron serias dificultades a las actividades manufactureras que se resolvieron con profundos cambios que afectarían, fundamentalmente, a la esfera de la producción. El estudio aclara ciertos aspectos con respecto a la aparición del capitalismo industrial en Alcoi a principios del siglo xix.

Palabras clave: protoindustrialización, manufactura pañera, crisis económica, gremios, mecanización.

Códigos JEL: N63, O14, E32.