



Florentine Woolen Manufacture in the Sixteenth Century: Crisis and New Entrepreneurial Strategies

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In this essay, I re-examine Florentine woolen textile manufacture with a focus on the types and quantities of cloth produced. Although classic historiography notes several fluctuations in the quantity and value of the sector's output during the sixteenth century, my approach to the archival sources shows a continuous decline. In a time of crisis, the *Arte della Lana* partnerships introduced new textiles between the end of the fifteenth and the sixteenth century. These were high-quality cloths, able to bear the rising costs of raw materials and skilled labor. The partnerships also intervened by reducing the costs of managing unskilled labor, using the services of *fattori* (labor masters) charged with supplying labor and remuneration for unskilled workers (*ciompi*) who performed the first phases of wool processing. These changes influenced the partnerships' bookkeeping methods; comparisons of account books from the fourteenth to the sixteenth centuries reveal downsizing of the accounting system.

In this essay, I communicate the first results of my research on the Florentine wool guild, the *Arte della Lana*, with a focus on the strategies adopted by producers to overcome the difficulties affecting the city's wool textile industry during the sixteenth century. By analyzing some aspects of woolen manufacture, I explore the hypothesis that the crisis of the seventeenth-century *Arte della Lana* resulted from structural rather than conjunctural causes.

The changes that occurred in the international economic landscape during the early modern period left the Florentine production system, which was mainly urban-based, unable to bear the competition from Northern European production. The glorious Tuscan production was condemned to a low-profile future by the ability of Northern European producers to offer successful products at a competitive price, augmented by their crushing primacy in maritime trade. Nevertheless, Tuscan *compagnie* did not lose their adaptive spirit and innovative skills: the last

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positive years of the Florentine wool industry provided a chance for original experimentation.

Florentine Cloth Production in the Sixteenth Century: Products, Labor Costs, and Accounting Systems

Beginning in the second half of the fifteenth century, the Florentine wool guild, the *Arte della Lana*, formalized a product differentiation by entrusting the exclusive use of English wool (at that time the most precious raw material destined for luxury production) to some workshops located in the San Martino “*convento*.” Other workshops, generically named “*di Garbo*,” were allowed to use Italian (*matricine*, from the Abruzzo region,) and Spanish (*merino*) wools. Garbo workshops proved to be the most dynamic branch of the sector, and the guild put the industry’s recovery in their hands after the early-fifteenth-century crisis. They were enjoined to produce new textiles to imitate various foreign cloths, destined for domestic consumption, that were invading the city’s market at the time.¹

Florentine wool-makers became familiar with a whole series of low-quality products such as *perpignani*, *saie*, and, above all, *rasce*, which would characterize the wool industry in the second half of the sixteenth century. The *panni larghi di Garbo* or *panni sopramani* (Garbo broadcloths) continued to be produced for the international market, the real driving force of the city.

Changes in supplies affected the purchase of raw materials: after decades of widespread use of good quality Abruzzese wool, the Garbo workshops started to buy large stocks of Castilian merino wool, as relations with Iberian merchants improved. By the third decade of the sixteenth century, export to the Levant quickly declined. The loss of this vital trade, the most significant for the first thirty years of the century, was a hard blow to the city’s workshops. One cause of that waning, among others, was the contraction of *Brussa* (Bursa)’s raw silk imports, which had played an important role in the Florentine trade scheme.² The city’s woolen cloth production was approaching an intense season of uncertainty and renewal, coinciding with a complex international scene (with the Italian wars) and the turbulent transition period leading Florence from the *Republic* to the *Principato*.³

The account books of the partnerships of that age cast some light on wool-makers’ attempts at innovation in their cloth production. Garbo

¹ Hidetoshi Hoshino, *L’Arte della Lana in Firenze nel Basso Medioevo: Il commercio della lana e il mercato dei panni fiorentini nei secoli XIII-XV* (Florence, 1980), 235, 238.

² Bruno Dini, “Aspetti del commercio d’esportazione dei panni di lana dei drappi di seta,” in *Saggi su un’economia-mondo—Firenze e l’Italia fra Mediterraneo e Europa (secc. XIII-XVI)* (Pisa, 1995), 215-69, especially p. 264.

³ Furio Diaz, *Il Granducato di Toscana—I Medici* (Turin, 1987), 55-58.

workshops were the most sensitive to the sector's need for change, while the San Martino branch slowly declined.

The wool-makers, who had been forced to familiarize themselves with new kinds of cloth in the fifteenth century, used their experience and ability to transform low-quality imitations into higher-level products. The most successful cloths, besides the *accordellati* and the *saie*, were the *perpignani* and the *rasce*, made with the best Castilian wool (at least until the end of the sixteenth century). With their characteristic black finishing, the *rascia* became the industry's key product of the century.⁴

The generalized use of Spanish merino wool combined with the production of so-called woolen cloths (in brief, woven with carded wool and subjected to fulling) was not unique to Italian textile centers; historians have traced similar diversification processes in much of the European woolen industry at that time.⁵

These *rasce* and, to a lesser extent, the other cloth types, found new marketplaces across the Alps: in Lyon and all of France, Antwerp, and Spain itself, but also Messina, Palermo, and Naples, which were replacing the Levant as suppliers of raw silk. Even in this dynamic climate, Florence tried to strengthen its relations with the Ottoman Empire to improve the Levant trade, which had never fully ceased.⁶

This commercial growth was not destined to last long; the last twenty years of the sixteenth century were defined by a gradual worsening in the quality of both the cloths and the raw materials. Analyzing the account books of Cristofano di Tommaso Brandolini's partnership, for example, which was active from 1580 to 1597, we notice a strong tendency toward the use of mixtures of different kinds of wool or lower qualities of Spanish wool, even for making *rasce*, so "precious" for the guild's market.⁷

⁴ Evidence can be found in many Florentine wool-makers partnerships' sixteenth century account books, along with the *panni corsivi* (coarse cloths), destined to disappear from the second half of the century, and the *panni larghi* (broad cloths), which were not so different from the *sopramani* of the previous century. Some sixteenth-century *rasce* technical specifications can be found in Patrick Chorley, "Rascie and the Florentine Cloth Industry During the Sixteen Century," *Journal of European Economic History* 32 (Winter 2003): 487-527, especially p. 520.

⁵ John H. Munro, "Spanish Merino Wools and the *Nouvelles Draperies*: An Industrial Transformation in the Late Medieval Low Countries," *Economic History Review* 58 (Aug. 2005): 431-84; Paulino Iradiel, *Evolucion de la industria textil castellana en los Siglos XIII-XVI: Factores de desarrollo, organización y costes de la producción manufacturera en Cuenca* (Salamanca, 1974), 215-17; Herman Van Der Wee, "The Western European Woollen Industries, 1500-1750," *Cambridge History of Western Textiles*, 2 vols., ed. David Jenkins (Cambridge, England, 2003), 1: 397-472, especially p. 407.

⁶ Paolo Malanima, *La decadenza di un'economia cittadina* (Bologna, 1982), 258.

⁷ See in particular: *Libri dei tessitori* C and D, Archivio di Stato di Firenze (ASF), *Serie strozziane—V serie*, 1720, 1739.

Moreover, in a letter to the Grand Duke, Ferdinand I de' Medici, dated 1603, the guild complained about the wool-makers making *rasce* with a lower yarn density and passing them off as higher-quality goods.⁸

From this time on, the markets that the *rasce* contributed to opening to Florentine woolen products were no longer reliable (especially Lyon and Antwerp). In all of Europe, and within Italy as well, cheap imitations of *rasce* started to circulate. The role of woolen manufacture in the Florentine *contado* or *dominio* is also worth mentioning. Although production was strongly restricted by the urban guild, the quality of these products had gradually increased during the century, prompting the *Arte* to ask the Grand Duke to take some preventive measures.⁹ Yet, this did not lead to a shift to rural manufacturing; high-quality cloth production remained an essentially urban phenomenon.

I cannot provide a full analysis of the composition of Florentine cloth production output here, but it is interesting to note that production continued in San Martino even into the early seventeenth century.¹⁰ The Guild's stiff rules, intended to differentiate them from the Garbo workshops, were mostly ignored, however, and San Martino wool-makers could continue to weave *rasce* and *perpignani* using Spanish wool mixtures with no significant problems.

In discussing other aspects of fifteenth-century woolen manufacture, such as personnel management, it must be stressed that, at that time, the production system had not experienced any substantial transformation. As in the previous centuries, all of the processes were carried out by external operative centers that had fitful and non-exclusive relationships with the workshops. As is well known, transformative activity, in a narrow sense, was not performed under a single roof, and permanent personnel were employed only to organize the process and to deliver and collect half-finished goods to and from artisans or external workers.

By the second half of the fifteenth century, we see a substantial change in managing *lavoranti* (workers): many sources show an abrupt shift away from direct relationships between workshops and single workers to the use of *fattori* (labor masters) in charge of supplying labor and remuneration to a group of unknown and unskilled workers (*ciompi*).

The fact that the *ciompi* were totally unknown to the wool-makers, who dealt only with the *fattori*, coupled with the simple nature of their duties, may explain the comparatively low cost of the preliminary operations in the woolen process in the sixteenth-century workshops, which had experienced a steady reduction during the previous two

⁸ ASF, *Pratica segreta*, 16, c.205r.

⁹ *Ivi*, c. 515r-516r.

¹⁰ Many San Martino partnerships' accounting books dating back to 1580s and 1590s can be found in the "Archivio dell'Ospedale degli Innocenti di Firenze" (AIOF). In 1605, only three remained, see ASF, *Pratica segreta*, 17, c. 155v.

centuries.¹¹ It was not by chance that in the course of the sixteenth century the guild granted its protection only to skilled workers, who were able to maintain the value of their real wages thanks to many provisions, such as those on the weavers' behalf.¹² Nevertheless, during the early seventeenth century the Grand Duke confirmed some old weavers' privileges and reaffirmed some spinners' benefits against the *stamaioli* (spinners' masters), but he rejected many wool-beaters' requests. In response to their recurrent claims (“*ricorsi in diversi tempi più volte a domandare simili cose*”), they were prompted to change jobs if they did not like the situation (“*se non piace loro l'arte, mutinla in una altra*”).¹³

A similar validation of the organizational system necessarily shaped the partnerships' bookkeeping method. Generally, accounting simplification was the norm for the workshops' bookkeeping techniques. Sixteenth-century partnerships seem to have become skilled in good accounting practices and tried to standardize their bookkeeping systems. During the fourteenth and fifteenth centuries, the books were more “customized.”¹⁴ This impression is strengthened by the analysis of many partnerships' account books. With respect to the commercial and manufacturing aspects, all workshops kept few books and used the same rules. Even big companies did not seem to need an exhaustive cost-accounting system, a lack that inevitably compromised a detailed reckoning of production costs. It is possible that in the sixteenth century such an analysis was not considered as important as it had been in the past for establishing prices.

The Volume of Florentine Woolen Cloth Production in the Sixteenth Century

Despite many attempts, studies of the volume of Florentine *Arte della Lana* cloth production have not yielded consistent results.¹⁵ The data for the years from 1553 to 1571, a period of renewal for Florentine manufacturing, are particularly controversial. They are derived from *Arte* reports that are available to us only from later printed sources.¹⁶ The

¹¹ Richard A. Goldthwaite, “The Florentine Wool Industry in the Late Sixteenth Century: A Case Study,” *Journal of European Economic History* 32 (Winter 2003): 527-54, especially p. 537.

¹² Giuseppe Parenti, *Prime ricerche sulla rivoluzione dei prezzi* (Florence, 1939), 213; ASF, *Arte della lana*, 16, cc. 252v, 360r, 382v, 396r.

¹³ ASF, *Pratica segreta*, 15, cc. 318r, 428r, 481r.

¹⁴ Some examples can be found in the accounting books of Pratese Francesco Datini and other Florentine wool workshops, dating to the late fourteenth and fifteenth centuries.

¹⁵ Patrick Chorley, “The Volume of Cloth Production in Florence, 1500-1600: An Assessment of the Evidence,” in *Wool: Products and Markets (13th to 20th Century)*, ed. G. L. Fontana and G. Gayot (Padua, 2004), 551-71, especially p. 551.

¹⁶ The January 1560 and January 1572 reports (1559 and 1571 according to the Florentine calendar *ab incarnatione*) are quoted in Riguccio Galluzzi, *Istoria del*

annual amount of cloth produced was calculated by dividing the annual production value for the standard *panno corsivo* (coarse cloth) by the price of 30 scudi (“*riducendo le rascie e panni larghi a panni corsivi come già si costumava, ragionasi l’un panno per l’altro scudi trenta*”). The use of these uncorrected data leads to an obvious distortion: for example, in 1561, the annual production result is 33,000 cloths. Distributed over the 152 workshops that were surely active at that time, this yields a productive capacity of about 217 cloths per workshop per year.¹⁷ It would be nearly impossible for even the largest partnerships to have reached this capacity. Some interpretations of these numbers consider the reports’ data to be merely statistical figures; we propose a new production estimate for the period between 1488 and 1615 (see Figure 1).¹⁸ Our estimate shows a new trend, not characterized by sudden highs and harmful lows, but by a slow decrease in the number of cloths produced beginning in the 1560s (see Table 1). If the level of output physically produced by the industry did not suffer sudden leaps, the value of production was instead subject to wider fluctuations.

The Causes of Decline of Florentine Woolen Manufacture

The non-traumatic reduction of woolen cloth production during the last thirty years of the sixteenth century could lead to misinterpretation of the Florentine woolen industry’s crisis. Actually, those years’ difficulties would have blocked any possibility of recovery, as Florentine cloth faced the market with two strong negative characteristics. Maintaining the *Arte*’s price level brought lower profitability. At the same time, the cloths’ quality decreased as wool-makers started to replace the fine *merino* wool with mixtures of lower-quality material to reduce shrinkable production costs. In brief, they were not able to compete with other types of cloth.

Granducato di Toscana sotto il governo della casa Medici (Florence, 1781), 1: 381-83; 2: 221. Data for the years 1553/54 and 1560/61 come from Lorenzo Cantini, *Legislazione toscana raccolta e illustrata* (Florence, 1800-1808), 4: 83-84. See Chorley, “The Volume of Cloth Production,” 556.

¹⁷ Pietro Battara, “Botteghe e pigioni nella Firenze del Cinquecento: Un censimento industriale e commerciale all’epoca del granducato mediceo,” *Archivio Storico Italiano* 95 (III 1937): 3-28, at 14.

¹⁸ We hypothesize that the percentage of coarse cloth gradually decreased. Our estimate is based on the analysis of the city’s textile production derived from the *Arte*’s legislation, accounting data, and other written information in Florence’s archives. We assume that the percentage of coarse cloth dropped progressively from 25% during the years 1553 and 1554, to 20% in 1558 through 1560, and to 15% after 1561. We have also estimated cloth prices, and consider 64 *fiorini* to have been the stable price for higher-quality cloth during this whole period.

FIGURE 1
 Florentine Cloth Production, 1488-1615

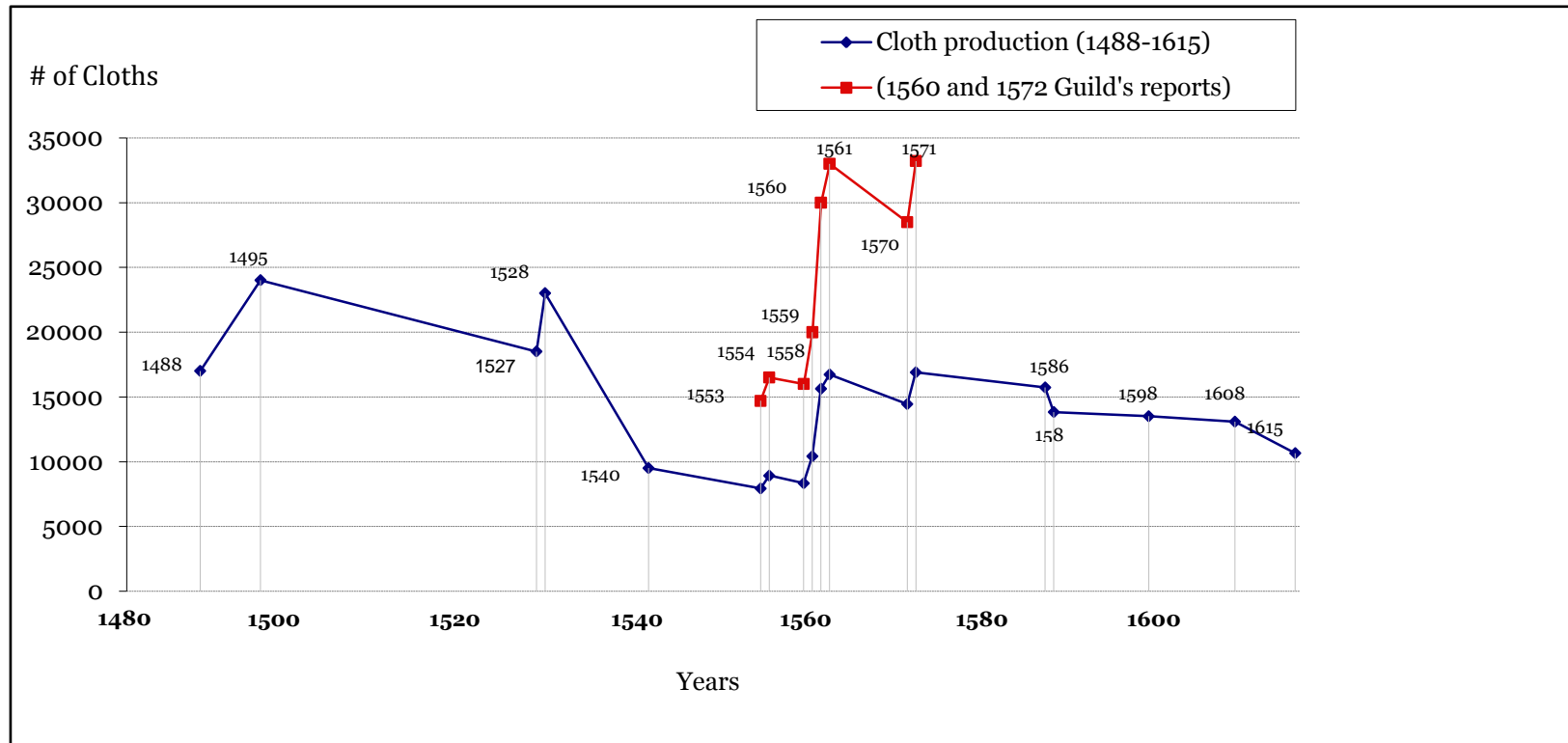


TABLE 1
Comparison of Estimated Florentine Woolen Cloth Production, 1553-1571

Year	Guild's Reports			Chorley's Estimate			Our Estimate		
	Production value	Unit price	# of cloths	# of cloths	Coarse cloth average price	% Coarse cloth	# Coarse cloths	# Broad cloths	# Cloths
1553	440,000	30	14,700	8,148	30	25	1.982	5.946	7.928
1554	495,000	30	16,500	9,167	30	25	2.230	6.689	8.919
1558	480,000	30	16,000	8,889	32	20	1.667	6.666	8.333
1559	600,000	30	20,000	11,112	32	20	2.083	8.334	10.417
1560	900,000	30	30,000	16,667	32	20	3.125	12.500	15.625
1561	990,000	30	33,000	18,333	32	15	2.508	14.215	16.723
1570	854,760	30	28,492	15,829	32	15	2.166	12.273	14.439
1571	1,000,000	30	33,212	18,519	32	15	2.534	14.358	16.892

Source: Our data elaboration of Galluzzi, *Istoria del Granducato di Toscana sotto il governo della casa Medici*, 1: 381-83, and 2: 221; Cantini, *Legislazione toscana raccolta e illustrata*, 4: 83-84; Chorley, "The Volume of Cloth Production," 558, 560; ASF, *Miscellanea medicea*, 27/III, cc. 1011-1017; ASF, *Arte della Lana*, 16; ASF, *Libri di commercio e famiglia*, 909, 910, 914, and 916.

Obviously, the causes of the industry's decline were many and interdependent. A number of events coincided: the dynamics of international trade changed very quickly, and some key marketplaces closed or fell into ruin (especially Levant, Lyon, and Antwerp).¹⁹ The competition from the new textile industry emerging in Northern Europe combined with the production of foreign *rascia* imitations (some evidence of these copies was traced by contemporaries in France, England, and Spain), keeping in mind the sixteenth- and seventeenth-century boom in the Venetian woolen industry.²⁰ A tight monetary policy in the 1560s caused a lack of cash in the Florence marketplace, resulting in the revaluation of 1570 and the bank crisis of the second half of 1570s. The lack of Castilian wool and its rising price were representative of difficulties with the raw materials supply.²¹ In this climate, we can well understand the Florentine Customs Consul's (*console della Dogana*) proposal to the Grand Duke Cosimo I, dated 1573, to use *matricine* wools of domestic production, due to their quality ("*hoggi sono in assai miglior conditione*"), when higher-priced Spanish wools were mostly diverted to Venice ("*delle quali buona partita se ne sono smaltite per Vinegia [e] che sono molto alzate di pregio*").²²

The decision to rely on a luxury cloth made with raw materials that were increasing in price left the Florentine industry wide open to the competition of Northern Europe's less expensive products. During a period of population growth, these cloths found great success among the middle and lower classes.

Given those conditions, the *Arte* made the one choice they could make to survive. A shift toward a lower quality product would not have been sustainable by the Florentine manufacturers, due to the organization's characteristics: higher wages than those in other countries, the impossibility of integrating rural and urban labor, and the lack of an adequate supply of good quality native raw materials. These elements, during a period of fierce competition and profound change over the international landscape, unveiled the fragility of Florentine textile production.

¹⁹ Richard Gascon, *Grand commerce et vie urbaine au 16 siècle: Lyon et ses marchands (environs de 1520-environs de 1580)* (Paris, 1971), 2: 572-82; Chorley, "Rascie and the Florentine Industry," 505-6; Furio Diaz, *Il Granducato di Toscana*, 292.

²⁰ Domenico Sella, "The Rise and Fall of the Venetian Woollen Industry," *Crisis and Change in the Venetian Economy in the 16th and 17th Centuries*, ed. Brian Pullan (London, 1968), 106-26, especially p. 125.

²¹ Carlo M. Cipolla, *Il governo della moneta a Firenze e Milano nei secoli XIV-XVI* (Bologna, 1990), 243-44; Parenti, *Prime ricerche sulla rivoluzione dei prezzi a Firenze*, 234.

²² ASF, *Pratica segreta*, 9, n°76.