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# Big Business for Firms and States: Silk Manufacturing in Renaissance Italy

Silk manufacturing began in Lucca in the twelfth century and by the fifteenth century Italy had become the largest producer of silk textiles in Europe, nurtured by extensive domestic and foreign demand for the luxurious fabric. This essay explores the market for silk textiles, the organization of the silk industry, and the role played in it by guilds, entrepreneurs and their capital, and highly sought after artisans. Just as silk manufacturing was an important and lucrative business for entrepreneurs, this article argues, so was it a crucial strategic activity for the governments of Italy's Renaissance states, whose incentives, protections, and investments helped to start up and grow the sector with the aim of generating wealth and strengthening their respective economies.

**Keywords:** Renaissance Italy, silk manufacturing, fabrics, human capital, economic policy, guilds, entrepreneurship, luxury markets

Among the most distinctive aspects of the Italian Renaissance economy was the impressive development of silk manufacturing, nurtured by increasingly strong and extensive demand. This phenomenon, well known to historians, doubtlessly conforms to logics of an economic nature. Thanks to the redistributive mechanism triggered by the plague of 1348 and by subsequent epidemics, the availability of revenue increased, benefiting above all the lay and ecclesiastical elites of the cities that represented Italy's most dynamic markets. But it has also been considered as part of a transformation of habits and

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mentalities vis-à-vis consumption and the expression of a new passion for things, especially for objects of cost and beauty.[1]

The prices fetched in silk shops were justified by the high cost of raw materials, difficult to obtain and from far away places; by the complexity of the production cycle, especially evident in the weaving phase; by the fact that the most luxurious cloths were dyed with expensive dyestuffs like *grana* and *kermes* and often incorporated silver, gold, and precious stones; by the sense that silk was a socially exclusive fabric; and by silk's resistance to the ravages of time, such that Renaissance fabrics became a kind of safe haven asset. At the same time, the beauty of silk was inherent in material terms in its lightness, thinness, and elasticity; in the way it reflected light, totally unlike other fibers; in its ability to easily absorb dyes, allowing for a vast array of shades; and in its softness, pleasing both to the wearer and to the tailors who could achieve perfect hemlines and draping effects with it. Not to mention its elegance, refinement, and, importantly, its versatility, since it could provide smooth and monochrome fabrics but could also be enriched with embroidery and designs—the so-called *opere*—achieved in different pile heights and depicting floral and animal motifs or the human form.[2] In the former group were smooth and mostly lightweight fabrics like sendals, satins, taffetas, and veils (*zendadi* and *zendadini*; *rasi*; *zetani* and *zetanini*; *camocati* or *camuccà*; *sindoni*; *taffetà*; *veli;* and *poste*); in the latter were lampases, brocades, samites, embroideries, damasks, and velvets (*lampassi*; *diaspri*; *broccatelli*; *sciàmiti* and *catasciàmiti; damaschi* and *damaschini*; *zetani vellutati* and most *velluti*).

Thanks to their material and symbolic qualities, then, silks—and above all damasks, velvets, and silk-and-gold fabrics—expressed the desire for magnificence, distinction, and ostentation typical of both the long-established elite and the *nouveau riche* and did so more fully

[1] On these aspects, see Richard A. Goldthwaite, "The Empire of Things: Consumer Demand in Renaissance Italy," in *Patronage Art and Society in Renaissance Italy*, ed. Francis William Kent and Patricia Simons (Oxford, 1987), 155–75; Goldthwaite, *Wealth and Demand for Art in Italy, 1300–1600* (Baltimore, 1993), 33–62; Lisa Jardine, *Worldly Goods: A New History of the Renaissance* (New York, 1996); Franco Franceschi and Luca Molà, "L'economia del Rinascimento: Dalle teorie della crisi alla 'preistoria' del consumismo," in *Il Rinascimento Italiano e l'Europa*, vol. 1, *Storia e storiografia*, ed. Marcello Fantoni (Treviso and Vicenza, 2006), 192–97; and Evelyn Welch, *Shopping in the Renaissance: Consumer Cultures in Italy, 1400–1600* (New Haven, 2005). On the limits of Renaissance consumerism, see Lauro Martines, "The Renaissance and the Birth of a Consumer Society," *Renaissance Quarterly* 51, no. 1 (1998): 193–203; and Frank Trentmann, *Empire of Things: How We Became a World of Consumers, from the Fifteenth Century to the Twenty-First* (New York, 2016), chap. 2.

[2] Francesco Battistini, *L'industria della seta in Italia* (Bologna, 2003), 14; Anna Muthesius, "Silk in the Medieval World," in *The Cambridge History of Western Textiles*, ed. David Jenkins, vol. 1 (Cambridge, U.K., 2003), 350–51; Roberta Orsi Landini, "Seta: Tre momenti di una storia particolare," in *Seta: Potere e glamour: Tessuti e abiti dal Rinascimento al XX secolo*, ed. Roberta Orsi Landini, exhibition catalog (Milan, 2006), 13–14.

than had even the splendid English woolens that once dominated the luxury sectors of the textile market. As Maria Giuseppina Muzzarelli writes, "silk clothes and embellishes the real world but also animates the world of appearances, which is also real in its own way, fueling fantasies and representing aspirations. . . . It is not only a shiny, precious, and attractive thread, but, precisely because of these characteristics, . . . it is also an instrument of social affirmation."[3] This concept is synthesized effectively by Giorgio Vasari and is expressed when he says this of Luca Signorelli: "He lived splendidly and always dressed in silk; and he was venerated by all the great personages."[4]

In the face of growing demand, before the great boom of the fifteenth century, silk manufacturing had a rather limited number of processing centers in Europe and was therefore protected from the dangers of overproduction, which had become very concrete in the wool sector, the oldest and most consolidated of urban textile activities, but also the most widespread.[5] Compared with the woolen cloth industry, silk production had peculiar features: a shorter and faster production cycle, a smaller number of employees, and above all a different cost structure. In fact, due to the greater specialization required of silk workers, individual wages paid by *setaioli* (silk manufacturing entrepreneurs) were often considerably higher than the wages paid by *lanaioli* (wool manufacturing entrepreneurs); however, they had significantly less impact on overall production expenses, 60 to 70 percent of which were absorbed by the price of the raw materials, dyestuffs, and the precious metals used in processing.[6] So, while the European wool business, hit by new market trends and by the increase in wages caused by epidemics, had to face a difficult restructuring process, the few existing silk industries, directed especially toward the creation of luxury fabrics for export, saw very promising commercial prospects ahead, not compromised by wage growth, which was

[3] Maria Giuseppina Muzzarelli, "Seta posseduta e seta consentita: Dalle aspirazioni individuali alle norme suntuarie nel basso Medioevo," in *La seta in Italia dal Medioevo al Seicento: Dal baco al drappo*, ed. Luca Molà, Reinhold C. Mueller, and Claudio Zanier (Venice, 2000), 211.

[4] Giorgio Vasari, *Le vite de' più eccellenti pittori scultori e architettori nelle redazioni del 1550 e 1568*, ed. Rosanna Bettarini, with commentary by Paola Barocchi, vol. 3 (Florence, 1971), 640.

[5] As Harry A. Miskimin already revealed, in *The Economy of Early Renaissance Europe, 1300–1460* (Englewood Cliffs, 1969), 102–5; see also Franco Franceschi, *Oltre il "Tumulto": I lavoratori fiorentini dell'Arte della Lana fra Tre e Quattrocento* (Florence, 1993), 30–31.

[6] The details of the comparison, based on the Florentine example, may be found in Sergio Tognetti, *Un'industria di lusso al servizio del grande commercio: Il mercato dei drappi serici e della seta nella Firenze del Quattrocento* (Florence, 2002), 16–23. In significant agreement with these valuations, Paola Massa calculates labor costs at around 30 to 35 percent of the total cost of the finished product. Massa, "Technological Typologies and Economic Organisation of Silk Workers In Italy, from the XIVth to the XVIIIth Centuries," *Journal of European Economic History* 22 (1993): 545.

absorbed without great repercussions.[7] Especially in the major Italian cities, there was available capital, entrepreneurial forces, and high-level mercantile organization, in addition to the extraordinary capacity to select and train the workforce needed for making successful products.[8]

If the production of these centers was originally inspired by models found in Islamic Spain, the Byzantine Empire, or the manufactures of the Asian regions conquered by the Mongols, from where the "Tartaric cloths" came, during the fourteenth century Italian shops began to elaborate increasingly autonomous and original articles.[9] This renewal culminated in the perfecting of textured velvets, fabrics capable of enhancing the "material and three-dimensional effect of the pile," and ones that contributed significantly to building the international reputation of the producers of the Peninsula.[10]

## Lucca and the Other Cities of Silk

Introduced to Lucca in the twelfth century, perhaps by Jewish or Greek workers, silk manufacturing subsequently developed in a few places in central and north Italy; in the thirteenth century, only Genoa, Venice, Bologna, and Lucca could boast of silk production for export as well as for the local market.[11] Some activity in this sector is also reported at the beginning of the thirteenth century in Milan but seems to have died out in the course of the century, only to reappear in the fifteenth century. As for the typology of this era's Italian fabrics, cloths of high quality were produced, among them auroseric ones, especially in the two maritime republics; Bologna's specialty was weaving simpler fabrics, mostly sendals and taffetas; and the Lucchese silk industry,

[7] For a panoramic view on the restructuring process in the industry, see Stephan R. Epstein, *Freedom and Growth: The Rise of States and Markets in Europe, 1300–1750* (London, 2000), chap. 6.

[8] Bruno Dini, "Dibattito," in *La seta in Europa: Secc. XIII–XX*, ed. Simonetta Cavaciocchi (Florence, 1993), 181.

[9] Maria Ludovica Rosati, "Le manifatture della seta in Italia nel basso Medioevo: Produzioni seriali al servizio del lusso," in *Fatto in Italia: dal Medioevo al Made in Italy*, ed. Alessandra Guerrini, exhibition catalog (Milan, 2016), 55–72; Ignazio del Punta and Maria Ludovica Rosati, *Lucca una città di seta: Produzione, commercio e diffusione dei tessuti di seta lucchesi nel tardo Medioevo*, preface by Luca Molà (Lucca, 2017), 22–33.

[10] Roberta Orsi Landini, "Vesti di seta e d'oro," in Landini, *Seta: Potere e glamour*, 41–44; Lisa Monnas, *Renaissance Velvets* (London, 2012), 7. Quotation from Maria Ludovica Rosati, "Il linguaggio della seta: Tipologie, motivi e colori," in *Tessuto e ricchezza a Firenze nel Trecento: Lana, seta, pittura*, ed. Cecilie Hollberg, exhibition catalog (Florence, 2017), 78.

[11] Florence Edler de Roover, "Lucchese Silks," *Ciba Review* 80 (1950): 2907; David Jacoby, "Silk Crosses the Mediterranean," in *Le vie del Mediterraneo: Idee, uomini, oggetti (secoli XI–XVI)*, ed. Gabriella Airaldi (Genoa, 1997), 55–79.

being more versatile, made not only luxury cloths for consumption by the elite classes but also articles of lower quality and price.[12]

Lucca, in effect, presented itself as the long-standing silk center of the Peninsula.[13] The "silk revolution" had begun there at the end of the twelfth century and had developed in the thirteenth thanks to close ties with the port of Genoa, where increasing quantities of raw silk were arriving from different parts of the Byzantine Empire, particularly Greece and Asia Minor, and from the territories bordering the Caspian Sea.[14] There are no reliable estimates of total production for this period of expansion, but it has been calculated that in the 1330s, and therefore in a less brilliant phase, the annual exports of the Lucchese silk industry oscillated between 100,000 and 125,000 pounds (or 335 to 418 quintals) of product, theoretically convertible into 12,000 pieces of light cloth or 6,250 rich ones: huge quantities for a single city and for products of such high value.[15] The early success of Lucca's silk factories, known all over Europe, made its artisans extremely sought after, such that by 1231 they had already been beckoned to the municipality of Bologna, together with wool workers from Verona and Florence, for the purpose of strengthening the city's own textile sector.[16] In the thirteenth century, in fact, the diaspora of entrepreneurs and workers from Lucca in search of new economic opportunities had already begun, but it was only following the conquest of Lucca by the Ghibellines of Uguccione della Faggiola (who became lord of Pisa) and his allies the "White" Guelphs that real migratory currents took shape.[17] In Italy these flows pointed toward Florence, Bologna, Venice, and Genoa; in each of

[12] Bruno Dini, "L'industria serica in Italia: Secc. XIII–XV," in *Saggi su una economia-mondo: Firenze e l'Italia fra Mediterraneo ed Europa (secc. XIII–XVI)* (Pisa, 1995), 51–85; Luca Molà, *The Silk Industry of Renaissance Venice* (Baltimore, 2000), 3; Patrizia Mainoni, "La seta in Italia fra XII e XIII secolo: Migrazioni artigiane e tipologie seriche," in Molà, Mueller, and Zanier, *La seta in Italia*, 365–99; Muthesius, "Silk in the Medieval World," 331–40. As far as Lucca is concerned, some believe that the city's production until the late fourteenth century comprised mostly lighter and lower-cost fabrics like sendals. See Alma Poloni, "L'economia lucchese nella seconda metà del Trecento," in *Spazi economici e circuiti commerciali nel Mediterraneo del Trecento*, ed. Bruno Figliuolo, Giuseppe Petralia, and Pinuccia F. Simbula (Amalfi, 2017), 123–25.

[13] For the most recent synthetic treatment of the Lucchese industry, endowed with an ample bibliography, see del Punta and Rosati, *Lucca*.

[14] Alma Poloni, *Lucca nel Duecento: Uno studio sul cambiamento sociale* (Pisa, 2009), 46–55, 77–85.

[15] Hidetoshi Hoshino, "La seta in Valdinievole nel basso Medioevo," in *Atti del Convegno su artigianato e industria in Valdinievole dal Medioevo ad oggi* (Buggiano, 1987), 47–57, esp. 50–51.

[16] Still valid is the study by Maureen Fennell Mazzaoui, "The Emigration of Veronese Textile Artisans to Bologna in the Thirteenth Century," *Atti e Memorie dell'Accademia di Agricoltura Scienze e Lettere di Verona*, 6th ser., 19 (1967–1968): 275–321.

[17] On causes and dynamics of the migration, see del Punta and Rosati, *Lucca*, 229.

these cities, local manufacturing received new stimuli and a new impetus.[18]

In the Tuscan metropolis, where only production aimed at the local market existed, carried out on an artisanal basis by independent weavers or managed by small-time silk retailers, the arrival of the Lucchese contributed to the formation of a first nucleus of specialized labor and, over almost a century, to the development of an export industry. In 1411 the Guild of Por Santa Maria, which together with various other trade groups also welcomed silk merchants, issued specific "ordinances of the silk guild," intended to regulate economic activity and employment relationships in the sector, while after 1420, thanks to the arrival of gold-beaters (*battilori*) from Genoa and Venice, local production of the gold thread necessary for the weaving of auroseric cloths had its beginnings.[19]

In 1427 at least thirty-three companies in Florence were involved in processing the textiles; this number rose to thirty-nine in 1458 and to about fifty in the early 1460s, only to remain substantially stable in the following decades. In the last four decades of the fifteenth century, the number of workshops of *battilori*, some of them also silk manufacturers, increased until reaching eighteen to twenty. Data on total production are only available for a little over a fifteen-year period, but they describe a decidedly positive trend: from around 500 pieces per year in 1430, in fact, production jumped to over 2,100 pieces in 1446, while the overall value of the items made, which in 1436–1437 was about 230,000 florins, rose to 270,000 in the years 1451–1453, to 300,000 in 1461–1462, and to 400,000 in 1490.[20]

[18] On Florence, see Franco Franceschi, "I forestieri e l'industria della seta fiorentina fra Medioevo e Rinascimento," in Molà, Mueller, and Zanier, *La seta in Italia*, 406–9; and Sergio Tognetti, "La diaspora dei lucchesi nel Trecento e il primo sviluppo dell'arte della seta a Firenze," *Reti Medievali Rivista* 15, no. 2 (2014): 41–91. On Bologna, see Giovanni Livi, *I mercanti di seta lucchesi in Bologna nei secoli XIII e XIV: Notizie e documenti* (Florence, 1881); and Iacopo Volpi, "Mercanti e setaioli lucchesi a Bologna intorno al 1400," *Archivio storico italiano* 154, no. 4 (1996): 583–604. On Venice, see Telesforo Bini, *I lucchesi a Venezia: Alcuni studj sopra i secoli XIII e XIV* (Lucca, 1853); and Luca Molà, *La comunità dei Lucchesi a Venezia: Immigrazione e industria della seta nel tardo Medioevo* (Venice, 1994), esp. 25–29. On Genoa, see Paola Massa, *L'Arte genovese della seta nella normativa del XV e del XVI secolo* (Genoa, 1970), 21–22; and Giacomo Casarino, "Lucchesi e manifattura serica a Genova tra XIV e XVI secolo," in *Genova, solo mercanti? Artigiani, corporazioni e manifattura tra Quattro e Cinquecento* (Rome, 2018), 103–49.

[19] Umberto Dorini, ed., *Statuti dell'Arte di Por Santa Maria del tempo della Repubblica* (Florence, 1934), Riforma of 1411, rubrics I–VII, 406–11; Bruno Dini, "Una manifattura di battiloro nel Quattrocento," in *Saggi su una economia-mondo*, 91; Franceschi "I forestieri," 410–11.

[20] For data on the number of shops, see Tognetti, *Un'industria di lusso*, 24–29, where the author collects and discusses estimates of various scholars, in particular those of Florence Edler de Roover and Maria Luisa Bianchi and Maria Letizia Grossi. Edler de Roover, *L'arte della seta a Firenze nei secoli XIV e XV*, ed. Sergio Tognetti (Florence, 1999), 62–64;

In Venice and Bologna, where manufacturing was more deeply rooted, the presence of migrants seems to have more rapidly influenced the level of processing techniques and the forms of work organization. Even before the plague of 1348, Bologna was able to export its products to France and Flanders and, in the following decades, the city developed the production of what would become its flagship item, the veil, in rippled or straight versions: a prized accessory present in the repertoire of goods sold by major merchant companies, including those of Francesco Datini.[21] As for Venice, the fundamental role that Lucchese *setaioli* and silk workers played in the growth of the silk industry, especially in the period between 1314 and 1430, is well known, thanks to Luca Molà's research, as much in terms of business structures as corporate assets.[22] Around 1420, silk-and-gold cloths exported to Lombardy alone yielded 250,000 ducats to Venetian producers, and during the fifteenth century, thanks to the possibility of selling fabrics in all the markets reached every year by the republic's fleets, turnover still continued to grow.[23] Likewise enriched was the range of fabrics on offer, which, alongside simple satins and taffetas, included lampases, damasks, and velvets in crimson, *paonazzo*, and polychrome or on a gold background, among which the famous *restagno d'oro* stood out.[24]

Different still are the events that led to the development of the industry in Genoa, which saw the birth of its own silk guild in 1432 and was characterized by an upward trend until almost the end of the sixteenth century. The *setaioli* of Genoa could count on the great availability of raw materials imported from regions in both the western and the eastern Mediterranean (that not even Turkish advances interrupted), so much so that at the beginning of the sixteenth century the quantity of raw silk transformed in the city was more than double the amount worked in Florence, if less consistent. The market for cloths was no

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Bianchi and Grossi, "Botteghe, economia e spazio urbano," in *Arti fiorentine: La grande storia dell'Artigianato*, vol. 2, *Il Quattrocento*, ed. Franco Franceschi and Gloria Fossi (Florence, 1999), 60–61, tables 1–2. On the volume and value of the production, see instead Gino Corti and José-Gentil Da Silva, "Note sur la production de la soie à Florence, au XVe siècle," *Annales E.S.C.* 20 (1965): 309–11; and Bruno Dini, *La ricchezza documentaria per l'arte della seta e l'economia fiorentina nel Quattrocento*, in *Manifattura, commercio e banca nella Firenze medievale* (Florence, 2001), 12.

[21] Dini, "L'industria serica," 61–62; Elisa Tosi Brandi, "Il velo bolognese nei secoli XIV–XVI: Produzioni e tipologie," in *Il velo in area mediterranea fra storia e simbolo: Tardo Medioevo-prima Età moderna*, ed. Maria Giuseppina Muzzarelli, Maria Grazia Nico Ottaviani, and Gabriella Zarri (Bologna, 2014), 289–305; Angela Orlandi, "Impalpabili e trasparenti: I veli bolognesi nella documentazione datiniana," in Muzzarelli, Nico Ottaviani, and Zarri, *Il velo*, 307–24.

[22] Molà, *La comunità dei Lucchesi*.

[23] Dini, "L'industria serica," 65.

[24] Lisa Monnas, "Le luxe industriel," in *Venise 1500: La puissance, la novation et la concorde: Le triophe du mythe*, ed. Philippe Braunstein (Paris, 1993), 157–71, 159.

less extensive—and indeed was "as vast as was the Genoese trade"—but with particularly promising prospects in France, where in 1530 the exported silks, and velvets in particular, accounted for over a million *scudi*.[25]

In the fifteenth century, and especially in the 1430s and 1440s, the entire Italian silk sector entered a phase of more marked expansion, strengthening where it already existed and gaining new centers. At the end of the century, valuable cloths were being produced in Milan, Mantua, Ferrara, Modena, Siena, Perugia, Naples, Catanzaro, and Messina, while during the sixteenth century the manufacture of silk extended to a whole series of smaller towns in Piedmont and the Trentino, to the major cities of the Po river valley, and to Pisa, Rome, Catania, and Palermo.[26] The movements of entrepreneurs and specialized workers were doubtlessly decisive in this process of diffusion, but the role played by imitation based on pure observation and the reproduction of the most successful articles should not be underestimated.[27]

According to an estimate relative to the early sixteenth century, 14,000 of the 25,000 silk looms then active throughout Europe were in Italy, with 5,000 of them in Genoa and the Ligurian riviera, 2,500 in Lucca, 2,000 in Venice, 1,500 in Bologna, 1,000 in Florence, 500 in Naples, and a few hundred in Milan.[28] And valuations relative to all the labor involved in silk manufacturing speak of about 25,000 workers in Genoa in the first half of the sixteenth century, of 12,000 employed in Lucca in the same period, of 25,000 "souls" in Venice in 1529, and of 15,000 people in Milan in 1474.[29] In Florence, according to an opinion expressed by the consuls of the silk guild in 1461, "a third of this people" drew their livelihood from silk production.[30] Considering the population data proposed for the Tuscan capital in the fifteenth century, this figure represents not less than 12,000 to 13,000 individuals.[31]

[25] Dini, "L'industria serica," 69; Gabriella Sivori, "Il tramonto dell'industria serica genovese," *Rivista Storica Italiana* 84 (1972): 932.

[26] See, limiting oneself to syntheses, Dini, "L'industria serica"; Molà, *Silk Industry*, 4–14; Battistini, *L'industria della seta*, 9–19; and Sergio Tognetti, "I drappi di seta," in *Il Rinascimento Italiano e l'Europa*, vol. 4, *Commercio e cultura mercantile*, ed. Franco Franceschi, Richard A. Goldthwaite, and Reinhold C. Mueller (Treviso and Vicenza, 2007), 156–66.

[27] See Franco Franceschi, "L'impresa tessile e la trasmissione dei saperi (secoli XIII–XV)," in Franceschi, *". . . E seremo tutti ricchi": Lavoro, mobilità sociale e conflitti nelle città dell'Italia medievale* (Pisa, 2012), 84–95.

[28] Battistini, *L'industria della seta*, 177, table 3.2. For critical evaluations of these figures, see Tognetti, "I drappi di seta," 163n54.

[29] For references to these estimates, of diverse provenance, see Molà, *Silk Industry*, 16.

[30] Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1461, chap. I, 618.

[31] I refer to the 37,000 to 40,000 inhabitants estimated by David Herlihy and Christiane Klapisch-Zuber, *Les Toscans et leurs familles: Une étude du Catasto florentin de 1427* (Paris, 1978), 183, table 16.

## The Markets

Until the fourteenth century the raw material that fed the Italian silk industry came chiefly from areas located outside the Peninsula: from China, Persia, the Caspian Sea, different regions of the Byzantine Empire, including the islands of Chios and Rhodes, and Spain.[32] With the development of consumption and production recorded since the fifteenth century, however, the share of Italian silk out of the total used rose noticeably. From Sicily and Calabria, where it had, in fact, already been practiced for centuries, mulberry sericulture began to spread north, reaching Tuscany and Le Marche, the Po river valley, and even the hills of the Brianza and around Como, Verona, and Mantua, becoming an increasingly important activity for both landowners and peasant families.[33]

These advances, as we shall see, were the result also of specific cultural choices supported by the governments of many Italian states. It has been estimated that as early as the beginning of the sixteenth century the silk produced in the country, some 400 to 425 tons, was sufficient to cover the needs of the entire Italian silk industry and that three-quarters of the total continued to arrive from the South, particularly from Calabria.[34] In his *Descrittione di tutta Italia*, written after 1530, Leandro Alberti estimated that the quantity obtained from this region was approximately equal to what was produced throughout the rest of the Peninsula, but he also does not fail to report the presence of mulberry trees in the Bolognese countryside and even around Vicenza, whose inhabitants, according to Alberti, gained "great profit" from silk.[35] Naturally, this does not mean that imports of raw silk from abroad had been completely stopped, not least because a share of the silk obtained in Italy was in turn exported, but the dependence of *setaioli* on the most distant markets had been decidedly reduced.[36]

A different trend, and in many ways an opposite one, characterized the circulation of finished products. A part of the Italian silk textiles, in

[32] Dini, "L'industria serica"; Tognetti, "I drappi di seta"; Luca Molà, "A Luxury Industry: The Production of Italian Silks, 1400–1600," in *Europe's Rich Fabric: The Consumption, Commercialisation, and Production of Luxury Textiles in Italy, the Low Countries and Neighbouring Territories (Fourteenth–Sixteenth Centuries)*, ed. Bart Lambert and Katherine Anne Wilson (Farnham, 2016), 209–11.

[33] Franco Cazzola, "Colture, lavori, tecniche, rendimenti," in *Storia dell'agricoltura italiana*, vol. 2, *Il Medioevo e l'età moderna*, ed. Giuliano Pinto, Carlo Poni, and Ugo Tucci (Florence, 2002), 239; Tognetti, "I drappi di seta," 161.

[34] Battistini, *L'industria della seta*, 87.

[35] *Descrittione di tutta Italia di F. Leandro Alberti Bolognese* (Bologna, 1550), fols. 180r, 193v, 422r. On the diffusion of mulberry sericulture in the areas around Vicenza and Verona, see Edoardo Demo, *L'"anima della città": L'industria tessile a Verona e Vicenza (1400–1550)* (Milan, 2001), 47–52.

[36] Battistini, *L'industria della seta*, 18, 92–93.

fact, was sold at retail in the producing cities, and this type of demand should not be underestimated. The need to satisfy the demand for luxury fabrics among the Aragonese of Naples, possibly at lower prices than those of imported silks, was among the reasons that pushed King Ferrante to promote the manufacture of silk in the city, and the same happened later with the Gonzaga family in Mantua.[37] In Milan, in the second half of the fifteenth century, the level of consumption by the ducal court was very high, so high as to decisively influence the performance of the local manufacturing sector.[38] But there is no doubt that larger quantities were intended for export and had a very wide diffusion radius. Inside Italy the main consumers of silks were Rome with the papal curia, the cities of the southern kingdom—Naples in the lead—and the seigneurial domains; outside the Peninsula they were the capitals of the national states and the great European and Mediterranean merchant centers.[39]

North of the Alps a fundamental role was played by Geneva, where businessmen, largely from central and Atlantic Europe, converged as buyers. At least until the 1460s, in fact, it was in the city on Lake Léman that the most important of the continental trade fairs were held, providing a real clearing house for debt and credit relationships and, at the same time, an exchange center for gold and silver, in coins or in bars, and for every kind of luxury product.[40] The Medici bank and other Florentine companies, such as that of the Della Casa-Guadagni, operated there since 1420 and there built the bulk of their fortunes, some of them emanating directly from the silk business.[41] It is no coincidence that in merchant accounts, news about the supplying of silk to urban shops is sometimes accompanied by a clause stating that payment will be deferred until mules returning from Geneva had time to bring the profits from sold cloths, in the form of cash or letters of

[37] Molà, *Silk Industry*, 34.

[38] See Franca Leverotti, "Organizzazione della corte sforzesca e produzione serica," in *Seta Oro Cremisi: Segreti e tecnologia alla corte dei Visconti e degli Sforza*, ed. Chiara Buss (Milan, 2009), 18–24.

[39] Edler de Roover, *L'arte della seta*, 99–119; Dini, "L'industria serica"; Tognetti, "I drappi di seta," 154.

[40] Jean François Berger, *Genève et l'économie européenne de la Renaissance* (Paris, 1963), 286–87; Michele Cassandro, *Les foires de Genève et les hommes d'affaires italiens au XV siècle* (Florence, 1979), 14–15; Bruno Dini, "I mercanti banchieri italiani e le fiere di Ginevra e di Lione," in *L'Italia alla fine del Medioevo: I caratteri originali nel quadro europeo*, ed. Francesco Salvestrini and Federica Cengarle, vol. 1 (Florence, 2006), 434–41.

[41] Michele Cassandro, "Interazioni economiche tra la Svizzera e il mondo mediterraneo nel basso Medioevo: Il ruolo delle fiere e la strategia dei mercanti banchieri," in *Die Schweiz in der Weltwirtschaft*, ed. Paul Bairoch and Martin H. Körner (Geneva, 1990), 29–34; Raymond de Roover, *The Rise and Decline of the Medici Bank: 1397–1494* (Washington, DC, 1999), 278–89.

exchange, to the hands of the textile entrepreneurs.[42] Even in Genoa, the days when the caravans that left four times a year for Geneva returned were special: the fairs, as Jacques Heers once observed, gave a rhythm to the activities of the city's *setaioli*.[43]

But Italian silks also reached London, Bruges, and Paris, most passing through the Lyon fair, whose fortunes began in 1463 when King Louis XI, determined to develop an alternative economic pole to Geneva on French soil, gave foreign merchants very enticing concessions to induce them to move their business to the city on the Rhone. In Lyon as in Geneva luxury silks dominated the scene, primarily Italian velvets, satins, and damasks, which still in the mid-sixteenth century made up about 50 percent of all the products handled at the fairs.[44] Of considerable importance was the market represented by the Flemish lands of the Dukes of Burgundy, then in Habsburg hands, in which the traditional prevalence of products marketed by Lucca's merchant entrepreneurs left an opening, after 1460, for the penetration of Florentine silk cloths.[45]

Two other areas absorbed substantial quantities of silks from Italy. The first was the Iberian Peninsula, where Barcelona, Valencia, and Lisbon imported fabrics mainly from Genoa, Florence, and later from Naples, even if, starting from the second half of the fifteenth century, Italians—in particular, Genoese and Ligurian—themselves gave an essential boost to the development of local silk manufacturing in Valencia, Toledo, Cordoba, Seville, Malaga, and Granada.[46] The second area was the Levant, traditionally an important outlet for Venetian silks but where, after the Turkish conquest of Constantinople and the affirmation of Ottoman domination, the volume of exports from Florentine *setaioli* increased.[47]

[42] Sergio Tognetti, "Attività industriali e commercio di manufatti nelle città toscane del tardo Medioevo (1250 ca.–1530 ca.)," *Archivio storico italiano* 159 (2001): 474.

[43] Jacques Heers, *Genova nel '400: Civiltà mediterranea, grande capitalismo e capitalismo popolare,* Italian translation (Milan, 1991), 265.

[44] Richard Gascon, *Grand commerce et vie urbaine au XVIe siecle: Lyon et ses marchands (environs de 1520–environs de 1580)* (Paris, 1971), 65.

[45] Laura Galoppini, *Mercanti toscani a Bruges nel tardo Medioevo* (Pisa, 2009), esp. 155–59, 162–64, 187–89, 196, 336; Edler de Roover, *L'arte della seta*, 111–13.

[46] Battistini, *L'industria della seta*, 21; Edler de Roover, *L'arte della seta*, 99–102; Tognetti, *Un'industria di lusso*, 120–27; Eleni Sakellariou, *Southern Italy in the Late Middle Ages: Demographic, Institutional and Economic Change in the Kingdom of Naples, c. 1440–c. 1530* (Leiden, 2012), 404. This boost in local manufacturing has been documented by Germán Navarro Espinach, particularly in "Los genoveses y el negocio de la seda en Valencia (1457–1512)," *Anuario de Estudios Medievales* 24 (1994): 201–24; "La seda entre Génova, Valencia y Granada en época de los Reyes Católicos," in *La frontera oriental nazarí como sujeto histórico (siglos XIII–XVI)*, ed. Pedro Segura Artero (Almeria, 1997), 477–84; and *Los orígenes de la sedería valenciana (siglos XV–XVI)* (Valencia, 1999), 39–45, 255–74.

[47] Eliyahu Ashtor, "L'exportation de textiles occidentaux dans le Proche Orient musulman au bas Moyen Age (1370–1517)," in *Studi in memoria di Federigo Melis*, vol. 2 (Naples, 1978), 360–67; Bruno Dini, "L'economia fiorentina dal 1450 al 1530," in *Saggi su un'economia-mondo*, 191–93; Edler de Roover, *L'arte della seta*, 117–19.

## The Industry: Organization and Investment

As was the case with other textiles, the production of silk fabric was complex and required a strong organizational commitment. Unlike wool, cotton, and linen, which before being woven had to undergo a series of procedures necessary to obtain the woolen yarn, the raw silk arrived in the city in the form of a continuous thread, which greatly shortened the production cycle; nevertheless, the ultimate fabric still resulted from the work of different categories of craftsmen.[48] The earliest essential phase to be carried out was winding (*incannatura*)—possibly preceded by doubling (*binatura*), the coupling of two or more threads—through which the silk was transferred from skeins (*matasse*) to wooden spools wrapped with thread. Silk throwing (*torcitura*), a fundamental operation that made the thread more elastic, robust, and regular, followed immediately. From the end of the thirteenth century it was carried out using an innovative and ingenious machine, the mechanical *torcitoio* or silk-throwing machine, capable of reducing the necessary labor hours by fifty to a hundred times. Returned to the spools, the twisted yarn was delivered to dyers, who first cleansed it of the natural rubber with which it was still impregnated by washing it in warm water (a process called *cocitura*, or cooking) and then sent it on to the color baths. The manufacturing process ended with warping (*orditura*), the assembly of longitudinal warp threads on the warp-beam (*subbio*), an essential part of the loom (*telaio*), and then weaving (*tessitura*), destined to finally transform the semifinished product into silk cloth. While the doubling, winding, and warping were carried out by women "who had no clear professional status," the other, more specialized phases were the reserve of men.[49]

The system adopted to manage all these operations, at least from the second half of the fourteenth century, was what historians have described as "disseminated" or "decentralized" manufacturing.[50] That is, there were diverse workplaces scattered throughout the space, managed by their particular owners with lesser or greater degrees of autonomy and connected by the initiative and organizational skills of the textile entrepreneurs, the *setaioli*, who normally worked by

[48] The brief description that follows is based chiefly upon Flavio Crippa, "Dal baco al filo," in Molà, Mueller, and Zanier, *La seta in Italia*, 3–33; and Molà, "Luxury Industry," 215–20.

[49] Molà, "Luxury Industry," 215.

[50] Historians using this language have followed the work of Federigo Melis on the wool industry, especially his *Aspetti della vita economica medievale: Studi nell'Archivio Datini di Prato*, vol. 1 (Siena, 1962). For a fuller discussion, see Bruno Dini, *Le origini del capitalismo* (Florence, 1979), 1–22; and Franco Franceschi, "L'impresa mercantile-industriale nella Toscana dei secoli XIV–XVI," in *La storia dell'impresa nella lunga durata: Continuità e discontinuità*, *Annali di Storia dell' impresa* 14 (2003): 229–34.

forming firms or partnerships (*compagnie*) with other *compagni*. The sole owners of the raw silk, the worked product in its various stages, and the final product, the *setaioli* directed the transformation process at every moment. The heart of this "extended workshop" was the silk workshop (*bottega di seta*), which brought together the functions of an organizational center, a sorting warehouse for the semifinished product, and a sales point; the other workplaces of the staff involved in the actual productive transformation were connected to it.[51] This particular workshop configuration, which avoided the convergence of the work phases in a single location and made extensive use of the "putting out" system, was the answer to two very serious problems that the textile entrepreneur had to face: on the one hand, the difficulty of procuring enough capital to simultaneously manage the entire technological cycle; on the other, the risk of investing in an activity that was heavily dependent on foreign markets for the supply of raw materials and the sale of finished fabrics and, as such, subject to sudden fluctuations. In this way, at least, the investments necessary for the production of silk fabrics were divided, to some extent, between different economic actors.

The figures involved in silk manufacturing, however, remained huge and increased over time with the expansion of the market. That silk was big business is evident from the growing interest it aroused among the major mercantile families of the Italian cities; in fact, they entered more and more decisively into the sector, relying on their preexisting networks of economic relationships to obtain the best possible conditions for the supply of raw materials and the sale of their products. Interpenetrating more and more closely with large-scale trade and banking, the production of silks during the fifteenth century registered, in addition to clear quantitative growth, substantive change at the level of entrepreneurship and organization: "what at the beginning of the fourteenth century were only small artisanal workshops, characterized by their modest managerial level and only poorly connected with supra-regional markets, in the fifteenth century became capitalist enterprises with ample financial resources, directed by personnel well versed in the mechanisms of the circuits of international merchants."[52] In Venice these men were initially recruited, above all, from among the Lucchese merchant entrepreneurs, owners of companies with capital over and beyond (sometimes by far) 10,000 ducats. Such were the companies of the Balbani, the De' Cari, the Quarti, the Bernardi, and the Cenami, able to buy oriental or Spanish silks both in the city and in other ports and to

[51] Massa, *L'Arte genovese della seta*, 545–46; Dini, "L'industria serica"; Tognetti, "I drappi di seta," 150–52.

[52] Tognetti, "I drappi di seta," 150.

open shops in the lagoon, at home, and even in Genoa or Bologna.[53] But representatives of large Venetian families such as the Contarini, Querini, and Soranzo were also deeply involved in the trafficking of raw materials.[54] In Florence, by contrast, Lucchese *setaioli* gave way more quickly to the city's entrepreneurs, eager to invest their capital in the "new" industry: among these were the Medici, who in 1438 engaged capital of 4,200 florins in a silk workshop destined to remain in operation, with excellent results, until the bankruptcy of the Medici bank in 1494.[55] Spinelli, Antinori, Pitti, and Martelli also joined the ranks of the Medici and, from the last third of the fifteenth century, the Gondi, Ridolfi, Strozzi, Capponi, and Salviati, owners of large companies, specialized in the production of silk-and-gold cloths.[56]

The evolution was similar in Genoa, where silk became the most important manufacturing sector in the fifteenth century and the one in which investments reached their highest levels. Often structured as partnerships between *setaioli*, who by virtue of their "art and industry" acted as administrators, and other unspecialized businessmen, who provided the bulk of the financing, individual Genoese silk enterprises came to invest amounts exceeding 10,000 lire.[57] Also striking, especially after the mid-fifteenth century, is the growing presence among the *setaioli* of representatives of noble families traditionally engaged in international trade and navigation such as the Spinola, Di Negro, Doria, and Grimaldi.[58]

## Entrepreneurs, Artisans, and Guilds

Growing mercantile and entrepreneurial strength often found expression in the creation of guilds (*corporazioni*) in the silk sector that were dominated by *setaioli* but made up of all those who cooperated in the production of the fabric, including sometimes the fabricators of silk workers' tools and the craftsmen engaged in the production of the metal threads necessary for the weaving of auroseric textiles. When this was not possible, and separate guilds for the main categories of

[53] Molà, *La comunità dei Lucchesi*, chap. 5.

[54] Luca Molà, "The Italian Silk Industry in the Renaissance," in *Le Mariegole delle Arti dei tessitori di seta: I veluderi (1347–1474) e i samitari (1370–1475)*, ed. Simone Rauch (Venice, 2010), lviii–lix.

[55] De Roover, *Rise and Decline*, 60, 169.

[56] Dini, "L'industria serica," 82. The case of the Gondi lies at the center of a recent monograph by Sergio Tognetti in which the commerce in silken textiles beyond the Alps plays an important role. Tognetti, *I Gondi di Lione: Una banca d'affari fiorentina nella Francia del primo Cinquecento* (Florence, 2013).

[57] Heers, *Genova nel '400*, 157–58, 162, 164–65.

[58] Massa, *L'Arte genovese della seta*, 23.

producers were formed, the *setaioli* still managed to secure preeminence over the other trade groups, albeit to varying degrees depending on place and time and not without tensions and conflicts.[59]

A perfect example of the first typology is the guild of the Florentine *setaioli*, born as a *membrum* of a composite body, the Arte di Por Santa Maria. It grew in importance until it could gain hegemony over its "host" association, transforming it during the fifteenth century into a real silk guild. Although it is impossible, given the state of surviving legislative materials, to reconstruct the exact position of spinners (*filatori*), throwers (*torcitori*), cookers (*cocitori*), dyers (*tintori*), and warpers and weavers (*orditori* and *tessitori*) before 1335, the impression is that until the mid-fourteenth century they enjoyed some economic autonomy and some corporate status.[60] But the situation began to change soon after. In fact, with the reform of 1352, and especially with that of 1411, all those who for some reason cooperated in the creation of silk textiles, together with their employees, were forced to swear an oath to the *setaioli*-led guild and to promise to observe its laws. They were not recognized as members of the guild with full rights and, indeed, were not even required to matriculate; their status was that of simple subordinates (*sottoposti*) and thus they would always remain.[61]

Less unambiguous, but substantially similar, was the situation in Genoa. Even there, according to the statutes of the Arte della seta of 1432, the various categories of producers were not allowed to form autonomous associations and their condition was characterized by a "complete and almost unconditional submission to the interests of entrepreneurs."[62] The only ones to escape this fate were the dyers (probably because they had already been united in their own guild since the thirteenth century), who nonetheless had to defend themselves several times from attempts by the *setaioli* to incorporate them into their guild and from rules that tended to closely surveil their activities. Such were the provisions, for example, enacted in 1466 that authorized textile entrepreneurs to visit them in their shops to supervise the dyeing of the raw material and obliged the consuls of the silk guild to check *very often* that these guildsmen did not commit fraud. The story of the spinners is different still: from the early fifteenth century, they

[59] Massa, "Technological Typologies," 546–47.

[60] Only from this perspective can we explain a deliberation of 1351 according to which "nullus texitor seu texitrix sindonum vel drapporum vel laborerii sirici audeat vel presummat texere vel texi facere aliquam suam telam, texutum vel aliam rem de sirico . . . nisi talis . . . laborans vel texitor seu texitrix fuerit matriculatus in dicta Arte et residens ad apothecam vel fundacum." Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1351, 247–48.

[61] Franco Franceschi, "Un'industria 'nuova' e prestigiosa: La seta," in Franceschi and Fossi, *Arti fiorentine*, 2:170–71.

[62] Massa, *L'Arte genovese della seta*, 99.

had insisted, through repeated "entreaties," on the recognition of their legal autonomy, which, however, they did not receive until 1598.[63]

We can ascribe to the second guild typology the arrangement of the Lucchese silk industry, characterized by the existence of a guild formed by the *mercatores* engaged in the production and marketing of textiles, the Ars Sendadorum, which was flanked by separate guilds for the main categories of producers: dyers, goldbeaters, and warpers.[64] Beginning in at least 1376, however, all details of the artisans' activity were regulated by the statutes of the Corte dei mercanti, the peculiar civic institution that combined the functions of a commercial court, a merchant association, and an organ of control of the artisans' guilds, of which the half of the consuls and the majority of the councilors were chosen from among the "real merchants" of the silk industry.[65] The situation did not change in the following decades and, still at the end of the fifteenth century, the subjection of the producer organizations to the Curia mercatorum had to remain strong, as evidenced by the statutes of the Weavers' Guild of 1482: meetings of the governing bodies of this guild were not valid if one of the Consuls of the merchants did not participate; its deliberations had to be approved in advance by the court; and its sentences could always be appealed to the mercantile *curia*.[66]

The situation was very similar in Venice, where the presence of Lucchese entrepreneurs and workers was also decisive in this respect. Here, the first to be established, perhaps as early as the twelfth century, were the guilds of the dyers and the *samitari*, weavers engaged in the creation of a vast range of textiles, among which *sciàmiti* and auroseric cloths stood out. In 1347 the guild of the *veluderi*, craftsmen specializing in the weaving of velvets, joined these two associations, for which we possess the thirteenth-century statutes. In 1488 the two guilds of weavers united into one; in the same year, spinners also obtained the right to associate. In the meantime, at least from the mid-fourteenth century on, a guild of *setaioli* had formed, the Corte della seta, initially reserved for Lucchese *setaioli* only but later open also to Venetian silk entrepreneurs; from 1360 on, all those who for

[63] Massa, 101–7, 109–21.

[64] Bini, *I lucchesi a Venezia*, 55–63; Poloni, *Lucca nel Duecento*, 132n61.

[65] Augusto Mancini, Umberto Dorini, and Eugenio Lazzareschi, eds., *Lo statuto della Corte dei Mercanti in Lucca del 1376* (Florence, 1927), xxv–xxxi, xxxvi–xxxix; Renzo Sabbatini and Antonella Moriani, "Corporazioni e vita cittadina nella 'Toscana minore': Alcune considerazioni su Lucca, Arezzo e Siena," in *Dalla Corporazione al mutuo soccorso: Organizzazione e tutela del lavoro tra XVI e XX secolo*, ed. Paola Massa and Angelo Moioli (Milan, 2004), 122.

[66] "Capitoli e statuti dell'Arte e Scuola de' Testori del MCCCCLXXXII," in Carlo Tommasi and Girolamo Minutoli, eds., *Sommario della storia di Lucca dall'anno MIV all'anno MDCC: Documenti* (Florence, 1847), 66–87; Sabbatini and Moriani, "Corporazioni e vita cittadina," 123.

some reason participated in the production and marketing of textiles, including those already matriculated in their respective guilds, had the obligation to be inscribed as *sottoposti*. This regulation is already indicative of the relationship existing between the entrepreneurial and the artisanal components of the industry, but what seems to distinguish the Venetian situation from the Lucchese one is the greater autonomy of the producers' guilds, wider in the case of the oldest of the associations and, in any case, at least partially guaranteed by the fact that all the guilds of the sector, including the Corte della seta, were subject to the supervision of the Consuls of the merchants, a magistracy made up of individuals chosen from among the ranks of the Maggior Consiglio and less dominated by *setaioli* than was true of the Court of merchants in Lucca.[67]

## Silk, Employment, and Wealth

In a 2019 article on the wool industry in the cities of late medieval Italy, Giuliano Pinto again suggests, with a variety of examples, the theme of the awareness that the ruling classes of cities and states had of the economic and social function that this activity performed. A strong and developed wool sector—this the leitmotif of the testimonials presented—generated well-being, wealth, power, honor, and good reputation, while weakness, crisis, or lack in this fundamental sector impoverished a city's inhabitants and often forced them to look for work in other places, with very negative general consequences.[68] I cite this study to highlight the fact that in the fifteenth century similar declarations began to appear, only now in reference to the silk industry: a sign of an ever clearer awareness, by public authorities and by entrepreneurs, of silk's growing importance. In 1439, for example, the potential inherent in the development of this industry was already clear to the rulers of Siena, where the production of silk cloths was just beginning, as is attested to by this municipal deliberation:

> In the first place, considering how much silk manufacturing is honored and brings great convenience and utility to the cities where it has developed (this being deduced by experience from how little has so far been done in our own city), it appears an

[67] Romolo Broglio D'Ajano, "L'industria della seta a Venezia," in *Storia dell'economia italiana: Saggi di storia economica*, vol. 1, *Secoli settimo-diciasettesimo*, ed. Carlo M. Cipolla (Turin, 1959), 230–38; Molà, *La comunità dei Lucchesi*, 73–76, 155, 167–69; Simone Rauch, "L'industria della seta nella Venezia tardomedievale," in Rauch, *Le Mariegole*, ciii–cv.

[68] Giuliano Pinto, "*Beneficium civitatis*: Considerazioni sulla funzione economica e sociale dell'arte della lana in Italia (secoli XIII–XV)," *Archivio storico italiano* 177 (2019): 213–34.

> honorable and very useful thing to ensure that the said silk manufacturing grows and increases as much as possible.[69]

The same concepts, but colored with evident pride for results already achieved, reappear a few decades later in Florence, where the consuls of the Por Santa Maria guild stressed "the honor, fame, and great utility that derive to our city from the said guild and especially from the silk member (*membro della seta*) and how it has expanded and grown, surpassing every other city in the world."[70] These ideas were also current elsewhere, for example, in Milan, where in 1490 the city's silk and gold merchants presented a petition to Duke Gian Galeazzo Sforza, which began with these words: "Your Lordship knows how useful and convenient the production of gold, silver, and silk cloths that is done in this city of Milan is for the whole city and especially for Your Lordship and for your income, and thus the merchants of this sector do everything possible to maintain its reputation and to carry it out properly and fairly."[71]

Returning to Florence, it is worth mentioning a passage that highlights the "social" function of silk manufacturing—that is, that of creating jobs, thus guaranteeing the subsistence of workers. The statutes of the silk guild again observe "how much the silk guild in this city has grown and continues to grow, so much so that by virtue of its manufactures the people receive a great deal of support and help."[72] And not so different is what the rectors of the Venetian silk guild wrote in 1529, aware of "how many souls live thanks to this activity."[73] From this perspective it is not difficult to understand why in 1448, when rejecting the request put forward by the local *setaiolo* Giovanni Triadano to move to Milan, the Genoese authorities countered with "the advantages that the city

[69] "In prima, avuto rispecto quanto l'arte della seta sia cosa honorata, et facci grande comodo et utilità nelle città dov'è moltiplicata (et questo per experientia si vede per quello piccolo principio che infin da ora è fatto nella nostra città) et paia cosa honorevole et utilissima a provvedere che la detta arte della seta quanto si può crescha et augumenti." Luciano Banchi, ed., *L'arte della seta in Siena nei secoli XV e XVI: Statuti e documenti* (Siena, 1881), 121–22.

[70] "Considerato l'onore, la fama e la grande utilità che deriva et procede dalla detta arte alla nostra città et maxime dal membro della seta et quanto è ampliato et cresciuto, che ogni altra città del mondo avanza." Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1460, chap. I, 597–98.

[71] "Illustrissimo Signore. Sa la V.S. de quantà utilità e comoditate è lo exercitio de drapi d'oro, de argento et seta se fa in questa cità de Milano a tuta la cità et precipue a la V.S. et a le intrate sue, et però li mercadanti d'esso exercitio studiano continue se conservi in reputatione et se faza debitamente et justamente." Quoted in Silvio Leydi, "Regesto di statuti e grida relativi ai tessuti auro-serici fabbricati a Milano nel periodo sforzesco," in Buss, *Seta Oro Cremisi*, 180.

[72] "Quanto l'arte della seta in questa città è moltiplicata et multiplica per modo che delle manifatture di quella el popolo riceve grandissimo sussidio e aiuto." Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1446, chap. I, 565.

[73] Quoted in Molà, *La comunità dei Lucchesi*, 194.

obtains" from his activity and, precisely, with the fact that "it certainly provides work for more than 300 persons."[74]

It is, in the end, from the Ligurian capital that perhaps the most comprehensive and authoritative comment on the role of the silk industry in economic development comes. In 1514, Doge Ottaviano Fregoso exalted its importance and usefulness for the community, evoking its reverberating advantages for "trade, gabelles, and private individuals both in the city and outside, to the point that it could be said that this activity is the spirit and soul of our republic."[75]

## The Intervention of Public Powers

Fregoso's praise was not only words. In Renaissance Italy, in fact, the silk sector was probably the one in which institutional intervention proved to be the most determined and effective—starting from the action of the states and guilds that set for themselves the objective of introducing manufacturing where it did not really yet exist, or deeply reorganizing its structure, or simply developing particular types of products. Examples are numerous and make up a chronology that affects, over two centuries, cities of different sizes and importance, located in every area of the Peninsula. Even if we limit ourselves to the fifteenth and early sixteenth centuries, the list remains very substantial: Siena in 1438; Milan in 1442 and 1457; Catanzaro in 1445; Turin in 1447, 1449, 1453, 1463, and 1515; Perugia in 1437 and 1459; Brescia in 1444 and 1527; Ferrara in 1462 and 1466; Florence in 1463 and 1476; Naples in 1465, 1474, and 1475; Pinerolo in 1481; Messina in 1486 and 1493; Cesena in 1491; Reggio Emilia in 1502; Cuneo in 1506; Udine in 1515; and Mantua in 1523 and 1524.[76]

The cities that saw the best results from their industrial development projects in the fifteenth century—so much so that silk cloth production remained the main manufacturing activity there for centuries—were Milan, Ferrara and Naples. In Milan, where the manufacture of light articles (belts, cords, bonnets, purses, ribbons, and fringes) had existed since the thirteenth century, the production of more complex and precious

[74] Quoted in Heers, *Genova nel '400*, 164.

[75] "Di quanta importanza, utilità o aviamento sia alla città lo artificio dei drappi di seta . . ., e quanto emolumento ne risente la mercanzia, cabella e private persone così di dentro come fuori della città, in modo che si porria dire che il detto artifizio sia il spirito e anima della nostra repubblica." Quoted in Sivori, "Il tramonto," 894. A similar expression was used by a successor of Fregoso, the Doge Antoniotto Adorno, according to whom silk manufacturing "non che l'occhio destro, è l'anima della nostra città." Quoted in Casarino, "Lucchesi e manifattura serica," 111.

[76] These data represent the work of collecting and synthesizing them by Molà, *Silk Industry*, 5–14, 309–18.

fabrics like damasks, velvets, and brocades took off only in 1442, when Duke Filippo Maria Visconti signed a contract to start the weaving of silk textiles with Pietro di Bartolo, a Florentine with pro-Visconti sympathies. A group of fifteen to twenty from Florence but also from Venice, among them spinners, weavers, dyers and other craftsmen, arrived in the city and accepted the assignment in exchange for substantial funding and a long series of concessions, including, remarkably, authorization to work in semimonopoly conditions for ten years and tax exemptions for the import of silk, dyestuffs, gold and silver yarn, and the tools of the trade.[77] This was exactly the right choice, and it was helped along by the evolution of demand, which attracted weavers and other craftsmen from Florence, Genoa, Pavia, Venice, and Bergamo to the city in increasing numbers. In these years, local *setaioli* had a generally modest profile, although some initiatives stand out: for example, the case of the company led by Leonardo Lanteri, an enterprising *setaiolo* who included among his financiers the Genoese Filippo Spinola and Enrico Picheti but also the very powerful Milanese Lampugnano family.[78] The situation, however, changed within a few decades: between 1459 and 1461 the sector was organized in guilds, and by the end of the century it appeared to be characterized by great vitality, especially in the production of silk-and-gold textiles. Though concealed under the label of "silk weavers," of whom lists exist in 1460, 1481, and 1494, we find in many cases representatives of the main merchant families of the city (Cusani, Dugnano, Carcano, Pusterla, Resta, Marliani, Vimercate, Landriano, Lampugnano, Grassi, and Biglia) coming from different backgrounds—woolens, fustians, construction, and lumber—but having become converts to the silk business.[79]

In Ferrara, the vehicle for the take-off of a high-quality silk industry was the Genoese weaver Urbano Trincherio, well known to authorities in the Ligurian city who had condemned him in 1452 for moving to Catalonia with some companions and then returning to his homeland to supply them with work equipment.[80] Ten years after this unpleasant adventure, the craftsman was again far from Genoa and, along with three other

[77] These events were reconstructed by Ettore Verga, *Il comune di Milano e l'Arte della seta dal secolo decimoquinto al decimottavo* (Milan, 1917), ix–x; but now, see Molà, "Oltre i confini della città: Artigiani e imprenditori fiorentini della seta all'estero," in Franceschi and Fossi, *Arti fiorentine*, 2:90–92.

[78] Paolo Grillo, "Le origini della manifattura serica in Milano (1400–1450)," *Studi storici* 35 (1994): 907; Consuelo Roman, "L'azienda serica di Leonardo Lanteri, imprenditore a Milano nel XV secolo," *Studi storici* 35 (1994): 917–42.

[79] Patrizia Mainoni, "La seta a Milano nel XV secolo: aspetti economici e istituzionali," *Studi storici* 35 (1994): 888–90; Maria Paola Zanoboni, *Artigiani, imprenditori, mercanti: Organizzazione del lavoro e conflitti sociali nella Milano sforzesca (1450–1476)* (Florence, 1996), 53–67.

[80] Massa, *L'Arte genovese della seta*, 194–95.

weavers, he obtained a contract from Duke Borso d'Este for the manufacture of "silk cloths of all sorts and in multiple colors, as well as gold and silver brocades *in tutta perfezione*." In this case too the agreements provided for a series of privileges, including the availability of a home for living and a workspace, a loan of 300 florins for the manufacturing plant, and exemption from taxation. In return, the four men had to ensure the activity of twenty looms, which in fact were in operation five years later, by which point, thanks to new agreements and privileges, dyers, *battilori*, and various other expert craftsmen had arrived in the city.[81] A significant aspect of the economic policy of the small state in the Po Valley was its "liberal" approach to the spread of silk manufacturing into the territories of dominion. In fact, in contrast to a generalized attitude according to which the monopoly for processing luxury cloth was reserved for the center and not the periphery, Duke Ercole I granted concessions and sureties that facilitated the birth of a silk industry in Modena and subsequently, because of the personal interest of Lucrezia Borgia, in Reggio Emilia, where it would become its main production activity in the modern era.[82]

Of great interest too are the events that transformed Naples into, to use the title of a book by Rosalba Ragosta, a "city of silk."[83] Between the mid-1460s and mid-1470s, King Ferrante of Aragon, taking advice from a counselor of the caliber of Diomede Carafa, entered into three contracts with as many craftsmen and businessmen: in 1465 with the Venetian Marino da Cataponte, "master of silk cloths," hired to produce velvets, satins, and damasks with five looms; in 1475 with the Genoese merchant Pietro de' Conversi, who undertook to recruit a number of craftsmen capable of starting up the production of light fabrics numbering between five and fifty pieces per year; and in 1474 with the Florentine Francesco di Nerone, who was meant to make brocades and auroseric clothes of any type for ten years.[84] The economic rewards were numerous and they were accompanied, for Francesco di Nerone and his possible partners, by a grant of Neapolitan citizenship, immunity for offenses committed *extra regnum*, and a certain degree of civil and criminal

[81] Luigi Napoleone Cittadella, *Notizie relative a Ferrara per la maggior parte inedite* (Ferrara, 1864), 502; Molà, *Silk Industry*, 8.

[82] Franco Franceschi and Luca Molà, "Regional States and Economic Development," in *The Italian Renaissance State*, ed. Andrea Gamberini and Isabella Lazzarini (Cambridge, U.K., 2012), 457–48.

[83] Rosalba Ragosta, *Napoli, città della seta: Produzione e mercato in età moderna* (Rome, 2009).

[84] On Diomede Carafa, see David Abulafia, "The Crown and the Economy under Ferrante I of Naples (1458–1494)," in *City and Countryside in Late Medieval and Renaissance Italy: Essays Presented to Philip Jones*, ed. Trevor Dean and Chris Wickham (London, 1990), 129–33.

jurisdiction over all their dependent workers. The very wealthy Neapolitan entrepreneurs Loise and Francesco Coppola, already engaged in a similar operation aimed at implanting high-level wool manufacturing in the kingdom, also participated in the venture, which had an estimated cost of at least 10,000 ducats.[85] In 1477 the first nucleus of the guild was formed, made up of everyone who took part in the creation of silk textiles, and the following year detailed rules were promulgated to protect the quality of the products, whose range was already very wide: a distinction that would be maintained and strengthened in the following century.[86]

The three cases on which I have focused, even in their historical specificity, present a scenario in common: the decisive role played by public authorities convinced that manufacturing could create employment and well-being; the use of contracts with individual specialists, usually foreigners; and the exchange between the authorities granting more or less extensive privileges to new arrivals and their commitment to activate a certain number of looms and/or produce a specific quota of textiles. In the silk sector, therefore, a model of integration between public initiative and private competences had emerged that would lead to the birth or take-off of new production activities.

## Supplying and Protecting the Industry

Industries, whether nascent or already established, had to be supplied and protected, and this necessity once again inspired, in a number of states, a series of similar measures aimed primarily at reducing the dependence of the industry on silk of distant origin. If we exclude the early initiative of the Commune of Modena, which already in its statutes of 1327 ordered "for public utility" the planting of at least three mulberry trees in every fenced place around the city,then the first measures inspired by the fifteenth-century boom in luxury consumption were taken at Florence in 1441.[87] At this time, mulberry sericulture had recently arrived in Valdinievole, introduced into the territory of Pescia, together with the white mulberry, by Francesco Buonvicini.[88] But the Florentine government aimed to acclimatize the silkworm throughout its whole domain and to this end forced landowners to plant five

[85] Molà, "Oltre i confini della città," 95–98; Ragosta, *Napoli*, 22–23; Sakellariou, *Southern Italy*, 392–96.

[86] Sakellariou, *Southern Italy*, 394–401; Alessandra Mastrodonato, *La norma inefficace: Le corporazioni napoletane tra teoria e prassi nei secoli dell'età moderna* (Palermo, 2016), 18.

[87] *Statuta civitatis Mutine anno 1327 reformata* (Parma, 1864), book 3, chap. XLI, 318.

[88] Judith C. Brown, *In the Shadow of Florence: Provincial Society in Renaissance Pescia* (New York, 1982), 66.

mulberries and five almond trees every year until they reached a minimum of fifty for each type, entrusting the supervision of the application of the law to the Consuls of Por Santa Maria and to the "rectors of the countryside [*contado*] and district [*distretto*]."[89] At the same time, the government concerned itself with attracting, with the promise of a twenty-year tax exemption, personnel able to carry out the silk reeling in Tuscany.[90] Among those who followed the government's wishes was Giovanni Rucellai, who had three to four thousand mulberry trees planted on his property in Poggio a Caiano.[91] Already in the mid-fifteenth century, a reliable estimate puts the silk produced in the state at 3.5 tons, an amount that would have grown quite slowly—so much so that still in the early sixteenth century, silk manufacturing in Florence depended on silk imports from southern Italy for 90 percent of its raw material.[92]

The Tuscan example was later followed by Duke Galeazzo Maria Sforza, who in 1470 invited the landowners of Milan, and of the villages and the rural area immediately adjacent to the city (the Corpi Santi), to plant five mulberry trees for every one hundred *pertiche* of land. Toward the end of the century, his successor, Ludovico il Moro—whose coat of arms bore an image of this plant—made a personal contribution to the development of mulberry sericulture by creating a full nursery in his farmstead La Sforzesca, located a few miles from Vigevano.[93] Meanwhile, the Dukes of Mantua were also showing interest in sericulture, acquiring three hundred mulberry seedlings in the countryside of Bologna, Vicenza, and Pescia.[94] In short, new cultivation was beginning to take on a clearly strategic character, to the point that at the end of the fifteenth century in Vicenza and Verona, for example, export bans on tree species that constituted nourishment for silkworms were issued; at the same time a kind of "mulberry diplomacy" developed, as is shown by the attempts (albeit unsuccessful) that Milanese ambassadors made in 1488 to obtain, first from the Consiglio generale of Vicenza and then

[89] Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1441, chap. II, 553.

[90] "E che chi vorrà godere detto beneficio," the measure clarifies, "si debba fare scrivere all'ufficio de' Cinque del Contado," while the supervision of these workers was delegated to the consuls of the guild. Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1441, chap. I, 552.

[91] Francis W. Kent, "The Making of a Renaissance Patron of the Arts," in *Giovanni Rucellai e il suo Zibaldone*, vol. 2, *A Florentine Patrician and his Palace* (London, 1981), 9–95, 76.

[92] Francesco Battistini, "La produzione, il commercio e i prezzi della seta grezza nello Stato di Firenze 1489–1859," *Rivista di storia economica* 21, no. 3 (2005): 237–38.

[93] For a summary of these facts, see Renzo P. Corritore, "Storia economica, ambiente e modo di produzione: L'affermazione della gelsibachicoltura nella Lombardia della prima età moderna," *Mélanges de l'École française de Rome: Italie et Méditerranée modernes et contemporaines* 14, no. 1 (2012): note 22, https://doi.org/10.4000/mefrim.327.

[94] Battistini, *L'industria della seta*, 41.

personally from the Doge of Venice, the coveted plants for transplantation at home.[95]

Another essential tool for guaranteeing the development of silk manufacturing was a customs policy—generally inspired by the protomercantilist principle of prohibiting the introduction of cloths that would potentially compete with those produced locally—of encouraging the import of silk and auxiliary materials (like precious metals, dyestuffs, and equipment) and discouraging their export. In Genoa, for example, during the fourteenth and fifteenth centuries, no luxury fabrics destined for export ever paid a duty and the same was true of the gold and silver used in weaving the richest cloths; even some of the raw silk, in this specific case from Vicenza and Verona, enjoyed a reduced import tariff.[96] Conversely, since 1423 there was a ban on introducing silk fabrics made outside the borders of the state, with some exceptions (for example, sendals and taffetas), unless they came from overseas territories subject to the republic's authority.[97] Likewise, in Florence in 1406, the gabelles on the importation of gold and silver into the city were abolished, while two years later, in order to prevent the reexportation of silk present inside the Tuscan territorial state, entry tariffs on various types of it were standardized and those on its commercial transport elevated. A peculiar system of deterrence for the importation of prohibited fabrics was the decision, reached in 1426, to hit those who used municipal galleys for the transport of "foreign cloths" with the heavy penalties that had been provided for failure to comply with the customs provisions of 1393 relating to woolen cloth.[98] In Venice, the goal of protecting local production led the republic to formulate a ban on importing silk from abroad already in 1366, though it is certain that the fine fabrics of Florence, Genoa, Milan, and later Naples bypassed these controls without too much difficulty. It is therefore not surprising that antismuggling laws concerning these articles were repeatedly promulgated throughout the fifteenth and sixteenth centuries.[99]

[95] Molà, *Silk Industry*, 219; Demo, *L'"anima della città,"* 48.

[96] Massa, *L'Arte genovese della seta*, 77–78.

[97] "Quod nullus, tam civis Janue quam districtualis vel extraneus quicumque, et cuiuscumque conditionis, status vel preheminentie existat, nullo modo possit, valeat vel presumat, in Januam vel eius districtum, conducere vel apportare, seu conduci vel apportari facere, per mare vel per terram, aliquem pannum vel aliquos pannos siricos, seu de setta, cum auro vel argento seu sine, cuiusmodi conditionis vel forme sit, qui non sit factus, textus vel fabricatus in civitate Janue et districtu, a Corvo usque ad Monachum vel saltem ultra mare, in terris et locis subditis Communi Janue et districtu dicti Communi." Massa, *L'Arte genovese della seta*, 83n22.

[98] On this subject, see Franco Franceschi, "Medici Economic Policy," in *The Medici: Citizens and Masters*, ed. Robert Black and John E. Law (Florence, 2015), 144.

[99] Molà, *Silk Industry*, 262.

Nor were silk and silk fabrics the only goods subject to restrictions. This category also included equipment, in addition to men, naturally, which we discuss below. In Lucca, the statutes of the Corte dei mercanti of 1376—"to ensure that the silk trade does not expand abroad"—prescribed that "no person, of any condition whatsoever, dare to bring or to have brought out of the Lucchese district any tool or device suitable for working sendals or silk cloths or other any thing belonging to the craft of weaving."[100] In Florence, too, from the time of the earliest development of silk production, the Guild of Por Santa Maria had prohibited, under penalty of 100 florins, extracting *telarium vel telaria*, *liccios et seu licciaturas*, *ferros*, *tabulas*, and *operas* from the city and granting those who had already transferred the tools out one year to destroy them so that no one else could use them. And each month of delay past the scheduled deadline would further result in an additional fine of 100 florins.[101] In Genoa in 1452 the Doge Pietro Fregoso established —on the occasion of the aforementioned dealings with Urbano Trincherio—that any *setaiolo*, weaver, dyer, or spinner who left Genoa or who without the permission of the government exported *instrumenta et alia necessaria ad exercitium dictarum artium* would incur the extremely onerous fine of 400 ducats and that the same penalty would apply to those who provided the offenders with advice, favor, or help.[102] Exemplary, again in this regard, is the story of the diffusion, starting from Bologna, of the circular silk-throwing machine (*torcitoio*). Developed in Lucca in a human-powered version, it had long since evolved in Bologna into a silk mill, such that it was specifically claimed as one of Bologna's important civic creations.[103] Thus the accusation made in 1537 against two artisans for having transferred this "versatile machine that spins around by force of water," or in any case the techniques needed to reconstruct it elsewhere (as one of the two accused was a carpenter), was exceptionally grave.[104]

## Increasing and Protecting Human Capital

When presenting the new statutes of their guild to Galeazzo Maria Sforza in 1481, the silk and gold merchants explained that it was necessary to adapt the corporate legislation to the changes that had occurred

[100] Mancini, Dorini, and Lazzareschi, *Lo statuto della Corte dei Mercanti*, chap. 41, 151.
[101] Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1416, chaps. I–IV, 446.
[102] Massa, *L'Arte genovese della seta*, 187.
[103] See Molà, *La comunità dei Lucchesi*, 139–44; Francesco Battistini, "Le principali tappe della diffusione del torcitoio circolare per seta nell'Italia del centro-nord (sec. XIV–XVIII)," *Società e Storia* 69 (1995): 631–40; and Crippa, *Dal baco al filo*, 15–31.
[104] Laura Righi, "Produzione di seta e trasferimenti tecnologici tra legislazione e frodi: Il caso di Bologna dal XIV al XVI secolo," *Archivio storico italiano* 174 (2016): 650.

in the fifteen years since the approval of their old statutes, noting in particular that they were now much more "educated and expert" in the exercise of their business and therefore "know better what is necessary at the present time," things they could not have imagined at the time because they were "new" to the trade.[105] In a highly specialized activity like the manufacturing of luxury silks, the need to have an adequately formed entrepreneurial class was certainly important, but this need was perhaps even stronger in the case of their workers: reliance on an abundant supply of qualified workers meant not only guaranteeing the good health of the sector and the high quality of its products but also stabilizing wages. For these reasons, the goal of guilds and governments alike was to increase the immigration of specialized personnel and, at the same time, avoid any dispersal of productive forces. In the effort to discourage transfers outside the city or the state, though, it was not only demographic matters that were at stake but also the need to prevent the loss or leakage of valuable knowledge, whose dissemination could have triggered or widened the dangerous phenomenon of competition and the related loss of market share for local products.

Following a diaspora in 1314, for example, the Republic of Lucca decreed that emigrants could be killed wherever they were found and incentivized this by offering special criminal bounties.[106] And just when the boom in the production of silk cloth was beginning, and at the behest of local *setaioli*, the Florentine government approved a similar law that provided beheading and property confiscation as penalties for those who went to practice silk-related activities outside the city and a fine of 1,000 florins for any who encouraged it.[107] In the second half of the fifteenth century, Genoa also tried to counter the phenomenon of the emigration of skilled workers by implementing progressively stricter legislation, including a combination of pecuniary penalties, exclusion from the guild, and corporal punishments, until at last, in 1529, the city adopted the Lucchese solution: offering bounties of 50 to 200 ducats to anyone who killed one of these industrial fugitives.[108]

[105] "Da la concessione in qua sono mutati li tempi e li facti, et maxime circa a le cosse pertinente al dicto exercitio, quia ut solet dici fata la leze pensato l'ingano, et tum etiam perché essi merchadanti sono altrimenti de presente instructi et experti in esso exercitio che non erano tempore concessionis de li predicti statuti et ordeni, et meglio sano quello gli è di bisogno de presente, che non potevano divinare alora perché erano novi in partia, seu in esso exercitio." Quoted in Leydi, "Regesto di statuti e grida," 180.

[106] Giulio Cordero di San Quintino, *Cenni intorno al commercio dei Lucchesi coi Genovesi nel XII e XIII secolo* (Lucca, 1838), 53–55.

[107] "Provisio Comunis Florentie de puniendo maioribus penis illos qui vadunt extra dictam civitatem ad tessendum drappos de auro et sirico." Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1419, 456–58.

[108] Massa, *L'Arte genovese della seta*, 187–90.

That this was not only a matter of threats is shown by references to the dangers run and the hardships suffered, which can sometimes be retraced in legislation in favor of the artisans who made it to and were heartily welcomed in their new place of work, and occasionally in associated judicial documents.[109] Such is the case of the 1474 process in Bologna against Cosimo Dini, a Florentine resident of the city for some time, found guilty of having led "certain persons from here to Florence to do work, prohibited outside Bologna's jurisdiction, relating to silk manufacturing." In fact, from the trial documentation, we learn how at least six workers had left the Bologna area with Dini: three female weavers, two spinners, and a crisper or curler (*increspatore*). Dini was sentenced in absentia to the Commune's criminal ban, with a bounty of 200 gold ducats, while the craftsmen who had followed him were invited to return to the city within a month's time; if they did not, they too would fall under the ban. Further, an image of the guilty party, with an indication of the crime he had committed, was then to be painted in public places in the city as a mark of infamy.[110]

The reaction of the Commune of Bologna to the Cosimo Dini affair shows that, beyond the facts in the particular case, the silk entrepreneurs and government alike were very worried about its general implications: if, in fact, all the emigrants were specialists in the production of veils it could be surmised that the exported know-how covered the entire production process for this valuable fabric. This deduction is borne out by Florentine sources, from which it appears that thanks to the teaching of Dini, who ultimately operated not less than thirty looms and taught his skills to local apprentices, the earliest foundations were laid for specialized production destined to develop there in the following century.[111] The exclusivity, or at least the preeminence, of Bolognese silk manufacturers in the creation of silk veils was thus put concretely in doubt and this sounded a special alarm, because what had left the city was not just a group of skilled workers but the production secrets regarding one of the most lucrative articles for the local silk industry.

But a clenched fist was not the only option: threats and clemency alternated, especially because the real goal, once the departures had

[109] For Florence, see what the *setaioli* write about Giovanpiero da Padova, arrived in the city from Bologna, as well as the declaration of the Consiglio generale of Siena concerning the weavers Martino d'Antonio, Simone di Nanni, and Lupo di Nanni, coming from Lucca, Venice, and Florence, respectively. Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1490, chap. 7, 686; Marco Giacchetto, "Produzione e commercio della seta in Siena: Origini e sviluppo, XIV–XV secolo," (master's thesis, University of Siena, 2015–2016), 44–45, 86. I thank the author for permitting me to discuss these findings.

[110] See Righi, "Produzione di seta," 642.

[111] *Provvisioni. Registri*, 167, f. 113v, Archivio di Stato di Firenze, Florence (hereafter ASFi); Franceschi, "I forestieri," 413–14.

taken place, was to bring the emigrants back to their homeland; in fact it was crucial to limit the damage that could result from the dissemination of their skills, not to mention that there were times when the demand for skilled labor definitely exceeded the supply. The flip side of repressive legislation, then, was flexibility or leniency toward those who returned. In Florence, to bring back entrepreneurs and skilled workers who had left the city, in 1429 the Consigli della Repubblica offered them a period of immunity from debts they had contracted and the possibility of extinguishing those debts in a facilitated and deferred way.[112] Measures of similar tenor were repeated several times during the fifteenth century and sometimes, as in 1468, these were motivated by very precise information about what categories of skill had left the city and their destinations.[113]

Taken as a whole the strategies and interventions put in place failed to stem the tide of moving labor and knowledge, as evidenced by the widespread presence of the phenomenon of cloth imitation and its impact on the development of the whole sector—so much so that city governments and guilds ended up excluding from the prohibitions against emigration a small number of places, which together constituted something like a "a free-trade area for labor." This included at least Lucca, Venice, Florence, and Genoa in the fifteenth century and extended even farther in the following century.[114]

## Conclusion

Thanks to the development from the fifteenth century of a very wide and articulated demand, which affected both Italy and a large part of Europe, albeit in different ways, the Peninsula became the largest European producer of silk textiles and yarns. Taken together, Italy's various "cities of silk," while focusing mainly on the most elaborate and

[112] *Provvisioni. Registri*, 120, ff. 303r–305r, ASFi; Dorini, *Statuti dell'Arte di Por Santa Maria*, Riforma of 1429, chap. I, 482–86.

[113] The individual acts, each making explicit reference to precedents of a similar type, are found in the statutes of the silk guild. Dorini, *Statuti dell'Arte di Por Santa Maria*, respectively, the Riforma of 1439, chap. I, 541–43 (and *Provvisioni. Registri*, 129, f. 277, ASFi); Riforma of 1443, chap. I, 560–62 (*Provvisioni. Registri*, 134, f. 154, ASFi); Riforma of 1468, chap. I, 626–31 (*Provvisioni. Registri*, 159, f. 112v, ASFi); Riforma of 1481, 659–62 (*Provvisioni. Registri*, 172, ff. 124–26v, ASFi); Riforma of 1495, chap. VI, 700–1 (*Provvisioni. Registri*, 186, ff. 78–79, ASFi). This final law was especially directed at *maestri di broccati*, considered "infra gl'altri menbri di decto exercitio quello del fare e' brocchati è peculiare proprio di questa città." *Statuti dell'Arte di Por Santa Maria*, Riforma of 1495, chap. VI, 700. On the specializations and destinations of migrants, see *Statuti dell'Arte di Por Santa Maria*, Riforma of 1468, chap. I, 629, where it speaks of "setaiuoli, tessitori di drappi, filatoiai, orditori, tintori, chi fa opere, pettini, o ferri et trattrici di seta . . . et sonsene andati a lavorare chi a Siena, chi a Perugia et chi a Bologna et a Napoli et in Spagna o in altro luogho."

[114] As observed by Molà, *Silk Industry*, 46–51.

expensive fabrics, were able to put on the market a truly varied repertoire of fabrics that responded to the different needs and spending power of consumers. The growth of the silk industry was supported by the significant spread of mulberry trees, which in many Italian areas changed the systems of crop organization and the agricultural landscape itself, generating significant income for farmers and landowners. But it is in the urban centers that the impact of the new activity was most significant, creating employment for a large contingent of workers, to a good extent endowed with a high level of skill and specialization, and strengthening the wider textile sector where the wool industry was undergoing fluctuations. The production of silk cloths attracted a growing volume of capital and interpenetrated with the spheres of banking and finance, finding the most effective distribution channels in the major centers of international trade and in particular in the major fairs of Geneva and Lyon. Moreover, an essential component of success was the intervention of governments, which, increasingly aware of the potential of manufacturing for generating employment and wealth, supported the growth of the silk industry (and sometimes its very birth) with overlapping measures of economic policy. Not all the measures adopted had the same effectiveness—a case in point being attempts to limit the mobility of men and technical knowledge—but less successful policies were modified or abandoned.

Throughout the Renaissance and beyond, silk was a big business for capable entrepreneurs, but it was also a "strategic" activity, to which many states entrusted the essential task of strengthening their economies.

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