



Notary Lending Networks in Northern Italy in the Eighteenth and Nineteenth Centuries

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1 INTRODUCTION

In the expansive phase of the ‘long sixteenth century’, the credit system developed similar structures across northern Italy, albeit varying in terms of proportions and coverage. Next to the steady growth of formal financial institutions such as public banks, Monti di Pietà, private banks, and moneychangers the informal level of the money market was also ballooning. Networks that linked religious and private bodies, urban and rural populations, specialized and non-specialized operators in a large mass of credit transactions developed an increasingly ramified and capillary geography. In Milan, Genoa, Florence, Bologna, and smaller towns,

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formal and informal circuits functionally intertwined, matching supply to demand for capital, playing a decisive role in both production, political, and social dynamics.¹

Within these networks, notaries performed their traditional role as certifiers of transactions, their services ensuring public faith in deeds and possible legal enforcement. The information that led to the stipulation of credit contracts, such as the knowledge relationship matching contracting parties to capital supply/demand, stemmed from the institutional nature of the credit organization and the inherent functions of its actors. When, from the mid-seventeenth century onward, the urban cycles of the northern regions of the peninsula gradually lost momentum and the center of gravity of regional economies shifted from city manufacturing hubs to the production of semi-finished goods and raw materials in the countryside, the notaries became the protagonists of a credit market increasingly freed from its previous masters.

The economic downturn then pruned back the diversified credit landscape. The new production balance, based on the export of semi-finished silk products against the import of finished goods, no longer supported the rich retail structure of the Renaissance world; a marked polarization of roles began to characterize the eighteenth-century recovery in these regional areas, and entrepreneurs in both business and finance were concentrated at either end of the size scale. In the middle, between small consumer credit and super-specialized credit for international payments, lay the bulk of the capital market, where supply appeared to be dominated by a mass of people who were distant from the professionals and where information flows were conveyed by the action of notaries.

¹ On the co-essential nature of credit networks with some traits typical of Ancien Régime economies, see Jean Louis Gaulin and François Menant, 'Crédit rural et Endettement Paysan dans l'Italie communale', in: Maurice Berthe (ed), *Endettement Paysan et Crédit Rural dans l'Europe médiévale et moderne* (Toulouse, 1998), there 36; Renata Ago, *Economia barocca. Roma nel Seicento* (Roma, 1998); Massimo Fornasari, 'Istituzioni, professionisti, privati: le reti di credito nella Bologna moderna', in: Adriano Prosperi and Paolo Prodi (eds), *Storia di Bologna*, tome III, 'Bologna nell'età moderna' (Bologna, 2008), 791–855; Giuseppe Felloni, 'Dall'Italia all'Europa: il primato della finanza italiana dal Medioevo alla prima età moderna', in: A Alberto Cova et al. (eds), *Storia d'Italia*, Annali 23, 'La Banca' (Torino, 2008), 93–149; Giuseppe De Luca and Angelo Moioli, 'Il potere del credito. Reti e istituzioni in Italia centro-settentrionale fra età moderna e decenni preunitari', in: Alberto Cova et al. (eds), *Storia d'Italia*, Annali 23, 'La Banca' (Torino, 2008), 212–255.

If credit networks had essentially been characterized by personal relationships, they now consisted of ties between borrowers and lenders who did not know each other but were put in contact thanks to the (non-institutional) match-making action of notaries. Whereas in the seventeenth century the main novelty of the credit market in Central-Northern Italy had been represented, on the supply side, by the massive intervention of a wide range of heterogeneous institutions, such as congregations and religious bodies, pious institutions and lay confraternities, between the end of the seventeenth and the beginning of the eighteenth century, it was the aggregate activity of these *sui generis* brokers that built an efficient capital market capable of fostering progress in the real economy.

The branch of studies that drew attention almost 30 years ago to the credit function of these operators (the notaries), who had hitherto been considered by economic historians almost only as ‘producers’ of sources, has gradually extended. From the seminal analysis of Paris between the eighteenth and nineteenth centuries it widened to many other contexts of Europe and beyond, also to South America.² More recently, notarial records have offered an interesting dataset on which to fund a new social comparative history.³

The analysis of notarized credit networks in some northern Italian settings aims to contribute to the overall results of this line of research not only by providing some confirmations, from the study of large Italian cities such as Milan, but also by bringing some new results related to the purposes of debts and to the use of capital mobilized by notarial networks.

2 THE DATA

Our methodological framework combines a longitudinal with a horizontal approach. As regards the longitudinal perspective we collected lending contracts drawn up by the most important notaries of three

² Philip T. Hoffman, Gilles Postel-Vinay, Jean-Laurent Rosenthal, *Priceless Markets. The Political Economy of Credit in Paris, 1660–1870* (Chicago, 2000); Juliette Levy, *The Making of a Market: Credit, Henequen, and Notaries in Yucatan, 1850–1900* (University Park, PA, 2012), Martin Wasserman, ‘Diseño institucional, prácticas y crédito notarial en Buenos Aires durante la primera mitad del siglo XVII’, in: *Investigaciones de Historia Económica - Economic History Research*, 10:1 (2014), 1–12.

³ Claire Lemercier, Francesca Trivellato, ‘1751 and Thereabout: A Quantitative and Comparative Approach to Notarial Records’, in: *Social Science History*, 46 (2022), 555–583.

different-sized cities—Milan, Pavia, and Imperia—from the eighteenth to the nineteenth century. As regards the horizontal perspective, we gathered all loan contracts of larger and smaller cities—Milan, Trento, and Rovereto—in some benchmark years. On the whole we sampled 8,700 loan contracts.⁴ Lien registers not available, and neither notarial index registers, the collection implied the selection of debt/credit contracts among all types of deeds contained in notarial protocols.

A significant volume of capital was mobilized by notarial credit networks. In 1784 four of the biggest notaries of Milan were able to circulate 3% of State tax revenues, which amounted to 19,663,229 Milanese lire.⁵ In 1840 the entire group of notaries mobilized 10,648,000 Milanese lire, amounting to 17% of State revenues (62,539,000 Milanese lire)⁶ or 71% of the 1829 balance of trade (14,979,172 Milanese lire).⁷

Milan was one of the most financially and economically prosperous cities on the Italian peninsula, with a growing population that reached 130,000 inhabitants in the 1780s.⁸ Its geographical position, at the crossroads of central Italy and northern European countries, made it an important international trade hub. However, if we consider other smaller

⁴ This is a selection of a broader sample comprising over 30,000 contracts.

⁵ The notaries were Carlo Giuseppe Aureggi, Archivio di Stato di Milano (hereafter ASMI), Rubrica notarile (hereafter Rn.), 311; Carlo Ambrogio Coquio, ASMI, Rn. 1712; Giovanni Agostino Gariboldi, ASMI, Rn. 2326; Marco Antonio Pizzagalli, ASMI, Rn. 3775. For the State revenues see Marco Bianchi, 'Le entrate e le spese dell'amministrazione centrale e delle province dello Stato di Milano nella seconda metà del Settecento', in: *Archivio Storico Lombardo*, 10:4 (1978), 174-196, there 188.

⁶ The amount of capital flow drawn up by notaries was more precisely 12,100,050 Austrian lire (Giuseppe De Luca, 'Informal Credit and Economic Modernization in Milan (1802-1840)', in: *The Journal of European Economic History*, 52 (2013), 211-234, there 225). One Milanese lire was worth 0.88 Austrian lire (Rupert Pichler, *L'economia lombarda e l'Austria: politica commerciale e sviluppo industriale 1815-1859* (Milan, 2001), there 10). The revenues of Lombardy in 1840 amounted to 23,689,000 Florins or 62,539,000 Milanese lire (Uggé Albino, 'Le entrate del Regno lombardo-veneto dal 1840 al 1864', in: *Archivio economico dell'unificazione italiana*, 1 (1956), 1-15, there 9). In 1840 the population of Milan represented 5.8% of the entire population of Lombardy (148,434 inhabitants out of 2,516,000) (Mario Romani, *Aspetti e problemi di storia economica lombarda nei secoli XVIII e XIX* (Milan, 1977), there 317-318). One florin was worth 3 Milanese lire.

⁷ Pichler, *L'economia lombarda e l'Austria*, there 112.

⁸ Romani, *Aspetti e problemi di storia economica lombarda*; Luciano Segre, 'Bonifica e irrigazione in Lombardia nel secolo XIX: lo schema di base', in: *Rivista di Storia dell'Agricoltura*, 32:1 (1992), 174-181, there 184.

cities and towns, notarized loans covered a share of credit transactions comparable to that in Milan. In late-seventeenth-century Verona (32,000 inhabitants), which was still recovering from the plague of the 1630s,⁹ the sixty ‘active’ notaries drew up credit contracts amounting to 372,000 Venetian lire per year, which was close to one-fourth of the revenues of the Camera Fiscale (taxation), equal to 1,539,088 Venetian lire.¹⁰ In one of the most thriving manufacturing towns of South Tyrol, Rovereto, notarized loans in the mid-eighteenth century totaled 406,000 Venetian lire, more than three times the city’s revenues of 123,000 Venetian lire.¹¹

Our study shows that the larger the city the smaller the ratio of notaries to inhabitants. In Milan in 1825 there were forty-five ‘active’ notaries¹² and a population of 126,000,¹³ which means one notary per 2,800 inhabitants. In Paris in 1790, there were 114 notaries per 524,000 inhabitants, or one notary per 4,596 individuals.¹⁴ In the smaller city of Trento (1780) the proportion was one notary per 257 citizens, similar to the ratio of Rovereto: one notary per 280 inhabitants.¹⁵ The size of the city and

⁹ Verona was one of the cities in northern Italy most severely affected by the plague. A ‘typical English epidemic had mortality rates of 100–120 per thousand, as opposed to Italy where the most common rate was 300–400 per thousand, with peaks of 500–600 per thousand. [...] The mortality rate was 330 per thousand in Venice, 443 per thousand in Piacenza, 615 per thousand in Verona in 1629–1630 [Italics ours], 490 per thousand in Genoa, and 500 per thousand in Naples in 1656 – 1657’. Guido Alfani, ‘Plague in seventeenth-century Europe and the decline of Italy: an epidemiological hypothesis’, in: *European Review of Economic History*, 17 (2013), 408–430, there 417, 425.

¹⁰ This is the average calculated on four benchmark years: 1676, 1681, 1686, 1691.

¹¹ Marcella Lorenzini, ‘Borrowing and lending money in Alpine areas during the eighteenth century: Trento and Rovereto compared’, in Marcella Lorenzini, Cinzia Lorandini and D’Maris Coffman (eds), *Financing in Europe: Evolution, coexistence and complementarity of lending practices from the Middle Ages to Modern Times* (New York, 2018), 105–132, there 109; Andrea Bonoldi, *La fiera e il dazio: economia e politica commerciale nel Tirolo del secondo Settecento* (Trento, 1999), there 67.

¹² De Luca, ‘Informal Credit and Economic Modernization in Milan’, there 225.

¹³ Romani, *Aspetti e problemi di storia economica lombarda*, there 316.

¹⁴ Hoffman, Postel-Vinay, Rosenthal, *Priceless Markets*, there 27.

¹⁵ Lorenzini, ‘Borrowing and lending money in Alpine areas’, there 105–132. Although it had half the population of Trento, Rovereto under the Habsburg Monarchy had a much livelier credit market due to its high silk production. The total capital mobilised by Rovereto’s notaries (400,000 Venetian lire per year) was three times as much as Trento’s (Lorenzini, ‘Borrowing and lending money in Alpine areas’, there 109). One florin was worth 5 Venetian lire.

the number of notaries had distinct outcomes on the distribution of credit and wealth. Countries with smaller cities, such as Italy, Germany, and the Netherlands, allowed greater democratization of wealth and credit: ‘a far more egalitarian urban network, with a large number of medium-sized cities’. Conversely, in states where the largest cities tended to dominate the others, credit tended to benefit the most affluent: ‘The size of a dominant large city means that credit transactions are frequent, but since big cities usually have skewed wealth distributions, loans tend to be large, but fewer overall, because many borrowers lack collateral. The result, typically, is a capital market that services the elite’.¹⁶ Accordingly, our data demonstrate that while in Milan in the early nineteenth century (1825) the average loan was 13,000 lire, in smaller centers it was much lower. In Imperia (Liguria) 75% of loans were below 1,000 new Piedmont lire, while 22% were in the 1,000–3,000 lire range.

3 THE EMERGENCE OF CREDIT NETWORKS BROKERED BY NOTARIES

From mid-eighteenth century onward, transactions involving non-specialized operators (namely private individuals or subjects that transcended their own institutional spheres) constituted, in most situations, the bulk of the credit market. According to a memoir by Francesco Gianni, by 1774 in Tuscany, the religious institutions had completely abandoned their poor-relief functions in order to intervene freely on the capital market, while the Monte di Pietà of Faenza—to give but one example—handed out the money received from the State or from donations, not in pawn loans (as established by the statutes) but by disbursing *censi* and mortgages to small landowners, artisans, and shopkeepers at market prices.¹⁷

¹⁶ Hoffman Philip T., Gilles Postel-Vinay, Jean-Laurent Rosenthal, *Dark Matter Credit: The Development of Peer-to-Peer Lending and Banking in France* (Princeton and Oxford, 2019), there 233.

¹⁷ Giovannini Carla, *La presenza e l'attività del Monte nei secoli XVII e XVIII*, in Giuseppe Adani (ed), *Il Sacro Monte di Pietà di Faenza. Cinque secoli di storia e società 1491–1991* (Faenza, 1990); Recent historiography on pawnbanks, which had often been victim of excesses, simplifications, and superficial judgements, and harshly stigmatised by Oscar Nuccio (Nuccio Oscar, ‘Chiesa e denaro dal XVI al XVIII secolo’, in: Ugo Dovere (ed), *Chiesa e denaro tra Cinquecento e Settecento. Possesso, uso, immagine* (Cinisello Balsamo, 2004), 11–85), has brought to light numerous, solidly documented examples of behaviour

With the issuance of *Vix pervenit* in 1745 and the publication the year after of *Dell'impiego del denaro* by Scipione Maffei, the question of the legitimacy of interest-bearing loans obtained positive reactions, attenuating and almost annulling the religious deterrence toward the trade of money.¹⁸ This widespread moral emancipation was significantly matched by the progressive formal definition of the loan instrument, which in those very years began to assert itself in the Ambrosian notarial protocols in place of the dissimulating *reorganiza*, *reorganizat*, *consensus prestitus*, and which became increasingly prevalent in the notaries' work, as Tables 1 and 2 show. Since the late 1770s, monetary stability linked to the 1778 reform¹⁹ and the upward trend of the interest rate²⁰ made investments in the local capital market particularly attractive; in the same period, more than 28 million Milanese lire in cash were reimbursed to the holders of *regalia* (i.e., the taxes that had been granted or sold in the Spanish era and beyond), thus fueling an enormous flow of additional liquidity that greatly expanded—as Pietro Verri also testified—the credit supply of private individuals.²¹

During the second half of the century, in an expansive phase of the economy in northern Italy (largely due to the reorganization of public

similar to that of Faenza's pawnshop, see Montanari Daniele (ed), *Monti di Pietà e presenza ebraica in Italia (secoli XV-XVIII)* (Roma, 1999).

¹⁸ Vismara Paola, *Questioni di interesse. La Chiesa e il denaro inn età moderna* (Milano 2009), there 107; Pecorari Paolo, 'Orientamenti della cultura cattolica sul prestito a interesse nel secolo XIX', in: *Chiesa, usura e debito estero. Supplemento a «Scienze sociali e dottrina sociale della Chiesa*, 2 (1998), 85–87.

¹⁹ Tucci Ugo, 'Monete e riforme monetarie nell'Italia del Settecento', in: *Rivista storica italiana*, 93:1, (1986), 78–119; Gianelli Giulio, 'La riforma monetaria di Maria Teresa', in: Giovanni Gorini (ed), *La Zecca di Milano* (Milano, 1984).

²⁰ See Kaunitz's letter of early 1785 to Wilzeck and the assertions by the cameral magistrate, who stated during the council meeting of 7 October 1785 that the interest rate on cash loans had risen on average from 3.5 to 5% (De Maddalena Aldo, *Prezzi e mercedi a Milano dal 1701 al 1860* (Milano, 1974), there 195).

²¹ Zaninelli, 'Un capitolo centrale del riordino dei tributi indiretti dello Stato di Milano nella seconda metà del '700: la "redenzione delle regalie"', in: *Studi in onore di Antonio Petino*, tome I, 'Momenti e problem di storia economica' (1986), there 334 That the effect of these repayments on credit supply, interest rates, and money circulation was very substantial is also affirmed by Pietro Verri; see his letter of 5 July 1769 to his brother Alessandro, in Greppi Emanuele, Alessando Giulini (eds), *Carteggio di Pietro e Alessandro Verri* (Milano, 1923), there 346; quoted also in Bruno Caizzi, *Industria, commercio e banca in Lombardia nel XVIII secolo* (Milano, 1986), there 200.

Table 1 Mortgage contracts of Milanese notary Carlo Giuseppe Aureggi (1751–1785). Source: ASMI, notary C. G. Aureggi, Rn. 311

<i>Years</i>	<i>Contracts</i>	<i>Loan contracts</i>	<i>% loan contracts</i>
1751–1755	47	16	34.04
1755–1760	98	30	30.61
1760–1765	115	28	24.34
1765–1770	137	54	39.41
1770–1775	96	29	30.20
1775–1780	82	32	39.02
1780–1785	73	34	47.22

Table 2 Mortgage contracts of Milanese notary Marco Antonio Pizzigalli (1751–1785). Source: ASMI, notary M.A.Pizzigalli, Rn. 3775

<i>Years</i>	<i>Contracts</i>	<i>Loan contracts</i>	<i>% loan contracts</i>
1751–1755	55	8	14.54
1755–1760	113	28	24.77
1760–1765	114	30	26.31
1765–1770	166	38	22.81
1770–1775	221	53	23.98
1775–1780	106	65	61.31
1780–1785	205	65	31.70

finance and the Enlightenment reforms in favor of agriculture, trade, and manufacturing), peer-to-peer relations between those who had capital and those who needed it, together with those who professionally traded in money and those who used its circuits, became the main channel through which information on the availability of money, its price, and the reliability of the various parties circulated. At the center of these credit networks were the notaries who performed the fundamental function of effective transmission of information between the parties; even if some notaries did not disdain the role of lenders of capital themselves, their strategic and crucial role consisted precisely in being privileged centers of reliable information for loans granted or requested by non-specialized subjects.

In pre-modern societies as today, information is at the heart of the financial sector. Only if it flows easily and reliably can a credit system work and improve. It was information, rather than prices (interest rates),

that determined the allocation of capital and, as a consequence, set the rules.²² While registering contracts, notaries collected a great deal of information about their clients, ranging from their level of wealth, state of indebtedness, and financial means to their level of trustworthiness; they knew whether their clients had cash to lend, if they had recently sold or bought properties, if they were reliable business partners and prompt payers, or if they were close to bankruptcy and needed to sell their assets quickly. The willingness to pay a higher interest rate for a debt was a necessary yet not sufficient condition for obtaining the loan.²³ Notaries screened this information and channeled it into the credit circuits, ably matching lenders and borrowers.²⁴ Most significantly, this information bears no cost for either the creditor or the debtor, unlike in the case of *sensali* (specialized matchmakers). The notaries found their micro-economic incentives—in the careful management of these reputational mechanisms—only in terms of keeping and increasing their clientele, as they were only paid for the stipulation of the deed. The more satisfied a lender was with the loan granted (in terms of payment and punctuality of interest and the repayment of the principal), the more likely he/she would be to return to the same notary. Similarly, borrowers who had managed to find the capital they sought would turn to the notary who had been able to put them in contact with appropriate lenders. Safeguarding the reliability of this market produced increasing returns for the notary. In Milan, the clear evidence of the establishment of these dynamics and of the intermediary function performed by the notary is the letter by Giovanni Filippo Visconti to Giuseppe Macchi, who worked as a notary in the city during the second half of the eighteenth century. On 1 June 1778, the young count addressed Macchi begging him to ‘procure [for Visconti] a loan, if possible, of two thousand gigliati’.²⁵ The case of the notary Ignazio Baroggi and the loan he procured for Gaetano

²² Hoffman, Postel-Vinay, Rosenthal, *Priceless Markets*.

²³ Hoffman, Postel-Vinay, Rosenthal, *Priceless Markets*, there 43.

²⁴ Hoffman Philip T., Gilles Postel-Vinay, Jean-Laurent Rosenthal, ‘What do Notaries do? Overcoming Asymmetric Information in Financial Markets: The Case of Paris, 1751’, in: *Journal of Institutional and Theoretical Economics*, 154:3 (1998), there 499-530; Insolvent debtors were not rare, but in those cases notaries were able to find new investors willing to finance them. Differently, since most loans were backed by collateral, lenders would become owners of the asset, usually a plot of land, a house, a mill, etc.

²⁵ A *gigliato* was a pure silver coin weighing 4 grams.

Battaglia in 1802 is also compelling to prove the match-maker role of these Milanese professionals. In order to fulfill the request of Battaglia, who was a Napoleonic colonel and majority partner in his father's firm, for 15,000 lire to finance his leather trade, the notary drew up a three-year loan contract at 5.5% interest with some of his clients 'who had capital at their disposal', namely the engineer Giovanni Cogliati of Milan, Onofrio Carnocino of Cremona, and Antonia Fumagalli, widow of Fortunato Radice, to whom he represented Battaglia as coming from a family of 'highly esteemed merchants'.²⁶

The costs of raising and allocating capital were thus absorbed by the network of relations centered on notaries. The reputational and fiduciary dynamics of which they were protagonists thus significantly reduced the risks associated with information asymmetries (mitigating the distortions of moral hazard and adverse selection) with the result of making loans between private individuals increasingly reliable, attractive, and abundant. Italian notaries did not specialize in any one type of contract, e.g., wills, sales, dowries, or loans. Their status depended instead on the size of their studios. There were notaries whose clientele included the wealthiest and most important urban institutions and who thus brokered the highest sums; having a large clientele meant having more information and managing bigger capital flows. For example, Giovanni Agostino Gariboldi's network was populated mainly by the local élite (dukes, princes, marquises, counts), and religious institutions (convents and monasteries), while Marco Antonio Pizzigalli and Carlo Giuseppe Aureggi mainly served merchants and partnerships. Wealthy households, professionals, and municipal institutions all used to rely on their own *notaio di fiducia* (trusted notary), whose archives contained all the documents relating to his clients' assets, property transfers, and financial activities. While defining the terms of the contract, notaries from Pavia used to specify that the debtor was 'a person I know' (*persona da me conosciuta*), or 'most worthy person' (*persona di grande affidabilità*) to underscore good faith and ensure the absence of risk.

Thus, through solid and prolonged scrutiny and an information set that covered the entire economic life of their clients, the notaries were able to sustain a market in which a separating equilibrium could be achieved. In this market, high-risk agents could find lenders willing to

²⁶ ASMi, Rn. 49,730, 05/06/1802.

loan them capital, charging them a higher interest rate, and low-risk borrowers could find less costly options leveraging their reliability as debtors. The capital market thus prevented the exclusion of operators who could not offer the real property in guarantee but staked the success of their more innovative ventures on their motivation, entrepreneurial spirit, and business acumen. This was the case of the credit network centered around the notary Carlo Ambrogio Coquio. Thanks to him, Francesco Sala, a diamond and jewelry dealer, provided a total of 278,241 lire in loans spread over fifteen deeds. While some agreements stipulated gradual repayment—such as the payment for jewelry worth 77,500 lire sold to Prince Alberigo di Barbiano Belgioioso d’Este²⁷—others regarded single large sums, like the 2,000 *gigliati* (33,500 lire) lent to Giovanni Andrea Valle, major of Cremona.²⁸ The major had permission from the Imperial Court of Vienna to seek funds to build a postal road connecting Cremona to Mantua. The loan expired after 6 years at a modest rate of 4.25%.²⁹ Francesco Sala also lent 200 *gigliati* to Carlo Maggioni, owner of a fabric shop (*teleria*), in a 3-year loan (credit transfer) at 4.5%.³⁰ Another credit involved 24,500 lire at 4.5% for 1 year to the count Carlo Pertusati, General Vice Superintendent of Finance from Milan, who needed the sum to buy a noble dwelling (*casa da nobile*).³¹ Carlo Giuseppe Bossi borrowed 10,291 lire to pay off the house and two workshops he had purchased from the Ospedale Maggiore in 1774.³² Within this notarial credit market, the Grianta brothers, tax farmers, were leading players.³³ Tommaso, Carlo, and Giuseppe Brentano supplied a total of 5,561,575 lire in 19 transactions through the notary Carlo Giuseppe Aureggi. The latter was also the notary for the Venini brothers, likewise wealthy tax contractors who issued credit for 231,122 lire distributed in 12 transactions.

²⁷ ASMI, notary C.A. Coquio, Rn. 1712, 10/12/1788; 2/9/1790.

²⁸ The value of *gigliati* underwent frequent variations. The figures here are drawn from Aldo De Maddalena, *Prezzi e mercedi a Milano dal 1701 al 1860* (Milano, 1974), there 421.

²⁹ ASMI, notary C.A. Coquio, Rn. 1712, 24/5/1780.

³⁰ ASMI, notary C.A. Coquio, Rn. 1712, 19/12/1781.

³¹ ASMI, notary C.A. Coquio, Rn. 1712, 9/5/1781.

³² ASMI, notary C.A. Coquio, Rn. 1712, 9/7/1780.

³³ Bruno Caizzi, *Industria, commercio e banca in Lombardia*, there 159.

Good creditors (i.e., operators who lent money to different good debtors) and good debtors (i.e., operators who received multiple loans from different good creditors) populated the market intermediated by notaries, as shown by the network analysis of the longitudinal activity of the four main city notaries during the second half of the eighteenth century.³⁴ For each notarized loan of this sample, we took into account the date, loan amount, interest rate, debtor(s) and creditor(s), and notary and defined a one-mode directed network:

- $\mathcal{G}(\mathcal{A}, \mathcal{L})$, with $\mathcal{A} = (a_1, \dots, a_n)$ the set of debtor(s) and creditor(s), and $\mathcal{L} \subseteq \mathcal{A} \times \mathcal{A}$ the links (a_i, a_j) an ordered couple denoting the a_i as creditor and a_j as debtor, i.e., each loan is an arch in the network;
- Loan amount, interest rate, notary, and motivation can be considered attributes of the links (not fully exploited in this analysis).

For each network we compute actor degree centrality: in-degree (received loans), out-degree (given loans), total degree; and hub and authorities scores. Given the graph $\mathcal{G}(\mathcal{A}, \mathcal{L})$ and the corresponding adjacency matrix \mathbf{A} the hub and authority score are related to the eigenvector of the matrix \mathbf{A} . Hyperlink-Induced Topic Search (HITS) algorithm is used to estimate these scores.³⁵ Namely, the authority scores are determined by the entries of the dominant eigenvector of the matrix $\mathbf{A}^T \mathbf{A}$, i.e., the authority matrix; the hub scores are determined by the entries of the dominant eigenvector of the matrix $\mathbf{A} \mathbf{A}^T$, i.e., the hub matrix. In our case authorities are good debtors, i.e., they receive multiple loans from different good creditors, hubs are good creditors, i.e., they lend money to different good debtors (Figs. 1, 2).³⁶

Regarding interest rate, compared to the previous century, they tended to decrease in the second half of the eighteenth century also as a result of the increase in the supply of money brought about by the redeeming of public debt by the State of Milan. The most frequent interest rates ranged

³⁴ See footnote 4.

³⁵ Jon M. Kleinberg, ‘Hubs, authorities, and communities’, in: *ACM Computing Surveys*, 31:4 (1999), 1–3; Michele Benzi, Ernesto Estrada, and Christine Klymko, ‘Ranking hubs and authorities using matrix functions’, in: *Linear Algebra and its Applications*, 438:5 (2013), 2447–2474.

³⁶ We are debtors and grateful to Giancarlo Ragozini of the Università degli Studi di Napoli Federico II for the network analysis of the sample and for creating the graphs.

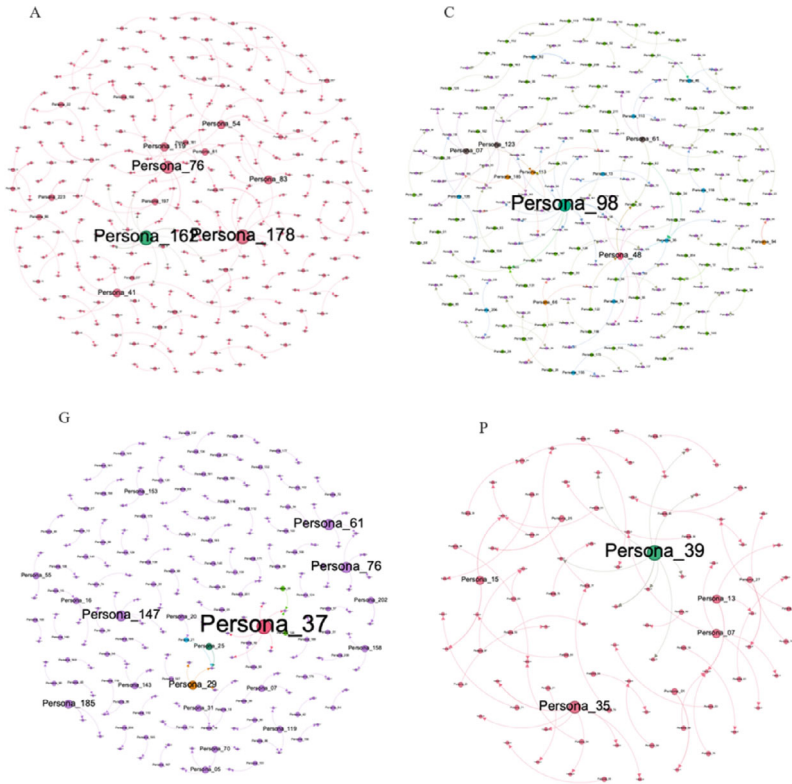


Fig. 1 Hubs and out-degree in Aureggi (A), Coquio (C), Gariboldi (G) and Pizzigalli (P) networks

from 3.75 to 4.75%, while the span was 3 to 6%. There was no correlation between amount, duration, and interest rate, although for the higher amounts the interest tended to be lower. For instance, Giovan Battista Cattaneo lent 2,158 lire to Domenico Rocca at 6%³⁷ while Giuseppe Maria Zaccaria was willing to lend 106,500 lire (6,000 *gigliati*) at 4%

³⁷ ASMI, notary M.A. Pizzigalli, Rn. 3775, 15/09/1767. The purpose of the debt was to pay off the balance.

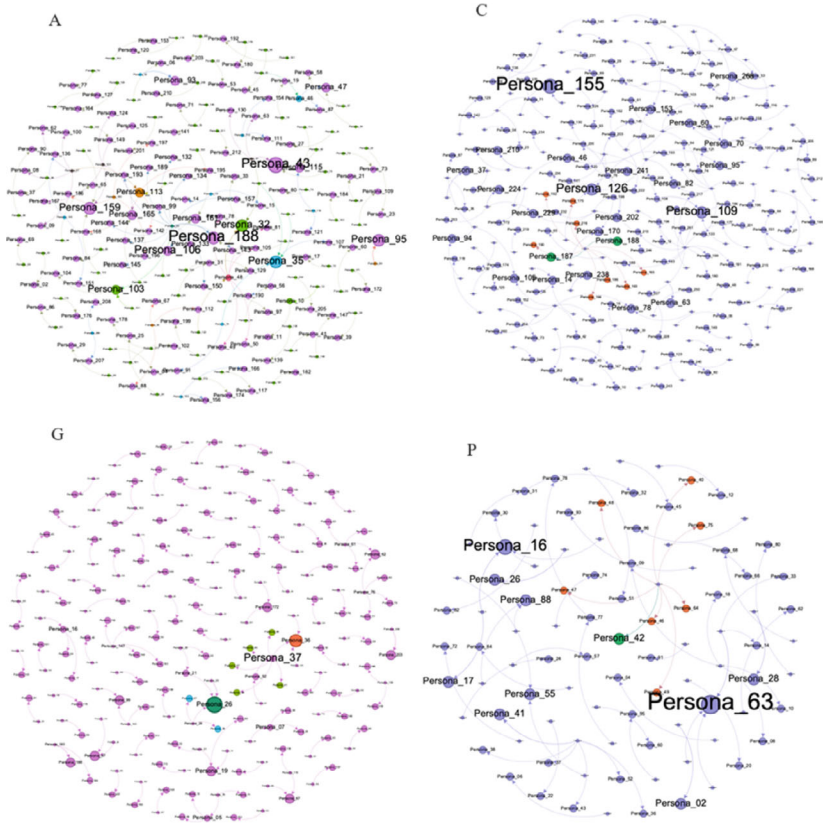


Fig. 2 Authorities and in degree in Aureggi (A), Coquio (C), Gariboldi (G), and Pizzigalli (P) networks

to the count Antonio Greppi.³⁸ It was the reputational factor of the debtor assessed by the notary that determined the price variations. With the decree of October 1807, as set forth in the Napoleonic Civil Code,

³⁸ ASMI, notary C.A. Coquio, Rn. 1712, 15/05/1779. As stated, this cannot be considered the rule. Greppi was one of the most prominent tax farmers and richest people in Milan.

the legal interest rate was fixed at 5% for civil uses and at 6% for commercial ventures.³⁹ However, during the first half of the nineteenth-century rates varied from 4 to 5%.

3.1 *Lenders and Cash Pooling*

In credit networks, the pool of lenders comprised men and women from different professions and of different socio-economic status. In Milan the duke Giovanni Galeazzo Serbelloni lent 193,000 lire in just six transactions.⁴⁰ Prince Don Antonio Maria di Barbiano di Belgioioso borrowed 62,000 lire at a relatively low interest rate, 3.75% (1776), for 6 years.⁴¹ Another 45,000 lire were supplied to the countess Maria Olgiati Pertusati, at 3.5% for 5 years, and 15,000 lire to Monsignor Michele Daverio at an even lower interest rate of 3% for 4 years.⁴²

The marquis Carlo Camillo Carcano lent even larger sums to a wider range of borrowers. His wealth was accumulated through trade and business, he became soon a protagonist in the private credit market as evidenced by the numerous transactions he ran. On the whole the marquis supplied 1,444,000 lire in 123 deeds, an average of almost 12,000 lire per deed, charging interest rates that spanned from 3.75 to 5%.⁴³ He also provided significant sums in a single transaction, such as the 196,000 lire at 3.75% that he supplied in 1782 to the heirs of the marquis Antonio Menafogli⁴⁴; he lent another 47,450 lire at 4% to the count Aloisio Ignazio Belloni. Carcano's borrowers were not only his peers but also people from emerging professions at higher interests, such as the lawyer

³⁹ Robert Bigo, *Les banques françaises au cours du XIXe siècle* (Paris, 1947), there 48; ASMI, Giustizia civile pm, cart. 40.

⁴⁰ The Duke Serbelloni was 'Chamberlain of SMI, member of the 60 decurions and executor of the orders of the city of Milan, superintendent general of the militia, Marquis of Incisa', see Levati, *La nobiltà del lavoro, Negozianti e banchieri a Milano tra Ancien Régime e Restaurazione* (Milano, 1997), there 220.

⁴¹ ASMI, notary G.A. Gariboldi, Rn. 2326, 29/04/1776,

⁴² The duke also raised considerable sums from the private money market, borrowing almost 100,000 lire over 10 years (1785-1796) from different lenders: marquis (Trotti), counts (Sormani), cardinals, and also monasteries.

⁴³ Contracts were always drawn up by the same notary, Gariboldi: ASMI, notary, G. A. Gariboldi, Rn. 2326.

⁴⁴ It was a credit transfer (*cessione di credito*).

Giuseppe Soardi, to whom he gave 1,000 imperial lire at 4.5%,⁴⁵ or another 1,000 lire to the physician Carlo Recalcati at 5%.⁴⁶

At the same time, the pool of lenders was being enriched by members of new professions, who together with artisans, accountants, and clerks represented an increasingly bourgeois society, in which work and wealth defined a new scale of values.⁴⁷ Their accumulated earnings and capital poured continuously into the informal market centered around notaries. In 1825, the architect Luigi Canonica and the lawyer Giovanni Orleri lent 70,000 lire to the merchant Giuseppe Zanella for 3 years at 4.5%,⁴⁸ while the engineer Francesco Belotti granted three loans totaling 7,500, at 5% and with a three-year term.⁴⁹ That same year, the town clerk accountant Carlo Ferraboschi lent 4,500 lire to the surgeon Francesco Campaniga⁵⁰ and the physician Bernardino Grassi granted a ten-year loan of 10,000 lire to Pietro Patrizio.⁵¹

Women—chiefly widows over the period considered—were also frequent lenders. They were often active in notaries' networks, supplying large amounts overall. The widow Paola Tartara issued a total credit of 232,873 Milanese lire in ten transactions at an interest rate that ranged from 3.5 to 5%.⁵² Her preference for *gigliati* or *zecchini* (gold currencies) as transaction currency is probably due to the fact that they were less subject to devaluation. On the other hand, the countess Maria Olgiate Perusati borrowed 45,000 Milanese lire from the Duke Gian Galeazzo Visconti at 3.5% for 5 years, in order to pay her sister's dowry.⁵³ The countess Aurelia Gonzaga, Visconti's widow, manager of her children's estates, in just two transactions supplied loans totaling 100,000 lire at 4.5%. Rosa Sturioni in Galbiati, transacting on behalf of her children, supplied 99,931.50 lire in 12 loans at an interest rate of 4%. To give an idea of the magnitude of this sum, a bricklayer's income was 1.46 lire per

⁴⁵ ASMI, notary G.A. Gariboldi, Rn. 2326, 4/3/1771.

⁴⁶ ASMI, notary G.A. Gariboldi, Rn. 2326, 18/5/1771.

⁴⁷ Levati, *La nobiltà del lavoro*.

⁴⁸ ASMI, notary I. Baroggi, Rn. 49789, 04/10/1825.

⁴⁹ ASMI, notary I. Baroggi, Rn. 49789, 04/10/1825.

⁵⁰ ASMI, notary B. Pozzi, Rn. 475, 07/11/1825.

⁵¹ ASMI, notary G. Arpegiani, Rn. 50096, 02/03/1825.

⁵² ASMI, notary G. A. Gariboldi, Rn. 2326, 10/06/1779.

⁵³ ASMI, notary G.A. Gariboldi, Rn. 2326, 10/06/1779.

day, and 1 *moggio* of wheat (approx. 146 liters) cost 32.10 lire,⁵⁴ which means it was enough to pay the former for more than 185 years of work or to buy nearly 12,000 bushels of wheat.

As the population grew, notaries' credit network expanded, engaging individuals who lived in distant parts of the city or in other towns. In notarized mortgage contracts in Milan, people from San Babila signed the agreement with others from San Pietro; or from San Nazzaro Maggiore with others from San Salvatore, Sant'Eufemia, Morbegno, Sant'Ambrogio, San Michele, or San Bartolomeo.

The case of Giuseppe Alberti, as Fig. 3 shows, is an example of the wide credit network centered on notaries.

As the network broadened, people coming from other towns such as Como, Pavia, Lodi, or Novara began to be involved in loans. Luigi Petazzi, royal feudal lord of Conterico in the province of Lodi, lent the large sum of 60,000 lire to the marquis Pietro Antonio Natta, royal feudal lord from Novara (50 km from Milan).⁵⁵ Giuseppe Maria Villa from San Bartolomeo, who had to extinguish his father's debt with the countess Francesca Bonenzia (dated in 1743) signed for a debt of 600 zecchini with Carlo Francesco Campini from Monza.⁵⁶ In 1830 the widow Marianna Linati of Milan lent 2,900 lire at 5% to two brothers from Saronno, both of them butchers.⁵⁷

Alongside the elite, religious bodies played a key role in the early-modern lending market. They participated almost exclusively as suppliers of capital and very rarely as borrowers. Their wealth came from donations, bequests, and charity, and also from a parsimonious conduct, contrasting with the dissipative behavior that characterized some aristocratic households.⁵⁸ Most convents and monasteries had been founded in Medieval times, but their centrality in the credit market emerged in the sixteenth century, when the position of the Church on usury started to soften, legitimizing interest-bearing loans, albeit under strict terms.⁵⁹ Regular Orders

⁵⁴ De Maddalena, *Prezzi e mercedi a Milano*, there 379.

⁵⁵ ASMI, notary C.G. Aureggi, Rn. 311, 17/03/1789.

⁵⁶ ASMI, notary, G.A. Gariboldi, Rn. 2326, 16/03/1765.

⁵⁷ ASMI, notary, L. Clerici, Rn. 295, 17/06/1830.

⁵⁸ Fiorenzo Landi, *Storia economica del clero in Europa. Secoli XV-XIX* (Roma 2005).

⁵⁹ The reference is in particular to the publication of the *Bulla Plana* in 1569, after which the *census consignativus* rapidly spread, becoming the leading financial instrument



Fig. 3 The star pinpoints the notary's office in via Santa Maria Fulcorina in Milan centre. The black dots locate the place of residence of debtors and creditors. Archivio di Stato di Milano, notary Giuseppe Alberti, Notarile, Ultimi versamenti, folders 766–794 (1860–1865) Milan's map is the *Nuovo Panorama Geometrico Orografico Pittorresco di Milano Ideato Disegnato ed Inciso da Leoni Zucoli e dal medesimo pubblicato nel 1844, in Civica Raccolta Stampe Achille Bertarelli*, Castello Sforzesco, Milano

underwent a process that may be defined as a heterogenesis of ends: alongside their primary spiritual mission, they started a credit activity (*censi, fitti, livelli*) that progressively developed and increased. In Milan, the Monastero di St. Caterina Braidense, Monastero di St. Agostino e Pietro Martire, Convento Santa Maria dei Servi, Monastero di St. Vittore, Monastero di St. Celso, and the Collegio Santa Ursula di Monza supplied in total 258,064 lire, with an average of 10,320 lire per transaction. Acting as creditors, religious bodies thus entered into competition with professional lenders. However, their activity differed from that of the latter because they put no pressure on the debtor to repay the capital; their priority was, in effect, to generate a continuing revenue stream. The Church circles and the city elite enjoyed a strong relationship since the borrowers were usually members of the aristocracy who had daughters or cadets in convents, monasteries, or abbeys. This alliance also influenced the price of money, with these institutions charging lower interest rates for higher sums. The Monastero San Vittore di Meda lent 22,000 lire to Bianca Maria Sforza, marquise of Caravaggio, charging a 3.5% interest rate to be paid off in 10 years.⁶⁰ The Monastero San Celso lent 266 gigliati (4,671 lire) to the counts and brothers Scotti, charging an interest rate of 4% for 4 years.⁶¹ In the mid-nineteenth century, the Church still represented golden coffers whence governments could draw capital in times of financial strain. Their capital covered 31% of the total flow in Milan, and an even greater proportion in other cities.

One of the main innovations of the nineteenth century regarded the techniques used by notaries to overcome the limit represented by the capacity of individual borrowers. More precisely, notaries began to leverage the method of cash pooling, which enabled them to collect large sums by bundling together different lenders (who had no relationship to one another) and to avoid multiple loan deeds. All the creditors shared the same risk and the same profits, issuing their portion of capital to one

for collateral-backed loans. See Luigi Alonzi, *Economia e finanza nell'Italia moderna. Rendite e forme di censo (secoli XV-XX)*, (Roma, 2012); Giuseppe De Luca and Marcella Lorenzini, 'Not only land: mortgage credit in central-northern Italy in the sixteenth and seventeenth centuries', in: Chris Briggs and Jaco Zuijderduijn (eds), *Land and credit: mortgages in the medieval and early modern European countryside* (Cham, 2018): 181-204.

⁶⁰ ASMI, notary G.A. Gariboldi, Rn. 2326, 01/02/1775.

⁶¹ ASMI, notary G.A. Gariboldi, Rn. 2326, 11/02/1778.

single borrower. In this way, in 1825 the notary Sormani procured a loan of 50,000 lire for engineer Giuseppe Albini and his brothers by combining funds from the widow Caterina Sanchioli with those of the priest Scavennizza Visconti.⁶² Francesco Viscontini obtained a loan of 16,000 lire at 4% interest from two creditors, Vedani and Piazza (contributing 4,000, and 12,000 lire, respectively).⁶³ As we have seen, the Milanese notary Ignazio Baroggi gathered together some of his clients ‘who had capital on hand’, an engineer, Giovanni Cogliati of Milan, Onofrio Camocino from Cremona, and Antonia Fumagalli, the widow of Fortunato Radice, giving the lenders assurances about the Battaglia family, who were well-respected merchants.⁶⁴

But the real specialist in this technique was the notary Achille Marocco. Between 1844 and 1848, he drafted an impressive series of loans in which the lending party was always two or more people (shopkeepers, silk merchants, and accountants and very often widows), who ‘jointly subsidized by way of an interest-bearing loan’.⁶⁵ The credit pooling method developed and spread to other cities. In nearby Pavia the notary Luigi Vecchio grouped together nine creditors, all individuals who were unrelated to each other, hence: Carolina Ferrara, Ludovico Albani, Angelo and Alberto Morandotti, Bartolomeo Polloni, Luigi Spagnuoli, Ferdinando Granellini, Giuseppe Francesi, and Giovanni Bottiglia Vigo, who lent a total of 22,250 lire to Luigi Pietrasanta.⁶⁶

3.2 *Reasons for Loan and Evolving Collateral*

Another element that helped to expand the peer-to-peer market in the 1800s was the collateral that progressively shifted from immovable (real estate) to movable assets (capitals, tolls, duties, the rights of perceiving thites’ revenues). Whereas the first modern banks, such as the Cassa di

⁶² ASMi, notary F. Sormani, Rn. 50236, 11/11/1825.

⁶³ ASMI, deed of 17/06/1835.

⁶⁴ ASMI, notary I. Battaglia, Rn. 49,730, 05/01/1802.

⁶⁵ See by way of example deeds no. 925 of 24/09/1844 (cart. 876), no. 991 of 26/02/1845 (cart. 877), no. 1090 of 23/09/1845 (cart. 878), no. 1145 of 10/01/1846 (cart. 879), no. 1148 of 19/01/1846 (cart. 879), no. 1201 of 05/06/1846 (cart. 879), no. 1336 of 01/04/1847 (cart. 881), no. 1452 of 13/01/1848 (cart. 882), ASMI, notary A. Marocco.

⁶⁶ Archivio di Stato di Pavia, notary L. Vecchio, Rn. 4961/7035, 15/11/1880.

Risparmio (Savings Bank) of Milan (founded in 1823), accepted only real estate assets, the possibility of using annuities from capital, *censi*, and other income as forms of collateral made the informal credit market particularly accessible, liquid, and attractive. In 1830 Carl'Antonio Crippa obtained 5,000 lire from Pietro Ferrandi using as collateral a claim he had on Ferdinando Gallavresi,⁶⁷ while in 1843 Pietro Manzoni, the eldest son of the author of *I promessi sposi* (*The Betrothed*), borrowed 5,000 lire from Matilde Arnaboldi as security for a debt that his father owed her.⁶⁸ In 1849, the Laurin brothers obtained 365 gold pieces at 5% by using as collateral a credit of 20,000 lire to Luigi Brunetti's wife, and Carolina Bernasconi received 3,300 lire by pledging a three-year loan she had granted the year before.⁶⁹ As we may deduce from the latter, the mortgages to private individuals brokered via a notary's network could be used as collateral for loans, preventing the creditor in need from having only one means of obtaining further capital, i.e., collection of active loans; credit thus became a matrix of other credit, ending up acting as a multiplier of the resources available to the economy.

At the same time, it was a very liquid market and if the lender wanted or needed to repay the loan, it was not difficult for the notary to find someone to take it over (to buy the credit), as in the case of the loan of 30,000 lire at 4.25% that Paolo Sessa of Rovagliola, from Arzago, had taken out with Regina Niada Milani of Vaprio and which was subrogated to Giuseppa Arnaboldi on 15 April 1839.⁷⁰

The analysis of the motivations underlying debts shows some elements of continuity with the past and others marking a break and opening the way to a new modern age. In the preindustrial era a large proportion of mortgages were taken out in order to extinguish old debts, for *urgentissimi bisogni* (urgent needs), for paying taxes, house maintenance, purchasing plots of land, or buying working tools or draught and pack animals. In periods of economic expansion, individuals borrowed funds to open new shops, create factories, start a new business or enlarge an existing one, or establish new partnerships. Often families went into debt in order to provide a dowry for a daughter who was going to get married

⁶⁷ ASMI, notary A. Finalli, Rn. 50392, 16/08/1830.

⁶⁸ ASMI, notary A. Marocco, Rn. 873, 24/06/1843.

⁶⁹ ASMI, notary A. Marocco, Rn. 884, 08/03/1849.

⁷⁰ ASMI, notary A. Marocco, Rn. 866, 15/04/1839.

or enter a convent.⁷¹ The dowry could be part in cash and part in real estate and attracted the attention of families for its economic, social, and political implications. It stopped being considered as the mere transfer of property from one household to another and began to be seen as a vehicle by which to climb the social ladder, create businesses, and forge political alliances. ‘A good marriage could guarantee not only liquidity to invest in partnerships and businesses, but also access to a system of social relationships that often, more than others, determined successful dealings’.⁷² As well documented in wills, dowries had become larger and larger since the sixteenth century. Though the Republic of Venice issued sumptuary laws that fixed a maximum amount for dowries, the dowry inflationary trend continued to increase in the following centuries.⁷³ The accelerated inflation that occurred in the nineteenth century was only partially attributable to currency inflation (the lira), being mainly due, in effect, to the rising amounts allocated to a daughter’s assets. In addition, the introduction of the Civil Code (1806) established that women could obtain a share of the inheritance, which had to be proportional to the entire family estate. Dowries between 1801 and 1820 were often in excess of 100,000 lire, as in the case of Sidonia Montorfano. When she married Cristoforo Busti, son of the famous banker Giulio Cesare Busti, she held a dowry of 105,000 lire. Thanks to the sums they enjoyed from dowries,

⁷¹ On the function of the dowry in defining the social, economic, and financial position of women see, among others: Paola Lanaro and Gian Maria Varanini, ‘Funzioni economiche della dote nell’Italia centro-settentrionale (tardo medioevo/inizio età moderna)’, in: Simona Cavaciocchi (ed), *La famiglia nell’economia europea, secc. XIII – XVIII* (Florence, 2009), 81–102; Anna Bellavitis, ‘Dare credito, fiducia e responsabilità alle donne (Venezia, secolo XVI)’ in: Giovanna Petti Balbi and Paola Guglielmotti (eds), *Dare credito alle donne. Presenze femminili nell’economia tra medioevo ed età moderna* (Asti, 2012), 259–267; James Shaw, ‘Women, credit and dowry in early modern Italy’, in: Elise Dermineur (ed), *Women and credit in preindustrial Europe* (Turnhout 2018), 173–202; Stefania Licini, ‘Assessing female wealth in nineteenth century Milan, Italy’, in: *Accounting History* 16:1 (2011), 35–54; Elise Dermineur, ‘Single Women and the Rural Credit Market in Eighteenth-Century France’, in: *Journal of Social History*, 48:1 (2014), 175–199; Elise Dermineur, ‘Peer-to-peer lending in pre-industrial France’, in: *Financial History Review*, 26:3 (2019), 359–388; Marcella Lorenzini, ‘The Other Side of Banking. Private Lending and the Role of Women in Early Modern Italy’, in: Stephan Nicolussi-Köhler (ed), *Change and Transformation of Premodern Credit Markets. The importance of Small-Scale Credits*, (Heidelberg, 2021), 177–197.

⁷² Levati, *La nobiltà del lavoro*, there 111.

⁷³ Lanaro and Varanini, ‘Funzioni economiche della dote nell’Italia centro-settentrionale.

the Milanese were among the wealthiest families in Lombardy, reaching levels comparable to those of landed aristocrats.⁷⁴

The purposes underlying debts reveal much about the new streams of investment. In the early nineteenth century the invested capital moved toward the silk industry. It was a sector increasingly expanding as a consequence of the rising domestic demand—partly driven by population growth—and expanding foreign demand. The principal exports were raw and spun silk, whose volumes grew more than threefold from 1825 (415,000 libbre) to 1846 (1,412,000 libbre).⁷⁵ This demand provided a strong stimulus to manufacturing, technological development, and organizational and entrepreneurial capacities.⁷⁶ A specific bank was founded to support and finance the silk industry and silk trade, the Monte Sete (bank for silk producers, 1781–1796). The aim was to free producers from their dependence on spinners, who speculated on cocoon prices (which were unknown at the time of sale) and the final price of silk yarn. Loans were invested in raw and spun silk. Between 1781 and 1782 Monte Sete supplied credit of 1,464,234 lire, of which only a part, 928,477 lire, was repaid. Monte Santa Teresa, a pawn bank created under Maria Theresa of Austria, could not insulate against uncertainties or dampen the cyclical ups and downs of that market, which produced drastic effects for Monte Sete. The silk bank's turnover in effect began to evaporate in the last decade of its life, with the arrival of Napoleon's troops putting the final nail in its coffin.⁷⁷ Due to the high price fluctuations, the bank had exposures that remained unsolved and the financial support from Monte Santa Teresa was not enough to save it. The strict conditions on Monte Sete loans certainly did not play in its favor: they were short-term, charged at a 4.5% interest rate, and collateralized by national silk products. It was not rare then for tradesmen to turn to the private capital market to borrow or lend extra money at different terms (rates, guarantees, and deadlines). Debts were contracted to pay for merchandise, create partnerships, or open shops or factories. The numerous transactions and the

⁷⁴ Levati, *La nobiltà del lavoro*, there 92–99.

⁷⁵ One libbra was equal to 0.327 kg. Data refer to exports to London and Lyon. But foreign markets also included Austria (Wien), Germany, Switzerland, and Russia (Romani, *Aspetti e problemi di storia economica lombarda*, there 301).

⁷⁶ Giandomenico Piluso, *L'arte dei banchieri. Moneta e credito a Milano da Napoleone all'Unità*, (Milan, 1999), there 32–33.

⁷⁷ Caizzi, *Industria, commercio e banca in Lombardia*, there 185–189.

sums linked to silk manufacturing and trade show the territory that this sector was gaining within the economic system.⁷⁸ Capital raised on the informal market implied a long-term expiry and interest rates with a wider range, from 4 to 6%. A great growth spurt was witnessed in the 1760s, with the production of mulberry leaves increasing by 60 or 70%. Likewise, the manufacturing sector was expanding, attracting investments to upgrade existing plants and machinery. Money borrowed through notarized loans was in effect used to finance fixed capital. Marco Antonio Chiappone asked for 400 gigliati to establish a silk works in Civate Pieve of Oggiono, part of the Duchy of Milan.⁷⁹ Dario G. Botta and his son borrowed 2,000 lire from Romolo Frontino to expand their drapery shop on the Dom square. It was a short-term (1-year) loan at 4.5% interest.⁸⁰ At the same time Pietro Lanelli received 2,600 lire from Felice Bonanone at 5% to finance a shop in Gessate. Payment had to be made at the fairs of Bergamo.⁸¹ The Redaelli brothers obtained a loan of 7,050 lire to fund their silk shop in Pieve d'Oggiono. The credit was supplied by Giovan Battista Pasta at 4%, which was a good rate.⁸²

Capital raised on the private credit market turned out to be fundamental for the establishment of new partnerships. The Caldaras, for example, took out debt of 14,000 lire from the Venini brothers, prominent and wealthy tax farmers from Milan, in order to establish a partnership with their brother-in-law, Flaminio Prina.⁸³ Their plan was to build a yarn mill for a silk shop. They received the sum at 5% with a 5-year deadline.⁸⁴ On the other hand, Giovanni Domenico and Carlo, Grazia, and Antonio Francesco Rognoni borrowed 600 gigliati (10,410 lire) to pay a partnership share in a store with the Rava brothers.⁸⁵ They received the sum from the tax farmer Antonio Greppi at an advantageous rate of 3.75%

⁷⁸ Angelo Moioli, 'Il commercio serico lombardo nella prima metà dell'Ottocento', in: Simona Cavaciocchi (Ed), *La seta in Europa sec. XII-XX* (Florence, 1993), 723–739.

⁷⁹ ASMI, notary M. A. Pizzigalli, Rn. 3775, 23/04/1771.

⁸⁰ ASMI, notary G. Aureggi, Rn. 311, 10/12/1753.

⁸¹ ASMI, notary G. Aureggi, Rn. 311, 23/09/1769.

⁸² ASMI, notary M. A. Pizzigalli, Rn. 3775, 13/03/1778.

⁸³ Caizzi, *Industria, commercio e banca in Lombardia*, there 159.

⁸⁴ ASMI, notary G. Aureggi, Rn. 311, 04/01/1791.

⁸⁵ ASMI, notary G.A. Gariboldi, Rn. 2326, 17/03/1777.

for 4 years.⁸⁶ Tax farmers were crucial figures in the lending market, as the income from their activity was largely reinvested in the credit circuits. According to the ledgers we have consulted, they boasted significant surpluses, reaching 600,000 lire in the mid-eighteenth century.⁸⁷ Less attracted to investments in land or public bonds, they preferred to employ their liquidity in financial activities, especially interest-bearing loans to dukes, princes, and governors, such as the Duke of Mantua or Prince Kaunitz.⁸⁸

Merchants took out loans to pay outstanding debts and thus avoid bankruptcy or failure. One of the main features characterizing the notarized market was its resilience, which derived from the service provided by notaries, who were able to meet the demand and supply of money also in case of insolvency. By drawing on his familiarity with his clientele, he knew which debtors were trustworthy—even in the event that they were unable to pay back the money at the deadline, he knew they could be trusted to pay in the end—and was able to select financiers willing to supply credit to them. Francesco Butti, for instance, borrowed 500 zecchini at 4% with a 3-year term to ‘pay credit to the business Giovan Battista Barca and Angiolo Carrara and Company’. The de Capitani brothers, silk spinners, asked for 2,000 imperial lire from Giovan Battista Cattaneo, (*pubblico negoziante*), which they obtained at 6%; during the time of the contract, debtors were also obliged to process Cattaneo’s raw silk.⁸⁹

The expansive trend in silk manufacturing and trade is reflected in the numerous loans to purchase merchandise. Carlo Maggini borrowed money to buy ‘supplies for his clothing and lace shop’.⁹⁰ He obtained 12,000 lire for 3 years at 4% from Camillo Carcano. Carlo Brentani needed a much higher amount, 30,000 lire, to pay off the goods he had purchased in Caltingnana agri Novarese,⁹¹ while Carlo Martini borrowed

⁸⁶ Caizzi, *Industria, commercio e banca in Lombardia*, there 162.

⁸⁷ Lombard tax farm profits came from the taxes on salt, tobacco, gunpowder, saltpetre, and merchandise, and tolls from Lodi and Cremona, Caizzi, *Industria, commercio e banca in Lombardia*, there 163.

⁸⁸ Caizzi, *Industria, commercio e banca in Lombardia*, there 163.

⁸⁹ ASMI, notary M.A. Pizzigalli, Rn. 3775, 13/03/1778.

⁹⁰ ASMI, notary G.A. Gariboldi, Rn. 2326, 30/07/1771.

⁹¹ ASMI, Notary G.A. Gariboldi, Rn. 2326, 09/09/1756.

21,350 lire from Giuseppe Marini to purchase silk for commercial purposes.⁹²

Loans often took the form of deferred payments, sometimes interest-free. The possibility to enjoy cash advances shows the compensative action played by the informal money market, which, via the intermediation of notaries, could limit risks and transaction costs. For example, the Rougier and Carlo Francesco Volpino partnerships obtained silk for the amount of 3,012 lire, charging no interest, from Francesco Vergani.⁹³ In 1782, the latter provided a loan of 7,140 lire also to two partnerships, Giacomo Biffi and Albuzio, who had bought 340 libbre of silk from Cattaneo (one of the biggest silk producers in Milan) that they had to repay in two instalments at zero interest.⁹⁴ Bartolomeo Aureggi needed money to cover costs in his silk hosiery shop in Bellagio. His financier was Bernardo Monti, who lent him 375 gigliati (6,094 lire) for 4 years at the relatively low interest rate of 4%.⁹⁵

Along with silk, the cotton industry also started to develop throughout the eighteenth century. A number of major loans were drawn up in notarized contracts to modernize this emerging sector. Pioneers of the innovations in this field were the Kramers. The family was originally native to Essenheim, near Frankfurt, with which Milan had important commercial relations. They arrived in Milan at the end of the eighteenth century and took over management of the 'Rho Brothers' partnership, which operated in the spinning and weaving processes of silk manufacturing. The family soon distinguished itself within the city's business community and began to branch out, initiating business ventures in different fields, from silk manufacturing to insurance, from contracts for military barrack sewage management to fertilizer marketing.⁹⁶ However, it was the cotton industry where they made their fortune, pioneering important innovations such as process mechanization.⁹⁷ They had a great impact on the social and economic life of Milan, promoting initiatives that were crucial

⁹² ASMI, Notary, Giusti, Rn. 49.661, 14/11/1840.

⁹³ ASMI, Notary M.A. Pizzigalli, Rn. 3775, 21/03/1782.

⁹⁴ ASMI, Notary M.A. Pizzigalli, Rn. 3775, 10/04/1782.

⁹⁵ ASMI, Notary G. Aureggi, Rn. 311, 15/01/1772 (1 gigliato equalled 16.25 lire).

⁹⁶ Levati, *La nobiltà del lavoro*, there 223.

⁹⁷ Romani, *Aspetti e problemi di storia economica lombarda nei secoli XVIII e XIX*, there 244–245.

to its future economic development.⁹⁸ Their notary-mediated transactions were associated with a quest for financing, turning to the private capital market to raise money. In 1835 they borrowed 26,500 lire from Michele Begtheden and Vincenzo Ferrario (who supplied 15,000 and 11,500 lire, respectively).⁹⁹ Two days later (4 September) they received another loan from Antonio Arena, who supplied another significant sum of 20,000 lire.¹⁰⁰ Some months later (14 November) another 30,000 lire were loaned to them by Antonio Cagnola.¹⁰¹

Although they were in a declining phase, other manufacturing sectors still received funds, particularly woolen and linen manufacturing. Mr and Mrs Guaita turned to the count Stefano San Giuliani—outside of the specialized merchant circuit—for a sum of 60,000 lire that they obtained at 4.75% for 3 years. As collateral, the couple mortgaged their woolen mill in Como along with their partnership in Amsterdam.¹⁰² Clara Clerici and her husband Giovanni Battista Ballioni obtained a loan of 2,000 lire to set up a linen, wool, and silk spinning mill in the village of Luino.¹⁰³ The couple obtained the financing from Count Crivelli's widow, Carlotta Pickler.

As regard the mining sector, in the eighteenth century it entered a declining phase due to resource depletion and outdated organization. No significant technological progress was introduced and the transformations that took place in the 1760s mainly regarded management structure, rather than effective economic or technical innovations.¹⁰⁴ However, some mining centers were still alive in the eighteenth century and required financing. In 1757, the Rabaglietti brothers, who leased a mine in Val Anzasca on Lago Maggiore, were looking for money to pay rent and turned to the count Federico Borromeo for a loan of 270 gigliati.¹⁰⁵

⁹⁸ Levati, *La nobiltà del lavoro*, there 65.

⁹⁹ ASMI, Rn. 3513, 2/09/1835.

¹⁰⁰ ASMI, Rn. 3516, 4/09/1835.

¹⁰¹ ASMI, Rn.3529, 14/11/1835.

¹⁰² ASMI, notary M.A. Pizzigalli, Rn. 3775ASMI, notary M.A. Pizzigalli, Rn. 3775.

¹⁰³ ASMI, notary G. A. Gariboldi, Rn. 2326, 24/01/1784.

¹⁰⁴ Caizzi, *Industria, commercio e banca in Lombardia*, there 124–131.

¹⁰⁵ ASMI, notary G.A. Gariboldi, Rn. 2326, 10/05/1757.

The eighteenth and nineteenth centuries were marked by the growth of transportation infrastructure, especially roads and canals. Its increasing importance is reflected in the requests for money for maintaining and repairing old routes or creating new stretches of road connecting city and countryside, or building postal roads, as in the case of the 2,000 gigliati (33,500 lire) sought by the mayor of Cremona. The road would link Cremona to Mantua and had been authorization by the Habsburg government.¹⁰⁶ The transportation infrastructure improved particularly by the development of canals, and Lombardy pioneered new and advanced technologies. Lombardy had a long tradition of using canals for trade and agriculture: The oldest canals of Europe were the *Navigli*, which were built in here in the Middle Ages, to foster commerce and agriculture.¹⁰⁷ But the real boom of water communication routes took place in the nineteenth century, both for transportation and irrigation.¹⁰⁸ Lombardy's broad plains and rich hydrographic network presented an ideal environment from a morphological viewpoint. One of the most important irrigation canals was the Lorini-Marocco that started to be built in 1806 and finished in 1817.¹⁰⁹ While the main waterways were usually supported and managed by the State, minor and secondary canals were financed and administrated by private individuals organized into

¹⁰⁶ ASMI, notary C.A. Coquio, Rn. 1712, 24/05/1780.

¹⁰⁷ This canal network was funded mainly by the municipalities and by the nobility: Visconti, Sforza, Pallavicini, and Maggi. For the Navigli canals see also, Stefano Jacini, *La proprietà fondiaria e le popolazioni agricole in Lombardia* (Milano, 1854).

¹⁰⁸ See Bruschetti Giuseppe, *Storia dei progetti e delle opere per l'irrigazione del milanese* (Lugano, 1834); Carlo Cattaneo, *Notizie Naturali e Civili sulla Lombardia* (Milano 1844); Giulio Cesare Zimolo, 'Canali e navigazione interna nell'età moderna', in: *Storia di Milano*, 24 (1960); Gabriele Pagani, *Storie d'acqua. Contado di Milano: dalla formazione della pianura alla civiltà dei fontanili e dei navigli Lombardi* (Milano, 2017).

¹⁰⁹ The 'canal fever' (1844-1855) that was sweeping over England and the United States also arrived in Lombardy, whose canals irrigated 427,200 hectares. The most remarkable waterway of Lombardy was the Cavour Canal (1840-1863). It was built under Camillo Benso count di Cavour, Minister of Agriculture and then of Finance, and financed with private capital. For that purpose Cavour created the first irrigation partnership, which was an 'association of the owners of land irrigated with public waters, to whom exclusive rental rights to these waters was to be granted'. The Cavour canal (83 km long) was built as a deviation from the Po River, in order to improve land cultivation, especially of rice (Segre, 'Bonifica e irrigazione in Lombardia nel secolo XIX').

partnerships, as was the case of Lorini-Marocco.¹¹⁰ In 1806 a partnership was created by Francesco Zaccaria Lorini, by the lawyer Carlo Marocco, and the Balabio and Besana partnership, which was one of the most prominent merchant banks (originally silk merchants) in Milan at the turn of the nineteenth century.¹¹¹ Ignazio Besana, representing his brothers in the Balabio and Besana partnership, borrowed 30,000 lire from Giovanni Battista Camagni necessary to cover the costs of digging and operating the canal. The loan was issued at a 5.5% interest rate for 5 years.¹¹² Numerous other credit transactions were drawn up by the notaries Sacchi and Gianorini for the construction of the canal.¹¹³ The total cost amounted to 4 million lire. It was 80 km long with another 193 km of feeder canals and provided irrigation to 6,666 hectares of rice and flax (linen) fields. Other zones were devoted to pastures and cattle raising, notably associated with the region's dairy farms. The canal crossed through the countryside around Milan, Lodi, and Pavia.¹¹⁴

4 CONCLUDING REMARKS

Large, bustling private capital networks centered on notaries emerged during the second half of the eighteenth century in northern Italy, from Lombardy to Veneto and from Liguria to Trentino. Incomes, annuities, savings, cash flows, and civilian or monastic dowries began to fuel a complex, well developed network of money exchange centering around notaries. Notaries were crucial actors within this market as they acted 'informally' as financial intermediaries, matching those seeking capital with those looking for investments. The great store of information they collected and consulted during their regular activities reduced transaction

¹¹⁰ Gandolfi Claudio, 'Acqua e irrigazione per nutrire il pianeta. la realtà della pianura padana lombarda', in: *Istituto Lombardo, Accademia di Scienze e Lettere - Incontri di Studio* (2017), 51-66, there 62. For methods of financing infrastructure from ancient Rome to modern times, see Giuseppe De Luca and Marcella Lorenzini, 'A taxonomy of infrastructure financing in Europe on the long run (12th-18th century)', in: *Entreprises et histoire*, 70:1 (2013), 10-36.

¹¹¹ Levati, *La nobiltà del lavoro*, there 219-222.

¹¹² ASMI, notary G. Sacchi, Rn. 543, deed of 08/05/1807.

¹¹³ ASMI, notary G. Gianorini, Rn. 49.205, 49.206, 49.207, 49.208; notary G. Sacchi, Rn. 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555.

¹¹⁴ Bruschetti, *Storia dei progetti e delle opere per l'irrigazione del milanese*, there 323.

costs, such as adverse selection, preventing the market from failing and helping to expand it.

The networks penetrated like fine capillaries through society. The thousands of large and mid-sized transactions made this market the ‘dark matter’ of financial systems, i.e., the bulk of capital markets (Hoffman et al. 2019). In northern Italian regions, both in towns and metropolises, the sums mobilized in these informal credit networks reached significant amounts. In Rovereto, for instance, during the economic boom of the eighteenth century, the private capital market amounted to four times the revenues from tolls. In 1840 Milan, it was over 17% of total State revenues (10,648,000 Milanese lire). Here, almost one fifth of the families had turned to the credit services offered by notaries, who relied on consolidated information rather than generic mortgage guarantees.

Thanks to a massive scrutiny and a longitudinal information set about their clients, notaries were able to sustain a market in which a separating equilibrium could be achieved. High-risk agents could find creditors willing to lend them capital, charging a higher interest rate, and low-risk debtors could find less costly options leveraging their reliability as debtors. The capital market thus prevented the exclusion of operators who could not offer real estate in guarantee but staked the success of their more innovative ventures on their motivation, entrepreneurial spirit, and business acumen. Medium- and long-term capital was mobilized to finance the more modern entrepreneurial initiatives that were animating the local economic environment and that could not find support from the *casse di risparmio* (savings banks). These institutions, which did not have the same extensive social knowledge network, relied on the scrupulous assessment of the value of mortgaged assets and thus ended up granting loans only to aristocratic families or municipalities. The relationship between banks and notaries’ credit activity was not one of exclusion, but rather of coexistence, complementarity, and later hybridization.

The effectiveness of the credit system rested on a thick and articulated credit network, which was elastic and, thanks to the decisive role of notaries, offered increasing returns on the accumulation and distribution of information, establishing a process of path-dependence that highly influenced the formation of Italy’s post-unification ‘financial identity’. In the middle of the nineteenth century, when Vienna asked for a voluntary loan from the ecclesiastical bodies of Lombardy-Venetia (after realizing that religious bodies and other similar institutions were endowed with ‘the most conspicuous capital’) it turned out that in Brescia the

sum invested by these institutions in mortgage loans was over 9 million Austrian lire, complemented by over 23 million from private individuals. The competition within this effervescent mortgage business—centered on notarial credit networks, which put the forced savings of convent dowries or charitable endowments back into circulation—hindered formal lending institutions, like modern banks, from gaining a favorable position in the private lending market.

REFERENCES

PRIMARY SOURCES

- Archivio dell'Ospedale Maggiore, Milano, Causa Pia Macchi, Macchi 41, 1 giugno 1778.
- Archivio di Stato di Milano, Rubrica notarile (Rn.): Rn. 1712; Rn. 3775; Rn. 2326; Rn. 2326; Rn. 3775; Rn. 49789; Rn. 475; Rn. 50096; Rn. 311; Rn. 295; Rn. 50236; Rn. 49730; Rn. 50392; Rn. 873; Rn. 884; Rn.866; Rn. 48944; Rn. 49.661; Rn. 3513; Rn. 3516; Rn.3529 Rn. 542; Rn. 543; Rn. 544, Rn. 545, Rn. 546, Rn. 547, Rn. 548, Rn. 549, Rn. 550, Rn. 551, Rn. 552, Rn. 553, Rn. 554, Rn. 555, Rn. 49.205; Rn. 49.206; Rn. 49.207; Rn. 49.208; Rn. 542, 543;
- Archivio di Stato di Pavia, deed: n. 4961/7035; 925; n. 991; n. 1090; n. 1145; n. 1148; n. 1201; n. 1336; n. 1452.

PRINTED PRIMARY MATERIAL

- Bruschetti Giuseppe, *Storia dei progetti e delle opere per l'irrigazione del milanese* (Lugano, 1834).
- Cattaneo Carlo, *Notizie Naturali e Civili sulla Lombardia* (Milano 1844).
- Jacini Stefano, *La proprietà fondiaria e le popolazioni agricole in Lombardia* (Milano, 1854).

SECONDARY SOURCES

- Ago, Renata. 1998. *Economia barocca. Roma nel Seicento*, Donzelli, Rome.
- Alfani, Guido. 2013. Plague in seventeenth-century Europe and the decline of Italy: An epidemiological hypothesis. *European Review of Economic History* 17: 408–430.
- Alonzi, Luigi. 2012. Economia e finanza nell'Italia moderna. Rendite e forme di censo (secoli XV-XX), Carocci, Rome.

- Bellavitis, Anna. 2012. Dare credito, fiducia e responsabilità alle donne (Venezia, secolo XVI). In *Dare credito alle donne. Presenze femminili nell'economia tra medioevo ed età moderna*, edited by Giovanna Petti Balbi and Paola Guglielmotti, 259–267, Centro Studi Renato Bordone sui Lombardi, Asti.
- Benzi, Michele, Ernesto Estrada, and Christine Klymko. 2013. Ranking hubs and authorities using matrix functions. *Linear Algebra and its Applications* 438 (5): 2447–2474.
- Bertini, Fabio. 1989. *Nobiltà e finanza tra '700 e '800. Debito e affari a Firenze nell'età napoleonica*, Centro Editoriale Toscano, Firenze.
- Bianchi, Marco. 1978. Le entrate e le spese dell'amministrazione centrale e delle province dello Stato di Milano nella seconda metà del Settecento. *Archivio Storico Lombardo* 10 (4): 174–196.
- Bigo, Robert. 1947. *Les banques françaises au cours du XIXe siècle*, Libraire du Recueil Sirey, Paris.
- Bonoldi, Andrea. 1999. *La fiera e il dazio: economia e politica commerciale nel Tirolo del secondo Settecento*, Società Studi Trentini, Trento.
- Borelli, Giorgio. 1983. Teoria e prassi dell'attività di prestito nei domini della Repubblica veneta al cadere del Settecento. *Economia e storia* 3: 377–387.
- Caizzi, Bruno. 1986. *Industria, commercio e banca in Lombardia nel XVIII secolo*, Banca Commerciale Italiana, Milano.
- De Luca, Giuseppe and Angelo Moioli. 2008. Il potere del credito. Reti e istituzioni in Italia centro-settentrionale fra età moderna e decenni preunitari. In *Storia d'Italia*, Annali 23, 'La Banca', edited by Alberto Cova, Salvatore La Francesca, Angelo Moioli, Claudio Bermond, 212–255, Einaudi, Torino.
- De Luca, Giuseppe, and Marcella Lorenzini. 2013. A taxonomy of infrastructure financing in Europe on the long run (12th-18th century). *Entreprises et histoire* 70 (1): 10–36.
- De Luca, Giuseppe and Marcella Lorenzini. 2018. Not only land: mortgage credit in central-northern Italy in the sixteenth and seventeenth centuries. In *Land and Credit: Mortgages in the Medieval and Early Modern European Countryside*, edited by Chris Briggs and Jaco Zuijderduijn, 181–204, Palgrave, Cham.
- De Luca, Giuseppe. 2013. Informal Credit and Economic Modernization in Milan (1802–1840). *The Journal of European Economic History* 52: 211–234.
- De Maddalena, Aldo. 1974. *Prezzi e mercedi a Milano dal 1701 al 1860*, Banca Commerciale Italiana, Milano.
- Dermineur, Elise. 2019. Peer-to-peer lending in pre-industrial France. *Financial History Review* 26 (3): 359–388.
- Dermineur, Elise. 2014. Single Women and the Rural Credit Market in Eighteenth-Century France. *Journal of Social History* 48 (1): 175–199.

- Dermineur, Elise. 2009. Female Peasants, Patriarchy and the Credit Market in Eighteenth-Century France. *Proceedings of the Western Society for French History* 37: 61–84.
- Fantini, Ilenia. 2019. Notai e reti creditizie a Forlì nel primo Ottocento. *Romagna, arte e storia* 113: 61–84.
- Felloni, Giuseppe. 2008. Dall'Italia all'Europa: il primato della finanza italiana dal Medioevo alla prima età moderna. In *Storia d'Italia*, Annali 23, 'La Banca', edited by Alberto Cova, Salvatore La Francesca, Angelo Moioli, and Claudio Bermond, 93–149, Einaudi, Torino.
- Fornasari, Massimo. 2008. Istituzioni, professionisti, privati: le reti di credito nella Bologna moderna. In *Storia di Bologna, tome III, 'Bologna nell'età moderna'*, edited by Adriano Prosperi and Paolo Prodi, 791–855, Bononia University Press, Bologna.
- Gandolfi, Claudio. 2017. Acqua e irrigazione per nutrire il pianeta. la realtà della pianura padana lombarda. In *Istituto Lombardo, Accademia di Scienze e Lettere - Incontri di Studio*, 51–66.
- Gaulin, Jean Louis and François Menant. 1998. Crédit rural et Endettement Paysan dans l'Italie communale. In *Endettement Paysan et Crédit Rural dans l'Europe médiévale et moderne*, edited by Maurice Berthe, 1–22, Presses Universitaires du Midi, Toulouse.
- Gianelli, Giulio. 1984. La riforma monetaria di Maria Teresa. In *La Zecca di Milano*, edited by Giovanni Gorini, Società Numismatica Italiana, Milano.
- Giovannini, Carla. 1990. *La presenza e l'attività del Monte nei secoli XVII e XVIII*. In *Il Sacro Monte di Pietà di Faenza. Cinque secoli di storia e società 1491–1991*, edited by Giuseppe Adani, Banca del Monte e Cassa di Risparmio, Faenza.
- Greppi, Emanuele, Alessandro Giuliani (eds). 1923. *Carteggio di Pietro e Alessandro Verri*, Cogliati, Milano.
- Hoffman, Philip T., Gilles Postel-Vinay, and Jean-Laurent Rosenthal. 1998. What do Notaries do? Overcoming Asymmetric Information in Financial Markets: The Case of Paris, 1751. *Journal of Institutional and Theoretical Economics* 154 (3): 499–530.
- Hoffman, Philip T., Gilles Postel-Vinay, Jean-Laurent Rosenthal. 2019. *Dark Matter Credit: The Development of Peer-to-Peer Lending and Banking in France*, Princeton University Press, Princeton and Oxford.
- Hoffman, Philip T., Gilles Postel-Vinay, Jean-Laurent Rosenthal. 2000. *Priceless Markets. The Political Economy of Credit in Paris, 1660–1870*, University of Chicago Press, Chicago.
- Kleinberg, Jon M. 1999. Hubs, authorities, and communities. *ACM Computing Surveys* 31 (4): 1–3.
- Lanaro, Paola, Gian Maria Varanini. 2009. Funzioni economiche della dote nell'Italia centro-settentrionale (tardo medioevo/inizio età moderna). In

- La famiglia nell'economia europea, secc. XIII – XVIII*, edited by Simona Cavaciocchi, 81–102, Firenze University Press, Florence.
- Landi, Fiorenzo. 2005. *Storia economica del clero in Europa. Secoli XV-XIX*, Carocci, Roma.
- Lemercier, Claire, and Francesca Trivellato. 2022. 1751 and Thereabout: A Quantitative and Comparative Approach to Notarial Records. *Social Science History* 46: 555–583.
- Levati, Stefano. 1997. *La nobiltà del lavoro. Negozianti e banchieri a Milano tra Ancien Régime e Restaurazione*, FrancoAngeli, Milano.
- Levy, Juliette. 2012. *The Making of a Market: Credit, Henequen, and Notaries in Yucatan, 1850–1900*, Penn State University Press, University Park, PA.
- Licini, Stefania. 2011. Assessing female wealth in nineteenth century Milan, Italy. *Accounting History* 16 (1): 35–54.
- Lorenzini, Marcella. 2018. Borrowing and lending money in Alpine areas during the eighteenth century: Trento and Rovereto compared. In *Financing in Europe: Evolution, coexistence and complementarity of lending practices from the Middle Ages to Modern Times*, edited by Marcella Lorenzini, Cinzia Lorandini and D'Maris Coffman, 105–132, Palgrave, New York.
- Lorenzini, Marcella. 2021. The Other Side of Banking. Private Lending and the Role of Women in Early Modern Italy. In *Change and Transformation of Premodern Credit Markets. The Importance of Small-Scale Credits*, edited by Stephan Nicolussi-Köhler, 177–197, Heidelberg University Publishing, Heidelberg.
- Lorenzini, Marcella. 2016. *Credito e notai*. Capitali per l'economia veronese del secondo Seicento, Il Mulino, Bologna.
- Moioli, Angelo. 1993. Il commercio serico lombardo nella prima metà dell'Ottocento. In *La seta in Europa sec. XII-XX*, edited by Simona Cavaciocchi, 723–739, Le Monnier, Florence.
- Montanari, Daniele (ed.). 1999. *Monti di Pietà e presenza ebraica in Italia (secoli XV-XVIII)*, Bulzoni, Roma.
- Nuccio ,Oscar. 2004. Chiesa e denaro dal XVI al XVIII secolo. In *Chiesa e denaro tra Cinquecento e Settecento. Possesso, uso, imagine*, edited by Ugo Doveve, 11–85, San Paolo Edizioni, Cinisello Balsamo.
- Pagani, Gabriele. 2017. *Storie d'acqua. Contado di Milano: dalla formazione della pianura alla civiltà dei fontanili e dei navigli Lombardi*, Pagani Edlin, Milano.
- Pecorari, Paolo. 1998. Orientamenti della cultura cattolica sul prestito a interesse nel secolo XIX. *Chiesa, usura e debito estero. Supplemento a «Scienze sociali e dottrina sociale della Chiesa*, 2, 85–87.
- Pichler, Rupert. 2001. *L'economia lombarda e l'Austria: politica commerciale e sviluppo industriale 1815–1859*, FrancoAngeli, Milan.

- Piluso, Giandomenico. 1999. *L'arte dei banchieri. Moneta e credito a Milano da Napoleone all'Unità*, FrancoAngeli, Milan.
- Pompermaier, Matteo. 2022. *L'économie du 'mouchoir': crédit et microcrédit à Venise au XVIIIe siècle*, Collection de l'École française de Rome, Rome.
- Romani, Mario. 1977. *Aspetti e problemi di storia economica lombarda nei secoli XVIII e XIX*, Vita e Pensiero, Milan.
- Segre, Luciano. 1992. Bonifica e irrigazione in Lombardia nel secolo XIX: Lo schema di base. *Rivista di Storia dell'Agricoltura* 32 (1): 174–181.
- Shaw, James. 2018. Women, credit and dowry in early modern Italy. In *Women and Credit in Preindustrial Europe*, edited by Elise Dermineur, 173–202, Brepols, Turnhout.
- Tucci, Ugo. 1986. Monete e riforme monetarie nell'Italia del Settecento. *Rivista storica italiana* 93 (1): 78–119.
- Uggé, Albino. 1956. Le entrate del Regno lombardo-veneto dal 1840 al 1864. *Archivio economico dell'unificazione italiana* 1: 1–15.
- Vismara, Paola. 2009. *Questioni di interesse. La Chiesa e il denaro inn età moderna*, Mondadori, Milano.
- Wasserman, Martin. 2014. 'Diseño institucional, prácticas y crédito notarial en Buenos Aires durante la primera mitad del siglo XVII. *Investigaciones de Historia Económica - Economic History Research* 10 (1): 1–12.
- Zaninelli, S. 1986. Un capitolo centrale del riordino dei tributi indiretti dello Stato di Milano nella seconda metà del '700: la "redenzione delle regalie". In *Studi in onore di Antonio Petino*, tome I, 'Momenti e problem di storia economica.
- Zimolo, Giulio Cesare. 1960. Canali e navigazione interna nell'età moderna. *Storia di Milano*, 24.

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