Organizational Invention and Elite Transformation: The Birth of Partnership Systems in Renaissance Florence[1]

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The birth of a new form of business organization, the partnership system, in Renaissance Florence is examined closely in order to discover the social processes of invention in that extraordinarily inventive place. Stated generally, the processes of invention the authors discover there are transposition, refunctionality, and catalysis across multiple social networks. Specifically, political co-optation of cambio bankers in the aftermath of the Ciompi revolt induced the transposition of domestic guild methods to the international plane, thereby changing their purpose and their reach. Subsequent social absorption through marriage of these elevated bankers into the victorious political alliance infused partnership with the multiplex logic (and often money) of dowry, thereby reproducing partnership systems as an integral component in post-Ciompi republicanism. Medieval organizational logics of patrilineage and guild were transformed into Renaissance organizational logics of marriage and clientage. The origins of financial capitalism are partly rooted in this elite social-network response to class revolt.

INTRODUCTION

Inventions of any sort are hard to understand. They seem to come out of the blue, a rupture with the past, yet close investigation always reveals

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historical roots. Individual geniuses sometimes create them, but is "genius" just our celebratory label for a process that worked, which we do not understand? To proffer a tentative distinction: innovations improve on existing ways (i.e., activities, conceptions, and purposes) of doing things, while inventions change the ways things are done. Under this definition, the key to classifying something as an invention is the degree to which it reverberates out to alter the interacting system of which it is a part. To some extent we understand micrologics of combination and recombination (e.g., Barley 1990; March 1991; Powell, Koput, and Smith-Doerr 1996; Fleming 2002; Burt 2004). Yet the invention puzzle is that some of these innovative recombinations cascade out to reconfigure entire interlinked ecologies of "ways of doing things," whereas most innovations do not. The poisedness of a system to reconfiguration by an invention is as much a part of the phenomenon to be explained as is the system's production of the invention itself. Invention "in the wild" cannot be understood through abstracting away from concrete social context, because inventions are permutations of that context (Hutchins 1995; Latour 1988; Galison 1997, 2003). But to make progress in understanding discontinuous change we need to embed our analysis of transformation in the routine dynamics of actively self-reproducing social contexts, where constitutive elements and relations are generated and reinforced.

Biological evolution stands as one exemplar that theoretical analysis (without prediction) is possible even in open-ended, endlessly generative systems of self-reproducing recombination and feedback. Imitation of biological science by the social sciences should never be slavish: social systems have no genes, and social systems have consciousness. But from biology comes the fundamental insight that organic entities, structures, and artifacts are not static "objects"; they are vortexes of cross-entity

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chemical flows that reproduce themselves (Maturana and Varela 1980; Nicolis and Prigogine 1989; Kauffman 1993; Fontana and Buss 1994; Padgett, Lee, and Collier 2003). Among other things, social systems are one form of "life" (Luhmann 1995). As such, uncovering social analogues to cross-entity chemical flows, which transform and reproduce actors through interaction, is a prerequisite for systematically analyzing punctuated tippings or inventions in the reproductive dynamics of any human entity, be that a body, an organization, a market, or a city.

Renaissance Florence is the empirical site for our study of the historical process of socially embedded invention. While the uniqueness of the Italian Renaissance in world history may be debatable, the creativity of that particular place and time is not. Inventions in literature (Dante, Boccaccio), in art (Giotto, Masaccio, Donatello, Michelangelo), in letters (Petrarch), in architecture (Brunelleschi, Alberti), in science (Leonardo, Galileo), in constitutional design (Bruni, Savonarola), in political theory (Machiavelli, Guicciardini), and in business (Datini) were produced in breathtaking numbers and speeds. Indeed the most striking global feature about Renaissance Florence is the sheer multiplicity of domains in which inventions occurred: inventions seemed to cascade from one domain to another. These developments did not occur in isolation from the rest of northern Italy (e.g., Witt 2003), but Florence was a particularly catalytic site in the northern Italian Renaissance web of invention.

While there is no gainsaying these facts about inventiveness, recent historians have challenged the "renaissance" interpretation of late medieval Florence, preferring instead to emphasize the traditional and conservative character of the place (Kent 1977; Kelly-Gadol 1977; Molho 1994). The historiographical puzzle this revisionism poses for us is not the question of which competing interpretation is correct. The puzzle is how both can be correct. How did such a traditional and conservative place, not at all motivated to innovate per se, nonetheless invent so prolifically? Large macrohistorical issues about the so-called "rise of the West" are linked to the answer to this question (Lopez 1976; Abu-Lughod 1989).

The particular Florentine economic invention whose emergence we will trace in this article is the discovery, in the late 1300s, of a new organizational form that Melis (1962) called the "business system" (*sistema di aziende*). We find his label to be imprecise, but what Melis (1962, p. 130) meant was not imprecise: a set of legally autonomous companies linked through one person or through a small set of controlling partners.[2] In Melis's definition, "legally autonomous companies" meant either ownership by a single person (*individuale*) or ownership by a partnership of

[2] In the latter case of a small number of dominant owners assembled into a controlling partnership, the *sistema di aziende* was a holding company (de Roover 1966).

persons (*collettiva*). If at least one of the companies linked into *sistema di aziende* is a partnership, then we will translate Melis's term as "partnership system."[3] The partnership system was an innovation in company ownership in which a single controlling partner (or a small number of partners), if he did not manage the branch himself, made a set of legally separate partnership contracts with branch managers in different locations and/or industries. This new "network-star" ownership structure largely displaced earlier legally unitary companies, often built collectively by patrilineage families, which were common in the early 1300s (Sapori 1926; Renouard 1941). Viewed formally, this splintering of a unitary company into overlapping parts was decentralization because it allowed various branches and business markets to be managed separately, through legally independent account books.[4] Viewed operationally, this devolution was centralization because it dissolved unitary committees of numerous owner-directors and substituted dominant ownership by just one or at most a few persons (de Roover 1966, p. 78). Melis (1962) himself studied the extraordinarily well-documented case of Francesco Datini, the famous "merchant of Prato" whose system lasted from 1382 to 1410 (see also Origo 1957). The Datini system was among the first, if not the first, example of this new organizational form. De Roover (1966) studied the slightly later case of the Medici bank.[5]

This new organizational form is important in the history of financial capitalism both because it protected owners (to some extent) against the unlimited-liability risk of complete financial ruin,[6] and because it easily

[3] Goldthwaite (private communication) has suggested translating *sistema di aziende* as "company agglomerate."

[4] These legally independent account books, however, were functionally interconnected through current accounts among branches that permitted highly liquid transfers of funds.

[5] De Roover's so-called "Medici bank" was that of Giovanni di Bicci and his descendants Cosimo and Lorenzo de' Medici. Below we will show that the less well-documented predecessor of Giovanni de' Medici's bank, namely that of Vieri di Cambio de' Medici (de Roover [1965] 1974), was in fact also a partnership system, contemporary in time with Datini. Giovanni di Bicci de' Medici was trained by Vieri di Cambio de' Medici.

[6] This is distinct from the legal issue of limited liability within a single partnership contract. The limited liability or *accomandite* partnership was not legally established in Florence until 1408, well after the invention of partnership systems. Even after their authorization, limited-liability *accomandite* partnerships were not used heavily in Florence until the 1500s, perhaps because of the popularity of the functional substitute of partnership systems. Decentralized branch partnerships in partnership systems were legally unlimited, not limited, liability in contractual character, just as the previous unitary forms of partnerships had been. But splintering the unitary firm into separate legal entities protected the assets of each branch from the bankruptcy and liability of other branches, even if it did not protect the owner's personal assets. Perhaps Florence's

allowed diversification into multiple product markets. The earlier unitary companies (Padgett 2005) often had been generalist in character, doing whatever type of merchant or banking business made sense to them at the moment. The new partnership system was also generalist in ensemble, but each component company was more specialized than before. Component specialization required a more abstracted system of articulation among branches than before. This in our account was the organizational driver for the rapid diffusion of double-entry bookkeeping in Florence in the late 1300s. A stock market did not yet exist in the Renaissance, but apart from this major difference in ownership structure, the invention of the partnership system in Renaissance Florentine banking is similar managerially to the shift in American manufacturing from the functional to the multidivisional form, discussed by Chandler (1962). In economic *mentalité* Florentine partnership systems are early exemplars of the "financial conception of control" discussed by Fligstein (1990). Partnership systems are also members of the class of organizations that Powell (1990) called "network organizations"; indeed historically they may have been the first member of this class. Each of these modernist classifications is accurate, depending upon which aspect of the new organizational form one chooses to emphasize. Viewed in the context of its time, however, partnership systems were sui generis, deeply embedded in the local Florentine and Tuscan context.

A companion article (Padgett and McLean 2002, 2004) to this one examines economic invention not at the level of organizational structure but at the level of organizational practice—namely, the operation and dramatic growth of economic credit in Renaissance Florence in the late 1300s and early 1400s. Formally, ongoing relations of business credit were recorded primarily in the bookkeeping device of current accounts, tabulated in bilateral format. Extensive and deep credit relations among Florentine merchant-bankers were the primary reason for the century-long dominance of international finance in Europe by Florence. In that companion article, we demonstrate the historical connection between the rise of intercompany credit and the invention and spread of partnership systems as new nodes of exchange in that credit. Emphasizing linguistic framing and self-construction, McLean (1998, forthcoming) develops an argument compatible with ours in the domain of patronage letters.

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adoption of the *accomandite* limited liability in 1408 was stimulated by the 1380s adoption of the *sistema di aziende*, but this is speculation on our part.

THEORETICAL FRAMEWORK

Dynamic Multiple Networks

Inspired by biochemistry, our theoretical approach to the topic of organizational invention is to situate invention in the dynamics of reproduction of multiple networks—specifically, in the cross-network processes of transposition, refunctionality, and catalysis. Recombinant innovation in organizations is produced, our case study shows, when one or more social relations are transposed from one domain to another, mixing in use with relations already there. This transposition-induced hybridity is the raw material for invention, but that is only the first step. Refunctionality is when transposition leads not just to improvement in existing uses but, more radically, to new uses—that is, to a new set of objects with which to interact and transform. Catalysis is when these new interactions feed back to alter the way existing relations reproduce. The entire multiple-network ensemble may tip into true invention when catalytic feedback loops are modified in the autocatalytic transformational process of network reproduction (Maturana and Varela 1980; Fontana and Buss 1994; Wagner and Altenberg 1996; Padgett 1997), either by adding new positive feedback loops or by subtracting old negative feedback loops.

This biochemically inspired theoretical framework may seem on first glance to be distant from the rich and complicated social history of Renaissance Florence. But actually it is an inductive generalization from our detailed interrogation of the Florentine materials. We are not without precedent in seeing history in this way: Machiavelli in his revolutionary analysis of Florentine politics also interpreted its turbulent dynamics in terms of the biochemistry of his time, namely that of "humors" (Parel 1992; Najemy 1995).

To draw out the operational meaning of this perspective for Florence, see figure 1. We represent "social context" by multiple-network architectures. Actors are clusters of relational ties. In the activity plane of economics, for example, collective actors called companies are composed of partnership ties. These companies trade with each other. In the domain of kinship, for another example, collective actors called patrilineages are composed of genealogy ties. These patrilineages marry each other. And in the domain of politics, collective actors called factions are composed of clientage ties. These factions do political deals with each other.[7] We label the strong-tie relations that constitute collective actors "constitutive ties," and we label recurrent weak-tie relations through which actors deliver resources to each other "relational ties." Within each domain, con-

[7] Often in the Florentine republican setting these were coordinated institutional votes.

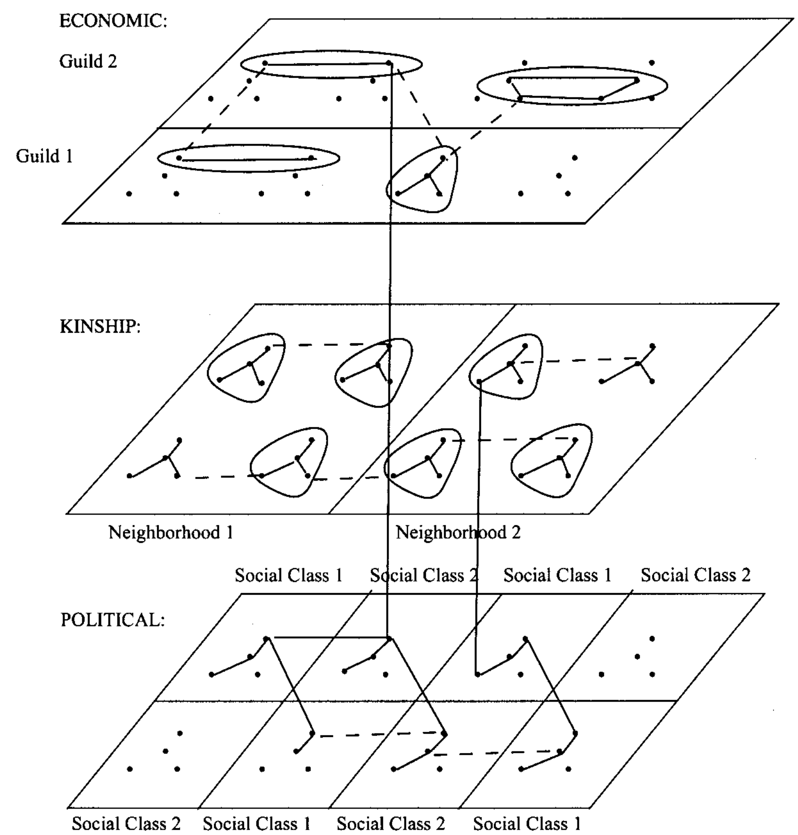

FIG. 1.—Multiple-network ensemble Renaissance Florence. Solid lines are constitutive ties, dotted lines are relational social exchanges, and oblongs are formal organizations (families and firms). People in multiple roles are vertical lines connecting corresponding dots in the domains of activity in which people are active (only two are shown for illustration).

stitutive ties "feed" via relational ties. Reproduction is when constitutive ties, using input resources, make new constitutive ties.

All important for a multiple-network setup, people also are conceived as constitutive ties: namely, they are cross-domain composites of roles. Purposes are domain-specific features of roles within individuals; they are not features of individuals per se.[8] In figure 1, people are represented as

[8] For example, it is the businessman segment of the total person whose goal it is to make profits. The person *tout court* has more objectives than just that, associated with other roles in his life. Cross-domain embeddedness structures how the other roles of a businessman may affect his understanding of and activities within his economic role (cf. Padgett and Ansell 1993, p. 1264).

vertical lines, linking roles across planes. Not all people participate in all networks at all levels, but many do, inducing patterns of multiple-network overlay or "social embeddedness" (Granovetter 1985). Cross-domain connections, through people, regulate the reproductive formation of constitutive and relational ties. Conversely, network reproduction generates people as social actors by shaping and composing the roles that act through them. Patterns of social embeddedness are important for us not only because of "trust" but also because they regulate the dynamic reproduction of constitutive ties in each domain through the aligning and sequencing of multiple roles.

Within this architecture, we are searching for the flows and processes that generate and reproduce multiple-network relations, constructing social actors and making them "alive." This is the prerequisite for our empirical (and future-analytic[9]) investigation into qualitative tips in the dynamics of such relational reproduction, which is how we conceptualize organizational invention.[10]

If organizations are the units of analysis—firms, families, and factions—then one obvious flow through them, bringing them to life, is people. "In organizations, biological or social, rules of action and patterns of interaction persist and reproduce even in the face of constant turnover in component parts, be these molecules or people. In the constant flow of components through organizations, the collectivity typically is not renegotiated anew. Rather, within constraints, component parts are transformed and molded into the ongoing flow of action" (Padgett 1997, p. 200). Attending to the flow of people, and to the action rules they bring with them, leads to an analytic focus on careers and biographies as these wend their way across organizations and domains. Organizations reproduce through people and other resources flowing through them. The structure of biographical flow among organizations, both within and across domains, channels constitutive-tie transpositions of previously acquired network ties and learned rules of action and interaction. Organizational structure is the blending, transformation, and reproduction, on site, of networks and interaction rules transported by people into the site from

[9] Along with Pip Pattison of the University of Melbourne and Sanjay Jain of the University of Delhi, we have received NSF-HSD grant SBE-0433006 in order to implement our ideas formally in dynamical network modeling. See Pattison (1993).

[10] We do not spend much time in this article comparing our view of inventions to other views in the literature. But two common alternative conceptions—individual inspiration and stochastic search—really are not theories of invention at all, in any explanatory sense. Both of these alternatives treat invention as a random variable, abdicating the goal of explaining the content of invention. This of course is quite a legitimate trick if the objective of the analysis is something else, like historical narrative or the economic analysis of R&D investment strategies.

numerous sources (Padgett 2001). People, conversely, are the hybridized residues of past networks and rules acquired through interaction at their previous organizational sites (cf. Breiger 1974). In other words, both organizations and people are shaped, through network coevolution, by the history of each flowing through the other.

The distinctive payoff of a multiple-network approach is to focus particular attention on cross-domain catalytic interactions, which either amplify or dampen rates of reproduction within domains, once organizational reproduction has been attained. Chemistry sensitizes us to the possibility that catalysis is likely to have large consequences for the nonlinear dynamics of any transformational system (Fontana and Buss 1994; Fell 1997). Hence the catalytic situation of innovation within its social-network context is likely to be crucial in the reinforcement (or suppression) of that into invention. Biographically structured flows of people through organizations are one way to operationalize the idea of social catalysis, because success or failure in interactions in one role generates resources and access that affect success or failure in interactions in other roles.

To illustrate in the context of Florence, one nonhypothetical example of a cross-domain transposition, generating innovation raw material for possible network feedback into invention, is transposition of the relational logic of dowry from its original domain of kinship into the novel setting of a business partnership in markets. Refunctionality would occur if this revised understanding of how to construct companies led to new types of businesses in which that company engaged. Catalysis would then be if those new types of business relations reverberated to alter market relations among existing businesses. A second nonhypothetical illustration is the transposition of clientage logic into the family. Refunctionality would occur if this reconceptualization of family altered the perception of who counted as family. Catalysis would be if intermarriage patterns among families were altered as a consequence, thereby reconstituting the sociopolitical elite. Finally, single-domain inventions cascade from one domain (e.g., politics) to another (e.g., economics) if multivocal social relations (Padgett and Ansell 1993) like marriage, operating functionally in more than one domain, bridge transformations in the family, in business firms, and in political factions into a positive feedback loop that catalytically reinforces one another. These examples are more than mere illustrations. In the late 1300s dynamic multiple-network feedbacks like these, we shall show, underlaid the punctuated series of inventions that we label the Florentine Renaissance.

Florentine Transposition of Economic Networks into Politics (and back again)

In this article, the general theoretical framework above will play out in specific Florentine history as follows: After the Ciompi revolt of 1378, as part of a political reconsolidation-cum-repression to be discussed below, domestic or cambio bankers were strongly mobilized into core political offices within the republican state. Before this political mobilization, cambio bankers operated for the most part domestically within the city, changing money and also doing deposit banking for their Florentine customers. They participated in state offices through the medium of their guild. International trading (mostly of woolen cloth), on the other hand, was the province of socially high-status merchants often organized into large unitary family firms. This international versus domestic division of labor was reinforced administratively by the guild structure—*Arte della Calimala* for international traders of finished cloth and *Arte del Cambio* for domestic bankers. With aggressive political mobilization of them by elite moderates after the Ciompi revolt, however, cambio bankers systematically were pulled up into the "jet stream" of international trading, thereby injecting domestic banking organizational forms and accounting practices into international trading. We show below that a majority of the new partnership systems were constructed by cambio bankers reaching overseas to construct new trading branches abroad. They had been inhibited, though not prohibited, from engagement in international trade by the guild system before the Ciompi revolt.[11] Making bankers into city councillors is our example of transposition of roles across domains, through collectively restructuring political biographies.

As cambio bankers were transported into new settings, both economic and political, they brought with them their old master-apprentice logics of contracts and careers but then adapted these to the new international-trading setting, blending with the patrilineage family logics already there. The result was a modularized hybrid—short-term contracts with both family and nonfamily branch managers—in other words, the partnership system. Refunctionality was when this new organizational form led Florentine businessmen to new ways for companies to relate to each other in the market, through current accounts, credit, and double-entry bookkeeping. Together transposition and refunctionality created the potential for revolutionizing international finance via modularity and liquidity, de-

[11] This is not to say, however, that Florentine cambio bankers before 1378 could not move overseas to do their so-called "lombard" money-changing and deposit-banking business in foreign cities. One example was Boccaccio's father (Mueller 1997*b*), for which citation we thank Richard Goldthwaite.

pending upon how the rest of the multiple-network system of Florence responded to these innovations.

The catalysis that catapulted this organizational innovation into systemic invention, which restructured both economic banking and political elites, was the social embedding of this partnership system into marriage and clientage. In politics the Ciompi revolt triggered the formation of a "republican oligarchy" to succeed "guild corporatism" (Najemy 1982), in two stages. After 1393, a more conservative political regime succeeded the major-guild moderate innovators of 1382–92. Higher-status popolani and magnates demographically took over the partnership systems which had been developed (for the most part) by cambio bankers. This second stage of biographical transposition brought economic partnerships into tighter correlation with elite marriages. And this in turn established sinews for the percolation of partnership-system economic techniques, like current accounts, out into the broader network structure of the ruling social elite at large, making that elite itself more mercantile in character. For markets, this new correlation of partnership with marriage provided social foundations for *fiducia* (trust) within the merchant community to make the credit system function. The final product, on the one hand, was a vibrant financial system that dominated European international finance for a century and, on the other hand, was an intensely status-conscious but politically permeable merchant elite that created generalists ("Renaissance men") for whom economics, politics, family, art, and philosophy were all refractions of each other.

Therefore in our explanatory account, the economic invention in late-medieval Florence of the partnership system was the corollary (and not the only corollary[12]) of elite transformation.[13] Rapid diffusions of both double-entry bookkeeping and current accounts among companies, in turn, were consequences of the invention of partnership systems.

The "rise of financial capitalism" for us is not a grand teleological process of inevitable modernization. It was rooted instead in particular places and histories, which refashioned their own multiple-network social structures in crucial punctuated-equilibrium moments. Florence was unusually creative in part because of its tumultuous political history, which repeatedly transposed and refunctionalized its underlying social networks. Florentine elites invented not because they wanted to, but because they

[12] We do not develop the point in this article, but we perceive the dramatic growth of patronage in this period (Brucker 1969, p. 97) to be another face of this oligarchic elite-transformation process.

[13] Our analysis of Florentine economic development, while quite different from that of Lachmann (2000), is not theoretically inconsistent with his approach. See also Bearman (1993), Carruthers (1996), and the historically oriented network-analysis literature reviewed in Emirbayer and Goodwin (1994).

had to, conservatively to preserve their threatened positions. Naturally there is more to explaining organizational invention than political turmoil, but in the case of Renaissance Florence that was the core mechanism that recomposed its economic, political, and kinship networks into tipping (cf. Stinchcombe 1965). Other case studies no doubt will add to the list of annealing mechanisms that induce transposition, refunctionality, and catalysis in social networks in such ways that evolution, not collapse, is the result.

This article will demonstrate this argument in the following stages: After reviewing prior historical research on Florentine partnership systems, we shall pinpoint the exact timing of this invention to be 1383, confirming with more data the hypothesis of Melis (1962, p. 130). Most of the partnership-system builders of this period will be identified to be cambio bankers, who politically were mobilized into government at increased rates after the Ciompi revolt. After identifying the innovators, we then shall describe the politics of the Ciompi revolt and its repression in some detail, and show how political mobilization created a post-Ciompi republican oligarchy and absorbed cambio bankers and other businessmen into this newly augmented elite through marriage. Marriage, along with clientage, took the place of demobilized guilds as the primary social-network integuments of the post-Ciompi oligarchy, which thereby sought to co-opt, not to crush. This social embeddedness of banking in marriage catalyzed the reproduction of partnership systems in economics and helped to transform the new oligarchy politically into mercantile republicans. Overall, postrevolt Renaissance Florence is a dramatic case example of the punctuated coevolution of economic markets and political elites.

DOCUMENTING THE EMERGENCE OF FLORENTINE PARTNERSHIP SYSTEMS

Existing Literature

Melis (1962) and de Roover (1966) do thorough jobs of explaining the character of the new partnership system in Renaissance Florence. They use as their respective cases Francesco Datini and the Medici bank.

Francesco di Marco Datini of Prato is the first documented case of a partnership system (Melis 1962, [1946–77] 1991; Origo [1957] 1992).[14] After an early apprenticeship with his Pratese guardian, Datini started business

[14] Through the careful design of his will, Datini himself preserved almost all (*libri secreti* are missing) of his life's business records: about 500 account books and over 100,000 business letters. A small subset of this material has been published (Villain-Gandossi 1969; Frangioni 1994).

in 1358 as a merchant trader in Avignon, the seat of papal government at that time, staying there until 1382, through the Florentine war with the pope (1375–78) and through the Ciompi revolt (1378). As a Tuscan but not a Florentine, Datini made his original fortune in Avignon opportunistically trading a wide variety of goods. He did not participate in the enormous banking business of the pope himself, as did other larger Florentine companies in Avignon, such as the Alberti (*antichi* and *nuovi*) and the Soderini (Renouard 1938, 1941). Datini's construction of his new partnership system began with his return first to Prato (1382–86) and then to Florence (1386–1410), after the Ciompi revolt. "When Francesco di Marco decided to move to Florence and establish himself there, his decision was partly due to the fact that the city had just come under the rule of a few powerful families—rich bankers, merchants, and professional men—whose laws he thought likely to be favorable to trade" (Origo 1992, p. 78). From his residence-cum-warehouse in Prato, Datini at first consolidated his Tuscan base through creating new trading companies in Pisa (1383–1410) and in Florence (1383–1410), and also a new wool manufacturing partnership in Prato (1384–99). From this Tuscan base, Datini then branched out further, constructing trading partnerships in Genoa (1392–1401) and in Catalonia (1396–1410). Datini also formed a short-lived cambio bank in Florence itself (1399–1401). All of these extensions were done through legally distinct companies.[15] Like previous organizational forms, Datini maintained Florentine correspondents in many other cities in Europe through whom he managed geographically dispersed trades. Almost the epitome of a "new man," by 1403 Francesco Datini,

[15] To elaborate this innovative developmental sequence in microprocessual detail: (*a*) Datini's first steps toward a partnership system were just derivative of his physical movement, without conscious *sistema* intent: i.e., he made Avignon into a partnership upon his 1382 departure from there, and he made the Prato wool company into a 1384 partnership soon after his 1383 movement to Pisa. (*b*) The exact date of initiation of Datini's *sistema di aziende*, according to Melis (1962, p. 174), was January 28, 1383, the first entry in Datini's legally autonomous account book for his newly founded company in Pisa. Both this new company and the similar new one in Florence, also initiated in 1383, were solo owned and managed (*individuali*). Datini shuttled back and forth between Pisa and Florence, doing all the decision making with factors as assistants. (*c*) 1388 was the date when Datini shifted his core Florence branch from *individuale* to *collettiva* partnership status, through the promotion into partner status of a trusted assistant (Stoldo di Lorenzo) and the recruitment of an outside investor (Falduccio di Lombardo). (*d*) 1392 was the date when major organizational expansion took place, first to Genoa and then in 1393 to Catalonia. Associated with this expansion, Datini transformed the ownership structure of his growing agglomerate into a holding company: namely, the Florence branch "owned" both the Pisa and the Genoa branches, and the Genoa company (later in 1396 the Florence company) "owned" the Spanish company. Throughout all of these transformations in legal ownership there was no doubt that the entire system of legally autonomous companies was centrally controlled and dominated by one man alone: Francesco di Marco Datini.

despite his humble and poor social origins, had risen economically to become the tenth wealthiest resident of Florence (Martines 1963, p. 356).

The full set of organizational features that Datini employed to construct and then to control his business expansion and diversification were these:

1. legally distinct partnerships with branch managers (or the owner) in each location;
2. separate sets of account books for each branch;[16]
3. diversification of companies into multiple industries;
4. a "holding company" arrangement, in which Datini's Florentine partnership owned parts of other partnerships (Melis 1991, p. 169);
5. centralized oversight[17] of branches through vast numbers of business letters[18] between Datini and his branch partners and through regular meetings between Datini and his branch partners;
6. double-entry bookkeeping in bilateral format;[19] and
7. current accounts both among partnership-system companies and with major trading partners (de Roover 1974, pp. 144–49).[20]

The first two elements in this list define the partnership system, but the

[16] Goldthwaite (personal communication) has brought to our attention that, as developed as Datini's accounting system otherwise was, there are no overview *libri secreti*, which summarized ownership investments and profits, in the Datini archives. Perhaps Datini intentionally avoided the donation of these most sensitive accounting books to his estate, but if not then it would have been difficult for Datini to get a clear and precise "bird's-eye view" of his multiple holdings.

[17] The word "centralized" is meant to distinguish operational policy making by one or two persons from the policy making by board of owners that was characteristic of earlier family-based companies.

[18] "Messer Benedetto Alberti, who showed his wisdom and prudence in weighty affairs of state and government as well as in domestic and civil affairs, used to say that the merchant should always have his fingers stained with ink" (Alberti [1433] 1971, p. 205; see also Cotrugli in Lopez and Raymond [1990, p. 375]).

[19] "Bilateral format" (also called *alla veneziana*, hinting at its source) is where, for purposes of double-entry bookkeeping, debts and credits are recorded symmetrically, debts on one page (or column) and credits on the facing page (or column) of account books. While this is only one non-necessary aspect of full double-entry bookkeeping, it is a tangible indicator of it because it makes double-entry calculations easier and less error prone.

[20] Current accounts were in effect lines of credit where two companies open-endedly executed orders for each other, each acting as the agent for the other. In today's Italian Civil Law (chap. 26, articles 1823–24) *il conto corrente* refers to a contract between two private parties in which no money is exchanged but rather in which reciprocal credits are recorded. (We thank Alessandro Lomi for bringing this modern reference to our attention.) This is a tangible sign, within bookkeeping, of moving beyond seriatim transactional to relational exchange. Current accounts were further developed by Datini and others into *Nostro* and *Vostro* accounts for multiple-currency international exchange (de Roover 1944). These will be discussed in the companion article.

historical significance of the partnership system comes from this whole package of organizational correlates, working together.

No other Florentine company has surviving records as complete as those of Francesco Datini. But de Roover (1966) has analyzed the incomplete but still substantial surviving records of the much longer-lasting Medici bank. The Medici bank that de Roover analyzed was the famous one founded by Giovanni di Bicci (controlling partner 1397–1429), which continued through five generations: Cosimo di Giovanni (1429–64), Piero di Cosimo (1464–69), Lorenzo "the Magnificent" di Piero (1469–92), and Piero di Lorenzo (1492–94). At its peak, this Medici bank had geographical branches in Florence, Pisa, Rome, Naples, Venice, Milan, Avignon, Geneva/Lyons, Bruges, and London. It also owned two wool-manufacturing partnerships and one silk-manufacturing partnership in Florence, plus it was in partnership with the pope to manage his alum mine. The operation of this very important bank—the financial segment of the famous Medici family's wealth and power[21]—has been so thoroughly described and analyzed by de Roover (1966) that details are not necessary to repeat here, except to say that all seven of the organizational features of the Datini system listed above were present in this larger Medici bank. The only difference was one of degree: instead of a single dominant person at the center, the Medici owners/managers listed above relied for assistance on a series of talented (and not-so-talented) general managers, whom they included in their core holding-company partnerships, which owned majority stakes in all the other partnerships. The organizational structure of the Datini system scaled up easily to the larger size of the Medici bank.

As noted by de Roover (1974), this well-known Medici bank was actually a descendant of an earlier, more obscure Medici bank—that of Vieri di Cambio de' Medici, in business from 1349 to 1393, a contemporary of Datini. Vieri was a domestic or cambio banker, who trained and eventually elevated to partnership both Giovanni di Bicci and his older brother Francesco. Three Medici banks descended from Vieri di Cambio: the famous Medici bank of Giovanni di Bicci, the successful bank of Averardo di Francesco di Bicci, and the unsuccessful bank of Vieri's own sons Niccola and Cambio. No private business records of this early Vieri di Cambio bank survive, but from the primary and secondary sources described in appendix A we have reconstructed the partnership history of this bank. After a long and complicated series of domestic banking partnerships, recorded in the records of the *Arte del Cambio* or Bankers' Guild, Vieri di Cambio started to build his own international organizational system—first through new partnerships in Genoa with Francesco di Bicci and in Venice with Jacopo di Francesco Venturi, probably both established

[21] See Padgett and Ansell (1993) for additional sources of Medici power.

in 1382 or in 1384,[22] and then through a new partnership in Rome with Giovanni di Bicci in 1385 (de Roover 1966, p. 36).[23] These dates are virtually identical in timing with the dates at which Datini constructed his own innovative partnership system. Hence Datini was not the only one in Florence to invent the partnership system in the early 1380s.

Further archival work using the same sources has uncovered three more examples of the simultaneous discovery of the partnership system by other Florentine businessmen: namely, the 1383 partnership systems of Davanzato and Manetto di Giovanni Davanzati, of Francesco di Neri Ardinghelli, and of Ardingo di Corso Ricci and Gualtieri di Sandro Portinari (see app. A). In the years shortly after 1383, moreover, many other examples of partnership systems were quickly born (all reported in app. A). Placing Datini in the historical context of those with whom he traded, in other words, reveals the invention of the partnership system in Florence to be not the isolated work of a single and socially isolated new-man "genius." Instead it was a simultaneous invention by the community of Florentine businessmen interacting with each other. In the hindsight of this contextualization, Datini stands out more because of the quality of his surviving documentation than because of the uniqueness of his organizational design.

Documenting the explosive growth and spread of partnership systems in Florence after 1382 is only half of the empirical task of pinpointing timing. Documenting the absence of such systems before the Ciompi revolt is the other half. We have compiled a 60-page memo (Padgett 2005) that summarizes existing case studies of 19 Florentine companies during the 1300 to 1378 period, extracting data on partnership.[24] Instead of reviewing that extensive information here, we have posted it online for interested readers.The memo documents the absence of full-blown Florentine partnership systems before 1378.

As discussed in that online memo, there were four "precursor" or "gray

[22] De Roover (1966, p. 36) reports that the Vieri Medici and Jacopo Venturi company in Venice was founded "by 1385" based on bills of exchange to the Dalmatian coast (Teja 1936, pp. 74–75, 113), and also that the Vieri and Francesco Medici company in Genoa was probably in existence in 1390, based on a bill of exchange from Palermo published by Bensa (1928, pp. 327–28). Examination of the changing partnership structure of Vieri's Florentine home company, summarized in appendix A, leads to the inference that both of these international branches were established simultaneously as part of either the 1382 or the 1384 reorganization of Vieri's Florentine firm. Unfortunately it is not possible to prove this plausible inference, since no partnership contracts or account books from Vieri's partnership system survive.

[23] Melis (1962, p. 162) also reports a Vieri de' Medici branch in Bruges, but without dates or partners.

[24] We deeply thank Richard Goldthwaite for helping us to complete this secondary-literature research.

zone" cases that we uncovered in our search of the secondary literature, which may or may not be called partnership systems depending upon one's exact definition. The first two of these ambiguous cases—namely, the Covoni company of 1336–40 (Mandich in Sapori 1970) and the Del Buono-Bencivenni company of 1336–40 (Mandich 1984)—Mandich labeled *sistema di aziende* on the basis of extensive deposit and credit relations, but no formal partnership relationship, between a Florentine home company and its agent companies (or factors) in other cities. Interesting though these are in their own right, these two merchant-banking companies do not qualify as "partnership systems" under Melis's and our definition. Two other cases, however, appear to qualify under Melis's and our narrow definition of item 1 above, but do not qualify under the more extensive items 1–7 "Datini ensemble" definition. These precursor cases are the Albizzi wool-manufacturing company of 1351–72 (Hoshino 1969) and the Pinciardi da Borgo San Sepolcro alum-importing and dyeing company of 1348–75 (Pinto 1999). The Albizzi firm opened a branch office in Venice to sell its texiles, with a factor who was given a quarter share in the profits, but who may or may not have contributed any capital (Hoshino 1969, p. 17). The Pinciardi firm, originating in Borgo San Sepolcro, opened a branch company in Florence to receive and sell its alum, a crucial raw material in Florentine dyeing. Both of these companies were economically successful, but they were not diversified firms. The topic of precursors deserves more research in the future, but the existence of a few ambiguous cases does not undermine our basic empirical finding of an explosion of new partnership systems in Florence around 1383.

In addition to secondary-literature research on pre-1382 Florentine companies, the online memo (Padgett 2005) also summarizes four documented non-Florentine cases, from nearby Pisa and Lucca, which together imply the rapid diffusion of the partnership system from Florence through Tuscany: (*a*) the Raù company of Pisa, which was a partnership system around 1390 (Melis [1955] 1987, pp. 215–22); (*b*) the Borromei company of San Miniato and Pisa, which apparently was a partnership system in the 1390s (Melis 1962, p. 188); (*c*) the Guinigi company of Lucca, which switched from unitary company to partnership system sometime between 1391 and 1407 (de Roover 1949); and (*d*) the Rapondi company of Lucca, which apparently switched from unitary form to partnership system in 1396 (Mirot 1928). To our knowledge, no pre-1380 example of a partnership system in Pisa exists. It can be shown through surviving 1371–1407 company censuses in Lucca that true partnership systems emerged in that city in the 1390s and not before (ASL, *Corte dei Mercanti*; Lazzareschi 1947).[25] These supplementary examples suggest that organiza-

[25] The following two "gray-zone" cases, however, were found in the Lucca business

tional invention in Florence spread quickly throughout Tuscany. This is not surprising since Florentine companies, Francesco Datini da Prato foremost among them, were deeply intertwined with the economies of other cities in Tuscany.

Quantitative Documentation of Growth and Diffusion

In table 1 and in figures 2 and 3, we attempt to build, as best as our primary sources permit us, a more quantitative portrait of the extent of this collective Florentine invention of the *sistema di aziende*. Collating the various archival and secondary sources listed in table 1 allows us to reconstruct almost complete listings of cambio bankers, wool manufacturers, and international merchant-bankers in the four time periods of 1348–58, 1369, 1385–99, and 1427.[26] As discussed above, diversified partnership systems did not really exist in Florence until the 1380s, but a functional analogue in the earlier period, which we can measure for comparative purposes, is the degree to which unitary companies participated in multiple industries—in particular in the three industries of domestic banking, international merchant banking, and wool manufacturing, for which we have data. Even if a unitary Florentine company specialized primarily in one industry, it was possible for it to engage in other economic activities as well, through the device of a businessman joining more than one guild. Florentine merchant-banking companies were noted for their opportunistic flexibility at the level of trading, even in the earlier period.

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censuses: (*a*) in 1371, the Balbani company had a separate partnership in Avignon to receive its silk production (ASL, *Corte dei Mercanti* 82, p. 4v), apparently along the lines of the Albizzi company, and (*b*) in 1381, the Carincioni company had three interlinked partnerships within Lucca, which appear to have been three separate silk-manufacturing *botteghe* or "factories" (ASL, *Corte dei Mercanti* 84, p. 8r).

[26] "Almost complete" means this: (1) The *Arte del Cambio* banking guild recorded annual censuses of domestic banks active in Florence. These guild lists of banking partnerships have survived for the years 1340–99. (2) The *Arte della Lana* wool guild recorded complete lists of active partnerships for the years 1355 and 1382 only. (3) Among many other things recorded in this grand tax census of Florence, the 1427 *catasto* recorded all partnerships in all industries for that one year. (4) Censuses of international merchant-bankers for years other than 1427 are harder to come by, but we did the best we could with three valuable sources: (*a*) a 1369 census of all Florentine companies shipping goods through the port of Pisa, (*b*) all companies listed in the 1348–58 account books of the Albert *nuovi*, and (*c*) all companies listed in the 1385–99 account books of Francesco Datini. These last two companies were among the largest international traders of their time periods, and hence were in economic touch with a large proportion of the international Florentine business community. Full citations are given in table 1. All of these sources (and many others) have been coded and computerized by us, over 15 years of archival and data-construction work, into a single integrated relational database, which traces 200 years (1300–1500) of Florentine social networks over time.

TABLE 1
Number of Partnerships or Industries in Which Florentine Businessmen Participated

No. of Partnerships	No. of Industries: Alberti International 1348–58 + Cambio 1348–58 + Wool 1353	No. of Industries: Pisa 1369 + Cambio 1369 + Wool 1382	No. of Partnerships: Datini 1385–99 + Cambio 1385–99 + Wool 1382	No. of Partnerships: Catasto 1427 (all industries except "other")
1	838	470	762	443
2	12	31	51	66
3	0	1	12	18
4	0	0	2	4
5	0	0	1	0
6	0	0	1	2

Source.—(1) 1348–99 annual censuses of cambio banking partnerships: ASF, *Arte del Cambio* 14. (2) 1348–58 companies with whom Alberti *nuovi* did business: Goldthwaite, Settesoldi, and Spallanzani (1995). (3) 1369 companies that shipped goods through the port of Pisa: Silva (1908), Peruzzi (1868, pp. 219–22). (4) 1385–99 companies with whom Datini did business: Melis (1962, tables 27, 28, 31, 32, 35, 36, 39, 40). (Through double-checking the partnerships reported in these tables with dates of the business letters cited by Melis in his extensive footnotes, we eliminated the listed companies that did not operate in the 1385–99 period.) (5) 1353 census of active wool manufacturers: ASF, *Arte della Lana* 20. (6) 1382 census of wool-manufacturing companies: ASF, *Arte della Lana* 46. (7) 1427 Catasto: ASF, *Catasto* 64–85.

On the basis of these data, we report in table 1 the number of industries in which active unitary-company Florentine businessmen participated for the periods 1348–58 and 1369, and the number of distinct partnerships in which active Florentine businessmen participated for the periods 1385–99 and 1427. These two sets of measures are not identical because the underlying units of measurement (companies) changed, but they are conceptually as close as it is feasible to measure. Figures 2 and 3 show not just the partnership size distribution over time but also the network of partnerships across industries, for the two time periods that bracket the organizational invention—namely, 1369 and 1385–99. The numbers in each cell in figures 2 and 3 represent the number of Florentine partners in the industry or in the multiple-industry classification in question.[27]

In general, both versions of the data reveal that economic diversification was on the rise in early Renaissance Florence—quantitatively in the pe-

[27] Multiple partnerships within a single industry are indicated graphically by industrial self-loops. Also here, like in our companion article, we subdivide the international merchant-banking industry into "home" branches located in Florence or Pisa and "foreign" branches located elsewhere. This subdivision was impossible for 1369 because the original source did not identify company location, only that the company used the port of Pisa.

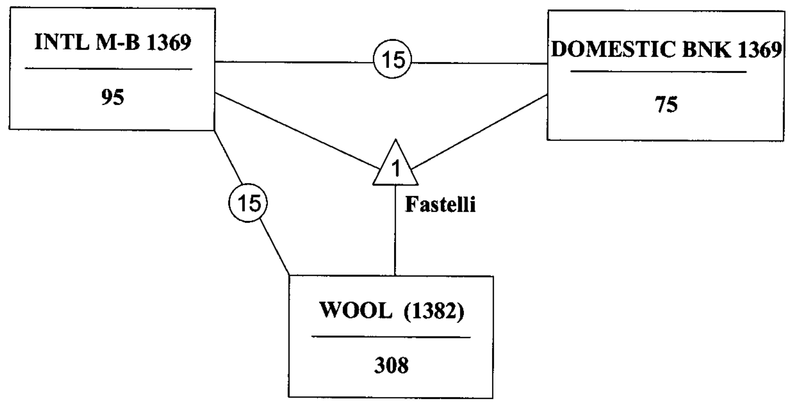

FIG. 2.—Interindustry structure of Florentine businessmen, 1369. The numbers in the boxes and circles are the numbers of Florentine businessmen active in the various industries indicated. For example, in 1369 there were 95 international merchant-bankers who were active only in that industry, whereas Piero Fastelli was the only Florentine active simultaneously in the three industries of international merchant banking, domestic banking, and wool manufacturing. Source: Silva (1908, pp. 679–83) for merchant-bankers in 1369; *Arte del Cambio* 11 for domestic bankers in 1369; *Arte della Lana* 46 for wool manufacturers in 1382.

riods from 1348–58 to 1369 and from 1385–99 to 1427, and qualitatively in the period from 1369 to 1385–99. In 1350 Florentine companies were extremely specialized by industry, but by 1427 they had become much more diversified. Specifically, according to table 1, the percentage of Florentine businessmen participating in two or more industries started at the essentially nonexistent level of 1.4% in 1348–58 and then climbed to 6.4% in 1369. Multi-industry companies in this pre-Ciompi period were not partnership systems; these were unitary companies engaged in more than one type of business. The percentage of businessmen engaged in partnership systems with two or more branches rose from 8.1% in 1385–99 to the very substantial level of 16.9% in 1427. In the tail end of these size distributions, where large partnership systems resided, the increase was much more pronounced: the number of Florentine businessmen participating in three or more industries or partnerships rose from zero businessmen in 1348–58 to one businessman in 1369 to 16 businessmen in 1385–99 to 24 businessmen in 1427. Even the one exception in 1369 proves the rule: the only Florentine businessman to participate in three industries in 1369—namely, the cambio banker Piero Fastelli—never truly developed a partnership system (see app. A) even after 1380.

Figures 2 and 3, which present the same data in the format of the network of interindustry connections through companies, illustrate the

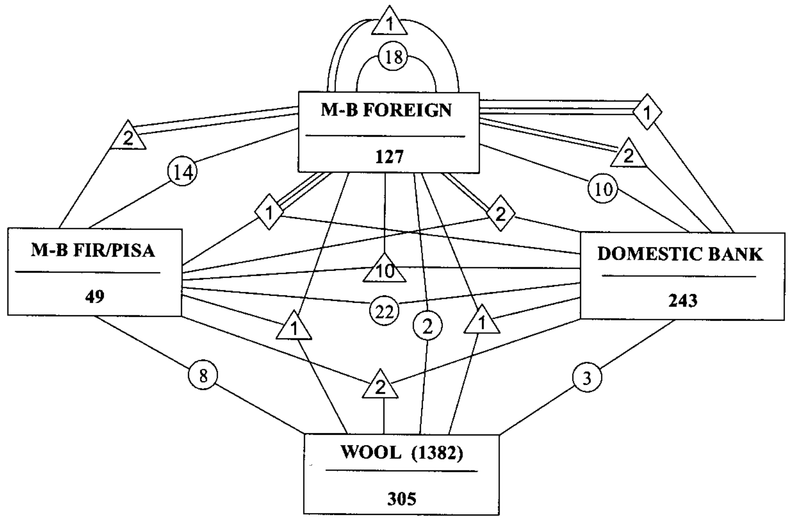

FIG. 3.—Interindustry structure of Florentine businessmen, 1385–99. The numbers in the boxes and circles are the numbers of Florentine businessmen active in the various industries indicated. Multiple redundant lines indicate activity in more than one company in the corresponding industry. Source: Melis (1962, tavole 27, 28, 31, 32, 35, 36, 39, 40) for Florentine merchant-banking companies trading with Francesco Datini in 1385–99; *Arte del Cambio* 14 for domestic bankers in 1385–99; *Arte della Lana* 46 for wool manufacturers in 1382.

sudden emergence of the partnership system in an even more vivid way. In the 15-year interval between 1369 and 1385–99, there was an explosion in density in interindustry connections, created by diversified partnership systems. Within a remarkably short time Florentine industries went organizationally from being autonomous and specialized by guild, to being densely interconnected and overlapping, at least at their partnership-system peaks. The invention in organizational form at one level of analysis produced a change in interindustry structure at another level of analysis.

With the notable exception of Datini, moreover, the businessmen located in the "spiderweb" intersections of industries in figure 3 either were or became prominent and high-status members of the social elite in Florence at that time. While certainly the number of influential Florentine republicans in this time period was far larger than that contained in these lists of elite businessmen, the membership of these diversified businessmen in the larger political and social elites of their periods is beyond doubt. In addition to being seen as interindustry economic structure, therefore, figures 2 and 3 can also be seen, through the analytic lens of duality (cf. Breiger 1974), as the partnership component of the overall multiple-network elite architecture of Florence. As such they were influenced by reproduction dynamics in the overall elite architecture in which they were embedded. Below we shall show how the invention of the partnership system was the economic face of an even larger restructuring and reconsolidation of the Florentine elite after the Ciompi revolt, which both coopted and reorganized those businessmen into the new political order—thereby reshaping that order itself.

We have attempted to document carefully the timing and sudden emergence of the partnership system in Florence (and in Tuscany) because this directly affects causal interpretation. Nothing we have shown violates the detailed historical accounts of Melis and de Roover. Indeed historiographically we are building upon, confirming, and extending their work. Yet both Melis and de Roover were narrowly economic historians, intentionally somewhat inattentive to the social and political contexts of their economic histories. They explained the rise of the partnership system functionally—as an intelligent, and thus almost inevitable, response to financial volatility and risk. Timing of invention was not pinpointed or emphasized by them because in their view partnership systems were simply a delayed reaction to the massive financial collapses in 1342–45 of large unitary family banks like the Bardi and the Peruzzi (Melis 1991, p. 165; de Roover 1966, p. 77). We do not doubt that partnership systems had the consequence of containing exposure to financial risk, which was part of their appeal to contemporary economic actors.[28] But explanations of consequence are not explanations of genesis. Consequences help to account for why inventions lock in once they emerge, but not for how and why they are born in the first place. A functionalist account of invention is doomed to exogenize (and often randomize) the content of the invention itself, in order to move on quickly to issues of selection.

More specifically, to have an unaccounted 40-year time lag between the purported triggering event of the famous Bardi crash and the "rational" response of the Datini system is a bit of an embarrassment for Melis's and de Roover's purely economic explanation. Certainly there was economic volatility in the 1340s (the Bardi et al. crash), but there was also economic volatility during the 1350s and 1360s (as a result of the 1348 and 1360 plagues and wars with Pisa and other Tuscan cities), during the 1370s (as a result of war with the pope), and during the 1380s and 1390s (as a result of a series of wars with Milan; Brucker 1962, 1977). Volatility and risk in international markets were too routine for that factor to be

[28] This is especially so before the 1408 Florentine passage of law enabling limited-liability partnerships. It is consistent with our alternative multiple-level-feedback explanation, as opposed to a monocausal emphasis on risk, that Florentines after 1408 did not abandon their organizational systems for limited-liability *accomandite* until the 1500s, well after almost everything in Florentine politics had changed.

very useful as an explanation of something as precise as a particular collective invention in 1383.

As we see it instead, once born, the new organizational form reverberated powerfully in Florence precisely because it worked in multiple systems and hence in multiple logics at once. Viewed organizationally as a partnership contract, the partnership system was an innovative way to protect capital from risk. Viewed macroeconomically as industrial structure, the partnership system was an innovative route to the financial integration of multiple industries. Viewed as a social network within the Florentine elite, the partnership system (along with marriage) was an innovative principle for consolidating political control, in response to economic-class challenge from below. Ultimately all of these levels of functioning reinforced each other in catalytic feedback. The partnership system was an innovation to the extent that it improved existing "ways of doing things" in any one of these domains. But it was an invention to the extent that it reverberated into multiple domains, altering feedback relations among them to change the constitutional genesis and purposes of actors themselves—organizations and industries, businessmen and elites. Even though it is beyond the scope of this article to discuss it, it is worth noting that the diversification initiated by partnership systems ultimately reverberated out far beyond economics into the generalist, and elitist, conception of the "Renaissance man"—talented in so many specific domains at once that he stood above them all as a role-free "individual" (and perhaps even "genius").[29]

Composition of Post-Ciompi Partnership Systems

So much for timing and extent: now what about agency? That is, other than Francesco Datini, Vieri di Cambio de' Medici and the others already mentioned, who exactly were the Florentines who collectively invented the partnership system? We have already cited the earliest examples that we have found. The answer to this question is contained in the list of 1385–99 partnership systems in appendix A, which we have reconstructed through triangulation of multiple archival sources.

Lacking the same level of detail that is available for Datini and for the later Medici, we have used company names operationally to measure "partnership system" in appendix A as "a set of autonomous companies, linked through common partners, with at least one company being a

[29] The powerful and misleading individualist conception of invention as the province of the genius, safely beyond the purview of any social science analysis, historically also dates from Renaissance Florence—in particular, from the worshipful literary portraits of Michelangelo and others by Vasari ([1550] 1991, pp. 414–88).

partnership." A more restrictive definition, also apparent in the appendix, adds the criterion of centralization—namely, "all of such companies linked through a single person." Whether the other corollaries of partnership system (namely, extensive business letters, double-entry bookkeeping, bilateral format, and current accounts) existed in the partnership systems so defined is unavoidably a matter of extrapolation on our part. Other than Datini and Medici, few partnership-system account books survive from this period with which to check this plausible assumption.[30]

In table 2, we have tabulated the industrial composition and the centralization frequencies of the newly emergent partnership systems listed in the appendix. While some of the new partnership systems, like Datini himself, emerged out of international trading, the bulk of them, like Vieri de' Medici, emerged through a fusion of cambio banking with international trading.[31] The post-Ciompi role of wool-manufacturing companies in the emergence of partnership systems was minor, contra the "precursor" example of the Albizzi company mentioned above. Among the 24 cambio-plus-international-fusion partnership systems, 19 were formed sequentially by cambio bankers entering into international trading or merchant banking. Only five (including Datini) were formed in the reverse order, by international traders entering into cambio banking. In other words, Florentine partnership systems primarily emerged in the industry domains of domestic banking and international trading, fusing them together, with cambio bankers taking the lead in organizing this fusion.

Table 3 presents another slant on who were the post-Ciompi partnership-system innovators, in comparison to time periods both earlier and later. In that table we analyze through Poisson regressions not the industrial composition of the companies but rather the social and political backgrounds of active Florentine businessmen who organized varying numbers of companies, using the frequency-distribution data in table 1 as our dependent variables.[32] The archival sources for the data in these regressions are listed in the notes to the table.

[30] For 1427 we have scribal summaries of all the account books in Florence, because these were registered in the tax-census *catasto* of that year. These data will be the focus of the companion article to this one. There is no doubt that double-entry bookkeeping, bilateral format, and all the other defining features of partnership systems had thoroughly diffused throughout the city by that later date.

[31] The predominance of cambio plus international fusion is even more pronounced—i.e., 21 versus 7—if attention is confined only to centralized partnership systems.

[32] Poisson regressions usually operate with zero as the base, whereas table 1 has one as its lowest value. Therefore, for Poisson purposes we constructed the Poisson dependent variable by subtracting one from the data summarized in table 1. As a result, the regressions should be interpreted as evaluating the likelihood that a businessman participated in more than one company or industry, given that he participated in at least one. As reported in the notes of table 1, heterogeneous negative binomial re-

TABLE 2
INDUSTRIAL COMPOSITION OF 1385–1399 PARTNERSHIP SYSTEMS

No. of Partnership Systems	International Trading + Cambio Bank	International Trading Only	International Trading + Wool Manufacturers	Cambio Bank + Wool Manufacturers
Three or more partnerships	13 (11)	7 (4)	1 (0)	0 (0)
Two partnerships ...	11 (10)	9 (3)	3 (0)	3 (2)
Total	24 (21)	16 (7)	4 (0)	3 (2)

SOURCE.—See app. A.
NOTE.—Nos. in parentheses indicate the number of centralized partnership systems.

Before the 1378 Ciompi revolt, according to our findings, the only businessmen who participated in multiple industries in statistically significant numbers, few in absolute numbers as these were, were guild consuls—that is, elected political leaders of the banking, wool, and, to a lesser extent, the international trading guilds.[33] Before guilds were dismantled in the reaction to the Ciompi revolt (Najemy 1982; Franceschi 1993*b*), guilds were the regulatory and the career-training institutional frameworks that anchored industries. Industries were specialized in personnel because of the recruitment and training systems fostered by guilds, which channeled businessmen of the same industry together into parallel careers (Padgett 2001, p. 227). The pre-Ciompi regressions in table 3 reflect the fact that business careers were specialized within guild until guildsmen reached the pinnacle of success, at which point they could branch out into other economic activities, using their originally more specialized unitary-company base.

Piero Fastelli is a good example of this pre-Ciompi guild pattern of success. A lifelong cambio banker from 1340 through the end of our *Arte del Cambio* time series in 1399, Piero formed domestic banking partnerships with family members, rising quickly to become elected consul of his guild by 1349. During his long career, he continued to hold that office 10 times, until 1378. He first joined the city council in 1367, as a Ricci-faction partisan, and he first joined the Mercanzia commercial court in 1380, representing the cambio guild. From these cambio guild and unitary-company organizational foundations, however, Piero then branched out also to engage in international trading activities, as is evidenced by his registry on a 1369 list of Florentine merchants using the port of Pisa.

gressions were not used because they would not converge in the first two periods, which have no "fat tails."

[33] Members of the Ricci political faction also were statistically more likely to participate in multiple industries—a fact that makes sense in light of the Ricci faction's probusiness leanings in that period (Brucker 1962, pp. 125–27).

TABLE 3

Social and Political Embedding of Businessmen in Multiple Companies: Poisson Regression Coefficients over Time

	No. of Industries		No. of Partnerships	
	Alberti International 1348–58 + Cambio 1348–58 + Wool 1353	Pisa 1369 + Cambio 1369 + Wool 1382	Datini 1385–99 + Cambio 1385–99 + Wool 1382	Catasto 1427 (all industries except "other")
Social class:				
Popolani	1.110	1.003	.342	.688**
Magnate	[collinear]	[collinear]	.608	1.030**
New man	.718	1.465	.110	.007
Social class of wife:				
Popolani	.736	.541	.673**	.766***
Magnate	.559	.147	.365	.713*
New man	1.722	.815	.497	−.079
Political office:				
Priorate	−2.144	.054	−.288	.160
Calimala consul	[−∞]	1.299	.985*	−.307
Cambio consul	1.572*	2.691***	.198	−.341
Lana consul	.907	2.389***	−.744*	.322
Mercanzia	1.909	−.993	−.345	−.470
Balìa 1378			.408	
Balìa 1382			−.234	
Reggimento 1382			−.574	
Balìa 1384			.746*	
Balìa 1393			−.200	
Reggimento 1393			.995**	
Political factions:				
Albizzi	−∞	.523	.726	
Ricci	.602	1.178*	−.333	
Anticiompi			.331	

Prociompi			−.818	
Albizzeans				.095
Mediceans				1.371***
Quarter:				
Santa Croce	1.187	.068	−.217	.057
Santa Maria Novella	.126	.520	−.345	−.169
San Giovanni	−.022	−.183	.042	.260
Log likelihood	−54.4	−79.2	−311.0	−287.1
No. of observations (persons)	850	502	829	533
LR χ^2	17.31	88.6	79.3	93.9
Prob > χ^2	.185	.000	.000	.000
Pseudo R^2	.137	.359	.113	.141

Source.—(1) Numbers of industries and partnerships: see table 1 for list of sources. (2) Social class: (*a*) Magnates: Lansing (1991, pp. 239–42) records original patrilineage membership in 1293 and 1295. See Klapisch-Zuber (1988) for important qualifications about changing membership in this group over time. (*b*) Popolani, new men, and new-new men: defined by the date that an ancestor from patrilineage first entered priorate, as recorded in ASF, *Manoscritti* 248–52. "Popolani" are defined by first date in priorate between 1282 and 1342, "new men" are defined by first date in priorate between 1343 and 1377, and "new-new men" are defined by first date in priorate between 1378 and 1433. See Padgett and Ansell (1393, p. 1261) for a time-series plot of rates of new entry of families into the priorate, which makes obvious the discreteness of the political cohorts of families defined by these particular dates. (3). Marriages: recorded from multiple sources, but primarily ASF, *Manoscritti Carte dell'Ancisa* 348–61. (4). Political offices: (*a*) Priorate: Newberry Library copy of ASF, *Manoscritti* 248–52. (*b*) Mercanzia: ASF, *Mercanzia* 129. (*c*) Merchant guild consuls: http://www.stg.brown.edu/projects/tratte. (*d*) Banking guild consuls: ASF, *Arte del Cambio* 12. (*e*) Wool guild consuls: http://www.stg.brown.edu/projects/tratte. (*f*) 1378 *balìa*: Gherardi ([1389] 1876, p. 505). (*g*) 1382 *balìa*: Stefani (1903, pp. 394–96); later additions or *arroti* in ASF, *Balìa* 17, p. 22. (*h*) 1384 *balìa*: ASF, *Arte della Lana* 46, pp. 154–66. (*i*) 1393 *balìa:* ASF, *Balìa* 17, pp. 80–86, 105–7. (*j*) *Reggimento* 1382: Ildefonso di San Luigi (1770, pp. 125–260). (*k*) *Reggimento* 1393: ASF, *Tratte* 357, pp. 7–20. (5). Political factions: (*a*) Albizzi and Ricci: Brucker (1962): no specific pages, narrative references throughout book. (*b*) Prociompi and anticiompi: Stefani (1903). (*c*) Albizzeans and Mediceans: Kent (1978, pp. 1352–57). (6). Neighborhood, both *gonfalone* and quarter: (*a*) 1351: ASF, *Estimo* 306. (*b*) 1378: ASF, *Prestanze* 367–69, *Estimo* 268. (*c*) 1427: ASF, *Catasto* 64–85.

NOTE.—Given that businessmen participated as partners in at least one company or industry (see table 1), the dependent variable is number (minus one, to fit Poisson format) of partnerships, or industries in the first two periods, that Florentine businessmen owned or participated in. “Number of industries” is used as proxy for number of companies in 1348–58 and 1369 periods, because partnership systems, where companies were legally split into multiple partnerships, did not exist then. Nonetheless single unitary firms sometimes participated in multiple markets in these earlier times, at the low rates shown in table 1. On the independent variable side, only those marriages and political offices with dates prior to the last date of the logit regressions (i.e., 1358, 1369, 1399, 1427, respectively) are included in these estimations. Negative binomial regressions performed slightly better than Poisson regressions for the latter two periods, though the differences in estimated coefficients are quite minor. Nonetheless, Poisson regression was used throughout table 3 in order to preserve comparability across all four regressions. The first two regressions would not converge using negative binomial, because of the absence of fat tails (see table 1).

* $P < .05$.

** $P < .01$.

*** $P < .001$.

Shortly before the Ciompi revolt, in 1374, Piero branched out yet again to form his own wool-manufacturing firm, in partnership with no one. In his old age, perhaps because of his earlier Ricci partisanship, he retreated with his sons once again into doing only domestic banking, missing out on the boom in partnership systems that surrounded him.[34] For us, Piero Fastelli is an example of the slowly increasing industrial diversification that was occurring in Florence between 1350 and 1375, even before the 1380s invention of the partnership system caused a dramatic increase in this trend.

With the onset of partnership systems, however, the sociopolitical backgrounds of businessmen engaged in multiple companies (for the most part in multiple industries) changed. In 1385–99, immediately after the Ciompi revolt, businessmen participating in two or more partnerships were distinguishable sociopolitically from businessmen who participated in only one company in two ways: (*a*) politically they were mobilized into the 1384 *balìa* and the 1393 *reggimento*, and (*b*) socially they married upper-class popolani wives.[35]

Balìe were special ad hoc committees set up in order to reform the Florentine political constitution, sometimes in minor, sometimes in major ways. The 1384 *balìa* was set up to reform the wool manufacturers' industry and guild (ASF, *Arte della Lana* 46), a central locus of *ciompi* agitation. The *reggimento* was the set of Florentines successfully elected to be eligible for the priorate or city council (Kent 1975) through an election procedure called the scrutiny (Najemy 1982).[36] As such it was Florence's political ruling class. To say that partnership-system businessmen were disproportionately members of these two membership groups is to say that, for those years at least, they were members of the political elite.

It is not surprising that the 1378 *balìa* coefficient, during the height of

[34] This would also explain why Gucciozzo di Corso Ricci, another old cambio banker, missed out on the new partnership-system invention.

[35] For the 1385–99 period, a third statistically significant independent variable was election to the calimala guild consulate. But we interpret this as a soon-to-be-extinguished leftover of the previous "guild corporatism" regime. To support this interpretation, note (*a*) that election to the lana guild consulate had a statistically significant *negative* effect on the likelihood of being in more than one partnership in this period, quite a dramatic change from the immediate past, and (*b*) that statistical significance of all guild consulate variables vanishes by 1427.

[36] More specifically, the scrutiny was the complicated multistage electoral procedure in Florence, involving the four stages of nomination of candidates, voting on nominees by authorized voters, insertion of successful candidates' names into bags, and random selection of names from bags for short terms of service. For the priorate, city councillors served only two months, taking time out from their normal careers for this honor. Within this basic rubric, detailed electoral rules were contested and frequently changed. See Najemy (1982) and Rubinstein (1966) for 14th- and 15th-century details, respectively.

the Ciompi revolt itself, is not statistically significant. But it is interesting that in 1382, a year associated with repression of the Ciompi revolt, the political membership variables of 1382 *balìa* and 1382 *reggimento* were *not* statistically significant predictors of partnership-system builders. This temporal pattern of coefficients helps us to interpret direction of causality: it was the new 1382 post-Ciompi political elite that subsequently recruited and co-opted businessmen (about to become partnership-system businessmen) into the political elite, rather than these businessmen who created the new political elite in the first place.

The other statistically significant effect in table 3, for 1385–99, is marriage to popolani wives. In the republican conception of status in Renaissance Florentines, social class was defined as the political age of one's patrilineal family—namely, the year in which one's male ancestors first were elected to city council.[37] The highest-prestige *popolani* were the politically founding generation of those Florentine families who first entered the priorate during 1282–1342—namely, that era between the constitutional founding of the republic and its first major political convulsion in 1343. To say that partnership-system businessmen disproportionately married popolani wives is to say that they were being absorbed into the social elite, whether or not they were born into it.

Indeed the natal social-class coefficients reveal that the 1385–99 partnership-system businessmen (unlike their 1427 successors) were not themselves systematically born into the social elite. Instead they were socially quite heterogeneous in class background—some high prestige like Vieri de' Medici, and some low prestige like Francesco Datini. Either way, they wound up marrying popolani wives, indicating a systematic process of social, as well as political, co-optation.

The vector of 1427 coefficients shows how these partnership-system businessmen settled into the social structure of Florence over time. Busi-

[37] Social class in Renaissance Florence was defined by family age of service in the republican state—specifically, the earliest date at which one's family joined the city council or priorate. More specifically, "popolani" were the cohort of families who first served on the priorate in the years 1282–1342, "new men" were families who first served in the years 1343–77, and "new-new men" were families who first served in the years 1378–1433. See Padgett and Ansell (1993, p. 1261) for a picture of just how sharply distinct the social classes of Florence really were under these definitions, because of the punctuated character of newly admitted family cohorts in Florence's tumultuous political history. We call "no date" the families who never served in the priorate before 1433. "Magnates" are a special case: these very old, often feudal, families were legally excluded from holding high public office in 1293 by the victorious popolani, who considered them violent and antithetical to guild corporatist principles. Magnates were even higher status than popolani according to out-of-date nonrepublican medieval standards of blood, but they were politically embittered and impotent. See Rabil (1991) for the still-contested alternative conceptions of honor and status in Florence.

nessmen's marriages to popolani wives (and now also to magnate wives) became an even more powerful predictor of their capacity to build partnership systems in 1427 than it was in 1385–99. The big change over this 50-year period after the Ciompi revolt was that partnership-system businessmen became far more homogeneously elitist in social-class background than before. By 1427, natal membership in the popolani and in the magnate social classes had become strongly associated with leadership in partnership systems. Indeed by 1427, the social distinction between popolani and magnates had been largely effaced: these two upper social classes fused, in the economic domain and also in the marriage domain (Padgett 1994), as they gradually took over the partnership systems that others had created. It is facts like these that lend credence to the "oligarchic" interpretation of the Albizzean regime (Schevill [1936] 1963; Martines 1979; Cohn 1980).[38]

The statistically significant 1427 coefficient for Medici faction is consistent with traditional historiography. The Medici bank was a crucial component within the new Medici party. To put this point more generally: ultimately economic organizational invention, in the form of new partnership networks, became incorporated into the organizational structure of political parties, thereby changing the dynamic of state formation in Florence (Padgett and Ansell 1993). After a number of intervening events and decades, economic organizational invention eventually cascaded into political organizational invention.

We have not yet coded from the archives *balìa* and *reggimento* data for 1427, so our interpretation for that later period needs to be provisional. But there is no evidence in table 3 that political mobilization, in the form of political officeholding, played an important role in the ongoing maintenance of the Florentine partnership system after its birth. Political mobilization was clearly related to economic partnership-system building in the 1383–99 phase of its genesis. But 40 years later, during the phase of its ongoing reproduction, natal social class had taken over as the dominant social embedding for partnership systems. Marriage to popolani wives was the network that dynamically bridged the transition between these two phases, guiding the partnership system from its political genesis to its social-class institutionalization.

[38] At the end of this article, however, we will point out that routes of political mobility, through clientage, opened up even as routes of economic mobility, through banking partnerships, closed down. The multiple-network reality of Renaissance Florence was more complicated than just oligarchic closure. Rather, the structured routes of mobility were reconfigured.

EXPLAINING THE EMERGENCE OF FLORENTINE PARTNERSHIP SYSTEMS

Given these newly discovered facts about the Florentine invention of the partnership system in the 1380s, our causal explanation of these facts will be developed in the following stages: First, summarizing the extensive secondary literature on this topic, we shall briefly describe the Ciompi revolt and the stages of its repression. Second, we shall examine the roles of both cambio bankers and international merchants in the political reconstructions of the state and of the elite after the Ciompi revolt. Demobilization of guilds and politicization of marriage and clientage were central features in these reconstructions. Next we shall show how the socially embedded inner logics of cambio-banking and international-merchant partnerships, viewed separately as individual spokes of the partnership system, changed through this elite reconsolidation process, enabling those components organizationally to fit together, and also to be reinforced by their social contexts. In the final section of this article, we shall adumbrate the economic consequences of these organizational transformations for bookkeeping, liquidity, and credit in the Florentine banking system and therefore for the emergence of a new financial conception of control.

The Ciompi Revolt and Its Repression

The Ciompi revolt was the only (temporarily) successful workers' revolution in European preindustrial history (Rodolico 1905; Cohn 1980; Stella 1993). Many contemporary Florentine historians do not accept this economic-class characterization (Brucker 1968, 1977; Najemy 1981, 1982), even though direct involvement of wool workers and other *popolo minuto* or "little people" (collectively called *ciompi* or "comrades" by contemporaries) in violently overthrowing the state and in evicting large numbers of popolani and magnates from Florence was indeed the most striking feature of this dramatic event in 1378. The major reason for their rejection is because the objectives of the *popolo minuto* emphasized guild-corporatist demands for inclusion and citizenship rather than overthrow of the means of production. Seen in the light of contemporaries, however, the political "reforms" proposed and forcibly implemented for a short time by the ciompi were radical indeed (Cohn, forthcoming). Here we shall narrate these events with an emphasis on the role of and the impact on international merchants and domestic bankers, who collectively invented the partnership system.

The Ciompi revolt emerged out of the "War of the Eight Saints" (1375–78) with the papacy. Intense political struggle between two elite factions had been building up for two decades before this climatic war, with a "conservative" side (the Albizzi faction in alliance with the *Parte Guelfa*[39]) consistently pushing for restriction of the republican franchise to patrician families, and with a "liberal" side (the Ricci faction in alliance with artisan guilds) consistently pushing to open the franchise to new men who had recently established themselves in the city economy (Brucker 1962). Three traumatic events in the 1340s—namely, the 1342 bankruptcies of the large Bardi and Peruzzi banks, the 1343 political convulsion which that economic crash triggered, and the 1348 Black Death which killed about two-thirds of the Florentine population (Herlihy and Klapisch-Zuber 1985, p. 69)—had opened up both the economy and the political regime to an infusion of new men (*gente nuova*). This post-1343 infusion generated deep resentment on the part of the older patricians who had founded the republic in 1282. Political struggle between patricians and new men, with evolving memberships in these political cohorts, had been a consistent trope in late medieval Florence—even more so than in other Italian city-states because of high rates of economic and social mobility. Contradictorily, each generation of elites between 1200 and 1500 sponsored mobility in the economic domain but resisted it in the political domain.[40] The institutional expression of this underlying social-mobility contradiction, however, changed substantially through time.

In the 1343–78 generation, political struggle was manifest in an escalating series of McCarthyite purges (*ammonizione*) by both factions—the Albizzi side purging liberals through denouncing them as Ghibellines, and the Ricci side purging targeted conservatives through denouncing them as magnates (Brucker 1962). The 1375–78 war with the pope, then resident in Avignon, was perhaps an inevitability given the two territorial consolidations by Florence in Tuscany and by the pope in central Italy, which collided. Internationally, the pope through his spiritual interdict of Florence organized a largely (though not completely) successful boycott of European trade with Florentine businessmen, thereby temporarily crushing the Florentine economy (Trexler 1974). Domestically, war with the pope desecrated deep and long-standing Guelf loyalties in many Florentines, especially in traditionalist patricians. Ultimately the rejection of city-state loyalty to the pope set the stage for the birth of civic-humanist republicanism (Baron 1966). But in the short run this intersection of do-

[39] The *Parte Guelfa* was a very old organization, dating back to the *Guelf* versus *Ghibelline* days of the mid-1200s, whose purpose was to defend and to protect the historic *Guelf* alliance of Florence with the pope. Unlike the republican priorate, many magnates participated in this conservative quasi-feudal organization.

[40] Italy in general was distinctive in the context of European feudalism by the fact that the Italian aristocracy lived in cities, not in the countryside like the French or English aristocracy.

mestic with international politics fueled Florentine factional struggle to the boiling point. Each side, but particularly the Guelf side,[41] progressively denounced and purged the other to the point where eventually Salvestro d'Alamanno de' Medici led liberal guild forces in the burning of conservative houses and the forcible eviction from Florence of many *Parte Guelfa* leaders on June 18, 1378.[42]

This violence within the citizenry opened the door to the potentially revolutionary entrance of previously disenfranchised ciompi onto the public stage. On July 21 and then again on August 31, waves of wool workers organized as a "mob" surged into the streets and public squares of Florence, forcibly dissolving with plunder and arson the existing government and demanding reorganization of the state in order to incorporate themselves as three new guilds.[43] These new guilds provided the organizational core of the temporarily victorious ciompi state, an expanded guild-corporatist alliance between previously nonguild workers and minor-guild artisans, which lasted only six weeks. Throughout these tumultuous events, conservative popolani and magnates left Florence in droves in fear of their lives,[44] and all export-oriented economic activity, already damaged by the pope's interdict, ceased.

It is not the purpose of this article to explain the Ciompi revolt itself, but historians have pointed to a (contested) combination of three factors as causes: (*a*) chronic dissatisfaction of wool workers with political disenfranchisement, because of their economic subordination within the guild system; (*b*) the self-immolation of elites in factional struggle, the liberal side of which had systematically raised enfranchisement expectations; and

[41] "Just as the men who maneuvered the commune into war in 1375 were motivated as much by emotion as by logic and calculation, so did the oligarchs in 1378 succumb to irrational impulses. The immoderate character of their actions suggests the preponderant influence of such extremists as Gherardo Buondelmonti and Bonaiuto Serragli, whose passions were not curbed by an appreciation of political realities. Oligarchic policy in these months thus cannot be explained entirely in terms of the rational linking of means to ends. In varying degrees, the Parte hierarchs were afflicted by political madness" (Brucker 1962, p. 339). The *Parte Guelfa* conservatives had planned a coup d'état (Brucker 1977, p. 42; Schevill 1963, p. 276), which is what triggered Salvestro d'Alamanno Medici and his liberal allies into their street rampage.

[42] In the middle ages, patrician houses were urban fortified towers-cum-forts, which patrician patrilineages used militarily to dominate local neighborhoods (Waley 1969). Many are still visible in Italian cities today.

[43] "Mob" is in quotes because clearly there was sub rosa organization underneath this violent worker outburst, but it is not well understood what exactly that was. Trexler (1998) provides the most detailed analysis of workers' organization that is possible with the limited and biased sources available. "Mob" is how the ruling elites, who dominate archival sources, saw the ciompi.

[44] The diary of Buonaccorso Pitti (Brucker 1967) gives a dramatic firsthand portrait of the migratory and conspiratorial existence of these exiled conservative popolani.

(*c*) a wool-industry economic slump, as a result of both short-run pressures from the papal war and long-term pressures from the growth of a competitive English textile industry (Carus-Wilson and Coleman 1963; Carus-Wilson 1967), which constricted the import of high-quality English wool to Florentine putting-out *botteghe*, thereby generating unemployment (Hoshino 1980; Franceschi 1993*a*). In a future article we hope to "endogenize" the Ciompi revolt by explaining it as the long-term consequence of chronic contradiction in 14th-century Florence between the two organizing principles of patrilineage and guild, which the above short-term pressures intensified.

More important to us in this article is the reaction of various exiled and nonexiled groups to this searing political event. Florentine reaction developed in three stages, each stage progressively involving more elite actors. The first stage was not really an "elite" reaction at all; it was the countermobilization on September 1, 1378, of minor-guild artisans to take back "their" guild-corporatist state from six-week control by nonguild ciompi. Minor guildsmen, led by liberal popolani like Salvestro Medici, Tommaso Strozzi, Giorgio Scali, Benedetto Alberti, and Uguccione Ricci, confronted radical wool workers in the streets and defeated them in combat.[45] The largest and most radical of the new ciompi guilds was disbanded, and a relatively democratic guild-corporatist state was established that lasted from 1378 to 1382.[46]

The second stage of reaction, in January 1382, was essentially a coup d'état by "cloth manufacturers and bands of aristocrats, who had armed their servants and retainers, and the peasants from their country estates" (Brucker 1977, p. 60). The constitutional *balìa* produced by this coup abolished the remaining two minor guilds set up by the ciompi, burned the 1378 regime's scrutiny bags, and forcibly tilted officeholding away from artisans back toward the major guilds like international traders, cambio bankers, and wool cloth manufacturers (*lanaiuoli*), who had been in charge before the revolution. Rather than purely reactionary in character, this second-stage counterrevolution was led by factional "moderates"—that is, wealthy major guildsmen in the political center, who opposed factional extremes both on the left and on the right. Their guiding policy was elite "consensus" (Najemy 1982), in the pursuit of which, ominously, deeply reactionary exiles and magnates were invited to return to Florence. This elitist but relatively moderate regime of 1382–93 was the "favorable business climate" that induced Francesco Datini to return to

[45] Conservatives thought of these liberal popolani leaders of artisans as demagogues, class traitors, or "heroes of the new men" (cf. Padgett and Ansell 1993).

[46] "That regime was the closest approximation to the corporate ideal that Florence was ever to experience" (Brucker 1977, p. 46).

Tuscany in 1383, thereby initiating the construction of his partnership system.

The third and final stage of counterrevolution occurred in 1393, with the accession to power of Maso degli Albizzi and his “oligarchic” allies. Reinforced by an international context of dangerous wars with Milan, returning conservatives resumed their purging ways, first in 1387 and then in 1393, this time more selectively targeting the most powerful remaining leaders of the liberal popolani—namely, the Alberti family of international merchant-bankers. With the Alberti and their close popolani allies sent into exile, the Albizzi-led regime destroyed remaining guild-consul scrutiny bags and held new elections to restructure the political *reggimento* by fusing elite moderates with elite conservatives.

There has been a lively debate in the historiographical literature about the character of this post-Ciompi Albizzean regime. The traditional interpretation shared by chroniclers and historians alike (e.g., Machiavelli [1524] 1988; Guicciardini [1512] 1994) is that the Albizzean regime was an oligarchy, politically dominated by a fairly well-defined set of conservative families, mostly popolani but also including new men and magnate sympathizers. But Hans Baron’s (1966) famous book on civic humanism emphasized the forward-looking philosophical and patriotic vision of republicanism forged by this “oligarchy” in its wars with Milan. In support of this revisionist interpretation, careful empirical analyses by Molho (1968*b*), Witt (1976), and Najemy (1982) have shown the high success rates in elections of new individuals in the 1382 and 1393 scrutinies, well beyond any purported closed circle of elite families. Najemy (1982, pp. 276–300) resolved this contradiction to some degree by showing that openness in election was offset by tight institutional controls (e.g., *accoppiatori* and *borsellini*) on the translation of election into real political power. But still this dual vision of oligarchy versus republicanism remains to confound clear understanding of the period.

Following Najemy (1982), our position on this puzzle will be that the entire 1282–1382 century in Florence can be understood as a long-term contradiction between the patrilineage and the guild modes of organizing economic-cum-social-cum-political mobility. The long-standing pattern was older elites organized into patrilineages confronting rising groups organized into guilds. But the historical dynamic of political development arose from organizational crossover—namely, popolani dominating markets and the state through major guilds, and new men mimicking patrilineages in their family structure. Najemy focused on the formal institutional, electoral side of this organizational contradiction. Our complement to Najemy’s interpretation is to focus on constitutive networks: the sequential reactions to the Ciompi revolt, summarized above, resolved guild-patrician contradiction through generating a new marriage-clientage mode of orchestrating mobility, within and across multiple domains. Civic-humanist republicanism was the ideological face of this underlying reorganization of mobility channels into the Florentine elite.

Biographical Transposition: The Political Co-optation of Cambio Bankers

During the reaction to the Ciompi revolt, domestic cambio bankers, more so than international merchants, were mobilized strongly into the republican institutions of the state. Table 4 demonstrates this point. In the post-Ciompi period of 1380–99, 26%–36% of cambio bankers and 51%–59% of cambio-banking companies were represented in the city council or priorate of the city, up from pre-Ciompi representation rates of 15%–25% and 35%–38%, respectively. In the more economically focused Mercanzia or commercial court, political mobilization of cambio bankers was even more dramatic: from 4%–6% of cambio bankers and 6%–11% of cambio-banking partnerships in the Mercanzia before the revolt, to 23%–24% and 44%–48% after the revolt, respectively. These cambio-banker representation rates compare with the much lower representation rates of 13%–17% for international merchants and 17%–26% for international merchant-banking companies during 1380–99. For international merchants, these political representation rates appear to be lower than they had been before the Ciompi revolt, although some of this decline might be a result of imperfect comparability of international-merchant data over time (as explained in the note to table 4). Temporally refined *balìe* representation rates reveal the post-Ciompi mobilization inflection point exactly to be 1384, a date that makes perfect sense in light of the Ciompi-revolt narrative above. Cambio bankers did not initiate the second-stage 1382 major-guild regime that quickly mobilized them, but by 1393 they were fully integrated into the Albizzean "oligarchic" or "civic humanist" regime.

This differential political mobilization of cambio bankers, compared to international merchants, is surprising in light of the strictly economic history of the period. The pope emerged victorious in his 1375–78 war with Florence not because of the military power of his weak mercenary armies but because of the economic power of his spiritual interdict of Florentine merchants—namely, his ordering other cities' merchants not to trade with Florentines, under the sanction of withholding sacraments. Florentine international merchants—not everywhere but in many places (Trexler 1974)—economically were decimated by this interdict, as foreign merchants seized their goods and exiled them back to Florence. If anyone needed support, political or otherwise, in rebuilding their markets it would

TABLE 4

POLITICAL MOBILIZATION OF CAMBIO BANKERS AND INTERNATIONAL MERCHANTS

	% BANKERS					% PARTNERSHIPS				
	1348–62	1363–76	1380–89	1390–99	1427	1348–62	1363–76	1380–89	1390–99	1427
Cambio banking:										
Governing offices of the state:										
Priorate	.254	.147	.262	.356	.272	.353	.376	.514	.587	.405
Mercanzia	.063	.043	.235	.244	.087	.057	.113	.436	.482	.108
Balìe:										
1378 *balìa*			.027					.069		
1382 *balìa*			.040					.073		
1384 *balìa*			.154					.362		
1393 *balìa*				.106					.255	
Reggimenti:										
1382 scrutiny			.248					.512		
1393 scrutiny				.313					.605	

	% Merchants				% Partnerships	
	1348–58	1369	1385–99	1427	1385–99	1427
International trading:[a]						
Governing offices of the state:	.297	.479	.167	.100	.263	.149
Priorate	.122	.028	.131	.100	.175	.108
Mercanzia						
Balìe:			.012		.035	
1378 *balìa*			.024		.018	
1382 *balìa*			.083		.088	
1384 *balìa*			.048		.105	
1393 *balìa*						
Reggimenti:			.107		.105	
1382 scrutiny			.167		.228	
1393 scrutiny						

Note.—On the left are percentages of businessmen on the identified political bodies. On the right are percentages of partnerships with at least one partner on the identified political bodies. For priorate and Mercanzia, time periods refer, e.g., to "bankers active in 1348–62 who were ever on Priorate before 1362."

[a] For 1385–99 and 1427 "international" operationally is defined as company located in city other than Florence. For 1348–58 and 1369, sources did not identify geographical location, so those columns include companies resident in Florence who engaged in international trading.

have been the international merchants—previously on top of the economic heap, but now brought low.

To probe this and other aspects of the political mobilization of cambio bankers, we present tables 5 and 6 which, within the context of a sampling universe of tax censuses of the entire male head-of-household population of Florence, present various social and political predictors of active personal participation in cambio banking (table 5) and in international trading (table 6), at various points in late medieval time. Numerous findings in these logit regressions are of interest, to which we shall return, but the answer to our current puzzle about the greater political mobilization of cambio bankers than international merchants is to be found in the political-faction section of those logit-regression tables. Both before and during the Ciompi revolt, cambio bankers and international merchants were politicized into the various factional struggles of the time, as was the entire city. But in the Albizzi-Ricci struggle cambio bankers were neutral, and in the Ciompi struggle itself cambio bankers were politicized into both sides equally. In contrast, international merchants by 1369 had swung predominantly to the liberal, guild side (Brucker 1962, pp. 124–27). The political redoubt of the leading Alberti family, later to be exiled by conservatives in 1387 and in 1393, was the most internationally oriented guild of them all—the *Arte della Calimala*, home of international traders and import cloth finishers.

Leaders of the 1382–93 moderate regime were *lanaiuoli* and other domestically based major guildsmen—socially and economically "elite" but politically opposed to both factional extremes. They had experienced decades of violent political and street warfare among fractious elite families, which had opened the door to revolution from below. These moderate major guildmen desperately wanted to reestablish peace and control both for their own sanity and in order to rebuild the manufacturing and export economy upon which their livelihood depended, so damaged by war with the pope. Instead of crushing opposition, they sought to achieve the difficult objective of annealing conflicting forces back into economic and political synergy.[47] Statistical support for this "leading reform role of the moderates" interpretation is given by the disappearance of all significant political-faction coefficients in tables 5–9 after 1382. Because of the sequentiality of annealing, the crushing of prociompi revolutionary forces in 1382 did not automatically imply that reactionary forces took over (contra Najemy 1972).

The political problem faced by the 1382 moderate-elite regime trying to restore order was the following: repression of the radical ciompi ob-

[47] This idea of the *Popolo*, opposed to factional violence on all sides, had precedent in Florentine history, dating from the 1250s (Schevill 1963).

TABLE 5

Political and Social Embedding of Cambio Bankers

Logit Coefficients	1348–62	1363–76	1380–89	1390–99	1427
Patrilineage:					
Cambio patrilineages	1.624***	3.229***	2.199***	2.534***	2.196***
Social class:					
Popolani	.267	−.765**	−.008	−.388	.098
Magnate	.210	−.130	.347	−.138	.732*
New man	.815*	.106	.541	.483	−.003
Social class of wife:					
Popolani	.961***	1.258***	.689*	.660**	1.836***
Magnate	.022	−.550	.180	.008	1.113*
New man	1.595**	1.799**	1.437**	.164	1.343*
Political offices:					
Priorate	1.091***	−.060	.339	.319	1.211***
Mercanzia	1.021*	.835	1.486***	1.219***	.296
Balìa 1378		.198	.185	.524	
Balìa 1382		.081	−.394	.005	
Reggimento 1382		.669*	.231	−.625	
Balìa 1384		2.658***	1.622***	1.283**	
Balìa 1393			−.756	−.354	
Reggimento 1393			1.192***	1.694***	
Political factions:					
Albizzi	.234	−.548	−.131	−.158	
Ricci	.997†	.122	−1.526	−1.230	
Anticiompi		1.289*	.503	.721	
Prociompi		1.089*	−.474	−.517	
Albizzeans					.564
Mediceans					1.405**
Quarter:					
Santa Croce	.074	−.198	.331	.070	.372
Santa Maria Novella	.467	.796**	.712**	.606*	−.177
San Giovanni	.384	.313	.771**	.597*	.477
Log likelihood	−576.7	−467.7	−574.2	−594.2	−416.1
No. of observations (persons)	5,005	7,129	7,129	7,129	8,376
LR χ^2	138.2	250.1	299.1	342.9	180.8
Prob > χ^2	.000	.000	.000	.000	.000
Pseudo R^2	.107	.211	.207	.224	.179

Source.—See citations in tables 1 and 3.

Note.—In each logit regression, the universe of persons to whom these cambio bankers were compared was the time-appropriate tax census (that is, 1351 *Estimo*, 1378 *Prestanze*, or 1427 *Catasto*) of household heads, plus those household heads' fathers. Only those marriages and political offices with dates prior to the last date of the logit regressions (i.e., 1362, 1376, 1389, 1399, 1427, respectively) were included in estimations. "Cambio patrilineages" were patrilineages with three or more members in the cambio banking industry, during the time period in question.

† $P < .06$.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE 6

Political and Social Embedding of Merchant-Bankers

Logit Coefficients	Alberti 1348–58 (Interational + Pisa + Florence)	Pisa 1369 (International + Pisa + Florence)	Datini 1385–99 (International + Pisa)	Catasto 1427 (International + Pisa)
Patrilineage:				
International merchant-banker patrilineages	2.287***	2.964***	2.937***	2.098***
Social class:				
Popolani	−.665	−.375	.048	−.089
Magnate	−1.367**	−1.413	−.352	−.060
New man	.392	−.113	.320	−1.492*
Social class of wife:				
Popolani	1.368***	.781	.821**	2.333***
Magnate	1.492***	1.243*	−.431	1.579**
New man	1.173	1.755*	.550	1.364
Political offices:				
Priorate	.977**	2.385***	−.985†	−.865
Mercanzia	1.581**	−1.657	.730	1.675**
Balìa 1378		1.260***	−.557	
Balìa 1382		.128	.436	
Reggimento 1382		1.038**	−.010	
Balìa 1384		1.598**	1.510**	
Balìa 1393			−.649	
Reggimento 1393			1.376**	
Political factions:				
Albizzi	1.431*	.983	−1.150	
Ricci	1.863**	1.550*	.057	
Anticiompi		.529	.746	
Prociompi		1.907***	.028	
Albizzeans				1.425**
Mediceans				2.202***
Quarter:				
Santa Croce	.396	.529	−.509	−.247
Santa Maria Novella	.487	.616	−.189	−.653
San Giovanni	.771*	.081	−.519	−.174
Log likelihood	−313.9	−257.9	−389.0	−321.6
No. of observations (persons)	5,005	7,129	7,129	8,376
LR χ^2	142.8	279.9	135.1	166.0
Prob > χ^2	.000	.000	.000	.000
Pseudo R^2	.185	.352	.148	.205

Source.—See citations in tables 1 and 3.

Note.—In each logit regression, the universe of persons to whom these international merchant-bankers were compared was the time-appropriate tax census (that is, 1351 *Estimo*, 1378 *Prestanze*, or 1427 *Catasto*) of household heads, plus those household heads' fathers. Only those marriages and political offices with dates prior to the last date of the logit regressions (i.e., 1362, 1376, 1389, 1399, 1427, respectively) were included in estimations. "International merchant-banking patrilineages" were patrilineages with three or more members in the international merchant-banking industry, during the time period in question. The first two of these regressions include merchant-bankers whose companies were resident in Florence, as well as those whose companies were resident elsewhere (i.e., international + Pisa), because the primary data in these two periods did not differentiate residence well.

† $P < .06$.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

viously was the sine qua non, but that had already been accomplished by the previous 1378 regime of minor guilds and liberal popolani. The next step was to solve the structural problem of the guild-corporatist constitutional order, which had served major guildsmen so well in earlier generations, but which had badly malfunctioned. The ciompi had hijacked this institutional order to mobilize revolution, and minor guildsmen with their liberal popolani allies had used it to seize control from major guilds, both immediately before and immediately after the Ciompi revolt. Najemy (1981) has shown how the economic-class tension associated with the Ciompi revolt shredded political cohesion within the guild of wool manufacturers, and presumably within other major guilds as well, thereby enabling these defeats.

Whatever the reasoning, the 1382–93 regime moved quickly to dismantle the autonomy of those very guilds, both major and minor, which had previously been the institutional foundation of their own economic and political power. In 1382, all elected guild consuls became subject to the approval of the Mercanzia, in 1383 and 1390 the Mercanzia exercised this review power to alter the results of the election of consuls in the cloth retail and silk guild, and finally in 1393 the *balìa* burned all guilds' scrutiny bags, containing the results of previous consul elections, and requested that the Mercanzia appoint guild consuls directly "by hand" (Najemy 1972, pp. 582–601; Franceschi 1993*b*, pp. 886–89).[48] In addition, in 1384, a special-purpose *balìa* of major guildsmen, including both cambio bankers and international merchants, was appointed to reform the wool-manufacturers' guild (ASF, *Arte della Lana* 46, pp. 164–66). The previous constitutional system of federated economic and political self-governments by guilds was dismantled, in other words, in favor of more direct "oligarchic" oversight by those in control of the central institutions of the republican state (namely, the priorate, the *balìe*, and the Mercanzia).

Previous histories have not always clearly differentiated between moderate and conservative elements in the post-Ciompi oligarchic-cum-republican regimes (although see Brucker 1977). Nor have they precisely identified the differing roles of various major guildsmen, such as wool manufacturers, cambio bankers, and international merchants, in this constitutional reconstruction. Our data show clearly, however, that 1382 reformers actively reached out to cambio bankers for allies in their institutional reforms. But they did not reach out similarly to international merchants, apparently because they were often not politically reliable. This mobilization collectively lifted cambio bankers to political heights not previously attainable.

[48] This was not unlike what had happened in a previous (1308–29) oligarchic phase of Florentine political history (Najemy 1972, pp. 296–398; Astorri 1998).

This co-optation strategy by 1382–93 political reformers in rebuilding their post-Ciompi constitution fits neatly with the findings of Molho (1968*a*, 1968*b*), Witt (1976), and Najemy (1982), who demonstrated the high degree of openness by the post-1382 "oligarchic" regime to the (highly selective) election of newcomers. Cambio bankers were not the only ones being co-opted. In pursuit of their annealing objectives, elite-but-moderate reformers reached out for support in all sympathetic directions, as long as they, not the guilds, controlled the routes of access. But whereas new men were mobilized as clients, cambio bankers were mobilized into the very core of the regime.

Without sharply distinguishing between moderates and conservatives, Najemy puts the same point eloquently, if somewhat cynically, like this:

> In short, as the number of participants reached new heights, real power in the system underwent an unprecedented process of centralization. The thousands of individual Florentine citizens who willingly entered the lists of the electoral lottery, each nourishing his private hope of elevation to the priorate, gave the republican regime a stability it had not previously known. They played the game as faithful creatures of the regime, hardly aware that their own acquiescence in the illusion of political equality, their very willingness to play by rules they no longer shared in defining, and their acceptance of participation without actual power were the bedrock of consensus on which the stable and elitist polity of fifteenth-century Florence was built. Even less were they aware of having created the conditions that shaped the new republican ideology of civic humanism. (Najemy 1982, pp. 299–300)

Organizational Refunctionality: Domestic Bankers into International System Builders

From the perspective of our theoretical framework for analyzing organizational invention, co-optation of bankers into politics was biographical transposition. This induced organizational refunctionality—namely, the perception of new purposes for old practices and tools. The old practices and tools were those of the domestic cambio bankers; the new perceptions and purposes were those of international trade.

Twenty-five to thirty percent of cambio bankers were elevated into the central institutions of the state—the priorate, the *balìe*, and the Mercanzia—where government policy was formulated. Coming from a previous experience in domestic deposit banking, this political mobilization introduced them to international contacts and to an internationalist perspective from which they had previously been, if not excluded, then inhibited by the specialized guild system. Before the Ciompi revolt, a few cambio bankers had sometimes engaged in international trading on the side (like the example of Piero Fastelli, cited above), but that was hardly their primary activity. International trading instead had been dominated by merchants in the Calimala guild, not by bankers in the Cambio guild. Now however, the state had an urgent need to rebuild its war-damaged export-oriented wool-manufacturing and international-trading economies. Cambio bankers were recruited into this economy-rebuilding effort, and they soon became a core part of the very state that recruited them.

The 1384 special-purpose *balìa* on the wool industry (ASF, *Arte della Lana* 46, pp. 164–66) was one prong in this rebuilding effort in which cambio bankers were centrally involved, as we have seen in tables 4 and 5. This *balìa* reformed the terms of trade and the administration of disputes, fines, and fees among various members of the wool industry (manufacturers, dyers, laborers, etc.), in an apparent effort simultaneously to restructure this recently politically explosive guild and to revive this crucial but declining economic sector in Florence. Apart from this important industry-specific *balìa*, there was no special governmental commission of which we are aware that was set up to propose other macroeconomic policy innovations. Rather there was "just" the strong encouragement and backing of the state for those who wished to fill the international-trading vacuum. In future research into the records of these governmental bodies, we hope to elaborate the precise form that this "encouragement" took.

Whatever the particular inducements, some experienced cambio bankers—men like Vieri di Cambio de' Medici and Manetto di Giovanni Davanzati, but also some international merchant-bankers like Francesco Datini and Tommaso di Guccio Soderini—responded to the new opportunities to expand their business by opening new branches in overseas cities.[49] In addition, a new generation of cambio bankers—men like Giovanni di Bicci de' Medici, Francesco di Simone Tornabuoni, and Giovanni di Jacopo Orlandini, descended from the earlier generation of cambio bankers—broadened their domestic base into international merchant banking. A few newcomers, like Niccolò da Uzzano, did the reverse and extended their international trading origins into cambio banking (see, once again, app. A for full list). The specific issue for us is how did this flow of domestic banking into international trading trigger the invention of the partnership system, which organizationally fused these two industries?

Our answer is in two parts: careers and practices. Before the Ciompi revolt, the guild system had channeled economic careers into industrial

[49] The "War of the Saints" was over and settled in part by the death of Pope Gregory XI. A peace treaty was negotiated and the spiritual interdict was lifted by new Pope Urban VI in 1378 (Brucker 1962, pp. 356–57).

specialization,[50] which also became one important basis for political representation. After the Ciompi revolt, the guild system was effectively dismantled, and a more centralized system of elite monitoring of the activities of businessmen was imposed, through the Mercanzia.[51] This breakdown of effective intermediation through corporatist organizations "individualized" the biographical flows of businessmen through the state, inducing political and eventually social stratification. Selected businessmen from various industries were placed onto the same political career tracks, through the priorate, the *balìe*, the Mercanzia, and other republican offices of the state. Thereby it became easier, through dialogue and shared position within leading formal and informal (*consulte e pratiche*) councils of the state, and without the constraint of corporate representation, for each major guild's businessmen to see the world more easily from the perspective of the other major guilds. This is similar to the social-network concept of structural equivalence (White, Boorman, and Breiger 1976), except here we have parallel career flows, instead of highly correlated network profiles (cf. Padgett 1990). In our case, career-flow equivalence generated merged, hybridized perspectives, which prepared the cognitive soil for refunctionality.

The precise micromechanism that translated this new career-flow equivalence into partnership systems, we contend, was the transposition of cambio bankers' existing master-apprentice way of making domestic partnerships (Padgett 2001, p. 227) onto the international stage. In their domestic companies, cambio bankers were used to short-term (often three-year) renewable partnerships between cambio masters and a series of ex-apprentice younger junior partners, who fully expected to split from their master's company upon financial success to form their own firms. For compensation, the junior partner received a share of the profit higher than his share of the capital contribution, as reward and incentive for hard labor.[52] These were exactly the typical terms of formal contracts between founders and branch managers in partnership sysyems, except that in partnership systems there were simultaneously many such contracts with multiple branch managers, often spanning more than one industry. This cambio-banking guild partnering logic, previously constrained to be sequential because of its domestic and specialized-industry

[50] Not completely so because businessmen could join multiple guilds, but largely so.

[51] Note that the Mercanzia was not established after the Ciompi revolt; rather, its role within the state was strengthened (Franceschi 1993*b*, 1994). Previous episodes existed in the early 1300s where the Mercanzia was used for similar political ends (Najemy 1972; Astorri 1998)

[52] In the context of the partnership system, Melis (1962, pp. 128–29) called this a *socio d'opera*.

guild setting, was unleashed to become modular, cross-cutting multiple geographical settings and industries. Thereby it supplanted the older unitary patrilineage form of international merchant banking,[53] which after the 1340s was on the ropes in any event.

There were macroeconomic forces moving this industrially diversified partnering logic down the tracks of geographical diversification as well. The War of Eight Saints with the pope had altered the landscape of European trading outlets. Before this war, Florentine long-distance international trade, mostly in woolen cloth, traveled primarily along an almost straight geographical line, running from London and England in the north, down through Flanders, Paris, and Avignon in France, to Genoa, Milan, and Pisa in northern Italy, and continuing on to Rome and Naples in southern Italy (e.g., Goldthwaite et al. 1995, pp. xlv–lxxx). Venice (Mueller 1997*a*, pp. 255–75) and other smaller Italian cities also were in Florence's international trading network, off this primary geographical line. The spiritual interdict of the pope, with its mixed success in host cities of organizing boycotts and exiles of resident Florentine businessmen, helped to diversify this economic geography. To simplify a complex topography: after the war, England and Avignon went down, and Spain and Venice went up, as relative Florentine trading partners, in immediate response to their respective national profiles of cooperating, or not, with the pope (Trexler 1974, pp. 44–108).

To be sure, the various political responses of host countries to anti-Florentine pressure from the pope reflected their own economic interests. That is, they reflected ongoing economic trends. The fact remains that after the war, the King of England expelled Italians for decades, in his successful import-substitution effort to develop domestic wool production. Exports of high-quality raw English wool to Florence plummeted (Carus-Wilson and Coleman 1963), with deleterious consequences for the Florentine wool-manufacturing industry (Franceschi 1993*a*). Trading connections with Catalonia and Mediterranean Spain, on the other hand, centered around silk and raw wool, blossomed (Lopez 1952, p. 347). And Venice, also in response to its War of Chioggia with Genoa, liberalized its free-trade policy, thereby currying the favor of Florentine merchants (Mueller 1997*a*, p. 266).

Thus when Florentine international trading revived after the Ciompi revolt, Florentine companies, using their new organizational tool of partnership systems, faced a more geographically dispersed economic geography than before, centered as much around the western Mediterranean

[53] The two Alberti companies, *antichi* and *nuovi* (Goldthwaite, Settesoldi, and Spallanzani 1995), were the largest and most important of these patrilineage-based "remnants."

as around the old French route to London. This was the "demand side" facing the "supply side" of new partnership systems. Modularity had a wider variety of geographical sockets to plug into.

To summarize, our contention about organizational refunctionality is that when cambio bankers flowed through newly centralized political institutions, these institutions transposed existing ways of doing economic business into new purposes. Politically moderate elite leaders of the new regime were just trying conservatively to reestablish control and to rebuild their decimated economy. But the unintended consequence of their co-opting cambio bankers and select international businessmen into their electoral system was to catalyze cambio bankers and their international partners into reshaping themselves. Sequential cambio partnerships became transformed into modularized simultaneous partnerships, which spanned industries. This new organizational form permitted the ready exploration of geographically dispersed markets, which had been produced through the war with the pope (which in turn had triggered the Ciompi revolt in the first place).

Multiple-Network Catalysis: The Embedding of Partnership Systems in Elite Marriage

Political co-optation in response to revolt explains the transposition and refunctionality stages in the Florentine invention of partnership systems. But for novel innovation to become transformative invention, there must be something more. Innovation must reverberate out into collateral ways of doing business, thereby reshaping the interactive system in which the invention is embedded. This is the difference between the incremental evolution of banks, which is variation within species, and the punctuated evolution of banking, which is emergence of new species. The same post-Ciompi political process in Florence that induced organizational innovation, however, also rewired the social embedding of partnership into surrounding networks, thereby altering the contextual feedbacks that reproduced that invention. The Florentine partnership system was not just the incremental diffusion of a good organizational idea; it was part of a larger punctuated-equilibrium reorganization of the Florentine elite, which resituated the Florentine business community within its surrounding social and political contexts.

To demonstrate this changing social embedding of economic partnership in late medieval Florence, we present tables 7, 8, and 9, which disaggregate partnership systems into their constitutive parts—namely, cambio partnerships and international merchant-banking partnerships, viewed separately. Table 7 presents the unconditional relationship of partnership with marriage over time. Tables 8 and 9 present logit regressions on partnership

TABLE 7

MARRIAGE PATTERNS OF CAMBIO BANKERS AND INTERNATIONAL MERCHANTS

	% Bankers					% Partnerships				
	1348–62	1363–76	1380–89	1390–99	1427	1348–62	1363–76	1380–89	1390–99	1427
Cambio banking:										
Own social class:										
Popolani	.465	.353	.389	.400	.555	.482	.516	.641	.600	.811
Magnates	.218	.181	.215	.194	.136	.208	.158	.210	.222	.216
New men	.190	.207	.228	.213	.091	.355	.391	.329	.272	.095
Wife's social class:										
Popolani	.155	.172	.168	.219	.355	.255	.223	.471	.459	.500
Magnates	.049	.026	.054	.056	.118	.127	.118	.087	.088	.176
New men	.042	.052	.060	.031	.045	.082	.105	.115	.057	.081
Intermarriage between partners' families:										
Nuclear-family level						.003	.003	.023	.021	.041
Partilineage-family (nonnuclear) level						.014	.007	.054	.030	.176

	% Merchants				% Partnerships	
	1348–58	1369	1385–99	1427	1385–99	1427
International trading:[a]						
Own social class:						
Popolani	.456	.353	.327	.402	.439	.466
Magnates	.123	.058	.112	.232	.140	.243
New men	.211	.213	.219	.018	.175	.007
Wife's social class:						
Popolani	.211	.159	.211	.393	.368	.527
Magnates	.175	.082	.040	.143	.088	.230
New men	.018	.028	.036	.045	.018	.068
Intermarriage between partners' families:						
Nuclear-family level					.000	.007
Partilineage-family (nonnuclear) level					.000	.216

Source.—See citations in tables 1 and 3.

Note.—Only 40%–50% of marriages are known in our data set. Thus, percentage calculations above, while comparable across time, underestimate true rates probably by about half. This is why the percentages for wife's social class are, in general, lower than those for own social class. Percentages in case of partnerships refer to the percentage of one or more of the partners or partners' wives with the specified social class.

[a] For 1385–99 and 1427, "international" operationally is defined as company located in city other than Florence. For 1348–58 and 1369, sources did not identify geographical location, so those columns also include companies resident in Florence who engaged in international trading.

TABLE 8

Political and Social Embedding of Cambio Banking Partnerships

Logit Coefficients	1348–62	1363–76	1380–89	1390–99	1427
Patrilineage:					
Nuclear family	8.273***	7.998***	6.296***	5.830***	4.006***
Patrilineage (excluding nuclear)	3.720***	2.435***	3.245***	2.966***	2.487***
Marriage:					
Nuclear in-law partners	.851	1.055	2.888***	1.102**	1.379**
Patrilineage intermarriage:	.684*	−.602	1.566***	.382†	.915***
To popolani	.182*	.300**	.455***	.115	.014
To magnates	−.215	−.184	−.331	−.626***	−.024
To new men	.433**	.680***	.036	−.594***	−.579
Neighborhood:					
Same gonfalone	1.268***	.956***	.483***	.614***	1.129***
Same quarter (excluding gonfalone)	.384***	−.034	.270**	.457***	.327
Social class:					
Both popolani	−.168	.018	−.099	−.028	.883**
Both magnates	−2.515***	.235	.315	−1.092***	1.240*
Between popolani and magnates	−.317*	.113	−1.377***	.703***	1.006**
Between popolani and new men	−1.409***	−.446**	−.545***	−.600***	.288
Both new men	−1.293***	−.176	−.695***	.422**	2.343***
Both new-new men			−.256	.211	.577
Political offices:					
Priorate	−.100	.388**	.340***	.124	−.138
Cambio consuls	.414***	−.388***	−.348***	.008	.068
Mercanzia	−.528**	−.722***	−.146	−.068	.025
Balìa 1378		.004	.152	.014	
Balìa 1382		.353	−.198	.213	
Reggimento 1382		.181	.136	.016	
Balìa 1384		.128	.181*	.087	
Balìa 1393			.384***	.286**	
Reggimento 1393			.369***	.200*	
Political factions:					
Albizzi	−.435*	.762***	−.116	−.964**	
Ricci	.145	.874***	−.841**	−.552*	
Anticiompi		.113	−.327*	.152	
Prociompi		.074	−.049	−.181	
Albizzeans					−.037
Mediceans					−.161

TABLE 8 (*Continued*)

Logit Coefficients	1348–62	1363–76	1380–89	1390–99	1427
Log likelihood	−3,837.6	−2,340.1	−3,546.9	−4,332.2	−628.3
No. observations (dyad-year)	81,535	36,688	75,288	97,060	12,430
LR χ^2	3,044.4	1,306.1	1,605.3	2,173.6	349.0
Prob > χ^2	.000	.000	.000	.000	.000
Pseudo R^2	.284	.218	.185	.201	.217

SOUCE.—See citations in tables 1 and 3.

NOTE.—The (0/1) logit dependent variable equaled one if the dyadic partnership actually formed sometime in the time period in question, and it equaled zero if the dyadic partnership was possible but never formed in the time period in question. The universe of "possible partnerships" was constructed by dyadically crossing all cambio bankers who were observed to have been active as partners in the industry, solo or with somebody, during the time period in question. Only those marriages and political offices with dates prior to the last date of the logit regressions (i.e., 1362, 1376, 1399, 1427, respectively) were included in estimations. "Patrilineage intermarriage" was calculated on basis of existence of at least one intermarriage between patrilineages (excluding a direct nuclear in-law) in the 30 years prior to last date of regressions. Political offices, factions, and marriages with social class were coded as (0/1/2), depending on the number of partners in the category in question.

† $P < .06$.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

dyads in these two industries over time.[54] These logit-regression tables report the conditional effects of many contextual social and political variables on economic partnership, controlling for each other.

The strongest time-series message in these tables is marriage, but before we discuss those results we will discuss three other statistically significant findings in tables 8 and 9, as interesting preliminaries. The first is essentially a reconfirmation of the discussion in the section about biographical transposition: political mobilization of cambio bankers, through the 1380–99 priorate, the 1384 *balìa*, the 1393 *balìa*, and the 1393 *reggimento*, had a significant effect on the formation of cambio banking partnerships. Table 5 showed that cambio bankers were mobilized politically after the suppression of the Ciompi revolt. Table 8 shows that this mobilization had an impact on cambio bankers' partnership behavior—namely, mobilized bankers were significantly more likely to form partnerships. Table 9 shows the same *not* to be true for international merchant-bankers. While international merchants were also mobilized into the 1384 *balìa* and the 1393 *reggimento*, this lesser mobilization had no detectable effect on their part-

[54] To be clear, tables 5 and 6 presented logit regressions on businessmen's active participation in the two industries. The unit of analysis is the person, with tax censuses defining the universe. Tables 8 and 9 present logit regressions on those active businessmen's partnership choices of each other. The unit of analysis is the dyad, with active businessmen in the relevant industry defining the universe.

TABLE 9
POLITICAL AND SOCIAL EMBEDDING OF MERCHANT-BANKER PARTNERSHIPS

Logit Coefficients	Alberti 1348–58	Pisa 1369	Datini 1385–99	Catasto 1427
Patrilineage:				
Nuclear family			5.138***	3.865***
Patrilineage (excluding nuclear)			3.591***	2.058***
Marriage:				
In-law partners			[−∞]	2.395*
Patrilineage intermarriages:			[−∞]	.682**
To popolani			.056	−.152
To magnate			−.229	−.327
To new men			−.753	−.391
Neighborhood:				
Same gonfalone			.970†	−.264
Same quarter (excluding gonfalone)			.193	.619**
Social class:				
Both popolani			.118	−.080
Both magnates			.226	−.670
Between popolani and magnate			−1.337	.319
Between popolani and new men			[−∞]	[−∞]
Both new men			.417	[no cases]
Both new-new men			[−∞]	1.485
Political offices:				
Priorate			.347	−.161
Calimala consuls			−.699	1.006*
Mercanzia			−.997	−.205
Balìa 1378			[collinear]	
Balìa 1382			.426	
Reggimento 1382			−.183	
Balìa 1384			.073	
Balìa 1393			−.595	
Reggimento 1393			.534	
Political factions:				
Albizzi			.836	
Ricci			2.621	
Anticiompi			1.127	
Prociompi			−1.478	
Albizzeans				.130
Mediceans				.268

TABLE 9 (*Continued*)

Logit Coefficients	Alberti 1348–58	Pisa 1369	Datini 1385–99	Catasto 1427
Log likelihood			−275.1	−623.2
No. of observations (dyads)	[insufficient data]		13,366	7,260
LR χ^2			185.7	199.0
Prob > χ^2			.000	.000
Pseudo R^2			.252	.138

SOURCE.—See citations in tables 1 and 3.

NOTE.—The (0/1) logit dependent variable equaled one if the dyadic partnership actually formed sometime in the time period in question, and it equaled zero if the dyadic partnership was possible but never formed in the time period in question. The universe of "possible partnerships" was constructed by dyadically crossing all international merchant-bankers who were observed to have been active as partners in the industry, solo or with somebody, during the time period in question. Only those marriages and political offices with dates prior to the last date of the logit regressions (i.e., 1362, 1376, 1399, 1427, respectively) were included in estimations. "Patrilineage intermarriage" was calculated on basis of existence of at least one intermarriage between patrilineages (excluding a direct nuclear in-law) in the 30 years prior to last date of regressions. Political offices, factions, and marriages with social class were coded as (0/1/2), depending on the number of partners in the category in question. [−∞] means "independent variable = 1 predicts partnership = 0 perfectly," so variable dropped from logit regression.

† $P < .06$.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

nering behavior. Political mobilization not only affected cambio businessmen, it also affected their banks.

Second, examination of the coefficients for natal (not in-law) family in table 8 reveals the following trend: the causal importance of family—both at the level of the nuclear family and at the level of the patrilineage—for predicting the likelihood of forming cambio-banking partnerships declined smoothly in magnitude over the 1348–1427 period. But it remained statistically significant throughout. The same trends are revealed in table 9 for international merchant-banking partnerships over the shorter observable time period of 1385–99 to 1427. These results confirm the gradual decline of natal family as an organizing principle of economic partnership throughout the early Renaissance,[55] just as Goldthwaite (1968) has argued. On the other hand, these results also confirm the historical continuity of patrilineage in early Renaissance Florence, as Kent (1977) has counterargued. Both historians were correct in their assessments; they just emphasized different sides of the late-medieval kinship transition. "Family" did not go away in importance in Renaissance Florence; rather, its

[55] Excluding solo operators, who had no partners, the raw percentages of cambio-banking partnerships which occurred among nuclear or patrilineage family members declined from 75.3% in 1299–1323 to 58.6% in 1329–46, to 43.9% in 1348–62, to 39.1% in 1363–76, to 40.0% in 1380–99 (*Arte del Cambio* 11, 14, 15). Of course from the modern perspective 40% of partnerships within family is still extremely high.

economic role changed. The medieval dominance of the patrilineal father-son relation became supplemented, and to some degree supplanted, by early Renaissance economic relationships among in-laws. More specifically in the kinship history of Florentine elite families, the *consorteria* horizontal solidarity of medieval families, rooted primarily in factional feuds, land, and the military (Lansing 1991), evolved into more internally differentiated Renaissance patrilineages, with sharp wealth distinctions between senior and cadet branches and with diffuse and negotiable membership boundaries (Herlihy 1985; Fabbri 1991; Molho 1994; Klapisch-Zuber 2000). Economic and kinship evolutions were linked.

Third, examination of the coefficients for neighborhood in table 8 reveals the following temporal pattern: statistically significant effects of residence in same *gonfalone* on cambio partnerships first declined and then rose in magnitude over time. These results are consistent with Kent and Kent (1981) and Kent (1987), which argued for the general importance of neighborhood in structuring sociality of all kinds in Renaissance Florence, at the level of the 16 *gonfaloni* or administrative wards in the city. But more specifically they also are consistent with our overall thesis of the dissolution of guild, rooted in neighborhood, and then the consolidation of clientage, also rooted in neighborhood but in a different way.[56] Like family, neighborhood never went away in its structuring impact in Renaissance Florence; rather, its specific catalytic relationship with economic networks was reconfigured. Before the Ciompi revolt, guild brought cross-class neighbors together in banking partnership through the social model of master and apprentice. After Ciompi, clientage brought cross-class neighbors together a bit in banking partnership, but even more so in credit (Padgett and McLean 2004), through the social model of patron and client.

On the core issue of the increasing social embeddedness of economic partnership in marriage, there are two modalities of marriage embeddedness presented in each of these three tables: (*a*) the marriages of partners into various social classes, elite or otherwise, and (*b*) the intermarriage of the partners themselves, either at the level of their nuclear families or at the level of their patrilineage families.[57] The logic of the first modality is access: marriage to popolani meant that businessmen and their com-

[56] This inference about the changing social role of neighborhood is consistent with everything we know, but it requires more research to confirm. Kent (1987, 1991) emphasizes the rootedness of clientage in neighborhood during the 1400s.

[57] Partnership intermarriage at the nuclear family level means one partner (or his son, brother, or father) marrying the sister, mother, or daughter of the other partner. Partnership at the patrilineage level means one partner marrying someone with same last name as the other partner (excluding nuclear family intermarriages, which had already been counted).

panies had kinship access into socially elite and usually politically powerful families, whether or not they themselves were elite. The logic of the second modality is multiplexity: intermarriage with one's partner meant that economic and in-law kinship roles were fused, with normative framing consequences for each of those roles. Among families with last names, "only" 40%–50% of all Florentine marriages are coded in our data set (Padgett 1994),[58] so the raw marriage percentages reported in table 7 should be adjusted upward to approximate true underlying rates.

The simplest message about marriage in these tables is that both forms of partnership embeddedness in marriage increased after the Ciompi revolt. Subtleties exist in timing and relative rates: the sharpest and most sudden post-Ciompi increases in the raw percentages in table 7 are in cambio partnerships (even more than in cambio bankers per se)—both in rates of marriage to popolani and in rates of intermarriage with each other. The suddenness of this temporal jump implies to us that cambio-banking partnerships were the leading edge of this transformation in the fitting of economic partnership into *parentado* or in-laws. Other raw percentage rates—those for cambio bankers, those for international merchants, and those for international merchant-banking partnerships—climb in a more gradually escalating pattern, indicating to us that these were the second, consolidating wave of this approximately 30-year process of embedding of banking and merchant-banking partnerships into marriage. By 1427, the intercorrelation of partnership with marriage in both industries was very strong, far stronger than had existed before the Ciompi revolt.

Logit regressions in table 8 qualify these zero-order time trends with control variables. According to table 8, the post-Ciompi pattern of aligning banking partnerships with intermarriage between partners remained statistically significant through 1427, even after controlling for other factors. We have already shown in table 3 that a businessman's marriage to a popolani wife was significantly associated with being a partnership-system builder after the Ciompi revolt, but not before. Among cambio bankers viewed alone, a statistically significant spike upward in the "leading edge" 1380–89 coefficient for *parentado* access to popolani was followed by a drop to insignificance in 1390–99 and in 1427, after controlling for other factors. The reason for this inconsistency between conditional and un-

[58] There are 10,000+ marriages in Padgett's data set, compiled largely though not exclusively from ASF *Manoscritti Carte dell'Ancisa* 348–61 and Litta (1819). The estimated sampling rate of these marriages, judged through comparison with tax censuses, drifts up very slowly from about 40% in 1350 to about 50% in 1500. Thus any but glacial rises in raw percentages in table 7 are not the result of increased sampling rates in the underlying data. (Before 1350, the sampling rate in our data is lower, but that is not relevant here.)

conditional temporal patterns after 1390 is that by 1427 the collinear social class of bankers themselves had taken over the explanatory purchase from the social class of their wives. By 1427, popolani and magnate bankers formed partnerships among themselves, indeed effacing the economic distinction between them, with marriage socal-class endogamy becoming the corollary of elite social-class dominance of the industry. The increased 1380–99 intermarriage of cambio bankers with popolani after the Ciompi revolt, in other words, functioned as a bridge toward popolani and magnate demographic dominance of cambio banking by 1427.[59]

All of these marriage results are far more muted for international merchants. Only in 1427 do the two direct intermarriage coefficients in table 9 for international merchant partnerships achieve statistical significance. And never is *parentado* marriage into the popolani important for international merchants forming partnerships among themselves. Consistently the pattern here is of deeply socially embedded cambio bankers linking up with relatively unembedded international merchants to form partnership systems. Cambio bankers, being physically resident in Florence, were more connected into (and presumably more constrained by) their social and political contexts than were Florentine international merchants, who for much of their active business lives were resident abroad.[60] To put this another way, in the period after the Ciompi revolt residentially domestic bankers, newly connected to international merchants through partnership systems, helped to broker those sometimes new international merchants into the dense social-network structure of their own Florence back home.[61]

This increased correlation between partnership and marriage has the testable corollary that the economic value of marriage should increase. Dowries could be and were used as startup capital for new economic

[59] Goldthwaite (1985) paints a very different picture of the predominantly lower-social-class background of cambio bankers in 1469–85. In data beyond 1427, not reported here, we show that the war-induced financial crises of 1430–35 dramatically changed the 1427 situation reported here. Indeed 1427, near the end of the Albizzi regime, was the high water of popolani and magnate dominance of domestic as well as international banking, as new men returned to positions of economic and political influence in the post-1434 Medici regime. But that next economic transition is for a future article to dissect. See Padgett and Ansell (1993) for the political side of this Medici transition.

[60] This hardly means that Florentine international merchants were socially anomic. In foreign cities, they lived and did business tightly clustered with each other in virtual ghettos. Plus, most Florentines resident abroad yearned to return home. But still the fact remains that domestic social networks back in Florence were not as constraining on their economic behaviors as they were on Florentines resident in Florence.

[61] After 1387, some of the most prominent older international merchants, such as the Alberti and the del Bene, otherwise deeply connected into Florence, had been exiled because of their liberal political sympathies.

companies.[62] Chabod (1995, p. 103) provides information on average Florentine dowry prices over time, among families established enough to write surviving *ricordanzi* or private diaries. Consistent with the time series that we expect, the average price of the Florentine dowry reported by Chabod rose from 592 florins ($N = 18$) in 1314–49, to 845 florins ($N = 24$) in 1350–99, to 925 florins ($N = 54$) in 1400–49, to 954 florins ($N = 35$) in 1450–99.[63] This rise in the value of dowries eventually became so strong that money circulating among elite families through daughters came to be central in the maintenance of patrilineage economic position within the elite (Molho 1994). This was true in spite of the lowly medieval origins of the dowry as a consolation prize for dispossessed daughters (Hughes 1978).

The post-Ciompi fusion of cambio bankers into the popolani elite therefore had two consequences for the changing Renaissance meaning of banking partnership. In the first transposition-plus-refunctionality stage, political mobilization brought master-apprentice logic out of the guild world into the international domain to produce partnership systems, as has already been discussed. But in the second network-catalysis stage, social incorporation brought the logic of marriage, and hence dowry, out of the world of popolani kinship into banking, reinforcing and rewiring the social embedding of banking partnerships into the elite. Our quantitative data allow us to measure direct multiplexity only, but subject to future testing, we also believe that marriage became a newly available symbolic model for banking partnership, influencing normative expectations among similar-status partners, even if the economic partners were not literally intermarried. Our evidence for this plausible extrapolation from direct multiplexity to indirect social framing is the following: (*a*) The Renaissance word for partnership starting capital was *corpo* or body (hence incorporation). (*b*) Metaphorical homology: like a married daughter, partnership startup capital was a redeemable deposit of one person in another to create a new corporate unit. For both economic capital and married daughters, ownership was usufructuary, not permanently alienable—namely, upon termination of the corporation the deposit returned to the original depositor. (*c*) Dowries became used as startup capital, thereby operationalizing the metaphorical parallel. (*d*) Like marriages of children from the perspective of the father, economic partnership systems were

[62] The 1384–1422 diary of silk manufacturer Goro Dati (Brucker 1967, pp. 114, 121) attests to this practice.

[63] This is not to say that increased correlation between economic partnership and marriage was the only possible cause of increased dowry values, only that this was one cause and that increasing dowry prices are consistent with our own social embeddedness findings.

network-star structures that linked businessmen to diverse counterpart businessmen in other patrilineages.[64] (*e*) Marriage logic applied to partnership reinforced industrial diversification: one's son-in-law by training was often in a different occupation from oneself, whereas one's son was typically in one's own occupation. Once economic partnership became socially embedded in and symbolically framed as analogous to marriage, it took on the normative overtones and the catalytic reproductive support of the popolani and magnate elites who embraced it.

This second causal stage of catalysis through embedding in marriage also fits neatly into the temporal history of the oligarchic reaction to the Ciompi revolt, just as did the first causal stage of transposition and refunctionality through co-optation. In 1382, consensus-oriented major-guildsmen moderates reached out to their "right" of patrician exiles by inviting everyone home, and also to their "left" of new men through relatively open electoral access, as well as to the "center" of cambio bankers through direct mobilization. It was primarily rapprochement with conservatives, culminating in the rise of Maso degli Albizzi in 1393, that lead to the politicization and economization of marriage. Major guildsmen, after all, had been deeply intermarried all along with both popolani and magnates, often themselves being popolani. Before the Ciompi revolt, however, marriages were just that—ties primarily in the kinship domain, not in the political or economic domains. Patrilineages and guilds competed at the center constitutional stage of the state, instead of marriages and clientage. It was the challenge from below of the Ciompi revolt that made more salient and multifunctional these previously "latent" marriages. With guilds politically defanged and the importance of elite cohesion painfully evident, marriage was the only social network available to 1382–92 regime leaders to translate fleeting elite-solidarity consciousness into effective oligarchic organization. Marriage could mobilize all of the groups that the moderates wished to co-opt.[65] And most important for political control consequences, marriage and clientage were capable

[64] Network stars are single points with lines radiating out.

[65] Padgett (1994) demonstrates that marriage surprisingly cut across social classes in Renaissance Florence. While the magnates and new men avoided each other in marriage like the plague, popolani were remarkably catholic in their marriage patterns, at least at the coarse-grained level of social class: popolani versus magnates versus new men. This result contradicts the closed-elite, marriage-endogamy portrait of Molho (1994). Thus, counterintuitively, marriage was even a method for popolani to reach out to (highly selective) new men. The published letters of Alessandra Strozzi (Gregory 1997) and the published *ricordanze* of Marco Parenti (Phillips 1987) vividly illustrate the logic of popolani and new men as in-laws, which blended into patron-client or *amicizia* relations.

of mobilizing potential allies selectively and individualistically,[66] thereby demobilizing them as dangerous groups.

Whether the leaders of the 1382 regime were as foresighted and strategic as our narrative makes them appear is doubtful. Unlike Cosimo de' Medici in 1434 a couple of generations later (Padgett and Ansell 1993), the almost forgotten 1382 moderates are not among the most famous and celebrated names in Florentine history. Just because they achieved lasting success does not imply that they were unusually clever. More plausible than (hyper)rational choice as microdecisional foundation, both for them and for Cosimo de' Medici, is learning—in which intelligent but adaptive agents are channeled by events into adopting a new perspective that redefines their own rationality (March 1999). Cosimo de' Medici appears both to us and to contemporaries like a genius because the same historical forces that produced him also constructed a glorified political position or stage for him, far above that of other men (Brown 1961; cf. Tolstoy [1869] 1982 on Napoleon). The 1382 moderates in contrast are forgotten because they knitted together a "consensual" republican regime in which many citizens had at least the illusion of access and influence. Both Cosimo de' Medici and the 1382 moderates equally were inventors—products of their time who changed their time. That they did so was not because they were superior in cognitive abilities, intelligent though no doubt they were. What they shared in common instead, in our opinion, was the more profound perspicacity to observe the ways that others were moving tumultuously around them well enough to blend those others' biographies into interacting sequences, which catalyzed those movements into self-reproducing (i.e., institutionalized) careers, thereby creating new perspectives and goals in others.

No greater testament to the achievement of the 1382 elite moderates can be made than to point to the speeds of the ideological demise of deeply entrenched medieval loyalty to the pope and of the subsequent rise of civic-humanist republicanism to take its place (Baron 1966). The 1382 moderates did not themselves make the intellectual revolution of the Renaissance. But they altered the social-network feedbacks in Florentine history enough to make that intellectual cascade appear to be almost inevitable in hindsight.

ECONOMIC CONSEQUENCES: THE EVOLUTION OF BANKING

Most banks today are shining lobbies and offices, temples to modernism and the capitalist spirit. Renaissance banks did not look like this of course.

[66] We find no evidence for this being the self-conscious strategic aim of moderate elites, only of this having beneficial political control consequences.

They too had their *palazzi* (Goldthwaite 1972), from which modern bank lobbies are descended, but they were smaller and more intimate in physical and manpower size.[67] In spite of this difference, however, Renaissance banks also epitomized, indeed were central in inventing, financial capitalism—namely, partnership systems, limited liability, double-entry bookkeeping, and current accounts. The historiographical puzzle is the one with which we opened this article: How could such a traditionalist time and place, not motivated to innovate, nonetheless have invented so prolifically? In particular how did it invent financial capitalism? The political context of the Ciompi revolt and the post-Ciompi homology between partnership and marriage have taken us a considerable way toward understanding the changing Renaissance meaning of the partnership relationship. Now we show how this change in partnership logic transformed the banks internally. Melis (1962) and de Roover (1966) have already documented at length these organizational changes, of course. In this section we simply extend their strictly economic inquiry by analyzing the changing social composition of Renaissance banks. We thereby place economic transformation more explicitly in its social context. We shall examine banks not as disaggregated sets of businessmen and dyads, as in the logit regressions of the previous section, but rather holistically as coherent collective actors. In particular we shall demonstrate transformation in the role of the lead banker from guild entrepreneur to partnership-system financier. This was socially rooted at the level of ownership in a new mixed-kinship organizational structure of banks. Closely related to this change in organizational form, important changes at the level of transactional practice—namely, double-entry bookkeeping, current accounts, and economic credit—are sketched here, but will be analyzed at more length in our companion article.

We focus empirically on cambio banks not only because they were central components in the formation of partnership systems, as has been demonstrated above, but also because that is the most comprehensive time-series data that is available in the archives. With the annual registrations by the *Arte del Cambio* of all domestic banking partnerships, one can measure change in ownership structure with a temporal precision not possible in other industries.[68]

Before moving to content, let us first prove again, to remove any lin-

[67] Distributed across eight branches, the partnership-system Medici bank of 1470 employed 57 staff, excluding partners (de Roover 1966, p. 95). This was smaller than the earlier Bardi, Peruzzi, and Acciaiuoli banks had been in the early 1300s. The unitary-company Peruzzi bank, for example, employed 90 clerks across 15 branches in 1335 (de Roover 1966, p. 95).

[68] With less-than-perfect data, however, Hoshino (1980) and Franceschi (1993*a*) do masterful jobs measuring change and transformation in the Florentine wool industry.

gering doubts, that something in fact did change suddenly in Florentine cambio banking at exactly the time of the Ciompi revolt. Figure 4 presents a scatterplot of average bank size (measured in partners per bank) arrayed by aggregate size of industry (measured in total number of active bankers) for each year in the second half of the 1300s. This functional relationship is a trace of the growth (and decline) process of banks, in response to industry conditions. Not surprisingly, as the industry expanded and contracted for macroeconomic reasons, average company size also expanded and contracted in response to demand, both for the period before the Ciompi revolt and for the period after. The surprise is the sharpness of the sudden shift in intercept of this partnership-growth relationship immediately after the Ciompi revolt. Consistent with our analysis of the political context of cambio banking, the clarity of this shift goes down to the granularity of exact years—namely, the 1380 data point lined up neatly with the 1350–76 line, whereas the very next available 1382 data point initiated a new 1382–99 line.[69] Confirmations of hypotheses about timing are rarely as definitive in historical research as this. Both the compositional data on partnership systems and the growth data on cambio banks agree that 1382 was the date of organizational transition—precisely the same date as the initiation of the moderate phase of the post-Ciompi political regime.

Popolani Mixed-Kinship Banks

Figure 4 says that something definitely happened in the growth logic of cambio banking in 1382, but it does not say what that change was. Figure 5 begins to fill in the story. Immediately after the suppression of the Ciompi revolt, there was a dramatic growth in the demographic representation in cambio banking of partners with popolani backgrounds.[70] Other social

[69] The years 1377–79 are missing in the time series, because cambio guild record keeping collapsed during the Ciompi revolt itself. The year 1381 is also missing in the registration book, for unknown reasons.

[70] The rise in popolani dominance in fig. 4 is more dramatic than similar data in table 7, because table 7, among other things, reported on the social-class backgrounds of bankers as persons, rather than bankers as partners. The difference is that a single person can be a partner for many years. Both versions of the data, taken jointly, indicate increased social concentration—namely, a substantial block of post-Ciompi popolani bankers maintaining their demographic and organizational dominance of the industry over long stretches of time, surrounded by numerous lower-class bankers who came and went, sometimes in branch partnership with dominant popolani bankers and sometimes independently of them. Such social-class concentration in the domestic-banking industry was the result, intended or otherwise, of oligarchic consolidation in politics.

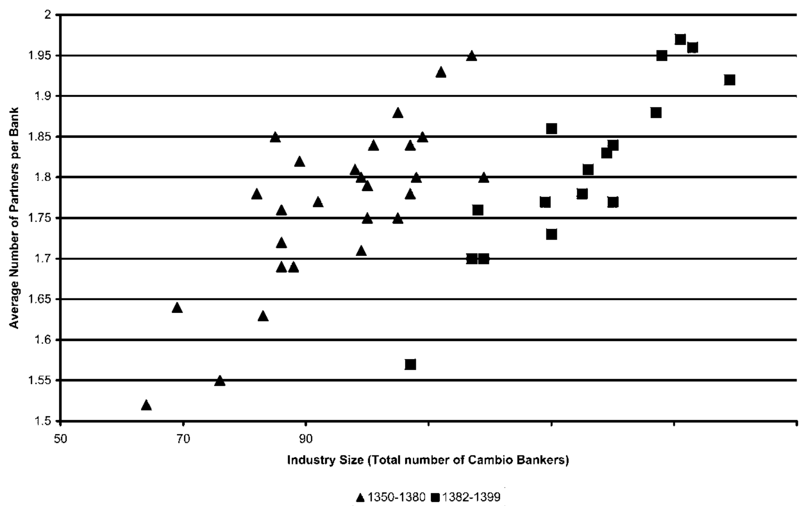

FIG. 4.—Cambio banking firm size distribution

classes were not really purged,[71] but popolani families captured almost all of the post-Ciompi economic rebound after the war with the pope. Partnership systems were how this economic rebound was achieved. The disproportionate social-class character of this rise is consistent with the political-mobilization and social-incorporation mechanisms already identified. These popolani bankers were men like Vieri de' Medici—simultaneously building partnership systems and transforming cambio banks into more diversified business organizations, located physically in Florence but capable of becoming headquarters within international partnership systems.

How did these mostly popolani cambio bankers reconstruct their Florentine domestic banks to link into and indeed to become central nodes within their partnership systems? Table 10 gives over-time data on the differential kinship character of those cambio banks that participated in partnership systems with both international and domestic activities, versus those cambio banks that did not. "Not" means those traditional domestic bankers who maintained their guild roles as deposit bankers and money changers, in the parlance of the day variously called *banchieri, cambiatori,* or *tavolieri* (LaSoursa 1904; Usher 1943; De la Roncière 1973;

[71] Although we note with great interest the ominous drop in representation of "no date" bankers soon before the Ciompi revolt—perhaps an indication of the same sort of pre-Ciompi class shredding within the Cambio guild that Najemy (1981) has documented for the Lana wool guild. This was a precursor of things to come.

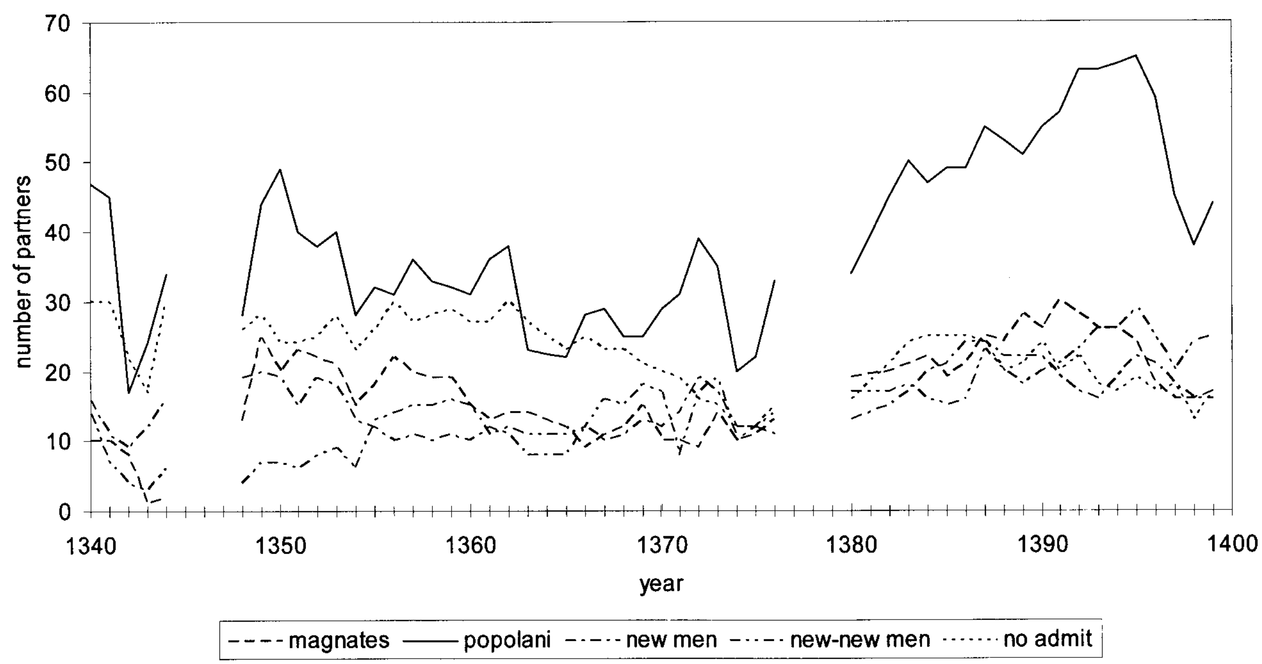

FIG. 5.—Number of cambio bankers, by social class, in the 14th century

TABLE 10
FAMILY TYPES OF CAMBIO BANKING PARTNERSHIPS

	Solo	Family	Mixed	Nonfamily	Total
Aggregate percentage distribution:					
1357–66	.265	.159	.177	.399	1.00
1367–76	.325	.171	.173	.332	1.00
1380–89	.275	.153	.190	.382	1.00
1390–99	.254	.173	.217	.357	1.00
1427	.152	.161	.312	.375	1.00
% also in other merchant-banking activities or partnerships:					
1357–66	.078	.239	.266	.107	.149
1367–76	.094	.130	.264	.134	.143
1380–89	.090	.095	.350	.123	.153
1390–99	.096	.125	.316	.268	.210
1427	.118	.333	.400	.190	.269

SOURCE.—Annual cambio bank censuses, plus 1427 catasto.

NOTE.—Unit of analysis is partner-year. "Solo" defined as company with only one owner. "Family" defined as company with all partners in the same nuclear or patrilineage (= "same last name") families. "Nonfamily" defined as company with all partners in different families. "Mixed" defined as company with some partners in same family, but also with some other partners from different families. For overlaps of cambio banking with other industries/companies, 1357–66 and 1367–76 periods use "merchant-banker" to be 1369 Pisa list—hence the word "activities" in the title. 1380–89 and 1390–99 periods use Melis's Datini list of partnerships. 1427 uses industry = 1, 2, 3 in catasto. Starting date of 1357 chosen to make 1357–76 period comparable (20 years) to 1380–99 period.

Goldthwaite 1985). The first half of table 10 subdivides cambio banks (actually partner-years of cambio banks) into (*a*) whether the partners all came from the same family (nuclear or patrilineage), (*b*) whether they all came from different families, (*c*) whether they came from a mixture of same family and nonfamily backgrounds, or (*d*) whether the bank had only a single owner. The second half of the table records whether this kinship modality of cambio banks affected participation in international trading, above and beyond normal domestic deposit-bank business.

The message in table 10 is the growth in importance, after the Ciompi revolt, of the mixed-kinship or hybrid type of cambio bank. In raw numbers, the percentage of partner-years involved in the mixed type of cambio bank rose from 17% before Ciompi to 31% in 1427. More important to us, the likelihood of partners in such mixed-form banks engaging in international trading rose from 26% before Ciompi to 40% in 1427. The mixed form was always more likely to engage in international trading than family or nonfamily cambio banks, and this differential grew after

Ciompi.[72] The key point is this: those cambio banks that had been formed through blending family (patrilineage) and nonfamily (guild) partnership logics into hybridity lay at the nodal center of the new partnership systems.

Biographies and Careers

Just looking cross-sectionally at organizational types, while quite revealing of macrotrends in development, runs the risk of conveying too static an image of organizational structure through time, as if these were fixed species competing in some Darwinian ecology of succession. In fact, these organizational types were fluid stages in the life cycles of bankers, as they formed and reformed partnerships with each other through time.[73] The career-stage dynamics in figures 6 and 7 give a sense of how these various kinship and nonkinship organizational forms fitted into the ongoing lives of Florentine bankers. In the dimension of kinship especially, but also in the dimension of politics, changing organizational forms were the epiphenomema of the different ways that economic biographies were structured before and after Ciompi (Goldthwaite 1983; Padgett 2001).

Before Ciompi, from 1348 to 1376, cambio banking partnerships were formed according to the classic logic of a guild career, which shaped the structures of the organizations produced. As is evident in figure 6, most cambio bankers regardless of social class started out their careers in nonfamily companies, essentially as apprentices to master partners.[74] As they gained experience, career paths diverged, depending upon social-class backgrounds. The career goal of successful apprentice-partners of lower class was to become themselves masters, operating as independent solo operators. There was an interesting wrinkle among new men, where in midcareer they detoured into family companies, but even among them

[72] Other kinship forms, however, also had their moments of glory: the nonfamily form was involved in international trading in 1390–99, and the family form staged a comeback in 1427 from its earlier 14th-century withdrawal from this activity. Never was cambio banking homogeneous in its distribution of organizational forms.

[73] Goldthwaite (1983) and Kent (1977) both agree on this life-cycle interpretation of the relation between kinship and economic partnership. Legally, partnership contracts were typically written for two or three years. Practically, given renewals, dyadic partnerships in our cambio data lasted on average 4.6 years, and domestic banks (with partner turnover) lasted on average for 9.4 years. These calculations cover the period from 1348 to 1395, dates chosen to minimize right- and left-censoring complications from the calculations.

[74] Literally of course apprentices were teenagers, even younger than young partners in their twenties. But these data show that the first stage of becoming a partner was often a social continuation of apprenticeship. Successful apprentices were often rewarded with their first partnership, as a promotion, with little or no *corpo* contributed and a slightly higher share of profit, as incentive for continued hard labor.

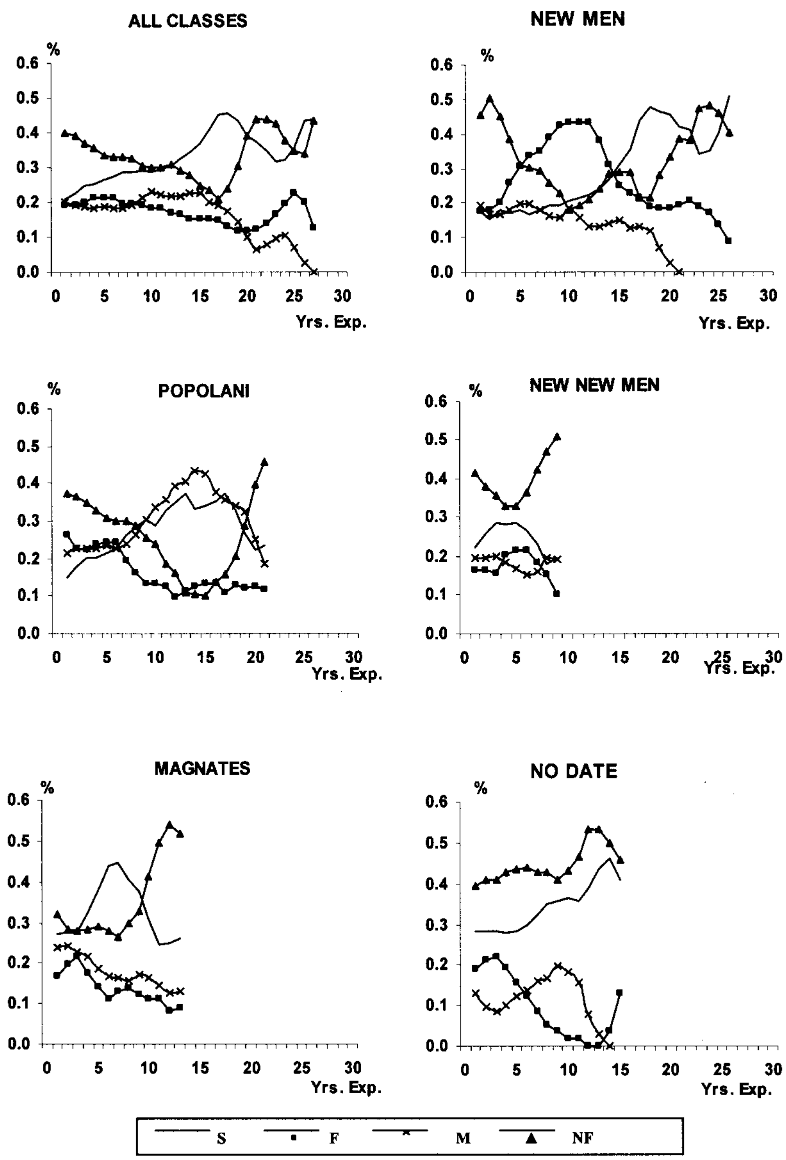

FIG. 6.—Bankers' life courses: career experience of company types, 1348–76. Percentage is three-year moving average. Graph stops when the total number of cases is less than seven.

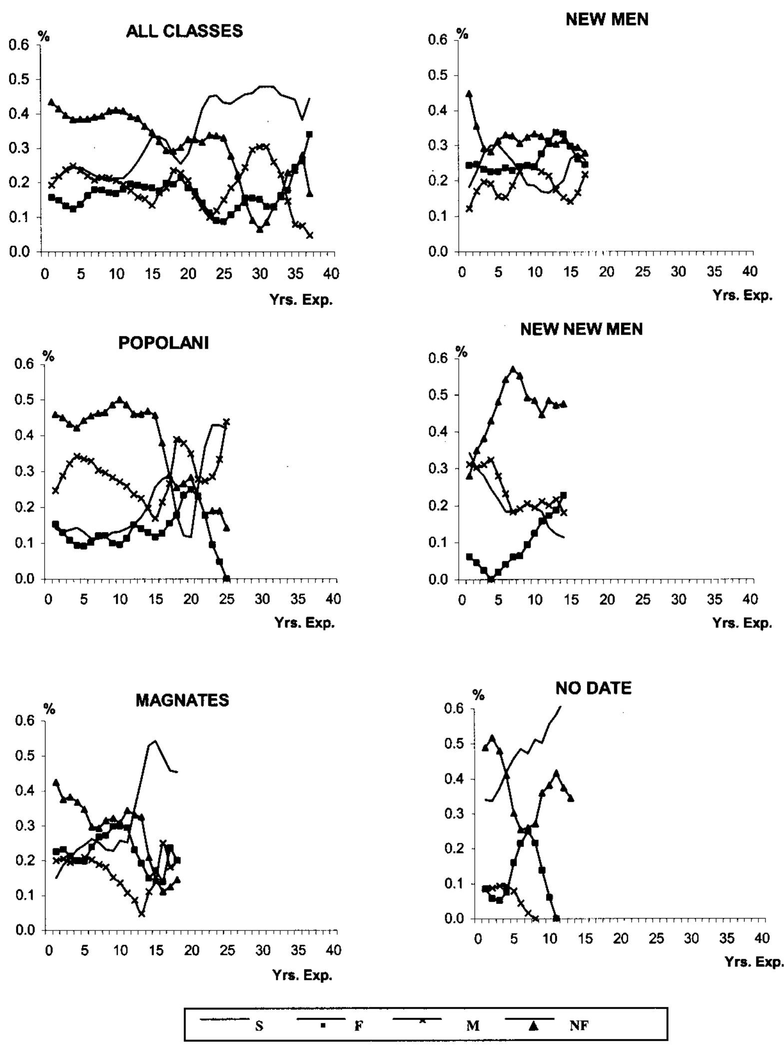

FIG. 7.—Bankers' life courses: career experience of company types, 1380–99. Percentage is three-year moving average. Graph stops when the total number of cases is less than seven.

the long-run objective, 15 years after starting in the business, remained to become a solo-owner "master" *cambiatore*. Among the upper social classes—popolani and magnates alike—guild career trajectories were different. After beginning in nonfamily partnerships like everyone else, they followed varied career trajectories in midcareer before coming back to the nonfamily form late in career, in order to train new apprentices. The core engines of guild reproduction, in other words, were popolani and to a much lesser extent magnate master partners who reached down to chosen youngsters of all social-class backgrounds in order to recruit them into the occupation. The gap in age between master and apprentice partners ensured that these small popolani-led domestic banks were run almost as if they were solo-ownership partnerships (with helpers), but it is still notable that popolani bankers recruited and trained new entrants of all social classes, whereas the lower-social-class bankers did not.

After the Ciompi revolt, career trajectories show some continuities, as is consistent with the persistence of purely domestic bankers at the base of the industry, but they also reveal transformation. The lowest social classes—namely, new-new men and "no date"—had a consistent orientation to nonfamily partnerships and to solo partnerships throughout their careers. The middle class of new men started out in nonfamily partnerships early in their careers, like previously, but then they diverged into an equal number of all types throughout the course of their careers—a median position between the lowest and the highest social classes. Most interesting are transformations in the career trajectories of popolani domestic bankers. Now the culmination of popolani bankers' careers, 30 years after entering the occupation, was to form mixed-kinship companies, mixing nonfamily ties (which had been dominant in the guild logic of 1348–76) with family ties (which had been dominant in the even older unitary-company families of international merchants of pre-1342), blending these two historical logics together into a hybrid. These mixed-kinship companies are the same ones that, in table 10, were linked into international trading through partnership systems. Here in figure 7 we are adding information on who exactly was behind the construction of those mixed-kinship organizational forms—namely, popolani cambio bankers late in their careers.[75]

This popolani economic behavior of constructing mixed-kinship forms of cambio banks at the peak of one's career was consistent, we suggest, with the social behavior of any popolani patriarch—supporting through patronage and generosity one's own kin, in-laws, friends, and neighbors (Klapisch-Zuber 1985, pp. 68–93), in the pursuit of the honor and glory of the patrilineage one leads. This generalized *padrone* role came to be gradually well known within Florentine elite circles during the Renaissance (Alberti 1971). What was new in this role, right after the Ciompi

[75] Touchingly enough, the top panel in fig. 7 shows that really elderly bankers (across all social classes because the numbers are too low to permit social-class disaggregation), 35 to 40 years after beginning their careers, showed a real fondness for supporting their offspring through partnering, probably passing on their business, shortly before they died.

revolt, was the transposition and refunctionality of this behavior from the kinship domain into the economic and political domains, displacing the previously dominant economic and political role of guild master. First the cross-network relationship between banking and politics was rewired, and second the cross-network relationship between banking and kinship was rewired, locking in the first so tightly that it no longer needed to be monitored consciously.

These organizational developments can be illustrated perfectly with the Medici banks. As can be seen in appendix A, the original Medici bank of Vieri di Cambio de' Medici started out as a domestic cambio bank, which had been founded in 1349. Before 1380 that successful cambio bank had been built entirely on the basis of nonfamily partnerships with many social classes, in classic guild manner.[76] In 1382 or 1384 for the first time, however, Vieri di Cambio built his partnership system by using his distant nephew (and past apprentice) Francesco di Bicci de' Medici both to diversify internationally into Genoa and to make his domestic bank into mixed-family form. Francesco's brother Giovanni di Bicci soon followed as partner-cum-branch-manager of Vieri's new Rome branch in 1385. After 1382, even the meaning of "nonfamily" partner changed: for example, one of Vieri's domestic banking partners, Niccolò di Riccardo Fagni, married the now late Vieri's sister Cilia in 1399 after her first husband had died.

The timing of these economic-system-building moves was not accidental: Vieri was very active in Ciompi and post-Ciompi politics. Like the classic guildsman that he was, Vieri participated heavily in his own *Arte del Cambio* guild, serving as consul seven times before the Ciompi revolt.[77] Despite his long years of guild service, however, Vieri never attained the exalted levels of the Mercanzia or the priorate until after the Ciompi revolt—in 1383 and in 1392, respectively. This institutional elevation was status recognition of Vieri's very active Ciompi and post-Ciompi involvement in the political reconstruction of the republic: Vieri was a member of every one of the reforming *balìe* in our data set (1378, 1382, 1384, and 1393). Leading up to the Ciompi revolt, Vieri di Cambio de' Medici had been a conservative leader of the *Parte Guelfa*, clearly aligned with the Albizzi faction and personally involved in anti-Ghibelline persecutions (Brucker 1962, pp. 204, 340, 343n). In spite of his undoubted personal conservatism, Vieri served on the revolutionary 1378 *balía* under the lead-

[76] Tommaso Baronci was a popolano, Gregorio Tornaquinci was a magnate, Giacomo Tebalducci and Giovanni Rinaldeschi were new-new men, and the families of Lodovico Pini and Filippo Ticci were of such low social class that they were never admitted to the priorate.

[77] Vieri also served six more times after the Ciompi revolt (*Arte del Cambio* 12).

ership of his firebrand cousin Salvestro d'Alamanno de' Medici (Anonimo Fiorentino [1389] 1876, p. 505). In reward for this service the ciompi regime knighted him in 1378 (Stefani [1385] 1903, p. 324). Even as late as 1393, artisans in street battles appealed futilely to Vieri, as well as to his cousin Michele de' Medici, for leadership (Brucker 1977, p. 141n). This contradictory political behavior by Vieri can only be understood in the context of the cross-cutting social-network position of the Medici family itself (Brucker 1957; Padgett and Ansell 1993). To call Vieri a "political moderate" is too simple, but he clearly operated on both sides of the fence, whatever his own conservative views. His cross-cutting network position pushed Vieri late in life (though not yet the Medici family as a whole) into a position of inventive leadership, both within the republican state and within economic partnership systems.

These points could be illustrated at even greater length by the more famous Medici bank of Giovanni di Bicci and Cosimo di Giovanni, which descended from Vieri di Cambio, but de Roover (1966) has already done that job. The only aspect of the famous Medici bank of Giovanni di Bicci and Cosimo di Giovanni that we would like to highlight here is their increased reliance on a higher social class of general and branch managers. In the early Medici bank of Vieri di Cambio, only 30% of the nonfamily partners had been either popolani or magnates. In contrast, in the more famous Medici bank of Giovanni di Bicci and Cosimo di Giovanni before 1427, 64% of the nonfamily partners (listed in de Roover 1966, pp. 377–78) were popolani or magnates. In 1413 Cosimo himself married into the Bardi family of his bank's general managers. These changing personnel policies of the two sequential Medici banks were consistent with the overall trend of social oligarchy taking place within Florentine banking during the Albizzean republican era.

Datini stands as the exception to the trends in political and social embeddedness which are documented here. He was the driven new-man maverick, standing slightly apart from Florence both socially and geographically. The fact that Datini is the most documented case has thrown historians a bit off the trail of understanding the deep linkage of partnership systems into the Florence of the time. Being the outsider from Prato, Datini personally despised Florentine politics. Even Datini, however, was forced to pay close attention to Florentine politics through his intimate friend, the notary ser Lapo Mazzei, who was located occupationally right at the center of the Florentine state (Trexler 1980, pp. 131–58). In the end, Datini the outsider did marry into the Florentine popolani in order to gain social access, just as table 3 showed to have been common, even though the marriage may have been loveless.[78] It is doubtful that

[78] Right before the Ciompi revolt, in 1376, Datini married Margherita di Domenico

Datini could have succeeded in his system building without this crucial linkage of a marriage into the Florentine elite.[79]

To sum up, at the administrative-headquarters core of the new partnership systems laid a transformation in the structure of Florentine domestic banks. The contractual modularity of the spokes (i.e., the partnerships between senior managers at the center with branch managers in the periphery) came from the transposition of master-apprentice logic from its specialized origins in the guild system into the open-ended air of international trading. This modularity was socially reinforced by the logic of marriage of daughters into different families, if the branch manager were worthy enough in social status to marry.[80] But at the banking core of the system, the logic of the new Renaissance version of patrilineage held sway—less solidaristic than the old medieval *consorterie*, and more hierarchically differentiated with fuzzy boundaries, bleeding over into nonfamily in-laws and clients, who became treated like fictive kin. Previously contradictory logics of guild and patrilineage now blended precisely because this intermediate zone of in-law and client emerged, which reconfigured them both. Guild "thickened" into clientage, and patrilineage "thinned" into *parentado*, enabling them to fit together. The functional consequence of this new economic-social organizational hybrid was the administrative capacity to integrate trading with banking into a coherent enterprise.[81] International trading now became more deeply infused with a banking mentality,[82] and conversely domestic banking now became infused with a mercantile mentality.[83]

Bandini, an offshoot of the Baroncelli family, 25 years his junior. Origo ([1957] 1992) provides much insight on the emotional character of that marriage, based on extensive surviving correspondence. The Datini archives exist today because Francesco and Margherita had no offspring. Hence he donated almost all of his assets, including his archives, to a public foundation in Prato that he created with his will upon his death.

[79] Origo (1992, p. 110) provides two quotations from Datini's letters that reveal the quasi-kinship nature of his brotherly feelings toward his partners, no matter the hierarchical economic relationship between them. The second of these quotations is this: "When I formed a company with Toro di Berto in Avignon many men laughed at me, saying 'You were free and have now made yourself a servant; you could rise and go to bed as you pleased, and now you must follow your partner's bidding.' I replied I was glad to have a partner for various reasons—first, to acquire a brother, and then, to have someone to keep me from the follies of youth, so as to acquire honor and profit."

[80] Data in table 9 show intermarriage with international partners happened by 1427 but not by 1399.

[81] The bookkeeping innovations discussed in the companion paper also played an important role in this.

[82] Banking and trading activities were combined in the old unitary patrilineage international companies of the early 1300s as well (e.g., the Bardi and Peruzzi banks analyzed by Sapori [1926, 1955] and by Hunt [1994]), but these specialized in inter-

All of this system building and political reorganization of course added up to great wealth for Florentine bankers. Figure 8 plots Lorenz curves of the wealth distributions of Florentine cambio bankers, for various years, standardized by dividing their tax assessments by the seventy-fifth percentile assessment in the entire city.[84] The data show clearly a progressive increase in the wealth of domestic bankers, relative to upper levels of the population as a whole, from 1351–78 to 1403–27, especially among the upper reaches of bankers, before its decline in 1460 after the period of our study.[85] Given the background transformation in their multiple social identities which produced this wealth, great wealth for Florentine bankers as individuals also translated into wealth for all those artists and clients whom now they sponsored. Perhaps we need not belabor the point that the artistic inventions traditionally associated with the onset of the Renaissance—for example, the new linear perspective of Brunelleschi, Masaccio, and Donatello—are dated around 1400, the terminus of the 20-year banking and political consolidation that we are analyzing. The creation of patronage and great wealth are the links between the artistic story of the Renaissance and our own economic-political account (cf. Kent 2000).

From Entrepreneur to Financier

Finally in this article, we shall demonstrate the internal consequences of organizational transformation for the economic role of the lead partner. The lead partner shifted from the role of an entrepreneur to the role of a financier. Table 11 presents a cross-tabulation of 1348–99 cambio-banking partners, subdivided by social class, where the partnership dyad is

national trading (often particular goods), bills of exchange, and state finance, with only sideline ventures into domestic banking.

[83] We will clearly demonstrate the mercantile behavior, both international and domestic, of Florentine domestic banks in 1427 in our companion article.

[84] The original sources of these data from the Archivio di Stato di Firenze, now compiled in Padgett's relational database, are these: (*a*) active cambio bankers: *Arte del Cambio* 11, 14, 15; (*b*) 1351 tax census: *Estimo* 306; (*c*) 1378 tax census: *Prestanze* 367–369; (*d*) 1403 tax census: ASF, *Prestanze* 1989–2020; (*d*) 1427 tax census: *Catasto* 15–85; and (*e*) 1458 tax census: *Prestanze* 834–37. The 1427 catasto was coded by Herlihy and Klapisch-Zuber, and also by McLean. The 1403 prestanza was coded by Nicoletta Baldini, a research assistant to Padgett in 1997. Other archival sources were coded by Padgett.

[85] The decline to 1460 is explained by the 1430–35 fiscal crises induced by wars documented by Molho (1971). This decline also helps to explain the very different portrait of cambio bankers in the mid-to-late fifteenth century given in the case study by Goldthwaite (1985), whose Cerchi local banker was located in the lower end of the industry.

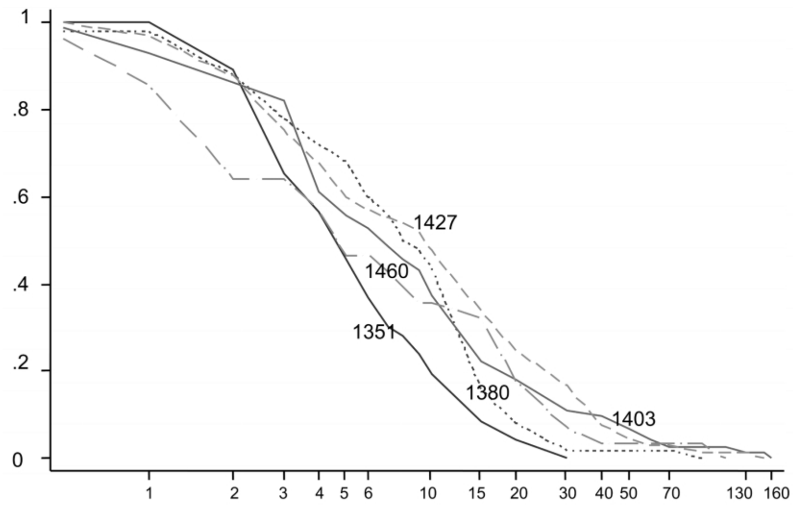

FIG. 8.—Domestic bankers' wealth distribution (standardized at the 75% city percentile)

ordered by relative experience in banking.[86] That is, the rows contain the more senior partner, as defined by years of active experience in the industry, and the columns contain the more junior partner, defined the same way. Only nonfamily partnerships (including the nonfamily component of mixed-kinship companies) are sensible to cross-tabulate in this manner, because intrafamily partners by definition are within the same social class. To the right-hand side of the cross-tabulation we present a simple graphical device to help the reader see quickly the asymmetries in this table.

The data in this table provide confirmation of points about cambio banking that we have been making all along, but they also add new insights. Before the Ciompi revolt nonfamily cambio banking partnerships were organized according to the guild logic of master and apprentice. In the context of this table, this means that relative experience and social

[86] "Active experience in banking" can only be calculated when complete annual time series of company censuses are available. As mentioned above, the *Arte del Cambio* guild did indeed conduct such annual registrations, providing extraordinarily precious data. Their records have survived for the years 1340–99, with only small gaps—one of which was the 1377–79 period of the Ciompi revolt itself, when record keeping in the guild broke down. These annual registrations allow the number of prior years of active participation as partner in the industry (in some company or other) to be calculated for all active bankers in all years during this period. (There is the minor problem of left censoring at 1340, which is why we report experience data only from 1348 forward, after the Black Death had killed about half of the bankers). These same experience data also underlay the calculation of career trajectories, reported in figs. 6 and 7.

TABLE 11

RELATIVE EXPERIENCE OF NONFAMILY CAMBIO BANKING PARTNERS (Including Nonfamily Subset of Mixed Companies)

	Less Experience in Cambio Banking						% More Experience >Less Experience	Less Experience					
More Experience	Popolani	New Men	New-New Men	Magnates	No Date	Total		Popolani	New Men	New-New Men	Magnates	No Date	Total
1348–76:													
Popolani	191	49	56	78	157	531	+.424	0	+	+	++	++	+++
New men	36	13	17	45	52	163	+.716	−	0	+	+	+	++
New-new men	38	4	52	22	40	156	+.083	−	−	0	+	+	+
Magnates	27	6	12	26	60	131	−.388	−−	−	−	0	+	−−
No date	81	23	7	43	100	254	−.379	−−	−	−	−	0	−−−
Total	373	95	144	214	409	1235		−−−	−−	−	++	+++	
	Magnates	New Men	No Date	New-New Men	Popolani	Total		Magnates	New Men	No Date	New-New Men	Popolani	Total
1380–99:													
Magnates	13	17	29	18	131	208	+.518	0	0	0	0	++	++
New men	8	16	25	55	65	169	+.174	0	0	0	+	0	+
No date	30	22	36	6	99	193	−.045	0	0	0	0	0	0
New-new men	17	27	15	24	82	165	−.098	0	−	0	0	0	−
Popolani	69	62	97	80	240	548	−.110	−−	0	0	0	0	−−
Total	137	144	202	183	616	1283		−−	−	0	+	++	

SOURCE.—ASF, *Arte del Cambio* 14.

NOTE.—"+" ≡ $[(i, j) - (j, i)] \geq 10$, "++" ≡ $[(i, j) - (j, i)] \geq 50$, "−" ≡ $[(i, j) - (j, i)] \leq -10$, "−−" ≡ $[(i, j) - (j, i)] \leq -50$.

class were, in the aggregate, highly correlated. A junior partner of lower social class would "apprentice" himself with no status difficulty to a senior partner of higher social class. But junior partners of higher social class never violated (in the aggregate) the Florentine status hierarchy by "apprenticing" themselves to senior partners of lower social status than themselves. Just because banking was based on guild did not mean that bankers were not deeply conscious of status and social-class distinctions among themselves. The only exception to this pre-Ciompi rule of occupational-experience authority hierarchies within the firm mirroring social-class status hierarchies outside the firm was the peculiar position of magnates—high social status within feudal patrilineage logic, but low social status in guild corporatist thinking.

After the Ciompi revolt, in sharp contrast to this guild-based equation of vertical occupational experience with vertical social class, two complementary horizontal layers of class-endogamous "alliances" developed: (*a*) popolani and magnates were more likely to form banking partnerships with each other than with the middle and the lower social classes, and (*b*) new men and new-new men were likewise more likely to form cambio banking partnerships with each other than with upper classes, presumably in response to the fewer opportunities extended to them by the upper classes. A two-tiered segmentation of companies within the industry of domestic banking therefore developed—an upper-class tier, which integrated international merchant and domestic banking businesses, and a middle-class tier more oriented to the traditional domestic banking domain.

The strikingly new information contained in this table is the inversion of the occupational experience ordering of the popolani, before and after the Ciompi revolt. In the pre-Ciompi guild logic, high-status popolani were also the more occupationally experienced bankers in nonfamily partnerships. In other words, they were entrepreneurs: founding, owning, and running their own companies. In the post-Ciompi partnership-system logic, in contrast, popolani actually descended to the bottom of the occupational experience hierarchy. This did not necessarily mean that popolani had few years of experience in the industry, as we have seen in figure 7. But it did mean that, whatever their own experience levels, popolani tended to partner with others of even more experience in the industry than themselves. There was no more reaching down to youngsters, except their own kin, in-laws, or clients. Instead they searched out and hired branch-manager partners who really knew the business, and then they turned over daily management of that business to those more experienced than themselves, with close supervision of them of course.

This is evidence not just for the evolution of banks as organizational forms, but also for the evolution of banking as roles. Partnership system alliances among legally autonomous corporate units brought in its train a transformation in business itself. Rather than bank founders becoming entrepreneurs who knew their business backward and forward, and who built up their own companies, rewarding themselves at the end of their careers by being wealthy, independent, and "free" solo operators, socially elite bank founders instead became financiers searching for experienced partners, who knew their various industries even better than they did. This does not mean that competent leaders of partnership systems did not know their core business. They did, because they had past experience. But instead of doing the daily work themselves they delegated that to branch partners, assuming for themselves the role of investor, supervisor, and policy advisor—something similar to venture capitalists today (cf. Gompers and Lerner 1999).

In the interest of highlighting cross-domain feedback, we close by noting the consistency of this new economic role of quasi-venture-capitalist financier with emerging patron clientage in the politics of this same period. Similar to branch managers in the economic domain, clients in the political domain became actively recruited into the republican state in order to do the bidding of elite patrons increasingly off the primary institutional stage of the priorate (Najemy 1982; Kent 1975). In the domains of both economics and politics, elite patrons took one step back from the primary scene of action in order more effectively to manipulate others to do their bidding. The emerging role of financier is one aspect of that.

Bookkeeping

The consequences of all these organizational transformations for economic credit, and hence for the macroeconomics of Florence in the European trade system, will be dealt with in our companion article. But to understand the evolution of banking technique associated with what we are talking about, a few highlights of that analysis are presented here. At the level of bookkeeping, current accounts, which formally registered repeat relational trading based on credit, spread rapidly among Florentine bankers after 1380. *Conti di esercizio*, which emerged at about this same time (Melis [1972] 1987; Dini 2001), were the equivalent bookkeeping device for registering credit between bankers and manufacturers. Double-entry bookkeeping as an algorithm, which for the first time permitted an integrated calculation of assets, debts, and profit, was invented decades earlier, perhaps in Genoa. But in Florence this technique diffused widely only after 1380 (de Roover [1956] 1974), grounded mostly in the relational subunits of current accounts. Bilateral or *contrapposto* format was a visualization of this in Florentine bankers' account books: a person's or company's debits (*dare*) were aggregated and listed neatly on one page of the account book and his credits (*avere*) listed on the facing page of the same account book, thereby giving summary overviews of the current states of various economic relationships at a glance, as one turned the pages.

The rise of double-entry bookkeeping in Florence, based on current accounts, was associated with the leaving behind of the late medieval economic world of notarized contracts. Notarized contracts (and primitive account books) conceptualized economic exchange as transactions. Post-Ciompi Renaissance Florentine account books for the most part conceptualized economic exchange as relationships. As Florence moved its business organizational forms into partnership systems, it also moved its intercompany economic exchanges away from the logic of transactions into the logic of relational credit, as recorded in bilateral, double-entry, current-account bookkeeping. Relational credit, we demonstrate in our companion article, functioned like reciprocal gift giving. Massive liquidity, the basis of Florence's dominance of international finance throughout Europe, was created thereby.

Our co-worker, Piera Morlacchi, with the assistance of Ethel Santacroce, has examined 53 Florentine account books from the period 1259–1427, in order to trace the emergence of bilateral format in Florence over time. This sample of account books was drawn from two exhaustive inventories of extant account books compiled by Richard Goldthwaite: namely, Goldthwaite et al. (1995, pp. cxxvii–cxxxii), which covers the years 1211–1355, and Goldthwaite (private communication), which covers the years 1363–1427. Our sample was chosen from the Goldthwaite lists according to the following criteria: all *libri di debitori e creditori* (and equivalents like *libri del dare e dell'avere*) company account books, for the years 1255–1427, which were located in the *Archivio di stato* in Florence. The full coded data set, with citations to all qualifying account books, is provided in Morlacchi (2005).

Not redundantly counting multiple account books in single companies, the results of this survey were as follows:[87] (*a*) during 1259–99, 0/10 = 0% of the companies kept their books in bilateral format or *contrapposto*;

[87] The years listed here refer to the date at which the account book was initiated. Usually the closing date of the account book was considerably later. In particular, three of the *sovrapposto* account books initiated in the 1300–1348 period (namely those of Francesco Del Bene Bencivenni, Francesco di Jacopo Del Bene, and Vanni di ser Lotto Castellani) continued well into the 1350–77 period. *Sovrapposto* format records debits and credits in long chronological lists, with cross-references and cross-out to indicate payment. Double-entry bookkeeping can be constructed on the basis of *sovrapposto* format, but it is more difficult: a complex cross-referencing system is then required. Thus *contrapposto* format almost always indicates the presence of double-entry bookkeeping, but the absence of *contrapposto* does not indicate the absence of double-entry bookkeeping.

(*b*) during 1300–1349, 0/7 = 0% of the companies were *contrapposto*; (*c*) during 1350–77, 0/3 = 0% were *contrapposto*; (*d*) during 1382–99, 5/5 = 100% were *contrapposto*; and (*e*) during 1400–1427, 12/15 = 80% were *contrapposto*. There was a sharp and unambiguous transition to bilateral format in Florentine company account books, exactly around the 1382 date that the partnership system was born.

To examine this apparent causal linkage between partnership system and bilateral format more closely, we examined carefully the earliest two Florentine cases of bilateral format that survive: Paliano di Falco and Francesco Datini. Following another helpful suggestion by Richard Goldthwaite, Ethel Santacroce has transcribed the *ricordi* of Paliano di Falco, the first known Florentine to adopt bilateral format, on October 12, 1382.[88] Paliano di Falco (last name variously Paliani or Falcucci) was a cambio banker who enrolled in the *Arte del Cambio* in 1369, soon afterwards running his own small bank as a solo *cambiatore* in 1370 and in 1371. Paliano next appears in our records, through his *ricordi*, as a Perugia-resident partner within the Florentine partnership system of Giovanni Portinari and Ardingo Ricci, who themselves were Florentine cambio bankers, starting their company in Florence in 1372.[89] The home-office account books of Portinari and Ricci have been lost, but the fact that branch manager Paliano initiated bilateral format on exactly the same day on which the partnership in Perugia between Paliano and Ardingo Ricci was formed (ASF, *Carte Strozziane*, serie II, 7, p. 4) suggests a linkage between these two adoption events, even though Paliano's *ricordi* was actually a personal, not a company, account book. Paliano does not say so explicitly, but we presume that Paliano's bookkeeping practice conformed with that of his senior partners.

To confirm further this connection between partnership systems and bilateral-format bookkeeping, Piera Morlacchi, assisted by Padgett, consulted many of the account books of Francesco Datini, preserved in the Archivio di Stato di Prato (and hence not included in the sample survey above). As hypothesized, Datini's adoption of bilateral format in his bookkeeping procedures coincided perfectly in date with his adoption of the

[88] In Paliano's own words, "scriverollo alla viniziana cioè nelluna carta dare e a rinpetto lavere" (ASF, *Carte Strozziane*, serie II, 7, p. 1), thereby suggesting the proximate source of his method: Venice. See Kuehn (2002) for a discussion of the legal and social issues involved in Paliano's inheritance and will.

[89] The fact that the larger Portinari-Ricci cambio bank started in Florence in 1372, the year after Paliano's closure of his own small bank, plus the fact that Paliano appears as international partner immediately when Portinari and Ricci expand beyond Florence, gives the circumstantial impression that Paliano had gone to work for Portinari and Ricci in the 1372–81 interval, perhaps as a factor. This assumption would explain his promotion to partner in 1382, with substantial capital in hand to invest.

partnership system. Datini did not use bilateral format early in his career, when he ran his unitary trading company in Avignon. Indeed, even after Francesco left that city, his original company of Avignon lagged behind in adopting *contrapposto*, not switching to bilateral format until 1398. Rather, Datini's first adoption of bilateral format and double-entry bookkeeping was in his new Pisa branch in 1383, when Datini initiated his partnership system.[90] Subsequent branches adopted bilateral format as they were formed: in Florence in 1386, in Genoa in 1391, and in Barcelona in 1393.[91]

Our final example of the connection between partnership system and bilateral double-entry bookkeeping is that of Averardo di Francesco de' Medici. A 90-page fragment of Averardo's account book has survived from 1395, two years after Averardo in Florence formed a partnership system with his father Francesco in Genoa (see app. A). This account book was in bilateral-format double-entry bookkeeping (Ceccherelli 1913).

Therefore, if the sample survey and the first three known examples of usage are any guides, in Florence the adoption of the partnership system at the level of organizational form and the adoption of bilateral-format bookkeeping at the level of organizational practice were two sides of the same organizational-invention coin. Our interpretation of this tight empirical linkage is this: bilateral format and double-entry bookkeeping were useful in centrally managing the heterogenous companies that the partnership system created. Bilateral format lumped dense and recurrent flows with clients into easily visible current accounts; cross-branch transfers were the densest flows that required such inspection and central approval. In older unitary companies, heavily used current accounts among inside partners and employees existed and were called *conti interni*, whereas *conti externi* with outside clients were transactionally specific, with little recurrent use (Goldthwaite et al. 1995, pp. cxiii, cxvi). Partnership systems, almost tautologically, took *conti interni* and turned them into *conti externi*. As such, the logics governing internal transfers became externalized into the domain of intercompany relations, especially as external business relations themselves became more embedded into the enforceable "trust" inherent in Florentine elite structure. Intercompany transfer of credits among branches was the transitional step, we hypothesize, toward intercompany transfer of credits among systems. As the partnership system diffused, credit protocols, such as current accounts and bilateral format, were standardized and also spread.

[90] The account book in question is ASP, *Datini* 357.

[91] Even though technically founded in 1383, the Florence branch did not begin operations serious enough to require comprehensive bookkeeping until 1386, when Datini himself moved from Prato to Florence.

Rather than this bookkeeping evolution being an expression of some impersonal and teleological "spirit of capitalism" that left traditionalism behind, current accounts, bilateral formats, and double-entry bookkeeping were the formalization and measurement of deeply personalistic and multivocal relationships that transcended economics.[92] It is within these relationships themselves, and not in the formal accounting of them, that the secrets of Florentine financial capitalism—namely, merchant trust or *fiducia*, organizational flexibility, and credit liquidity—are to be found.

All of these internal organizational changes within the banking headquarters of partnership systems—namely, mixed (and fictive) kinship *padroni*, lead partners as financiers instead of entrepreneurs, and bilateral-format double-entry bookkeeping—added up the Florentine version of a "financial conception of control" (cf. Fligstein 1990). This quasi-venture-capital approach to control through the monitored sponsorship of others' mobility operated not just in banking but in multiple domains. This logic germinated, we believe, within partnership systems through the formal device of the modular partnership contract, and then translated into interfirm relations through the bookkeeping device of the current account. Like spiders, popolani bankers constructed interlocking webs of financial pooling, credit, and obligation, both within their strong-tie world of partnership contracts and within their weaker-tie world of account books, constructing thereby others' wealth and transforming everyone, including themselves, in the process. Such webs of partnership and credit became the social-network constituents of financial markets. They also became tools for political and social elites when used in other contexts, for other purposes.[93]

CONCLUSION

Despite the fact that Renaissance Florentines invented financial capitalism and much else that we associate with modernity, we agree with contemporary historians who stress the traditionalist *mentalité* of the era. Florentines were too drenched in concerns with family, marriage, status, and clientage, not to mention the ever-looming threat of early mortality (Cohn 2002), to appear to be cognitively very much like us, even though they

[92] McLean and Padgett (1997) demonstrate the statistical lack of fit between the neoclassical model of perfect competition and Florentine transactional data from the 1427 catasto. See also Goldthwaite (1987, p. 23).

[93] The modeling literature on neural-net connectionism (e.g., Bechtel and Abrahamsen 1991) demonstrates clearly how single networks can compute multiple rules, when perturbed in different ways. Within the Florentine literature, Weissman (1982, 1989) shares our perspective on the multifunctionality of credit.

frequently did things that look very much like what we do. Social science efforts to impose modernist models of ourselves on the past do violence to our comprehension of that past. More important, they lead us to miss the opportunity to learn what the ancients have to teach us, about social science, among other things. Listening to, not testing preconceived ideas about, the past is how to learn.

Vasari (1991) and Burckhardt ([1878] 1990) invented the concepts of individual genius and Renaissance to explain the remarkable achievements of late medieval Florence. But if we try to listen to the Florentines of the past through systematic sifting of their voluminous records, then we can learn about those achievements' institutional and social-network dimensions, which do not speak straightforwardly to us in words. What those aggregated thousands of archival voices have told us, albeit in our own descriptive language, not in theirs, is transposition, refunctionality, and catalysis. Organizational inventions (as opposed to innovations) are transpositions of relational logics from one domain to another, which attain new purposes in the new domain, whose reproduction is positively reinforced to the point that it alters interactions among others in the new domain. Florentine inventions were more than good ideas. They were discontinuous system tippings, rooted in reproductive feedbacks among dynamic multiple social networks. This process explains how genesis and path dependence historically went hand-in-hand.

Transposition, refunctionality, and catalysis are "network folding" mechanisms underlying the collective production of organizational invention. Important as Renaissance Florence is in its own right, the discovery of these mechanisms is relevant beyond even this paradigmatic case because it opens the black boxes of "stochastic process" and "genius," the usual two nonexplanations of invention. In biology, life is the self-organization and reproduction of two forms of chemical flow: metabolic flow of food among species within generations and genetic flow of DNA within species across generations. Speciation is the reorganization and then reproduction of these transformational flows. This article developed an analogous perspective on the emergence of actors from intersections of social-relational flows, within a multiple-network architecture. "Metabolic flow" was operationalized as biographies. Biographies wend through organizations and transform the people flowing through them, usually into reproducing the roles and interests contained within those organizations. Occasionally but not often, when catalyzed to do so, biographies and the people flowing along these mobility paths tip their self-regulation and transform themselves. "Genetic flow" was operationalized as organizational reproduction of relational logics. Selection in the multiple domains of markets, politics, and kinship lock in sets of relational logics that catalyze each other, not always optimally, through coevolution.

Interdependent “ways of doing things” usually require predictability in inputs and outputs collectively to function. But occasionally, the rewiring of old logics into new purposes (i.e., refunctionality) opens a new trajectory for path-dependent system transition. We look to transformational feedback between interlinked biographies, on the one hand, and the reproduction of relational logics, on the other, to analyze the poisedness of a multiple-network system either to equilibrial lock-in or to organizational tipping and invention.

Specifically, the Florentine invention of the economic partnership system was a hybridization of the two relational logics of patrilineage and guild through the means of political republicanism. Rechannelling the political biographies of guildsmen, after the guild system had been politically defanged, broke down the previous segregation of patrilineal logic into international business and guild logic into domestic business, and it blended modular guild partnership methods from domestic cambio banking into the patrilineal world of international trade. A decisive system-tipping move in politics (not entirely by choice) was to dramatically increase the number of Florentines eligible for and nominated to political office at the same time as selection procedures for those offices were centralized. The more-or-less direct effect in politics was an explosion of patron-client relations. Organizational change in economics was an indirect effect as the *padrone* role emerging in Florence more generally influenced the partnership and credit logics of the upper tier of business as well. In kinship continued pressure on the patrilineage to internally differentiate may have been a third consequence, although that was also a long-term trend. All of these organizational changes were aspects of the emergence of a new style of elite—part businessman, part politician, part patriarch, part intellectual esthete—that we have come to call the Renaissance man. In network terms, we interpret this emergence as an expression of an underlying transformation in the core relational logics of the society from patrilineage and guild to marriage and clientage.

This article has focused more on mechanism than on structural preconditions. More research into the earlier 14th century (cf. Brucker 1962; Najemy 1982) is required in order to uncover the exact topology of the patrilineage-guild-ensemble network that tipped in the Ciompi revolt. But even at our current level of understanding, it is clear why Florence had a different evolutionary trajectory than did Venice and Genoa, the two most obvious comparative cases. Namely, even though the relational logic of patrilineage was similar in all of these cities, the relational logic of guild was strong only in Florence.

Venice and Genoa had their own forms of economic invention, to be sure, but not in international finance or partnership systems.[94] Patrilineage was pervasive everywhere within the elites of northern Italy (Waley 1969), but guild corporatism was politically weak in the comparison cities, depriving those cities of the guild half of the Florentine fusion. Perhaps related to this historical fact, neither city experienced the degree of social-mobility-driven political turmoil that Florence did. Venice exhibited great stability in its legally closed aristocracy; hence it was known as the *serenissima* or most serene republic. The corollary in Venetian banking of this almost castelike political stability was a strict segregation between domestic deposit banking, in which the small number of specialized Rialto bankers excelled, and international banking, which was delegated to the Florentines (Mueller 1997*a*, pp. 3–32, 255–87). Rich Venetian merchants were shippers and traders (Lane 1967), not mixed-mode merchant-bankers like the Florentines. And Genoa, like Florence before the Black Death, had deep and persistent factional feuds and civil wars based on patrilineage (Epstein 1996). The corollary in Genoese banking of this intraelite turmoil and distrust was a strong transactionalist focus, with economic actors on both the domestic and the international levels spreading around short-term economic partnerships, investments, and accounts among many alters, to cushion risk (Heers 1983, pp. 77–80, 136–41).[95] In coarse-grained contrast to Venice on the one side and to Genoa on the other, post-Ciompi Florence appears to be relational and oligarchic, with porous (because of co-optation) elite boundaries.

A final thing about which the Florentines can teach us is the perspectival construction of identity. As developed by Brunelleschi and Masaccio and explained by Alberti ([1435] 1991), visual perception of objects operate through linear perspective, in which the two-dimensional spatial arrangement of objects in a painting are artfully arranged to create the perception of a third dimension—a line stretching from a focal-point location on the horizon in the painting back toward the viewer. This line suggests movement of the viewer into the painting toward the focal point. We think that the partnership system, with its array of account books at its base, had a similar effect on the perceptions of Florentine businessmen at its center.[96] In a modularized partnership system, the senior owner is both

[94] For example, short-term *commenda* voyage contracts and insurance (Lane 1973; Lopez and Raymond 1990).

[95] We disagree with Greif's (1994) characterization of Genoa as "individualistic." The transactional focus of Genoese economics was socially embedded in deep conflict among strong patrilines or *alberghi* (Hughes 1975*a*, 1975*b*, 1977).

[96] Since the invention of the partnership system preceded the invention of linear perspective by only a few years, it is tempting to suggest a causal relationship between these, especially in light of Baxandall's analysis ([1972] 1988) of the strong mercantile sensibility of Florentine artists. But that is only speculation on our part.

inside (entrepreneur) and above (financier) his array of companies at the same time. The multiplicity of heterogeneous account books that he is forced to manage, keeping track of complex cross-flows of goods, finance, and credit, necessitated systematization and abstraction analogous to the arrangement of space in a linear-perspective painting. Current accounts, which really were reified people and customers, were arrayed mathematically, with double-entry bookkeeping used to calculate the financial flows and the businessman's own line of movement, called profit. Businesspeople always want to make money in some loose sense, as well as to do other things. But the precision involved in "maximization of profits" over multiple streams of transactions is inconceivable without the array of cross-connected account books that lies at the base of the partnership system. In the sense of perception, the account books themselves induced the Florentine businessman to walk into this line of movement. More generally we conclude that goals are our cognitive perspectives on the trajectories of flows, financial and biographical, to which organizational networks subject us in their processes of reproduction.

We end with this salute of appreciation: innovation in the sense of getting someone to try something new is relatively easy. Invention in the sense of getting an entire system to tip into a new trajectory of evolution is extremely hard. Because of this, we thank both the *ciompi* and the obscure 1382 moderates for the Florentine Renaissance.

APPENDIX A

Post-Ciompi Partnership Systems: 1385–1399

In this appendix are all the companies, triangulated from the collated sources listed above, which were composed of two or more partnerships, simultaneous in time, linked through shared businessmen. (Simultaneity of temporal overlap is not always perfectly known from the sources.) The asterisk (*) denotes that the partnership system in question was also centralized, meaning that all of the linked partnerships were linked through a single businessman at some point in the simultaneous lives of the partnerships. Other than those for Datini and for Medici, where supplementary secondary sources exist, the dates given for international trading companies refer to the dates of business letters between the company in question and Datini, not to the complete durations of such companies, which are unknown. These business-letter dates are contained in the extensive footnotes of Melis (1962). Dates for cambio banks, on the other hand, refer to the complete durations of the company in question, as recorded in Arte del Cambio annual censuses. Dates at which the lead partner first matriculated into his guild(s) are also provided.

I. Composed of International Merchant Banking and Cambio Banking

A. Large Partnership Systems, with Three Branches or More

*1. *Francesco di Marco Datini*: (cambio guild = 1398, calimala guild = 1404) (merchant of Prato, but part of Florentine economy)
- a. International merchant banking
  - Avignon: with Niccolo di Bernardo, 1363–64
    - with Tuccio Lambertucci, 1365–67
    - with Toro di Berto and Tuccio Lambertucci, 1367–73
    - solo, 1373–82
    - with Boninsegna di Matteo and Tieri di Benci, 1382–85, 1391–1401
    - with Boninsegna di Matteo, Tieri di Benci, and Andrea di Bartolomeo, 1386–90
    - with Tieri di Benci and Tommaso di ser Giovanni, 1401–10
  - Florence: solo, 1383–88
    - with Stoldo di Lorenzo di ser Berizo and Falduccio di Lombardo, 1388–90
    - with Stoldo di Lorenzo di ser Berizo, 1390–1404
    - with Luca del Sera and Francesco di ser Benozzo Pieri,

1404–10

Pisa: solo, 1383–92

Florence company (= Datini and Stoldo) and Manno d'Albizo degli Agli, 1392–1400

Florence company, 1400–1410

Genoa: Florence company, Andrea di Bonanno di ser Berizo, and Luca del Sera, 1392–96

Florence company and Andrea di Bonanno di ser Berizo, 1396–1400

Florence company, 1400–1401

Catalonia (Barcelona, Valencia, and Maiorca): Genoa company, 1393–96

Florence company, Luca del Sera, and Cristofano di Bartolo Carocci, 1396–98

Florence company, Luca del Sera, Cristofano di Bartolo Carocci, and Simone Bellandi, 1399–1403

with Luca del Sera, Cristofano di Bartolo Carocci, and Niccolo di Giovanni, 1404–10

b. Florentine cambio banking: with Bartolomeo Cambioni, 1398–1401

c. Wool manufacturing (not in Florence):

Prato: with Piero di Giunte del Rosso and Francesco di Matteo Bellandi, 1384–87

with Niccolo di Piero di Giunte del Rosso, 1391–95

with Agnolo di Niccolo di Piero di Giunte del Rosso, 1396–99

*2. *Vieri di Cambio de' Medici*: (cambio guild = 1348) (also in 1348–58 Alberti as banchiere and in 1369 list of Florentine traders using Pisa port)

a. Florentine cambio banking

with Tommaso di Diedati Baronci, 1349–52

with Lodovico Pini, 1353–62

with Lodovico Pini and Gregorio di Pagnozzo Tornaquinci, 1363–65

with Gregorio di Pagnozzo Tornaquinci and Giacomo di Gocci Tebalducci, 1366–68

with Gregorio di Pagnozzo Tornaquinci, Giacomo di Gocci Tebalducci, and Filippo di Michele Ticci, 1369–73

with Niccolo di Riccardo Fagni, Giovanni di Arrigo Rinaldeschi, and Bartolomeo di Tommaso, 1380

with Niccolo di Riccardo Fagni, Giovanni di Arrigo Rinaldeschi, Francesco di Bicci Medici, and Jacopo di Francesco Ventura, 1382–83

with Francesco di Bicci Medici and Jacopo di Francesco Ventura, 1384–85
with Francesco di Bicci Medici, Jacopo di Francesco Ventura, and Antonio di Giovanni Medici, 1386–91

b. International merchant banking (same marche):
Genoa: with Francesco di Bicci Medici, 1382/1384–1393
Rome: with Giovanni di Bicci Medici, 1385–93
Venice: with Francesco Venturi, 1382/1384–1395
Bruges: solo

*3. *Giovanni di Bicci de' Medici*: (cambio guild = 1385, lana guild = 1403) (same marche; company descended from Vieri di Cambio de' Medici's company)

a. Florentine cambio banking:
with Benedetto di Lippaccio Bardi and Gentile di Baldassare Buoni, 1397
with Benedetto di Lippaccio Bardi, 1398–99+

b. International merchant banking:
Rome: with Benedetto di Lippaccio Bardi, 1393–1401
Venice: with Benedetto di Lippaccio Bardi, 1398–1400+
Naples and Gaeta: Benedetto Bardi, 1387–1406
Naples: Castellano di Tommaso Frescobaldi, 1400

*4. *Averardo di Francesco di Bicci de' Medici*: (cambio guild = 1390) (same marche; company descended from Vieri di Cambio de' Medici's company)

a. Florentine cambio banking:
with Francesco di Daldo Cantini and Andrea di Antonio Frediani, 1390–92
with Francesco di m. Alessandro Bardi and Andrea di Antonio Frediani, 1393–97
with Francesco di m. Alessandro Bardi and Lorenzo di Cioni Buoni, 1398–99+

b. International merchant banking:
Genoa: with Francesco di Bicci Medici, 1393–
Francesco Bardi, 1393–1401+
Barcelona: Andrea Pazzi (he became a partner in Rome after 1400)

*5. *Manetto and Davanzato di Giovanni Davanzati*: (cambio guild = 1356 and 1360) (same marche; both also in 1369 list of Florentine traders using Pisa port)

a. Florentine cambio banking:
Davanzato and Manetto di Giovanni Davanzati, 1360–99+
with Primerano di Giovanni Pigli and others, 1360–81
with Gianno di Jacopo Gianni, 1382–94

with Gianno di Jacopo Gianni and Jacopo di Cambio Nucci, 1395–98

b. International merchant banking:
Venice: Manetto di Giovanni Davanzati, 1384–1402
Bologna: Manetto di Giovanni Davanzati

6. *Ardingo di Corso Ricci and Gualtieri di Sandro Portinari*: (cambio guild = 1372 and 1387) (same marche)

a. Florentine cambio banking:
Paliano di Falco, solo, 1370–71 (cambio guild = 1369)
Ardingo di Corso Ricci and Giovanni di Sandro Portinari, 1372–76
Ardingo di Corso Ricci, Giovanni di Sandro Portinari, and Jacopo di Filippaccio Rinaldeschi, 1380–87
Ardingo di Corso Ricci, Gualtieri di Sandro Portinari, and Jacopo di Filippaccio Rinaldeschi, 1388–97

b. International merchant banking:
Perugia: Ardingo di Corso Ricci and Paliano di Falco, 1382–88
Giovanni Ricci, 1397–1400
Genoa: Gualtieri di Sandro Portinari and Giovanni di Ardingo Ricci, 1388–89
Rome: Corso Ricci and Paliano di Falco, 1393–97

*7. *Francesco di Neri Ardinghelli*: (cambio guild = 1371, lana guild = 1399)

a. Florentine cambio banking:
with Filippo di Neri Ardinghelli, 1371–83
with Bartolomeo di Zanobi Baldesi, Niccolo di Riccardo Fagni, Guido di Filippo Fagni, Jacopo di Niccolo Cardinali/Tornaquinci, and Piero di Guidone Bonciani, in various combinations, 1383–99+

b. International merchant banking (same marche):
Florence: with Bartolomeo di Zanobi (same as cambio above?)
London: with Gherardo Davizzi

8. *Tommaso di Guccio Soderini and Tommaso Amidei*: (calimala guild = 1377, cambio guild = 1391; calimala guild = 1378, wool guild = 1399) (both Tommaso Soderini and Tommaso Amidei also in 1391 Calimala list)

a. International merchant banking:
Florence and Avignon (in Renouard 1938): Tommaso Soderini, 1374–?
Florence and Rome (same marche):
Tommaso Amidei
Turingo Amidei

Stoldo Altoviti and Tommaso Soderini
Florence merchant banking (same marche, but different from the one above):
Tommaso Soderini and Tommaso Amidei
Tommaso Soderini and Filippo di Piero
Stoldo Altoviti
b. Florentine cambio banking:
Tommaso di Guccio Soderini and Filippo di Piero Rinieri, 1392–99+

*9. *Niccolo di Giovanni da Uzzano*: (calimala guild = 1376, cambio guild = 1381)
a. International merchant banking:
Florence: solo (also in 1391 Calimala list of companies)
b. Florentine cambio banking:
with Agnolo di Giovanni da Uzzano, Antonio di Agnolo da Uzzano, Bernardo di Bruno Ardinghelli, and Pierozzi di Giovanni Francesi, 1387–99+
c. Wool manufacturing:
with Lorenzo di Giovanni, 1382–

*10. *Giovanni di Jacopo Orlandini*: (cambio guild = 1382; calimala guild = 1393) (same marche)
a. Florentine cambio banking:
solo, 1383–84, 1394–95
with Piero Benizzi and Duti di Filippo, 1396–99+
b. International merchant banking:
Bruges: with Piero Benizzi, 1395
London: with Neri Vettori, 1395–1405
Paris: with Antonio di Sandro Cittadini, 1401–6

*11. *Francesco di Simone Tornabuoni*: (cambio guild = 1396; calimala = 1410) (same marche)
a. Florentine cambio banking:
Simone di Tieri Tornaquinci, 1354–93
Filippo di Simone Tornaquinci/Tornabuoni, 1394–97
with Filippo di Simone Tornabuoni, 1398–99
b. International merchant banking:
Florence: Simone Tornaquinci (not same company as cambio, since Datini lists separately)
London and Bruges: with Piero Cambini, 1395–1401 (link to Cambini system, below)
London: with Domenico Caccini, 1401–4

12. *Doffo di Nepo Spini*: (cambio guild = 1392)
a. Florentine cambio banking: (an early spinoff of Vieri di Cambio Medici)

Giacomo di Gocci Tebalducci and Filippo di Michele Ticci, 1369–75

Giacomo di Gocci Tebalducci, Filippo di Michele Ticci, and Antonio di Jacopo del Vigna, 1376–90

Giacomo di Gocci Tebalducci, Filippo di Michele Ticci, Antonio di Jacopo del Vigna, Bartolomeo Bonaiuti, and Doffo di Nepo Spini, 1391–95

Antonio di Piero Spini and Agnolo di Luigi Spini, 1388–94

b. International merchant banking:

Rome: Antonio di Jacopo, Doffo di Nepo Spini, and Piero Bardelli, 1391–1401

Naples: Antonio di Jacopo and Doffo di Nepo Spini, 1396–1405

*13. *Niccolo di Bartolomeo Capponi and Domenico di Domenico Giugni*: (cambio guild = 1392, wool guild = 1395; cambio guild = 1392, wool guild = 1393)

a. Florentine cambio banking:

Niccolo di Bartolomeo Capponi and Domenico di Domenico Giugni, 1393–96, 1398–99+

b. International merchant banking:

Genoa: Niccolo di Bartolomeo Capponi and Domenico di Domenico Giugni, 1393–95

c. Wool manufacturing (?): (this inferred based on the two wool guild memberships)

B. Smaller Partnership Systems, with Two Branches Only

*14. *Piero Fastelli (de Petriboni)*: (cambio guild = 1340; lana guild = 1375; silk guild = 1374) (also in 1348–58 Alberti as banchiere, and in 1369 list of traders using Pisa port) (active in both cambio and international merchant banking, but never developed a true partnership system)

a. Florentine cambio banking (marche 65):

with Ubaldino Fastelli, 1340–41

with Tommaso di Diedati Baronci, 1344–46

with Ubaldino Fastelli and/or Jacopo di Ubaldino Fastelli, 1353–76

solo, 1380–87

with Matteo and Fastello di Piero Fastelli, 1388–99+

b. Wool manufacturing:

solo, 1382–

15. *Gucciozzo di Ardingho Ricci* (marche 114): (cambio guild = 1348, calimala guild = 1393) (an old cambio banker; very late arrival to

the partnership-systems game through son)
  a. Florentine cambio banking:
    with Tedaldino di Roggerio Ricci and Piero di m. Jacopo Ricci, 1348–49
    with Tedaldino di Roggerio Ricci and Bartolo di Giovanni Siminetti, 1350–65
    with Bartolo di Giovanni Siminetti, Bardo di Tingho Mancini, and Matteo di Bonaccorso Alderotti, plus various additions of Filippo di Pieri Rinieri, Zanobi Martini, Piero di Lorenzo Mancini, and Ridolfo di Guidone Cavalcanti, 1366–71
    with Filippo di Gucciozzo Ricci and Ardingho di Gucciozzo Ricci, plus the occasional addition of Piero di Jacopo Baroncelli or Bartolomeo di Leonardi Bartolini-Salimbene, 1372–90
    with Ardingho di Gucciozzo Ricci, 1391
    with Ardingho di Gucciozzo Ricci, Matteo di Gucciozzo Ricci, Niccolo di Gucciozzo Ricci, Sanminiato di Gucciozzo Ricci, and Jovacchino di Gucciozzo Ricci, 1392
    solo, 1398
    with Ardingho di Gucciozzo Ricci, Matteo di Gucciozzo Ricci, and Cristofano di Gucciozzo Ricci, 1399+
  b. International merchant banking:
    Rome: Matteo di Gucciozzo Ricci, 1401–6

*16. *Luigi di m. Piero Guicciardini*: (cambio guild = 1370; calimala guild = 1393)
  a. Florentine cambio banking:
    with Andrea di Cappone Capponi and Bonaccorso di Cappone Capponi, 1370–72
    solo, 1373–76
    with Duti Filippi and Piero di Antonio Benizzi, plus at various times Agostino Lutozzi and Niccolo di Luigi Guicciardini, 1382–94
    solo, 1395–99+
  b. International merchant banking:
    Florence and Bruges: solo

*17. *Niccolo di Jacopo Guasconi*: (wool guild = 1365; cambio guild = 1384)
  a. Florentine cambio banking:
    with Filippo di Carduccio Aldobrandini, 1385–96
  b. International merchant banking:
    Genoa: with Simone di Niccolo Guasconi, 1393–96

*18. *Ruggieri di m. Giovanni Ricci*: (cambio guild = 1384) (same marche)

a. Florence cambio banking:
with Niccolo di Pagnozzo Cardinali, Giovanni Arrigi Rinaldeschi, and Simone di ser Petro Lafioraria, 1384–87
with Tommaso di m. Giovanni Ricci, Giovanni Arrigi Rinaldeschi, Giovanni di Ruggieri Ricci, and Maghinardo di Pinuccio Bonciani, 1388–90
with Giovanni Arrigi Rinaldeschi, Giovanni di Ruggieri Ricci, and Maghinardo di Pinuccio Bonciani, 1391–96
b. International merchant banking:
Florence and Genoa: with Mainardo Bonciani 1395

*19. *Antonio and Uberto di Bartolomeo Cavalcanti*: (cambio guild = 1389 and 1387)
a. Florentine cambio banking:
with Niccolo di Pagnozzo Cardinale and Simone Lafioraia, 1387–90
with Jacopo and Filippo di Biagio Guasconi, Giovanni di Filippo Rondinelli, 1391–95
b. International merchant banking:
Genoa: together, 1395

*20. *Baldassare di Simone Ubriachi*: (cambio guild = 1368) (same marche)
a. Florentine cambio banking:
with Filippo di Arrigo Bonaiuti, 1368–71
with Guccio di Cino Bartolini de Nobili, 1389–91
b. International merchant banking:
Venice: solo

*21. *Antonio di Guccio and Matteo di Miniato Nucci*: (cambio guild = 1397 and cambio guild = 1393) (same marche)
a. International merchant banking:
Barcelona: together, 1383–97
b. Florentine cambio banking:
with Guccio di Guccio, 1395–97

*22. *Gherardo di Jacopo Canigiani*: (cambio guild = 1387) (same marche)
a. Florentine cambio banking:
with Luigi di Piero Canigiani, 1387–99+
b. International merchant banking:
Florence: with Luca Canigiani
Pisa: with Antonio Canigiani, 1401–10

*23. *Giovanni di Rinieri Peruzzi*: (cambio guild = 1392; calimala guild = 1396) (same marche)
a. Florentine cambio banking:
with Cante di Giovanni Compagni, 1392–99+

b. International merchant banking:
Florence: solo

*24. *Antonio di Niccolo Dietifeci*: (cambio guild = 1391; calimala guild = 1394) (perhaps wool not simultaneous)

a. Wool manufacturing:
solo, 1382–

b. International merchant banking:
Venice: Niccolo Dietifeci and Giovanni di Adoardo Portinari, 1384–, Antonio di Niccolo Dietifeci, 1395

c. Florentine cambio banking:
with Bonaccorso di Niccolo Dietifeci and Piero di Georgio Dati, 1391–95
solo, 1396

II. Composed of International Traders or Merchant-Bankers Only

A. Large Partnership Systems, with Three Branches or More

25. *Alberti family*: (many Alberti in 1391 Calimala company list and guild) (fragmented third-generation leftovers from a more glorious past) (besides Melis [1962], see also Melis [1956] and Foster [1985], but structure still not entirely clear)

25a. Ricciardo di Benedetto di m. Nerozzo Alberti: (calimala guild = 1391; lana guild = 1391)
Florence: Benedetto di m. Nerozzo Alberti, 1372–87
Florence: with Nerozzo di Bernardo Alberti, 1388–1400 (and with Piero di Marco e Matteo di Metto in “early 1390s”)
Sicily and Valenzia: with Bivigliano di Marco Alberti, Niccolaio di Marco Alberti, and Antonio di Tommaso Alberti, 1390–
Florence: with Antonio di Niccolaio Alberti (earlier independent of Ricciardo) and Niccolo di Luigi Alberti, 1395–

25b. Bernardo (di Nerozzo?) Alberti: (calimala = 1353)
Bruges, Bologna, and Venice: with Alberto di Bernardo Alberti
Wool manufacturing: Alberto di Bernardo Alberti and Giovanni Pagni, 1382–
Agnolo di Bernardo Alberti, 1380s (Foster 1985)
Venice: Bernardo (di Benedetto?) Alberti, 1399–1411

25c. Niccolo di Luigi Alberti: (calimala guild = 1391) (wool not simultaneous?)
Wool manufacturing: Niccolo di Luigi Alberti, 1382–
Florence: solo
London: with Calcidonio Alberti, 1397–99
Palermo: Simone Alberti and Jacopo Guardi

25d. Diamonte and Altobianco Alberti: (Diamonte: calimala guild = 1393)
Venice: Diamante and Altobianco Alberti, 1398
Bruges: Diamante and Altobianco Alberti, 1398
Palermo: Antonio Alberti, then Piero Alberti (same marche as Diamante and Altobianco)
25e. Gherardo Alberti: (calimala guild = 1391)
Paris: with Niccolo Ramaglianti
London: solo, 1398–99
26. *Mannini brothers*: (Luigi, Salvestro, and Antonio in calimala guild = 1391, 1400, 1401)
Florence: Alamanno and Luigi Mannini (marche 87)
Bruges: Luigi and Salvestro di Giovanni Mannini (marche 87)
London: Antonio and Alamanno di Giovanni Mannini, 1391–1400
Rome: Antonio and Luigi di Giovanni Mannini, 1396–98 (for Rome, Esch [1966] says Antonio, Lodovico, Alamanno, and Salvestro, 1394–1400)
Paris: Salvestro di Giovanni Mannini, 1395–1400
27. *Ramaglianti brothers*: (Stefano: calimala guild = 1385)
a. International ritagliatori:
Paris: Stefano Ramaglianti and Alessandro Ramaglianti, 1384
Stefano Ramaglianti and Deo Ambrogi, 1389–90
Stefano Ramaglianti and Niccolo Ramaglianti, 1395–1406
Niccolo Ramaglianti and Gherardo Alberti
Paris: Matteo Ramaglianti and Deo Ambrogi, 1390
Matteo Ramaglianti and Paolo di Paolo Ramaglianti, 1391–93
Paolo di Paolo Ramaglianti and Jacopo Ginocchi, 1393–95
b. Florentine cambio: (cambio is not simultaneous with international company for Paolo)
Paolo di Paolo Ramaglianti (cambio guild = 1387) and Bernaba di Giovanni Agli (lana guild = 1389, cambio guild = 1395, calimala guild = 1401), 1395–99
*28. *Deo Ambrogi*: (no guild) (same marche)
Bruges: with Giovanni Franceschi
Montpelier: with Giovanni Franceschi, 1391–1408
Paris: with Benedetto Cambini, 1385–1408
Paris: with Matteo Ramaglianti, 1390
*29. *Piero Cambini*: (no guild) (same marche; linked to Tornabuoni system)
Florence: solo
Rome: with Riccardo Bencivenni
Bruges and London: with Francesco di Simone Tornabuoni,

1395–1401

*30. *Antonio di Benincasa Alamanni*: (no guild) (same marche)
Florence: Simone Rinuccini and Benincasa Alamanni
Avignon: solo
Venice: with Jacopo di Tedaldo Benozzi, 1387–89, 1392

*31. *Nello di ser Bartolomeo Gherardini/Ghetti*: (same marche)
Cesena: with Domenico di Biagio di ser Nello Gherardini
Bologna: with Matteo di ser Nello Gherardini, 1391–1409
Venice: Antonio di ser Bartolomeo Gherardini

B. Small Partnership Systems, with Two Branches Only

32. *Edoardo di Giovanni Portinari*: (calimala guild = 1392) (same marche)
Florence: with Paolo di Francesco
Giovanni di Edoardo Portinari and Paolo di Francesco, 1400
Rome: Bernardo di Edoardo Portinari and Giuliano di Giovanni Portinai, 1393–1404

*33. *Bartolo di Bartolo Bonciani*: (same marche)
Naples: with Turino di Burcello
Palermo: with Vannuccio Petrucci, 1387–89

34. *Niccolo di Paolo Corbizzi*: (same marche)
Montpelier: solo, 1370–85
Florence: with Filippo di Paolo Corbizzi (also in 1391 Calimala list)

35. *Antonio Maffei*: (same marche)
Verona: solo, 1396–98
Venice: with Matteo Maffei

*36. *Zanobi di Taddeo Gaddi*: (different marches)
Venice: solo, 1385–1400
Montpelier: with Jacopo Ruspi, 1396–99

*37. *Gentile di Baldassare Boni*: (cambio guild = 1396)
Florence: with Niccolo di Baldassare Boni
Pisa: with Lorenzo di Cioni del Buono, 1395

38. *Sandro Mazzetti*: (same marche)
Florence: solo
Naples: with Guido Pilestri, 1396–98

39. *Andrea Cei*: (same marche)
Perugia: solo
Rome: with Giovanni di Geri Bartoli

40. *Filippo Lorini*: (wool guild = 1370; calimala guild = 1384) (same marche)

Florence: solo
Barcelona: Antonio di Filippo Lorini and Michele di Simone, 1382–1401

41. *Luca di Giovanni Cambi*: (silk guild = 1384; cambio guild = 1394) (only in Esch [1966])
Rome: solo, 1390–1401
Venice: with Domenico di Giovanni Rettini, 1390

III. International Trading and Textile Manufacturing

42. *Sons of Carlo Strozzi*: (all sons in calimala guild = 1398) (same marche; a family alliance)
  a. International trading or merchant banking:
    Florence: Strozza di Carlo Strozzi (in 1391 calimala list)
      Lorenzo di Carlo Strozzi
    Valencia: Uberto Strozzi
    Genoa: Piero di Carlo Strozzi, 1396–98
  b. Silk manufacturing:
    Piero di Carlo Strozzi and Niccolo del Barna
43. *Piaciti brothers*: (wool guild = 1384 and 1388) (same marche; a family alliance)
  a. Wool manufacturing:
    Tommaso di Gherardo Piaciti
  b. International trading:
    Venice: Bindo di Gherardo Piaciti, 1394–1407
44. *Giannozzo di Neri Vettori*: (cambio guild = 1350) (perhaps sequential, not system)
  a. Wool manufacturing:
    solo, 1382–
  b. International trading:
    Naples: with Grazia di Tuccino
45. *Giovannozzo di Francesco Biliotti*: (wool guild = 1364; calimala guild = 1393) (perhaps sequential, not system)
  a. Wool manufacturing:
    solo, 1382–
  b. International trading:
    Pisa: with Leonardo Altoviti, 1392–95

IV. Cambio Banking and Textile Manufacturing

*46. *Bartolomeo di Lippo Petriboni*: (cambio guild = 1373; wool guild = 1377)

a. Florentine cambio banking:
with Cherichino di Cristofano Petriboni, 1373–94
also with Pierozzo di Jacopo Aliotti, 1391 and 1393
solo, 1395–97
b. Wool manufacturing:
with Giovanni di Cristofano, 1382–

*47. *Ubaldino di Bindo Guasconi*: (cambio guild = 1383)
a. Wool manufacturing:
solo, 1382–
b. Florentine cambio banking:
with Neri Bencivenni, 1384–85

48. *Giovanni di Nofri Bischeri*: (wool guild = 1375; cambio guild = 1394) (probably sequential, not system)
a. Wool manufacturing:
with Nofrio di Giovanni Bischeri (his father), 1382–
b. Florentine cambio banking:
with Filippo di Luigi Quaratesi, 1394–96
solo, 1397

Sources:

1. Melis (1962, tables 27, 28, 31, 32, 35, 36, 39, 40). (Through double-checking the partnerships reported in these tables with dates of the business letters cited by Melis in his extensive footnotes, we eliminated the subset of his listed companies that did not operate in the 1385–99 period of interest to us.)
2. ASF, *Arte del Cambio* 12, 14.
3. 1391 calimala list.
4. ASF, *Manoscritto* 545.
5. ASF, *Arte della Lana* 46.
6. Silva (1908).
7. Renouard (1938).
8. Esch (1966, pp. 374–85).
9. Melis (1956, pp. 25–31).

ARCHIVAL PRIMARY SOURCES

ASF (Archivio di Stato di Firenze). *Arte del Cambio* 11, 14, 15, 16: Annual guild censuses of banks doing business in Florence, covering periods 1340–99 and 1460–1520. (Books for intervening period 1400–1459 unfortunately are lost. After 1500, censuses appear to be unreliable.)

———. *Arte del Cambio* 12: Matriculants (1330–1500) and consuls (1280–1500) of the banking guild.

———. *Arte della Lana* 20: 1353 census of active wool manufacturers.

———. *Arte della Lana* 46: 1382 census of wool-manufacturing firms by the wool guild (pp. 114–17), 1384 *balìa* membership and decisions (pp. 154–66).

———. *Balìe* 17: 1378 *balìa* membership (p. xx), 1382 *balìa* membership (p. 22), 1393 *balìa* membership (pp. 80–86, 105–7).

———. *Carte Strozziane*, serie II, 7: *Ricordi* of Paliano di Falco, 1382–1404.

———. *Catasto* 15–63 (*Portate dei Cittadini*): Original 1427 tax submissions of Florentine citizens.

———. *Catasto* 64–85 (*Campioni dei Cittadini*): Scribal summaries of citizens' 1427 tax submissions. (Thanks to the labors of David Herlihy and Christianne Klapisch-Zuber, a computerized subset of this information, not including the debitori and creditori analyzed here, is available online at http://www.stg.brown.edu/projects/catasto. These researchers also deposited a microfilm copy of the *campioni* documents themselves at the Center for Research Libraries at the University of Chicago.)

———. *Estimo* 306: 1351 tax assessments of Florentine residents. (Microfilm copy generously donated to Padgett by Samuel Cohn.)

———. *Estimo* 268: Misfiled 1378 *prestanza* tax assessment for Santo Spirito residents.

———. *Manoscritto* 545: Arte della Calimala matriculation.

———. *Manoscritti Carte dell'Ancisa* 348–61: Fourteen volumes of hand-transcribed marriage information from Renaissance Florentine dowry contracts, originals mostly now lost, produced in the 17th century by Pierantonio dell'Ancisa.

———. *Mercanzia* 129: List of members (1310–1500) of the commercial court.

———. *Prestanze* 367–69: 1378 tax assessments of Florentine residents, Santa Croce, Santa Maria Novella, and San Giovanni residents. (Microfilm copy generously given to Padgett by Samuel Cohn.)

———. *Prestanze* 1989–2020: 1403 tax assessments of Florentine residents.

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———. *Tratte* 357, 7–20: 1393 electoral results, winners being *reggimento*.

ASL (Archivio di Stato di Lucca). *Corte dei Mercanti* 82–86: *Libri dei mercanti, 1371, 1372, 1381, 1407 e 1488*. Censuses of Lucca companies.

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Newberry Library. *Priorista descritto a Tratte riscontro con quello delle riformagioni e con alter scritture publiche*. An 18th-century hand copy of the official list of elected priors, the *Priorista Mariani* original of which is ASF *Manoscritti* 248–52. (Thanks to the labors of the late David Herlihy and Burr Litchfield, this information can now be obtained online at http://www.stg.brown.edu/projects/tratte.)

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