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Regina Grafe, Oscar Gelderblom

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The history of European commerce since the Middle Ages is intimately related to the rise, persistence, and decline of what might be the most famous of mercantile institutions—the merchant guild or association of long-distance traders. However, we still know surprisingly little about when and why merchant guilds originated and what they actually did. It seems certain that before the eighth century, merchants traded largely independently without the assistance and organization afforded by a guild, *natie, consulado, hansa,* or similar collective body. At some point, however, merchants began traveling together with their ruler's representatives, early "diplomats" who had commercial clients as well. From the tenth or eleventh century onward, formal associations emerged that helped long-distance traders solve two fundamental problems of exchange—on the one hand, protection against crime, warfare, and arbitrary confiscation and, on the other, the enforcement of contracts whenever money or goods changed hands.[1]

Oscar Gelderblom is Associate Professor of Economic and Social History, Utrecht University. He is the author of, with Joost Jonker, "Completing the Financial Revolution: The Finance of the Dutch East India Trade and the Rise of the Amsterdam Capital Market, 1595–1612," *Journal of Economic History,* LXIV (2004), 641–672; the editor of *The Political Economy of the Dutch Republic* (Farnham, 2009).

Regina Grafe is Assistant Professor of History, Northwestern University. She is the author of *Entre el Mundo Ibérico y el Atlántico: Comercio y especialización regional 1550–1650* (Bilbao, 2005); with M.Alejandra Irigoin, "Bargaining for Absolutism: A Spanish Path to Empire and Nation Building," *Hispanic American Historical Review,* LXXXVIII (2008), 173–209.

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1 Michael McCormick, *Origins of the European Economy: Communications and Commerce, AD 300–900* (New York, 2002); Roberta Dessi and Sheilagh Ogilvie, "Social Capital and Collu-

Merchant guilds, like craft guilds and guilds of local retailers, operated in commercial centers everywhere in late medieval and early modern Europe (and beyond). As an institutional response to the fundamental problems of long-distance trade, merchant guilds were clearly distinguished by contemporaries from guilds that organized the interests of such local artisans and retailers as bakers or fishmongers. But they were never the only institutional answer to the troubles of long-distance traders. Re-invigorated towns and consolidated states at times provided similar support for commerce by building infrastructure, organizing fairs, and offering legal services, as well as protection from predation. Yet, none of these activities replaced merchant guilds altogether. Complementarity between different providers of services to merchants—for example, rulers and guilds—seems to have been the norm rather than the exception. To some extent, such complementarity would have been the obvious consequence of merchants' transterritorial activities. Because merchants often crossed political boundaries, they were unlikely to rely simply on the protective services and infrastructure provided by a single overlord. But even within a given polity, merchants used multiple institutions to solve the fundamental problems of exchange. Lane recognized this complex reality long ago: Merchants typically used combinations of institutions to solve *one* particular problem, but each of these institutions in turn contributed to solving *multiple* problems.[2]

Only in the late eighteenth century did merchant guilds disappear from most parts of Europe, sometimes as a result of forced dissolution. At that point, protection of traders and their goods, contract enforcement, and mitigation of risks largely became func-

sion: The Case of Merchant Guilds," Cambridge Working Papers in Economics No. 417 (Cambridge, 2004); Avner Greif, Paul Milgrom, and Barry R Weingast, "Coordination, Commitment, and Enforcement: The Case of Merchant Guilds," *Journal of Political Economy,* CII (1994), 745–776; Greif, *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade* (New York, 2006); Frédéric Mauro, "Merchant Communities, 1350–1750," in James D. Tracy (ed.), *The Rise of Merchant Empires: Long-Distance Trade in the Early Modern World, 1350–1750* (New York, 1990), 255–286; Greif, "The Fundamental Problem of Exchange: A Research Agenda in Historical Institutional Analysis," *European Review of Economic History,* IV (2000), 251–284; Douglass C. North, *Structure and Change in Economic History* (New York, 1981); Daron Acemoglu and Simon Johnson, "Unbundling Institutions," *Journal of Political Economy,* CXIII (2005), 949–995.

2 Frederic C. Lane, "Economic Consequences of Organized Violence," *Journal of Economic History,* XVIII (1958) 401–417, repr. in Fernand Braudel (ed.), *Venice and History: The Collected Papers of Frederic C. Lane* (Baltimore, 1966), 50–65.

tions of either state activity or vertically integrated businesses. In the intervening period between the eleventh and eighteenth centuries, merchants used multiple combinations of institutions to cope with the perils of long-distance trade. Each of these combinations presumably reflected the intention to maximize benefits (economic or otherwise) within a certain environment. Understanding these multiple combinations is crucial to explain the rise and fall of merchant guilds in pre-industrial Europe.

This article develops a comparative methodology to explain the rise, persistence, and decline of merchant guilds in different parts of late medieval and early modern Europe. The methodological challenge is to combine research traditions of historians and economists that so far have remained separate. Historians have detailed the organization of trade in towns and regions across Europe, but few of them have teased out generalizations about the ability of merchant guilds, or similar institutions, to mitigate the fundamental problems of exchange.[3]

Economists have begun to apply micro-economic theory to the organization of long-distance trade in pre-industrial Europe, modeling the contribution that merchant guilds, informal coalitions of traders, periodical fairs, or specific financial contracts made to a more efficient organization of trade. The great merit of this approach is that it forces us to abstract specific historical examples and make explicit the economic functions of the manifold mercantile institutions that existed across Europe. However, the modeling strategies generally employed—namely, game theory and mechanism design—require relatively restrictive ex-ante assumptions. To meet them, most models restrict analysis to one or two often mutually exclusive solutions (like guilds or fairs) for just one problem of exchange (like protection, contract enforcement, or rent seeking). Neither the multifunctionality of mercantile organi-

3 Richard Ehrenberg, *Das Zeitalter der Fugger, Geldkapital und Creditverkehr im 16. Jahrhundert, II, Die Weltbörsen und Finanzkrisen des 16. Jahrhunderts* (Jena, 1896); Robert S. Lopez, *The Commercial Revolution of the Middle Ages, 950–1350* (Englewood Cliffs, 1971); *idem* and Irving W. Raymond, *Medieval Trade in the Mediterranean World* (New York, 1955); Braudel, *Civilisation Matérielle, économie et capitalisme, XVe–XVIIIe siècles* (Paris, 1979); Peter Spufford, *Power and Profit: The Merchant in Medieval Europe* (London, 2002); John H. Munro, "The 'New Institutional Economics' and the Changing Fortunes of Fairs in Medieval and Early Modern Europe: The Textile Trades, Warfare, and Transaction Costs," *Vierteljahrschrift fuer Sozial- und Wirtschaftsgeschichte,* LXXXVIII (2001), 1–47; Stephan.R. Epstein, "Regional Fairs, Institutional Innovation and Economic Growth in Late Medieval Europe," *Economic History Review,* XLVII (1994), 459–482;

zations nor the combined use of different institutional solutions is easily modeled as a game.[4]

A comparative analysis of the organization of long-distance trade across time and space is the best way to deal with this multifunctionality of institutions and their combined use by merchants, without losing the theoretical rigor of microeconomic analysis. Comparing the problems that merchants faced in different economic, sociopolitical, and cultural environments with the institutions on which they relied to solve these problems can help to explain the rise, persistence, and decline of specific institutions. Notwithstanding Greif and others who have argued that the idiosyncrasies of (mercantile) institutions make it practically impossible to use standard comparative statistical techniques, all mercantile institutions shared one fundamental characteristic that can facilitate comparative analysis; through self-organization, merchants delegated control to fellow merchants in return for support with their contracting and enforcement problems.[5]

The methodology in this article is data-intensive, involving foreign merchant communities from modern-day Italy, Spain, Portugal, Germany, Denmark, Belgium, the Netherlands, France, and Britain that traded in Amsterdam, Antwerp, Bilbao, and Bruges from the thirteenth to the eighteenth century. Bilbao, the least known of these towns in Anglophone historiography, actually handled the largest European trading volume of any Spanish port until the late sixteenth century. All four of these ports have a long history of maritime trade between merchants from northern and southern Europe. The strength of the approach herein is its ability to include a much wider geographical area than previous studies. However, at this stage, our emphasis is on discussing the theoretical underpinnings, methodological implications, and empirical feasibility of this novel approach to the study of mercantile organization in premodern Europe.[6]

Our empirical analysis borrows from quantitative sociology

4 Greif, Milgrom, and Weingast, "Coordination"; Dessì and Ogilvie, "Social Capital"; Milgrom, North, and Weingast, "The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges and the Champagne Fairs," *Economics and Politics,* II (1990) 1–23; Yadira Gonzalez de Lara, "Institutions for Contract Enforcement and Risk-Sharing: From Debt to Equity in Late Medieval Venice," unpub. paper (Ente Luigi Einaudi, 2002).

5 Greif, "Fundamental Problem of Exchange"; *idem, Institutions,* 20–21, 386.

6 The full data set and coding is available in Appendix A at http://www.history.northwestern.edu/people/docs/appendixtoGelderblomandGrafe.pdf.

and political science. It employs standard maximum likelihood models more commonly associated with survey-data analysis to estimate the probability of observing the extent to which merchants delegated control to their guild depending on a number of political, legal, and economic variables. These variables capture four standard explanations given in the literature for the rise and decline of merchant guilds: (1) guilds' protection of merchants from predatory rulers, (2) their deterrence of cheating by merchants, (3) their enabling of traders to extract monopoly rents, and (4) their ability to balance supply and demand in markets of limited size. What follows is a first attempt to test these four hypotheses simultaneously in a single model.

THE RISE, PERSISTENCE, AND DECLINE OF MERCHANT GUILDS, 1000–1800 Merchant guilds are an old phenomenon. Formal associations of traders existed in the ancient world, and they may have been formed as early as the eighth century in medieval Europe. The remaining sources, however, reveal only the widespread existence of more or less formal associations of traders since the eleventh century: loose coalitions of Jewish and Armenian traders, local organizations of merchants like the *consulados* in Aragon, *hansen* of German and Flemish traders in England and France, and the *nations* of foreign merchants created in Flanders and Brabant. For the purpose of this study, these more or less formally organized groups of long-distance wholesale traders are all grouped under the rubric of "merchant guilds."[7]

Little is known about the functioning of merchant guilds in medieval Europe during the eleventh and twelfth centuries. Infor-

7 Otto Gerhard Oexle, "Gilden als soziale Gruppen in der Karolingerzeit," in Herbert Jankuhn et al. (eds.), *Das Handwerk in Vor- Und Frühgeschichtlicher Zeit* (Göttingen, 1981), I, 284–354. Rolf Sprandel, "Handel und Gewerbe vom 6.–11. Jahrhundert," in Berent Schwineköper (ed.), *Gilden und Zünfte: Kaufmännische und gewerbliche Genossenschaften im frühen und hohen Mittelalter* (Sigmaringen, 1985) 9–30; Rudolf Häpke, *Brügges Entwicklung zum Mittlelalterlichen Weltmark* (Berlin, 1908), 50–58, 129; J. A. Goris, *Étude sur les colonies marchandes mériodinales (Portugais, Espagnols, Italiens) à Anvers de 1488 à 1567: Contribution à l'histoire des débuts du capitalisme moderne* (Louvain, 1925); Joseph Marechal, "La Colonie Espagnole de Bruges du XIVe au XVIe Siècle," *Revue du Nord,* XXXV (1953), 5–40; Robert Sidney Smith, *Historia de los Consulados de Mar (1250–1700)* (Barcelona, 1978); Philip Curtin, *Cross-Cultural Trade in World History* (New York, 1984); Dessì and Ogilvie, "Social Capital and Collusion: The Case of Merchant Guilds (Long Version)," Cambridge Working Papers in Economics 417 (Cambridge, 2004), at http://www.econ.cam.ac.uk/dae/repec/cam/pdf/cwpe0417.pdf; Jonathan I. Israel, *Diasporas within a Diaspora: Jews, Crypto-Jews and the World Maritime Empires (1540–1740)* (Leiden, 2002).

mation about the brotherhoods of merchants who traded and traveled together in German lands and the Netherlands is fragmentary. The members of some of these guilds were sworn to help each other in cases of fraud, violence, and personal hardship. Much-better documented is the organization of African Jews trading in the Mediterranean during the eleventh century. This coalition of Maghribi merchants traded with Italian ports and developed social ties strong enough to offer a credible threat of exclusion to any of its members who attempted to cheat an Italian trading partner. This mechanism encouraged the Italians to do business with each and every member of the coalition even if they did not know them personally. Lack of evidence makes it difficult to determine exactly how widespread this kind of coalition trading was before 1300, but during later periods, peer pressure was certainly an important instrument to discipline relatives and friends.[8]

In the twelfth and thirteenth centuries, more and more groups of long-distance traders received privileges from local or central governments throughout Europe. One hypothesis suggests that guilds' only purpose was to serve as a vehicle of corporate rent-seeking, whereby they persistently lowered social welfare. Dessí and Ogilvie argued that most merchant guilds were granted privileges in exchange for financial support to the ruler. This equilibrium situation allowed rulers to benefit from regular tax revenues and merchants to extract rents from the rest of society, which in effect subsidized a guild's right to restrict access to trade and impose monopolies. Yet this scenario implies that guilds and their ruling protectors could dominate society for eight centuries to a degree that seems anachronistic.[9]

8 Hans Planitz, "Kaufmannsgilde Und Städtische Eidgenossenschaft in Niederfränkischen Städten im 11. Und 12. Jh," *Zeitschrift der Savigny-Stiftung für Rechtsgeschichte, Germanistische Abteilung,* LX (1940), 1–116; Alfred Kieser, "Organizational, Institutional, and Societal Evolution: Medieval Craft Guilds and the Genesis of Formal Organizations," *Administrative Science Quarterly,* IV (1989), 540–564; Christoph Anz, *Gilden im mittelalterlichen Skandinavien* (Göttingen, 1998); Greif, "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders," *Journal of Economic History,* XLIX (1989), 857–882; Stephan Selzer and Ulf-Christian Ewert, "Verhandeln und Verkaufen, Vernetzen und Vertrauen: Über die Netzwerkstruktur des hansischen Handels," *Hansische Geschichtsblätter,* CXIX (2001), 135–162.

9 Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations,* Book 5, Chapter 1, paragraph 6, at http://www.econlib.org/library/Smith/smWN20.html; Dessí and Ogilvie, "Social Capital"; Franz Irsigler, "Zur Problematik der Gilde- und Zünftterminologie," in Berent Schwineköper (ed.), *Gilden und Zünfte: Kaufmännische und gewerbliche*

Historical case studies of merchant communities in virtually every part of Europe illustrate that guilds were never single-purpose institutions; rather, they performed a multitude of economic, social, cultural, and political functions. They organized daily exchange; they provided protection against theft, civil unrest, and violence by offering housing and warehousing; and by concentrating trade on the premises of foreign merchants, they facilitated the matching of supply and demand. Guild members were also subjected to rules regarding everything from the quantity and quality of traded goods to the means of shipping them or the training of apprentices.[10]

Merchant guilds also contributed to the enforcement of contracts. The privileges granted by local or foreign rulers often invested guild leaders with the authority to resolve disputes between members. The *hansen* of Flemish merchants trading in England and France during the twelfth century, for instance, were explicitly created to extend the legal authority of their home government into foreign territory. Furthermore, in the corporatist world of the Middle Ages, a merchant's formal affiliation to a town or country helped to signal his creditworthiness to potential trading partners. When merchant guild members bore collective liability—or community responsibility, as it is sometimes called—a creditor of any member could attach the property of any other member to settle an unpaid debt.[11]

Merchant guilds with a strict internal organization were also

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Genossenschaften im frühen und hohen Mittelalter (Sigmaringen, 1985), 53–70. Ogilvie, "Rehabilitating the Guilds: A Reply," *Economic History Review,* LXI (2008), 175–176, argues that persistence is a weak test where powerful groups have an interest in rents. Although, theoretically, she is correct, given the almost total transformation of Europe's power and governance structures during these eight centuries, it is empirically difficult to see how a power monopoly could have survived so long in the absence of more widely spread economic benefits.

10 Oskar de Smedt, *De Engelse Natie te Antwerpen in de 16e eeuw (1496–1582)* (Antwerpen, 1950–1954), 2 v.; Jörgen Bracker, *Die Hanse: Lebenswirklichkeit und Mythos* (Hamburg, 1989); Spufford, *Power and Profit: The Merchant in Medieval Europe* (London, 2002); Olivia Remie Constable, *Housing the Stranger in the Mediterranean World: Lodging, Trade, and Travel in Late Antiquity and the Middle Ages* (New York, 2003); James M. Murray, *Bruges, Cradle of Capitalism 1280–1390* (New York, 2005); Eloy García de Quevedo, *Ordenanzas Del Consulado De Burgos De 1538* (Burgos, 1905); José Martínez Gijon, *La Compania Mercantil En Castilla Hasta Las Ordenanzas Del Consulado De Bilbao De 1737: Legislacion Y Doctrina* (Sevilla, 1979).

11 Greif, "Institutions and Impersonal Exchange: From Communal to Individual Responsibility," *Journal of Institutional and Theoretical Economics,* CLVIII (2002), 168–204; Lars Boerner and Albrecht Ritschl, "Individual Enforcement of Collective Liability in Premodern Europe," *ibid.,* 205–213.

able to offer protection against predatory rulers. Groups of traders could force their hosts to protect them and their goods to the best of their abilities by threatening to leave if endangered or mistreated. Instead of preying on their property, their hosts might choose to tax them lightly, or even to shift the financial burden of protecting them to local economic interests that benefited from their presence. Town governments were probably more important than central rulers in this context, since the latter typically lacked the political leverage or desire—the riches of foreign merchants being an enticing price in rulers' quest for funds—to provide such protection in pre-industrial Europe.[12]

Merchant guilds might be thought to have lost their purpose in the fifteenth and sixteenth centuries when European rulers became increasingly committed to the creation of law courts and the protection of trade through diplomacy, convoying, or even outright warfare. However, this strengthening of central political, economic, and legal control was accompanied by military competition between states, which led to increased violence against long-distance traders, at least in the medium term. Privateering, the principal means to wage war at the time, harmed not only the merchants whose sovereigns were fighting but also neutral traders. As a result, merchants in many parts of Europe continued to act collectively to ensure safe conduct. Even if safeguards did not always prevent infringements on their persons and goods, they gave neutral merchants at least some claim to damages.[13]

12 Greif, "Institutions," 91–123; *idem,* Milgrom, and Weingast, "Coordination"; Simona Cerutti, "Médicaments et société—Étrangers et citoyens—À qui appartiennent les biens qui n'appartiennent à personne? Citoyenneté et droit d'aubaine à l'époque moderne," *Annales ESC,* 62 (2007), 355–386; Philippe Dollinger, *La Hanse (XIIe–XVIIe siècles)* (Paris, 1964); Peter Stabel, "De gewenste vreemdeling: Italiaanse kooplieden en stedlijke maatschappij in het laat-middeleeuws Brugge," *Jaarboek voor Middeleeuwse Geschiedenis,* IV (2001), 189–221; Braudel, *Venice and History;* Herman Van der Wee, *The Growth of the Antwerp Market and the European Economy (14th–16th Centuries)* (The Hague, 1963); Grafe, *Entre el Mundo Ibérico y el Atlántico: Comercio y especialización regional, 1550–1650* (Bilbao, 2005); Hermann Kellenbenz, *Unternehmerkräfte im Hamburger Portugal- und Spanienhandel 1590–1620* (Hamburg, 1954).

13 Lane, "Economic Consequences of Organized Violence," *Journal of Economic History,* XVIII (1958), 401–417; Charles Tilly, *Coercion, Capital and European States, AD 990–1990* (New York, 1990); *idem* and Wim P. Blockmans (eds.), *Cities and the Rise of States in Europe, A.D. 1000 to 1800* (Boulder, 1994); Anne Perotin-Dumon, "The Pirate and the Emperor: Power and the Law of the Sea, 1450–1850," in Tracy (ed.), *Political Economy of Merchant Empires,* 196–227; Janice E. Thomson, *Mercenaries, Pirates, and Sovereigns: State-Building and Extra-Territorial Violence in Early Modern Europe* (Princeton, 1994); Peregrine Horden and Nicholas Purcell, *The Corrupting Sea: A Study of Mediterranean History* (New York, 2000); Louis Sicking,

Political fragmentation may have contributed to the persistence of merchant guilds in yet another way. Foreign merchants often used a wide variety of debt and equity contracts from their home countries to fund their businesses and manage risks. Host rulers who lacked the legal expertise or the will to enforce these contracts could grant consular jurisdictions to foreign merchants, allowing them to adjudicate conflicts according to the contracting rules of their home country. Members of merchant communities were subject to fines or even exclusion for attempting to cheat each other. For this reason, southern European merchants in Bruges and Antwerp continued to organize in nations until the mid-sixteenth century, and English and Dutch merchants still delegated legal authority to consuls in Russia and the Ottoman Empire during the seventeenth century.

The seventeenth and eighteenth centuries, however, witnessed a clear movement away from formal merchant associations toward entrepreneurs operating individually within informal networks of family and friends. The decline of merchant guilds began in the commercial heartland of Europe; formal organizations of foreign merchants in Venice, Antwerp, and Amsterdam began to lose their political, legal, and economic relevance during the course of the sixteenth century. After 1600, a similar development occurred in the leading commercial centers of the German lands, France, and England. The ports where merchant guilds faded economically were typically those where town councils thought it in their interest to respect the property of all resident merchants and to enforce contracts from a wide variety of legal traditions.[14]

Yet merchants continued to organize socially in many places, even in Europe's leading commercial centers. Communities with or without a formal guild status catered to the religious needs of their members. They often had their own chapel or strong relations with a particular parish or monastery. Occasionally, they owned burial grounds and founded fraternities. The surviving

Neptune and the Netherlands: State, Economy and War at Sea in the Renaissance (Leiden, 2004); Eddy Stols, *De Spaanse Brabanders of de Handelsbetrekkingen der Zuidelijke Nederlanden met de Iberische Wereld 1598–1648* (Brussels, 1971). For a more optimistic account of the effects of state formation, see Jan Glete, *War and the State in Early Modern Europe* (London, 2002).

14 Greif, "On the Political Foundations of the Late Medieval Commercial Revolution: Genoa during the Twelfth and Thirteenth Centuries," *Journal of Economic History,* LIV (1994), 271–287.

guilds defined sociability for local burghers, but, more importantly, guild houses, *fondaci,* or the Prussian *Artushöfe* offered social contacts between locals and foreigners. Groups of alien merchants often co-opted shipmasters, clerks, and various other non-traders in their provisioning of education and charity. These social functions continued to appeal to merchants and secured their prolonged allegiance to the guilds.[15]

Research in pre-industrial European commerce reveals that traders' organizations differed according to the economic and noneconomic problems that they tried to solve; they also differed according to how political and economic circumstances affected their choices. Areas with high levels of trade and strong local governments evinced a movement away from formal associations toward informal social networks, or even more individualistic organizational forms. For social and cultural reasons, corporate bodies of traders had not yet entirely disappeared even in the eighteenth century, though they lost their economic function in most places.

THE MODEL Merchant guilds do not have the same significance for historians and economists. Historians typically highlight the different forms and functions that mercantile associations could assume between 1000 and 1800; economists define merchant guilds on the basis of one unique purpose, be it the protection of property, the enforcement of contracts, or the creation of rents. The methodology herein seeks to bridge this gap in order to combine the strengths of both approaches. To do so, we define guilds not by any specific purpose, but by their employment of collective action as a means to minimize transaction costs.

It seems appropriate to think about commercial institutions as

15 Olson, *Logic of Collective Action;* F. J. Fisher, "Commercial Trends and Policy in Sixteenth-Century England," *Economic History Review,* X (1940), 95–117; Donatella Calabi and Stephen Turk Christensen (eds.), *Cultural Exchange in Early Modern Europe. II. Cities and Cultural Exchange in Europe 1400–1700* (New York, 2007), 114–131; Constable, *Housing;* Stephan Selzer, *Artushöfe im Ostseeraum: Ritterlich-höfische Kultur in den Städten des Preuéenlandes im 14. und 15. Jahrhundert* (Frankfurt am Main, 1996); Eric R. Dursteler, *Venetians in Constantinople: Identity and Coexistence in the Early Modern Mediterranean* (Baltimore, 2006); Miriam Bodian, *Hebrews of the Portuguese Nation: Conversos and Community in Early Modern Amsterdam* (Bloomington, 1997); Francesca Trivellato, *The Familiarity of Strangers: The Sephardic Diaspora, Livorno, and Cross-Cultural Trade in the Early Modern Period* (New Haven, 2009); Calabi and Christensen, *Cultural Exchange;* Renée Rössner, *Hansische Memoria in Flandern: Alltagsleben und Totengedenken der Osterlinge in Brügge und Antwerpen (13. bis 16. Jahrhundert)* (Frankfurt am Main, 2001); Bracker, *Die Hanse.*

a continuum along the lines suggested by Williamson. At one end lies a perfectly atomized market in which anonymous buyers and sellers meet in fleeting encounters of voluntary exchange. At the other end, all risks and decisions are incorporated into one large hierarchically ordered and vertically integrated firm. Human ingenuity has produced endless permutations along the continuum between those two points, characterized by more or less anonymity, hierarchy, market control, political involvement, and so forth. Following Williamson's distinction between markets and hierarchies, we view social networks, nations, consulates, guilds, and regulated companies as institutions that perform the same basic economic function—the governance of transactions—differing merely by the amount of control delegated to fellow members who are also merchants. This approach allows us to include merchant communities operating in different parts of Europe during a prolonged time period (1250 to 1800) within one data panel.[16]

Theoretically, merchants could attempt to maximize their returns and solve the fundamental problems of exchange—protection of life and livelihood and the enforcement of contracts—in three different ways: (1) through the purchase of solutions or the assumption of all risk by themselves; (2) most importantly for this article, through collective action with fellow merchants, cost sharing, and the benefits of club goods; and (3) through reliance on a third party, usually a ruler, to provide solutions in the form of public goods. The last option could take various institutional forms, ranging from a mercantile representation strong enough to constrain a host ruler to merchants being an integral element of the ruling institutions, as in the case of Venice.

The first solution was unrealistic in many circumstances. Even armed individual merchants or shipmasters stood little chance repelling determined attacks on them and their goods if acting by themselves. More systematic protection was subject to indivisibilities, which generally required start-up costs that were typically beyond the means of most merchants, who could hardly afford their own army or police force. Such private solutions were equally unattractive with regard to benefits; collective action promised greater market power. Hence, some form of collective

16 Oliver Williamson, *The Economic Institutions of Capitalism* (New York, 1985); Robert B. Ekelund and Robert. D Tollison, *Mercantilism as a Rent-Seeking Society: Economic Regulation in Historical Perpective* (College Station, 1981).

action or, for that matter, government intervention, potentially promised lower costs and higher benefits, a winning combination.[17]

By creating their own association, merchants could "produce" a collective good for all of its members that would be unavailable to non-members—that is, a club good. Thus, they could share the high start-up costs of protection and transaction governance as well as the benefits of greater market power. Moreover, addressing one of the three problems often helped them with the other two. Collective protection could create positive externalities; for example, a group could govern transactions more effectively and wield more market power than any individual could. Yet, collective action always came at a cost. Merchants generally had to pay some fee for the membership benefits. More importantly, delegating control to the association (the club) meant the loss of individual decision making. Although the choices made by the association were intended to be the optimal ones for the group as a whole, they were not necessarily the optimal ones for each and every member.

The relative costs and benefits that merchants derived from club goods depended, among other things, on the third potential solution, the provision of public goods, accessible to everyone, through a ruler. Rulers by definition provided some "services" for all of their subjects including merchants. They could also increase their responsibilities to, say, escorting merchants, enforcing contracts, and regulating markets. But their ability to enforce regulations in the premodern world had significant limitations, and the cost of these services to merchants was often heavy taxation and possibly limited influence on the exact nature of the actual public goods on offer. Furthermore, since, by definition, nobody could be excluded, the problem of free riding was inevitable. Hence, merchants would attempt to adjust their club goods to complement the available public goods, thus to optimize their private cost–benefit function.

Unfortunately, we cannot directly calculate the costs and benefits of the club goods provided by mercantile associations. However, history provides a large number of empirical observa-

17 Oliver Volckart, "The Economics of Feuding in Late Medieval Germany," *Explorations in Economic History,* XLI (2004), 282–299.

tions concerning the outcomes of that implicit cost–benefit calculus—namely, the amount of control that merchants chose to delegate to a guild. The outcomes reflect the constraints that they were willing to place on themselves to protect their property, enforce contracts, and manage commercial risks. We also have considerable data on merchants' alternatives. In order to use this information in a comparative setting, we can group observations of how much control a particular body of merchants chose to delegate at a given time into a few discrete categories. Ultimately we aim to discover any systematic relationships between the degree of control delegated and the alternative solutions to the fundamental problems of the exchange otherwise available in merchants' political and market environments.

Underlying this approach is only one crucial assumption: Merchants will surrender the freedom to conduct their own business to an organization only if adequately compensated for the loss of control with greater profits. The more control that they yield, the higher will be the compensation that they will want in return. This trade-off between autonomy and delegation is an essential characteristic of all mercantile organizations.

The history of European long-distance trade reveals an array of mercantile associations that can be distinguished according to the amount of control delegated by individual merchants (Table 1). A few examples from the dataset can illustrate the lines of distinction between the five categories. On one end of the control-delegation-distribution spectrum are merchants whose business transactions are in no way constrained by the formal or informal control of a guild—for instance, the dozens of German merchants that sojourned in Amsterdam during the second half of the sixteenth century to buy and sell grain shipped from Poland and other Baltic states. These merchants stayed in hostels, rented warehouses to store their merchandise, wrote contracts with the help of local brokers and notaries, settled disputes with fellow traders or shipmasters before the local court, and otherwise submitted to the prevailing property-rights regime. They did not rely on any kind of club goods provided only to members of a defined community; they had no community.[18]

18 Arguably, a sixth category in which merchants delegate control over their capital to the guild—as was common for joint-stock companies like the English, Dutch, and French East India Companies—could be added. That these companies operated in markets outside Eu-

The second category involves merchants that belonged to a community with shared cultural beliefs and social norms but without any formal ties between them. The close knit English Calvinist community of cloth dealers in Amsterdam during the last quarter of the sixteenth century is a case in point. Unlike the Merchant Adventurers, whose forced staple they were trying to circumvent, the English merchants in Amsterdam did not organize formally. Many belonged to the English church in Amsterdam, but their trade was subjected to the same contracting rules as local businessmen's and the same commercial infrastructure. This situation, in which behavior was directed by shared social or cultural beliefs—and related peer pressure—we characterize as one of informal constraints.[19]

A first step toward the formal association of alien merchants is the delegation of political control to a consul or ambassador, or simply to the ruler of a hometown or country. For instance, in 1500, Florentine merchants were represented solely by a consul in Antwerp, and representatives of the Scottish staple in Veere negotiated with the town magistrate on several occasions (category 3). None of these diplomats had any control, however, over the merchants' business dealings.[20]

Whenever talks with rulers in a foreign territory resulted in the creation of a separate jurisdiction, the delegation of control went a step further to the establishment of general rules of conduct and their enforcement by one or more leaders of the merchant

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rope makes comparisons with organizations of Europeans problematical. In the eighteenth century, new joint-stock companies were created in the Netherlands, Germany, and England to fund insurance and public utilities, but, again, their business does not warrant comparison with the organizations of long-distance wholesale traders. Milja van Tielhof, *De Hollandse graanhandel, 1470–1570: Koren op de Amsterdamse molen* (The Hague, 1995); *idem, The "Mother of All Trades": The Baltic Grain Trade in Amsterdam from the Late 16th to the Early 19th Century* (Leiden, 2002).

19 Alice Clare Carter, *The English Reformed Church in Amsterdam in the Seventeenth Century* (Amsterdam, 1964); Jessica Dijkman, "Giles Sylvester, an English Merchant in Amsterdam," unpub. paper (Utrecht University, 2002); De Smedt, *Engelse natie;* Herman Roodenburg, *Onder censuur: De kerkelijke tucht in de gereformeerde gemeente van Amsterdam, 1578–1700* (Hilversum, 1990); Daniel M. Swetschinski, *Reluctant Cosmopolitans: The Portuguese Jews of Seventeenth-Century Amsterdam* (Portland, 2000).

20 Gelderblom, "The Decline of Fairs and Merchant Guilds in the Low Countries, 1250–1650," *Jaarboek voor Middeleeuwse Geschiedenis* (2004), 199–238; Jan Denucé, *De Hanze en de Antwerpsche handelscompagnieën op de Oostzeelanden* (Antwerp, 1938); Matthijs P. Rooseboom, *The Scottish Staple in the Netherlands: An Account of the Trade Relations between Scotland and the Low Countries from 1292 till 1676 with a Calendar of Illustrative Documents* (The Hague, 1910).

Table 1 The Delegation of Control by Merchants as a Means to Differentiate between Mercantile Organizations

	CATEGORY	DESCRIPTION	CONTROL DELEGATED
1	Individual agents	Merchants organize transactions without any interference of fellow traders.	Individuals do not delegate any control.
2	Informal constraints	Merchants are organized loosely along social or religious lines but have no formal economic organization.	Control is not formally delegated, but social and/or cultural norms constrain decisions.
3	Political representation	Merchants rely on spokesmen to represent them in negotiations with other groups or political authorities.	Control to represent is delegated.
4	Internal discipline	Merchants elect officials to enforce general rules of conduct within the community.	Members delegate control to establish general rules and enforce them through sanction, but not exclusion.
5	Power of exclusion	Group is endowed with a privilege granted by a political body that gives it the right to exclude members/others.	Members delegate control to be sanctioned through total exclusion from market entry.

community (category 4). The Portuguese nation in Antwerp, for example, enforced the registration of every subject of the Portuguese king with the consuls upon arrival in the city. The nation held weekly meetings attended by all members, and Antwerp's customs stipulated that the group had the right to settle disputes between its members.[21]

Like the Portuguese, the members of the English Company of Merchant Adventurers in Antwerp had to register with the court master, pay contributions, and recognize the company's jurisdiction. The one major difference between the two nations was the ability of the English association to exclude merchants from participation in the cloth trade, first in Antwerp and then, after 1582, in Middelburg. The power of a mercantile organization to prevent free riding, and reserve the economic benefits of its operations to the membership, is considered a distinctive next stage (category 5) in the delegation of control.[22]

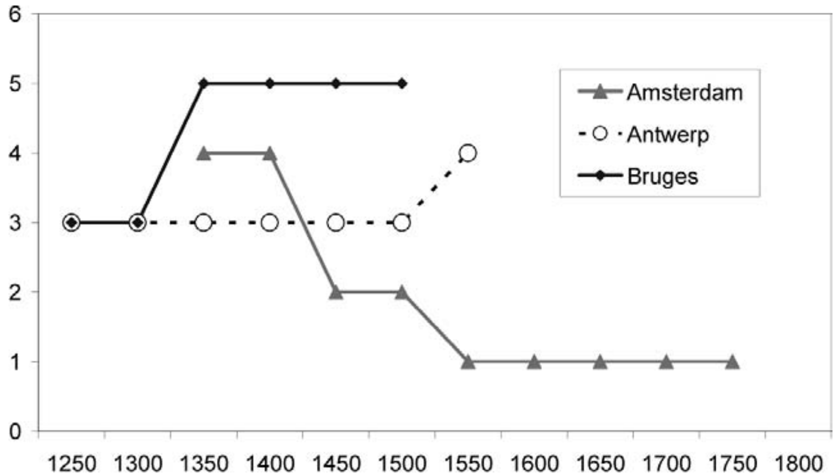
The above classification of mercantile organizations serves as a general tool to standardize the rich variety of mercantile associations. It creates an ordered dependent variable that describes the basic nature of each mercantile association during the period under consideration. By drawing comparisons between merchants in different places, it highlights group preferences and local influences regarding delegated control. The strength of this classification is clear in a comparison of the different organizations of the German merchants in Bruges, Antwerp, and Amsterdam, despite their shared affiliation to the Hanse (Figure 1). The classification enables an analysis of why merchants delegated more or less control; in other words, it operationalizes our independent variables for a multinomial model.

From a statistical point of view, whether we consider the five categories of this classification system as merely discrete choices or as ordered categories—that is, of the form $1 < 2 < 3 < 4 < 5$—is crucial. To illustrate, we argued that category 5, the highest form

21 Goris, *Étude;* Raymond de Roover, *Money, Banking and Credit in Mediaeval Bruges: Italian Merchant-Bankers Lombards and Money-Changers: A Study in The Origins of Banking* (Cambridge, Mass., 1948); Hans Pohl, *Die Portugiesen in Antwerpen (1567–1648): Zur Geschichte einer Minderheit* (Wiesbaden, 1977); Gelderblom, "The Resolution of Commercial Conflicts in Bruges, Antwerp, and Amsterdam, 1250–1650," in Debin Ma and Jan Luiten van Zanden (eds.), *Law and Economic Development: A Historical Perspective* (forthcoming, 2010).

22 William R. Scott, *The Constitution and Finance of English, Scottish, and Irish Joint-Stock Companies to 1720* (Cambridge, 1912), 3 v.; De Smedt, *Engelse natie.*

Fig. 1 A Graphic Representation of the Control Delegated by German Merchants in Bruges, Antwerp, and Amsterdam between 1250 and 1750



SOURCE The dataset of this study.

of delegation, was defined by its exclusion of non-members (and members who infringed on their own rules) from a particular market. Such exclusion would require guilds to have clear rules and sophisticated enforcement mechanisms (category 4). Moreover, such total market exclusion was impossible without the group's recourse to help from, or at least recognition by, local authorities with whom their duly appointed representatives could negotiate (category 3). Our category 5 groups were fundamentally cartels operating in geographically diverse markets (a home and a host city). Monitoring costs for such arrangements are known to have been extremely high, even if groups were granted additional enforcement from a third party, such as a local ruler. Without the help from cultural and social cohesion, monitoring costs would have been prohibitively high; not surprisingly, the bond that allowed distribution of this cost was a common feature such as geographical origin or religious affiliation (category 2). As this example shows, control delegation is an ordered variable.

The level of control that merchants were willing to delegate to fellow traders depended on the existence of alternative solutions for the problems of exchange and the comparative costs and benefits of these solutions, which, in the long run, was reflected by three main sets of variables: (1) the attitude of their political rulers at home toward traders; (2) the attitudes of political rulers in their host country toward foreign traders; and (3) market conditions, defined herein as the scale and scope of the markets in which merchants acted, and the private access to protection, information, and risk management in these markets.

Table 2 identifies a number of independent variables that proxy the three large sets of variables. The measurement of these variables is detailed in the Appendix (see n. 6). The first set ("home ruler") tries to capture political representation and services aimed at the protection of property rights that are offered by the rulers in the merchants' place of origin. The second set ("host ruler") looks at the same factors in the guest town. The third set tests for crucial market conditions, including private market solutions to property-rights issues, such as insurance, and the existence of face-to-face exchanges in spot markets. The last set of variables reflects how the size and scope of a market influences the probability that merchants would choose to delegate more or less control.

Ex ante, since we do not know whether merchant associations, home rulers, host rulers, and markets were complements or substitutes, we have to allow for both possibilities. The German Hanse, for example, not only negotiated for safe conducts with the counts of Flanders and the town of Bruges; it also organized its own convoys during the late fourteenth and fifteenth centuries. Several foreign nations in Antwerp retained their separate, consular jurisdiction as well as used local and central courts in the Netherlands to resolve commercial conflicts. Although English merchants in sixteenth-century Bilbao relied on their own consul for political matters, they delegated control of their business affairs to local hostellers.[23]

RESULTS Since we are dealing with a discrete, ordered dependent variable to test the probability of outcomes, we adopt a standard maximum likelihood regression (probit) to investigate the relationship between control delegated on the one hand and property-rights regimes and market conditions on the other.

23 Gelderblom, "Resolution"; Grafe, *Entre El Mundo Ibérico Y El Atlántico;* Amalia D. Kessler, *A Revolution in Commerce: The Parisian Merchant Court and the Rise of Commercial Society in Eighteenth-Century France* (New Haven, 2007)

Table 2 Independent Variables Capturing Property-Rights Regimes and Market Conditions

NR	VARIABLE	DUMMY	DESCRIPTION
	Home ruler		
H1	Political representation	Yes	Do merchants participate in the ruling elite of the home town or region?
H2	Protection	Yes	Does the home ruler coordinate protective measures (convoys, caravans)?
	Local ruler		
L6	Political representation	Yes	Do merchants participate in the ruling elite of the host town or region?
L4	Protection	Yes	Does the local ruler coordinate protective measures (convoys, caravans)?
L5	Protection	Yes	Were merchants victims of violence within the last 25 years?
L8	Protection	Yes	Does the local ruler provide merchants with housing and/or warehousing?
L2	Contract enforcement	Yes	Do merchants have access to, and use, specialized courts subsidiary to the general court?
L3	Contract enforcement	Yes	Do merchants have access to, and use, a specialized mercantile court?
	Market conditions		
M1	Protection	Yes	Do merchants have access to, and use, insurance markets?
M8	Contract enforcement	Yes	Do merchants have access to, and use, periodic fairs?
M9	Contract enforcement	Yes	Do merchants have access to, and use, a bourse?
M10	Contract enforcement	Yes	Do merchants have access to, and use, public vending locations for specific products?
M11	Contract enforcement	Yes	Do merchants have access to, and use, private vending locations?
M12	Competition	Yes	Do merchants from the host town trade in the home market?
	Size effects		
M7	Town population (^2)	No	How many inhabitants does the host town have?

Table 2 (Continued)

NR	VARIABLE	DUMMY	DESCRIPTION
M13	Size of the market	No	How big are the markets to which merchants have access, including the local market (population × wage)?
M16b	Size of the market	No	How big are the markets to which merchants have access, including the local market (population × silver wage)?
M17	Size of the urban market	No	How big are the urban markets to which merchants have access, including the local market (population × silver wage × urbanization rate)?
M14	Scope of the market	No	How many different product groups (eight in all) are traded?

This methodology is especially familiar to political scientists and sociologists who routinely use it to analyze surveys of ordered preferences—in voting behavior, for example. Rarely has it been employed by historians or economic historians. This study may well be the first attempt to subject a large sample of merchant guilds across time and space to an empirical analysis—indeed, to test the four standard hypotheses for the rise and decline of merchant guilds simultaneously in a single model.[24]

A first look at the descriptive statistics of the new classification of premodern European merchant associations in Table 3 reveals some interesting facts. The sample dwindles toward the beginning and end of the observed period. The lack of category 1 and 2 communities for the early benchmark years is almost certainly an artifact of data survival: We cannot know much about groups that left no institutional records behind. The distribution along the categories of delegated control seems to work reasonably well; classes 1 to 4—from no control delegated to substantial amounts of control delegated, including internal discipline—are particularly well

24 G. S. Maddala, *Limited Dependent and Qualitative Variables in Econometrics* (New York, 1983). For an example of the methodology employed in political science, see Larry M. Bartels, "Constituency Opinion and Congressional Policy Making: The Reagan Defence Build Up," *American Political Science Review,* LXXXV (1991), 457–474.

represented. From a total of 185 observations of merchants from the Hanse, southern Germany, Portugal, Venice, Genoa, Lucca, Florence, Milan, Aragon, Castile, Biscay, Andalusia, England, Scotland, Brittany, Normandy, northern Netherlands, Flanders, and Denmark in the towns of Bilbao, Bruges, Amsterdam, and Antwerp between 1250 and 1800, 60 show no discernible degree of internal cohesion. Forty others had no formal agreements among themselves even when they acted as a group. The remaining eighty-five had, in one way or another, a formal institutional bond that kept them together.

The raw data display certain patterns over time in the delegation of control to mercantile organizations. The early benchmark years until 1300 suggest a process of learning and diffusion with regard to different kinds of mercantile organization. Strikingly, however—at least between c. 1350 and 1600—there is no obvious trend toward either higher or lower degrees of delegation. By 1650, more "low-delegation-level" organizations than "high-delegation-level" ones are in evidence, but the small numbers should caution against drawing definite conclusions about individual benchmark years.

The overall impression is that there is little evidence for any kind of evolutionary trend toward either more or less delegation at least until 1650, which contradicts the common assumption in the literature that such organizations as informal coalitions, nations, and formally constituted guilds became understandably obsolete as the emerging European nation-states assumed crucial functions. For about three centuries, various competitive forms of organization, rather than an evolutionary path toward ever-more modern institutions, characterized Europe's commercial world.[25]

The diverging trajectories of the control delegated by German merchants in the Netherlands (Figure 1) seem to be representative of the overall sample. Throughout the years typically associated with the formation of a stronger state under Burgundian and Habsburg rule, different degrees of control delegation were manifest in Bruges, Antwerp, and Amsterdam, suggesting a complex relationship between rulers, market conditions, and the mercantile community. The existence of multiple organizational forms to suit

25 See Grafe, "Fairs," in Stanley Engerman et al. (eds.), *The History of World Trade since 1450* (New York, 2005), 281–283, for another type of merchant enterprise.

Table 3 Distribution of Dependent Variable Observations in a Four-Town Sample by Benchmark Year and "Delegated-Control-Classification"

	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	TOTAL
1	0	2	2	2	5	5	7	9	10	6	6	6	60
2	0	1	4	2	4	6	5	6	7	2	2	1	40
3	2	5	4	7	6	5	3	0	1	1	1	1	36
4	0	1	3	6	9	9	5	3	1	0	0	0	37
5	0	0	1	1	1	3	3	1	1	1	0	0	12
Total	2	9	14	18	25	28	23	19	20	10	9	8	185

different political and market circumstances may well lie at the heart of Europe's commercial success in the long view, though further research is necessary to confirm it.[26]

Tables 4 and 5 below report the results of the probit model employed to test for the relationship between different variables and the probability that merchants delegated more or less control. The specifications 1 and 2 in Table 4 provide a more formal test for the presence or absence of a time trend of the evolutionary type. The results largely confirm the impression gained from Table 3. A simple run of the entire dataset on a number of dummies for each benchmark year (1500 is the omitted year) clearly indicates a break after 1600. All dummies after that date are negative and strongly statistically significant, indicating lower degrees of control delegation over time. However, once we introduce a number of variables that capture the political and institutional framework as well as market size in specification 2, all of the time dummies become statistically insignificant at the 10 percent level. The time trend seen in specification 1 reflects a variety of political factors and institutional developments, as well as an expansion of market scope and scale that deserve more detailed analysis.

Table 5 explores the environmental factors that affected the probability of merchants delegating more (less) control to fellow traders. In the interest of parsimonious specification, we omit the time dummies based on our previous results, which showed no signs of a time trend. Specifications 3 and 4 use the full dataset. Due to missing observations for some of the independent variables, the sample size falls to around 140 observations. Specifications 5 and 6 test additional variables only relevant for foreign merchant guilds—that is, groups operating in a host town—thus reducing the dataset to 120 observations. The results from these specifications speak to four major themes in the literature about mercantile associations:[27]

(1) Guilds Offered Protection against Predatory Rulers Greif argued that "a state with sufficient coercive power to [enforce

26 For a similar argument on craft guilds, see Grafe, review of S. R. Epstein and Maarten Prak (eds.), *Guilds, Innovation, and the European Economy, 1400–1800* (New York, 2008)," *Journal of Interdisciplinary History,* XL (2009), 78–82.

27 A sufficient sample size (generally >100) is crucial in multinomial models; given the sample size in this study, an exclusion of the nonsignificant time dummies considerably improves the quality of the probit estimates.

Table 4 Probit Regression Results: Dependent Variable, Degree of Control Delegated

	(1)	(2)
	CONTROL DELEGATION	CONTROL DELEGATION
D1250	−0.02 (0.03)	#
D1300	−0.32 (0.91)	0.06 (0.14)
D1350	−0.12 (0.41)	0.12 (0.33)
D1400	0.08 (0.28)	0.33 (0.92)
D1450	−0.08 (0.33)	0.29 (0.88)
D1550	−0.22 (0.84)	0.05 (0.10)
D1600	−0.74 (2.58)***	−0.26 (0.50)
D1650	−0.90 (3.14)***	−0.09 (0.18)
D1700	−0.94 (2.54)**	0.91 (1.20)
D1750	−1.31 (3.23)***	0.47 (0.61)
D1800	−1.47 (3.26)***	0.26 (0.36)
Specialized courts		0.42 (1.36)
Mercantile courts		−0.70 (1.26)
Local convoys		−0.08 (0.38)
Local political representation		0.04 (0.14)
(Ware)housing		0.73 (2.70)***
Public vending location		0.45 (2.04)**
Private vending location		0.42 (1.52)

Table 4 (Continued)

	(1)	(2)
	CONTROL DELEGATION	CONTROL DELEGATION
Town population in 1,000		−0.01
		(3.40)***
Observations	185	174
Pseudo R-squared	0.07	0.13
McKelvey and Zavoina's R^2	0.21	0.32

* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.
\# Dropped due to collinearity.
NOTES Y-standardized coefficients: Change of variable 0 to 1 (dummy) or plus one unit (continuous variables) is associated with coefficient×StD change in dependent variable. Observed StD 1.30 (equation 1 and 2). Absolute value of z-statistics in parentheses. Omitted variable is 1500.

contracts and property rights] also ha[d] the power to withhold protection and confiscate private wealth." With Milgrom and Weingast, he also claimed that a ruler could be kept from expropriating foreign merchants by guilds with strong internal cohesion—in the form of rules that allow guilds to exclude members—which could also be abetted by home governments in which merchants had a strong voice. If predatory rulers were the main problem that merchants tried to solve through strong association, merchants with a strong voice in the home and or host government would need less delegation of control to guard against protection against predation. The existence of sophisticated legal institutions also reduced the need for forceful guilds. Strong organization was most attractive where violence against merchants was rife.[28]

The results of this article offer limited support for these views. The coefficient for merchants' political representation in the home town (specification 5 and 6) is not statistically significant. That for local political participation (specifications 3 through 6) returns a coefficient that is statistically significant only at the 10 percent level in one specification (6), albeit with the expected negative sign. These results suggest that the (formal) participation

28 Greif, *Institutions,* 91; *idem,* Milgrom, and, Weingast, "Coordination."

Table 5 Probit Regression Results: Dependent Variable, Degree of Control Delegated

	(3)	(4)	(5)	(6)
	FOREIGN AND LOCAL	FOREIGN AND LOCAL	FOREIGN ONLY	FOREIGN ONLY
Specialized courts	0.36 (1.26)	0.44 (1.53)	0.39 (1.34)	0.52 (1.90)*
Mercantile courts	−1.45 (2.77)***	−1.31 (2.41)**	−1.97 (3.34)***	−1.54 (2.66)***
Local convoys	−0.18 (0.73)	−0.23 (0.93)	−0.17 (0.59)	0.23 (0.81)
Violence	−0.27 (1.44)	−0.24 (1.31)	−0.21 (1.06)	−0.19 (1.08)
Local political representation	0.06 (0.15)	0.02 (0.05)	−0.55 (1.21)	−0.73 (1.72)*
(Ware)housing	0.57 (1.71)*	0.53 (1.63)	0.60 (1.74)*	0.74 (2.31)**
Insurance	0.07 (0.26)	0.16 (0.56)	0.09 (0.30)	0.16 (0.58)
Bourses	0.40 (1.54)	0.42 (1.51)	0.38 (1.40)	0.40 (1.47)
Public vending location	0.48 (2.07)**	0.58 (2.23)**	0.52 (2.13)**	0.74 (2.89)***
Private vending location	0.42 (1.75)*	0.44 (1.64)	0.39 (1.61)	0.28 (1.07)

Town population in 1,000	−0.028	−0.027	−0.030	−0.019
	(3.53)***	(2.60)***	(3.58)***	(1.86)*
Town population^2	0.0001	0.0001	0.0001	0.0001
	(2.61)***	(1.95)*	(2.71)***	(1.37)
Fairs		0.21		0.07
		(0.89)		(0.20)
Market scope		−0.04		−0.05
		(0.39)		(0.63)
Diaspora		0.69		0.29
		(1.77)*		(0.78)
Home political representation			0.16	−0.04
			(0.48)	(0.12)
Home convoys			−0.16	0.07
			(0.50)	(0.23)
Competition				−0.92
				(4.29)***
Observations	139	139	120	120
Pseudo R-squared	0.14	0.15	0.15	0.21
McKelvey and Zavoina's R^2	0.39	0.42	0.42	0.53

* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

NOTES Y-standardized coefficients: Change of variable 0 to 1 (dummy) or plus one unit (continuous variables) is associated with coefficient*SD change in dependent variable. Observed StD 1.3 (equations 3 & 4), 1.28 (equations 5 & 6). Absolute value of *z*-statistics in parentheses.

of merchants in government, stressed by generations of political economists, was in fact only weakly related to the form of mercantile organization.

Surprisingly, no clear association between acts of violence suffered by merchants and the degree of organization is apparent. Our measure of violence from Table 2 ("were merchants from this community known to have suffered acts of violence in the past twenty-five years?") is far from perfect, but it can reveal differences in the incidence of violence between groups and periods. The fact that this variable remains statistically insignificant in all of the specifications warrants strong caution against the simplistic assumption about the relationship between predation and merchants' organization common in the game-theoretical literature.

(2) Guilds Kept Merchants from Cheating Our model also tests the possible relationship between the formation of merchant guilds and the method of conflict resolution. Traders who delegated high levels of control (4 or 5) could rely on their consuls' adjudication of business disputes. In the four towns investigated herein, such consular courts existed in Bruges and Antwerp from 1300 onward and in Bilbao since 1500. In theory, local governments that provided reliable legal services might have led merchants to delegate less control to their fellow traders. This hypothesis would seem to be supported by the results for the mercantile court variable. High levels of delegated control were less likely in towns that had a separate mercantile court, like Bilbao in the mid-sixteenth century, and Bruges after 1700.

The opposite might be true, however, for towns like Amsterdam and Antwerp that extended their local courts with specialized, subsidiary ones for various kinds of business conflicts, though this result is only statistically significant in specification (6). The reason for this apparent contradiction probably lies in the underlying data set. Our specialized-courts variable, which measures the occurrence of any one subsidiary court—be it a maritime court, an insurance chamber, or a bankruptcy court—might be too blunt a tool, but data scarcity denies alternatives.

(3) Merchant Guilds Enabled Traders to Extract Rents A recurrent theme in the literature on guilds is that association increased market power and the potential for abuse of market power, especially for those groups that could exclude competitors legally. Our evidence on this point is indirect. Unmediated competition between mercantile groups and local merchants in the

same line of trade is associated with a lower degree of control delegation (specification 6). It stands to reason that the potential to monopolize a trade and thereby obtain rents was one incentive for an increased degree of organization. Thus, in the fourteenth and fifteenth centuries, the German Hanse in Bruges used its control over Baltic imports and exports of Flemish textiles to exact extensive privileges from the city magistrate. After 1500, Castilian merchants in the same towns benefited from their role as sole suppliers of wool to the local cloth industry. Both groups had by-laws and/or privileges that allowed them to exclude competitors (see the Appendix).

(4) Guilds Facilitated the Matching of Supply and Demand in Markets of Limited Size This hypothesis implies at least two mechanisms. Historians of merchant guilds often argue that larger markets required less delegation of control; our results prove them right. Our two measures for the size of markets are statistically significant. Though there could be an endogeneity problem (an optimal choice of control delegation might have a positive impact on market development), it is more likely that market development was driven largely by exogenous population growth. As expected, trading in larger size towns is associated with merchants delegating less control to a mercantile organization. Seventeenth-century Amsterdam is the most obvious example, but the lack of formal association between traders from Venice, Lucca, Aragon, southern Germany, and France in Antwerp during the mid-sixteenth century speaks to the same rationale. The quadratic term of town population, and its positive sign in the specification, suggests that this relation does not hold for the smallest towns where higher degrees of mercantile organization were unlikely, presumably because the start-up costs of merchant guilds would have been too high. If size of the reachable market is substituted for population (results not reported herein), the result still holds. Size mattered. Indicators of market diversification fare less well. The diversity of goods traded in these markets (the market-scope variable) does not seem to be strongly associated with the delegation of control.[29]

The second mechanism by which size and scope of markets

29 We have run alternative specifications of the same model, substituting more sophisticated measures of market size for town population. Introducing a measure that estimates purchasing power in the markets with which a town had regular trade by multiplying population by silver wages yields similar results.

might have been associated with different kinds of guild organization is the availability of sophisticated private-market solutions, such as insurance, and/or pressure for the provision of public goods that benefited merchants. That the coefficient for the availability of private market insurance is not statistically significant in our specification, however, does not necessarily imply that being able to insure against risk did not matter. The ubiquitously available risk-sharing contracts (bottomry, participations, and limited-liability companies) might have been close-enough substitutes for formal insurance contracts. The result points toward the importance of guilds in focusing rulers' minds on the provision of public goods to merchants. Sometimes courts contributed to the legal force of a wide range of debt and equity contracts, which gave merchants better means to manage risk.

As we suspected, merchant associations provided some of the services that could lower transaction costs (club goods), whereas rulers produced others as public goods. The pattern of complementarity rather than substitution is clearly implicated. The positive, statistically significant coefficients for public goods, such as warehousing, bourses, and other public vending locations (for example, cloth halls), suggest that tightly regimented merchant communities actually pressured towns for these services. The Merchant Adventurers in Antwerp are a case in point: Their textile trade was so important for other foreigners and local cloth finishers that the town magistrate in the late fifteenth century supplied extensive premises for the inspection and sale of cloth. This finding throws new light on the potential place of merchant guilds in general institutional development. Far from being the backward-looking institutions of Adam Smith's imagination, opposed to all novelty, they might have played a major role in the establishment of a wide variety of mercantile institutions in Europe.

But not all of the typical public goods directed at mercantile activity seem to have been linked to mercantile organization. The provision of protective convoys through either a local or home ruler is not statistically significant in any specification. In other words, the delegation of control to fellow traders apparently did not hinge on the protection offered by third parties.

SOME ROBUSTNESS CHECKS Additional information about the factors that influenced the delegation of control in our dataset can be gleaned from an examination of the individual predicted probabil-

Table 6 Individual Predicted Probabilities, Equations 4 and 6

VARIABLE	Z-STAT	1	2	3	4	5
Spec 4: all groups						
Specialized courts	1.53	0.186	0.244	0.266	0.268	0.035
Mercantile courts	2.41**	0.809	0.135	0.044	0.011	0.000
Local political participation	0.05	0.263	0.270	0.247	0.201	0.019
Warehousing	1.63	0.112	0.200	0.267	0.356	0.069
Public vending location	2.23**	0.126	0.208	0.269	0.337	0.059
Diaspora	1.77*	0.069	0.152	0.248	0.420	0.111
Town population	2.60***	1.000	0.000	0.000	0.000	0.000
Town pop^2	1.95*	0.000	0.000	0.000	0.008	0.992
Spec 6: foreign only						
Specialized courts	1.90*	0.094	0.252	0.330	0.295	0.030
Mercantile courts	2.66***	0.856	0.120	0.021	0.002	0.000
Local political participation	1.72*	0.172	0.318	0.306	0.192	0.012
Warehousing	2.31**	0.026	0.127	0.279	0.463	0.105
Public vending Location	2.89***	0.045	0.173	0.311	0.404	0.067
Diaspora	0.78	0.082	0.237	0.330	0.316	0.035
Competition	4.29***	0.414	0.345	0.181	0.059	0.001
Town population	1.86*	1.000	0.000	0.000	0.000	0.000
Town pop^2	1.37	0.000	0.000	0.004	0.101	0.895

* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

ities for the statistically significant variables in particular specifications, as reported in Table 6 for equation 3 above. In each case, the maximum for the independent variable is set (or the dummy = 1 for discrete variables), and all other independent variables are set at their mean value. Probabilities are then calculated for the degree of control delegation.

The profiles further illustrate the overall results. The existence of mercantile courts and larger town size are associated with a decreased probability of higher degrees of control delegation across all categories. Direct competition with the local merchant community (specification 6) also reduces the likelihood of much control devolving to fellow traders. In the case of the supply of (ware-) housing and public vending locations, we observe the highest probability for category 4. These results demonstrate not only the additional potential that our modeling strategy offers but also individual probability profiles that are broadly consistent with our argument that control delegation is indeed an ordered variable, even though the sample size means that we should be cautious in interpreting these.

The question remains whether the results would remain broadly consistent without the assumption that our control-delegation categories are ordered. The obvious test is to run a set of multinomial logit regressions rather than ordered probits. Since multinomial logits are essentially sets of binary pairs (that is, each category is run as a binary set against a predetermined comparison group), they are notoriously difficult to interpret; depending on the comparison group, the parameterization, and therefore the results, change. Nevertheless, we re-ran all specifications as multinomial logits across all possible base categories.

Table 7 reports just one set of relative-risk ratios for category 4 compared to category 1 merchant groups using equation 3. A relative-risk ratio < 1 indicates a negative relationship; a larger town size, for example, lowers the risk that a group of merchants will find themselves in a control-delegation level 4 group rather than a control-delegation level 1 group. A relative-risk ratio > 1 suggests a positive relationship; the risk to find a control-delegation level 4 compared to a level 1 increases significantly given a public vending location. Additional results not reported herein, which were used to check especially the patterns of the individual probability distribution derived from the probits reported above, were found to be consistent.

This article argues for a re-integration of the rich empirical evidence on premodern mercantile organization in Europe, as compiled by many generations of historians, employing comparative quantitative techniques, to analyze the rise, persistence, and decline of merchant associations. The new methodological approach employed herein permits comparative analysis without loss of rigor, while accounting for idiosyncrasies in the organizations via an ordered classification.

From the traders' point of view, membership in a merchant guild was meant to create benefits, economic or otherwise. It did so, however, only at the expense of delegating certain functions to the group. This logic underlies our control-delegation index. De-

Table 7 Relative-Risk Ratios for Equation 3 (Logit Category 4 Compared to Category 1)

	CONTROL DELEGATION LEVEL 4	Z-STAT
Specialized courts	6.82	1.05
Mercantile courts	*0.01*	*−1.56*
Local convoys	1.69	0.43
Violence	0.20	−1.74
Local political repr.	1.39	0.23
(Ware) housing	*0.76*	*−0.18*
Insurance	4.71	1.27
Bourses	7.25	1.35
Public vending locations	*48.90*	*2.64*
Private vending locations	5.41	1.11
Town population in 1,000	*0.88*	*−1.60*
Town pop^2	*1.00*	*−0.21*

NOTE Italics indicate variables that were statistically significant in the probit.

spite their undeniable simplification of the institutional forms, the five categories in our classification scheme accurately depict the basic forms of merchant association. Although these groups might be construed as discrete types of guilds, they actually reflect an inherent ordering. Political representation of a merchant group (category 3) realistically required, at least at an early stage, mutual knowledge and trust, most often based on common origin, ethnicity, or religion (category 2). Sanctioning by consuls (category 4) required legitimization by a formal organization that could verify membership (category 3). The exclusion of fellow merchants from a trade (category 5) required an internally cohesive group that could punish members who continued collaborating with outsiders.

This classification allows us to review existing explanations of the trajectories of merchant guilds in premodern Europe, using standard maximum-likelihood models to determine the probability of particular degrees of control delegation under a variety of political and market conditions. The results of our analysis speak to four large themes in the literature on premodern merchant associations.

First, the key to understanding mercantile organization in this period is not an evolutionary succession of first–best institutions but the co-existence of competitive forms of organization that suited different political and market circumstances. Notwithstanding an early learning phase of more differentiated forms of associations, a full set of institutional alternatives seems to have emerged as early as 1350. For the next three centuries, it provided a pool of alternative solutions that could be adapted to local contingencies. Only after 1650 did merchant groups begin to delegate less control to fellow traders.

Second, the results do not support the received wisdom that merchants dealt with political realities either by creating strong guilds to protect themselves against extortionist taxes and expropriations or by trying to control local and/or home government themselves. Violence suffered by merchant groups was associated with neither higher degrees of control delegation nor stronger collective action. Nor was political participation strongly associated with lesser control delegation. More research is required, but the results raise doubts about the overwhelming importance often given to predatory rulers in accounts of institutional development.

Third, the analysis hints at a more positive role played both by guilds and rulers. Guilds apparently helped the development of other institutions, such as warehousing and protective convoys. Strong guilds could press rulers for the provision of public goods, which also benefited others in the marketplace outside the guild.

Finally, the scale of the markets in which merchants operated was crucial for the level of control that they delegated. That larger markets lowered the potential benefits of organization and raised its costs vindicates generations of historians from Ehrenberg to Braudel and Lopez, as well as many more recently, who stressed the importance of market integration and its link with institutional development.

These conclusions pertain to the limited dataset employed herein to test our new methodological approach. Adding new towns and merchant communities to the dataset may result in other effects of political and economic circumstances on the organization of traders. More observations will also test the likelihood that combinations of economic and political factors will change the level of delegated control. Although the influence of social, religious, and cultural factors on trade associations is beyond the scope of the present analysis, the methodology employed herein would easily lend itself to such an investigation.

Our methodology delivers robust results, and it can enlighten many more detailed questions regarding the role of various independent variables than we could include in this article. Its identification of the key variables, based on an in-depth empirical analysis rather than ad-hoc assumptions about the kinds of problem that merchants were trying to solve, can help to set a new agenda for related research in historical economics. It should also allow historians of merchant guilds to extend and challenge our results in comparison with different groups and towns.