

Guilds and the Economy

Sheilagh Ogilvie

Subject: Economic History Online Publication Date: May 2020

DOI: 10.1093/acrefore/9780190625979.013.538

Summary and Keywords

Guilds ruled many European crafts and trades from the Middle Ages to the Industrial Revolution. Each guild regulated entry to its occupation, requiring any practitioner to become a guild member and then limiting admission to the guild. Guilds intervened in the markets for their members' products, striving to keep prices high, limit output, suppress competition, and block innovations that might disrupt the status quo. Guilds also acted in input markets, seeking to control access to raw materials, keep wages low, hinder employers from competing for workers, and prevent workers from agitating for better conditions. Guilds treated women particularly severely, usually excluding them from apprenticeship and forbidding any female other than a guild member's widow from running a workshop. Guilds invested large sums in lobbying governments and political elites to grant, maintain, and extend these privileges.

Guilds had the potential to compensate for their cartelistic activities by creating countervailing benefits. Guild quality certification was one possible solution to information asymmetries between producers and consumers, which could have made markets work better. Guild apprenticeship had the potential to solve imperfections in markets for skilled training, and thus to encourage human capital investment. The cartel profits generated by guilds could in theory have encouraged technological innovation by enabling guild masters to appropriate more of the social benefits of their innovations, while guild journeymanhood and spatial clustering could diffuse new technical knowledge. A rich scholarship on European guilds makes it possible to assess the degree to which guilds created such benefits, outweighing the harm they caused.

After about 1500, guild strength diverged across Europe, declining gradually in Flanders, the Netherlands, and England, surviving in France and Italy, and intensifying across large tracts of Iberia, Scandinavia, and the German-speaking lands. The activities of guilds contributed to variations across Europe in economic performance, urban growth, and inequality. Guilds interacted significantly with both markets and states, which helps explain why European economies diverged in the crucial centuries before industrialization.

Keywords: guilds, entry barriers, occupational licensing, cartels, gender, quality certification, human capital investment, innovation, economic growth, economic history

Introduction: What Is a Guild?

A guild, in the most general sense, is an association of people with common characteristics who wish to pursue collective ends. In different times and places, guilds have included religious fraternities, mutual welfare associations, place-of-origin lodges, dining societies, neighborhood leagues, and militia clubs. But historically, most guilds were formed by people practicing the same occupation. These occupational guilds sometimes engaged in sociability, processions, performances, worship, and politics. But they all acted in the economic sphere. Their main aim was to protect and enrich their members by excluding competitors, keeping prices high, keeping wages low, reducing threats from innovation, and generating enough profits to pay off the political elites that enforced guild privileges. In some cases, guilds brought certain benefits for the broader public by controlling product quality, certifying skilled training, and creating appropriable rewards that could have motivated innovation by guild members. Guilds' social and cultural activities helped them achieve these economic ends by creating internal cohesion, and their political activities got them legitimacy and enforcement from governments. But guilds' overriding aim was the economic protection and enrichment of their own members (Ogilvie, 2014, 2019).

Guilds have been found for thousands of years in many economies across the world: ancient Egypt, Greece, and Rome; medieval and early modern India, Japan, China, Persia, Byzantium, and Europe; and 19th-century Latin America and the Ottoman Empire. This article focuses on European guilds, because they are much more thoroughly documented and studied than non-European ones. Furthermore, guilds show interesting cross-country variation during the "Little Divergence" (c. 1500–c. 1850), when the economies of the North Atlantic seaboard outpaced the rest of Europe (Fouquet & Broadberry, 2015).

Guilds existed in European antiquity across the ancient Greek and Roman Empires and left tantalizing traces during the so-called Dark Ages (c. 400–c. 1000). They came definitively back into view with the resurgence of European trade and manufacturing, together with public record keeping, after about 1000, and became virtually universal across Europe in the 13th and 14th centuries. After 1500, guilds gradually lost their powers in some European societies while becoming more entrenched in others. The French Revolution triggered the abolition of guilds in France in 1791, a reform exported by French occupational governments to the Netherlands, western Germany, and northern Italy during the Napoleonic period. But guilds survived in Austria-Hungary, most of Germany and Switzerland, Scandinavia, and Iberia, well into the 19th century. The last guilds in Europe were not abolished until 1883.

Behind the term "guild" lay a wide array of organizations. One key distinction is between "merchant guilds" and "craft guilds." Merchant guilds were organizations of wholesale traders and differed in many ways from other guilds. Their members specialized in selling goods and services to industrial, commercial, institutional, or other professional business users, rather than ordinary consumers. Members of merchant guilds often traded across long distances and political frontiers, forming branches or "communities" in foreign trading centers and sometimes organizing multicity associations called "hansas." Merchant

guilds also differ analytically from other guilds because of the distinctive challenges of wholesale, long-distance trading: the gap in space and time between delivery and payment, the need to deal with multiple political regimes, the challenges of managing far-away agents, and the lack of information about alien markets. So studies of merchant guilds have focused on commercial security, contract enforcement, principal-agent relations, information transmission, and price volatility. Merchant guilds comprised a tiny and idiosyncratic minority of guilds in Europe, raising distinctive analytical themes that space constraints preclude discussing here. The interested reader is referred to the rich literature on long-distance trading institutions for detailed consideration of this type of guild (see Gelderblom, 2013; Greif, 2006; Ogilvie, 2011).

Other occupational guilds, comprising the overwhelming majority, are conventionally called “craft guilds.” This term is imprecise because it ignores the many guilds formed by practitioners of occupations other than traditional crafts. Guilds were formed by many service-sector practitioners, including shopkeepers, carters, porters, boatmen, painters, sculptors, musicians, physicians, surgeons, public bath operators, and chimney sweeps. There were also guilds of primary-sector producers, including farmers, agricultural laborers, gardeners, wine growers, shepherds, miners, and fishermen. But practitioners of crafts and “other” guilded occupations shared many characteristics and challenges, above all the fact that they produced goods and services that were destined for (and often directly sold to) consumers. So scholars have focused mainly on craft guilds’ activities to erect entry barriers, maintain market privileges, certify product quality, regulate skilled training, and control innovation.

Debates About Guilds

The effects of guilds on economy and society have always attracted controversy. Contemporaries held strong views about them, with guild members and their political allies extolling their virtues, while customers, employees, and competitors lamented their misdeeds. Guilds were praised by many early economic thinkers such as the French government minister Jean-Baptiste Colbert and the Austrian imperial councilor Johann Joachim Becher. Others censured guilds, as when Adam Smith called them “a conspiracy against the public,” or the French Controller-General Anne-Robert-Jacques Turgot told the King, “I do not believe that one can seriously and in good faith hold that these guilds, their exclusive privileges, the barriers they impose to work, emulation, and progress in the arts, are of any utility.”

Modern scholars are also deeply divided on guilds. Some argue that guilds were so widespread and long-lived that they must have generated economic benefits (Epstein, 1998; Epstein & Prak, 2008; Gustafsson, 1987; Hickson & Thompson, 1991; Prak & Van Zanden, 2013; Putnam et al. 1993). Guilds had the potential to solve information asymmetries between producers and consumers, overcome imperfections in markets for skilled training, created incentives favoring innovation, put pressure on governments to be business friendly, or generate social harmony by reducing competition, conflict, and inequality.

Other scholars take a darker view (Acemoglu et al., 2011; Caracausi, 2017A, 2017B; Hafter, 2007; Horn, 2015; Ogilvie, 2019; Stasavage, 2017; Van den Heuvel, 2015; Wahl, 2019). Guilds were in a position to extract benefits for their own members by acting as cartels, exploiting consumers, rationing access to human capital investment, stifling innovation, bribing governments for favors, harming outsiders such as women, Jews, and the poor, and redistributing resources to their members at the expense of the wider economy.

The evidence suggests that a common theme underlies guilds' activities: guilds tended to do what was best for guild members (Ogilvie, 2014, 2019). Guilds did sometimes protect craftsmen, guarantee quality, and foster skills; at times they even rewarded innovations. In some cases, therefore, guilds brought certain benefits to the broader public. But in many other cases, the actions guilds took mainly had the effect of protecting and enriching their members at the expense of consumers and non-members; reducing threats from innovation, competition, and audacious upstarts; and generating sufficient rents to pay off the political elites that enforced guilds' privileges and might otherwise have interfered with them. It is important to recognize that guilds engaged in multiple activities and to draw a balance sheet between the benefits they had the potential to create through solidarity, quality, and training, and the harm they caused by excluding competitors, manipulating markets, discriminating against women and minorities, corrupting governments, and blocking innovations.

Guild Entry Barriers

It is sometimes assumed that guilds were voluntary, open-access associations—part of “civil society,” like bowling clubs, choral societies, or parent-teacher associations (Greif, 2006; Putnam et al. 1993; Richardson, 2008). Empirical investigations of guilds' behavior show that this was not the case. Guilds were compulsory—and closed. If you wanted to practice a particular occupation, you had to join the right guild. And guilds limited entry (Ogilvie, 2019). They discriminated against applicants who did not hold town citizenship, spoke the wrong language, had the wrong skin color, or were disliked by existing members. Virtually all guilds excluded women, Jews, gypsies, Muslims, Orthodox Christians, and Anabaptists. Guilds excluded Protestants in Catholic places and Catholics in Protestant ones (Kluge, 2007). Guilds in German-speaking central Europe and in Iberia imposed particularly onerous entry barriers based on ideas of honor and defilement. Thus a number of Spanish guilds excluded boys whose skin was the wrong color (in one case anyone “darker than quince jam”), whose parents practiced a “vile” occupation, or whose ancestors had been slaves or religious converts (Klein, 1932; La Force, 1965). Many German guilds excluded people who spoke other languages, descended from serfs, could not document 8 legitimately born great-grandparents, or had social contacts with “defiling” persons such as skimmers or executioners (Stuart, 1999). All guilds everywhere excluded men who could not afford the entry fees. Although German and French guilds charged the highest fees and English and Dutch guilds the lowest ones, across European guilds as a whole, mastership admission fees averaged more than a year's wages for a journeyman or laborer (Ogilvie, 2019). A guild was compulsory if you wanted to ply a trade. And guilds

kept most people out—females, Jews, bastards, gypsies, former serfs, and slaves; most members of minority religions, ethnicities, and nationalities; those without the right parentage in the guild or community; those with an ancestor who had practiced a “defiling” occupation; and anyone who could not afford the guild fees.

By limiting entry, a guild hindered competition in the market for the goods and services its members produced. To see why, consider an occupation whose existing practitioners are competing with one another, faced with an entrant who can produce at a lower cost and thus charge a lower price. If there were free entry, this entrant would capture some of the market by producing at a lower price, forcing the existing producers to respond in some way, perhaps by reducing their own prices, perhaps by ceasing to produce. If a guild imposes an entry barrier, it enables the legally licensed guilded producers to exclude the entrant or require her to incur costs of admission, thereby increasing her production costs and reducing her ability to compete with other producers. Entry barriers also facilitate “tacit collusion,” in which competition is threatened by a number of firms engaging in behavior that approximates that of a single dominant firm, even in the absence of direct market manipulation such as price-fixing and limits on output (although guilds also directly fixed prices and limited supplies, as discussed below in the section on GUILD MANIPULATION OF THE MARKET). Tacit collusion was rendered easier by guild entry barriers because reducing the number of participants lowers coordination costs and increases each party’s share of any collusive profit, thereby increasing incentives to collude (Ivaldi et al., 2003).

Women were unquestionably the largest social group affected by guild entry barriers (Hafer, 2007; Ogilvie, 2004A; Quataert, 1985; Schmidt, 2009; Trivellato, 2008; Van den Heuvel, 2007; Wiesner, 1986). Most guilds restricted women’s training, excluding them from apprenticeship and journeymanship: female apprentices were virtually nonexistent in the German lands, and even in England girls comprised less than 5% of guild apprentices though over 30% of non-guild apprentices. Most guilds prevented women from becoming independent masters, and thus from being business owners and self-employed entrepreneurs. Guilds usually allowed a master’s widow to continue the family workshop but only if she satisfied certain conditions and limited her business in various ways. During the lifetime of the male master, it was common for a guild to restrict the work of his female employees, servants, relatives, daughters, and even his wife.

It might be thought that guilds actually provided for women well, through all-female guilds, widows’ rights, and the work of masters’ female family members (Clark, 1919; Crowston, 2008). But all-female guilds were vanishingly rare. Just 55 were recorded in Europe from the 13th to the 19th century—compared to tens of thousands of male guilds (Ogilvie, 2019). Mixed-sex guilds were also extremely rare, with only 343 recorded across that entire period. Usually most of their members were male, they were run by men, and they treated female members unfairly. Over 99% of guilds were all-male clubs that just let masters’ widows continue the workshop in a limited way. They typically made masters’ widows fulfill conditions that full male masters did not. A guild master’s widow could not remarry, her tenure of the guild license was limited, she had to have a son, she had to pay

extra fees, or she had to please existing male masters. Even then, she often faced limits on her workforce, equipment, raw materials, output, or voice in guild decisions. These constraints made it hard for a guild master's widow to stay in business: from 1354 to 1861, widows headed 18% of town households but only 8% of guild workshops (Ogilvie, 2019). Many guilds responded to pressure from their male members to restrict the work even of masters' wives, daughters, and other female family members. German guilds often blacklisted journeymen who worked alongside females. It is difficult to conclude that the guild system provided well for women.

By erecting barriers against women, guilds affected the wider economy. For one thing, discrimination against women redistributes resources from females to males, reducing the well-being of half the population. In addition, evidence from 21st-century developing economies provides strong reason to think that discrimination against women inflicts large economic costs on society as a whole. Preventing females from obtaining skilled training not only reduces women's own earnings but lowers per capita GDP. Likewise, excluding women from the labor force as workers, business owners, and entrepreneurs not only prevents women from supporting themselves and their families but also lowers output and slows growth in the economy at large (Cuberes & Teignier, 2016; Knowles et al., 2002; United Nations, 2007).

Did guilds actually play an independent role in economic discrimination? It might be argued that the true culprit was culture: that patriarchal, xenophobic, and anti-Semitic norms made discrimination inevitable. Such cultural norms were widespread in the European past. But their practical implementation relied on institutions—such as guilds. Guilds protected their members from competition partly by discriminating against visible minorities. They issued rules barring women, foreigners, and Jews from mastership, guild members from employing them, and customers from buying their wares. These guild rules would not have been needed if everyone had instinctively obeyed patriarchal, xenophobic, or anti-Semitic norms. Guild masters often wanted to employ women, migrants, and Jews. Customers wanted to buy from them. Many people did not let cultural norms about women and Jews affect their daily decisions—especially when it hit their pockets. Guilds did not just reflect cultural norms. They enforced these norms against people who would not otherwise have let culture determine their economic choices (Trivellato, 2006).

Guild Manipulation of the Market

Guilds also sought to protect and enrich their members by manipulating markets directly. Many guilds took action to influence prices, limit supplies, and restrict competition in markets for the goods and services their members produced, and the inputs they used to produce them (Deceulaer, 1996; Edgren, 2006; Farr, 1988; Kluge, 2007; Lipson, 1915; Lis & Soly, 2008; Mickwitz, 1936; Ogilvie, 2019; Unwin, 1908).

Guilds were often observed agreeing internally on prices. They imposed prices that were artificially high, forbade their members to undercut each other's prices, and mobilized government authority in fixing prices. Guilds also limited supplies in order to push up

prices, since if a group of producers can restrict the quantity that is supplied, consumers will have to pay a higher price without any need for the guild to fix prices formally. The most frequent approach was to specify a volume of output that no guild member was allowed to exceed. But many guilds agreed to restrict output on an ad hoc basis, without specifying a precise quota. This approach was attractive because it could be adapted flexibly to a particular situation.

Guilds also used a variety of other approaches to push up prices for what their members produced. Many guilds forbade their members to sell goods they had not themselves produced, limited hours or days of work, closed workshops for particular periods of the year, banned peddling and rural trading, mandated a minimum distance between shops, limited the number or duration of market visits, banned advertising, forbade enticing away another master's customers, limited the number of customers per master, or required any master who got an order to share it with other masters. Most guilds limited each master to just a single workshop, shop, or market stall, with no branches. Some mandated that each member's market stall should be of precisely equal size, should stock a maximum quantity of wares, or should not be replenished with wares for the duration of the market opening. Many guilds limited the amount of raw materials each master was allowed to process—the quantity of wood for each cooper, grain for each baker, raw cotton or wool for each weaver, hides for each tanner, and charcoal for each ironworker. Guilds frequently restricted the amount of equipment each master could have—weavers' looms, spinners' spindles, tanners' lime-pits, shoemakers' lasts, ironworkers' hearths or furnaces, wire-makers' capstans. Another widely used approach was to restrict the number of apprentices, journeymen, or family members each master could employ—a favored approach since it helped limit entry as well as output.

Much more research is needed on guilds' effects on output and prices. Only in a small number of cases is there quantitative evidence of how much output a workshop could produce when there was no guild quota. Surviving evidence suggests that a successful guild could limit the output of a craft workshop to just one-third to two-thirds the level that was technically feasible. Likewise, there are only a few documents recording quantitative information on how much higher guild prices were than non-guild ones, although there are hundreds of qualitative sources describing the practice. The few quantitative records suggest the median price rise imposed by guilds was 25%, and the average was 47% (Ogilvie, 2019). This is even higher than the price rises imposed by 21st-century cartels, which involve mean and median price increases of about 23 percentage points above the competitive price, though they are 42.5% in Pakistan and 53.5% in Turkey (Connor, 2014; Ivaldi, Jenny, & Khimich, 2017). The greater price rises caused by premodern guilds than most 21st-century cartels may result from the fact that guilds enjoyed political enforcement, whereas 21st-century cartels are usually illegal.

Guilds sought to shape markets not only for the goods and services their members produced but also for the inputs they used—labor, raw materials, and even shops and stalls (Ammannati, 2014; Kluge, 2007; La Force, 1965; Mickwitz, 1936; Ogilvie, 2019; Poni, 1991). A guild's privileges usually gave its masters the right to be the sole legitimate buy-

ers of certain inputs, to influence their price, and to limit competition for them. Many guilds used these privileges to lower their members' production costs. In a number of cases, guilds depressed the cost of raw materials by imposing a direct price ceiling. More commonly, guilds sought to reduce their members' production costs indirectly by demanding the right to buy raw materials before outsiders got access, forbidding exports of key raw materials, requiring any guild member who bought such inputs to share the purchase with his fellows, or making them get permission before selling raw materials to an outsider.

The most important way guilds depressed their members' costs was by intervening in the labor market (Caracausi, 2011; Horn, 2015; Kaplan, 1986; Kisch, 1989; La Force, 1965; Ogilvie, 2019). Many guilds fixed maximum wages for journeymen and maximum piece rates for freelance spinners. One German guild even forbade guild masters to offer their workers hot drinks in the evening, as it would force other masters to offer the same (Ogilvie, 2019). Even more frequently, guilds pushed down workers' wages indirectly by forbidding any guild master from hiring away another's employee and making it difficult for a worker to change masters. Some guilds went so far as to allocate journeymen to masters centrally, preventing them from shopping around among masters for better conditions. By the 18th century, English guilds were too weak to do this, but French guilds frequently coerced their workforce in this way, as shown by a journeyman tailor from Bristol who was swept up in a Marseille journeymen's riot against guild labor-allocation practices, and remarked in astonishment that "in England there was no guild labor-allocation officer, the journeymen being free to take employment with the master whom they find most appropriate" (Sonenscher, 1989). Many guilds, especially in France and Germany, blacklisted employees who demanded better wages or resisted guild regulation of the labor market.

These findings cast a sobering light on the idea that guilds were the precursors of trade unions, protecting workers and fostering solidarity. Guilds were associations of employers. They often exerted considerable pressure to prevent their workers from setting up their own associations. When workers went on strike, many guilds organized bands of masters to beat them up, persuaded governments to send in soldiers, or blacklisted the ringleaders. Guilds were the opposite of labor unions. They were employers' clubs that used their legal privileges to keep wages low and conditions poor. Guilds not only reflected employers' interests but provided institutional mechanisms that helped employers reach enforceable agreements to refrain from competing for workers, thereby keeping employees poorly paid and dependent on employers' favor.

Guilds and the Informal Sector

But did guilds actually enforce their regulations? Not all guilds have yet been investigated in detail. Furthermore, as discussed in the section on guilds and economic development, guilds varied a great deal, with strong guilds in Iberia, Scandinavia, Austria, and most German societies, medium-strength guilds in Italy, France, and Scotland, and com-

paratively feeble guilds in the Northern Netherlands, the Southern Netherlands (modern Belgium), and England. However, most guilds enforced their entry barriers and market privileges sufficiently to have real economic effects (Cerutti, 2010; Edgren, 1998; Hafter, 2007; Heimmermann, 1998; Horn, 2015; Mickwitz, 1936; Ogilvie, 2019; Poni, 1991; Schalk, 2017; Stuart, 1999; Van den Heuvel, 2015).

Again and again, contemporaries complained that guilds kept them out, stopped them earning a livelihood, charged unaffordable fees, and erected other obstacles to admission. Guild entry barriers often changed people's behavior, impelling them to pursue other types of work, stop practicing multiple occupations, migrate to other places, work in the black market, delay marriage, go to prison, and alter other fundamental life decisions. People regularly spent resources to satisfy guild entry conditions, paying substantial sums for apprenticeship enrollment fees, minimum training premiums, mastership fees, operating licenses, and extraordinary memberships. Those who could not satisfy guild entry requirements often spent resources circumventing them. Apprentices and journeymen bought exemptions from guild admission barriers. Time and again, illegal producers, Jews, rural workers, members of other guilds, and other outsiders paid guilds for permits allowing them to produce specific wares or sell in particular markets. Non-members commonly paid guild masters to act as their front men. It was normal for outsiders to devote resources to secure countervailing privileges entitling them to practice occupations in violation of guild entry barriers.

The behavior of contemporaries also reveals the real economic effects of market manipulation by guilds. Customers habitually complained about high guild prices and supply restrictions that made their daily lives difficult. Journeymen tried to set up their own associations and periodically went on strike against oppressive guild masters. Suppliers of raw materials and intermediate inputs protested against the low, monopsonistic prices imposed by guilds. Guilds spent huge amounts of money to lobby governments to grant, confirm, and extend their rights to intervene in input and output markets, and their opponents spent nearly as much in the attempt to block them. Guilds also regularly invested time and money in legal conflicts to defend their privileges to manipulate markets, and those harmed by these market machinations in turn spent time and money on litigation to attack them. In many instances, guilds and their opponents engaged in costly and sometimes violent struggles over price fixing, supply restrictions, wage ceilings, and raw material prerogatives. As organizations of employers, guilds intervened recurrently in labor markets, evoking bitter conflicts with workers. Guilds habitually invested time and money in systems of detection and punishment to enforce their market privileges. Such activities strongly imply that guild action was effective, since people do not spend resources to secure, defend, enforce, attack, and evade forms of market manipulation that have no real economic effects.

No enforcement regime is perfect. Guild entry barriers and market privileges were violated by both free-riding insiders and encroaching outsiders. These infringements became increasingly widespread in the Low Countries and England as guilds weakened after c. 1550, in Scotland after guilds lost their political influence in 1672, and in France in the

later eighteenth century, especially after Turgot's abortive abolition of the guilds in 1776, although the French guilds recovered their powers after just six months and were not finally swept away until 1791. But even where a particular guild's privileges were not perfectly enforced, at best this created a black-market "informal sector." It did not mean that guild privileges had no economic effects, just that these effects consisted partly of manipulating formal markets in favor of guild members and partly of pushing economic activity into the black market.

This guild-induced bifurcation between formal and informal economic activity reduced efficiency and harmed welfare both in the informal sector—where producers and consumers moved to escape guild privileges—and in the formal sector where insiders enforced the guild privileges. In the informal sector, transactions are hard to enforce, ownership is insecure, risks are high, time horizons are short, finance is scarce, human capital is low, worker protection is nonexistent, consumer safeguards are lacking, and resources are wasted evading formal-sector sanctions (Batini, Levine, Kim, & Lotti, 2010). Guilds, by pushing consumers and producers into the informal sector, reduced economic efficiency and increased these people's costs and risks.

But guilds also caused harm in the formal sector where their entry barriers were enforced. In the formal sector, guild entry barriers gave the legally privileged producers market power, enabling them to increase prices above marginal cost, reducing exchange and consumer surplus (Auriol & Warlters, 2005). Market concentration increases the prices of goods and services for everyone, of course. But it disproportionately reduces the relative incomes of the least well off, who seldom share the oligopolistic rents and have fewer options to substitute among different consumption choices (Rodríguez-Castelán, 2015). Guild entry barriers and market privileges, whether enforced thoroughly or partially, exercised a palpable economic impact, especially on the poor.

Guild Quality Certification and Consumer Protection

It might still be possible to conclude that guilds were beneficial institutions in a wider perspective. Even though guilds erected entry barriers, manipulated markets, and oppressed women, they had the potential to create countervailing benefits—for instance, by certifying quality. A standard source of market failure is asymmetric information between consumers and producers. Producers know whether they are selling a good- or a bad-quality product—for example, a good or a bad cloth. But consumers do not know whether any given cloth is good or bad. So they are only willing to pay a price for that cloth that is the average between the value they place on a good cloth and the value they place on a bad one. Given that uninformed consumers will only pay the average price, producers will only sell bad cloths and will exit from the market when they have good ones to sell, since they cannot get a good price for them. As sellers of good cloths leave the market, the average quality of cloths in it decreases, so consumers' average willingness to pay decreases.

es, leading to even more producers of good cloths leaving the market, followed by the departure of even more consumers, in a vicious circle (Akerlof, 1970).

Guilds had the capacity to correct this market failure by certifying quality. First, all guilds certified producers. As discussed below in the section on guilds and human capital investment, many guilds did not operate apprenticeship systems, but all imposed entry barriers: only those licensed by the guild were allowed to provide the goods and services of that occupation (Epstein, 1998; Lis & Soly, 2008). Second, many guilds also certified products: they inspected goods for quality and forbade items below a certain quality level to be sold at all (Gustafsson, 1987; Richardson, 2005, 2008). Third, some guilds engaged in monopoly contracting with wholesale merchants, collectively guaranteeing the quality of wares, especially where producers were dispersed in the countryside (Pfister, 1998, 2004, 2008). Fourth, some guilds operated collective sales rooms, assembling in one place the output of multiple producers and implicitly guaranteeing its quality (Prak, 2003, 2008). Finally, guilds often professed a corporate ethos of honorable behavior, sometimes backed by religious sanctions, which guaranteed to uninformed customers that wares were high quality because that was the way honorable guild masters behaved (De Munck, 2018; Richardson, 2005; Richardson & McBride, 2009).

Many guilds did regulate quality. But they mainly imposed a pass-fail system. As far as producers were concerned, it was completely pass-fail: producers excluded from the guild could not legally sell to customers. As far as products were concerned, those guilds that operated inspection systems typically prohibited wares that did not pass the inspection from being sold at all, often confiscating or destroying the wares and sometimes even smashing the equipment used to make them. Only a few guilds operated an inspection system with gradations, allowing some (though not all) lower-quality wares to be sold as long as they were appropriately labeled; these were typically in more flexible guild systems such as those of England, the Low Countries, and Prussia after the state forcibly liberalized the guild system in 1712. In France, by contrast, it was not until the 1780s that the state was able to overcome guild opposition to graduated quality certification (De Munck, 2011, 2018; Ogilvie, 2019).

Guilds justified their pass-fail system for certifying producers and products by arguing that they protected consumers by keeping quality high. But by restricting supply and stifling competition from lower-quality (but also lower-price) producers and products, guilds also kept prices high. Poor consumers often prefer lower prices, even if this means lower quality. If guilds had been the best way of protecting consumers, everyone should have chosen to buy guild-certified products from guild-certified producers. Instead, many people—especially the poor—risked prosecution to buy black market wares that cost less, even though they might be of lower quality. Guilds' legal monopolies meant guild masters did not have to provide the appropriate level of quality—the level consumers wanted (Hafer, 2007; Horn, 2015; Ogilvie, 2004B).

Guilds did not always even guarantee high-quality high-price products. All guilds certified producers, in the sense that they prohibited sales by non-members of the guild. But not

all guilds certified goods and services (Caracausi, 2017A; Cerutti, 1991; Edgren, 2006; Epstein, 1991; Horn, 2015; Ogilvie, 2005). Most guilds did not devote much attention to quality certification in their regulations, and many devoted none (Mocarelli, 2008). Guilds with quality regulations often showed little will or capacity to implement them, with low proportions of enforcement activities devoted to quality, mild sanctions, numerous quality breaches by senior guild members, and widespread corruption inside the certification system. Inward moral adherence to a collective ethos of honesty about product quality is impossible to observe, but the outward behavior of guild members reveals widespread failure to act in accordance with any such ethos (Farr, 1988; Gustafsson, 1987; Ogilvie, 2019).

Collective contracts, in which guilds guaranteed delivery of specified quantities and qualities of products to groups of merchants were extremely rare, being found exclusively in a few zones of German-speaking central Europe. Where they existed, they were widely evaded by both producers and merchants. The rapid growth of guild-free rural “proto-industries” all over Europe from the late medieval period onward shows clearly that collective guild contracts—and indeed guilds themselves—were neither necessary nor sufficient for dispersed rural producers to supply quality levels that satisfied export markets (Boldorf, 2009; Cerman, 2002).

Guild sales rooms, in which guilds implicitly guaranteed the quality of wares, were also extremely rare: they were operated almost exclusively by artists’ guilds, and even among guilded artists only in the Netherlands. Even for Dutch artists, guild sale rooms were a minor component of a lively ecosystem of market outlets in which consumers felt confident enough about product quality to purchase eagerly without guild quality guarantees (Evans, 2012; Ewing, 1990).

Alternative quality-certification mechanisms—operated by merchants, town governments, and state authorities—existed alongside guilds from the early 13th century onward and were increasingly preferred to them by rulers, town governments, and consumers (De Munck, 2018; Ogilvie, 2019). Consumers, rather than buying guild-certified products from guild-certified producers, eagerly bought non-guild-certified goods and services from non-guilded producers, despite the risks involved in using the black market (Haftor, 2007; Horn, 2015; Ogilvie, 2005; Van den Heuvel, 2015). In many parts of Europe, consumers and producers increasingly shifted from an emphasis on the intrinsic value of the raw materials embodied in a product, the main aspect of quality certified by the guild, to characteristics such as design, decoration, diversity, fashionable style, and innovative configurations, which guild rules struggled to codify and indeed often stifled (Caracausi, 2017B; De Munck, 2011, 2018; Ogilvie, 2019). On an aggregate level, European industries without guild quality-certification systems often outperformed ones where producers and products were certified by guilds. Guild quality guarantees were evidently neither necessary nor sufficient for creating and maintaining consumer confidence in both luxuries and everyday wares, at home and on export markets (Braun & Burger, 2008; Caracausi, 2017B; Ogilvie, 2005; Sella, 1968).

This is not to say that guild quality controls had no effects (Caracausi, 2017B; De Munck, 2011, 2018; Mickwitz, 1936). Guilds used quality certification to restrict entry, by excluding producers who were not guild members and condemning products that had not been produced by guild members. Guild quality controls often hindered industries from responding nimbly to changes in fashion and demand, which became increasingly important relative to the intrinsic value of the raw materials, especially in the largest branch of manufacturing, textiles (De Munck, 2011, 2018). This was because guild rules could not adequately codify the diverse and rapidly changing characteristics of fashionable wares, and experimenting with new products and processes not covered by the quality regulations involved a cumbersome process of securing consent from all guild members as well as the guild's political patrons.

Things guilds did for other reasons often inflicted unforeseen harm on quality. Guilds' restrictions on competition reduced their members' incentives to maintain quality and respond to changes in consumer demand. Guild price ceilings on raw materials created incentives for suppliers to reduce their quality. Guild wage caps made employees work carelessly, embezzle inputs, riot and strike, reducing labor quality (Horn, 2015; Ogilvie, 2019).

Quality problems undeniably existed. Information asymmetries between producers and consumers can arise in any market, and premodern markets were no exception. No society has devised the perfect institutional solution to quality certification. But the historical evidence on guilds casts doubt on the notion that privileged professional associations were the solution. Guilds often sought to control quality, but their other incentives prevented them from ensuring the appropriate product quality: the one desired by the consumer, not the producer.

Guilds' Role in Human Capital Investment

Human capital in the form of economically relevant skills is important for economic growth, and guilds are widely regarded as having the institutional capacity to provide such skills. For one thing, the cartel profits guilds generated had the potential to attract people into training who might otherwise not have thought it worthwhile. Guild prescriptions mandating apprenticeships longer than needed to learn the skills made it possible for apprentices to pay for training in the form of cheap labor rather than money. Guilds also sometimes regulated opportunistic behavior on the part of apprentices who left before completing their term or masters who neglected or abused their apprentices (De la Croix et al., 2018; Epstein, 1998).

Many guilds did operate apprenticeship systems, but surprisingly, many did not—in the largest available sample, covering Italy over nearly six centuries, 60% of guilds did not even mention training in their ordinances (Mocarelli, 2008). Many guilds that did have apprenticeship systems did not require any examination or masterpiece, so they did not seriously certify skill. Those guilds with examinations often failed to define the skills being tested and most resisted outside pressure—for example, from governments—to clarify

or improve their assessment regimes. Some guilds imposed a detailed examination but left its requirements unchanged for centuries, during which techniques, equipment, and commercial practices changed immensely. Still other guilds administered examinations corruptly or openly passed unqualified candidates who possessed the requisite personal ties, political clout, or financial means. As organizations to promote the interests of masters, guilds commonly turned a blind eye to masters who failed to provide training and exploited apprentices as cheap general laborers. This in turn encouraged apprentice opportunism. A large percentage of apprentices, often half or more, dropped out before completing their terms, a suggestive indicator of the failure or economic irrelevance of guild training (Schalk et al., 2017; Wallis, 2008).

In fact, apprenticeships existed widely without guilds. Private apprenticeships were widespread in guilded and non-guilded occupations alike, wherever guilds did not prohibit their use. Alternative institutions regulated apprenticeships in 13th- and 14th-century Italian and Flemish cities before guilds existed in the occupations in question (Epstein, 1991; Nicholas, 1995). Private apprenticeships were particularly prevalent in two of the most dynamic economies in premodern Europe, the Netherlands and England, where young people—especially girls—who were excluded from guild training often invested in non-guild apprenticeships (Davids, 2003, 2007; Simonton, 1991). Legal, notarial, municipal, and state institutions provided protections against opportunism in training contracts in Italy, Flanders, and England from the medieval period onward (Epstein, 1991; Nicholas, 1995; Wallis, 2012). That guilds were not necessary for providing skilled training is evidenced by the fact that many mainstream crafts were practiced successfully by females who were prohibited by guilds from obtaining guild training. Females and other outsiders who had been barred from formal guild training were attacked as a serious competitive threat in most guilded crafts, indicating the adequacy of their skills in the real economy.

Guilds did, however, use their local monopolies over providing training to benefit their own members. Guilds imposed formal apprenticeship as an entry condition in a large number of occupations generally recognized as not highly skilled, such as laboring, farming, cleaning, selling, carrying burdens, cleaning chimneys, and coal picking. Even in mainstream crafts, guilds often mandated apprenticeships longer than needed to learn the occupation. This widespread guild practice cannot be explained as a bond on apprentice opportunism given evidence that most new apprentices were already productive enough to cover their consumption costs and alternative monetary and legal bonds were available (Caracausi, 2017A; Wallis, 2008). Rather, many guilds imposed excessively long apprenticeships to augment barriers to entry, as did the woollen-weavers of the Bohemian town of Iglau (modern Jihlava) in 1510, “so that it will not be so easy to get into the guild” (Ogilvie, 2019). Guilds also used apprenticeship requirements as entry barriers and revenue-raising devices by denying training to otherwise capable applicants (such as Jews and women), charging high fees to those they admitted to training, exempting masters’ relatives known to lack expertise, and selling exemptions from apprenticeship require-

ments to completely untrained entrants (Ogilvie, 2019). This casts doubt on the idea that guild apprenticeships were superior to non-guild ones.

It is therefore unsurprising that there is a lack of concrete evidence that guild apprenticeship requirements improved economic performance. The lower skill premium—the gap between wages for skilled and unskilled workers—in Europe compared to Asia is sometimes held to imply that guilds enhanced aggregate skills (Epstein & Prak, 2008; Van Zan-den, 2009). But wage differentials are caused by many labor market characteristics other than skills, and skills are determined by many factors other than training institutions (Blundell et al., 2016). Moreover, as already mentioned, training was provided by many other institutions than guilds, and too little is known of Asian guilds to conclude that they provided inferior training to European ones. Comparisons across European industries, by contrast, show that guild training was neither necessary nor sufficient for high productivity and rapid growth. In all major branches of European manufacturing, there were industries that were either completely non-guilded or whose guilds did not mandate apprenticeship. Those industries in which guild apprenticeship was absent often out-performed those in which guilds imposed compulsory apprenticeship systems (Davids, 2003, 2007, 2013; Ogilvie, 2004A, 2005, 2019).

Guilds did not just administer a training system that was open to all capable applicants. Instead, to benefit their members, guilds decided who was allowed training and kept most people out. Guilds denied apprenticeships not just to females but also to many males—Jews, bastards, gypsies, former serfs, and slaves; most members of other religions, ethnicities, and nationalities; those without the right parentage in the guild or community; those with an ancestor who had practiced a “defiling” occupation; and anyone who could not afford the fees. Guilds enabled a privileged minority to obtain vocational skills but excluded large numbers of unprivileged men, and nearly all women, from investing in their own human capital. It is therefore unsurprising that guild apprenticeship systems show no positive relationship with economic outcomes. Guilds probably generated some economic benefits by ensuring training for a privileged few. But they also caused economic harm by denying training to many more young people who were eager to learn but could not convince guilds to let them become apprentices. For the economy at large, guilds’ net effect on training was probably negative.

Guilds and Innovation

Innovation is important for economic growth—arguably more crucial than anything else. But new knowledge is what economists call a “public good,” with two features that make it complicated to buy and sell in markets. First, it is non-excludable: once you communicate it to one person, how do you stop it spreading to others without charge? Second, an idea is non-rival: once you tell it to one person, you can tell it to others at no extra cost. So the private benefits of devising and diffusing an idea may be less than the social benefits. Ideas may be underprovided by private individuals transacting in markets. An innovative idea may not be devised at all, since potential inventors cannot profit from their own

efforts. Or a good idea may be conceived but, so that the private inventor can profit from his own efforts, communicated only to a few paying customers, even though at zero additional cost it could benefit society more widely.

Because ideas are public goods, other institutions than markets might be better at encouraging their invention and diffusion. Non-market institutions might enable individuals to appropriate more of the social benefits of their ideas, giving them better incentives to think them up. Or non-market institutions might give inventors better incentives to diffuse their innovations to everyone who might use them.

Guilds had the potential to provide these institutional solutions. For one thing, as already mentioned, guilds generated cartel profits for their members, which might have enabled guild members to appropriate more of the social benefits of their innovations, giving them better incentives to invest in research and development (Epstein, 1998). Second, guilds often mandated apprenticeship, which might have encouraged the diffusion of innovative technical knowledge across generations (De la Croix et al., 2018; Epstein, 1998, 2004). Third, guilds sometimes required journeymen to travel, which could facilitate the geographical diffusion of innovative knowledge (De la Croix et al., 2018; Reith, 2008). Fourth, guilds often held assemblies of their entire membership, where their members could have exchanged technical know-how (Unger, 1978). Finally, guilds created spatial clusters of specific occupations in towns and even specific neighborhoods, which might have promoted the transmission of technological knowledge among practitioners (Epstein & Prak, 2008; Lis & Soly, 2008).

Governments try to encourage innovators by granting them patents—temporary monopolies—that let them appropriate some of the public benefits of their inventions. Guild monopolies are also sometimes seen as creating this kind of appropriability for inventors through the monopoly profits they generated for their members. But there were crucial differences. A guild monopoly was permanent, not temporary. All guild masters enjoyed the monopoly collectively, whether they innovated or not. And guilds excluded competitors, reducing members' incentives to incur the costs and risks of innovation. Guild members had a captive market, enabling them to enjoy monopoly profits without bothering to innovate.

European societies therefore developed other tools to aid appropriability, like patents, prizes, and pensions for inventors (Belfanti, 2004, 2006). None provided perfect incentives for innovation. But inventors often preferred them to guilds—unsurprisingly, since guilds often lobbied and litigated in order to block innovations that threatened the status quo (Horn, 2015; Mickwitz, 1936; Ogilvie, 2019). Innovation needs both rewards for inventors and pressures from competition (Aghion et al., 2005). Guilds tipped the balance too far against competition.

What about the idea that guilds encouraged diffusion of technical knowledge across generations via apprenticeship? A first snag with this idea is that, as discussed in the section on guilds' role in human capital investment, many apprenticeships existed without guilds, and many guilds had no apprenticeship regimes (Davids, 2003). A second snag is that

technologically innovative premodern industries show no evidence of knowledge being diffused by guild apprenticeships. “Mega-structures” such as Gothic churches involved some of the greatest technological innovations in medieval Europe, yet guilds played no role in meeting these challenges (Prak, 2011). Shipbuilding was another high-tech industry, yet guild-mandated apprenticeships were not central to diffusing its technical knowledge. The most innovative shipbuilding regions in Europe either lacked a comprehensive guild apprenticeship system as in the Netherlands, or lacked guilds altogether as in England. Comprehensively guild-regulated shipbuilding industries in Germany and France, by contrast, were technologically backward (Clapham, 1949; Unger, 1978). Machine making was another activity in which technological innovation was important and spilled over into other branches of manufacturing. But guilds were not central to the technological expertise of millwrights, engineers, or loom builders in the most innovative European machine-building regions such as the Zaanstreek zone north of Amsterdam or the industrial towns of northern England (Davids, 2013). The lack of discernible link between guild apprenticeships and technological innovation should not be surprising given that, as already mentioned, many guilds that had training regulations used them as entry barriers, pretexts for other privileges, or licenses to be sold, rather than as mechanisms for transmitting knowledge. Even where guilds did effectively convey technical knowledge to those individuals whom they permitted to enter apprenticeships, they denied training to many more applicants than they admitted, narrowing the conduits through which technological knowledge could diffuse across the economy by restricting such knowledge to a privileged few.

Did guilds diffuse innovations by making journeymen travel? Guilds in some parts of Europe required journeymen to go “on the tramp” for several years before they could apply for mastership. Traveling journeymen probably helped circulate techniques from town to town. But craft labor was highly mobile anyway. Around 1750, Europe had an estimated 300,000 migrant workers, only a minority of whom were guild journeymen (Lucassen & Lucassen, 1997). Journeymen were not required by guilds to travel in Renaissance Italy, Golden Age Holland, or 18th-century England, where innovations spread swiftly (Caracausi, 2017A; Davids, 2013; Ogilvie, 2019). Conversely, Germany and Austria remained technologically stagnant, despite strong guilds that made journeymen travel for years (Kluge, 2007; Reith, 2008). In Germany, where guilds often compelled journeymen to travel, surviving tramping books show that the young men spent much of their time wandering from place to place failing to find work, while their technical knowledge decayed (Wesoly, 1985). Guild journeymen seldom traveled outside their own cultural zone, which reduced their probability of transmitting novel technical ideas across linguistic or cultural boundaries (Reith, 2008). Guilds in the German lands often excluded journeymen who were not from the majority religious confession, and many German guilds rejected journeymen who had worked in the Netherlands, where the more flexible guild system sometimes permitted females to do craft work, a practice many German guilds regarded as defiling for male workers (Ogilvie, 2019). If traveling journeymen applied for mastership as nonlocals, they ran into guild discrimination (Kaplan, 1986; Kluge, 2007). Journeymen were quite unlikely vectors for transmitting technical knowledge.

What about the idea that guild assemblies served to spread technical knowledge among masters? Many guilds held regular assemblies, where they communicated information to members (Unger, 1978). But there is no evidence that this information involved technology. Instead, where records survive, guild assemblies mostly communicated information relating to the guild's institutional privileges. The assembly began with an oral reading of the guild regulations. Offenses against the regulations were punished. New masters and apprentices were registered. Existing masters were asked for their views on guild issues. Above all, lobbying and litigation was planned—including campaigns against disruptive technologies (Ogilvie, 1997). So guild assemblies did transmit information but seldom about technology. When they did discuss new technology, it was more often about how it could be opposed, not how it could be adopted.

Did guilds create “knowledge clusters,” which diffused technological innovations among practitioners? Guilds mostly required craftsmen to work inside the city limits, sometimes in specific neighborhoods. Such spatial clusters might have helped transmit industrial knowledge, but concrete evidence is missing. And there are some reasons for doubt. For one thing, European industries progressively moved from urban clusters to the open countryside after c. 1500. This was partly because producers wanted to escape guild surveillance—the downside of knowledge clusters. Inside towns, most guilds did not require workshops to cluster (Ogilvie, 2019). Some even forbade one master to set up shop too near another, to prevent too much competition. Where occupational clusters formed inside towns, it was mostly because craftsmen wanted to cluster anyway. Industrial agglomerations arise spontaneously—including in modern economies—where being near other producers improves access to technical ideas, customers, suppliers, or skilled labor (Fujita & Thisse, 1996). There is no evidence that clusters needed guilds to create them.

Why Did Guilds Exist—and Why Did They Disappear?

Guilds existed for such a long time in so many places, surely they must have been beneficial? This argument is an example of the “efficiency” approach, which theorizes that institutions arise and survive because they benefit the whole economy, solving problems such as market failures (Acemoglu et al., 2005; Ogilvie, 2007; Ogilvie & Carus, 2014). In principle, this argument could account for the widespread existence of guilds, since market failures are ubiquitous in developing economies.

But the empirical findings do not support the idea that guilds arose and survived because they were efficient. As discussed in the sections on entry barriers and market manipulation, guilds were cartels of producers, and there is overwhelming evidence that many of them used their market power to overcharge customers, exploit employees, underpay suppliers, stifle competition, oppress women, and impede innovation. Guilds do not appear to have been efficient in correcting failures in markets for product quality for the reasons examined in the section on guild quality controls: alternative quality-certification mechanisms existed, and guilds had characteristics that created poor incentives for their

members to provide the range of quality that a heterogeneous population of consumers wanted – especially those who were budget-constrained.

Nor, as discussed earlier, were guilds necessary or sufficient for correcting failures in markets for training: other institutions were available and were voluntarily chosen by trainees and trainers. Indeed, guilds' net effect on aggregate human capital investment was probably negative, since they provided training to a privileged few but denied it to the disadvantaged many.

Finally, guilds were not efficient institutions for correcting failures in markets for innovations. Some guilds probably did enable their members who innovated to appropriate more of the social benefits of their innovations, but guilds also restricted competition, reducing their members' incentives to innovate and actively obstructing the innovative activities of outsiders. In theory, guild apprenticeship, journeymanship, assemblies, and locational clusters had the potential to facilitate diffusion of technical knowledge; however, there is no concrete evidence that this actually occurred in any specific premodern industry. In fact, many guilds effectively lobbied and litigated to block or delay the adoptions of disruptive innovations, which were implemented more readily in weakly guilded Flanders, Holland, and England than in strongly guilded Germany or Iberia. Efficiency approaches cannot explain the historical evidence on guilds.

In a wider perspective, there is little evidence that institutions in general exist to benefit the whole economy—think of slavery or serfdom. Instead, many institutions survive by providing perks to the powerful, at the expense of everyone else (Acemoglu et al., 2005; Ogilvie, 2007; Ogilvie & Carus, 2014). This “distributional” approach to explaining institutions can explain why guilds existed so widely and survived for so many centuries, despite the harm they caused: they benefited powerful and well-organized interest groups. In other words, they made the pie smaller but dished out large slices to established guild masters, with fiscal and regulatory side benefits to town governments, princes, seigneurs, and other powerful elites. Guilds provided an organizational mechanism for groups of businessmen to lobby political elites for market privileges that protected and profited guild members. Guilds then redirected a share of the profits to political elites in the form of cash gifts, taxes, favorable loans, regulatory cooperation, military services, and political support. Neither guilds nor political elites could have extracted these resources on their own. But by doing so, they harmed customers, workers, competitors, and the economy as a whole. Guilds existed for a reason. But this reason was that they benefited powerful interests, not the economy at large.

The mutually reinforcing exchange of favors between guilds and political elites in premodern Europe prefigured a pattern widespread in modern developing economies. Political elites grant entry barriers to entrenched producers, giving them market power that enables them to extract monopoly profits from consumers. Part of these profits are then paid to political elites as fees and taxes, in return for official enforcement of the entry barriers. This reduces political elites' administrative costs and increases their short-term revenues but distorts resource allocation and stifles long-term growth. Entry barriers ex-

pand the informal sector, where risks are higher, and producers cannot be taxed. Entry barriers also give formal sector producers market power, enabling them to increase prices, reducing exchange and consumer surplus. In this way, developing economies, whether historical or modern, can find themselves burdened enduringly by institutions that are bad for society at large but good for political elites, who cooperate to keep them in being (Auriol & Warlters, 2005).

So why did guilds ever disappear? Even in medieval and early modern Europe, there were “liberties,” suburbs, towns, and even entire regions where guilds were weak or absent, creating interstices within which anyone could practice a trade, even if she was a woman, a non-citizen, a Jew, or a former slave (Horn, 2015). The period after c. 1500 saw a widening divergence across Europe in the relationship between guilds and political elites. In societies such as the Low Countries and England, political authorities gradually ceased to grant and enforce guilds’ privileges, while in “corporatist-absolutist” European states, such as France, Spain, Austria, Scandinavia, and the German territories, political elites continued to profit from their particularistic bargain with guilds for much longer (Ogilvie, 2019).

The reasons for the gradual breakdown of the coalition between guilds and political elites in some parts of Europe after c. 1500 are a matter of lively debate. But economic and political historians have identified a complex of factors that created a new equilibrium in which both political authorities and businessmen gradually discovered they could do better for themselves by renouncing identity-based, “particularized” privileges and adopting more generalized institutional mechanisms. These factors included stronger parliaments that increasingly constrained how rulers could raise revenues and grant privileges to special-interest groups; a more diversified urban system in which towns did not act in concert but rather competed and encroached on one another’s markets; a more variegated social structure including prosperous, articulate, and politically influential individuals who wanted to engage in manufacturing and objected to its being monopolized by members of exclusive organizations; and governments that gradually made taxation more generalized and developed markets for public borrowing, reducing the attractiveness of short-term fiscal expedients such as selling privileges to special-interest groups (Ogilvie, 2019; Ogilvie & Carus, 2014). Much further research is needed, however, to identify the precise combination of factors that triggered this gradual transition from an economy of coercive, identity-based privileges to one of voluntary, open-access transactions.

Conclusion: Guilds and Economic Development

How did the strength of guilds affect the development of the economy? There are many different ways of measuring the strength of guilds. It is important to assess guild strength not just on the basis of the characteristics of guilds themselves, such as their numbers or their internal cohesiveness. Rather, the strength of guilds must be evaluated more comprehensively, in terms of “guild landscapes” (Reininghaus, 2000A, 2000B)—that is, how guilds interacted with the entirety of the surrounding economy and society. This encom-

passed guilds' relationships with merchant groups, their links with governments and political elites, their place within the urban system, their interactions with the much larger rural economy, and the existence of jurisdictional "liberties" and even entire towns that were guild-free (Reininghaus, 2000A, 2000B; Ogilvie, 2019).

Guild strength varied widely across European societies in all of these dimensions. Overall, however, there were three main zones (Ogilvie, 2019). The strongest guilds were found in central, southern, and Nordic Europe: the German lands, Austria-Hungary, the Iberian Peninsula, and the Scandinavian societies. Guilds of intermediate strength were found in societies such as Switzerland, France, Italy, and some German territories such as the Rhineland (Kisch, 1989; Reininghaus, 2000B). The weakest guilds were found along the North Atlantic seaboard: in the Southern Netherlands (modern Belgium), especially in the 15th and 16th centuries, but again after c. 1750; in the Northern Netherlands, especially before and during its Golden Age, from 1560 to c. 1670, but continuing to some degree during the 18th century; and in England, especially after about 1550.

When guild strength is mapped against economic performance, it shows an inverse relationship: strong guilds were associated with economic stagnation and weak guilds with dynamism. Our best estimates of per capita GDP between c. 1300 and c. 1850 show that stronger guilds were associated with lower output and slower economic growth, particularly after c. 1500. Holland, England, and the southern Netherlands had the weakest guilds and the fastest growth in Europe. Germany, Spain, and Sweden had the strongest guilds and the slowest economic growth (Ogilvie, 2019). Those German polities that were occupied after 1789 by the French, who abolished the legal and economic privileges of guilds, experienced faster urbanization and economic growth later in the 19th century (Acemoglu et al., 2011). Analysis of 282 cities in German-speaking central Europe between 800 and 1800 found that, controlling for other characteristics, cities with greater representation of craft guilds on the city council experienced zero or negative economic growth, as proxied by demographic expansion, and that the negative effect of craft guilds gradually intensified over time (Wahl, 2019). A study of 85 cities in Germany, the Low Countries, Switzerland, France, and northern Italy between 1000 and 1800 found that, controlling for other characteristics, unsuccessful revolts by craft guilds had no effect on demographic growth, but successful revolts that secured guild membership of city councils resulted in lower economic growth, as proxied by demographic expansion (Stasavage, 2017).

However, association does not imply causation. Many factors affect economic growth. Cross-city analyses can control for some of these factors, but comparisons at a higher level of aggregation—particularly across entire polities or societies—can seldom do so adequately. It would not be fair to blame slow economic growth solely on guilds. Central Europe, Iberia, and Scandinavia had other problems besides guild strength—absolutist states, high taxes, devastating wars, rapacious landlords, monopolistic merchants, coercive towns, predatory churchmen, and stagnant villages. Guilds were just one part of a broader institutional framework in which political elites granted privileges to powerful groups who used them to extract profits for themselves, thus harming the whole econo-

my. Guilds mainly regulated manufacturing and trade, whereas agriculture—and thus landlords and villages—mattered more. But although many factors stifled economic growth, there are plenty of reasons to believe that guilds were detrimental to economic performance.

Even if guilds harmed growth, perhaps they favored economic equality? Many guilds aspired to maintain internal equality among their masters. In fact, guilds often used equality to justify limiting competition. Many guilds forbade any master from keeping more than one workshop, employing more than a specified number of apprentices and journeymen, making or selling above a particular output quota, exceeding statutory business hours, subcontracting to poorer masters, or advertising his wares. Guilds often forbade their members to introduce innovative products or practices that might entice customers away from their fellows. Such rules probably reduced inequality inside guilds—though many guilds were still dominated by rich oligarchies (Lis & Soly, 2008).

But equality in the wider society is of more concern than equality inside occupations. Guilds excluded wide swathes of would-be producers, especially women, minorities, migrants, and people who could not afford to buy guild licenses. Guilds often enabled their members to overcharge customers and underpay workers. This inevitably widened the gap between the small group of privileged guild masters and the larger population of workers and outsiders. A study of 297 German towns between 1300 and 1850 found that, controlling for other urban characteristics, stronger guilds were associated with higher economic inequality (Schaff, 2018). This is not surprising, given the politically sanctioned market power that guilds created for their members. A study of eight OECD countries in the early 21st century found that market power, by driving up prices of goods and services, increases the wealth of the richest 10% of households by 10 to 24%; this implies that public action to reduce market power, by either enhancing enforcement of competition law or reducing government-sanctioned barriers to entry, can substantially reduce inequality (Ennis & Kim, 2017). Where medieval and early modern guilds were strong enough to enforce their market power, therefore, guilds almost certainly increased inequality in the wider society, because the benefit to guild members was surpassed by the harm to the less well-off.

So what is the bottom line? Were guilds completely harmful? Or is there a middle course we can steer in assessing the economic effects of guilds? Guilds varied a lot. There were some that crushed competition and others that struggled to contain it. There were places such as Florence or Lyons where a single guild might include multiple occupations, so internal squabbles impeded harmful collusion. In cities such as Bordeaux, half of all craftsmen never formed guilds. In London, any member of any guild could practice any occupation he chose, and in Amsterdam guilds charged comparatively low fees and sometimes even admitted women and Jews. But this did not mean those guilds were good. They still aspired to block entry, restrict competition, overcharge customers, and underpay workers—they were just not particularly effective in doing so. Even in places where guilds were weak, the most dynamic industries escaped to guild-free enclaves and the open countryside. Weak guilds struggled to stifle competition, which meant they caused less harm. But

they were not actually beneficial. It is akin to asking whether there is a middle course we can steer in assessing slavery or serfdom: these were good systems for slaveowners and serf-landlords but bad for the economy as a whole. Some guilds were certainly less harmful than others. But hardly any generated positive economic effects.

Further Reading

Davids, K. (2013). Moving machine-makers: Circulation of knowledge on machine-building in China and Europe between c. 1400 and the early nineteenth century. In M. R. Prak & J. L. Van Zanden (Eds.), *Technology, skills and the pre-modern economy in the East and the West: Essays dedicated to the memory of S. R. Epstein* (pp. 205–224). Leiden, The Netherlands: Brill.

De Munck, B. (2018). *Guilds, labour and the urban body politic: Fabricating community in the southern Netherlands, 1300–1800* (1st ed.). London, UK: Routledge.

Epstein, S. A. (1991). *Wage labor and guilds in Medieval Europe*. Chapel Hill: University of North Carolina Press.

Epstein, S. R. (1998). Craft guilds, apprenticeship, and technological change in preindustrial Europe. *Journal of Economic History*, 58(3), 684–713.

Gustafsson, B. (1987). The rise and economic behavior of medieval craft guilds: An economic-theoretical interpretation. *Scandinavian Economic History Review*, 35(1), 1–40.

Heckscher, E. F. (1994). *Mercantilism*. London, UK: Allen & Unwin.

Horn, J. (2015). *Economic development in early modern France: The privilege of liberty, 1650–1820*. Cambridge, UK: Cambridge University Press.

Kisch, H. (1989). *From domestic manufacture to industrial revolution: The case of the Rhineland textile districts*. Oxford, UK: Oxford University Press.

Ogilvie, S. (2014). The economics of guilds. *Journal of Economic Perspectives*, 28(4), 169–192.

Ogilvie, S. (2019). *The European guilds: An economic analysis*. Princeton, NJ: Princeton University Press.

Pfister, U. (2004). The introduction of the engine loom in the European silk ribbon industry (17th–18th centuries). In N. Coquery, L. Hilaire-Perez, L. Teisseyre-Sallmann, & C. Verna (Eds.), *Artisans, industrie: Nouvelles révolutions du Moyen Age à nos jours* (pp. 41–54). Paris, France: ENS Editions.

Poni, C. (1991). Local market rules and practices: Three guilds in the same line of production in early modern Bologna. In S. Woolf (Ed.), *Domestic strategies: Work and family in France and Italy, 1600–1800* (pp. 69–101). Cambridge, UK: Cambridge University Press.

Quataert, J. H. (1985). The shaping of women's work in manufacturing: Guilds, households and the state in central Europe, 1648–1870. *American Historical Review*, 90(5), 1122–1148.

Wallis, P. (2008). Apprenticeship and training in premodern England. *Journal of Economic History*, 68(3), 832–861.

References

Acemoglu, D., Cantoni, D., Johnson, S., & Robinson, J. A. (2011). The consequences of radical reform: The French Revolution. *American Economic Review*, 101(7), 3286–3307.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2005). Institutions as a fundamental cause of long-run growth. In P. Aghion & S. N. Durlauf (Eds.), *Handbook of economic growth* (Vol. 1A, pp. 385–472). Amsterdam, The Netherlands: Elsevier.

Aghion, P., Bloom, N., Blundell, R., Griffith, R. and Howitt, P. (2005). Competition and innovation: an inverted U relationship. *Quarterly Journal of Economics* 120(2), 701–728.

Akerlof, G. A. (1970). The market for 'lemons': Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84, 488–500.

Ammannati, F. (2014). Craft guild legislation and woollen production: The Florentine *Arte della Lana* in the fifteenth and sixteenth centuries. In K. Davids & B. De Munck (Eds.), *Innovation and creativity in late medieval and early modern European cities* (pp. 55–80). Aldershot, UK: Ashgate.

Auriol, E., & Warlters, M. (2005). Taxation base in developing countries. *Journal of Public Economics*, 89(4), 625–646.

Batini, N., Levine, P., Kim, Y.-B., & Lotti, E. (2010). Informal labour and credit markets: A survey. *IMF Working Papers*, 10/42.

Belfanti, C. M. (2004). Guilds, patents, and the circulation of technical knowledge: Northern Italy during the early modern age. *Technology and Culture*, 45(3), 569–589.

Belfanti, C. M. (2006). Between mercantilism and market: Privileges for invention in early modern Europe. *Journal of Institutional Economics*, 2(3), 319–338.

Blundell, R., Green, D., & Jin, W. (2016). The puzzle of graduate wages. *IFS Briefing Note*, BN185.

Boldorf, M. (2009). Socio-economic institutions and transaction costs: Merchant guilds and rural trade in eighteenth-century Lower Silesia. *European Review of Economic History*, 13(2), 173–198.

- Braun, H., & Burger, P. (2008). Wissens-, Techniktransfers und Wettbewerbsprozesse am Beispiel der Herstellung leonischer Drähte in der Region Nürnberg im 16. und 17. Jahrhundert. *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, 95(2), 157–174.
- Caracausi, A. (2011). The just wage in early modern Italy: A reflection on Zaccia's *De Salario seu Operariorum Mercede*. *International Review of Social History*, 56, 107–124.
- Caracausi, A. (2017a). A reassessment of the role of guild courts in disputes over apprenticeship contracts: A case study from early modern Italy. *Continuity and Change*, 32(1), 85–114.
- Caracausi, A. (2017b). Information asymmetries and craft guilds in pre-modern markets: Evidence from Italian proto-industry. *The Economic History Review*, 70(2), 397–422.
- Cerman, M. (2002). The organization of production and trade in proto-industrial textile production in early modern east-central Europe: The role of seigneurial influence and sub-contracting. In F. D. Guy & J. W. Veluwenkamp (Eds.), *Entrepreneurs and institutions in Europe and Asia 1500–2000* (pp. 215–236). Amsterdam, The Netherlands: Aksant.
- Cerutti, S. (1991). Group strategies and trade strategies: The Turin tailors' guild in the late seventeenth and early eighteenth centuries. In S. Woolf (Ed.), *Domestic strategies: Work and family in France and Italy, 1600–1800* (pp. 102–147). Cambridge, UK: Cambridge University Press.
- Cerutti, S. (2010). Travail, mobilité et légitimité. Suppliques au roi dans une société d'Ancien Régime (Turin, XVIIIe siècle). *Annales. Histoire, Sciences Sociales*, 65(3), 571–611.
- Clapham, J. H. (1949). *A concise economic history of Britain of Britain from the earliest times*. Cambridge, UK: Cambridge University Press.
- Clark, A. (1919). *Working life of women in the seventeenth century* (1st ed.). London, UK: Routledge.
- Connor, J. M. (2014, February 24). Price-fixing overcharges (Rev. 3rd ed.). *SSRN Working Papers*, 2400780.
- Crowston, C. H. (2008). Women, gender and guilds in early modern Europe. *International Review of Social History*, 53(supplement), 19–44.
- Cuberes, D., & Teignier, M. (2016). Aggregate effects of gender gaps in the labor market: A quantitative estimate. *Journal of Human Capital*, 10(1), 1–32.
- Dauids, K. (2003). Guilds, guildsmen and technological innovation in early modern Europe: The case of the Dutch Republic. *Economy and Society of the Low Countries Working Papers*, 2003-2.

Davids, K. (2007). Apprenticeship and guild control in the Netherlands, c.1450–1800. In B. De Munck, S. L. Kaplan, & H. Soly (Eds.), *Learning on the shop floor: Historical perspectives on apprenticeship* (pp. 65–84). New York, NY: Berghahn.

Davids, K. (2013). Moving machine-makers: Circulation of knowledge on machine-building in China and Europe between c. 1400 and the early nineteenth century. In M. R. Prak & J. L. Van Zanden (Eds.), *Technology, skills and the pre-modern economy in the East and the West: Essays dedicated to the memory of S. R. Epstein* (pp. 205–224). Leiden: Brill.

De la Croix, D., Doepke, M., & Mokyr, J. (2018). Clans, guilds, and markets: Apprenticeship institutions and growth in the pre-industrial economy. *Quarterly Journal of Economics*, 133(1), 1–70.

De Munck, B. (2011). Guilds, product quality and intrinsic value: Towards a history of conventions? *Historical Social Research*, 36(4), 103–124.

De Munck, B. (2018). *Guilds, labour and the urban body politic: Fabricating community in the southern Netherlands, 1300–1800* (1st ed.). London, UK: Routledge.

Deceulaer, H. (1996). Guilds and litigation: Conflict settlement in Antwerp (1585–1796). In M. Boone & M. Prak (Eds.), *Statuts individuels, statuts corporatifs et statuts judiciaires dans les villes européennes (moyen âge et temps modernes). Actes du colloque tenu à Gand les 12–14 Octobre 1995* (pp. 171–208). Leuven, Belgium: Garant.

Edgren, L. (1998). The brotherhood of the guild? Conflicts within the Swedish guild system in the 18th century. In S. R. Epstein, H. G. Haupt, C. Poni, & H. Soly (Eds.), *Guilds, economy and society* (pp. 153–165). Seville, Spain: International Economic History Conference.

Edgren, L. (2006). What did a guild do? Swedish guilds in the eighteenth and early nineteenth century. In I. A. Gadd & P. Wallis (Eds.), *Guilds and association in Europe, 900–1900* (pp. 43–55). London, UK: Centre for Metropolitan History.

Ennis, S. F., & Kim, Y. (2017). Market power and wealth distribution. In World Bank (Ed.), *A step ahead: Competition policy for shared prosperity and inclusive growth* (pp. 133–153). Washington, DC: World Bank Group.

Epstein, S. A. (1991). *Wage labor and guilds in Medieval Europe*. Chapel Hill: University of North Carolina Press.

Epstein, S. R. (1998). Craft guilds, apprenticeship, and technological change in preindustrial Europe. *Journal of Economic History*, 58(3), 684–713.

Epstein, S. R. (2004). Property rights to technical knowledge in premodern Europe, 1300–1800. *American Economic Review: Papers and Proceedings*, 94(2), 382–387.

Epstein, S. R., & Prak, M. (2008). Introduction: Guilds, innovation and the European economy, 1400–1800. In S. R. Epstein & M. Prak (Eds.), *Guilds, innovation and the European economy, 1400–1800* (pp. 1–24). London, UK: Routledge.

Evans, A. (2012). *Het Tapissierspand: Interpreting the success of the Antwerp tapestry* (Doctoral dissertation). Duke University, Durham, North Carolina.

Ewing, D. (1990). Marketing art in Antwerp, 1460–1560: Our Lady's Pand. *The Art Bulletin*, 72(4), 558–584.

Farr, J. R. (1988). *Hands of honor: Artisans and their world in Dijon, 1550–1650*. Ithaca, NY: Cornell University Press.

Fouquet, R., & Broadberry, S. (2015). Seven centuries of European economic growth and decline. *Journal of Economic Perspectives*, 29(4), 227–244.

Fujita, M., & Thisse, J.-F. (1996). Economics of agglomeration. *Journal of Japanese and International Economies*, 10, 339–378.

Gelderblom, O. (2013). *Cities of commerce: The foundations of international trade in the Low Countries, 1250–1650*. Princeton, NJ: Princeton University Press.

Greif, A. (2006). *Institutions and the path to the modern economy: Lessons from medieval trade*. Cambridge, UK: Cambridge University Press.

Gustafsson, B. (1987). The rise and economic behavior of medieval craft guilds: An economic-theoretical interpretation. *Scandinavian Economic History Review*, 35(1), 1–40.

Haft, D. M. (2007). *Women at work in pre-industrial France*. University Park: Pennsylvania State University Press.

Heimmermann, D. J. (1998). The guilds of Bordeaux, les *métiers libres* and the *sauvetats* of Saint-Seurin and Saint-André. *Proceedings of the Western Society for French History*, 25, 24–35.

Hickson, C. R., & Thompson, E. A. (1991). A new theory of guilds and European economic development. *Explorations in Economic History*, 28(2), 127–168.

Horn, J. (2015). *Economic development in early modern France: The privilege of Liberty, 1650–1820*. Cambridge, UK: Cambridge University Press.

Ivaldi, M., Jenny, F., & Khimich, A. (2017). Cartel damages to the economy: An assessment for developing countries. In World Bank (Ed.), *A step ahead: Competition policy for shared prosperity and inclusive growth* (pp. 77–110). Washington, DC: World Bank Group.

Ivaldi, M., Jullien, B., Rey, P., Seabright, P., & Tirole, J. (2003). *The economics of tacit collusion*. Paper presented at the Final Report for DG Competition, European Commission, March 2003.

- Kaplan, S. L. (1986). Social classification and representation in the corporate world of eighteenth-century France: Turgot's 'Carnival.' In S. L. Kaplan & C. J. Koepp (Eds.), *Work in France: Representations, meaning, organization and practice* (pp. 176–226). Ithaca, NY: Cornell University Press.
- Kisch, H. (1989). *From domestic manufacture to industrial revolution: The case of the Rhineland textile districts*. Oxford, UK: Oxford University Press.
- Klein, J. (1932). Medieval Spanish guilds. In E. F. Gay, A. H. Cole, A. L. Dunham, & N. S. B. Gras (Eds.), *Facts and factors in economic history: Articles by former students of E. F. Gay* (pp. 164–188). Cambridge, MA: Harvard University Press.
- Kluge, A. (2007). *Die Zünfte*. Stuttgart, Germany: Franz Steiner.
- Knowles, S., Lorgelly, P. K., & Owen, P. D. (2002). Are educational gender gaps a break on economic development? Some cross-country empirical evidence. *Oxford Economic Papers*, 54(1), 118–149.
- La Force, J. C. (1965). *The development of the Spanish textile industry, 1750–1800*. Berkeley: University of California Press.
- Lipson, E. (1915). *The economic history of England, Vol. I: The Middle Ages*. London: A. & C. Black.
- Lis, C., & Soly, H. (2008). Subcontracting in guild-based export trades, thirteenth-eighteenth centuries. In S. R. Epstein & M. Prak (Eds.), *Guilds, innovation and the European economy, 1400–1800* (pp. 81–113). London, UK: Routledge.
- Lucassen, J., & Lucassen, L. (1997). *Migration, migration history, history: Old paradigms and new perspectives*. Bern, Switzerland: Peter Lang.
- Mickwitz, G. (1936). *Die Kartellfunktionen der Zünfte und ihre Bedeutung bei der Entstehung des Zunftwesens: eine Studie im spätantiker und mittelalterliche Wirtschaftsgeschichte*. Helsingfors, Finland: Societas scientiarum Fennica.
- Mocarelli, L. (2008). Guilds reappraised: Italy in the early modern period. *International Review of Social History*, 53, 159–178.
- Nicholas, D. (1995). Child and adolescent labour in the late medieval city: A Flemish model in regional perspective. *English Historical Review*, 110(439), 1103–1131.
- Ogilvie, S. (1997). *State corporatism and proto-industry: The Württemberg Black Forest, 1580–1797*. Cambridge, UK: Cambridge University Press.
- Ogilvie, S. (2004a). Guilds, efficiency and social capital: Evidence from German proto-industry. *Economic History Review*, 57(2), 286–333.
- Ogilvie, S. (2004b). How does social capital affect women? Guilds and communities in early modern Germany. *American Historical Review*, 109(2), 325–359.
-

- Ogilvie, S. (2005). The use and abuse of trust: The deployment of social capital by early modern guilds. *Jahrbuch für Wirtschaftsgeschichte*, 2005(1), 15–52.
- Ogilvie, S. (2007). ‘Whatever is, is right’? Economic institutions in pre-industrial Europe. *Economic History Review*, 60(4), 649–684.
- Ogilvie, S. (2011). *Institutions and European trade: Merchant guilds, 1000–1800*. Cambridge, UK: Cambridge University Press.
- Ogilvie, S. (2014). The economics of guilds. *Journal of Economic Perspectives*, 28(4), 169–192.
- Ogilvie, S. (2019). *The European guilds: An economic analysis*. Princeton, NJ: Princeton University Press.
- Ogilvie, S., & Carus, A. W. (2014). Institutions and economic growth in historical perspective. In S. Durlauf & P. Aghion (Eds.), *Handbook of economic growth* (Vol. 2A, pp. 405–514). Amsterdam, The Netherlands: Elsevier.
- Pfister, U. (1998). Craft guilds and proto-industrialization in Europe, 16th to 18th centuries. In S. R. Epstein, H. G. Haupt, C. Poni, & H. Soly (Eds.), *Guilds, economy and society* (pp. 11–24). Seville, Spain: International Economic History Conference.
- Pfister, U. (2008). Craft guilds, the theory of the firm, and early modern proto-industry. In S. R. Epstein & M. Prak (Eds.), *Guilds, innovation and the European economy, 1400–1800* (pp. 25–51). London, UK: Routledge.
- Poni, C. (1991). Local market rules and practices: Three guilds in the same line of production in early modern Bologna. In S. Woolf (Ed.), *Domestic strategies: Work and family in France and Italy, 1600–1800* (pp. 69–101). Cambridge, UK: Cambridge University Press.
- Prak, M. (2003). Guilds and the development of the art market during the Dutch Golden Age. *Simiolus: Netherlands Quarterly for the History of Art*, 30(3–4), 236–251.
- Prak, M. (2008). Painters, guilds and the art market during the Dutch Golden Age. In S. R. Epstein & M. Prak (Eds.), *Guilds, innovation and the European economy, 1400–1800* (pp. 143–171). London, UK: Routledge.
- Prak, M. (2011). Mega-structures of the Middle Ages: The construction of religious buildings in Europe and Asia, c.1000–1500. *Journal of Global History*, 6(3), 381–406.
- Prak, M. R., & Van Zanden, J. L. (2013). Technology and Human capital formation in the East and West before the Industrial Revolution. In M. R. Prak & J. L. Van Zanden (Eds.), *Technology, skills and the pre-modern economy in the East and the West: Essays dedicated to the memory of S. R. Epstein* (pp. 1–22). Leiden, The Netherlands: Brill.
- Putnam, R. D., Leonardi, R. & Nanetti, R. Y. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton, NJ: Princeton University Press.

Quataert, J. H. (1985). The shaping of women's work in manufacturing: Guilds, households and the state in central Europe, 1648–1870. *American Historical Review*, 90(5), 1122–1148.

Reininghaus, W. (2000a). Zünfte und Regionen. 'Zunftlandschaften' als Forschungsproblem. In W. Reininghaus (Ed.), *Zunftlandschaften in Deutschland und den Niederlanden im Vergleich. Kolloquium der Historischen Kommission für Westfalen am 6. und 7. November 1997 auf Haus Welbergen* (pp. 3–9). Münster, Germany: Aschendorf.

Reininghaus, W. (2000b). Zünfte und Zunftpolitik in Westfalen und im Rheinland am Ende des Alten Reiches. In W. Reininghaus (Ed.), *Zunftlandschaften in Deutschland und den Niederlanden im Vergleich. Kolloquium der Historischen Kommission für Westfalen am 6. und 7. November 1997 auf Haus Welbergen* (pp. 71–86). Münster, Germany: Aschendorf.

Reith, R. (2008). The circulation of skilled labour in late medieval and early modern central Europe. In S. R. Epstein & M. Prak (Eds.), *Guilds, innovation and the European economy, 1400–1800* (pp. 114–142). London, UK: Routledge.

Richardson, G. (2005). Craft guilds and Christianity in late-medieval England: A rational choice analysis. *Rationality and Society*, 17(2), 139–189.

Richardson, G. (2008). Medieval guilds. In S. N. Durlauf & L. E. Blume (Eds.), *The New Palgrave dictionary of economics*. Houndmills, UK: Palgrave Macmillan.

Richardson, G., & McBride, M. (2009). Religion, longevity, and cooperation: The case of the craft guild. *Journal of Economic Behavior & Organization*, 71(2), 172–186.

Rodríguez-Castelán, C. (2015). The poverty effects of market concentration. *World Bank Policy Research Working Papers*, 7515.

Schaff, F. (2018). *Economic divergence and the 'inequality extraction ratio': Early modern Germany in a European perspective* (M.Phil. thesis). University of Cambridge, Cambridge, UK.

Schalk, R. (2017). From orphan to artisan: Apprenticeship careers and contract enforcement in The Netherlands before and after the guild abolition. *The Economic History Review*, 70(3), 730–757.

Schalk, R., Wallis, P., Crowston, C., & Lemercier, C. (2017). Failure or flexibility? Exits from apprenticeship training in pre-modern Europe. *Journal of Interdisciplinary History*, 48(2), 131–158.

Schmidt, A. (2009). Women and guilds: Corporations and female labour market participation in early modern Holland. *Gender & History*, 21(1), 170–189.

Sella, D. (1968). The rise and fall of the Venetian woollen industry. In B. Pullan (Ed.), *Crisis and change in the Venetian economy in the sixteenth and seventeenth centuries* (pp. 106–126). London, UK: Methuen.

- Simonton, D. (1991). Apprenticeship, training and gender in eighteenth-century England. In M. Berg (Ed.), *Markets and manufacture in early industrial Europe* (pp. 227–238). New York, NY: Routledge.
- Sonenscher, M. (1989). Le droit du travail en France et en Angleterre à l'époque de la Révolution. In G. Gayot & J.-P. Hirsch (Eds.), *La Révolution française et le développement du capitalisme* (pp. 381–387). Villeneuve d'Ascq, France: Université Charles de Gaulle, Lille III.
- Stasavage, D. (2017). When inclusive institutions failed: Lessons from the democratic revolutions of the Middle Ages. *New York University Working Papers*.
- Stuart, K. (1999). *Defiled trades and social outcasts: Honor and ritual pollution in early modern Germany*. Cambridge, UK: Cambridge University Press.
- Trivellato, F. (2006). Murano glass, continuity and transformation (1400–1800). In P. Lariano (Ed.), *At the centre of the Old World: Trade and manufacturing in Venice and the Venetian mainland (1400–1800)* (pp. 143–184). Toronto, ON: Centre for Reformation and Renaissance Studies.
- Trivellato, F. (2008). Guilds, technology and economic change in early modern Venice. In S. R. Epstein & M. Prak (Eds.), *Guilds, innovation and the European economy, 1400–1800* (pp. 199–231). London, UK: Routledge.
- Unger, R. W. (1978). *Dutch shipbuilding before 1800: Ships and guilds*. Amsterdam, The Netherlands: Van Gorcum.
- United Nations Economic and Social Commission for Asia and the Pacific. (2007). *Economic and social survey of Asia and the Pacific: Surging ahead in uncertain times*. New York, NY: United Nations.
- Unwin, G. (1908). *The guilds and companies of London*. London, UK: Methuen.
- Van den Heuvel, D. (2007). *Women and entrepreneurship: Female traders in the northern Netherlands, c. 1580–1815*. Amsterdam, The Netherlands: Aksant.
- Van den Heuvel, D. (2015). Policing peddlers: The prosecution of illegal street trade in eighteenth-century Dutch towns. *Historical Journal*, 58(2), 367–392.
- Van Zanden, J. L. (2009). The skill premium and the 'great divergence.' *European Review of Economic History*, 13(1), 121–153.
- Wahl, F. (2019). Political participation and economic development. Evidence from the rise of participative political institutions in the late medieval German lands. *European Review of Economic History*, 23(2), 193–213.
- Wallis, P. (2008). Apprenticeship and training in premodern England. *Journal of Economic History*, 68(3), 832–861.

Guilds and the Economy

Wallis, P. (2012). Labor, law, and training in early modern London: Apprenticeship and the city's institutions. *Journal of British Studies*, 51(04), 791–819.

Wesoly, K. (1985). *Lehrlinge und Handwerksgesellen am Mittelrhein. Ihre soziale Lage und ihre Organisation vom 14. bis ins 17. Jahrhundert*. Frankfurt am Main, Germany: Kramer.

Wiesner, M. E. (1986). *Working women in Renaissance Germany*. New Brunswick, NJ: Rutgers University Press.

Sheilagh Ogilvie

Faculty of Economics, University of Cambridge