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Access to the Trade: Monopoly and Mobility in European Craft Guilds, 17th and 18th Centuries

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Abstract:
One of the standard objections against citizenship systems and trade organizations in the premodern world has been their exclusiveness. Privileged access to certain professions and industries is seen as a disincentive for technological progress. Guilds, especially, have been portrayed as providing unfair advantages to established masters and their descendants, over immigrants and other outsiders. In this paper the results of detailed local investigations of the composition of citizenries and guild apprentices and masters is brought together, to find out to what extent this picture is historically correct. This data offers an indirect measurement of the accessibility of citizenship and guilds that allows insight into the mechanisms of exclusion and their impact. The paper finds that guild masterships were in most towns open to large numbers of immigrants and non-family, as were training markets for apprentices. Therefore, we argue, our understanding of urban and guild 'monopolies', and the measure of protection and reward they supplied to established citizens, is in need of serious revision.

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It is generally assumed that restricted access to urban manufacturing and trade constrained the premodern economy. Restricted access was part of a wider set of regulations that imposed political constraints on economic development ('feudalism'). Urban citizenship regimes generally limited some, or even all, economic roles to full citizens, or burgesses, freemen, *bourgeois*, *burgers*, *Bürger*, and so on. Within most cities, access to specific economic roles was further constrained by guilds. Guilds were established by documents that laid down the ground rules for their role in society and were approved and supported by local governments.[1] In some cities, moreover, guilds dominated the local government. This combination of urban citizenship and guild regulation has been portrayed by many economic historians as a great villain in restricting access to markets, and thus hampering progress.[2] The guilds' abolition, and the emergence of national citizenship in the nineteenth century is, in turn, one of the conventional explanations for industrialisation and modern economic growth.[3]

A standard element of the guild organisation was that the members were granted, as a privilege of their membership, the right to produce and sell a specific product, or range of products, to the exclusion of all non-members. This privilege is usually called the guild 'monopoly'. While monopoly is commonly understood in terms of

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[1] Unless stated otherwise, this article ignores merchant and shopkeepers' guilds, which faced different challenges, and often had different recruitment practices. Wherever the term 'guild' is used in the text, it should therefore be read to mean 'craft guild'.

[2] Peter Kriedte, *Peasants, landlords and Merchant Capitalists: Europe and the World Economy, 1500-1800* (Leamington Spa, 1983): 9; Carlo Cipolla, *Before the Industrial Revolution: European Society and Economy, 1000-1700* (New York, 1980, 2nd ed.): 256; Joel Mokyr, *The Lever of Riches: Technological Creativity and Economic Progress* (Oxford, 1990): 77, 258-260, 267, 298; David S. Landes, *Revolution in Time: Clocks and the Making of the Modern World* (Cambridge Ma, 1983): 219; Landes, *The Wealth and Poverty of Nations: Why Some are So Rich and Some So Poor* (London, 1998): 174, 223, 239, 242-245; Peter Musgrave, *The Early Modern European Economy* (London, 1999): 71, 73, 89; Joel Mokyr, *The Gifts of Athena: Historical Origins of the Knowledge Economy* (Princeton, 2002): 31, 259-260; Sheilagh Ogilvie, *Institutions and European Trade: Merchant Guilds, 1000-1800* (Cambridge, 2011): ch. 3; David Stasavage, 'Was Weber Right? The Role of Urban Autonomy in Europe's Rise', *American Political Science Review*, 108 (2014): 337-340.

[3] Daron Acemoglu and James Robinson, *Why Nations Fail: The Origins of Power Prosperity and Poverty* (London, 2012): 294; Michael P. Fitzsimmons, *From Artisan to Worker: Guilds, the French State, and the Organization of Labor, 1776-1821* (Cambridge, 2010): ch. 4; Jeffrey Frieden and Ronald Rogowski, 'Modern Capitalism: Enthusiasts, Opponents, and Reformers', in: Larry Neal and Jeffrey G. Williamson, eds., *The Cambridge History of Capitalism*, vol. II: *The Spread of Capitalism: from 1848 to the Present* (Cambridge, 2014): 386, 390-391; Peter Clark, *European Cities and Towns 400-2000* (Oxford, 2009): 258-259.

the output market, successful prosecution of market power also requires restriction on the entrance of new producers. As Gary Richardson already pointed out in 2001, what historians of guilds have in mind when they discuss issues of monopoly is something akin to Adam Smith's definition in *The Wealth of Nations* (1776): 'laws which restrain, in particular employments, the competition to a smaller number than might otherwise go into them'.[4] Questions have been raised, however, about the effectiveness of the monopoly: could guilds really monitor and enforce, especially in large urban centres, their 'monopoly'? Or were they undercut by interlopers and illicit producers, on the one hand, and by supplies of goods from other localities, some without guilds, on the other?[5]

The objective of monopoly is to drive up prices above the level achieved by open competition, to the advantage of the monopolist. In the context of guilds in Early Modern Europe, it is difficult to demonstrate whether this was actually happening. Therefore, many historians have instead looked at the supply side. As Smith's definition implies, if guilds managed to limit their membership, in terms of numbers, of geographical backgrounds, and of descent, this would more or less automatically have implied rents – for all members, for locals, or for the masters' offspring. The extent to which guilds were 'open' or 'closed', therefore has implications not only for the size of rents that accrue to guild members, but also to how these opportunities were distributed more broadly across European societies. As Sheilagh Ogilvie states the position in a recent survey: 'To establish their monopolies and monopsonies, guilds excluded entrants'.[6] In earlier work on guilds, she found strong evidence that 'guilds seek to restrict entry so as to limit

[4] Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, ed. by R. H. Campbell, A. S. Skinner and W. B. Todd, Glasgow Edition 2 vols. (Oxford, 1976), I, 79 (book I, vii, 28); Gary Richardson, 'A Tale of Two Theories: Monopolies and Craft Guilds in Medieval England and Modern Imagination', *Journal of the History of Economic Thought* 23 (2001): 217-242; see also Michael Sonenscher, *Work and Wages: Natural Law, Politics and the Eighteenth-Century French Trades* (Cambridge, 1989): 107.

[5] Steven L. Kaplan, 'Les corporations, les "faux ouvriers" et le faubourg Saint-Antoine au XVIIIe siècle', *Annales ESC* 43 (1988): 353-378; S.R. Epstein, 'Craft Guilds, Apprenticeship, and Technological Change in Pre-Industrial Europe' *Journal of Economic History* 58 (1998) : 686; James R. Farr, *Artisans in Europe, 1300-1914* (Cambridge, 2000): 82.

[6] Sheilagh Ogilvie, 'The Economics of Guilds', *Journal of Economic Perspectives* 28 (2014): 174; Mokyr, *Gifts of Athena*, 260; Ogilvie, *Institutions and European trade*, 51-62.

competition'.[7] Guild membership, it has also been claimed, was dominated by sons of established masters, or by people who had been born locally. Individuals without a family relationship to the membership, and especially immigrants, found it much more difficult to access incorporated trades.[8]

In this paper we evaluate the strength of guild 'monopolies' by exploring the accessibility of guild membership. How easy did those we might term 'outsiders' find it to become a guild member? This, we argue, offers one way to evaluate the significance of the economic constraints that guilds created. The array of formal rules established by guilds to define and control who could gain entry have been used to highlight the scale of barriers faced by people without a previous connection to the urban trades. By implication, they have also been taken as indicating the rewards membership brought to insiders.[9] To the extent that guilds did indeed generate valuable economic rents to insiders, they would also have created incentives for others to try to gain access – and for those who were already within the guild to try to reserve access to a small pool of their own choosing.

Our concern is with the outcome of this conflict of interest, and we use evidence on the extent to which outsiders were actually present as guild members as an indicator of the presence of effective barriers to entry. There are, obviously, more dimensions to the 'monopoly' issue than access. Some German crafts, such as those in Frankfurt and Augsburg, for example had annual quotas on the number of new masters, and the same happened in Paris.[10] Still, if access to the 'monopoly' was open to large numbers of 'outsiders', then it would seem that the exclusive nature

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[7] Sheilagh Ogilvie, *State Corporatism and Proto-Industry: the Württemberg Black Forest, 1580-1797* (Cambridge, 1997): 463.

[8] Discussion in Tim Leunig, Chris Minns and Patrick Wallis, 'Networks in the Pre-Modern Economy: The Market for London Apprenticeships, 1600-1749', *Journal of Economic History* 71 (2011): 415-16.

[9] Ogilvie, 'The Economics of Guilds', 176.

[10] Gerald L. Soliday, *A Community in Conflict: Frankfurt Society in the Seventeenth and Early Eighteenth Century* (Hanover, NH, 1974): 151n41; Kathy Stuart, *Defiled Trades and Social Outcasts: Honour and Ritual Pollution in Early Modern Germany* (Cambridge, 2000): 193; Arnd Kluge, *Die Zünfte* (Stuttgart, 2007): 230-33; Harald Deceulaer and Bibi Panhuysen, 'Dressed to Work: A Gendered Comparison of the Tailoring Trades in the Northern and Southern Netherlands, 16th to 18th centuries', in: M. Prak, C. Lis, J. Lucassen and H. Soly, eds., *Craft Guilds in the Early Modern Low Countries: work, power and representation* (Aldershot, 2006): 145.

of the 'monopoly' was not as strong as is often implied, and could not have led to the disastrous outcomes that many historians claim it had. We therefore want to find an answer to this straightforward question: were guilds in pre-modern Europe open or closed to outsiders?

Four theses have been proposed by historians to explain variations in guild openness. The first highlights regional variation. There is a broad consensus that English guilds became less important in the eighteenth century, although it has also been argued that this was not generally correct; in some economic sectors they became less powerful, in others they remained significant.[11] This idea has expanded to the claim that whilst guilds in England and the Dutch Republic had become more open, those of the German lands and possibly other regions remained exclusive.[12]

A second thesis refers to guilds' political influence: where guilds had a stake in local governance, they were able to erect barriers for newcomers.[13] A powerful example of this relationship comes from sixteenth-century Ghent. Before 1540, and again between 1579 and 1584, the guilds of Ghent had a strong voice in local government. Between 1541 and 1578, and again after 1584, the Habsburg government excluded guilds from local government and promoted an open-door policy for guild membership. The brewers, tailors, and other guilds in Ghent were forced to become more accessible to outsiders. The Ghent evidence suggests that, when left to their own devices, guilds preferred to exclude outsiders from their ranks.[14] An equally compelling example from the seventeenth and eighteenth

[11] Compare Forbes, 'Search, Immigration and the Goldsmiths' Company: A Study in the Decline of its Powers', in: Ian Anders Gadd and Patrick Wallis, eds., *Guilds, Society and Economy in London 1450-1800* (London, 2002): 115-125, with Michael Berlin, 'Guilds in Decline? London Livery Companies and the Rise of a Liberal Economy, 1600-1800', in: S.R. Epstein and Maarten Prak, eds., *Guilds, Innovation and the European Economy, 1400-1800* (Cambridge, 2008): 316-42.
[12] Ogilvie, *State corporatism*, 436-37, 449; Paul M. Hohenberg and Lynn Hollen Lees, *The Making of Urban Europe 1000-1950* (Cambridge Ma., 1985): 128; for Britain alone: David Landes, *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present* (Cambridge, 1969): 62; Mokyr, *Gifts of Athena*, 260, 269.
[13] Landes, *Revolution in time*, 211; Stasavage 'Was Weber Right?', 341-42.
[14] Johan Dambruyne, 'Guilds, Social Mobility and Status in Sixteenth-Century Ghent', *International Review of Social History* 43 (1998): 51

centuries was uncovered by Ogilvie's investigation of the Wildberg weaving district in Württemberg.[15]

A third thesis, which can be seen as a variation on the first, might be inferred from the literature on state-formation. As states became more powerful, we should expect them to exert greater control over guilds, and support guilds' attempts to remain exclusive. Therefore, guilds in the eighteenth century might be generally more closed to outsiders than they had been in the seventeenth century.[16] Alternatively, it has been argued that states were promoting greater equality and therefore attempted to reduce the impact of 'special interests' like guilds.[17]

The fourth thesis looks at the size of communities. In his famous *German home towns* from 1971, Mack Walker connected the German guilds' strict admission rules to the tightness of the face-to-face communities in which they operated. His 'home towns' were typically communities of fewer than ten thousand inhabitants.[18] From a demographic perspective, Maurice Garden has made the same point: large and growing towns were in greater need of immigrants to increase their size.[19] If this is correct, we should expect more openness in larger towns.

In order to evaluate the openness of guilds and the validity of these four theories, we need a valid measure of closure. In this paper, 'outsiders' are defined in two distinct ways: 1. those who were not the descendants of active guild members; 2. those originating from outside the town where the guild's 'monopoly' was established.

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[15] Ogilvie, *State Corporatism*.
[16] Jan de Vries, *The Economy of Europe in an Age of Crisis, 1600-1750* (Cambridge, 1976): 238; Ogilvie, *State Corporatism*, 475.
[17] S.R. Epstein, *Freedom and Growth: The Rise of States and Markets in Europe, 1300-1750* (London, 2000): 36-37, 110, 146; Clark, *European cities*, 214; Stasavage, 'Was Weber Right?', 353.
[18] Mck P. Walker, *German Home Towns: Community, State, and General Estate 1648-1871* (Ithaca, 1971): 27, 30; but see also Steven Hochstadt, 'Migration in Preindustrial Germany', *Central European History* 16 (1983): 195-224 for the opposite view.
[19] Maurice Garden, 'The Urban Trades: Social Analysis and Representation', in: Steven L Kaplan and Cynthia J. Koepp, eds., *Work in France: Representations, Meaning, Organizations, and Practice* (Ithaca, 1986): 293.

Recent scholarship on the history of Europe's guilds has produced a body of information about their membership that is almost by definition local. Remarkably, nobody has so far collected and compared these local data. This is the objective of the present paper. Limitations in the availability of data means that we concentrate on the seventeenth and eighteenth centuries. At times we will refer to some sixteenth-century material that is, however, too thin to produce a reliable survey. Our paper cannot claim to be exhaustive; the archives hold many more data waiting to be explored. We have, however, data about masters for 69 individual guilds in 19 different towns, plus data on a mixture of guilds for seven towns. Together the data cover over 100,000 masters. For apprentices our sample is much larger in the number of individuals covered: 450,000. However, they come from fewer guilds and places: ten guilds from six towns, plus eleven towns where we can observe a mixture of various guilds.

In all, the observations and analyses offered in this article are supported by evidence relating to over half a million individuals, across a range of towns from Bristol to Vienna and from Gdansk (Danzig) to Madrid. Much of the data relates to England and the Low Countries, where some of the most active guild research has been concentrated, but there is just enough evidence for France, Germany and Central Europe, and for Italy and Spain, to claim that the picture presented here is valid for Europe as a whole, rather than for a small – and possibly a-typical – part of it. To overcome the dominance of the number of observations from London or Paris, we have ignored the volumes and used un-weighted observations in our analyses. The results from tiny Wildberg therefore count for as much as those from huge London, also because we assume that Wildberg is potentially representative of a whole class of small towns.

We proceed as follows. In the next section we discuss the methodological challenges involved in measuring openness in labour markets and describe the characteristics of the measures of family and geographical openness that we employ here. In the second section we present evidence on the openness of guilds to new masters without a connection by kinship to an existing guild member. In

the third section, we evaluate guilds' willingness to accept migrants as masters. In the fourth section, we look at how important kinship and local origins were to obtaining a place as an apprentice. The fifth section evaluates how well our data fit with the four main theories on guild openness. We then consider whether or not our findings reflect a change from an earlier era of guild practice in the sixteenth century or before, whether a more direct comparison of openness using urban migration shares produces different conclusions, and the experience of women seeking to access guild-regulated labour markets. We conclude that on all of our measures, most of Europe's guilds were more open to outsiders than conventional assertions about their exclusive behaviours imply; guild 'monopolies' were only weakly rooted in a narrow membership.

Methodology

One methodological challenge for establishing the impact of restrictions on entering the economic arena is establishing a benchmark for openness. Critics of the guilds often seem to implicitly posit a completely open labour market. Labour economists, however, question whether this scenario ever exists outside the textbook, with current thinking emphasising the importance of frictions in the labour market that generate rents to almost all jobs.[20] Formal and informal barriers create 'segments' that privilege some groups of workers over others. Segmented labour markets have also been identified in the pre-industrial period.[21] The implication is that we cannot assume that in the absence of guilds there would be no other obstacles producing similar effects.

Clear evidence of this effect in historical labour markets without guilds can be found in the period after the decline of the guilds. Some occupations displayed strong intergenerational continuities, not necessarily as a result of formal

[20] Alan Manning, *Monopsony in Motion: Imperfect Competition in Labour Markets* (Princeton, 2003): 3.

[21] Jan de Vries, 'The Labour Market', in: Karel Davids and Leo Noordegraaf, eds., *The Dutch Economy in the Golden Age: Nine Essays* (Amsterdam, 1993): 55-78; Clare Haru Crowston, *Fabricating Women: The Seamstresses of Old Regime France* (Durham N.C., 2001): 86-94.

selection mechanisms, even without institutional barriers to entry of the kind that guilds provided. In industrial Lancashire, over 60 per cent of textile workers had followed their fathers into the same trade, and in nineteenth-century London, around half of those working in engineering, building, shoemaking and tailoring were engaged in the same occupation as their fathers.[22] In modern Canada c. 40 per cent of young men work for the same employer for which their father also worked, and 6–9 per cent have the same employer in adulthood.[23] This percentage is likely to be higher among the self-employed, who turn over businesses to the next generation.[24] In other words, the segmentation of the labour market that is produced by other factors than guilds in industrial societies raises questions about how we can empirically identify the distinctive role of guilds in the promotion or inhibition of flexible labour markets in pre-industrial societies.

In this paper, we do not solve this problem, but propose that to some extent it can be circumvented by assuming that large numbers of entrants previously unrelated to the trade constitutes a situation of openness, while small numbers of 'new' entrants points in the direction of high barriers. This approach is at the least a fair test of the claims made in the current literature about openness. Our aim is to map patterns of *relative* openness that may allow us to assess the causes and distribution of barriers, and their likely significance across the European landscape of citizenship regimes. As a simple rule of thumb, we classify guilds as 'closed' where two-thirds of masters or apprentices were 'insiders', i.e. originated locally or, alternatively, were the sons (sometimes daughters) of masters. We classify organisations as 'open' where two-thirds were 'outsiders', i.e. originated

[22] S.J. Chapman and W. Abbott, 'The Tendency of Children to Follow their Father's Trades', *Journal of the Royal Statistical Society*, 76 (1913): 66-67; Geoffrey Crossick, *An Artisan Elite in Victorian England: Kentish London, 1840-1880* (London, 1978): tables 6.4 and 6.5; Richard Zijdeman, 'Like My Father Before Me: Intergenerational Occupational Status Transfer During Industrialization (Zeeland, 1811-1915)', *Continuity and Change* 24 (2009): 476.
[23] Mark S. Granovetter, *Getting a Job: A Study of Contacts and Careers* (Cambridge Ma., 1974): 5; James D. Montgomery, 'Social Networks and Labor Market Outcomes: Towards an Economic Analysis', *American Economic Review* 81 (1991): 1408-18; Miles Corak and Patrizio Piraino, 'The Intergenerational Transmission of Employers', *Journal of Labor Economic* 29 (2011): 37-68.
[24] See for the modern era: Thomas Dunn and Douglas Holtz-Eakin, 'Financial Capital, Human Capital, and the Transition to Self-Employment: Evidence from Intergenerational Links', *Journal of Labor Economics* 18 (2000): 289 (table 2).

from outside the local community, or were by implication not directly related to the membership. Where the numbers fell between those values, we labelled the organisation or town as 'neutral'. In order to offer some insight into absolute levels of openness, we also compare our results for the percentage of local immigrants among guild members with comparable percentages for the town's population as a whole. This offers a stronger test of geographical openness, but is only possible for a few locations because of the lack of historical data on migration.

The measures that we use to evaluate openness vary because the nature of guild barriers and guild records varied in cities across Europe. In places where citizenship was a prerequisite for joining a guild, access to urban economic activities might be limited by citizenship barriers.[25] In others, the guild itself was the first hurdle that newcomers had to overcome, before becoming a citizen. In those towns citizenship was, in other words, a secondary effect of guild membership.[26] These various institutional structures affect the sources that were created. Sometimes guilds recorded the place of origin of their members and apprentices, or if their parents were a member of the guild. In many other cases we have to gauge this from the fact that the entrance fees distinguished such categories as sons of masters, or local origin. Much of the data presented here was collected by the authors from primary sources, but other data stems from secondary materials. For more detail we refer readers to the data appendix.

The data presented in this paper capture access to guilds at two different points. First, we can look directly at new entrants through the study of membership registers. In some cases at least, as well as allowing us to establish how many newly enrolled members were the sons of existing guild members, they provide information about their background, such as their place of origin. Rarely do we have both place of origin and family descent for the same guild. Second, we can

[25] Piet Lourens and Jan Lucassen, '"Zunftlandschaften" in den Niederlanden und im benachbarten Deutschland', in: W. Reininghaus (ed.), *Zunftlandschaften in Deutschland und Niederlanden im Vergleich* Schriften der Historischen Kommission für Westfalen, vol. 17 (Münster, 2000): 11-43.
[26] Patrick Wallis, 'Apprenticeship and Training in Premodern England', *Journal of Economic History* 68 (2008): 834.

gauge the characteristics of the membership through apprenticeship. Craft guilds usually required their members to spend several years learning the craft. Not all apprentices would become masters, but this was a stage which gave individuals the potential to become a master. Therefore, evidence about the characteristics of apprentices will be used to help flesh out our picture of the openness – or lack thereof – of the premodern urban and corporate system in Europe. One area where exclusionary mechanisms were also in force, was gender. This will be briefly discussed below, but is not the main point of this paper, which concentrates on kin and migrants.

One final point needs to be underlined about our approach. By aggregating across towns and regions, we necessarily treat guilds as if they were homogeneous in this paper; this was not so. The members of Painters Guild in Haarlem, for example, had a debate during the 1630s and 1640s about the desirability of public auctions, raffles and lotteries, which, according to the guild officials, were 'extremely damaging to, and disrespectful of, the artist and the art of painting'. As it was, guild members were themselves heavily involved in these illicit practices, and one of the offenders, former dean Frans de Grebber, actually claimed that such alternative outlets stimulated the demand for paintings, and could especially benefit young masters, who had still to establish a reputation.[27] Access might likewise be a source of internal contestation as, for instance in tailors' guilds with mixed gender membership. The Haarlem Tailors complained in 1707 that their trade was in trouble due to 'the great number of seamstresses', even though the seamstresses too were members of the guild. In Zutphen, in the eastern part of the Dutch Republic, male guild members introduced a rule that the number of

[27] Hessel Miedema, *De archiefbescheiden van het St. Lukasgilde te Haarlem 1497-1798*, 2 vols (Alphen aan den Rijn, 1980): 89 (quote), 280-88; Neil de Marchi and Hans Van Miegroet, 'Art, Value, and Market Practices in the Netherlands in the Seventeenth Century', *The Art Bulletin* 76 (1994): 458-60; also Christopher Friedrichs, 'Capitalism, Mobility and Class Formation in the Early Modern German City', *Past and Present* 69 (1975): 24-49; Robert Duplessis and Martha Howell, 'Reconsidering the Early Modern Urban Economy: The Cases of Leiden and Lille', *Past and Present* 94 (1982): 49-84; Hugo Soly, 'The Political Economy of European Craft Guilds: Power Relations and Economic Strategies of Merchants and Master Artisans in the Medieval and Early Modern Textile Industries', in: J. Lucassen, T. De Moor and J. L. van Zanden, eds., *The Return of the Guilds*, supplement 16 of *International Review of Social History* 53 (Cambridge, 2008): 45-71.

seamstresses should be limited to five.[28] The data presented in this paper were the result of such struggles.

Family Membership in Guilds

During the second half of the eighteenth century, the membership of the Butchers' Guild of 's-Hertogenbosch consisted entirely of people whose fathers, or fathers-in-law, had been or still were members of the same guild. Remarkably, new members were admitted as toddlers, i.e. before they could possibly have completed an apprenticeship or otherwise demonstrated their skills. The reason behind this unusual state of affairs was the fixed number of places, in the forms of stalls, in the town's meat hall, and the private ownership of those stalls.[29] This allowed the guild to impose cartel conditions on the meat supply. However, precisely because the licensed butchers were in this position, the local authorities opened up the market to external suppliers in 1770, after the commander of the local garrison had complained that his soldiers were over-charged for their meat. Several new butchers then settled in 's-Hertogenbosch, among them eight Jews, and started to sell meat outside the meat hall. In 1773 the guild filed a bitter complaint, about how these outsiders were able to charge lower prices because they sold poor-quality product. The guild's privileges were restored – on the condition that its members would restrain their prices.[30]

This state of affairs in the Butchers' Guild conforms with one popular image of the guilds: membership was routinely transferred from father to son, sometimes from

[28] Panhuysen, *Maatwerk: Kleermakers, naaisters, oudkleerkopers en de gilden (1500-1800)* (Amsterdam, 2000), 216 (quote), 225; Deceulaer and Panhuysen, 'Dressed to Work'; Crowston, *Fabricating Women*, ch. 5.

[29] In Paris, nearly half of all masters were sons of butchers: Sidney Watts, *Meat Matters: Butchers, Politics, and Market Culture in Eighteenth-Century Paris* (Rochester, 2006): 108; for Antwerp: Marc Jacobs, 'De ambachten in Brabant en Mechelen (12de eeuw-1795)', in: R. Van Uytven, C. Bruneel, H. Coppens, and B. Augustyn, eds., *De gewestelijke en lokale overheidsinstellingen in Brabant en Mechelen tot 1795*, vol. 2 (Brussels, 2000): 576.

[30] Erfgoed 's-Hertogenbosch, Municipal Archive of the City 1262-1810, 394: 28 April 1773, fol. 174r-177r and 395: 16 March 1774, fol. 101r-105v; also Maarten Prak, *Republikeinse veelheid, democratische enkelvoud: sociale verandering in het Revolutietijdvak: 's-Hertogenbosch 1770-1820*, (Nijmegen, 1999): 95-96, 100.

father to son-in-law or mother to daughter. Inheritable membership was therefore the most exclusive mechanism that privileged established masters and their offspring over outsiders, be they locals without previous connections to the guild, or immigrants. Many guilds actively shaped their rules to favour the children of members: for non-family members it was between 1.3 and 2.7 times more expensive to join the Antwerp Coopers' Guild, depending on the fluctuating tariffs.[31] Among Dutch Tailors' Guilds the gap tended to be on the lower end of the Antwerp spectrum, but almost all of them discriminated against non-locals by charging them higher entrance dues; family members were treated even more favourably.[32] The question is to what extent such preferential treatment for people with family ties to the guild actually shaped the composition of the membership. Or to phrase this in a different way: were the Butchers of 's-Hertogenbosch typical for the state of affairs among guilds of the period?

The two most spectacular pieces of evidence that support the thesis that guilds offered preferential treatment to relatives, come from Northern Europe. The first are the Butchers we already discussed, who happened to live in a region that is often portrayed as 'liberal', with 'weak' guilds, i.e. the Dutch Republic. The high percentage of sons in 's-Hertogenbosch was closely followed by an almost equally extreme example, the town of Wildberg in southern Germany, where over ninety per cent of the weavers were following in their parents' footsteps. Wildberg, located in the Swabian Black Forest, had a population of 1,500-2,000. Its economy was dominated by the textiles industry, which was embedded in a larger regional proto-industry, dominated by the *Calwer Zeughandlungskompagnie*, a merchant guild that controlled both the production and the export of the worsted industry of the Calw and Wildberg area.[33] Together with Durlach and Hildesheim, Wildberg is one of the three smallest town in our data-set.

[Figure 1 around here]

[31] Bart Willems, 'Loon naar werken? Sociale mobiliteit in het Antwerpse kuipersambacht (1585-1793), *Bijdragen tot de Geschiedenis* 82 (1999): 42.
[32] Panhuysen, *Maatwerk*, 297-99
[33] Ogilvie, *State Corporatism*, 3, 106-111, and *passim*.

Elsewhere, however, the shares of new masters who were sons or daughters of guild members were much more modest (figures 1a and 1b). The cities and towns with the next highest shares of new masters with kinship ties were Rouen (57 per cent), 's-Hertogenbosch (40 per cent) and Hildesheim (35 per cent). In most places, shares were well below this level. Data from London about other family connections than direct descent also suggest that these will push up the share of new members who had a family connection with the guild, but by small amounts.[34]

In England, masters' children only rarely supplied more than twenty per cent of new masters. For cities in both France and the Low Countries, we found an unweighted average of 27 and 26 per cent in each area. Our evidence for both Spain and the Italian peninsula is on a smaller scale, with the latter only represented by the Turin Tailors' Guild, but in both the share of masters' sons among new masters was also low. Germany is the only country in which the average falls above a third, with 44 per cent of new masters across the guilds in our sample possessing a kinship tie. This figure is pulled up by Wildberg's particularly high rates of insider recruitment, but as figure 1a shows, Germany did have a number of other guilds that drew heavily from members' kin. Even excluding Wildberg, the average kin share is 36 per cent across the other eight German guilds in our sample.

Although the spread of guilds, cities and countries in our sample does change over time, figure 1b shows that the averages in each of the half-century long periods we discuss fell within a narrow range, between 20 and 29 per cent.[35] In short, despite changes in the composition of our sample – notably the inclusion of more observations from Germany in the eighteenth century – the majority of guilds remained open to entrants who lacked a kinship connection to an existing member. Most guilds took fewer than a third of new masters from among their existing members' families. They were 'open', in short, in terms of our rule of thumb.

[34] Leunig, Minns and Wallis, 'Networks', 423-425.
[35] T-tests of the equality of the mean share of kin in each period yield no significant difference between 1650-99 and the other three periods. The test results are as follows: 1650-99 and 1600-49: t=-0.44, N=19; 1650-99 and 1700-49: t=-0.39, N=34; 1650-99 and 1750-99: t=-0,40, N=34.

Masters' children following their father into the same guild offer the most obvious indication of insider preference and guild openness, particularly in a patriarchal society such as early modern Europe. However, another kind of family connection also existed that offered a channel into a guild. In some cities and guilds, a man who married a master's daughter or widow would gain admittance to a guild by virtue of their wife's position. Data from eighteenth-century Hildesheim suggest that sons-in-law and widows' second husbands could amount to a substantial number of new masters. In the four Hildesheim guilds for which evidence exists, sons-in-law made up 29 per cent of new masters, and another 32 per cent had married the daughter or widow of a master.[36] Taken together with the 35 per cent of masters who were sons, even if son masters' sons married other master's daughters then this level of entry by marriage meant that entrants with a direct or affinal kin tie to existing masters surely constituted the majority of new guild members in this community – and masters' daughters could form a large share of the next generation of masters' wives.

It is not clear that we should generalize from Hildesheim, however. Marriage to a master's daughter or widow did not always bring guild privileges: this right existed in many centres in the German lands, France and the Southern Netherlands, but was rare in England and the Northern Netherlands. Even where it did exist, if we assume that the number of masters' daughters roughly equalled the number of masters' sons, then the evidence in figure 1 suggests that the total share of new masters with a kinship tie would still only be around half of new entrants in most cities and guilds that we observe. Most importantly, we need to ask if the possibility for mastership to be attained by marriage actually reinforced guild closure, or if it was simply a further way for outsiders to become guild members. To be sure, they might need the consent of a master to contract the marriage in question, but it is a substantial leap to imagine that masters are – in these cases – filtering the pool of potential husbands for their daughters with the aim of protecting the composition of their guild, as we would have to assume if this

[36] Calculated from Karl H. Kaufhold, *Das Handwerk der Stadt Hildesheim im 18. Jahrhundert* Göttinger Beiträge zur Wirtschafts- und Sozialgeschichte vol. 5 (Göttingen, 1980): 254 (table 3b).

was to be seen as an extension, not a loophole, in the barriers around Europe's guilds.

Finally, we need to ask if masters who entered guilds via inheritance formed a privileged cohort. Perhaps this group had an importance and access to authority that exceeded their numerical share. On the one hand, there are reasons to assume that sons of masters were more likely to complete their apprenticeship.[37] On the other hand, an investigation of the board members of eighteenth-century tailors' guilds in the Dutch Republic does not give any indication that sons of masters were more likely to be elected than others. In Amsterdam, many deans were first-generation immigrants. In the small town of Elburg they had to introduce a rule that nobody could refuse to accept the position of dean, if elected by the membership, suggesting it was as much a burden as an honour to be selected for such an influential post.[38]

The evidence as it currently stands shows that only in exceptional circumstances were guilds dominated by dynasties of masters who passed on their businesses from one generation to the next. The normal situation was that a minority, often quite a small minority, of masters had entered the guild as the direct successor of their father (or mother). Endogamy among guild members was unusual.[39] Financial and other barriers were no doubt advantageous to relatives of established masters, but generally they did not prevent non-kin membership.

Migrants in Guilds

In January 1757 the journeyman stonemason Franz Strickner filed a petition with the council of Vienna, asking to be confirmed in his mastership. Strickner, who

[37] Chris Minns, and Patrick Wallis, 'Rules and Reality: Quantifying the Practice of Apprenticeship in Early Modern England', *Economic History Review* 65 (2012): 573.
[38] Panhuysen, *Maatwerk*, 52-60.
[39] Michael Mitterauer, 'Zur familienbetrieblichen Struktur im zünftischen Handwerk', in: H. Knittler, ed., *Wirtschafts- und sozialhistorische Beiträge: Festschrift für Alfred Hoffmann zum 75. Geburtstag* (Munich, 1979): 190-219; Simona Cerutti, *La ville et les métiers: Naissance d'un langage corporatif (Turin, XVIIe-XVIIIe siècle)* (Paris, 1990), 167; Farr, *Artisans in Europe*, 245-46; Kluge, *Die Zünfte*, 244; Leunig, Minns and Wallis, 'Networks', 425.

originated from the small border town of Eggenburg to the north-west of Vienna, had taken over the workshop of the Viennese master Matthias Winkler, on the condition that he would look after Winkler's widow and marry his granddaughter. All looked set for a successful career, but the Guild refused to examine his masterpiece, and therefore prevented his admission to the Guild. According to the Guild's counter petition, the granddaughter was long dead, and the widow was rich enough to take care of herself. Instead of the outsider Strickner, the Guild had a strong preference for the 'citizen and master's son' Carl Schunko, whose father had already tried to persuade Winkler's widow to allow Carl to take over the workshop.[40]

The records do not tell who was ultimately victorious in this conflict about masterships, but the story does highlight how contentious access to the guilds could become. It also illustrates one common suspicion about guilds: that they had an innate tendency to prevent people from other places from joining their ranks, preferring to draw their membership from the familiar ranks of locals instead of freshly-arrived outsiders. We have no way of knowing the strength of guild officials' preferences, but we can identify the results of any actions they took by again looking at the distribution of insiders and outsiders, this time comparing the shares of locals and migrants among new masters. The share of new masters who were locals, reported by period, produces the results presented in figure 2.

[Figure 2 around here]

The range of values for guilds is much wider on this geographical measure of openness than on the kinship measure. Many more guilds are positioned in the middle of the range, and far fewer are hovering close to zero than in figure 1. Of course, guilds that recruited only a handful of locals might be thought of as excessively open, implying either a particularly unappealing occupation or

[40] Thomas Buchner, *Möglichkeiten von Zunft: Wiener und Amsterdamer Zünfte im Vergleich (17. Und 18. Jahrhundert* Forschungen und Beiträge zur Wiener Stadtgeschichte vol. 43 (Vienna, 2004): 121-22.

possibly their capture by a specific group of migrants. In general, most guilds (85 per cent) fell into either our open or neutral categories, with a minority being closed. Had we dropped the 'neutral' category and split the data into just open and closed along the 50 per cent divide, 49 out of 79, or 62 per cent, would have been classified as open.

Most of our evidence on the geographical origins of masters comes from England, especially London, and German Europe. When guilds are presented by country, as in figure 2a, we observe a pattern that is the opposite of what much of the literature might lead one to expect, with guilds in the Low Countries recruiting the highest share of masters from locals (58 per cent), followed by English guilds (45 per cent) and finally German guilds (38 per cent).[41] There is no sign on this measure that German guilds were systematically more closed than those in England or the Netherlands, although the sample size for the latter is modest. This is a striking contrast to what we saw in our earlier discussion of the share of new masters with kin ties, where German guilds looked more closed than those elsewhere. Behind this contrast is the substantial increase in the size of our German guild sample: we have information about the share of locals among new masters for 33 German guilds, compared to the nine discussed earlier. It seems likely that this migration-based measure thus better reflects the breadth of guild practices across Germany. At the very least, we can be sure that a great deal of heterogeneity existed within countries and regions, particularly in the German lands, as well as between guilds within the same city.

Figure 2b reports the share of locals by half century. Shifting composition aside, it suggests that guilds were recruiting more new masters locally as time passed. The trend is not very strong, and in all periods a number of guilds remained 'open'. However, there does appear to be a drift towards closure over these two

[41] The averages reported are calculated from the average share of locals among masters by guild for the full period; where guilds are observed for more than one period we use an unweighted average of the share of locals in all periods.

centuries.[42] When we look at patterns of recruitment within guilds over time, we see further indications of this: in London, where we have the strongest sequential series of evidence, the share of new masters who came from the city more than doubled from 28 to 59 per cent between the first half of the seventeenth century and the second half of the eighteenth century. Gloucester, similarly, saw the share of locals almost double from 44 to 78 per cent between 1600-49 and 1700-49. This trend was not universal, though. Over the same two hundred years, in Madrid the share of locals remained essentially stable, at around 30 per cent, while in Bristol the share only rose gently from 42 to 49 per cent from 1650-99 to 1750-99.

In general, most guilds encompassed a substantial share of migrants among their membership. Few European guilds were dominated by locals. On this measure of openness, although insiders were more numerous than in the kinship measure, guilds still largely appear to have been open to outsiders, although there are signs that they were increasingly tending to recruit locals by the later eighteenth century.

Access to Apprenticeship

Thomas Gent was born in Ireland, probably in 1693. He started an apprenticeship as a printer in Dublin, but ran away to England in 1710. The published version of his autobiography actually starts with Gent being seasick on the ship that took him across. Finding no printing press in Chester, his first port of call, he travelled on to London, where he continued to learn his trade. In 1713 Gent completed the seven years of training that was required under English law from every master artisan. At the end of his time, his master Midwinter offered Gent hospitality and protection: 'I do not prefer my interest to your good; and though you came [as] an almost stranger to me, God forbid that I should send you as such abroad.' He helped secure Gent some odd jobs and finally a place as a journeyman-printer in

[42] Tests of the equality of the mean share of locals in each period show that only 1600-49 was significantly different from the other three periods. The test results are as follows: 1650-99 and 1600-49: t = -2.35, N=28; 1650-99 and 1700-49: t = 1.65, N=59; 1650-99 and 1750-99: t = -0,15, N=28.

York. Subsequently, Gent returned to London and his former master, and in 1717 entered the Stationers Company, the guild of London booksellers.[43]

Once again the question is: was Gent's experience as a migrant able to find an apprenticeship in a distant city typical? The volume of available evidence for apprentices is smaller than for masters, as record survival is more limited. Moreover, in many places aside from England, masters' own sons did not need to be formally registered as apprentices if they were being trained at home. In those guilds, apprentices were by definition outsiders on one of our measures. Nonetheless, we possess sufficient evidence from a range of guilds to illustrate some general patterns.

[Figure 3 around here]

In figure 3, we report the average shares of locals and kin among apprentices by country and half century. The figure points to a marked contrast between our two measures of openness that echoes the differences seen in the sample of masters. On the one hand, guilds were highly varied in the share of locals that they recruited as apprentices. On the other, the share of kin found among apprentices was relatively similar – and much lower.

The sample size beneath the country averages is not large, as figure 3a shows, but even so there is at least some suggestion that the Low Countries was less open by this measure than other parts of Europe, while guilds in England, France and Spain look more similar to each other.[44] If we look instead at city-level averages,

[43] Thomas Gent, *The Life of mr. Thomas Gent, Printer of York* (London, 1832): 11-12 (quote), 66-67; see also Ian Anders Gadd, 'The Stationers' Company in England before 1710', in: I. Alexander and H.T. Gómez-Arostegui, eds., *Research Handbook on the History of Copyright Law*. Research handbooks in intellectual property (Cheltenham, 2016) : 81-95.

[44] Statistical interpretations are difficult due to small sample sizes, but t-tests of the equality of means of the local master shares between England, the Low Countries, and Latin Europe (France and Spain combined) show that only differences in the first pair are close to statistical significance. The results of these tests are as follows: England against Low Countries: t = -1.93, N=16; England against Latin Europe: t = 0.15, N=19.

[44] T-tests of the equality of means of the kin master shares between England, the Low Countries, and Latin Europe (France and Spain combined) show no significant differences between groups.

we gain a greater sense of the scale and factors that lay behind these differences. Our sample includes guilds from sixteen cities. In eleven of these, less than half of apprentices were locals: Liverpool, booming in the early eighteenth century, has the lowest share with just 12 per cent, followed by the expanding Spanish capital, Madrid (27 per cent), France's manufacturing powerhouse Lyon (28 per cent) and – somewhat unexpectedly – the provincial English town of Lincoln (35 per cent). The cities where local youths dominated apprenticeships by contrast were to a large extent united by facing periods of economic decline in the seventeenth or eighteenth centuries: Antwerp (81 per cent), Leiden (70 per cent) and Amsterdam (67 per cent). Only Paris (72 per cent) and Bristol (53 per cent) combined growth and high shares of locals among apprentices. Kin shares suggest a similar conclusion, with sons and daughters particularly rare in thriving London (four per cent), and exploding Liverpool (two per cent) compared to the small town of Boston (36 per cent).

Compared to the shares of locals among new masters, there is much less of a sense of increasing closure in the apprentice data. Across the seventeenth and eighteenth centuries, the overall average of locals among apprentices in the guilds in our sample was broadly stable, though clearly volatile, with an average of just below half of apprentices coming from within the town or city where they trained. And, as the distribution in figure 3c suggests, there was consistently a wide range between guilds.

It is instructive to compare the overall share of locals among apprentices with that among new masters, albeit that the samples cover slightly different cities and guilds. The share of locals was similar in both samples: the average share of locals among new masters was 44 per cent, just one percentage point from the 45 per cent share of locals among apprentices. In both cases, around 80 per cent of guilds fell into either the open or neutral category: if the two are divided down the middle, 65% of guilds are open when measured by the share of locals among apprentices,

The results of these tests are as follows: England against Low Countries: t = -0.23, N=17; England against Latin Europe: t = -1.21, N=14.

compared to 62% of guilds that are open when measured by the share of locals among new masters. Even though the margins are small, Europe's guilds appear to have generally tended to be 'open' to apprentices from outside as they were to new masters.

Access to apprenticeship was relatively open to outsiders in most European guilds. Migrants supplied upwards of half of all apprentices in most localities. The great majority of locals were not the children of masters, albeit that for most guilds we do not observe masters' children at all.

Explanations for Guild Openness

To what extent does the pattern of guild openness that we observe here support the four theses that exist to explain when and why guilds raised barriers to entry: divergent regional traditions; their power over local government; the size of the community; and change over time?

First, we have to reject the view that guilds in England and the Dutch Republic were somehow more liberal because of regional differences in political economy and institutions. As figures 1 to 3 have consistently shown, we can observe guilds in Spain and Italy that are as open as any in the Netherlands or England. London's guilds very much resemble those in Berlin and Vienna; only Paris looks more closed. Wildberg was, it seems, not typical for the German world, where other towns and cities in our sample are closer in character to those found elsewhere in Europe, with a mixture of open, closed and neutral guilds. Remarkably, it is the Low Countries that turns out to have the highest percentage of exclusive guilds judged by openness to new masters, with one in four closed, whilst France, Italy and Spain together have the most open guilds on this measure. Few of these differences, however, were statistically meaningful. Statistical tests of the equality of the mean share of locals among masters between England and the three comparison regions of Germany, the Low Countries and Latin Europe (the combination of France, Italy and Spain) fail to reject the hypothesis that share of

locals were equal at the five percent level of significance.[45] Only for kin shares, where the exceptional nature of Wildberg plays an important role, do we find a significant difference between Germany and England.[46] If we calculate the country-level averages for openness to migrant apprentices, the Low Countries again has the highest share of locals (63 per cent). Conversely, there is little to distinguish France (43 per cent), England (39 per cent) and Spain (35 per cent).[47]

The argument that the local political 'regime' might have impacted on the ability of guilds to close their ranks is in one way difficult to evaluate: only a minority of the towns in our dataset actually had governments in which guilds held much power.[48] Most guilds were politically weak, in formal terms at least. If we compare levels of openness between towns where guilds did and did not have some formal power, we find that locals made up 41 per cent of new masters in towns where guilds had power, compared to 39 per cent where they did not; the split if we look at kinship is 39 per cent where guilds had power against 25 per cent where guilds did not. The difference in guild openness between the two types of community is not statistically significant at conventional levels on either measure.[49] In fact, there is no consistent pattern among towns that share a political regime: whether or not guilds were in government, they could fit into almost any point along the range from very open to very closed. The same holds true for apprentices, where the politically influential guilds of London were largely open to migrant youths, while in Amsterdam guilds were not officially involved in politics and yet it was still a relatively closed city in these terms. Guild political influence did not automatically translate into closed apprenticeships or closed masterships.

[45] The values of the test statistics for equality of the share of local masters are as follows: England against Germany, t = 1.67, N=68; England against the Low Countries, t = -1.31, N=43, England against Latin Europe, t =1.80, N=38.
[46] The values of the test statistics for equality of the share of masters who were kin are as follows: England against Germany, t = -4.96, N=45; England against the Low Countries, t = -1.61, N=35, England against Latin Europe, t = -1.49, N=39.
[47] The number of cities in the sample is small: England 8; France 2; Low Countries 4; Spain 2.
[48] Towns where guilds had government power are: Antwerp, Brussels, Ghent, Hildesheim, London.
[49] Locals: student's t-test, N=34, t = -0.28; Kin, N=30, t = 1.45. This calculation is based on each guild contributing a single average figure for local or kin across all periods on our data.

We also tried to map our results against the related phenomenon of guild autonomy. Stasavage claims that 'autonomous' towns in the long run suffer from the tendency of their guilds to become increasingly closed, and thus stifle the local economy.[50] Unfortunately, all our towns, apart from Amsterdam, are in the non-autonomous group and even the Amsterdam classification as autonomous can be questioned. If Stasavage is correct then this may explain why we find most guilds to be relatively open. That said, we do see a lot of variation in openness among these 'non-autonomous' towns, suggesting that autonomy may offer at best a partial explanation for guilds' behaviour.

If local power and regional cultures and institutional differences cannot explain guild openness, is town size a good predictor? It is by no means perfect, but figures 4a and 4b, which trace the relationship between our two openness measures for masters and urban population, suggest that it does a better job than the other theories. There is a clear drift from closed to open as we move from smaller to larger towns when we plot openness to masters against population, and simple bivariate regressions of the share of local or kin masters against the log of city population yield statistically significant negative coefficients.[51] Not all guilds fit the pattern; we still find two closed guilds in the largest category, but otherwise the match is good for this group. In a way, this should not come as a surprise, because large towns simply required large numbers of immigrants to grow to the size they had attained.[52] We have too few cities in the apprentice sample to identify a meaningful relationship between openness and population. However, the apprentice sample does point to a direct link between openness and the economic cycle: unsurprisingly, it was Europe's fastest-growing centres that pulled in larger shares of outside youths among their apprentices.

[50] Stasavage, 'Was Weber Right?', 353; we thank the author for making his data available to us..
[51] A regression of kin master share against the log of population yields the following coefficients (t-statistics in parentheses): local = 101.1 (7.46) – 6.53 * ln(population) (-5.50), N=68, R-square = 0.31. The result of a regression of local master share against the log of population is local = 83.2 (6.49) – 3.51 * ln(population) (-3.13), N=79, R-square = 0.11. Further details are available on request.
[52] For England, see Jeffrey G. Williamson, *Coping with City Growth during the British industrial revolution* (Cambridge, 1990): 26.

[Figure 4 around here]

As a large number of Europe's guilds were active in medium and small-sized towns, this result suggests that the pessimists have a strong argument: it is possible that the majority of guilds were closed, because they were located in small towns. However, because small towns also had guilds with small memberships, it is also possible that most masters were members of open guilds. In the Netherlands in 1795, almost 30 per cent of the population lived in cities of 10,000 and over, and only 12 per cent more in cities below the 10,000 mark. In England and Wales (1801) the percentages were 20 and 11 respectively. Large centres with more open guilds thus reflect the experience of the most substantial part of the population in these two countries. In Prussia (1801) only 8 per cent lived in large towns, but 14 per cent in small towns; in the German territories on the left bank of the Rhine (1806) the percentages were 7 and 10.[53] This suggests that the 'small town' numbers in table 4 better capture the German situation, whilst the 'large town' numbers are more representative for the Low Countries and England.

For the apprentices, all theories are more difficult to test because of the small number of towns and their uneven distribution. This applies especially to the theories about the impact of political influence and state-formation. The data on apprentices confirms our observation for the masters that the Low Countries had relatively closed guilds, whereas England, France and Spain were much more open. There is no indication of openness increasing or decreasing over time. For apprentices, town size is not a good predictor of openness: all small towns are located in England, so that is not very helpful, but among the large towns we find examples of both open (London, Madrid) and closed (Amsterdam, Antwerp, Paris) guilds.

To sum up, our data provide clear evidence that numerous guilds allowed large numbers of apprentices who were neither born locally nor related to guild members to nonetheless access the membership. In terms of regional distribution

[53] Jan de Vries, *European Urbanization 1500-1800* (London, 1984): 59.

the Low Countries' guilds were closed compared to other regions of Europe, contrary to their reputation of early economic liberalism. There is some evidence of a decrease in openness across time among the masters, but not among the apprentices.

Are our results an artefact of the period for which we have been able to uncover evidence about these two measures of guild openness? The waxing and waning of guilds has long been debated, and one obvious objection to deriving any broad conclusion about the nature of Europe's guilds from their behaviour in the seventeenth and eighteenth centuries is that these periods came at the twilight of this type of economic institution. Possibly guilds in their medieval heyday were much more closed.

Historians' ideas on when guilds were strongest have been complicated in recent years by evidence that the numbers of guild foundations was increasing into the early modern period in the Netherlands and Italy.[54] Even in countries such as England – once the paradigmatic case of guild decline – some guilds remained active into the late eighteenth century.[55] Still, guilds were, arguably, losing power as time went on, because the growth of markets and states decreased the need and scope for such producers' organisations. One might expect greater openness to be the result. Yet if anything, our data suggest that guilds were becoming marginally less open over time (figure 1). The share of guilds falling into our 'open' category when measured by kinship falls from 80 per cent to 64 per cent between the early seventeenth and later eighteenth centuries. The share of 'open' guilds measured by migration falls from 50 per cent to 20 per cent over the same period – although it is truer to talk of a fluctuation here with the share open in the early eighteenth century at 41 per cent, thanks to the inclusion of a pool of German guilds. At the same time, as we discussed earlier, we see a decrease of openness in a number of

[54] Bert De Munck, Piet Lourens and Jan Lucassen, 'The establishment and distribution of craft guilds in the Low Countries, 1000-1800', Prak, Lis, Lucassen and Soly, eds., *Craft Guilds in the Early Modern Low Countries*, 37 (tab. 2.1); Luca Mocarelli, 'Guilds Reappraised: Italy in the Early Modern Period', in: Lucassen, De Moor and Van Zanden, eds., *The Return of the Guilds*, 164 (fig. 1).
[55] Berlin, 'Guilds in Decline?'.

guilds for which we have longer series of evidence across multiple sub-periods. Notably, this is a strong pattern in most London guilds, which were supposed to have become so weak in the same period. If London's guilds were becoming irrelevant in the eighteenth century, they were doing so among friends.

There is too little data from the fifteenth and sixteenth century to create a clear story about that earlier period. What we have uncovered does not suggest a sharp break in practices between late medieval and early modern guilds. In the five quarter-centuries between 1375 and 1500 the percentage of masters' sons registered by the coopers' guild in late medieval Bruges fluctuated between 11 and 31. The weighted average came to 22 per cent, or approximately one in five.[56] In sixteenth-century Ghent, the percentages were much higher than that and the highest values were found for the periods when the guilds were in power.[57]

Marriage contracts from sixteenth-century Aix-en-Provence suggest generally more open guilds: none of the twenty-seven marriage contracts for Tailors reports a tailor as the father of the groom. A similar pattern was found among the Carders, Tanners, and Shoemakers of Aix. Only one out of eighteen Tanners was a tanner's son. The Weavers, on the other hand, tended to follow their fathers' profession and also frequently married weavers' daughters or women who were otherwise connected to the weaving community. This happened rarely in the more open guilds. For example, only three out of 36 Shoemakers married a daughter or sister of another shoemaker.[58] These examples are comparable to those we observed for the seventeenth and eighteenth centuries and do not suggest a clear trend towards or away from greater openness.

[56] Peter Stabel, 'Social Mobility and Apprenticeship in late Medieval Flanders', in: Bert De Munck, Steven L. Kaplan and Hugo Soly, eds., *Learning on the Shop Floor: Historical Perspectives on Apprenticeship* (Oxford, 2007): 170.
[57] Dambruyne, 'Guilds', 51
[58] Claire Dolan, 'The Artisans of Aix-en-Provence in the Sixteenth Century: A Micro-Analysis of Social Relationships', in: Philip Benedict, ed., *Cities and Social Change in Early Modern France* (London, 1989): 181-85.

Migration benchmarks

Our discussion of guilds has concentrated on their relative position within a range of peers spread loosely from open to closed, as defined by our two measures of openness. For a few places we can go somewhat further, and compare the openness of guilds to that of the town or city in general, by considering the percentage of migrants in the total population. There are clearly endogeneity issues here: if guilds dominated the local economy, they may have influenced migration into the town as a whole.

Evidence about towns in Holland is least likely to suffer from this problem: most welcomed foreigners as a policy, especially during the seventeenth century.[59] On this basis, we could judge the Rotterdam Goldsmiths (77 per cent local), the Delft Painters (70 per cent local) or the Haarlem Dyers (83 per cent local) to be closed guilds, displaying substantially higher percentages of locals than each city's population (45, 40 and 52 per cent respectively). The Amsterdam Tailors, on the other hand, had fewer locals in their ranks (23 per cent) than we would expect on the basis of their 47 per cent share of the town's population. Other data about the Amsterdam population in the seventeenth century, which includes masters as well as journeymen, demonstrates huge variations in the share of locals versus immigrants. If we look only at incorporated trades, we find the Bakers were dominated by (German) immigrants, whilst the Shipwrights were two-thirds locals.[60] Similarly, in Madrid, where immigrants supplied between 53 and 70 per cent of the population between the mid-seventeenth and mid-eighteenth century, two thirds of the city's guilds' memberships also came from outside the city.[61]

In early seventeenth-century London, 23 per cent of women were locals compared to 28 per cent of new masters; in the second half of the century, the shares of locals

[59] Jan Lucassen, 'Holland, een open gewest: immigratie en bevolkingsontwikkeling', in: Timo de Nijs and Eelco Beukers, eds., *Geschiedenis van Holland,* vol. ii: *1572-1795* (Hilversum 2002): 207-10.

[60] Erika Kuijpers, *Migrantenstad: Immigratie en sociale verhoudingen in 17e-eeuws Amsterdam* (Hilversum. 2005): ch. 6 and p. 406.

[61] María F. Carbajo Isla, *La población de Madrid desde finales del siglo XVI hasta mediados del XIX* (Madrid, 1987): 118-25; we owe this reference to José Nieto.

had risen to 31 per cent and 37 per cent, respectively.[62] Masters appear more local than the population as a whole. Note, however, that these unweighted averages are made up of guilds that individually spanned the share of women. Larger guilds such as the Clothworkers (18 per cent local) were markedly more open than smaller ones such as the Apothecaries (26 per cent) and Stationers (34 per cent). Weighted for size, 23 and 34 per cent of masters were locals, little different to the city's women.

Despite major variations between guilds and cities, this exercise suggests that most guilds accepted a similar share of foreigners as towns did as a whole.

Guilds and Gender

One very large exception to this general picture of mostly open guilds needs to be underlined: there can be no doubt that the great majority of guild members were men. This was at least partly the result of the deliberate exclusion of females. Especially in the late fifteenth and sixteenth centuries, as a result of both the reinforcement of patriarchy during the Reformation and changes in the labour market, some guilds included explicit clauses to this effect in their rule books.[63] In many more places, the gender imbalance was simply the result of a shared bias among the membership. The precise contribution of guild policies – explicit or implicit – is difficult to measure, because the distribution across the workforce would not be equal even if there had been no obstacles, and because guild policies were embedded in broader societal patterns.[64]

[62] Eleanor Hubbard, *City Women: Money, Sex and the Social Order in Early Modern London* (Oxford, 2014): 20.
[63] From a more substantial literature, see Merry E. Wiesner-Hanks, 'Guilds, Male Bonding and Women's Work in Early Modern Germany', *Gender and History* 1 (1989): 125-37, Kluge, *Zünfte*, 132-40, and Clare Haru Crowston, 'Women, Gender and Guilds in Early Modern Europe: An Overview of Recent Research', in: Lucassen, De Moor, and Van Zanden, eds., *The Return of the Guilds*, 19-44.
[64] Elise van Nederveen Meerkerk, *De draad in eigen handen: vrouwen en loonarbeid in de Nederlandse textielnijverheid, 1581-1810* (Amsterdam, 2007): 162-63.

Some crafts, however, give us a better sense of the relationship between guild control and gender discrimination. The production of clothes was generally separated by gender: men were dressed by male tailors, women by female seamstresses who also made children's clothing. Women's access to the clothing trades, which were usually incorporated, was formatted in three distinct ways: subservience in male-dominated Tailors' Guilds, quasi-independence within Tailors' Guilds, or independent Seamstresses' Guilds. One such independent guild was established in Paris in 1675 and it quickly became the largest guild in the city, and home to the single largest group of apprentices. In Rouen, a similar guild was set up, but in Caen, Aix-en-Provence, and Marseille seamstresses remained subordinate members of the Tailors' Guild.[65] Similar variations occurred in the Low Countries. In the Northern Netherlands, seamstresses found it much easier to join guilds than in the South, where guilds actively excluded women. As a result, the tailoring trade remained a male preserve in the South, where the ratio of tailors versus seamstresses was three or four to one in the smaller centres. In the larger centres in the Low Countries, such as Antwerp, Amsterdam and Brussels, the numbers of males and females were neatly balanced in the clothing trade, irrespective of the fact that in the latter city guilds had a direct role in local government and in the other two they did not.[66]

Conclusions

How exclusive were guilds? Measured by the share of migrants among masters and apprentices, most guilds were 'open' or 'neutral' in our categorisation. Only one in five guilds were closed, and hence a clear minority. When we consider the share of masters with family ties most guilds also appear to have been on open; only one out of seven of the observations of the guilds investigated here, half or more of the members had been recruited among the masters' children. In forty per cent of guilds, fewer than one in five new members were the sons or daughters of another guild member. Given the fact that the parents could also have transferred

[65] Crowston, *Fabricating Women*, ch. 4, p. 402.
[66] Deceulaer and Panhuysen, 'Dressed', esp. 139 (tab. 5.1).

the property of a workshop and its equipment to their children, it is especially striking that this was a relatively unusual way to become a master.

Our results suggest that blanket references to guild exclusiveness are misleading in many cases. For both apprentices and masters, entry barriers did not result in the membership being drawn from a narrow range of social or geographical backgrounds. No doubt all kinds of obstacles stood in the way of joining the guilds, but those obstacles proved surmountable for large numbers of 'outsiders'. In many places, so-called guild monopolies were accessible to such a wide range of people that the word loses its explanatory value; whatever rents they produced were shared among a pool of masters who were mostly recruited from outside the guild and its immediate community.

Of the four theses that have been used to explain guild exclusiveness, we found support for only one. The size of towns was a reasonable predictor of guild openness. Most open guilds were found in larger communities, whereas small communities tended to have more closed guilds. The caveat is that both our smallest towns were located in Germany. We can safely say that among our data, Ogilvie's results for Wildberg are in every respect among the most extreme cases and therefore cannot be considered as representative until further evidence has been uncovered. Both commonplaces about regional differences across Europe and between political regimes proved to be a poor predictor of guild openness, and where indications were found of a decrease of openness, the trend was not very strong.

Why were Europe's guilds more open than expected? Set against the potential economic rents that masters might accrue from closure were a number of good reasons for guilds and urban authorities in premodern societies to be wary of closing their communities to outsiders. Amongst these, two stand out in particular. One is that urban communities found it very difficult to reproduce themselves demographically. To maintain the size of the local population, not to mention fuelling growth, an influx of immigrants was simply necessary. There is an

interesting parallel here with modern welfare states.[67] The second is that all these communities, but especially the larger ones, found it difficult to consistently police the boundaries of their communities. Exclusion also threatened to be counter-productive. Exclusionary policies might stimulate 'illicit' entrepreneurs to set up business outside the control of the guild, for example in the suburbs or the adjacent countryside.[68] The authorities were equally ambivalent: they wanted strong guilds to help them impose political and social control, but they also feared the guilds as potential platforms for revolutionary activities.[69]

An instructive parallel is offered by immigration policies in the twentieth century. Nation states have the capacity to use citizenship to bar prospective migrants from entering their labour markets. The policies that states follow in practice have varied significantly, but the net effect has been to provide very substantial rents to the citizens of the developed world, if measured by unskilled wage differentials.[70] This is reflected in much of the debate surrounding the introduction of restrictive immigration policies in the United States prior to 1917; attention was focused squarely on the potential effects of international population inflows on the high wages received by American workers.[71] This offers a modern benchmark for the capacity of institutions to reward insiders, and one that is, we would suggest, indicative of far larger labour market distortions than existed under the guild regime in the early modern world.

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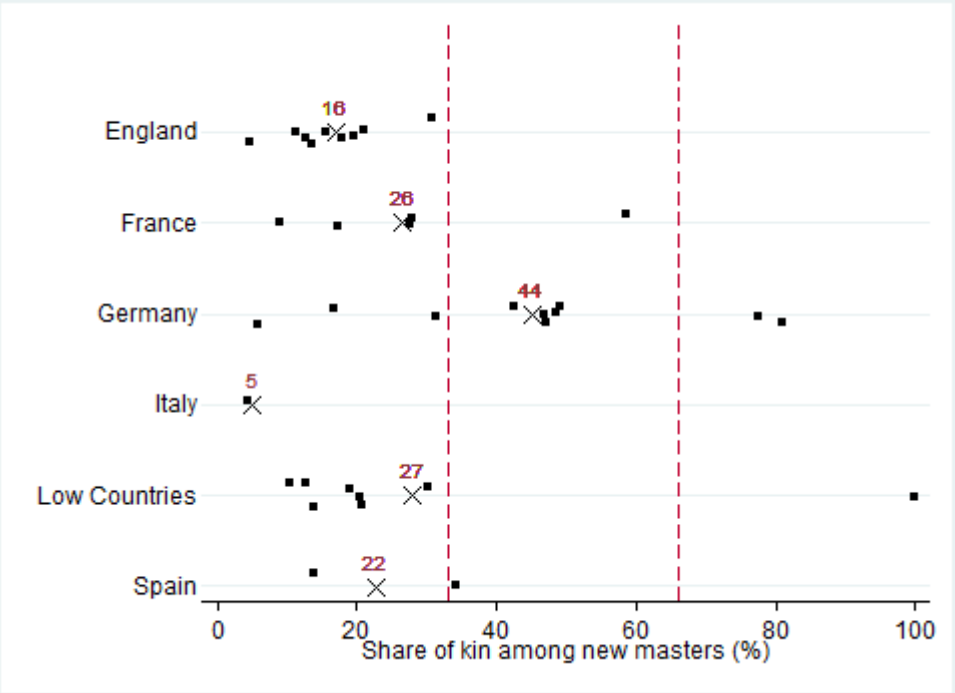
[67] Peter Lindert, *Growing Public: Social Spending and Economic Growth Since the Eighteenth Century* vol 1: *The Story* (Cambridge, 2004): 205-07.
[68] Kaplan, 'Les corporations'.
[69] Susan Reynolds, *Kingdoms and Communities in Western Europe 900-1300* (Oxford, 1997, 2nd. ed.): 68, 75; Soly, 'Political Economy'.
[70] Bob Hamilton and John Whalley, 'Efficiency and Distributional Implications of Global Restrictions on Labour Mobility: Calculations and Policy Implications', *Journal of Development Economics* 14 (1984): 61-75, estimate that abolishing all restriction on international labour migration would increase world GDP per capita in the 1980s by approximately 150 percent.
[71] Francis A. Walker, 'Restriction of Immigration', *Atlantic Monthly* 77 (1896): 822-29.

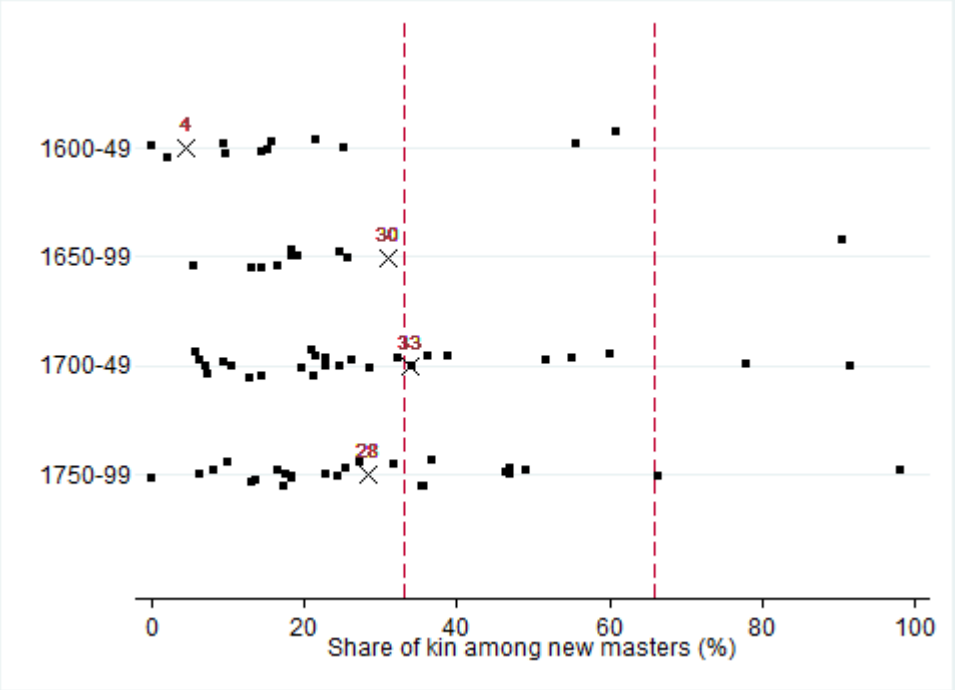
Graphs

Figure 1 Share of kin among new masters in European guilds

1a: Kinship rates by country



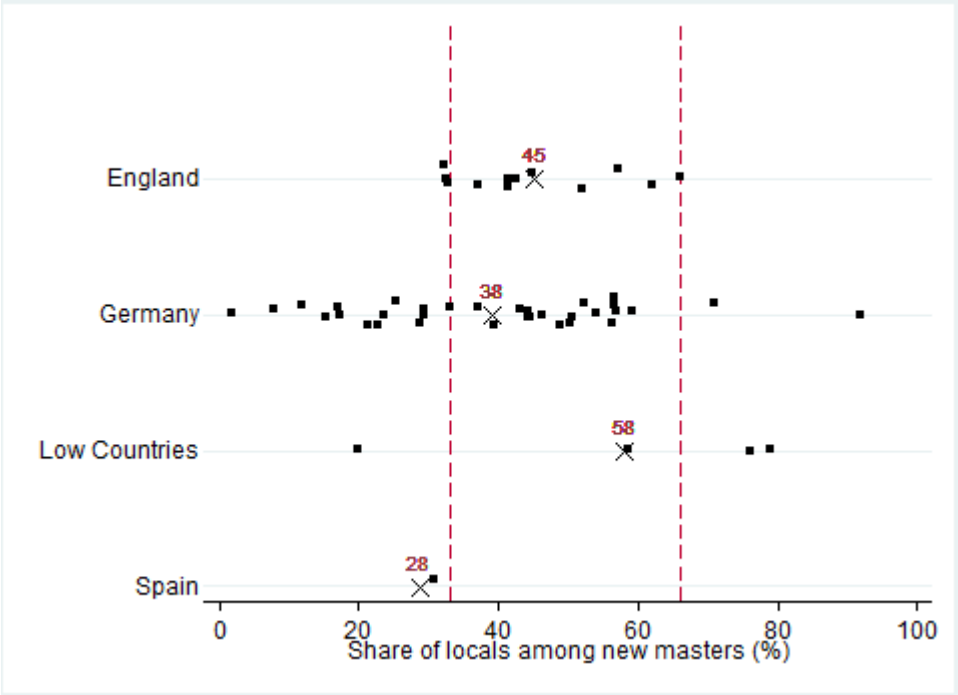
1b: Kinship rates by period



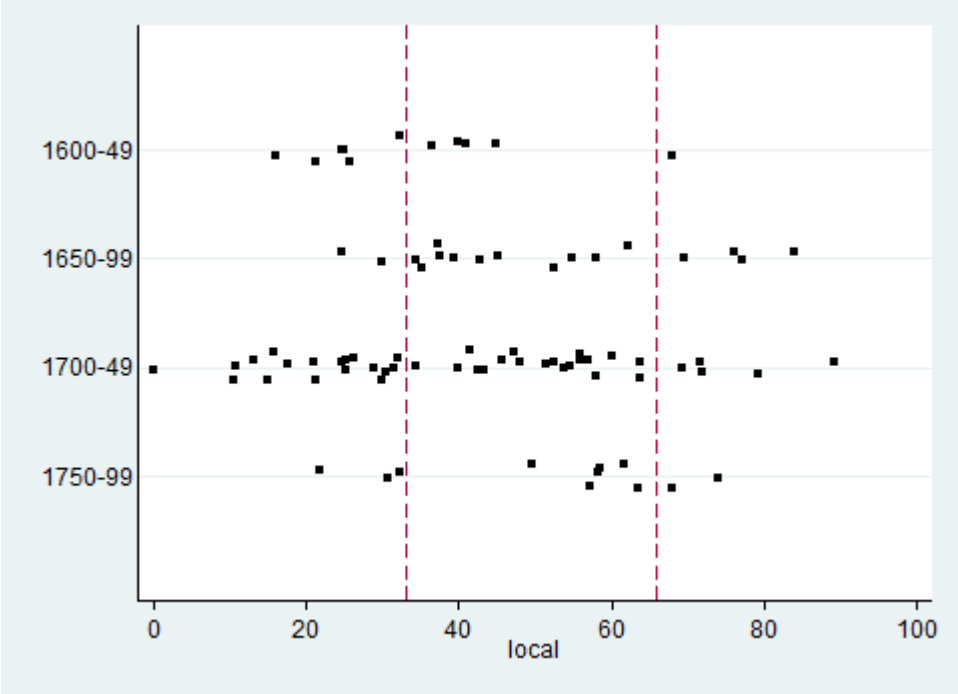
Note: figure 1a reports the unweighted average share of new masters who have a recorded kin tie to an existing guild member for each guild across all periods in our sample; each guild is thus represented by a single observation reported by country. Figure 1b reports the share for individual guilds by period; each guild can appear once in any period. Both figures show each guild as a single point, with the mean value indicated by an X with the percentage share above. Source: see appendix 1.

Figure 2 Share of locals among new masters in European guilds

2a: Local shares by country

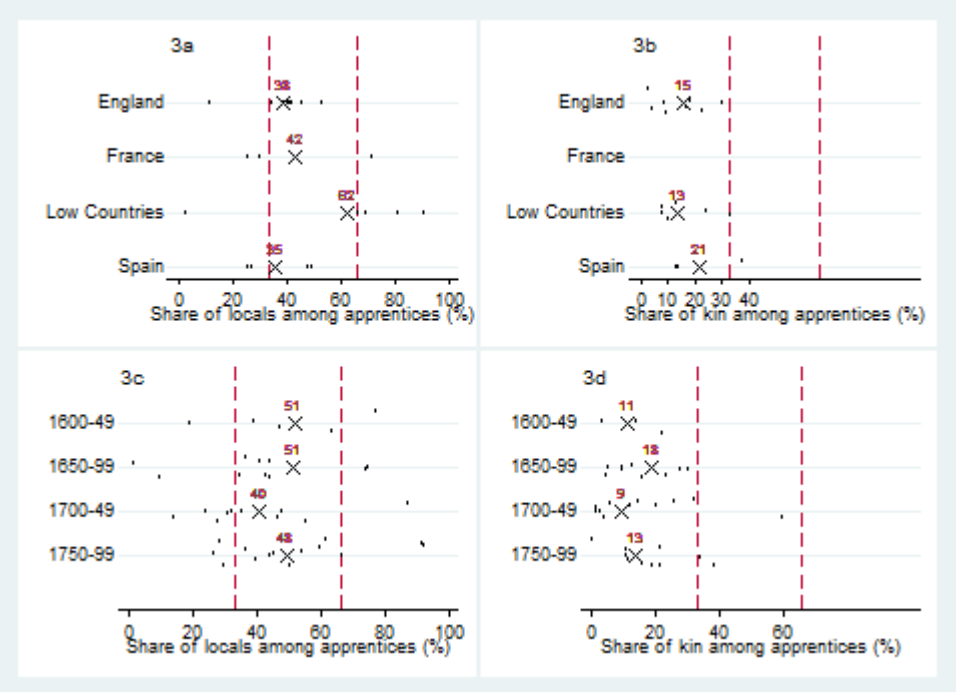


2b: Local shares by period



Note: figure 2a reports the unweighted average share of new masters who were local to a town or city for each guild across all periods in our sample; each guild is thus represented by a single observation reported by country. Figure 2b reports the share for individual guilds by period; each guild can appear once in any period. Both figures show each guild as a single point, with the mean value indicated by an X with the percentage share above. Source: see appendix 1.

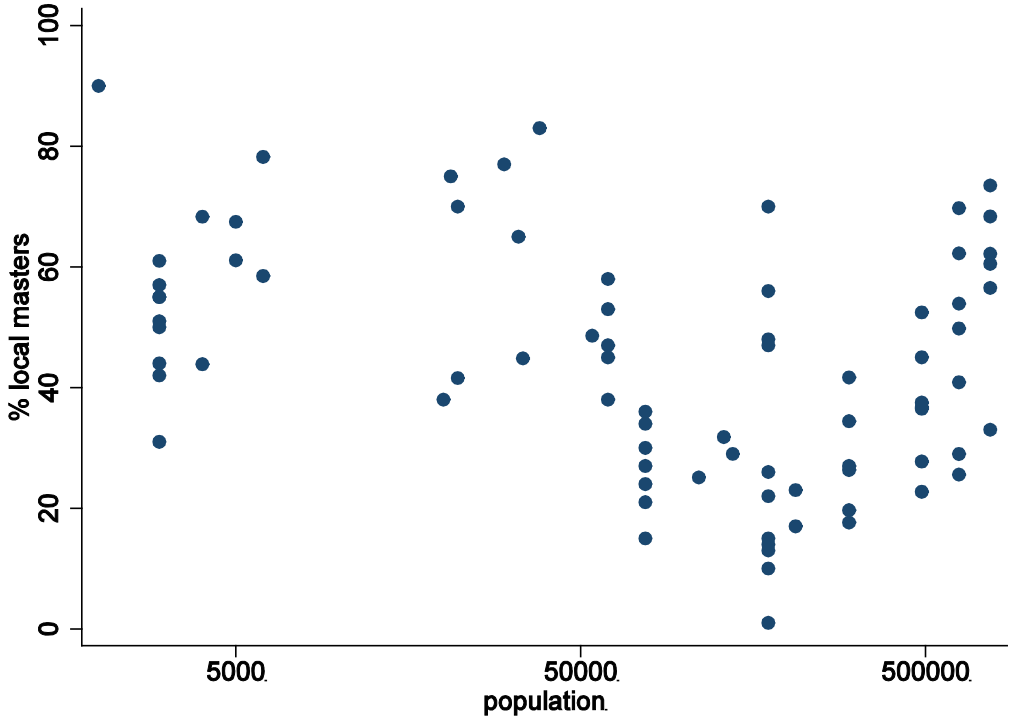
Figure 3: Share of Locals and Kin among Apprentices in European Guilds



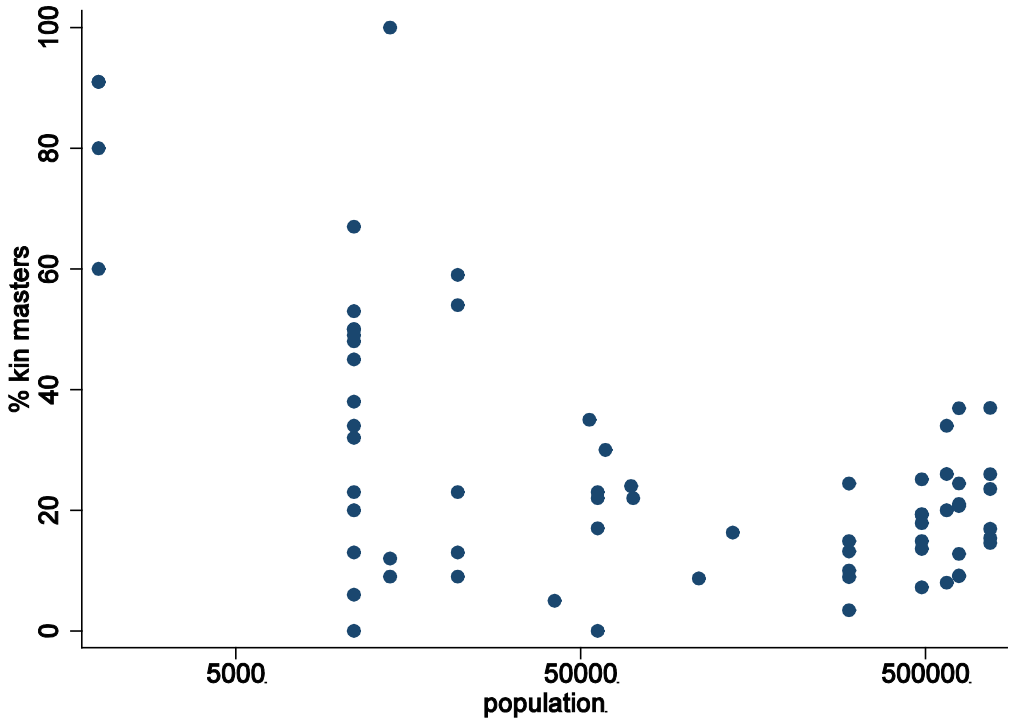
Note: figure 3a and 3b reports the unweighted average share of apprentices who were local to a town or city for each guild across all periods in our sample; each guild is thus represented by a single observation reported by country. Figure 3c and 3d reports the share for individual guilds by period; each guild can appear once in any period. Both figures show each guild as a single point, with the mean value indicated by an X with the percentage share above. Source: see appendix 1.

Figure 4: Guild openness related to town size in Europe

4a: Local master shares against city population (log scale)



4b: Kin master shares against city population



Note: figure 4 reports the unweighted average share of guild openness as reported in figures 1 and 2 (shares of locals) across all periods in our sample; each guild is thus represented by a single observation reported by country. Source: see appendix 1.

Data Appendix

The appendix lists for each town for which we have data

- Name of guild
- Years of observation: where the dates cover more than one half century we have counted them in both half centuries; when the data relate to less than one half century but straddle two half centuries they have been allotted to the half century with which there is the biggest overlap
- Local: percentage of masters/apprentices from the town itself
- Kin: percentage of masters/apprentices whose parents were members of the same guild

Masters & Freemen

City	Guild	Period	Local (%)	Kin (%)	N
England					
Bristol*[72]	All	1650-99	42		7,639
		1700-49	45		11,249
		1750-99	49		9,902
Gloucester*[73]	All	1600-49	44		64
		1650-99	61		491
		1700-49	78		726
Lincoln*[74]	All	1650-99	68		750
		1700-49	67		813
		1750-99	58		806

[72] Bristol & Avon Family History Society, *Bristol Burgess Books, 1557-1995, Index & Transcripts* (Bristol, 2004).
[73] A.F.J. Jurica and P. Ripley, eds., *A Calendar of the Registers of the Freemen of the City of Gloucester, 1641-1838*, Gloucestershire Record Series, 4 (Gloucester, 1991).
[74] Lincolnshire Family History Society, 'Lincoln City Apprentices & Freemen' (unpublished typescript).

London[75]	Apothecaries	1617-49	26	3	177
		1650-99	36	7	823
		1700-49	41	9	237
	Bowyers	1700-49	29	13	40
		1750-99	33	15	20
	Clockmakers	1650-99	23	19	1,983
		1700-49	26	9	2,178
		1750-99	73	15	2,006
	Clothworkers	1600-49	18	9	2,085
		1650-99	28	14	2,372
		1700-49	50	21	1,743
		1750-99	61	24	1,198
	Goldsmiths	1600-49	27	13	1,057
		1650-99	38	15	1,501
	Mercers	1600-49	42	24	183
		1650-99	52	25	387
		1700-49	70	37	189
		1750-99	57	37	8
	Merchant Taylors	1600-49	20	10	4,998
		1650-99	37	18	3,868

[75] Apothecaries: Guildhall Library, "Society of Apothecaries," Freedom Register, MS 8206/1; Bowyers, Clothmakers, Goldsmiths, Mercers: Centre for Metropolitan History, Records of London Livery Companies Online. URL http://www.londonroll.org/. We used the underlying dataset supplied by Mark Merry and Matthew Davies; Clockmakers: Clockmakers Company, *Freemen of the Worshipful Company of Clockmakers, 1631-1884* (George Daniels, Isle of Man: 1984); Merchant Taylors: Docklands Ancestors, *Merchant Taylors' Membership Index, 1530-1928* ([CD Rom] London, 2008); Stationers: Michael Turner, *London Book Trades Database*. URL http://lbt.bodleian.ox.ac.uk/. We used the underlying dataset shared by Michael Turner.

		1700-49	54	24	1,673
		1750-99	62	26	179
	Stationers	1600-49	34	15	1,357
		1650-99	45	19	889
		1700-49	62	21	94
		1750-99	68	17	398
France					
Dijon[76]	All	1693-1730		23	1,822
		1731-60		13	2,397
		1761-90		9	3,661
Paris[77]	All	1766-75		26	13,426
	Locksmiths	1735-50		20	186
		1742-76		34	346
	Seamstress	1735-76		8	5,509
Rouen[78]	All	1600-99		54	6,840
		1700-99		59	8,488
German Europe					
Berlin*[79]	Bakers	1709-50	27		489
	Butchers		36		303
	Construction		21		480
	Coopers		30		89

[76] E.J. Shephard Jr., 'Social and Geographic Mobility of the Eighteenth-Century Guild Artisan: An Analysis of Guild Receptions in Dijon, 1700-90', in: Kaplan and Koepp, eds., *Work in France*, 123.
[77] Registers of guild entries maintained by the royal procurator at the Châtelet of Paris, Archives Nationales, Paris Y 9330, Y 9331, and Y 9332; Locksmiths: Sonenscher, *Work and Wages*, 107; Seamstresses: Crowston, *Fabricating Women*, 329.
[78] Jean-Pierre Bardet, *Rouen aux XVIIe et XVIIIe siècles: les mutations d'un espace social* (Paris, 1983), 237.
[79] Compiled and adapted from E. Kaeber, ed., *Die Bürgerbücher und die Bürgerprotokollbücher Berlins von 1701-50* (Berlin, 1934), esp. tables 9-11.

	Metal		34		689
	Shoemakers		24		913
	Textiles		15		2,499
Gdansk/Danzig*[80]	Bakers	1640-1709	53		416
	Butchers		47		181
	Construction		38		203
	Coopers		58		235
	Textiles		45		2,257
Durlach[81]	Bakers	1700-99	55		131
	Butchers		57		103
	Carpenters		55		38
	Coopers		50		114
	Joiners		42		38
	Linenweavers		51		57
	Masons		31		49
	Shoemakers		61		130
	Tailors		44		105
Hildesheim[82]	Barbers	1700-49		13	16
		1750-99		0	23
	Basketmakers	1700-49		32	13
		1750-99		67	12
	Blacksmiths	1700-49		50	24

[80] Compiled from Henning Penners-Ellward, Die Bürgerschaft nach Herkunft und Beruf 1547-1709, PhD-dissertation Marburg an der Lahn, 1954, tables 4 and 5.
[81] Compiled from Otto Konrad Roller, ed., *Die Einwohnerschaft der Stadt Durlach im 18. Jahrhundert in ihren wirtschaftlichen und kulturgeschichtlichen Verhältnissen dargestellt aus ihren Stammtafeln* (Karlsruhe, 1907).
[82] Kaufhold, *Handwerk der Stadt Hildesheim*, 253-54

		1750-99		48	23
	Bookbinders	1750-99		50	18
	Smiths (other)	1700-49		34	80
		1750-99		49	80
	Tailors	1700-49		6	68
		1750-99		23	99
	Tinsmiths	1700-49		38	13
		1750-99		20	10
	Wheelwrights	1700-49		53	15
		1750-99		45	11
Vienna[83]	Bakers	1742	26		102
	Bookbinders		56		18
	Brewers		1		70
	Butchers		47		32
	Cabinetmakers		14		140
	Coopers		22		67
	Goldsmiths		48		116
	Shoemakers		15		555
	Sword-cutlers		70		36
	Tailors		13		640
	Weavers		10		31
Wildberg[84]	All trades	1666-1760	>90	>80	>500
	Worsted weavers	1598-1647		60	247

[83] Josef Ehmer, 'Worlds of Mobility: Migration Patterns of Viennese Artisans in the Eighteenth Century', in: Crossick, ed., *The artisan and the European town*, 180, 182.
[84] Ogilvie, *State corporatism*, 132, 171-72; Worsted weavers: Ogilvie, 'Guilds, efficiency', 309.

		1666-99		91	131
		1700-60		91	228
Italy					
Turin[85]	Tailors	1705		5	288
Low Countries					
Amsterdam[86]	Tailors	1730-1769	17		1,345
		1770-1798	23		1,129
Antwerp[87]	Coopers	1671-1700		24	177
		1701-50		30	204
		1751-93		35	89
	Shoemakers	1766-90		17	127
	Tailors	1714-79		22	813
Brussels[88]	Tailors	1694-1786		22	828
Delft[89]	Painters	1613	38		32
		1613-49	70		92
		1650-1679	75		40
Ghent[90]	Woodworkers	1616-30		23	137
		1631-67		0	206

[85] Cerutti, *La ville et les métiers*, 163, 167.
[86] Panhuysen, *Maatwerk*, 300.
[87] Coopers: Willems, 'Loon naar werken?', 46; Shoemakers: Bert De Munck, *Technologies of learning: Apprenticeship in Antwerp from the 15th century to the end of the ancien régime* (Turnhout, 2007) : 164; Tailors: Harald Deceulaer, *Pluriforme patronen en een verschillende snit: sociaal-economische, institutionele en culturele transformaties in de kledingsector in Antwerpen, Brussel en Gent, 1585-1800* (Amsterdam, 2001) : 330.
[88] Deceulaer, *Pluriforme patronen*, 330.
[89] John Michael Montias, *Artists and artisans in Delft: a socio-economic study of the seventeenth century* (Princeton, 1982): 140.
[90] Johan Dambruyne, 'De Gentse bouwvakambachten in sociaal-economisch perspectief (1540-1795)', in: C. Lis and H. Soly (eds.), *Werken volgens de regels: Ambachten in Brabant en Vlaanderen, 1500-1800* (Brussels, 1994): 72.

Haarlem[91]	Dyers	1663	83		36
		1714	65		60
Rotterdam[92]	Goldsmiths	1665	77		34
's-Hertogenbosch[93]	Butchers	1749-75		100	120
	Coopers			9	65
	Goldsmiths			12	17
Spain					
Barcelona[94]	Bookbinders	1794-1835		33	95
Madrid**[95]	Various	1643-49	32		569
		1700-49	25	9	2,187
		1750-99	29	16	3,233

* refers to the use of citizenship registers; in other cases we rely on guild sources.
** recalculated without the 'unknowns'.

[91] Janneke Tump, Ambachtelijk geschoold: Haarlemse en Rotterdamse ambachtslieden en de circulatie van technische kennis, ca. 1400-1720, PhD-thesis Vrije Universiteit Amsterdam 2012: 131.
[92] Tump, Ambachtelijk geschoold, 133.
[93] Erfgoed 's-Hertogenbosch, Bossche Ambachtsgilden 152 (butchers), 251 (Coopers), 314 (Goldsmiths).
[94] Àngels Solà Parera, Craft Apprenticeship in Barcelona, 1760-1850, paper presented at the workshop "Apprenticeship in early modern Europe: one institution or many?" (3-4 July 2016, Utrecht).
[95] José Antolín Nieto Sánchez and Juan Carlos Zofío Llorente, 'The return of the guilds: a view from early modern Madrid', *Journal of Social History* 50 (2016): 260.

Apprentices

City	Guild	Period	Local (%)	Kin (%)	N
England					
Boston[96]	all	1650-99		15	259
		1700-49		64	411
		1750-99		29	1,069
Bristol[97]	all	1650-99	45	17	2,227
		1700-49	53	10	5,290
		1750-99	62	6	10,157
Gloucester[98]	all	1600-49	36	11	1,789
		1650-99	47	15	2,266
		1700-49	55	18	1,576
Leicester[99]	all	1600-49	42	22	131
		1650-99	39	9	43
		1700-49	41	7	199
		1750-99	44	23	197
Lincoln[100]	all	1650-99	40	23	603
		1700-49	29	8	823
		1750-99	36	8	748
Liverpool[101]	all	1700-49	12	2	701
London[102]	Various	1600-49	18	2	101,914
		1650-99	32	4	145,180
		1700-49	51	8	106,307
		1750-99	62	1	59,545
Shrewsbury[103]	all	1650-99	39	28	331
France					
Lyon[104]	silk	1710-39	29		

[96] Lincolnshire Family History Society, 'Boston City Apprentices & Freemen' (unpublished typescript).
[97] Bristol & Avon Family History Society, *Transcript and Indexes of the Bristol Apprenticeship Books Volumes 1(o) to 1(z) 1724-2009* (Bristol, 2012).
[98] J. Barlow, ed., A *Calendar of the Registers of Apprentices of the City of Gloucester*, Bristol and Gloucester Archaeological Society, 2001 (v. 14), 1595 -1700 & v. 20 (1700-1834).
[99] H. Hartropp, *Register of the freemen of Leicester including the apprentices sworn before successive mayors*, 2 vols. (Leicester, 1927-33).
[100] Lincolnshire Family History Society, 'Lincoln City Apprentices & Freemen' (unpublished typescript).
[101] M. Power, F. Lewis, D. Ascott (1998). *Liverpool Community, 1649-1750*. [data collection]. UK Data Service. SN: 3882, http://doi.org/10.5255/UKDA-SN-3882-1.
[102] C. Webb, London Livery Company Apprenticeship Registers (London: Society of Genealogists 1994-2005); Wallis, *London Apprentices: Society of Apothecaries, 1617-1669* (London: Society of Genealogists, 2000); *Records of London Livery Companies Online*. URL http://www.londonroll.org/.
[103] Shropshire Archives MS6001/126; 6001/4263; 6001/5837; 6001/3360; 6001/4583.
[104] Maurice Garden, *Lyon et les Lyonnais au XVIIIe siècle* (Paris, 1970): 57, 63.

		1740-69	32		
		1770-90	29		
	various	1746-47	26		405
Paris[105]	all	1761	72		815
Low Countries					
Amsterdam[106]	surgeons	1597-1659	67		1,057
Antwerp [107]	cabinetmakers	1691-1760		3	412
	carpenters	1701-90		8	975
	coopers	1671-1700		34	635
		1701-1750		30	479
		1751-1793		17	186
	silversmiths	1600-50	75		32
		1650-1700	78		123
		1700-50	83		58
		1750-1800	90		31
	tinsmiths	1711-50		25	150
		1751-90		19	105
Haarlem[108]	coopers	1649-68	3		61
	shoemakers	1736-97	91	6	790
Leiden[109]	surgeons	1683-1729	70	15	391
Spain					
Barcelona[110]	fanmakers	1762-92	26	13	146
	builders	1786-1820		35	56
	silk-reeling	1760-1762	48		29
	veil weaving	1825-1849	50		1,482
	booksellers	1760-1788	26	15	39
Madrid[111]	various	1607-99	7		215
		1700-49	28		131
		1750-99	47		289

[105] Archives nationales Y 9330, Y 9331, and Y 9332.

[106] Stadsarchief Amsterdam, Archief Gilden en het Brouwerscollege 366, inv. 254.

[107] Cabinetmakers, Carpenters and Tinsmiths: De Munck, *Technologies of learning*, 165-67; Coopers: Willems, 'Loon naar werken?', 35; Silversmiths: Raoul De Kerf, De circulatie van technische kennis in het vroegmoderne Antwerpse ambachtswezen, 1500–1800 (casus kuipers en edelsmeden), PhD-thesis Universiteit Antwerpen 2014: 98.

[108] Coopers: Tump, Ambachtelijk geschoold, 128; Shoemakers: Feline van den Boogerd, Welkom bij het gilde: De openheid van ambachtsgilden in Haarlem in de 17e en 18e eeuw, unpublished BA-thesis in History, Utrecht University, January 2017, tab. 1.

[109] Regionaal Archief, Archief der Gilden 0509, inv. 351.

[110] Belén Moreno Claverías, 'El aprendiz de gremio'; Àngels Solà Parera, Craft apprenticeship in Barcelona, 1760-1850, paper presented at the workshop "Apprenticeship in early modern Europe: one institution or many?" (3-4 July 2016, Utrecht).

[111] Victoria López Barahona and José Antolín Nieto Sánchez, Artisan Apprenticeship in Early Modern Madrid (1561-1800), paper presented at the workshop "Apprenticeship in early modern Europe: one institution or many?" (3-4 July 2016, Utrecht), tab. 6.