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*Guilds, efficiency, and social capital: evidence from German proto-industry*¹

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Guilds were widespread in most European economies from the medieval period to—in some cases—the nineteenth century, and debate still rages about why they existed and about the economic impact they exerted. Traditionally, historians have been deeply divided on the question. Some argue that guilds exercised costly monopolies, others that guilds were economically powerless, and still others that guilds were positively beneficial.² More recently, economic theory has led some to claim that an institution that was so widespread and long-lived must have been an efficient solution to economic problems facing early modern industries.³ At the same time, political scientists and economists have begun to adduce guilds as historical exemplars of ‘social networks’ generating beneficial ‘social capital’ for the economy as a whole.⁴ Yet much of the debate hitherto has been based on legislative or literary sources, often assembled impressionistically from the secondary literature on a wide array of different societies and periods.⁵ Conversely, many detailed case studies of guilds still proceed without reference to theoretical models.

This article seeks to shed light on this debate by explicitly confronting alternative theoretical models of guilds with detailed empirical evidence

¹ I thank André Carus, Partha Dasgupta, Tracy Dennison, Jeremy Edwards, Tim Guinnane, Klas Nyberg, and three anonymous referees for stimulating comments on the arguments presented in this article. I also gratefully acknowledge the financial support of a British Academy Research Readership (2001–3). Archive locations, and the abbreviations by which these sources are referred to, are as follows. HSAS = Hauptstaatsarchiv Stuttgart, Konrad-Adenauer-Straße 4, 70173 Stuttgart, Germany. PAE = Pfarrarchiv Ebhausen and PAW = Pfarrarchiv Wildberg, microfilmed documents from parish archives held by Landeskirchliches Archiv Stuttgart, Balinger-Straße 33/1, 70567 Stuttgart, Germany. SOAD HS = Fond Rodinný Archiv Clam-Gallasů, Historická Sbirka, Státní Oblastní Archiv Litoměřice, Pobočka Děčín, Zbrojnická 14/1, 40502 Děčín 4, Czech Republic.

² On this debate, see Bräuer, ‘Entwicklungstendenzen’; Ehmer, ‘Traditionelles Denken’, pp. 19–35; Epstein, ‘Craft guilds’, pp. 685–6; Gustafsson, ‘Rise’, pp. 1–7, 12–13; Ogilvie, *State corporatism*, pp. 308–10, 339–66; Pfister, ‘Craft guilds’, pp. 12–14; Reith, ‘Technische Innovation’, pp. 21–8.

³ For representative recent examples, see Ehmer, ‘Traditionelles Denken’, pp. 32, 35–54, 76–7; Epstein, ‘Craft guilds’, pp. 685–6; Greif, et al., ‘Coordination’; Gustafsson, ‘Rise’, pp. 1–7, 12–13; Hickson and Thompson, ‘New theory’, pp. 127–8; Pfister, ‘Craft guilds’, pp. 12–14; Reith, ‘Technische Innovation’, pp. 21–8; and the majority of the essays in Epstein et al., eds., *Guilds*; and Haupt, ed., *Ende*.

⁴ Putnam, *Democracy*, pp. 163–85; Stiglitz and Ellerman, ‘New bridges’; Raiser, ‘Informal institutions’, p. 231.

⁵ As vigorously criticized, e.g., by Ehmer, ‘Traditionelles Denken’, pp. 29, 40; Bräuer, ‘Entwicklungstendenzen’, p. 37.

on what guilds actually did in a particular economy over a period of centuries. The economy in question is the proto-industrial worsted region of Württemberg between the sixteenth and nineteenth centuries. This provides a good test case for examining guilds both because it is exceptionally well documented and because it is representative of European industrial regions where, as has recently been emphasized in the new guilds literature, strong guilds survived for a long time and often spread beyond urban crafts into rural proto-industries and commerce in the course of the seventeenth and eighteenth centuries.⁶ This mainstream continental development pattern is more appropriate for the purpose of evaluating alternative theories about guilds than is the pattern observed in the exceptional economies of England and the Low Countries, where guilds remained limited to urban crafts, were generally weakened and circumvented even in towns from the sixteenth century onwards, and were often faced with a stark choice between metamorphosis and extinction.⁷ In most other parts of Europe, by contrast, guilds existed not just in crafts but in export-oriented 'proto-industries' and tertiary activities such as merchant trading.⁸ Rural or 'regional' (rural-urban) guilds were established throughout the early modern period in many central and southern European societies, including Germany, Switzerland, Austria, Bohemia, Italy, Spain, Greece, Bulgaria, and Serbia.⁹ And in many parts of Europe, guilds survived and new ones were set up into the eighteenth or even the nineteenth century.¹⁰ This pattern, whereby guilds operated in a wide range of economic sectors, expanded to the countryside, dominated important export trades, and survived to the dawn of industrialization and beyond, makes it the more important to find out what they actually did—in order both to conceptualize guilds themselves more clearly and to understand the development of different European industries and economies.

It is also timely to turn empirical attention to guilds in the light of new theoretical perspectives. The traditional literature on guilds consisted mainly of economic historians criticizing the cartelistic provisions of guild charters, and social historians celebrating guilds' contribution to the

⁶ On the long survival and new formation of guilds during the seventeenth, eighteenth, and even nineteenth centuries, see Ehmer, 'Traditionelles Denken', pp. 36-7, 54; Ogilvie, *State corporatism*, pp. 419-31.

⁷ The development of guilds in the Low Countries bifurcated after about 1700, when the Spanish Netherlands continued to see its guilds decline while the United Provinces experienced a guild resurgence, to which its intensifying economic sclerosis and late industrialization are widely ascribed: see Mokyr, 'Industrial revolution', pp. 10-12.

⁸ Ogilvie, 'Social institutions', pp. 30-3; *eadem*, *State corporatism*, pp. 419-31; Pfister, 'Craft guilds', pp. 11-14.

⁹ See the studies surveyed in Ehmer, 'Traditionelles Denken', pp. 36-7; Ogilvie, 'Social institutions', pp. 30-3; and *eadem*, *State corporatism*, pp. 428-31.

¹⁰ See the evidence in Ehmer, 'Traditionelles Denken', pp. 36-7, 54; Ogilvie, *State corporatism*, pp. 72-9, 419-37; Pfister, 'Craft guilds', pp. 11-14; and Reininghaus, *Gewerbe*, pp. 61-3, 71-2, 79-80.

solidarity of pre-modern society.¹¹ These two perspectives seldom intersected. Recently, however, a new literature has developed which seeks to rehabilitate guilds on economic rather than socio-cultural grounds. This 'rehabilitation' literature argues that guilds were widespread because they were efficient institutional arrangements that benefited the pre-industrial economy. A first strand of this literature argues that guilds existed to solve asymmetries of information between producers, merchants, and consumers concerning product quality, thereby increasing the volume of exchange and enabling industries to expand over larger spatial areas.¹² A second rehabilitation argument holds that guilds existed to overcome imperfections in markets for trained labour, thereby both increasing the volume of exchange and improving industrial productivity.¹³ A third plank of the rehabilitation case is that guilds existed because they were an efficient institutional solution to imperfections in markets for technological innovations, creating incentives for innovators to invent new ideas and disseminate their innovations more widely.¹⁴ A final and more general version of the rehabilitation case regards guilds as social networks that generated beneficial social capital by sustaining shared norms, punishing violators of these norms, effectively transmitting information, and successfully undertaking collective action.¹⁵

These arguments offer stimulating new perspectives on a widespread and important institution in the pre-industrial economy. But up to now they have not been tested against alternative theories about guilds as institutions through deeper empirical analyses of particular industries and economies. The lack of thorough empirical studies is a serious gap, since guilds rarely confined themselves to a single activity—restricting entry, fixing prices, controlling labour, seeking rents, maintaining quality, training labour, regulating technology, insuring members, organizing sociability, celebrating religious festivals, or undertaking collective political action. Instead, they engaged in a wide variety of interlinked economic, social, political, religious, and cultural activities. To evaluate theoretical models claiming that guilds were efficient institutions—or beneficial social networks—we must scrutinize the entire range of what they actually did in real-life situations. That is the purpose of this article.

¹¹ Space is lacking to provide a complete overview of the expanding recent literature on guilds. For surveys of the debate, see Ehmer, 'Traditionelles Denken', pp. 19-35; Ogilvie, *State corporatism*, pp. 308-10, 339-66; Pfister, 'Craft guilds', pp. 12-14; Gustafsson, 'Rise', pp. 1-7, 12-13; Reith, 'Technische Innovation', pp. 21-8.

¹² Pfister, 'Craft guilds', pp. 11, 14-18; Gustafsson, 'Rise'; Reith, 'Technische Innovation', pp. 49-53.

¹³ Epstein, 'Craft guilds', pp. 688-93; Pfister, 'Craft guilds', pp. 14, 18.

¹⁴ Epstein, 'Craft guilds', pp. 693-705; Reith, 'Technische Innovation', pp. 45-8.

¹⁵ Putnam, *Democracy*, pp. 163-85; Stiglitz and Ellerman, 'New bridges'; Raiser, 'Informal institutions', p. 231.

I

To draw up a balance sheet on the effects of a particular institution that engages in a multitude of activities over a long period requires detailed empirical findings that go beyond the legislative sources and impressionistic evidence on which traditional criticisms of guilds, and efforts at their rehabilitation, have often been based. Such detail can hardly be gathered for the guilds of a continent or even a state, but it can be done for those of a particular region.¹⁶ This article therefore focuses on a large German industrial region—the worsted (‘New Draperies’) region of Württemberg—between the late sixteenth century and the early nineteenth. This area was typical of many European proto-industrial regions: weavers in both town and countryside were organized into guilds, and proto-industrial traders were organized into a guild-like association of merchant-dyers. The outstandingly detailed quality of Württemberg local documentation in this period makes it possible to subject the activities of these guilds to detailed microeconomic analysis. The findings for this region can then be placed in the context of the institutional framework surrounding the worsted industry in other parts of early modern Europe.

In the 1560s, country people in the Black Forest region of Württemberg—as in many other regions of Europe at the same period—began to weave light worsted cloths for export markets. For 250 years, this proto-industry employed thousands of people, was the most important single livelihood in many rural communities, and became the economic mainstay of a region of 1,000 square kilometres, one-ninth of the land area of Württemberg. The only other Württemberg industry rivalling it in importance was a linen proto-industry with a similar—guilded—institutional structure.¹⁷ Neither of Württemberg’s two main proto-industries was economically vibrant. Instead, they were typical of many proto-industries throughout Europe: after an initial phase of rapid expansion, they grew slowly, required little skill, were technologically backward, and offered most of their practitioners a distinctly meagre living. But the Württemberg worsted industry supported 30–40 per cent of the population in the densest industrial communities for two and a half centuries, and survived in pockets well into the nineteenth century.¹⁸

Throughout most of its history, the Württemberg worsted industry was guilded. In the 1560s and 1570s, combing wool and weaving worsted wares were eagerly taken up by peasants, women, journeymen from other crafts—anyone who saw the industry as a better livelihood. But soon master

¹⁶ On the methodological advantages of the micro-study in penetrating behind normative and rhetorical statements, see Ehmer, ‘Traditionelles Denken’, pp. 29, 40–1; Medick, *Weben*, pp. 13–38; and Ogilvie, *Bitter living*, pp. 6–7.

¹⁷ On the Württemberg linen proto-industry, see Medick, *Weben*, which evaluates the weavers’ guilds sympathetically as sources of social solidarity against the merchant class.

¹⁸ On Württemberg’s two proto-industries, see Ogilvie, *State corporatism*, ch. 4; Troeltsch, *Zeughandlungskompagnie*, chs. 1–4; Medick, *Weben*.

weavers from the long-established woollen broadcloth trade were collecting money from house to house and organizing a grass-roots campaign to lobby the government for guild privileges that would reserve the lucrative new industry to themselves alone. In 1589, woollen weavers in the administrative district of Calw obtained a state charter for a 'regional' (rural-urban) worsted guild; weavers in the district of Wildberg followed suit in 1597. In 1611 the government issued an ordinance for worsted weavers' guilds in the six main worsted-producing districts. National guild ordinances were issued in 1654 and 1686, and auxiliary legislation expanded upon them throughout the eighteenth century. Worsted weaving remained guilded until the abolition of all Württemberg guilds in 1864.

Although making worsteds was by 1589 limited to guild masters, trading in them was until 1650 open to all comers, and included women, peasants, and foreigners—anyone with a bit of capital and time to invest in buying cloths and transporting them to nearby trade fairs.¹⁹ Thus, to give just one example, in 1643 Magdalena Frohnmüller of Wildberg, who had lost her weaver husband eight years earlier, was exporting worsteds in bulk to the neighbouring territory of Baden despite the risks of military plundering; many other widows and unmarried women had for decades done the same.²⁰ But in 1650, 22 merchants and dyers in the small town of Calw (population approximately 2,000) formed a guild-like association, lobbied the princely bureaucrats, and secured a state charter legally entitling them to exclude all other dyers and exporters of worsteds, and to compel all weavers to sell exclusively to their association, at fixed prices and quotas. This guild-like merchant-dyers' association—the famous Calwer Zeughandlungskompagnie—astutely used bribes to officials, loans to princes, and systematic lobbying of state councils to expand its economic privileges and its political influence, and was dissolved (at its own desire) only when worsted exports collapsed under the impact of the French wars in the late 1790s.²¹

But how typical was Württemberg? The standard view, based on England and the Low Countries, is that proto-industry moved to the countryside precisely to escape guilds, which then collapsed. However, comparative analysis of proto-industries across early modern Europe shows clearly that the breakdown of guilds in these exceptional economies should not be projected uncritically on to other societies. Guilds and guild-like merchant associations were the rule rather than the exception in proto-industries outside England and the Low Countries.²² Guilds remained almost universal

¹⁹ Troeltsch, *Zeughandlungskompagnie*, pp. 39-40.

²⁰ For this example, see HSAS A573 Bü. 128, fo. 82r, 29 Aug. 1643. On women's activities in the worsted trade, see Ogilvie, *Bitter living*, pp. 239-47.

²¹ Ogilvie, *State corporatism*, esp. pp. 89-94; Troeltsch, *Zeughandlungskompagnie*, esp. pp. 49-69, 80-135.

²² Indeed, even within the Low Countries there was a bifurcation in guild development between the Spanish Netherlands and the United Provinces after c.1700; see the discussion in n. 7 above, and Mokyr, 'Industrial revolution', pp. 10-12.

in the urban finishing stages, such as dyeing.²³ Guild-like merchant ‘associations’ exercising exclusive purchasing and exporting rights were the norm among proto-industrial traders.²⁴ And in many proto-industries, particularly in central, southern, and eastern Europe, rural proto-industrial producers were also guilded—as in Württemberg.²⁵ Guilds’ widespread survival in proto-industry and international merchant trading as well as in traditional crafts makes it the more important to investigate their economic impact.

It is therefore fortunate that extraordinarily detailed sources survive, documenting the activities of Württemberg’s proto-industrial guilds. A unique series of annual account books survives for the weavers’ guild in the most densely industrial district in the region, Wildberg, covering the worsted weavers of 10 rural communities between 1598 and 1760.²⁶ The colossal business registers of the Calw merchant-dyers’ association also survive for long periods between 1650 and 1797.²⁷ The Württemberg Upper Council preserved many cartons of petitions, lists, registers, and correspondence relating to the industry, the weavers’ guilds, and the merchant-dyers’ association.²⁸ Local courts kept detailed minutes of their own proceedings, with many references to local guild activities.²⁹ Finally, state ordinances and other administrative decrees defined the legal basis for guilds’ privileges and obligations.³⁰ These outstanding documentary series make it possible to reconstruct the entire array of activities pursued by the weavers’ guilds and the merchant-dyers’ association on the local level over a period of centuries. What light do they shed on theories about guilds?

II

A first ‘rehabilitation’ theory argues that guilds existed so widely for so many centuries because they overcame asymmetries of information and problems of delegated monitoring relating to product quality. According to this argument, information asymmetries between producers and consumers were greater in pre-industrial than in modern economies. Uncertainty about quality reduced consumers’ willingness to purchase, thereby diminishing gains from trade. Guilds are supposed to have corrected this, by regulating raw materials, production processes, apprenticeship, journeymanhood, mastership

²³ See the proto-industrial case studies discussed in Ogilvie, *State corporatism*, pp. 419–28; and *eadem*, ‘Social institutions’, pp. 30–3.

²⁴ For a survey of the extensive literature on proto-industrial merchant associations, see Ogilvie, *State corporatism*, pp. 419–23; *eadem*, ‘Social institutions’, pp. 30–3; Pfister, ‘Craft guilds’, pp. 11–14.

²⁵ Ogilvie, *State corporatism*, pp. 72–9, 419–37; *eadem*, ‘Social institutions’, pp. 30–3; Reininghaus, *Gewerbe*, pp. 61–3, 71–2, 79–80; Pfister, ‘Craft guilds’, esp. pp. 11–14.

²⁶ HSAS A573 Bü. 777–911.

²⁷ Analysed in Troeltsch, *Zeughandlungskompagnie*, pp. 136–89.

²⁸ HSAS A228, Bü. 256–304.

²⁹ HSAS A573 Bü. 1–103; PAW KKP, vols. I–VIII; PAE KKP, vols. I–VIII.

³⁰ Printed in Reyscher, *Sammlung*, vol. 13, pp. 364, 500–1, 615–40; vol. 14, p. 178; and Troeltsch, *Zeughandlungskompagnie*, pp. 431–84.

examinations, trademarks, and output quality, and by contracting collectively with merchants.³¹

The evidence adduced in support of this view is of two types. One consists of the frequent references to poor craftsmanship in contemporary plays and poems, which are supposed to show that quality was a serious problem and that guilds existed to control it.³² The problem is that literature serves explicitly rhetorical and often normative ends, making it an unreliable guide to what was actually happening. Literary references to poor craftsmanship, for example, may as easily have arisen from guilds' failure to control quality as from their desire to do so.

The second type of supporting evidence consists of guild legislation. Thus, for instance, it is claimed that 'the majority of the guild statutes are concerned precisely with demands for a sufficiently high quality of product' and that guilds imposed 'exceedingly harsh sanctions for violating the quality regulations'.³³ But is this true? In the Württemberg worsted industry, only a minority of guild statutes were even remotely concerned with quality control. Thus in the first surviving guild charter (the Calw ordinance of 1589), only 19 per cent of articles referred to quality; in the 1611 charter for the six Black Forest districts, the figure was 35 per cent; in the national charter of 1686 it was only 12 per cent.³⁴ The content of such articles was minimal: they merely set standard legal dimensions for wares. Nor were sanctions 'exceedingly harsh'. The penalties named were lenient, normally fines of 15 *Kreuzer*, the lowest guild fine ever inflicted, amounting to about two days' average earnings for a weaver in normal times. Only exceptionally poor cloths were to be defaced and the maker fined by the state. Harsh sanctions such as exclusion from the guild or expulsion from the community never came into question.³⁵

Even if a majority of guild statutes had focused on quality issues and even if they had set very severe penalties—which they did not—it is important to recognize that legislation, hitherto the mainstay of guild studies, is a deeply questionable source of evidence about what actually occurred.³⁶ Certainly, in this industry as in most others, guild ordinances justified themselves by claiming that without the guild, quality would plummet, consumers would be defrauded, and the industry would collapse. But historians must read such claims critically and consider the rhetorical aims they served. The wording of guild charters was often strongly influenced by guild masters themselves, since legislation typically came into being as a result of petitions and draft ordinances submitted by guild delegations.³⁷ Maintaining a high

³¹ Gustafsson, 'Rise', pp. 5, 13-24; Pfister, 'Craft guilds', pp. 14-16.

³² Gustafsson, 'Rise', pp. 3, 13-15, 23.

³³ Gustafsson, 'Rise', pp. 9, 13 (quotations) Pfister, 'Craft guilds', pp. 16-17.

³⁴ See the ordinances reprinted in Troeltsch, *Zeughandlungskompanie*, pp. 431-53; and Reyscher, *Sammlung*, vol. 13, pp. 615-40.

³⁵ Ogilvie, *State corporatism*, pp. 345-8.

³⁶ On this, see, e.g., Ehmer, 'Traditionelles Denken', pp. 29, 40; Bräuer, 'Entwicklungstendenzen', p. 37.

³⁷ Ehmer, 'Traditionelles Denken', p. 39; Ogilvie, *State corporatism*, pp. 89-95.

quality of output was widely regarded then—as it often still is—as an unquestionable ‘good’ for society at large, although we will shortly examine reasons why enforcing high quality at all costs is not necessarily efficient. But because it was viewed as generally beneficial, quality control provided a nearly unarguable rhetorical basis for justifying restrictions—entry barriers, output quotas, price controls—which served more narrow group interests and would otherwise have aroused social opposition.

Furthermore, as historians of crime are well aware, legislation is one thing and enforcement quite another. Many regulations on the early modern statute book were never enforced at all. Others were enforced but evaded to a greater or lesser extent, creating ‘informal sectors’ which (as modern development economists have shown) have profound but unstraightforward effects on economic growth and human well-being. And, as we shall see, some regulations that were enforced did not actually appear in the legislation, but were left to the discretion of local guild officials. Outside sources of evidence are needed, therefore, to check on how guild legislation was actually implemented in practice.

Such an outside check is provided for the Württemberg worsted industry by the guild account books, merchant records, and community court minutes described earlier. Guild account books reveal that quality-related offences were quite frequent, as table 1 shows: at 357 offences in total, they

Table 1. *Numbers of offence in each category fined by the worsted-weavers’ guild, district of Wildberg, 1598-1647 and 1666-1760*

Date	Quality control		Production monopoly		Labour control		Quantity control		Sealing		Honour and solidarity		Total	
	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%
1598-1609	0	0.0	7	38.9	11	61.1	0	0.0	0	0.0	0	0.0	18	100.0
1610-19	62	83.8	8	10.8	3	4.1	0	0.0	1	1.4	0	0.0	74	100.0
1620-9	82	72.6	12	10.6	2	1.8	0	0.0	8	7.1	9	8.0	113	100.0
1630-9	27	87.1	2	6.5	0	0.0	0	0.0	2	6.5	0	0.0	31	100.0
1640-7	14	60.8	5	21.7	1	4.3	0	0.0	0	0.0	3	13.0	23	100.0
1666-9	5	71.4	1	14.3	0	0.0	0	0.0	1	14.3	0	0.0	7	100.0
1670-9	29	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	29	100.0
1680-9	15	75.0	0	0.0	0	0.0	0	0.0	2	10.0	3	15.0	20	100.0
1690-9	12	36.4	4	12.1	3	9.1	0	0.0	10	30.3	4	12.1	33	100.0
1700-9	56	66.7	4	4.8	0	0.0	7	8.3	9	10.7	8	9.5	84	100.0
1710-9	11	68.8	0	0.0	0	0.0	0	0.0	0	0.0	5	31.2	16	100.0
1720-9	7	38.9	3	16.7	0	0.0	1	5.6	2	11.1	5	27.8	18	100.0
1730-9	11	55.0	1	5.0	0	0.0	0	0.0	1	5.0	7	35.0	20	100.0
1740-9	20	17.9	16	14.3	0	0.0	1	0.9	31	27.7	44	39.3	112	100.0
1750-60	6	17.6	21	61.8	0	0.0	0	0.0	2	5.9	5	14.7	34	100.0
1598-1647	185	71.4	34	13.1	17	6.6	0	0.0	11	4.2	12	4.6	259	100.0
1666-99	61	68.5	5	5.6	3	3.4	0	0.0	13	14.6	7	7.9	89	100.0
1700-60	111	39.1	45	15.8	0	0.0	9	3.2	45	15.8	74	26.1	284	100.0
1598-1760	357	56.5	84	13.3	20	3.2	9	1.4	69	10.9	93	14.7	632	100.0

Notes: There are no values for 1648-65 because of a gap in the surviving guild account-books. Offences of unknown nature are excluded (a total of 21 offences, 5 in 1680-9, 1 in 1720-9, 11 in 1730-9, and 4 in 1750-9).

Source: HSAS A573 Bü. 777-911 (1598-1647, 1666-1760).

Table 2. Mean value of fines exacted for each category of offence by the worsted-weavers' guild, district of Wildberg, 1598-1647 and 1666-1760

Date	Quality control	Production monopoly	Labour control	Quantity control	Sealing	Honour and solidarity	Total
1598-1609	—	1.69	1.00	—	—	—	1.27
1610-19	0.31	0.73	1.16	—	1.96	—	0.41
1620-9	0.33	0.87	1.00	—	0.48	0.35	0.41
1630-9	0.36	1.00	—	—	0.57	—	0.42
1640-7	0.36	1.31	0.50	—	—	0.30	0.57
1666-9	0.30	1.00	—	—	1.00	—	0.50
1670-9	0.31	—	—	—	—	—	0.31
1680-9	0.30	—	—	—	0.50	0.61	0.34
1690-9	0.38	1.00	0.75	—	0.82	0.14	0.60
1700-9	0.46	0.49	—	1.00	1.11	0.17	0.55
1710-19	0.41	—	—	—	—	0.60	0.47
1720-9	0.48	0.25	—	1.00	0.75	0.60	0.53
1730-9	0.32	1.00	—	—	1.00	0.40	0.40
1740-9	0.38	0.34	—	0.50	0.25	0.27	0.30
1750-60	0.46	0.57	—	—	0.50	0.42	0.55
1598-1647	0.33	1.08	1.00	—	0.63	0.34	0.49
1666-99	0.32	1.00	0.73	—	0.78	0.34	0.44
1700-60	0.43	0.47	—	0.94	0.47	0.33	0.43
1598-1760	0.36	0.75	0.96	0.94	0.56	0.33	0.46

Notes: All amounts are in *Gulden*. There are no values for 1648-65 because of a gap in the surviving guild account-books. Offences of unknown nature (n = 21) are excluded.
Source: HSAS A573 Bü 777-911 (1598-1647, 1666-1760).

made up over half of all offences fined in the surviving account books of the Wildberg guild. However, enforcement of quality regulations declined significantly as a proportion of the guild's overall regulatory activity between the late sixteenth century and the late eighteenth: before 1700 quality offences made up about 70 per cent of total offences, after 1700 only 40 per cent.³⁸

It is not surprising that quality offences were numerous since, as merchants complained at the time, guilds punished them very mildly.³⁹ Analysis of guild account books confirms this. As table 2 shows, quality offences were penalized with the lowest average fine, 0.36 *Gulden*. This was significantly lower than the 0.59 *Gulden* imposed for non-quality-related offences, and indeed lower than for any other category except offences against guild honour and solidarity. This casts doubt on the deterrent effect of guild quality controls.

Modern historians have accepted at face value guild claims that their trademarks and cloth seals functioned as effective quality guarantees.⁴⁰ But contemporaries were far more sceptical, and there is widespread evidence that, in this as in most other early modern textile industries, guild quality

³⁸ For a more detailed analysis, see Ogilvie, *State corporatism*, pp. 329-33, 345-52.

³⁹ Troeltsch, *Zeughandlungskompagnie*, p. 120, n. 1.

⁴⁰ Gustaffson, 'Rise', p. 22.

inspections were widely viewed as inadequate. Local merchants and Stuttgart officials repeatedly exhorted worsted weavers to work more carefully and guild inspectors to apply higher standards. As early as 1642, worsted merchants in the Black Forest region were seeking to establish their own independent inspection arrangements precisely because they perceived guild inspections as unreliable.⁴¹ In 1686, a merchant travelled up to Wildberg from Calw 'to measure the guild sealing counter which was supposed to be too short',⁴² an exercise which was repeated subsequently by other merchants,⁴³ and was ultimately institutionalized into a periodic merchant inspection of the guild seal and all weavers' workshops.⁴⁴ In 1777, worsted merchants went so far as to complain in the Wildberg community court about the 'improper way in which the guild sealing counter is attended to'.⁴⁵ This was common in European worsted industries: as we shall see in detail shortly, precisely because guilds could not (or would not) themselves control quality, independent inspections by merchants (and in some cases also by town officials or state inspectors) were necessary to enhance them, and in the most dynamic worsted industries swiftly came to replace them.

Why were guild quality standards so inadequate? Evidence from the Württemberg worsted industry reveals one major reason: self-regulating professional associations suffer from disincentives to offend or penalize their members. As seventeenth- and eighteenth-century merchant correspondence frequently remarked, guild inspections were 'subject to personal influences'⁴⁶ and 'suffered from the fact that they lay in the hands of people who could not extricate themselves from the influence of friends and neighbours'.⁴⁷ Community court minutes bear this out, as in 1660 when the Wildberg communal assembly recorded the petition of one guild sealer to be released from his office, 'on the grounds that the sealing takes place very badly, and when one says anything about it one incurs great enmity'.⁴⁸ This was a widespread problem with guild inspections throughout Europe. Thus, for instance, the guild sealing counter in the Thuringian worsted centre of Gera made elaborate provisions to conceal the identity of the maker of a cloth from the inspectors, precisely because it was recognized that sealers would otherwise be disinclined to refuse to seal the cloth of a relative, friend, neighbour, or patron; notwithstanding these provisions, by the later seventeenth century the guild seal was being widely ignored by Gera worsted exporters.⁴⁹

⁴¹ Troeltsch, *Zeughandlungskompagnie*, pp. 12, 90, 119-20.

⁴² HSAS A573 Bü. 839 (1685-6), fo. 66.

⁴³ HSAS A573 Bü. 847 (1693-4), fo. 102v; HSAS A573 Bü. 848 (1694-5), fo. 16r.

⁴⁴ Ogilvie, *State corporatism*, pp. 194-5.

⁴⁵ HSAS A573 Bü. 96, 17 April 1777, unpag.

⁴⁶ Troeltsch, *Zeughandlungskompagnie*, p. 90.

⁴⁷ *Ibid.*, p. 120 n. 1.

⁴⁸ HSAS A573 Bü. 91, 29 Oct. 1660, fo. 7r.

⁴⁹ Finkenwirth, *Urkundliche Geschichte*, p. 41.

A second structural reason that guild quality standards tended to be inadequate—here, as in many other industries—was that guild inspectors lacked the incentive to develop the skills and deploy the effort necessary to detect low-quality work beyond superficial features (such as size) which, as contemporaries pointed out, were readily apparent to potential customers anyway.⁵⁰ Calw merchant documents indicate that as early as 1642, the local guild inspectors were regarded by merchants as having ‘hardly any notion of the requirements of the wider market’.⁵¹ This was still true in 1777, as shown by communal assembly minutes in which the ‘improper conduct of the sealing counter’ was ascribed to ‘the method of electing guild sealers hitherto’, which involved rotating the position as a sinecure among masters every two years according to seniority so that every guild member would get a chance to enjoy the sealing fees.⁵² The same was true of guild quality inspections in other European worsted industries. Thus, for instance, the York coverlet makers’ guild was unique in the West Riding worsted industry in maintaining a guild monopoly throughout much of the early modern period; but its guild searchers were found selling coverlets unsealed and its guild wardens were detected adulterating their wool with hair.⁵³ In the worsted industry of seventeenth-century Valenciennes, likewise, ‘merchants complained bitterly about shoddily made, undersized fabrics passed by inspectors who had become careless once they had bought their offices’.⁵⁴

Even when guild sealers did enforce the regulations, it is not clear that the motive—or the effect—was to benefit consumers. In 1661, for example, the Wildberg weaver Jacob Zeyher complained that the guild sealers were preventing him from selling his cloths: ‘he cannot get along with the guild sealers. . . he has to make the cloth 2 ells wide, he sells such cloth in Offenbourg, the people want it like that from him, and otherwise he can’t sell it, but the sealers will not seal it for him’. The guild sealers claimed that ‘Old Jacob Zeyher makes absolutely terrible cloths, which are not worth sealing, but sells his cloths very cheap, and thereby causes the craft great injury’.⁵⁵ It is possible, of course, that Zeyher was cheating his customers, and that the guild sealers were indeed protecting these consumers and the reputation of local cloths. But it is also conceivable that Zeyher was speaking the truth when he said that ‘the people want it like that from him’: he had certainly been selling these cloths to Offenbourg for several years, and even the guild sealers admitted that they were ‘very cheap’. That is, cloths that were low-quality but cheap may have been what customers wanted. In this case, the guild seal was being used not so much to protect consumers

⁵⁰ Troeltsch, *Zeughandlungskompagnie*, p. 120.

⁵¹ *Ibid.*, p. 90.

⁵² HSAS A573 Bü. 96, 17 April 1777: ‘unrichtiger versehung des Sigel Stoks’; ‘der bißherige Wahl Modus’.

⁵³ Heaton, *Yorkshire industries*, p. 58.

⁵⁴ DuPlessis, ‘One theory’, p. 159.

⁵⁵ HSAS A573 Bü. 91, 28 Oct. 1661, fos. 6r, 9r.

against poor products as to protect high-cost producers against cheaper competitors with loyal customers outside the region.

The guilds of the Württemberg worsted proto-industry did not succeed in implementing their own quality controls very effectively, and seem not even to have tried to do so. However, the guild structure of the industry did have effects on quality which were unintended and, unfortunately, negative. The interlocking guilds of weavers and merchant-dyers inadvertently affected the quality of Württemberg worsted wares in three ways.

First, the weavers' guilds imposed price ceilings on raw wool. In 1650 they secured legislation permitting wool suppliers a maximum profit (after subtracting expenses) of 1 *Kreutzer* per pound of wool; when this proved unsustainable, new legislation of 1665 permitted it to rise to 2 *Kreutzer* per pound, and allowed 'expenses' to include not just transport costs but also the costs of sorting and capital. Nevertheless, by the eighteenth century the permitted profits on the trade in worsted wool were so low that the merchant-dyers' association often simply refused to supply wool to the weavers; its own business books show that on the wool it did supply (mainly to induce weavers to make specialist fabrics) it made a loss. Wool traders could therefore stay in business only by supplying low-quality wool and sorting it carelessly, since they were forbidden to charge more for higher quality. Poor wool was universally recognized as a major cause of the low quality of Württemberg worsteds.⁵⁶

Second, the weavers' guilds and the merchant-dyers' association imposed piece-rate ceilings on spinners. The very first worsted weavers' guild ordinance for the district of Calw in 1589 set maximum rates for spinners, as did the 1611 guild ordinance for the six districts of the Black Forest region. The national ordinance of 1654 provided that 'spinning a pound [of yarn] shall be paid at as high a wage as the [weavers'] craft agrees among its members, and the dyers as well as the worsted weavers shall support this in all ways, and each master shall then unfailingly stick to the agreed wage'.⁵⁷ The 1686 ordinance again set maximum spinning rates, while leaving future changes to the discretion of the weavers' guilds and the merchant association. Eighteenth-century legislation increased the penalties for paying spinners above the agreed ceiling. Local records confirm that weavers who paid (or spinners who charged) above the rate ceiling were indeed punished by guilds and community courts.⁵⁸ These rate ceilings harmed some of the poorest members of Württemberg rural society, particularly women: according to a livelihood listing of 1736, 86 per cent of independent

⁵⁶ For detailed discussion of this regulation of the wool trade, see Troeltsch, *Zeughandlungskompagnie*, pp. 97-101, 154-6, 165, 199; and Ogilvie, *State corporatism*, pp. 352-3.

⁵⁷ Emendations dated 1654 to 'Engelsattweberordnung', here article 21 (p. 446, n. 2): 'solle vom Pfundt . . . Zuespinnen, so vihl alls sich ein handwerckh mit einander vergleichen würdt zuelohn geraicht werden, vnd die Färber sowohl alls die Knappen hierzue alle guete befürderung erweisen, bey welchem vereinbarten Lohn allsdann Ein Jeder Maister . . . würdt ohnfehlbar verpleiben solle'.

⁵⁸ For a discussion of the rate ceilings and other restrictions imposed on the unorganized spinners by the weavers' guilds and the merchant company, see Ogilvie, 'Women and proto-industrialisation', pp. 86-8; *eadem*, *State corporatism*, pp. 354-5; and *eadem*, *Bitter living*, pp. 292, 307-8.

unmarried females and 60 per cent of widows in the district of Wildberg depended wholly or partly on spinning, and thus were harmed by these below-market piece rates imposed by the guilds.⁵⁹ The rate ceilings also damaged the worsted industry at large. Since spinners were forbidden to exceed the rate ceiling no matter how fine and time-consuming their work, they spun as fast as they could, producing coarse and irregular yarn. Poor yarn was universally recognized as another cause of the bad quality of Württemberg worsteds.⁶⁰ Indeed, the much more dynamic and successful Thuringian worsted industry of Gera and Schleiz managed to maintain quality standards only because its unguilded merchants and putters-out systematically opposed all guild attempts to force them to comply with low guild rate ceilings, arguing that 'they paid higher spinner-wages because the yarn had to be spun much more evenly'.⁶¹

A third unintended but harmful effect on quality arose from the fact that the Württemberg worsted guilds and the merchant-dyers' association engaged in 'monopoly contracting'.⁶² This was enshrined in the 'Calwer Moderation', the interlocking system of corporate privileges whereby the guilded weavers were legally obliged to sell all their cloths to the Calw merchant-dyers' association, with prices and output quotas collectively fixed in periodic negotiations between guilds and association under state supervision.⁶³ The 'rehabilitation' literature acknowledges that such monopoly contracting between guilds and merchants—the well-known Central European *Zunftkauf* system—was widespread, but adduces it as a major benefit of guild organization, on the grounds that it reduced the transaction costs of monitoring quality in a rural industry with dispersed producers.⁶⁴ However, as the Württemberg example shows, monopoly contracting between guilds of merchants and producers could actually have the opposite effect on quality—a negative one. The monopoly contracts between weavers' guilds and merchant-dyers' association fixed quotas and prices in such a way that no weaver could charge the merchant-dyers' association more for higher quality, and the association had to buy his quota irrespective of quality. This removed incentives for any weaver to weave carefully, since he could not earn more by doing so. Conversely, the merchant-dyers' association could not pay one weaver more for better cloth, since this price would then be demanded by the whole guild. Monopoly contracting between weavers' and merchants' guilds thus created a rigid regime of prices and quotas

⁵⁹ Calculations based on HSAS A573 Bü. 6967 (1736). For detailed analysis of unmarried women's economic options, see Ogilvie, 'Women and proto-industrialisation', pp. 86-92; and *eadem*, *Bitter living*, ch. 6.

⁶⁰ Troeltsch, *Zeughandlungskompagnie*, pp. 34-6, 125-31, 165-6, 171; Ogilvie, *State corporatism*, pp. 353-6.

⁶¹ Finkenwirth, *Urkundliche Geschichte*, pp. 13, 15-16, 20, 33 (quotation).

⁶² On the Württemberg worsted proto-industry as a prime example of 'monopoly contracting' between guilds and merchants, see Pfister, 'Craft guilds', pp. 14-16.

⁶³ For details of the method and content of this contracting, see Troeltsch, *Zeughandlungskompagnie*, pp. 80-135; Ogilvie, *State corporatism*, pp. 186-92.

⁶⁴ Pfister, 'Craft guilds', pp. 14-16.

removing weavers' incentive to do better work and merchants' incentive to experiment with new quality/price ratios that might better suit consumer demand.⁶⁵

These empirical findings for the Württemberg industry illuminate a more general theoretical problem with the claim that guilds were an efficient institution for solving information asymmetries with respect to product quality. The 'rehabilitation' argument takes for granted that what merchants and consumers wanted, and what was best for the economy, was a high absolute quality: an individual craftsman had an incentive to exploit the information asymmetry between himself and his customers by producing below this quality level, but a guild could solve this market failure by ensuring that all craftsmen produced at or above the level defined in the guild charter.⁶⁶ But this reflects a basic confusion. The problem of 'quality' under asymmetric information is about the variance, not about the mean: the market failure is solved by guaranteeing not high quality but standard quality; this standard can be low, as long as the customer knows what it is.⁶⁷ To rescue the 'rehabilitation' case, therefore, we must revise it: guilds must have been an efficient institution for guaranteeing a standard—not a high—quality level.

In principle, guilds might indeed have constituted an institution for guaranteeing standard quality. But in doing so they had two weaknesses. The first was political and rhetorical: guilds justified their other privileges by claiming that they ensured high quality, and this could lead to the rigid imposition of inappropriately high quality standards, even when a lower (but standardized) quality in combination with a lower price would have better addressed customer demand—as shown earlier in the case of Jacob Zeyher and the Offenburg customers who demanded his 'terrible' cloths.

The second weakness was economic: a single, monopolistic entity such as a guild might have been better placed than a variegated range of individual producers to guarantee a single, standard quality. But just these characteristics made a guild less able, and probably also less willing, to undertake the market research and the flexible response to changes in demand necessary to deliver the combinations of quality and price desired by a varied and changing population of consumers.⁶⁸ Precisely these issues were recognized by contemporaries such as the seventeenth-century English economist and merchant Josiah Child:

All our laws that oblige our people to the making of strong, substantial, and, as we call it, loyal cloth, of a certain length, breadth, and weight, if they were duly put into execution would, in my opinion, do more hurt than good, because the humours and fashions of the world change, and at some times, in some places (as now in most),

⁶⁵ For details of these monopoly guild contracts, see Ogilvie, *State corporatism*, pp. 355-6; Troeltsch, *Zeughandlungskompagnie*, pp. 101, 125-31, 165-6.

⁶⁶ Gustafsson, 'Rise', pp. 3, 13-15, 23; Pfister, 'Craft guilds', pp. 16-17.

⁶⁷ Akerlof, 'Market'.

⁶⁸ As argued for the successful West Riding woollen and worsted industries in Heaton, *Yorkshire industries*, pp. 417-18.

slight, cheap, light cloth will sell more plentifully and better than that which is heavier, stronger, and truer wrought; and if we intend to have the trade of the world we must imitate the Dutch, who make the worst as well as the best of all manufactures, that we may be in a capacity of serving all markets and all humours. I conclude all our laws limiting the number of looms, numbers or kind of servants, or times of working, to be certainly prejudicial to the clothing trade of the kingdom in general.⁶⁹

A comparison of different European worsted proto-industries provides a vivid empirical illustration of these theoretical weaknesses in the view that guilds were an efficient institution for ensuring product quality. The Württemberg industry was thoroughly regulated by guilds both of weavers and of merchants. Had guilds' function been to enhance quality, one would expect Württemberg worsteds to have been of unusually high quality. Instead, they compared poorly with many of the more dynamic and successful worsted proto-industries elsewhere in Europe, where guilds were weak or absent.⁷⁰ In many successful European worsted industries, insofar as information asymmetries between producers and consumers were important, they were solved through alternative institutions that seem to have dealt with the problem efficiently without the rigidities imposed by guilds.⁷¹ Thus, for instance, even in the medieval period there were cities such as Douai which successfully exported high-quality woollen textiles without quality enforcement through guilds.⁷² The sixteenth-century Flemish village of Hond-schoote, indisputably the first success story in the New Draperies sector, was notorious for its weak guild regulations and did not impose 'even minimal quality controls until 1534, and not fully until 1571-6, sometime after it had passed its apogee'.⁷³ The Thuringian worsted industry in Gera consistently maintained higher quality than the Württemberg industry, but with a much weaker—indeed, rapidly disintegrating—guild organization among the weavers, and a pluralistic free-for-all among proto-industrial dyers and merchants.⁷⁴ Although from 1613 on, all Gera wares were in principle supposed to be inspected by two guild sealers, in practice both weavers and traders often ignored the guild seal, with some privileged merchants paying a lump sum to the government in return for not having to bring wares to be sealed, and other exporters simply evading the requirement altogether, as shown by the weavers discovered in 1679 who had as many as 500 worsteds stored in their houses for the coming Leipzig fair, many of them unsealed.⁷⁵ The Verviers wool textile industry of the Southern Netherlands had a quality second only to England, but a wholly unguided institutional framework.⁷⁶ The weavers of Maubeuge in French

⁶⁹ Quoted in Lipson, *History*, p. 118.

⁷⁰ Ogilvie, *State corporatism*, pp. 352-7; Troeltsch, *Zeughandlungskompagnie*, pp. 35-7, 126-30, 163-6.

⁷¹ As acknowledged in Pfister, 'Craft guilds', p. 21; Epstein, 'Craft guilds', p. 686.

⁷² Howell, 'Achieving'.

⁷³ Munro, 'Origin', p. 87; Craeybeckx, 'Industries', pp. 23, 40.

⁷⁴ On the pluralistic structure of the Thuringian worsted export trade, see Finkenwirth, *Urkundliche Geschichte*, pp. 62-7, 70, 79, 83, 98-107.

⁷⁵ Finkenwirth, *Urkundliche Geschichte*, pp. 62, 66.

⁷⁶ Craeybeckx, 'Industries', pp. 27, 41-2.

Flanders prided themselves on careful guild regulation of product quality, but by the 1730s their worsted and hybrid stuffs were losing ground catastrophically to Flemish rural competitors because for the peasants and workers who bought their wares, 'quality mattered less than cost'; by 1750 the Maubeuge industry, along with its quality regulations, was dead.⁷⁷ After 1723 the Catalan town of Igualada improved the quality of its woollen-worsted hybrids enough to compete in export markets through compelling the weavers' guild to relax its regulations so as to permit merchants themselves to monitor quality in their own workshops.⁷⁸ In 1739, the Swedish government replaced guild quality controls on worsteds with local Hallmark Courts (*hallrätterna*), whose advantage over guild control was that 'as long as the final result of the production process fitted the quality rules stipulated . . . the manufacturer was free to organise the work process as he wished'.⁷⁹ In the English worsted sector, centralized quality control was enforced by the monopolistic Blackwell Hall in London, and it is therefore particularly striking that the two most successful English worsted regions succeeded largely by avoiding the Blackwell Hall controls, Norwich by virtue of a legal dispensation from the Privy Council and the West Riding through its remote location and uncooperative merchants.⁸⁰ The West Riding became the most successful worsted industry in eighteenth-century Europe by producing 'cheap and nasty' cloths subject to no quality (but also no price) controls by guilds: quality was monitored by merchants at point of sale; the Worsted Committee inspectors did not become effective until 1784, long after the Yorkshire industry came to dominate world worsted markets.⁸¹ Even for higher-quality Yorkshire woollens, merchants told a parliamentary inquiry in 1806 that 'In no instance do they depend upon the stamper's mark', but rather always had the cloth measured in their own warehouses before payment was made.⁸²

Indisputably, a majority of European worsted industries did resemble Württemberg in maintaining guild quality controls. But the few successful and dynamic ones almost without exception relied on alternative merchant, municipal, or state inspection institutions, and on a growing recognition that, as one eighteenth-century English cloth merchant put it, 'The interest of the seller is sufficient security to the buyer for fair dealing'.⁸³

⁷⁷ DuPlessis, 'One theory', p. 153.

⁷⁸ Torras, 'Old and new', p. 105; *Idem*, 'Craft to class', pp. 173-5.

⁷⁹ Nyberg, 'Commercial competence', pp. 10, 18.

⁸⁰ Priestley, 'Norwich stuffs', p. 282; Hudson, *Genesis*, p. 156; *eadem*, 'Capital', p. 72; Wilson, 'Supremacy', pp. 239-41.

⁸¹ Heaton, *Yorkshire industries*, pp. 379-82, 386-8, 418-37; Hudson, *Genesis*, pp. 36, 156-7; *eadem*, 'Capital', pp. 69-72; Lipson, *History*, pp. 80-1, 119; Wilson, 'Supremacy', pp. 244-5.

⁸² Heaton, *Yorkshire industries*, pp. 416-17.

⁸³ Quotation from Lipson, *History*, p. 120; for a perceptive discussion of such alternative quality control mechanisms see Pfister, 'Craft guilds', p. 21.

III

What of the second ‘rehabilitation’ theory, which contends that guilds existed so widely because they were an efficient institution for solving imperfections in markets for skilled training? According to this view, pre-industrial crafts required extensive formal training in sector-specific skills. But training markets functioned poorly, the argument continues, because of opportunistic behaviour and information asymmetries which made it difficult for good trainers and good trainees to identify one another, and for customers to identify well-trained craftsmen. This is supposed to have led to under-investment in training, scarcity of skilled labour, lower-quality output, lower productivity, and lost gains from trade. Guilds arose and survived, it is claimed, because they corrected these market imperfections. They did so by implementing rules against opportunistic behaviour by masters and apprentices, imposing apprenticeship entrance requirements which enabled masters to identify good apprentices, issuing apprenticeship certificates which enabled masters to identify good journeymen and journeymen to obtain appropriate employment, and imposing mastership entrance requirements which enabled apprentices to identify skilled trainers and customers to identify skilled producers.⁸⁴

As with quality controls, the main empirical support for this theory is provided by guild legislation, which always made elaborate provisions for apprenticeship, journeymanship, masterpiece examinations, and mastership admission requirements. But, for the reasons already discussed, legislation is not a reliable guide to what actually happened. Again, we must consider the incentives that guilds had to claim that skilled training was essential even when it was not, in order to provide a rhetorically convincing justification for imposing regulations that benefited their members, for example by enabling them to limit entry. Furthermore, we must recognize that the existence of legislation does not imply its enforcement: some regulations were not implemented at all, and others were interpreted in ways that suited particular interests. Guild regulations governing apprenticeship, journeymanship, and mastership potentially facilitated training, but they also potentially restricted legal entitlements to work in the industry. So independent evidence is needed to find out how regulations were interpreted and what purposes they served in practice.

Such evidence reveals a much more complicated picture than the optimistic rehabilitation view. Counter to the claims of guild members at the time and ‘rehabilitation’ theorists now, there were many pre-industrial crafts and proto-industries that were not highly skilled, hence did not require prolonged formal training, and yet were guilded. This was certainly true of most European wool textile industries, especially after the spread of the worsted ‘New Draperies’ in the later sixteenth century. In Württemberg,

⁸⁴ Gustafsson, ‘Rise’, p. 21; Epstein, ‘Craft guilds’, pp. 687-93; Pfister, ‘Craft guilds’, p. 18.

as early as 1582 disgruntled masters of the Calw woollen weavers' guild were complaining that peasants and men of other crafts, 'here and there also joined by women', were setting up as worsted weavers and selling successfully on export markets, 'after learning combing and weaving for only a few weeks or months'.⁸⁵ Such evidence exists for nearly every European worsted proto-industry: worsted weaving was easily learned and could be successfully practised without formal guild training, even when the products were destined for export markets. In 1592, for instance, the weavers' guilds of the Thuringian principality of Schleiz complained that smiths, goldsmiths, tanners, tailors, bakers, and shopkeepers were weaving worsteds *en masse* and exporting them via the Leipzig fairs, harming the livelihoods of guilded weavers.⁸⁶ In the West Riding of Yorkshire, rural people took up first woollen weaving, then worsted weaving, without lengthy (and often without any) apprenticeship, and 'every man that wolde had libertie to be a clothier'; when guilds did manage to secure apprenticeship legislation, it was widely ignored.⁸⁷ In 1702, worsted weavers in Somerset complained 'That there are about Fifteen hundred Woollen Weavers, and the like Number of Weaving Looms, in the . . . Town of Taunton, and about Two thousand within Five Miles thereof, and not Half of them have served Apprenticeships to the Weaving Trade',⁸⁸ and in 1800 a witness to a parliamentary inquiry in Yorkshire declared that 'nineteen out of twenty have not served regular apprenticeships in the textile industry of the West Riding'.⁸⁹ This was not surprising, given that one eighteenth-century English observer declared that 'a boy of common capacity would learn weaving, including dressing the warp and fixing it in the loom, in 6 months',⁹⁰ and another pointed out that since even a skilled occupation such as cloth dressing 'could be learned in a little over twelve months, there was not the least occasion for seven years' training'.⁹¹ Similar direct testimony survives for nearly every part of early modern Europe: most worsted—and even many woollen—wares could be successfully woven, finished, and sold on export markets without formal guild training.

Indirect evidence confirms the direct testimony of contemporaries. 'Encroachers' who failed to secure guild training—often, as in the case of females, because guilds excluded them from apprenticeship and journey-manship⁹²—were bitterly opposed by worsted weavers' guilds precisely because the wares they produced were indistinguishable from guild output

⁸⁵ Troeltsch, *Zeughandlungskompagnie*, pp. 10-11.

⁸⁶ Finkenwirth, *Urkundliche Geschichte*, pp. 30-1.

⁸⁷ Heaton, *Yorkshire industries*, pp. 101-7 (quotation from p. 102); Lipson, *History*, pp. 60-1, 74-5.

⁸⁸ 'Petition of serge, worsted and other woollen weavers', *Journals of the House of Commons*, 4 Dec. 1702 [<http://www.bopcris.ac.uk/bop1688/ref1506.html>].

⁸⁹ Heaton, *Yorkshire industries*, pp. 310-11.

⁹⁰ Lipson, *History*, p. 60.

⁹¹ Heaton, *Yorkshire industries*, pp. 310-11.

⁹² For a detailed discussion of the few, exceptional cases (mainly medieval) in which guilds permitted girls as apprentices, see Ogilvie, *Bitter living*, pp. 96-7; Roper, *Holy household*, pp. 44-9; Stuart, *Defiled trades*, pp. 213-19; Hafter, 'Underground business', pp. 14-18, 27-32; Rule, 'Property', p. 107.

and were willingly purchased by merchants and customers. In Württemberg, guild masters themselves had to be legally prevented by the guild from having combing and weaving done by 'untrained' free-lancers, whom they evidently trusted to produce work of sufficient quality to pass guild and merchant inspections.⁹³

Guilds' contradictory treatment of women is another indirect piece of evidence demonstrating how little guild training had to do with successful industrial practice as opposed to preventing competition against established producers. Unmarried females were absolutely excluded from guild training and harshly penalized as 'encroachers'. Yet black-market female encroachers produced combed wool and woven worsteds that satisfied guild, merchant, and customer quality standards.⁹⁴ A widowed weaver could be told in the village tavern one evening in 1751 that a particular girl 'would suit him well as a future wife, because she could work very capably at the worsted weaving craft'.⁹⁵ A master's wife or widow, despite receiving no guild training, was allowed to conduct the craft workshop on her own, irrespective of how long she had been married.⁹⁶ Weavers' wives and widows did indeed practise the industry on their own, as in 1675 when one weaver's wife admonished an adult stepson about the proper way to stretch a weft,⁹⁷ or in 1686 when another was prosecuted (without her husband) for Sabbath weaving.⁹⁸

The scale of this worsted production by untrained females is demonstrated by table 3, which shows that in the seventeenth and eighteenth centuries widows made up 11 per cent of practising weavers in the villages of the district of Wildberg and 14 per cent in the town, rising after 1730 to about 20 per cent as male emigration increased and widow remarriage declined. Such percentages appear to have been typical in the European worsted sector: thus, for instance, in the high-quality and phenomenally successful Thuringian worsted industry of Gera, widows made up 14.3 per cent of practising weavers in 1654.⁹⁹ As table 4 shows, widows did not simply carry over workshops for brief transitional periods, but often operated them for decades: although some widows practised for only 1 year, others did so for 50 years, and the mean duration of practice was about a decade. Nor was it only long-married widows who practised independently: although the average master's widow had been married for 17.2 years, nearly one-fifth of all practising widows had been married for six years or fewer (i.e. less than the minimum duration of male apprenticeship and journeymanhood combined), and nearly one-tenth had been married for three

⁹³ See, for instance, HSAS A573 Bü. 92, fo. 5v, 1 Nov. 1669; HSAS A573 Bü. 904 (1752-3), rubric 'Strafen'; HSAS A573 Bü. 906 (1754-5), rubric 'Strafen'.

⁹⁴ See, for instance, HSAS A573 Bü. 904 (1752-3), rubric 'Strafen'; HSAS A573 Bü. 906 (1754-5), rubric 'Strafen'.

⁹⁵ PAE KKP Vol. IV, 7 July 1751, fo. 80r.

⁹⁶ The relevant legislation is discussed in detail in Ogilvie, *Bitter living*, pp. 232-5.

⁹⁷ PAW KKP Vol. IV, fo. 33r-33v, 17 Dec. 1675.

⁹⁸ PAW KKP Vol. V, fo. 60r, 4 June 1686.

⁹⁹ Finkenwirth, *Urkundliche Geschichte*, p. 59.

Table 3. *Widows as percentage of total worsted-weavers, district of Wildberg, 1641-1755*

<i>Date</i>	<i>No. observations</i>	<i>Total weavers</i>	<i>Total widows</i>	<i>% widows</i>
<i>Wildberg town</i>				
1641	1	73	6	8.2
1667	1	123	4	3.3
1680-9	14	1,729	154	8.9
1690-9	19	1,903	256	13.5
1700-9	14	1,461	253	17.3
1709-19	11	1,054	149	14.1
1720-9	10	1,267	153	12.1
1730-9	10	1,170	185	15.8
1740-9	5	620	159	25.6
1750-5	2	224	42	18.8
1641-99	35	3,828	420	11.0
1700-55	52	5,796	941	16.2
1641-1755	87	9,624	1,361	14.1
<i>Wildberg villages</i>				
1667-8	2	106	2	1.9
1680-9	12	774	69	8.9
1690-9	19	1,169	161	13.8
1700-9	14	1,115	113	10.1
1710-19	11	1,011	85	8.4
1720-9	10	1,189	145	12.2
1730-9	9	1,178	171	14.5
1740-9	5	688	88	12.8
1750-5	2	276	27	9.8
1667-99	33	2,049	232	11.3
1700-55	51	5,457	629	11.5
1667-1755	84	7,506	861	11.5

Notes: Calculations based on numbers of practising weavers paying guild dues or attending guild assemblies in 1641, 1667, 1668, 1680, 1681, 1682, 1683, 1684, 1685, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741, 1743, 1745, 1748, 1750, 1752, 1754, 1755, 1756, 1757, and 1758. *Source:* HSAS A573 Bü. 816, 823, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 895, 897, 900, 902, 904, 906, 907, 908, 909, 910.

years or fewer (i.e. less than the minimum duration of male apprenticeship).¹⁰⁰ Almost all these widows produced the wares themselves, without guild-trained assistants: in 1717, for instance, widows made up 14 per cent of practising Wildberg weavers and not one employed an apprentice or journeyman.¹⁰¹ The fact that this non-trivial group of untrained women with legal entitlements from the guild was able to produce wares which passed guild and merchant inspections and sold successfully on export

¹⁰⁰ Three years for apprenticeship and another three years for journeymanhood are approximations of the minimum legal duration. As discussed in Ogilvie, *State corporatism*, pp. 139-51, the legal minimum duration changed with changes in legislation, from three to six years for apprenticeship and from two-and-a-half to five years for journeymanhood.

¹⁰¹ HSAS A573 Bü. 6965 (1717); for more detailed discussion, see Ogilvie, *Bitter living*, p. 260.

Table 4. *Widows as practising worsted-weavers: husband's age at death, duration of practice, and duration of marriage*

Date	Husband's age at death				Widow's duration of practice				Duration of marriage before widow practising independently							
	No.	Mean	Max.	Min.	No.	Mean	Max.	Min.	No.	Mean	Max.	Min.	no. 6 yrs. or less	% 6 yrs. or less	no. 3 yrs. or less	% 3 yrs. or less
1641	4	51.8	60	42	5	5.1	7	2	5	20.0	33	4	1	20.0	0	0.0
1667	4	46.3	62	34	4	7.6	13	3	4	15.5	25	8	0	0.0	0	0.0
1680-9	80	55.2	78	28	87	8.5	24	1	86	23.2	50	2	14	16.3	6	7.0
1690-9	129	50.2	78	28	146	8.5	28	1	129	19.0	39	2	30	23.4	17	13.3
1700-9	228	49.0	75	32	263	10.7	26	1	233	17.9	35	2	29	12.4	21	9.0
1710-19	156	50.3	77	31	177	12.4	34	1	161	17.9	35	2	16	9.9	4	2.5
1720-9	122	54.0	82	30	144	10.8	38	1	111	17.5	38	1	16	14.4	6	5.4
1730-9	161	53.5	79	24	190	8.7	50	1	162	13.1	41	1	54	33.3	31	19.1
1740-5	105	52.7	82	24	112	9.0	31	1	95	12.9	38	1	22	23.2	8	8.4
1641-99	216	52.3	78	28	242	8.4	28	1	223	20.6	50	2	45	20.2	23	10.3
1700-45	772	51.4	82	24	885	10.4	50	1	762	16.2	38	1	137	18.0	70	9.2
1641-1745	988	51.6	82	24	1127	10.0	50	1	985	17.2	50	1	182	18.5	93	9.4

Notes: Based on the 1,161 practising widows in Wildberg named in surviving lists of practising worsted-weavers paying guild dues, and in a 'soul-table' of 1736 recording livelihood sources for all households. Names have been matched with burials and marriages through record linkage. Calculations exclude observations for which links were ambiguous or missing.

Sources: Practising widows: HSAAS A573 Bü. 816, 823, 835, 839, 840, 841, 842, 843, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 895, 967. Death and marriage dates: PAW Ehregister and Totenregister.

markets, while vast numbers of similarly untrained women—and men—who lacked such entitlements were forbidden to do the same work, is a vivid illustration of the irrelevance of training to this industry and the indifference of its guilds to skill as a criterion for selecting who could practise it. But it is consistent with numerous recent studies showing that women without formal guild training engaged in skilled craft work throughout pre-industrial Europe, wherever guilds failed to exclude them.¹⁰² These findings show clearly that formal guild training was not required by the technologies used in many—perhaps most—pre-industrial European crafts.

Why, then, did guilds have training regulations at all? We saw earlier that existing guild members had several different incentives to impose apprenticeship, journeymanhood, and mastership requirements as a condition of being allowed to practise. One was that their craft really did require such skilled training; in some crafts this may have been the case, but as we have seen there were many relatively low-skilled crafts such as worsted weaving where it was not, and there were increasing numbers of activities—particularly proto-industrial ones—that were guilded in some European societies and unguilded in others. A second reason for guilds to have training regulations was rhetorical: skill was unquestionably a good thing, and hence could be used to justify restrictions that might otherwise have been opposed by those whom they disadvantaged. A third reason was that training requirements made it easier for established producers to restrict entry to the industry, thereby protecting themselves from competition.¹⁰³ As a Württemberg legal treatise stated in 1780,

Anyone who wants to learn a craft has to possess particular qualities, which are necessary because without them no-one can be accepted as an apprentice and registered with a guild. Among these qualities are: (1) legitimate birth, the cause being that illegitimate birth is a stain [*Macula*], and this prevents acceptance into a guild; and (2) masculine sex, since no female may properly practise a craft, even if she understands it just as well as a male person.¹⁰⁴

What mattered was not that one ‘understood’ the craft, but that one belonged to an identifiable group—females, bastards—which the guild could justify excluding.¹⁰⁵

¹⁰² Hafer, ‘Underground business’, pp. 14–18, 27–32; Howell, ‘Women’s work’, esp. pp. 200, 206–10, 212; Ogilvie, *Bitter living*, pp. 96–9, 127–8, 153–9, 232–6, 295–8; Roper, *Holy household*, pp. 44–9; Rule, ‘Property’, p. 107; Simon-Muscheid and Jacobsen, ‘Resümee’, p. 163; Simonton, ‘Apprenticeship’, p. 230; Sonenscher, *Hatters*, pp. 35–6; Stuart, *Defiled trades*, pp. 213–19.

¹⁰³ Rule, ‘Property’, p. 107; Hafer, ‘Underground business’, pp. 14–18, 27–32; Lourens and Lucassen, ‘Gilden’, pp. 66–7, 75–9.

¹⁰⁴ Weisser, *Recht*, pp. 99–100. ‘Von einem Jeden, der ein Handwerk erlernen will, werden gewisse Eigenschaften erfordert, welche insgesamt dergestalten notwendig sind, daß ohne sie keiner zum Lehrjungen angenommen, and bei der Zunft eingeschrieben wird. Unter diese Eigenschaften gehört: (1) die eheliche Geburt. Die Ursache ist, weil aus der unehelichen Geburt levis notae macula entsteht, diese aber die Aufnahme in ein Handwerk hindert . . .; (2) Das männliche Geschlecht; denn ordentlicher Weise darf kein Weibsbild ein Handwerk ein Handwerk treiben, ob sie es gleich eben so gut, als eine Mansperson, verstünde.’

¹⁰⁵ For a detailed discussion of how defining identifiable groups as ‘dishonourable’ helped guilds to reduce competition, see Stuart, *Defiled trades*, esp. pp. 189–221.

This use of guild training requirements to exclude identifiable groups, thereby reducing competition against guild members, is clearly reflected in practice. The Württemberg worsted weavers' guilds used apprenticeship, journeymanhood, and mastership regulations to exclude not only women and bastards, but also Jews, Catholics, Calvinists, Roma (male gypsies), foreigners, serfs, members of 'untouchable' occupations, paupers, and increasingly anyone who was not the son of a local citizen or an existing guild master. To be admitted as an apprentice, one had to be able to pay not only registration and deregistration fees to the guild (totalling 26 *Kreuzer*, just over three days' earnings for a master weaver in normal times, or 17 days' earnings for an average male servant),¹⁰⁶ but also (if one did not train with one's own father) an apprenticeship fee to the master of 20 *Gulden* (the equivalent of 150 days' earnings for a master weaver, 800 days' earnings for an average male servant); this apprenticeship fee doubled after 1654.¹⁰⁷ Then, to be admitted as a master, one had to be able to afford the raw materials for one's masterpiece (three pieces of worsted),¹⁰⁸ plus a mastership fee to the guild which was 0.5-1 *Gulden* for local masters' sons, 2.5-6 *Gulden* for sons of non-masters but of community citizens, and 5-6 *Gulden* for sons of outsiders to the community. These were equivalent to 20-40 days', 100-240 days', and 200-240 days' earnings respectively for the average male servant. In order to become a master one also had to obtain citizenship in the community, which involved the payment of a fee and a deposit for good behaviour, as well as the satisfaction of conditions relating to parentage, religion, race, marital status, serf status, and reputation.¹⁰⁹ It is often claimed that such admission barriers were not binding constraints and did not prevent entry to guilds. But documentary sources suggest that guild fees and citizenship requirements did exclude applicants: in 1785, for instance, a Black Forest community court refused permission for a non-local non-weaver's son to marry a weaver's daughter from the Württemberg district of Wildberg because he 'was in no sort of position even to raise the citizenship and mastership admission fees'.¹¹⁰

Quantitative evidence confirms that the weavers' guilds increasingly manipulated their admissions requirements in such a way as successfully to exclude outsiders. In the late sixteenth and early seventeenth centuries, as table 5 shows, sons of men of other occupations were still often admitted to the Black Forest guilds. The industry was booming, and there were not enough existing masters with adult sons to take up all available niches. Even so, as we saw earlier, non-masters' sons had to pay between three and six times the entry fee of masters' sons. In the first half of the

¹⁰⁶ On weavers' average daily earnings, see Troeltsch, *Zeughandlungskompagnie*, pp. 221-5; on male servants' average annual wage, see HSAS A573 Bü. 5593 (1631), and the analysis in Ogilvie, *Bitter living*, pp. 111-14, esp. tab. 3.8.

¹⁰⁷ 'Engelsattweberordnung', article 23 (447-9).

¹⁰⁸ Troeltsch, *Zeughandlungskompagnie*, pp. 78-9.

¹⁰⁹ On community controls over admissions to citizenship, see Ogilvie, *State corporatism*, pp. 45-57.

¹¹⁰ HSAS A573 Bü. 6948, 17 May 1785.

Table 5. Occupational and community background of new worsted-weaver masters in town and villages, district of Wildberg, 1598-1760

Date	New masters: town					New masters: villages				
	Total no.	% masters' sons	% non-masters' sons	% unknown occupational background	% community citizens'	Total no.	% masters' sons	% non-masters' sons	% unknown occupational background	% community citizens' sons
1598-1609	67	54	30	16	84	24	0	92	8	92
1610-19	62	65	24	11	89	30	3	90	7	93
1620-9	54	63	30	7	93	35	11	83	6	94
1630-9	32	47	16	38	63	34	32	65	3	97
1640-7	32	69	16	16	84	25	48	48	4	96
1666-9	11	100	0	0	100	13	54	0	46	54
1670-9	50	86	8	6	94	33	76	21	3	97
1680-9	54	91	4	6	94	24	92	0	8	92
1690-9	16	100	0	0	100	12	100	0	0	100
1700-9	45	84	13	2	93	36	92	6	3	100
1710-19	39	92	8	0	97	28	79	21	0	100
1720-9	44	95	5	0	98	31	97	3	0	100
1730-9	27	81	15	4	89	30	90	10	0	90
1740-9	27	89	4	7	93	34	79	6	15	79
1750-60	46	98	0	2	98	40	93	0	8	93
1598-1647	247	60	25	16	84	148	19	76	5	95
1666-99	131	91	5	5	95	82	80	9	11	89
1700-60	228	91	7	2	95	199	88	7	5	93
1598-1760	606	78	14	8	91	429	63	31	6	93

Note: There are no values for 1648-65 because of a gap in the surviving guild account-books. Source: HSAS A573 Bü 777-911 (1598-1647, 1666-1760).

seventeenth century, in the small town of Wildberg where there were already numerous masters' sons, the latter made up 60 per cent of new masters, compared with only 19 per cent in the villages of the district.¹¹¹ As time passed, the guild instituted new rules restricting masters to apprenticing only their own sons (unless they had no sons and obtained a state dispensation). Local communities, with councils dominated by guild members, increasingly refused to admit outsiders to citizenship: indeed, as early as 1603 the Wildberg community council turned down one young man who had actually grown up in the community with his grandfather but whose hereditary citizenship was in another community, justifying its decision by declaring that 'there are always too many foreign worsted weavers applying for citizenship, and they are refused it because of the large number of worsted weavers'.¹¹² By the second half of the seventeenth century, masters' sons made up 90 per cent of entrants to the worsted weavers' guild in the town and 80 per cent in the villages. During the eighteenth century, despite another worsted boom in the 1730s, masters' sons made up about 90 per cent of new masters in both town and villages. Outsiders to the local community were also largely excluded: throughout the surviving guild records 85-95 per cent of new masters were sons of community citizens. The same patterns can be seen in the occupational and community background of incoming and outgoing apprentices: as soon as the guild and the industry had established themselves, sons of non-masters and non-citizens were excluded.¹¹³

The exceptions were young men from well-off families who could buy their way into the guild by paying the discriminatory entrance fees charged to sons of non-members, as well as the apprenticeship fee that had to be paid to a master other than one's own father. The only other way to get around guild restrictions on apprenticeship and mastership was to apply for a state dispensation, as was done by the Wildberg pauper who petitioned the prince in 1769 to overturn the weavers' guild's rejection of her son due to the *Macula* (stain) of his illegitimate birth—but had her petition refused.¹¹⁴ This was typical: fewer than 3 per cent of new apprentices and fewer than 1 per cent of new masters in the district of Wildberg between 1598 and 1760 achieved state dispensations from guild admission barriers. Even then what they secured was usually just a reduction in fees rather than a relaxation of absolute guild preconditions relating to gender, ethnicity, legitimacy, religion, or paternity.¹¹⁵ Apprenticeship, journeyman-ship, and mastership regulations constituted effective barriers which existing guild members used to hinder entry by outsiders.

¹¹¹ The figures correct those in Ogilvie, *State corporatism*, p. 172 (fig. 6.10a), where a typesetting error duplicated fig. 6.10b.

¹¹² HSAS A573 Bü 24, 17 Jan. 1603, fo. 23v: 'weyll Immer zue vil ußblendische Knappen umbs Burgerrecht Anhalltten, und Inen solches, wegen der vile Knappen, Abgeschlag. würdt'.

¹¹³ Ogilvie, *State corporatism*, pp. 162-9, esp. figs. 6.5-6.8.

¹¹⁴ HSAS A573 Bü. 6947, 3 May 1769.

¹¹⁵ For quantitative analyses, see Ogilvie, *State corporatism*, pp. 155-79, figs. 6.3-6.10.

Given that they viewed apprenticeship, journeymanship, and mastership regulations primarily as means for excluding outsiders, perhaps it should not be surprising that guilds often failed to guarantee skills. Masters profited by taking on apprentices to whom they did not pay wages on the grounds that they were providing them with training, and then exploiting them as cheap agricultural and household labour instead of training them.¹¹⁶ Among the 632 offences punished by the Wildberg guild, not a single one related to a master failing to train his apprentice properly. Yet local court minutes record apprentices who ran away from masters (and guardians who removed boys from masters) because they were being 'held to hard work in the fields' and receiving no training.¹¹⁷

A journeyman was supposed to produce a masterpiece and be examined on it, but if he satisfied the other entry requirements (male gender, payment of fees, minimum three years' tramping, Lutheran religion, obtaining community citizenship, and so on), the quality of his masterpiece appears to have played little or no role in his being awarded a mastership licence. In 1619-20, for instance, the Wildberg journeyman Hans Jepler presented a masterpiece that was 'too little wefted', but was admitted as a master anyway, and in his first year as a new master promptly violated the guild's lax quality controls once again by producing a cloth that was a full ell short of the required length.¹¹⁸ In 1793, a journeyman who produced a masterpiece that local gossip described as 'not masterly, so that it had to be improved by fulling' was 'admitted as a master nonetheless'.¹¹⁹ The guild-like merchant-dyers' association behaved likewise: members' sons were admitted to full membership with little knowledge of the industry.¹²⁰

That guilds conferred mastership licences without seriously testing skills was widely recognized by contemporaries. Thus, for instance, one Bohemian rural bureaucrat responded to a guild master's petition in 1669 by pointing out that 'it is not sufficient in itself that the petitioner has gone through his apprenticeship years and journeymanship years, but besides this, skill [*die Kunst*] is required, and it is common knowledge that this man ... does not grasp his profession and skill as he should'.¹²¹ Likewise, in 1681 Thuringian worsted merchants explained that it was impossible to refrain from employing non-guilded weavers, since the Gera guild masters

did not understand how to make flowered [*gebülmter*] and broad worsteds; in order to carry out the frequent orders for these, it was necessary to resort to neighbouring

¹¹⁶ This was despite the prohibition of such practices in guild charters, e.g. 'Engelsattweberordnung', article 23 (447).

¹¹⁷ See, for instance, HSAS A573 Bü. 16, 3 June 1624, fo. 60r; PAW KKP Vol. VIII, 22 June 1798, fo. 94r.

¹¹⁸ HSAS A573 Bü. 792 (1619-20), unpag., rubric 'Strafen'.

¹¹⁹ HSAS A573 Bü. 100 (1793), fos. 22v-23r.

¹²⁰ Troeltsch, *Zeughandlungskompagnie*, pp. 65-7.

¹²¹ SOAD, HS, Karton 81, Dekretbuch Frydlant 1669-72, 2 Dec. 1669, p. 1: 'Eß ist nicht an dem genug, daß d. Supplicant seine Lehr: vndt wander Jahr außgestanden, sondern es wirdt darneben die Kunst Erfordert; Alldieweiln nun die Gemeine Rede durch gehend dahin Ziehlen thuet, daß derselbe ... seine profëßion Vnd Kunst, nicht, wie es sein soll, begriffen'.

localities, where such wares were to be had at a good quality. This bad state of affairs was the sole fault of the worsted weavers, since masters' sons hardly ever went on the tramp, were not required to demonstrate their knowledge through any masterpiece, and hence did not know how to do anything.¹²²

Perhaps it should not be surprising that many guilds issued licences to masters who did not 'grasp their profession and skill as they should': as associations of masters, guilds had incentives to certify members' sons without discrimination, and to permit opportunism by masters who could not be bothered to train their apprentices or journeymen.

Further evidence that guilds were neither necessary nor sufficient for ensuring craft skills is provided by the proliferation of black-market workers, here as in other European guilded industries, and by the huge lobbying expenditures (discussed later, in section V) which guilds incurred to defend their monopoly over production licences.¹²³ Women, Jews, and other excluded groups were perceived by guild masters in Württemberg, as throughout Europe, as serious competitors, despite being visible minorities whom customers could easily identify as non-possessors of guild training. Thus in the early 1750s, the Wildberg worsted weavers' guild mounted concerted and successful opposition to Juliana Schweickhert, a poor, 50-year-old unmarried woman doing black-market combing and weaving, work officially reserved for guild masters and journeymen.¹²⁴ Yet individual guild masters were eager to employ her—and others in her position. Likewise, in 1787 a Wildberg master complained that 'through the peddling of the Jews he and other craftsmen are suffering much interference and weakening of their livelihoods'.¹²⁵ These complaints can only have been made because the products and services provided by these women and Jews, despite their legal exclusion from guild training, equalled or surpassed those of guild members. Such evidence suggests that it would be inappropriate to view guilds as efficient institutions that existed because they were essential for transmitting and guaranteeing craft skills.

A final body of evidence indicating that guilds did not exist primarily to ensure skilled training is provided by comparisons across different European industries. Although many European wool textile regions resembled Württemberg in remaining guilded, a few were either wholly unguilded or retained a formal guild structure but ceased to enforce formal training requirements. Thus, for instance, Tournai managed to move from stagnation to boom in the late sixteenth century by simply granting master-ship to all worsted weavers, woollen weavers, and fulling workers in the town without examination in 1582, waiving apprenticeship and masterpiece requirements for immigrants in 1585, and opening up access to all its textile

¹²² Quoted in Finkenwirth, *Urkundliche Geschichte*, p. 68.

¹²³ For examples of female black-market work and guild controls on it see, for instance, Hafter, 'Underground business', pp. 16-8, 30-2; Ogilvie, *Bitter living*, pp. 130-4, 260, 263, 305-8.

¹²⁴ HSAS A573 Bü. 904 (1752-3), rubric 'Strafen'; HSAS A573 Bü. 906 (1754-5), rubric 'Strafen'.

¹²⁵ HSAS A573 Bü. 99, fo. 67v, probable date April 1787, no. 197 and no. 198.

corporations in 1588.¹²⁶ A century later, Mons succeeded in rescuing its wool textile industry from extinction in 1676 by simply suspending all apprenticeship and mastership requirements for new entrants.¹²⁷ Lille ensured the survival of its light wool textile industry from the late seventeenth century onwards by progressively relaxing guild training regulations and permitting non-guild-trained workers to be employed, thereby reducing costs; given Lille's specialization in higher-quality woollens and worsteds, it is particularly striking that it found it advantageous to dispense with guild training for a large part of its workforce.¹²⁸ Valenciennes, by contrast, failed to avert decline in its guilded wool textile industry after about 1700 due to competition by unguilded Flemish rural weavers who were said to have 'much more aptitude [*facilité*]' than their French counterparts.¹²⁹ The Thuringian worsted industry maintained faster growth and higher quality than that of Württemberg despite widespread princely dispensations from guild training requirements after about 1648, *de facto* opening of wool combing to untrained rural combers after 1702, and after 1710 turning a blind eye to urban guild masters who kept 15-20 looms apiece in villages where the renowned 'Gera worsteds' were woven by untrained 'women, lads and lasses, in exchange for little wages'.¹³⁰ The Catalan town of Igualada achieved phenomenal success in extra-regional markets for woollens and hybrid worsteds only after 1723 when three maverick clothiers induced the town council to compel the weavers' guild to admit all clothiers without examination and let them employ journeymen as if they were masters.¹³¹ The West Riding of Yorkshire developed the most successful worsted industry in Europe in the eighteenth century on the basis of a dispersed labour force of rural weavers who either had no formal training or entered voluntarily into private apprenticeship agreements outside any guild framework.¹³² Indisputably, a majority of European worsted industries did resemble Württemberg in maintaining guild apprenticeship, journeyman-ship, and mastership requirements into the late eighteenth century. But the few successful and dynamic ones either relaxed guild training requirements or abandoned them entirely.

Worsted production was only one of many early modern industrial activities that were guilded in some parts of Europe and unguilded in others. Thus, for instance, proto-industrial rural linen weaving, cotton weaving, scythe making, trimmings making, lace making, and the making of small iron goods were guilded in many parts of Germany, Austria, Italy, Spain, Bohemia, Serbia, Bulgaria, or Greece, but unguilded in most parts of

¹²⁶ DuPlessis, 'One theory', p. 141.

¹²⁷ *Ibid.*, p. 150.

¹²⁸ Craeybeckx, 'Industries', pp. 26-7; DuPlessis, 'One theory', pp. 158-9.

¹²⁹ DuPlessis, 'One theory', p. 152.

¹³⁰ Finkenwirth, *Urkundliche Geschichte*, pp. 52, 58-9, 64-5 (quotation), 69-70, 94, 96-7.

¹³¹ Torras, 'Old and new', pp. 105-8; *Idem*, 'Craft to class', pp. 175-7.

¹³² Heaton, *Yorkshire industries*, pp. 310-12; Hudson, *Genesis*, pp. 31, 37-8; *eadem*, 'Capital', p. 81; Lipson, *History*, pp. 116-17, 126.

England, Flanders, Scotland, Switzerland, and Ireland.¹³³ This clearly indicates that guilds existed for reasons other than skilled training. What decided whether an activity was guilded was not its technical requirements but—as will be discussed in the final section of this article—the social and institutional framework within which economic activity took place in that society.

IV

The third main rehabilitation argument is that guilds encouraged technological innovation. This argument has two components—the first seeking to refute the traditional view that guilds opposed innovation, the second to show that guilds actively solved imperfections in markets for new technologies. According to this school of belief, traditional claims that guilds opposed new technologies are quite unjustified: many industrial innovations were adopted without guild opposition; many innovations opposed by guilds were impractical in any case; guilds opposed only labour-saving and capital-intensive innovations, while favouring labour- and skill-intensive ones; and even when guilds did oppose innovations it did no harm since innovators simply evaded the regulations.¹³⁴ But rehabilitation theorists go further, and argue that guilds positively encouraged innovation: they offered monopoly rents to innovators, overcoming disincentives to innovation created by the difficulty of charging people to use a public good such as information; they compelled journeymen to travel, overcoming barriers to diffusion of new techniques; they required apprenticeships, guaranteeing smooth transmission of technical expertise across generations; and they promoted spatial clustering, easing technology transfer.¹³⁵

Let us begin with the first component of the case for guilds and innovation—the claim that the traditional technophobic view of guilds is unfounded. Guilds' attitudes to innovation were certainly more complex than has traditionally been recognized. Some industrial innovations were indeed adopted quietly and without detectable guild resistance. The woollen weavers of late-sixteenth-century Württemberg, for instance, did not oppose the innovation represented by the New Draperies. Rather, master woollen weavers managed to extend their existing guild privileges to cover the new worsted wares, thereby excluding peasants, other craftsmen, and women; this dispensed with any need to oppose the new techniques and products.¹³⁶ If an innovation could be adopted without threatening the well-being of established guild masters, they had no incentive to resist it.

¹³³ Pfister, 'Craft guilds', p. 21, writes that 'sectors producing simple goods of low quality that required little skill ... tended to be without guilds', but on the same page mentions activities, such as the low-skilled cotton proto-industry, which were guilded in some regions (e.g. Italy) and unguilded in others (e.g. Zürich). For a detailed discussion of guilded rural proto-industries and the literature on them, see Ogilvie, *State corporatism*, pp. 428-31; *eadem*, 'Social institutions', pp. 30-3.

¹³⁴ Reith, 'Technische Innovation', pp. 38-41; Epstein, 'Craft guilds', p. 695.

¹³⁵ Epstein, 'Craft guilds', pp. 693-705; Reith, 'Technische Innovation', pp. 43-9.

¹³⁶ Troeltsch, *Zeughandlungskompagnie*, pp. 11-13.

But the same guilds could bitterly resist other innovations that they perceived as endangering their interests, as shown by a train of examples from the Württemberg worsted industry. In 1619-21, for instance, an Italian merchant invited by the Württemberg prince to introduce new French and Dutch techniques into the primitive Black Forest worsted technology encountered such vehement opposition from local merchants', dyers', and weavers' guilds that he departed and refused all invitations to return.¹³⁷ In 1698, the Black Forest worsted weavers' guilds lobbied against 'several members of the Calw merchant-dyers' association who have begun to make new sorts of *Schlickh Cadiß* and to put them out to be woven, which they are not entitled to do'.¹³⁸ A decade later, in 1709-10, the weavers' guilds allied with their usual enemy, the merchant-dyers' association, to lobby against a textile manufactory in Stuttgart that planned to produce more advanced varieties of worsted.¹³⁹ In 1775, the Black Forest weavers' guilds and the Calw merchant-dyers' association successfully blocked another textile manufactory in Nagold whose 'technical advances and new work opportunities' threatened their own activities.¹⁴⁰ Like most guilds, those in the Württemberg worsted industry tolerated some innovations that they perceived as harmless to their interests while blocking others that they perceived as harmful.¹⁴¹ What guilds provided was the means—the 'social capital' lowering the costs of collective action—which established producers could use to resist innovation when they saw it as a threat.

The 'rehabilitation' approach acknowledges the existence of guild opposition to some innovative techniques but seeks to explain away such resistance through three lines of argument. First, it theorizes that although guilds did oppose innovations that were labour-saving and capital-intensive, they favoured ones that were labour- and skill-intensive.¹⁴² Empirically, however, this generalization does not hold. The innovative new wares opposed by the Württemberg worsted weavers' guilds in the eighteenth century were, in fact, skill-intensive, as we saw in our examination of quality earlier. But these new worsted varieties threatened the interests of weaving masters by requiring the removal of guild ceilings on wool prices and spinning rates, shifting production risks from merchants to weavers, and enabling some weavers to earn more than others.¹⁴³ Whether a guild opposed a particular innovation was doubtless influenced partly by its factor intensity, but also by how that innovation affected guild masters' rents: this in turn depended on the specific regulations, institutional structure, and political economy of the local industry. Furthermore, even if guilds had only opposed innovations that were

¹³⁷ *Ibid.*, pp. 35-8.

¹³⁸ HSAS A573 Bü. 851 (1698-9), fo. 25r-v.

¹³⁹ HSAS A573 Bü. 862 (1709-10), fo. 26r-v.

¹⁴⁰ HSAS A228 Bü. 1698 (1775-7), nos. 1-58; Troeltsch, *Zeughandlungskompagnie*, pp. 90-1, 130-1.

¹⁴¹ For other examples, see Thomson, 'Proto-industrialization', p. 88; Ogilvie, *State corporatism*, pp. 424-31; Pfister, 'Craft guilds', pp. 19-20; Reith, 'Technische Innovation', pp. 39-41, 50-3, 56-7.

¹⁴² Epstein, 'Craft guilds', pp. 695-6.

¹⁴³ Ogilvie, *State corporatism*, pp. 352-60; Troeltsch, *Zeughandlungskompagnie*, pp. 119-21, 161-9, 189-90.

labour-saving and capital-intensive, it does not follow that such opposition was harmless. Proponents of such innovations were willing to invest in them because they believed that these new techniques would increase productivity. Blocking them, therefore, harmed the economy by reducing the amount of output it obtained from a given quantity of inputs.¹⁴⁴

'Rehabilitation' approaches seek to counter such objections by adopting a second line of argument. Guild opposition to innovations was harmless because many new techniques were economically impractical.¹⁴⁵ But if the technique was no good and would not be adopted anyway, then why oppose it? The very fact that a guild mounted costly opposition to a technique suggests that guild masters regarded it as practical enough to harm them. If it would not, then the guild would have been safe to leave it unopposed.

A third argument adopted by 'rehabilitation' approaches is to acknowledge that guilds did try to block some practical innovations, but to claim that such attempts inevitably failed: innovations were secretly adopted, innovators forced guilds to liberalize by threatening to emigrate, or other guilds adopted the innovation anyway. There are three major problems with this.

First, it is a fallacy to believe that the fact that regulations are evaded makes them costless. Concealing forbidden innovations or migrating to a guildless enclave consumed resources, deterring the marginal innovator. The costs of avoiding regulations often have far-reaching effects on the well-being of individuals and the performance of an entire developing economy, as vividly illustrated by analyses of the 'informal' sector in modern less-developed economies.¹⁴⁶

Second, it is a fallacy to believe that the existence of more liberal regimes and threats of emigration by individuals inevitably leads to the liberalization of inefficient institutions—as the long survival of eastern European serfdom clearly illustrates. In pre-industrial Europe, political coercion, trade protection, market segmentation, transport costs, and migration restrictions enabled many guilds to protect their markets against technologically superior competitors for generations, sometimes for centuries.¹⁴⁷ Some pre-industrial guilds continued to defend their members' rents in this way, while others were forced to adapt more flexibly to competitive pressures. Which of these occurred depended partly on the technical characteristics of the industry and its markets, but even more on the political and institutional framework: where guilds were able to influence community, manorial, or princely authorities, they could secure political protection enabling them to sustain an inflexible position against competitors for long periods.¹⁴⁸

¹⁴⁴ For more detailed exploration of such arguments in the context of guild restrictions on women's work, see Ogilvie, *Bitter living*, pp. 346-51.

¹⁴⁵ Reith, 'Technische Innovation', pp. 38-41; Epstein, 'Craft guilds', p. 695.

¹⁴⁶ Basu, *Analytical development economics*, pp. 172-3; Todaro, *Economic development*, pp. 270-1; Ray, *Development economics*, pp. 261, 346-8, 395-6.

¹⁴⁷ See the examples discussed in Ogilvie, *State corporatism*, pp. 424-31; Pfister, 'Craft guilds', pp. 19-20.

¹⁴⁸ Pfister, 'Craft guilds', pp. 19-23, acknowledges the importance of political and institutional variables, while still arguing that guilds survived only in skilled and technically complex sectors.

Finally, this argument illustrates a theoretical incoherence at the heart of the case for guild ‘rehabilitation’: on the one hand, guilds are supposed to have been too weak to enforce harmful regulations, but on the other they are supposed to have been strong enough to enforce beneficial ones. In the present context, the argument that guilds were too weak to enforce regulations hindering innovation is inconsistent with the claims that they were strong enough to enforce regulations encouraging innovation, e.g. by offering monopoly rents to innovators, requiring journeymen to travel, enforcing apprenticeship, or promoting spatial clustering. One can defend guilds either by arguing that they were so weak they were harmless or by claiming that they were so strong they were beneficial—but not both at the same time.

In addition to being theoretically inconsistent with the ‘weak guilds’ defence, none of these four claims about the technological benefits of ‘strong guilds’ as yet enjoys convincing empirical support. The first positive claim, that strong guilds’ monopoly rents could have encouraged innovators, is as yet simply a theoretical proposition that has to be tested on a case-by-case basis. The idea that a producer with a monopoly in a particular sector will have greater ability to innovate than his competitive counterpart because monopoly profits relax funding constraints on R&D investment, and that he will have greater incentive to innovate because he stands to lose so much more, was advanced many years ago by Schumpeter, has subsequently been explored exhaustively by economic theorists, and is often invoked in modern antitrust cases.¹⁴⁹ But the empirical support for this hypothesis has always been ambiguous: large firms may innovate more, but it may be their size rather than their dominance that gives them the finance or incentive to do so; unusually profitable firms may innovate more, but the causation may run from innovation to profitability rather than vice versa; monopoly-induced financing incentives are difficult to disentangle from the effects of demand-pull (which increases both profits and inventive effort); and monopoly profits are only one of many possible funding sources for investments in innovation.¹⁵⁰ The predictions of economic theory on the relationship between monopoly and innovation are also ambiguous: as Scherer and Ross put it, ‘through an astute choice of assumptions, virtually any market structure can be shown to have superior innovative qualities.’¹⁵¹ Even models which find that monopoly favours innovation, however, require there to be *no barriers to entry* in order for the monopolist to have good incentives to innovate before any potential competitor comes up with a new technique or product that might threaten the monopolist’s rents. If there are barriers—such as guild licensing restrictions—that limit

¹⁴⁹ From a voluminous literature, see Schumpeter, *Capitalism*, esp. ch. VIII; Arrow, ‘Economic welfare’; and the studies surveyed in Scherer and Ross, *Industrial market structure*, pp. 630-51.

¹⁵⁰ See the discussion in Scherer and Ross, *Industrial market structure*, pp. 630-1, 644-51.

¹⁵¹ *Ibid.*, pp. 630, 642 (quotation).

the number of producers and prevent potential competitors from entering, then the monopolist loses any special incentive to invest in innovation.¹⁵²

In Württemberg, as in many other early modern industrial regions, guilds were certainly strong enough to provide their members with monopoly and monopsony rents, as shown by their successful efforts to restrict entry, impose output quotas, and depress input prices. But guilds also used their strength to erect barriers to entry, manipulating apprenticeship, journeyman-ship, and mastership requirements to limit the number of producers and prevent potential competitors from moving into worsted production. Guild regulations limited workshop size, fixed output quotas, set prices collectively, and required collective approval and adoption of any new equipment or wares. This prevented potential innovators from undercutting their fellows and reaping a greater share of rents. Monopoly rents went to all masters, irrespective of whether they were innovative. Thus guilds did enjoy monopoly rents, but there is no evidence that these rents rewarded innovation.

The second positive claim of the rehabilitation theorists about guilds and technology is that strong guilds' tramping requirements could have functioned to diffuse innovations geographically. The Württemberg proto-industrial guilds were certainly strong enough to require local journeymen to travel for a minimum of three years unless they got a princely dispensation.¹⁵³ But it is not clear that guilds were necessary to ensure such migration in early modern Europe. Young workers were highly mobile even in guildless sectors such as agriculture.¹⁵⁴ The Netherlands enjoyed legendary labour mobility and technological innovation in the seventeenth century, while differing from Germany, France, and England in not requiring journeymen to travel.¹⁵⁵ Furthermore, as one nineteenth-century commentator lamented, the Württemberg weavers' guilds actually excluded any technological innovations that journeymen might have diffused into the region by prohibiting the settlement of foreign journeymen.¹⁵⁶ Guild tramping was neither necessary nor sufficient for technological diffusion.

The third positive claim is that strong guilds' enforcement of apprenticeship and journeyman-ship was essential for transmitting technical expertise smoothly between generations. The Black Forest weavers' guilds were certainly strong enough to require that anyone weaving worsteds undergo a minimum three years' guild apprenticeship followed by a minimum three years' journeyman-ship—or marry a man who had the right certificates.¹⁵⁷

¹⁵² On the key role played by lack of barriers to entry in theoretical models linking monopoly and innovation, see Etro, 'Innovation by leaders', pp. 281-3, 287-9, 298, 300-1; Scherer and Ross, *Industrial market structure*, pp. 635, 637.

¹⁵³ As discussed in Ogilvie, *State corporatism*, pp. 139-51, the legal minimum duration of journeyman-ship changed with changes in legislation, but ranged between two-and-a-half and five years.

¹⁵⁴ On the mobility of Württemberg farm servants and agricultural labourers, see Ogilvie, *Bitter living*, esp. pp. 114-15, 282-6.

¹⁵⁵ Lourens and Lucassen, 'Gilden', pp. 73-5, 77, 79.

¹⁵⁶ Troeltsch, *Zeughandlungskompagnie*, pp. 165-6.

¹⁵⁷ On changes over time in the legal minimum duration of apprenticeship and journeyman-ship, see Ogilvie, *State corporatism*, pp. 139-51.

But in practice, as shown earlier, those aspects of apprenticeship and journeymanship that involved skilled training were not guild priorities: masters who failed to train their apprentices were not punished, journeymen who made faulty masterpieces were passed as masters anyway, and widows who never had any formal guild training practised legally. Conversely, unmarried women, Jews, and other ‘encroachers’ who had been denied a guild training somehow managed to acquire the relevant technical expertise without it. Many of the most successful European worsted industries, as we saw, dispensed with guild apprenticeships or never had them, yet evidently ensured that techniques were transmitted effectively. Guild apprenticeship and journeymanship, therefore, were neither sufficient nor necessary to ensure smooth transmission of technical expertise between generations.

The fourth positive claim is that guilds enforced spatial clustering in order to monitor their members, and this could have favoured horizontal transmission of technical expertise among practitioners. But the guilds in Württemberg, as in many other parts of central, southern, and eastern Europe, were strong enough to monitor their members without enforcing spatial clustering, since their writ ran in the countryside as well as in the town. Furthermore, even where industries did cluster spatially—for example, in towns or particular urban neighbourhoods—it is not clear that this was because of guild pressure. Industrial agglomeration is widely observed in most economies, including modern guildless ones, because it brings a whole array of advantages that have been quite thoroughly analysed by economists.¹⁵⁸ Guilds were thus neither necessary nor sufficient for spatial clustering which might have favoured technology transmission.

A further consideration—acknowledged in neither traditional nor rehabilitation approaches—is that regulations that guilds imposed for other reasons could have unintended but powerful effects on technological innovation. Guild production regulations were imposed for quality control (and other reasons examined earlier), but stipulating precisely how a product was supposed to be made could deter innovation by ossifying production methods and excluding even desirable deviations from them. Guild price regulations were imposed for social solidarity (and restricting competition), but they could also deter innovators by denying them profits from underselling competitors. Guild admissions restrictions were imposed for ensuring craft skills (not to mention excluding entrants), but they could also deter innovation by compelling a limited number of practitioners to spend many years in apprenticeship and journeymanship; the outlawing of subsequent occupational mobility endowed masters with a heavy investment in human capital specific to a particular technique and set of products, creating incentives to resist any technical change that threatened to depreciate their investment. Guild demarcations between different crafts were imposed for maintaining product quality and labour skills (not to mention masters’

¹⁵⁸ See, for instance, Marshall, *Principles*, pp. 267-77; Fujita and Thisse, ‘Agglomeration’, pp. 339-41.

rents), but they could also deter innovation by preventing the productive exchange of ideas between adjacent bodies of knowledge.

These unintended consequences can be seen at work in the Württemberg Black Forest. In worsted production, as in most pre-industrial textile sectors, innovation consisted mainly in introducing new varieties of wares.¹⁵⁹ As one Thuringian worsted merchant explained in 1700, 'it is in the interest of the trade to introduce as many varieties of worsteds here as possible, because the present-day world is always seeking something different in wares'.¹⁶⁰ This made it the more disastrous for the Württemberg industry that its weavers' guilds systematically lobbied against extending the merchant-dyers' association's purchasing privilege to new varieties, and often simply refused to produce new kinds of wares. In turn, the merchant-dyers' association repeatedly allowed decades to elapse before it agreed to purchase new worsted varieties from the weavers. New worsted varieties were swiftly adopted only before the merchant-dyers' association was established in 1650, and at the very end of the eighteenth century when the association obtained privileges permitting it to employ wage weavers who relinquished their status as independent guild masters and produced in a centralized manufactory according to merchants' precise prescriptions.¹⁶¹

This resistance to so many crucial innovations was a rational response to incentives created by the guild framework. Guild quality regulations ossified production methods by laying down a particular range of Black Forest worsteds with specified characteristics, which alone could obtain a guild seal; as we have seen, new varieties which customers demanded but which violated these definitions were refused seals and their producers penalized. Prices were fixed through periodic collective negotiation between guilds of weavers and merchants under the Calwer Moderation: this meant that a guild weaver who devised a cost-reducing innovation could not benefit by underselling fellow masters. New worsted varieties often required better wool or finer spinning, but the weavers' guilds and the dyers' association capped prices of these inputs, depressing their quality; when new cloth varieties were produced, the poor quality of the wool and yarn often meant that they failed to sell. Admissions and training restrictions gave weaving masters incentives to resist technical changes which might depreciate their human capital investment. Many of the innovative wares introduced in more dynamic European worsted centres such as Gera or Norwich were hybrid fabrics with an admixture of linen, cotton, silk, or carded woollen yarn; but Württemberg's strict guild demarcations prevented productive exchange of ideas (and often even access to raw materials) between these different textile branches. Many new worsted wares relied on a careful adjustment of weaving technique to intended dyeing and finishing

¹⁵⁹ See, e.g., Munro, 'Origin', p. 86; Priestley, 'Norwich stuffs', pp. 278, 281; Heaton, *Yorkshire industries*, p. 322.

¹⁶⁰ Quoted in Finkenwirth, *Urkundliche Geschichte*, p. 61.

¹⁶¹ Ogilvie, *State corporatism*, pp. 359-60; Troeltsch, *Zeughandlungskompagnie*, pp. 119, 161-9.

processes, and of the two latter to current fashion and customer preferences; but the Calw merchant-dyers' association forbade weavers to dye or to visit trade fairs, and the Black Forest weavers' guilds forbade the merchant-dyers themselves to weave or even to employ weavers directly. New worsted varieties were produced in Württemberg only after 1777, when the merchant-dyers' association secured legal permission to employ weavers directly in a centralized 'manufactory' where, finally, there could be interchange between the separate bodies of knowledge possessed by weavers, dyers, and merchants; even then, the size of this manufactory was strictly limited because of bitter guild opposition.

It must also be recognized that economic privileges—such as those enjoyed by guilds—create political disincentives to change. The Calw merchant-dyers' association wanted new worsted varieties to be produced only if they were included in its purchasing privileges; lobbying for new privileges took time and money, and this delayed the introduction of new wares. The Black Forest weavers' guilds believed (with some justification) that permitting new wares would simply enhance the power of their arch-enemy the merchant-dyers' association, which would shift all the risks of introducing the new varieties on to the weavers. Any change in worsted varieties led to an expensive round of political negotiations between weavers' guilds and merchant-dyers' association. Each party rationally feared being caught on the losing end of this inevitable lobbying struggle, being locked into an inflexible set of obligations that would work to its disadvantage if international prices or demand moved in the wrong direction. The fear of regulatory re-equilibration deterred both weavers' guild and dyers' association from seeking to innovate.¹⁶² The market interlinkages created by the interlocking privileges of different guilds thus hindered the adoption of new techniques, even without deliberate guild action.¹⁶³

A final reason to question the argument that guilds were an efficient institution for encouraging technological innovation is provided by European comparisons. Not only were strongly guilded worsted industries such as that of Württemberg technologically backward, but weakly guilded worsted industries such as those of the Low Countries and England were highly innovative. Thus, for instance, the Dutch city of Leiden was legendary for restricting or altogether banning textile guilds, yet its flourishing worsted industry was at the forefront of technological innovation, introducing at least 180 new types and sub-types of worsteds and an array of innovative mechanical devices for pressing, burnishing, and calendering between 1580 and 1797; Leiden remained one of the most successful and innovative European worsted centres until overtaken by cheaper Flemish and English competitors in the later seventeenth century.¹⁶⁴ The phenomenally successful cheap

¹⁶² Ogilvie, *State corporatism*, pp. 359-60; Troeltsch, *Zeughandlungskompagnie*, pp. 84-6, 119, 142-3, 151-2, 161-9, 189-90.

¹⁶³ For examples of how imperfect and interlinked factor markets can block technological innovation, see Ray, *Development economics*, pp. 420-78; Basu, *Analytical development economics*, pp. 281-316.

¹⁶⁴ Noordegraaf, 'New Draperies', pp. 176, 179-83.

woollen-linen *molleton* was invented in the Flemish village of Tourcoing in the early eighteenth century by an unguilded rural weaver, and by 1748 was being made by at least 2,000 unguilded producers in that village alone, despite attempts by the Lille guilds first to monopolize the invention and, when this failed, to outlaw it altogether.¹⁶⁵ The Thuringian worsted industry saw a rapid breakdown of guild restrictions from the later seventeenth century on, but remained renowned for its innovative ‘fine- and woad-dyeing’ technology and its readiness to invent and adopt new worsted varieties, which powered its phenomenal success on European export markets.¹⁶⁶ The Catalan woollen-worsted hybrid industry of Igualada managed to introduce the technical modifications necessary to adapt to export markets in 1723 by politically compelling the weavers’ guilds to relinquish their traditional controls over technical matters into the hands of clothiers who concentrated weaving, finishing, and marketing in their own establishments and ignored guild regulations.¹⁶⁷ The West Riding of Yorkshire was as close as possible to being wholly unguilded, yet its worsted industry was the most successful in eighteenth-century Europe, partly because of its exceptional receptiveness to technological innovations in both process and product.¹⁶⁸ Comparisons across European worsted industries demonstrate conclusively that guilds were neither necessary nor sufficient for innovation. On the contrary: in many cases unguilded or weakly guilded industries were at the forefront of inventing, adopting, and diffusing new techniques.

V

A final rehabilitation approach is to regard a guild as a ‘social network’, a framework within which a carefully defined group of individuals transact repeatedly with one another and form multi-stranded relationships, thereby generating ‘social capital’—a store of shared norms, information flows, effective sanctions, and collective action that benefits the wider economy.¹⁶⁹ Political scientists and economists explicitly adduce pre-industrial European guilds as exemplars of social networks that generated beneficial social capital. Thus Putnam argues that since medieval times northern Italy’s tightly knit guilded societies facilitated information transmission, norm enforcement, and collective action, in turn ensuring that government was monitored; governmental and economic failure in southern Italy, he argues, was caused by lack of such urban guild networks.¹⁷⁰ Likewise, economists working on less-developed and transition economies adduce

¹⁶⁵ DuPlessis, ‘One theory’, pp. 148, 158.

¹⁶⁶ Finkenwirth, *Urkundliche Geschichte*, pp. 65-6, 69-70.

¹⁶⁷ Torras, ‘Corporations’, pp. 749-50.

¹⁶⁸ Heaton, *Yorkshire industries*, pp. 264-71; Hudson, ‘Capital’, p. 72; Lipson, *History*, pp. 144-52, 241, 249.

¹⁶⁹ Coleman, ‘Social capital’; Putnam, *Democracy*; and, from a rapidly expanding literature, the essay collection edited by Dasgupta and Serageldin, *Social capital*.

¹⁷⁰ Putnam, *Democracy*, pp. 163-85.

the pre-industrial European guild as an example of a social network that generated a beneficial social capital for the economy at large.¹⁷¹

Coleman, an originator of the concept of social capital, defined two criteria that social networks must possess in order to generate social capital: 'closure' and 'multiplex relationships'.¹⁷² 'Closure' means that network membership is clearly defined, so that members' actions can be easily monitored, norm-violating behaviour effectively punished, and norm-compliant behaviour collectively rewarded. Guilds of craftsmen and merchants in Württemberg, as in most of pre-industrial Europe, certainly manifested closure. As we have seen, they clearly defined membership through their careful filtering of admission to apprenticeship, journeymanship, and mastership, and their exclusion of women, Jews, and members of many other identifiable groups.¹⁷³

'Multiplex relationships' mean that an organization, 'once brought into existence for one set of purposes, can also aid others'.¹⁷⁴ Again, guilds clearly manifested this characteristic. Guild members typically engaged in repeated transactions with one another, encompassing different spheres of activity. Members of the Wildberg worsted weavers' guild, for instance, transacted in the same factor and product markets, socialized over wine at their regular tavern, collaborated on petitions to the ruler, marched to Stuttgart to hold political demonstrations, and attended each other's weddings and funerals. These multi-stranded or 'multiplex' relationships among guild members allowed, in Coleman's formulation, 'the resources of one relationship to be appropriated for use in others', making it more possible to generate effective social capital.

Guilds, like other social networks, are regarded as generating social capital in four main forms: the fostering of shared norms; the improvement of information flows about these norms; the punishment of violations against these norms; and the organization of collective action in defence of these norms. These manifestations of social capital are held to have benefited not just guild members but the economy at large.¹⁷⁵

Guilds in pre-industrial Württemberg certainly created social capital in the sense that they fostered shared norms. Local documents are replete with direct statements of such norms. In 1598, for instance, the Wildberg weavers' guild declared explicitly that it was wrong for 'absolutely anyone who has not been apprenticed to the craft to practise it, whether in towns or villages'.¹⁷⁶ In 1611, the weavers' guilds of the entire Württemberg worsted region forbade unmarried females to make wefts, on the grounds that girls

¹⁷¹ Stiglitz and Ellerman, 'New bridges'; Raiser, 'Informal institutions', p. 231.

¹⁷² Coleman, 'Social capital', pp. 23-7.

¹⁷³ Ogilvie, *State corporatism*, pp. 45-57, 72-9, 127-80.

¹⁷⁴ Coleman, 'Social capital', pp. 23-7.

¹⁷⁵ Putnam, *Democracy*, pp. 163-85; Stiglitz and Ellerman, 'New bridges'; Raiser, 'Informal institutions', p. 231.

¹⁷⁶ HSAS A573 Bü. 777, unpag., rubric 'Zöhrung'.

should 'be kept to other and necessary domestic tasks and business'.¹⁷⁷ In 1623, guild members explicitly declared it to be 'dishonourable' for a weaver to pay a spinner above the piece-rate ceiling; one weaver rumoured to have violated this norm had to sue his accusers in the communal court 'in order to rescue his honour'.¹⁷⁸ In 1650, the guild-like merchant-dyers' association in Calw justified its monopoly on the grounds that 'it is much better and more useful to conduct trade out of one single hand than out of many unequal and separate hands'.¹⁷⁹ In the 1720s, the Wildberg weavers' guild fostered a new norm that members must shun the 'untouchable' knacker: masters and journeymen were punished for remote contacts such as touching the knacker's horse or sleeping on the knacker's lawn, 'thereby shaming the guild'.¹⁸⁰ In the 1780s, local guild masters—among whom weavers were prominent—prevailed on communal authorities to restate the norm 'forbidding trade and peddling by Jews outside the public periodic markets, and . . . explicitly warning the entire citizenry against it'.¹⁸¹

But did these norms benefit the wider economy? The norm that it was wrong to practise this low-skilled activity without guild apprenticeship served primarily to exclude entrants regardless of how well they 'understood' the craft, as we saw earlier. The norm that women should be limited to housework rather than earning income from craft work also served primarily to protect established male guild members from competition; it was certainly an inappropriate and oppressive norm to enforce in a demographic regime in which more than half of the female labour force was not currently married and 15-20 per cent of females remained unmarried throughout their lives.¹⁸² The norm that it was 'dishonourable' to pay spinners a competitive wage made spinning labour scarce, depressed yarn quality, and caused hardship to thousands of women—18 per cent of spinners lived partly from communal dole or begging.¹⁸³ The norm that worsted exporting should be monopolized by a single merchant guild depressed cloth quality, stifled innovation, and harmed weavers and free-lance traders. The norm that intercourse with Jews and knackers was 'defiling' was economically inefficient and socially divisive.¹⁸⁴ As Coleman himself acknowledges,

¹⁷⁷ 'Engelsattweberordnung', article 20, p. 446.

¹⁷⁸ HSAS A573 Bü. 15, fo. 618r, 20 Feb. 1623.

¹⁷⁹ 'Rezess Zwischen denn Ferbern vnnd der Knapschafft zue Calw vnnd selbiger refer' (2 Sept. 1650), reprinted in Troeltsch, *Zeughandlungskompagnie*, pp. 453-6.

¹⁸⁰ HSAS A573 Bü. 876 (1723-4), fo. 10v; Ogilvie, *State corporatism*, pp. 333-9.

¹⁸¹ HSAS A573 Bü. 99, fo. 67v, probable date April 1787, no. 197 and no. 198: 'den Handel und das Hausiren der Juden auser denen offentl.: Märkten verbietet, und . . . wird die ganze burgerschafft davor nach drücklich verwarnet'.

¹⁸² For detailed discussions of the implications of this demographic pattern for female labour force participation and the role played in it by guilds, see Ogilvie, *Bitter living*, pp. 40-54, 323; *eadem*, 'How does social capital affect women?'; *eadem*, 'Women and labour markets'.

¹⁸³ HSAS A573 Bü. 6967 (1736); Ogilvie, *Bitter living*, pp. 214-15, 278-9.

¹⁸⁴ On pre-industrial guilds' discrimination against women, Jews, bastards, and members of 'dishonourable' occupations, see Roper, *Holy household*, pp. 36-55; Ogilvie, *State corporatism*, pp. 336-8; Stuart, *Defiled trades*, pp. 189-221; Ogilvie, *Bitter living*, pp. 130-4, 162-70, 259-67, 300-8, 329-31, 340-4.

‘effective norms in an area can reduce innovativeness in an area, not only deviant actions that harm others but also deviant actions that can benefit everyone’.¹⁸⁵ Guild norms in Württemberg penalized ‘deviant’ actions—occupational mobility, women’s employment, competitive wages, non-monopolistic commerce, and moves to break down gender and racial discrimination—that could have benefited everyone.

This should be borne in mind when we assess the second way in which guilds created social capital, by improving information flows. In every weaving community the weavers’ guilds had officials known as ‘seveners’ who were obliged to report known offences. Together with the merchant-dyers’ association, the weavers’ guilds employed special ‘loom inspectors’ who carried out periodic ‘visitations’ of all workshops to check for ‘forbidden’ equipment, surplus apprentices or journeymen, or violations of the output quota.¹⁸⁶ Guilds also paid spies, as in 1707–8 when the Wildberg district guild employed an Emmingen weaver (a stranger from outside the district) ‘who went around in the villages and investigated whether there were any [apprentices who were non-masters’ sons] to be found there’.¹⁸⁷ About every seven months, the Wildberg guild held a general assembly attended by over 95 per cent of the membership from all 10 communities in the district. Here, each (male) master in turn was asked if he had anything to report; many did so, as in 1752 when several masters reported their fellows for illegally employing women, ‘to weave and comb, counter to the guild ordinance’.¹⁸⁸ Local communities also held periodic general assemblies, at which each (male) citizen in turn was asked if he had anything to report; many did so, as in 1669 when one weaver reported that Hannß Schrotter had been ‘setting his servant girl behind the loom and having her weave’, despite already having been forbidden to do so.¹⁸⁹ These information-transmission mechanisms indeed ensured that guild members were aware of each other’s activities. But it is clear that this social capital of mutual information was used for harmful as well as beneficial purposes: to enforce output quotas, prevent adoption of new equipment, limit apprenticeship by non-masters’ sons, and prevent women’s work—to stifle ‘innovations’ that could, in Coleman’s formulation, have benefited everyone.

The same applies to the third way in which guilds created social capital, by facilitating group action against violations of their norms. A guild was entitled autonomously to punish a vast array of offences, many of them not laid down explicitly in any legislation but simply decided upon at the discretion of local guild officials. As table 1 shows, over the 143 years of surviving guild account books between 1598 and 1760 the Wildberg worsted weavers’ guild imposed fines on 653 individuals, for 85 separate types of offence falling into six broad categories. As table 2 shows, the minimum

¹⁸⁵ Coleman, ‘Social capital’, p. 23.

¹⁸⁶ Ogilvie, *State corporatism*, pp. 193–7.

¹⁸⁷ HSAS A573 Bü 860 (1707–8), fo. 29v.

¹⁸⁸ Ogilvie, *State corporatism*, pp. 316–21; HSAS A573 Bü. 904 (1752–3), unpag., rubric ‘Strafen’.

¹⁸⁹ HSAS A573 Bü. 92, fo. 5v, 1 Nov. 1669.

fine was two days' average earnings (for example, for quality offences), the maximum nine days' earnings (for instance, for illegally employing women).¹⁹⁰ A special range of fines was invented in the early eighteenth century to penalize 'defiling' contacts with 'untouchable' social groups such as knackers.¹⁹¹ Some offenders, such as the Wildberg master who set his maidservant behind the loom in 1669, were fined by the state as well.¹⁹² Weavers who sold to free-lance traders outside the privileged merchant-dyers' association were fined and lost their wares, at a minimum cost of one week's earnings; the proceeds were split between guild and state.¹⁹³ Individual weavers perceived guild fines as a deterrent, as in 1623 when Hans Pfeiffer complained that a fellow weaver, by spreading rumours that he had overpaid a female spinner, 'had sought to bring him into punishment before the guild'.¹⁹⁴

But was this social capital of collective sanctions beneficial? It sustained the weavers' monopoly over weaving and the merchant-dyers' monopsony over exporting, it helped masters to collude to pay non-competitive wages to spinners, it enforced the cartelistic output quotas, and it penalized those who failed to discriminate against females and 'defiling' social groups. One must surely question whether this social capital benefited the wider society.

Similar questions arise in evaluating the fourth way in which guilds created social capital, by engaging in collective political action. In the opinion of the Black Forest worsted weavers, a major reason for the existence of their guild was to monitor—indeed, lobby—the government to ensure that 'appropriate' political decisions were taken. As table 6 shows, over the 143 years of surviving accounts between 1598 and 1760, the Wildberg district guild spent more than a quarter of its revenues on lobbying, a sum equivalent to 115 days' average earnings for a master weaver for every year of the guild's existence. In particularly troubled periods, such as between 1666 and 1690, this guild alone was spending 40 *Gulden* annually on lobbying, nearly a year's average income for a master weaver in normal times.¹⁹⁵ Entries in the Wildberg guild account books show that the weavers' guilds of neighbouring districts were also investing heavily in lobbying.¹⁹⁶ Individual guild members also invested time in lobbying, most notably in 1689 when one-sixth of the entire Wildberg district guild membership, alongside equivalent deputations from the guilds of neighbouring districts, marched to Stuttgart in a body to perform a 'Fueß Fall' (literally a 'foot fall') in front of the prince.¹⁹⁷ These expenditures alone suggest that the guild created

¹⁹⁰ For quantitative analyses of guild fines, see Ogilvie, *State corporatism*, pp. 321–39.

¹⁹¹ *Ibid.*, pp. 333–9.

¹⁹² HSAS A573 Bü. 92, fo. 5v, 1 Nov. 1669.

¹⁹³ HSAS A573 Bü 829 (1673–4), fo. 33–4; HSAS A573 Bü 830 (1674–5), fo. 14, 31; HSAS A573 Bü 854 (1700–1), fo. 14v. See the detailed discussion in Ogilvie, *State corporatism*, pp. 202–3.

¹⁹⁴ HSAS A573 Bü. 15, fo. 618r, 20 Feb. 1623.

¹⁹⁵ See the analysis in Ogilvie, *State corporatism*, pp. 366–78, esp. tab. 10.1.

¹⁹⁶ See, for instance, HSAS A573 Bü. 892, fos. 22–3, 27–8, Rapiatbuch (June–Sept. 1740).

¹⁹⁷ HSAS A573 Bü. 842 (1688–9), fos. 94–8, 107–10; described in detail in Ogilvie, *State corporatism*, pp. 376–7.

Table 6. *Lobbying expenditures of the worsted-weavers' guild, district of Wildberg, 1598-1647 and 1666-1760*

Date	Lobbying expenditures as % of total guild expenditures	Annual lobbying expenditures	
		nominal	inflation-indexed
1598-1609	50.1	20.1	19.3
1610-19	47.6	12.3	10.1
1620-9	32.9	14.7	7.4
1630-9	22.9	4.4	2.1
1640-7	48.8	8.8	6.7
1666-9	66.7	47.9	49.3
1670-9	23.3	34.8	37.0
1680-9	37.2	40.8	36.6
1690-9	32.7	26.2	20.1
1700-9	17.6	19.7	14.9
1710-19	22.7	11.8	8.9
1720-9	19.9	14.3	11.5
1730-9	18.3	15.2	11.2
1740-9	25.4	13.6	8.3
1750-60	12.4	10.3	6.0
1598-1647	40.9	12.5	9.7
1666-99	32.2	35.1	32.8
1700-60	18.6	14.2	10.2
1598-1760	27.1	18.5	15.3

Notes: nominal = expressed in *Gulden* of the accounting period

inflation-indexed = expressed in *Gulden* of 1599

There are no values for 1648-65 because of a gap in the surviving guild account-books

Source: HSAS A573 Bü. 777-911

economic rents for its members—people do not spend time and money defending valueless privileges.¹⁹⁸

The guild's unremitting series of campaigns to monitor the government ranged from relatively trivial affairs such as a campaign to outlaw part-time weaving by village schoolmasters, through serious conflicts such as putting down a journeymen's strike or confiscating black-market yarn from village spinners, to enormous struggles which absorbed the time and finances of the guild for years on end, as with the campaigns to obtain more favourable legislation against the merchant-dyers' association in the 1680s and the 1740s. In the course of these campaigns, guilds paid bribes to individual bureaucrats, demonstrated visibly in the streets of the capital, and issued careful instructions to their parliamentary deputies, who were selected from among the guild masters dominating local community councils and were in a position to obstruct the grant of taxation to the prince unless their demands were met. The guild-like merchant-dyers' association behaved likewise, astutely securing government support through intermarriage with

¹⁹⁸ For similar arguments with regard to the Thuringian worsted proto-industry, see Finkenwirth, *Urkundliche Geschichte*, pp. 73-4.

local officials, bribes to bureaucrats, and massive state loans.¹⁹⁹ These investments paid off, as in 1736 when the state greatly extended the privileges of the Calwer merchant-dyers' association, explicitly justifying this on the grounds that the association 'was a substantial national treasure, as shown especially with the moneys that had to be raised during the recent French invasion threat, and hence no just opportunity should be lost to extend it a helping hand in all matters'.²⁰⁰

This evidence of constant and costly guild lobbying illuminates a major reason for the widespread existence and long survival of guilds which has nothing to do with their being efficient institutional solutions to market failures. Rather, guilds were sustained by the political economy of early modern European societies and the incentives it created for both rulers and ruled. Well organized corporate groups such as guilds were in a position to offer—or deny—political cooperation and fiscal support to rulers in exchange for the grant of favourable economic legislation and economic privileges. Such legislative favours often seemed harmless or even—if guild rhetoric was to be credited—positively beneficial for the wider society, and had the inestimable benefit of being costless to the ruler, at least in the short term. Intertemporal calculations that by limiting trade now in return for a lump-sum payment from a producer interest group, one was denying oneself the benefits of higher tax revenues in future through economic growth, are difficult for all rulers, even in modern economies.²⁰¹

It was where the political authorities were incapable of offering enforcement of corporate privileges, or gained greater economic and political benefit from permitting them to be evaded, that guilds weakened, metamorphosed, or disappeared. Thus, for instance, one reason why unguided worsted production spread and prospered in sixteenth- and seventeenth-century French Flanders was that many villages 'enjoyed the protection of powerful seigneurs' who themselves benefited from peasant weaving and hence sheltered it from hindrance by the powerful guilds of Lille and Tournai, which in turn were forced to relax their entry restrictions to remain competitive.²⁰² Likewise, in the famous Thuringian worsted region, the worsted weavers' guilds failed either to prohibit rural weavers or to subject them to guild regulation, so long as their *Junker* (who benefited from the dues they paid him) protected them politically.²⁰³ In the Thuringian town of Gera itself, Flemish immigrants from Tournai were permitted to establish an unguided worsted industry in 1595 despite opposition from the local woollen weavers' guild, solely because the territorial

¹⁹⁹ As discussed in Troeltsch, *Zeughandlungskompagnie*, pp. 84-5.

²⁰⁰ Quoted in *Ibid.*, p. 84, n. 2.

²⁰¹ For an expanded exposition of this political economy argument in the Württemberg context see Ogilvie, *State corporatism*, pp. 79-84; *eadem*, 'German state', pp. 182-99. On Germany more widely, *eadem*, 'Germany', pp. 431-4. On the relationship between merchant guilds and rulers, Dessì and Ogilvie, 'Social capital'.

²⁰² DuPlessis, 'One theory', esp. pp. 139, 141.

²⁰³ Finkenwirth, *Urkundliche Geschichte*, pp. 10, 42.

prince perceived ‘the best interest of the country’—and his own fiscal advantage—to reside in encouraging rural industry and ‘adding the Netherlandish “woollen wares” to the others that are made in the land’.²⁰⁴ The Gera industry sought guild status in 1613 solely in self-defence against unfair taxes imposed by a town council dominated by other guilds, and the prince granted the guild charter in exchange for the promise of one-third of all guild sealing fees in perpetuity: the impetus for the formation of the guild thus had nothing to do with correcting market failures and everything to do with the political economy of taxation in the territory.²⁰⁵ Local politics also explains why the clothiers of the Catalan town of Igualada were able to circumvent and weaken the entry barriers and restrictive practices of the local weavers’ guild: clothiers dominated the local town council, which in 1723 forced an ‘agreement’ on the unwilling guild; a similar attempt in Barcelona at the same date failed because clothiers there were unable to dominate the city council.²⁰⁶ In each case, guilds achieved or lost power not as a function of whether their social capital offered efficient institutional solutions to market failures, but as a function of whether it endowed them with a powerful bargaining position within the local institutional and political framework. ‘Social capital’ certainly enabled many guilds to monitor and influence the political process. But it is not clear that by doing so they benefited the economy as a whole.

VI

Using economic theory to understand pre-industrial European guilds opens exciting new perspectives, as we shall see shortly. But it is important that economic models stand up to thorough empirical tests. This article has sought to confront recent theoretical attempts to rehabilitate guilds with an empirical investigation relying on a wide array of non-legislative sources, exploring the whole range of guild activities, and setting guilds in their wider socio-political context.

The evidence presented here suggests grounds for scepticism about hypotheses that guilds arose and survived because they corrected market imperfections. Information asymmetries between producers and purchasers certainly existed, but many important and long-lived guilds—such as those in the Württemberg worsted industry—did not make any contribution to solving them. Imperfections in training markets may also have existed in pre-industrial economies, but the empirical evidence examined in this article provides reasons for doubting that guilds were an efficient institution for correcting them. Imperfections in markets for innovative techniques exist in all economies, and no perfect institution for addressing them has yet been

²⁰⁴ *Ibid.*, pp. 21-7, 132; quotation from p. 21.

²⁰⁵ *Ibid.*, pp. 36-7, 132.

²⁰⁶ Torras, ‘Old and new’, pp. 105-8; *idem*, ‘Craft to class’, pp. 175-7; *idem*, ‘Corporations’, pp. 750-1.

devised. But sober empirical investigation suggests little reason to believe that guilds were this institution.

Social networks generating a social capital of shared norms, common information, mutual sanctions, and collective political action may—in some forms—overcome problems posed by lack of trust, reputation, monitoring, and cooperation in developing economies. But the evidence presented in this article provides greater support for the possibility already acknowledged by Coleman—that social capital might reduce innovativeness and economic well-being by penalizing ‘deviant’ actions that could have benefited the economy at large.²⁰⁷ Despite widespread advocacy of social capital as a cure to all the ills of today’s developing economies, almost no theoretical attention has been devoted to analysing what institutional mechanisms, if any, could be put in place to ensure that social capital is used for beneficial rather than harmful ends. The evidence on pre-industrial social capital presented in this article suggests that such attention is badly needed. Most existing studies of social capital simply assume that its benefits outweigh its costs; this article suggests that we must question this assumption—and test it empirically. In the meantime, we must regard social capital with caution.

So how can we use economic theory to help us move forward in this difficult and tangled area? In the debate about guilds economic theory has hitherto mainly been deployed to support the claim that any institution which exists widely and survives for centuries must be an efficient solution to market failures. But economic theory does not inevitably lead to this conclusion. On the contrary, economic tools can help us to understand why guilds existed so widely and survived for so long without being efficient institutions. Suppose there exists an institution which is not efficient, in the sense that the benefits of abolishing it exceed the costs. Will it automatically break down? No. To see why not, one need only look at the process by which institutions such as guilds change. Typically, these are institutions where the total benefits of abolition are large, but are spread over a large number of people—potential entrants to the industry, employees, consumers. Consequently, for each individual beneficiary, the benefits of abolishing the institution are small and hence that individual has little incentive to incur the costs of political action to change the institution.²⁰⁸ The total costs of abolition, by contrast, may be relatively small, but are concentrated on a small group—guild masters, princely officials—so among them, the per caput costs of abolition are high. Thus any one individual loser from abolition has a large incentive to incur the costs of political action to maintain the institution. This ‘logic of collective action’, in Olson’s phrase, means that an institution can survive even if the social benefits of abolition exceed the costs.²⁰⁹

²⁰⁷ Coleman, ‘Social capital’, p. 23.

²⁰⁸ The institution itself may also ensure that it includes among its benefits most well-off individuals, excluding only those who would not in any case have resources to invest in trying to abolish it.

²⁰⁹ Olson, *Logic*.

Economic theory also provides tools for analysing imperfect and inter-linked markets, which can help us to understand the complex way in which different institutions interact and sustain one another.²¹⁰ In pre-industrial Württemberg, for instance, a whole array of powerful interest groups—guilds, merchant associations, local communities, and the princely state—brought about an equilibrium in which transactions in different factor and product markets were interlinked. These interest groups derived significant benefits from one another's continued existence and for centuries perpetuated a corporative approach to responding to economic change.²¹¹

Economic approaches thus do not require that we assume that observed institutions are necessarily efficient. Indeed, as this article has tried to show, relaxing this simplistic assumption opens up exciting new perspectives for analysing the complex interactions between individuals, guilds, and political authorities in pre-industrial economies. We cannot, of course, generalize from Württemberg to all other economies with guilds. But, as shown at the beginning of this article, Württemberg with its active guilds and stagnant economy was closer to the norm than more dynamic pre-industrial European economies such as the Low Countries or England, and its low-skilled rural worsted manufactures were typical of many European proto-industries.²¹² The findings for this economy, where guilds were strong and long-lived, show that guilds could create greater incentives to seek monopoly rents for members than to correct market failures. As shown by the difficult and often painful process of development even in the richest, most innovative, and fastest-growing economies of early modern Europe—the Low Countries and England—the pre-industrial economy had plenty of market failures, and these could be very hard to correct. But the even more painful development of economies such as Württemberg suggests that powerful guilds were not the answer to correcting them.

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²¹⁰ For examples of how such tools can be used to understand the institutions of developing economies, see Basu, *Analytical development economics*, esp. pp. 281-329.

²¹¹ For a more detailed discussion of the nature and operation of Württemberg corporatism, and comparisons with Prussia and England, see Ogilvie, 'German state', esp. 182-202; on German 'communalism' more generally, see Blickle, 'Kommunalismus'.

²¹² Ogilvie, *State corporatism*, 398-475; Pfister, 'Craft guilds', 21.

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