

THE SYMBIOSIS OF TOWNS AND TEXTILES:
URBAN INSTITUTIONS AND THE CHANGING
FORTUNES OF CLOTH MANUFACTURING IN THE
LOW COUNTRIES AND ENGLAND, 1270-1570*

JOHN MUNRO

University of Toronto

ABSTRACT

This paper, a contribution to the “proto-industrialization” debate, examines the relative advantages of urban and rural locations for cloth manufacturing in later-medieval England and the Low Countries. From the eleventh to the mid-fourteenth century, when the English cloth trade began its seemingly inexorable expansion, the Low Countries had enjoyed a virtual supremacy in international cloth markets, then chiefly located in the Mediterranean basin. The traditional view has attributed the ultimate English victory to the advantages of a rural location, using cheap labour and water-powered fulling. The proponents of this view further contend that in late thirteenth-century England a new rural industry had displaced a centuries-old “traditional” urban cloth industry through such superior cost advantages. To challenge that view, this paper puts forth the following propositions: (1) that England’s traditional urban industry had declined, abruptly from the 1290s, chiefly because of steeply rising, war-induced, transaction costs in Mediterranean markets for its chief products: i.e., cheap and light fabrics, which they had sold as price takers; (2) that the Flemish/Brabantine cloth industries, having had a similar industrial-commercial orientation, suffered from the same industrial crisis; and more quickly responded by reorienting production, as price makers, to the very high-priced luxury woollens; (3) that rural locations were not always more advantageous, in lower labour and other costs; (4) that urban locations offered important benefits for luxury-cloth production: a more highly skilled, productive, better regulated labour force; urban and guild institutions to enforce necessary quality controls and promote international reputations for high quality; (5) that England’s cloth industry, when it revived from the 1360s, followed suit in shifting to more luxury-oriented exports, while gaining its chief advantages from the fiscal burdens imposed on high-quality wool exports to its overseas competitors; (6) that English export-oriented cloth production also remained more urban than rural until the late fifteenth century (for many complex reasons explored in this paper).

The proto-industrialization debate revisited: urban vs. rural locations for textile manufactures in later-medieval and early modern Europe

In the view of many economic historians, the industrial and commercial supremacy that the southern Low Countries had so long enjoyed

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in northern Europe, from the eleventh to fourteenth centuries, had been based primarily upon a strongly welded symbiosis between towns and textiles, but one that ironically contained the very seeds of this region's relative economic decline during the later fourteenth and fifteenth centuries. In most traditional concepts of that symbiosis, towns were fundamentally necessary for the expansion of this region's world-renowned cloth industries, whose exports in turn provided the most powerful dynamics for urban growth during the High Middle Ages: especially in Flanders, adjacent Artois, and then Brabant.¹ If Holland's somewhat later urbanization was based more on maritime trade, brewing industries, and the herring fisheries, woollen textiles were still vitally important for the growth of such towns as Leiden and Den Haag.² Thus, long serving as Europe's leading cloth exporters, the Low Countries collectively became the wealthiest, most densely populated, and most highly urbanized region north of the Alps, certainly by the thirteenth century.³

Many of these historians have also contended, however, that during the next century this mutually beneficial symbiosis was ruptured, so that an urban location became more and more inimical to the future of the traditional woollen draperies in both Flanders and Brabant, just as it had been somewhat earlier to the English textile industries. According to this pessimistic view, best articulated by Henri Pirenne, their sclerotic urban industries, first in England and then in the Low Countries, increasingly lost markets to internal domestic competition from new, upstart rural draperies. For the Low Countries' urban draperies, however, the truly fatal blow came from the rapidly expanding English cloth

¹ Few if any towns in the Low Countries, however, owed their medieval origins directly to textiles. For urban formation and the textile industries in the southern Low Countries, see the bibliographic appendix. Works included in the bibliographic appendix appear in subsequent footnotes in abbreviated form.

² See sources related to Holland in the bibliographic appendix.

³ According to some late-medieval censuses for the three major textile-producing provinces, the proportions of total population living in towns were: in Flanders, 36% of 660,700 (1469); in Brabant, 33% of 413,200 (1473; 39% in 1496); and in Holland, 45% of 268,200 (1514; 54% in the southern half). See Walter Prevenier, "La démographie des villes du comté de Flandre aux XIV^e et XV^e siècles: État de la question: essai d'interprétation," *Revue du Nord* 65 (1983): 268-73; Willem Blockmans, G. Pieters, W. Prevenier, R. W. Van Schalk, "Tussen crisis en welvaart: sociale veranderingen, 1300-1500," in *Algemene geschiedenis der Nederlanden*, vol. 3, *Middeleeuwen*, ed. J. A. Van Houtte et al. (Haarlem, 1980), 42-45. See also Joseph Cuvelier, *Les dénombrements de foyers en Brabant, XIV^e-XVI^e siècle*, 2 vols. (Brussels, 1912-13), 1: 432-87; Joseph De Smet, "Le dénombrement des foyers en Flandre en 1469," *Bulletin de la commission royale d'histoire* 99 (1935): 105-50; Herman Van der Wee, *The Growth of the Antwerp Market and the European Economy, Fourteenth to Sixteenth Centuries*, vol. 1, *Statistics* (The Hague, 1963), 545-48.

trade, during the later fourteenth century, based upon a newly vibrant, "free," low-cost industry that had also become almost entirely rural in structure; but many of the rural *nouvelles draperies* in Flanders and Brabant were far better able to weather this English competition and prosper into the sixteenth century, again primarily because of similar advantages from their low-cost rural location.

Thus Pirenne and many subsequent historians have contended that, in Flanders, the leading towns of Ghent, Bruges, and Ypres, known as the *drie steden*, and, in neighbouring Brabant, the comparable *drie steden* of Brussels, Leuven, and Mechelen must themselves bear the major responsibility for the subsequent "decline and fall" of this region's traditional woollen cloth industry. In their view, these towns subjected their draperies to oppressive guild controls, excessive taxation, high living costs, and consequently overly expensive labour. More specifically, the urban textile guilds, backed by the towns' judicial and police powers, are accused of engaging in a litany of sins: of restricting entry and controlling production in order to protect their members' employment and incomes; of imposing rigid industrial regulations that impeded technological innovation and stifled entrepreneurial initiative; and of fomenting dissension in political power struggles that disastrously disrupted production. The Flemish town governments and guilds were also guilty, in this general view, of impeding the industry's migration to the much freer and industrially more amenable countryside: to gain freedom from guild and urban controls; to escape high taxation; and thus to seek presumably lower-cost peasant labour.⁴ They also argue that medieval England's towns had never enjoyed the power to prevent the much earlier and more advantageous exodus of their draperies to adjacent or more distant rural locations, especially in the West Country, providing those crucial advantages that best explain how the English cloth industry managed to defeat most of its continental rivals, most especially the still urban-based draperies of the Low Countries.

Such a transition of textile manufacturing from urban to rural locations seems to have been a widespread phenomenon in late-medieval and early modern Europe. Currently highlighting its significance is the Proto-Industrialization thesis, whose leading proponent, the late Franklin

⁴ See sources cited in nn. 1-3, 8, 14, 26-35, 84, 120-25, 153-55, and 160-64. Mechelen was legally a *seigneurie* of the Count of Flanders (from 1356), an enclave within the duchy of Brabant; but the town's economy utilized the Brabantine coinage and money of account and was effectively part of that duchy's economy, even when under direct Flemish control.

Mendels, contended that, in early modern Europe, "the rapid growth of traditionally organized but market-oriented rural industry . . . induced the passage to modern industry," by serving "as an effective dissolver of the traditional agrarian structure" and by providing "a means of rapidly increasing industrial production."⁵ Though such interpretations may well have some merit for early modern Europe in general, a counterthesis can be argued for the later-medieval Low Countries, in defence of both towns and urban institutions: that they rescued their cloth industries from seemingly certain destruction in the fourteenth century and staved off ultimate, inevitable decline for almost a hundred years. From the mid-fifteenth century, however, their urban institutions may bear some lesser share of blame for the final and much more rapid decline of the traditional Flemish and Brabantine draperies, though this argument may be deemed moot.⁶

Any examination of these theses debating the relative advantages of urban and rural industrial locations must begin, however, by ascertaining why European textile industries had been so predominantly urban during the High Middle Ages, from the eleventh to early fourteenth centuries. The reason most commonly offered is that towns were then islands of relative freedom and economic security within a vast, often chaotic rural feudal sea of peasant servitude. As Robert Lopez has observed, the widespread medieval urban symbol was a circle enclosing a cross, representing commercial crossroads within fully protective circular walls.⁷ According to such views, many towns lost that relative advantage, at least for manufacturing industries, during the later Middle Ages, with the expansion and better enforcement of princely authority, the disintegration of rural seigniorialism, the diffusion of a market economy into the countryside, and a growing agricultural productivity that

⁵ Franklin Mendels, "Proto-Industrialization: The First Phase of the Industrialization Process," *Journal of Economic History* 32 (March 1972): 241-61. See a critical discussion of the now vast literature on this subject in Donald C. Coleman, "Proto-Industrialization: A Concept Too Many," *Economic History Review*, 2d ser., 36 (1983): 435-488; L. A. Clarkson, *Proto-Industrialization: The First Phase of Industrialization?* (London, 1985); and Sheilagh Ogilvie and Markus Cerman, eds., *European Proto-Industrialization* (Cambridge, 1996). See below, nn. 163-64.

⁶ See below, nn. 120-40, 143-47.

⁷ Robert S. Lopez, "The Crossroad Within the Wall," in *The Historian and the City*, ed. Oscar Handlin and J. Burchard (Cambridge, Mass., 1963), 27-43; Robert Lopez, *Intervista sulla città medievale*, ed. Marino Berengo (Rome, 1984), 5. See also Paul M. Hohenberg and Lynn H. Lees, *The Making of Urban Europe, 1000-1950* (Cambridge, Mass., 1985), 22; Nicholas, *Growth of the Medieval City*, 85-272.

together liberated cheap peasant labour for industrial activities, especially in textile manufacturing under a “putting-out” (*Verlag*) system. As many historians have reasonably contended, peasant labour accepted wages inferior to those for urban labour because rural living costs were generally so much lower, and because so many artisans provided only part-time or supplemental labour, while producing their own food and working within their own homes as peasant craftsmen.⁸

The Van Werveke thesis on industrial location and guild strife in Flemish textile crafts

In explaining the eleventh-century urban origins of the Flemish draperies, the eminent Belgian historian Hans Van Werveke argued, however, that the surrounding countryside, in this relatively advanced region, was not subjected to any oppressive form of “feudal servitude”; and thus that it offered as much freedom and security as were then to be found in the towns, which themselves were often prone to violence—so aptly demonstrated in Galbert’s chronicle *The Murder of Charles the Good* (1127-28).⁹

⁸ Even in smaller Flemish towns (such as Dendermonde, Aalst), wage rates were substantially lower, as much as a third lower, than in Bruges and Ghent. Wage data extracted from construction and other accounts in the municipal treasurers’ accounts in the *stadsarchieven* of Bruges, Ghent, Mechelen, and Leuven; and from the town accounts of Ypres, Dendermonde, Aalst in Algemeen Rijksarchief, Rekenkamer, for ca. 1350-1500. See also urban and small town wages (for Brabant and Flanders) in Van der Wee, *The Growth of the Antwerp Market*, 1: 333-75, appendices 27-29; Charles Verlinden, E. Scholliers, and Jan Craeybeckx, eds., *Dokumenten voor de geschiedenis van prijzen en lonen in Vlaanderen en Brabant, XVde-XVIIIde eeuw*, 4 vols. (Bruges, 1959-65); Jean-Pierre Sosson, *Les travaux publics de la ville de Bruges, XIV^e-XV^e siècles: les matériaux, les hommes* (Brussels, 1977), 300-309, graphs 12-19; John Munro, “Urban Wage Structures in Late-Medieval England and the Low Countries: Work-Time and Seasonal Wages,” in *Labour and Leisure in Historical Perspective, Thirteenth to Twentieth Centuries*, ed. Ian Blanchard (Stuttgart, 1994), 65-78.

⁹ Freedom and serfdom, however, are all to be viewed in relative degrees; and serfdom was hardly absent from twelfth-century Flanders. See Galbert of Bruges, *The Murder of Charles the Good*, trans. and ed. James B. Ross (Toronto, 1982), 3-75, 102-253; based upon Henri Pirenne, ed., *Histoire du meurtre de Charles le Bon, comte de Flandre (1127-1128) par Galbert de Bruges* (Paris, 1891). See also H. Van De Weerd and R. De Maeyer, *Geschiedenis van Vlaanderen*, vol. 1, *Oudste geschiedenis* (Amsterdam, 1936), 211-49; François-L. Ganshof, *La Flandre sous les premiers comtes* (Brussels, 1949), 28-57, 95-127; R. C. Van Caenegem, “Galbert of Bruges on Serfdom, Prosecution of Crime, and Constitutionalism (1127-28),” and Karen Nicholas, “The Role of Feudal Relationships in the Consolidation of Power in the Principalities of the Low Countries, 1000-1300,” both in *Law, Custom, and the Social Fabric in Medieval Europe: Essays in Honor of Bryce Lyon*, ed. Bernard Bachrach and David Nicholas (Kalamazoo, 1990), 89-112 and 113-30; and as Van Caenegem observes, “serfdom was a central theme for Galbert” (94); Nicholas, *Medieval Flanders*, 39-110, esp. 62-69; Nicholas, *Growth of the Medieval City*, 85-168. See also the next note.

For Van Weverke, if we may view his ideas through the lens of modern economic theory, the major advantage for the towns was in offering more direct supervision and thus lower transaction costs for export-oriented cloth production, with a necessarily intricate division of labour; and, for his thesis, that was all the more crucial in an era when most merchants and drapers were presumably illiterate, innumerate, and thus unable to utilize the complex bookkeeping that would have been required for an alternative industrial organization dispersed throughout the countryside, but linking villages (for production) with towns (for marketing).¹⁰ As Van Weverke notes, not until 1179 did Flemish merchants begin to enjoy the benefits of an institutional secular education (first in Ghent).¹¹ Few if any historians, however, have taken Van Weverke's illiteracy thesis seriously as an explanation for urban industrial locations in this era; and it is surely contradicted by the subsequent expansion of major urban cloth industries, first in Brabant, then in Italy, Holland, and Normandy, the latter by the mid-fourteenth century, after their mercantile-industrial entrepreneurs had long become fully literate and numerate.¹² Yet Van

¹⁰ Hans Van Weverke, "Landelijke en stedelijke nijverheid: Bijdrage tot de oudste geschiedenis van de Vlaamse steden," *Verslag van de algemene vergadering der leden van het Historisch Genootschap, Utrecht* (1951), 37-51, reprinted in his *Miscellanea Mediaevalia: Verspreide opstellen over economische en sociale geschiedenis van de middeleeuwen* (Ghent, 1968), 365-80; Hans Van Weverke, "Industrial Growth in the Middle Ages: The Cloth Industry in Flanders," *Economic History Review*, 2d ser., 6 (1954): 237-45, reprinted in his *Miscellanea Mediaevalia*, 381-90.

¹¹ Van Weverke, "Stedelijke nijverheid," 376; Van Weverke, "Cloth Industry," 244-45; Henri Pirenne, "L'instruction des marchands au moyen âge," *Annales d'histoire économique et sociale* 1 (1929), reprinted in *Histoire économique de l'occident médiéval*, ed. Emile Coornaert (Bruges, 1951), 551-74.

¹² For Brabant (with Mechelen) and Holland, see sources cited in the bibliographic appendix and n. 3. For Normandy, see Michel Mollat, "La draperie normande," in *Produzione, commercio, e consumo dei panni di lana nei secoli XIII-XVII*, ed. Marco Spallanzani (Florence, 1976), 403-21. For Florence and other Italian industrial towns, see Alfred Doren, *Studien aus der Florentiner Wirtschaftsgeschichte*, vol. 1, *Die Florentiner Wollentuchindustrie* (Stuttgart, 1901); Hidetoshi Hoshino, *L'arte della lana in Firenze nel basso medioevo: il commercio della lana e il mercato dei panni fiorentini nei secoli XIII-XV* (Florence, 1980); Hidetoshi Hoshino, "The Rise of the Florentine Woollen Industry in the Fourteenth Century," in *Cloth and Clothing in Medieval Europe: Essays in Memory of Professor E. M. Carus-Wilson*, ed. N. B. Harte and K. G. Ponting (London, 1983), 183-204; Franco Franceschi, *Oltre il "tumulto": I lavoratori fiorentini dell'Arte della Lana fra Tre et Quattrocento* (Florence, 1993); E. M. Carus-Wilson, "The Woollen Industry," in *Cambridge Economic History of Europe*, vol. 2, *Trade and Industry in the Middle Ages*, ed. M. M. Postan and Edward Miller, 2d ed. (Cambridge, 1987), 646-57. In coming to produce much higher-valued luxury quality woollens, the Florentine *Arte della Lana* superseded both the *Arte di Calimala* (finishing imported northern cloths) and crafts that had produced a wide range of cheap semi-worsted textiles. See nn. 55-56, 67, 96-99.

Werveke's implicit concept of supervision and transaction costs, deserving more serious consideration than it has so far received, will be revisited later in this study.¹³

The rest of Van Werveke's rather complex thesis is even more important in illuminating the severe internal conflicts that beset the Flemish cloth industry from the later thirteenth century, i.e., the essence of his anti-urban case. In his view, Flemish merchant-drapers had found little incentive to shift cloth production to rural sites in the uncertain hope of lowering costs, so long as foreign competition offered little threat to the supremacy and profitability of the Flemish-Artesian urban draperies. But from the 1260s (if not earlier), when such an external threat did indeed emerge from neighbouring Brabantine cloth towns, some Flemish merchant-drapers did begin to subcontract production to adjacent rural draperies, or to supplement their textile inventories from such sources. Not surprisingly, the quasi-guilds (*ambachten*) of textile craftsmen in the major Flemish towns strenuously opposed any such rural manufacturing that threatened their own livelihoods. They also fiercely resisted the alternative policy of the merchant-draper oligarchies, who then firmly controlled the town governments: wage regulation to reduce that cost differential, a policy particularly painful in an era of steadily rising population and soaring food prices.¹⁴

In brief, according to this and other related interpretations, leaders of the textile crafts sought aid from the Flemish count, Guy de Dampierre, who had his own agenda in opposing the governing urban oligarchies; and those town governments in turn appealed to the count's overlord, the French king, Philip IV. Politically complex, bitter, occasionally bloody strife ensued from the 1270s, culminating in the famous Battle of the

¹³ See below, nn. 120-24. For studies on transaction costs, see in particular those of the Nobel-prize winner Douglass North, "Government and the Cost of Exchange in History," *Journal of Economic History* 44 (June 1984): 255-64; Douglass North, "Transaction Costs in History," *Journal of European Economic History* 14 (Winter 1985): 557-76; Douglass North and Robert P. Thomas, *The Rise of the Western World: A New Economic History* (Cambridge, 1973), 79-85, 89, 93-94, 134-48; and also Clyde G. Reed, "Transactions Costs and Differential Growth in Seventeenth Century Western Europe," *Journal of Economic History* 33 (March 1973): 177-90.

¹⁴ For urban strife in this period, which involved much more than just wage disputes, see Van Werveke, "Cloth Industry," 240-41; Van Werveke, "Stedelijke nijverheid," 375-79; Carlos Wyffels, *De oorsprong der ambachten in Vlaanderen en Brabant* (Brussels, 1951); G. Doudelez, "La révolution communale de 1280 à Ypres," *Revue des questions historiques* 132 (March 1938): 58-78; 132 (September 1938): 3-25; 133 (January 1939): 21-70; and Agatha Bardool, "The Urban Uprising at Bruges, 1280-81: Some New Findings about the Rebels and the Partisans," *Revue belge de philologie et d'histoire/Belgisch tijdschrift voor filologie en geschiedenis* 71 (1994): 761-91. For neo-Malthusian arguments, see nn. 57-60 below.

Golden Spurs at Kortrijk (Courtrai), in July 1302, when the count's forces and Flemish urban militias (the *clauwaerts*), dominated by textile craftsmen, surprisingly defeated the French cavalry and helped overthrow the pro-French *leliaert* merchant oligarchies.¹⁵

In many common Pirenne-influenced interpretations, the urban craft guilds subsequently gained strong aldermanic representation in the restructured, supposedly more "democratic" Flemish town governments, while merchants, merchant-drapers, and others of the so-called *poorterie*, now supposedly weakened by steadily growing foreign dominance in the textile trades, found themselves relegated to a lesser political status.¹⁶ Yet, just two years after their humiliation at Kortrijk, the French defeated the Flemish forces, by sea at Zierikzee, and on land at Mons-en-Pèvele (1304), forcing the Flemish towns and the count (now Robert de Bethune) to accept the onerous Peace of Athis-sur-Orge (1305), which, inter alia, required the Flemish to surrender their major cloth towns of Lille and Douai, pay a crushing indemnity, and compensate all despoiled *leliaerts*. If by no means all of the Flemish *poorterie* were necessarily *leliaerts*, the *poorterie* evidently continued to dominate most of the Flemish town governments, usually in alliance with other socio-economic factions, at least up to the revolutionary era of Jacob Van Artevelde (a landowning *poorter*), from 1338 to 1349, when the count's forces overthrew the weaver-dominated regime, which, in July 1345, had replaced that of the assassinated Van Artevelde.

During the post-Kortrijk years, to be sure, the Flemish urban craft guilds did obtain fuller legal recognition, with town-sanctioned charters, considerable jurisdictional powers, and the right to choose their own deans and officers; and many guild craftsmen did become aldermanic *schepenen* (*échevins*), though usually as individuals rather than as formal guild representatives (in Ghent, at least, before the 1360s).¹⁷ To the

¹⁵ See Henri Nowe, *La bataille des éperons d'or* (Brussels, 1945), 45-93; Nicholas, *Medieval Flanders*, 180-216. The term *clauwaerts* represented the count's banner, with the lion's claw; the *leliaerts*, the French royal fleur-de-lys.

¹⁶ See Pirenne, *Histoire de Belgique*, 1: 225-56; Hans Van Werveke, "Der flandrische Eigenhandel im Mittelalter," *Hansische Geschichtsblätter* 61 (1936): 7-24, reprinted in his *Miscellanea Mediaevalia*, 45-59; François-L. Ganshof, "Staatkundige geschiedenis," and Hans Van Werveke, "De ekonomische geschiedenis," both in *Geschiedenis van Vlaanderen*, vol. 2, *Middeleeuwen*, ed. L. Van der Essen and François-L. Ganshof (Amsterdam, 1937), 39-62, 191-253; Frans Blockmans, *Het Gentsche stadspatriciaat tot omstreeks 1302* (Antwerp and The Hague, 1938); Henri Nowe, *La bataille*, 13-82; Van Werveke, *Gand*, 32-40, 48-65; Lestocquoy, *Villes de Flandre*, 131-74; Van Werveke, "Cloth Industry," 240-45. See also the sources cited in the bibliographic appendix.

¹⁷ For the foregoing, see Van Werveke, *Gand*, 48-64; Van Houtte, *Bruges*, 30-38; Paul

extent that the urban textile crafts did gain much greater independence and at least some indirect role in the town governments, their limited victory was only a Pyrrhic one that served to exacerbate labour strife within the Flemish urban cloth industry during the fourteenth century. In the *drie steden* of Ghent, Ypres, and Bruges, aldermanic members from the textile guilds could exercise influence only as individuals in collaboration with the *poorterie* and other craft and mercantile guilds, who frequently exploited the growing divisions amongst the two leading textile crafts, the weaver-drapers and fullers; and in Ghent the shearer-finishers and dyers were relegated to the *kleine neringe* or small-guilds collective.¹⁸

By the early to mid-fourteenth century, with the economic decline of the merchant-drapers, the organization of the Flemish cloth industry had fundamentally changed. Dependent on other merchants, foreign (Italian, German, English) and domestic, for wool supplies and cloth-marketing, the master-weavers had become the dominant industrial entrepreneurs: buying and putting-out the wools, organizing production, hiring

Rogghé, "Het Gentsche stadsbestuur van 1302 tot 1345: en een en ander betreffende het Gentsche stadspatriciaat," *Handelingen der maatschappij voor geschiedenis en oudheidkunde te Gent*, new series, 1 (1944): 135-63; Willem Blockmans, "Revolutionaire mechanismen in Vlaanderen van de 13de to de 16de eeuw," *Tijdschrift voor sociale wetenschappen* 2 (1974): 123-40; Blockmans, "Vers une société urbanisée," 66-83; and especially the following: Nicholas, *Town and Countryside*, 53-75, 173-200; David Nicholas, "The Governance of Fourteenth-Century Ghent: The Theory and Practice of Public Administration," in Bachrach and Nicholas, *Law, Custom, and the Social Fabric*, 235-62; Nicholas, "Economic Reorganization," 3-29; Nicholas, *The Metamorphosis of a Medieval City: Ghent in the Age of the Arteveldes, 1302-1390* (Lincoln, 1987), 1-16; David Nicholas, *The Van Arteveldes of Ghent: The Varieties of Vendetta and the Hero in History* (Ithaca, 1988), 1-71; Nicholas, *Medieval Flanders*, 186-224. But even Nicholas concedes that "here the issue [of political changes] is clouded" (201), noting that in May 1304, Ypres's acceptance of a comital verdict to restore peace and order was made under the seals of the town and its five guilds (*ambachten*): weavers, fullers, shearers, butchers, and fishmongers, along with the seals of the two civic captains for all the other guilds (198). Furthermore, "each guild was to choose a captain from among its members to keep the peace." According to an unchallenged statement of Pirenne, *Early Democracies*, 172-75, by the "middle of the fourteenth century," the communal government of Bruges consisted of nine *leden*: (1) the *poorterie*; (2) the textile guilds (weavers, fullers, shearers, and dyers); (3) the butchers and fishmongers; (4) 17 *kleine neringen* (lesser crafts); (5) the *hamere* or metal-working crafts; (6) the *ledre* or leather-working crafts; (7) the *naelde* or needle-working crafts; (8) the bakers; and (9) the *makelaars* or merchant-brokers. For Ypres, its four *leden* were: (1) the *poorterie*, combined with the butchers, fishmongers, dyers, and shearers; (2) the *vullerie* or fullers; (3) the *weweambacht* or weaver-drapers; and (4) *gemeene neeringen*, all the remaining "common" small-crafts. In Ghent, by the 1360s, the four major aldermanic groups were: the *poorterie*, the weaver-drapers, the fullers, and the 53 small or common crafts; but the fullers, as noted later, were soon excluded.

¹⁸ See sources cited in the bibliographic appendix and nn. 14-17, 20.

combers, carders, spinners, weaving assistants—and also fullers. Of these employees, only the fullers were guild-organized, with some power to contest the wages that the weaver-drapers sought to impose, while the professional dyers and shearers earned fees, not wages, from various clients: domestic drapers, brokers, and foreign merchants. With very narrow profit margins, the weaver-drapers, in Van Werveke's view, were caught in a worsening cost-price squeeze during the fourteenth century, between chiefly foreign merchants, for both wool and cloth. Such adverse circumstances were gravely aggravated by sharp increases in English wool prices, and the growth of foreign competition in European cloth markets, which were now suffering ever more severe contraction, with chronic warfare, then plagues, and consequent depopulation. Thus, as he argued, many of the urban revolts and civil wars of the fourteenth century directly or indirectly involved clashes between weavers and fullers over control of urban industrial and wage legislation.¹⁹ Other urban revolts were directed against the count, for varied reasons much too complex to discuss here. But all of these post-Kortrijk revolts (1319-20, 1323-28, 1337-49, 1360-61, 1379-85), manifesting the cloth towns' economic and political instability, and thus frequently involving foreign military intervention, seriously disrupted production and marketing, to the obvious advantage of their foreign competitors.²⁰ For late-medieval

¹⁹ Hans Van Werveke, "De economische en sociale gevolgen van de muntpolitiek der graven van Vlaanderen (1337-1433)," *Annales de la Société d'Emulation de Bruges* 74 (1931): 1-15, reprinted in his *Miscellanea Mediaevalia*, 243-54; Van Werveke, "Economische geschiedenis," 231-54; Hans Van Werveke, *Jacques Van Artevelde* (Brussels, 1943), 24-109; Hans Van Werveke, *De koopman-ondernemer en de ondernemer in de Vlaamse lakennijverheid van de middeleeuwen* (Antwerp, 1946); Van Werveke, *Gand*, 48-65; Hans Van Werveke, "Currency Manipulation in the Middle Ages: The Case of Louis de Male, Count of Flanders," *Transactions of the Royal Historical Society*, 4th series, 31 (1949): 115-27, reprinted in his *Miscellanea Mediaevalia*, 255-67; Hans Van Werveke, "Het ambachtswezen te Gent," *Fédération archéologique et historique de Belgique: Annales du XXXIIIe congrès* (Tournai, 1951), 363-37, reprinted in his *Miscellanea Mediaevalia*, 392-96; Van Werveke, "Cloth Industry," 240-45. See also the next note.

²⁰ See Pirenne, *Histoire de Belgique*, 1: 273-326, 349-68; Pirenne, *Belgian Democracy*, 76-133, 142-80; Victor Fris, "Les origines de la réforme constitutionnelle de Gand de 1360-1369," *Annales du XXe congrès de la fédération archéologique et historique de la Belgique* 3 (1907): 421-59; Ganshof, "Staatkundige geschiedenis," 49-99; Paul Rogghé, "De samenstelling der Gentse schepenbanken in de 2de helft der 14de eeuw: en een en ander over de Gentse poorterij," *Handelingen der maatschappij voor geschiedenis en oudheidkunde te Gent*, new series 4 (1950): 22-31; R. De Muynck, "De Gentse oorlog (1379-1385): Oorzaken en karakter," *Handelingen der maatschappij van geschiedenis en Oudheidkunde te Gent*, new series 5 (1951): 305-18; Lestocquoy, *Villes de Flandre*, 131-74; Richard Vaughan, *Philip the Bold: The Formation of the Burgundian State* (London, 1962), 19-38; Nicholas, *Stad en platteland in de middeleeuwen*, 25-82; Nicholas, *Metamorphosis*, 1-16, 135-77; Nicholas, *The Van Arteveldes*, 1-71, 108-88; Nicholas, "Governance," 235-60; Nicholas, *Medieval Flanders*, 259-322; Marc Boone and Hanno Brand, "Vollersoproeren en collectieve actie in Gent en Leiden in

Flanders, certainly, this criticism that guilds posed an impediment to textile manufacturing through their habitual strife may stand. At the same time, however, it must also be admitted that urban draperies elsewhere in the Low Countries, especially in Leiden, were not free from similar if much less bloody and prolonged industrial strife, even though their textile craft-guilds did not exercise the same political powers as those in the Flemish towns.²¹

Obviously, with such worsening urban political and economic conditions, Flanders did experience some relative shift of textile production from the *drie steden* to smaller towns and to some villages in the "countryside" during the fourteenth century, even though small-town and village cloth-making had become quite substantial by the thirteenth century.²² Somewhat surprisingly, Van Werveke understated the growth of rural cloth-making in later-medieval Flanders. In his view, "rural" or small-town draperies successfully flourished only in south-west Flanders,

de 14^e en 15^e eeuw," *Tijdschrift voor sociale geschiedenis* 19 (May 1993): 168-92; John Munro, "Industrial Entrepreneurship in the Late-Medieval Low Countries: Urban Draperies, Fullers, and the Art of Survival," in *Entrepreneurship and the Transformation of the Economy (10th-20th Centuries): Essays in Honour of Herman Van der Wee*, ed. Paul Klep and Eddy Van Cauwenberghe (Leuven, 1994), 377-88. In Ghent, from 1323 to 1338, the weavers were excluded from a fuller-dominated regime; from 1338 to 1349 the weavers dominated a regime that included some fullers; in 1349 the weavers were again excluded but were readmitted in 1358, and then succeeded in evicting the fullers by, or shortly after, 1361. In Bruges and Ypres, however, the fullers' guilds did retain their aldermanic seats, though with minimal powers. See nn. 17, 19, 106-7.

²¹ For Leiden and the frequent fullers' strikes against the merchant-draper dominated *vroedschap* and *gerecht* in the town government, see sources in the bibliographic appendix and n. 107.

²² See Georges Espinas and Henri Pirenne, *Recueil de documents relatifs à l'histoire de l'industrie drapière en Flandre*, part 1, *Des origines à l'époque bourguignonne*, 4 vols. (Brussels, 1906-24); and Renée Doehaerd, ed., *Les relations commerciales entre Gènes, la Belgique, et l'Outremont, d'après les archives notariales génoises aux XIII^e et XIV^e siècles*, 3 vols. (Brussels, 1941): for such Flemish villages as Diksmuide (Dixmude), Poperinge, Hondschoote, Gistel (Ghistelles), and Cassel, in which export-oriented cloth production can be documented for the twelfth and thirteenth centuries. Some of this rural production (before 1320), however, was subordinate to and controlled by the large urban draperies. See especially Coornaert, *Hondschoote*, 1-26; Coornaert, "Draperies rurales," 62-65, 69-80; Nicholas, *Town and Countryside*, 76-116 ("Urban and Rural Textiles to 1338"); Adriaan Verhulst, "L'économie rurale de la Flandre et la dépression économique du bas moyen âge," *Études rurales* 10 (1963): 68-80; Derville, "Draperies flamandes," 353-70; Van der Wee, "Structural Changes," 203-21; Patrick Chorley, "The Cloth Exports of Flanders and Northern France During the Thirteenth Century: A Luxury Trade?" *Economic History Review*, 2d ser., 40 (1987): 349-79; John Munro, "Industrial Transformations in the North-West European Textile Trades, c. 1290-c. 1340: Economic Progress or Economic Crisis?" in *Before the Black Death: Studies in the "Crisis" of the Early Fourteenth Century*, ed. Bruce Campbell (Manchester and New York, 1991), 110-48, reprinted in Munro, *Textiles, Towns, and Trade*; Munro, "Origins of the English 'New Draperies,'" 35-127.

where Ypres, the weakest of Flanders' *drie steden*, failed to enforce its ban on rural cloth-making within its own castellany during the fourteenth and fifteenth centuries.²³

That view, however, though repeated by many historians, requires some significant qualifications.²⁴ The *drie steden* were never empowered to suppress the many small-town or quasi-village draperies that had already obtained comital or seigniorial charters. Furthermore, the *drie steden*, who themselves evidently continued to rely on rural yarn production, tolerated much rural textile manufacturing, while concentrating their opposition on those village draperies that were imitating their own fine woollens. Certainly from the 1330s, the *drie steden* had much to fear on these very grounds from the growth of the so-called *nouvelles draperies*, many located in various small towns and villages of south-west Flanders, but most outside the jurisdiction of the *drie steden*. Finally, Van Werveke's contention that, by the mid-fifteenth century, these *nouvelles draperies* had "succeeded in outstripping the old urban industry," a view commanding widespread support, deserves a closer scrutiny that must be postponed until later in this study.²⁵

England's industrial transformations in textile manufacturing: the "urban industrial crisis," rural cloth-making, and rural fulling-mills, ca. 1290-1340

As just noted, however, the Flemish urban draperies had encountered a far more dangerous threat during the fourteenth century from England,

²³ Van Werveke, "Cloth Industry," 244-45.

²⁴ For the classic views, which unfortunately and quite incorrectly also refer to the *nouvelles draperies* as *draperies légères*, producing supposedly cheap, light cloths, see: Henri Pirenne, "Une crise industrielle au XVI siècle: la draperie urbaine et la 'nouvelle draperie' en Flandre," *Bulletins de l'Académie Royale de Belgique, Classe des Lettres* (1905), reprinted in *Histoire économique de l'occident médiéval*, ed. Emile Coornaert (Bruges, 1951), 621-43; Verlinden, "Draps flamands," 85-112. For other, alternative views, see especially Coornaert, *Hondschoote*, 1-26; Coornaert, "Draperies rurales," 60-96; Federigo Melis, "La diffusione nel Mediterraneo occidentale dei panni di Wercicq e delle altre città della Lys attorno al 1400," in *Studi in onore di Amintore Fanfani*, vol. 3, *Medioevo* (Milan, 1962), 219-43; Federigo Melis, "L'industrie drapière au moyen âge dans la vallée de la Lys, d'Armentières à Gand," in *Hulde aan Paul Ferrant-Dalle* (Wervik, 1967), 151-61; Nicholas, *Town and Countryside*, 76-116, 203-21; John Munro, "Monetary Contraction and Industrial Change in the Late-Medieval Low Countries, 1335-1500," in *Coinage in the Low Countries (800-1500): Third Oxford Symposium on Coinage and Monetary History*, ed. Nicholas Mayhew (Oxford, 1979), 110-61; John Munro, "Economic Depression and the Arts in the Fifteenth-Century Low Countries," *Renaissance and Reformation* 19 (1983): 235-50, reprinted in Munro, *Textiles, Towns, and Trade*; Munro, "Industrial Transformations," 110-16; Munro, "Origins of the English 'New Draperies,'" 35-127.

²⁵ Van Werveke, "Cloth Industry," 244-45; and the sources cited in the previous note,

whose cloth industry had supposedly already undergone a complete transformation from an urban to a rural structure. During the later twelfth and thirteenth centuries, cloth-making had indeed been a major industrial activity in most of England's leading towns, especially along the eastern seaboard—in York, Lincoln, Louth, Stamford, Beverley, Winchester, Oxford, Nottingham, Leicester, Gloucester, Exeter, Coventry, Norwich, and London itself; but, according to most historians, these urban industries were suffering irredeemable decay by the early fourteenth century.²⁶

beginning with Pirenne, with whom this view began. See nn. 98-99, 125, 135-37, 142-43.

²⁶ For the literature of that urban industrial decline, see: William Cunningham, *The Growth of English Industry and Commerce*, vol. 1, *During the Early and Middle Ages* (Cambridge, 1890), 282-85; William J. Ashley, *An Introduction to English Economic History*, vol. 2, *The End of the Middle Ages* (London, 1893; 4th ed., 1893), 193-95; Louis Salzman, *English Industries of the Middle Ages*, new ed. (Oxford, 1923), 197-205; Ephraim Lipson, *The History of the Woollen and Worsted Industries* (London, 1921), 11-13; Ephraim Lipson, *The Economic History of England*, vol. 1, *The Middle Ages* (London, 1937), 448-56; E. M. Carus-Wilson, "An Industrial Revolution of the Thirteenth Century," *Economic History Review*, 1st ser., 11 (1941): 182-210, reprinted in E. M. Carus-Wilson, *Essays in Economic History* (London, 1954), 1: 41-60, and also in E. M. Carus-Wilson, *Medieval Merchant Venturers: Collected Studies* (London, 1954), 183-210; E. M. Carus-Wilson, "The English Cloth Industry in the Twelfth and Thirteenth Centuries," *Economic History Review*, 1st ser., 14 (1944), reprinted in Carus-Wilson, *Medieval Merchant Venturers*, 211-38; E. M. Carus-Wilson, "The Woollen Industry," in *Cambridge Economic History*, ed. M. M. Postan and E. Rich (Cambridge, 1952), 2: 398-29, reissued, with a few revisions in the 2d rev. ed. (Cambridge, 1987), 2: 657-90; J. N. Bartlett, "The Expansion and Decline of York in the Later Middle Ages," *Economic History Review*, 2d ser., 12 (1959-60): 17-33; A. R. Bridbury, *Economic Growth: England in the Later Middle Ages* (London, 1962), 70-82; Herbert Heaton, *The Yorkshire Woollen and Worsted Industries from the Earliest Times to the Industrial Revolution*, 2d ed. (Oxford, 1965), 1-88; Edward Miller, "The Fortunes of the English Textile Industry in the Thirteenth Century," *Economic History Review*, 2d ser., 18 (1965): 64-82; Paul Harvey, "The English Trade in Wool and Cloth, 1150-1250: Some Problems and Suggestions," in Spallanzani, *Produzione, commercio e consumo*, 369-76; J. L. Bolton, *The Medieval English Economy, 1150-1500* (London, 1980), 150-206; Andrew Woodger, "The Eclipse of the Burel Weaver: Some Technological Developments in the Thirteenth Century," *Textile History* 12 (1981): 59-76; A. R. Bridbury, *Medieval English Clothmaking: An Economic Survey* (London, 1982), 27-36; Patrick Chorley, "English Cloth Exports During the Thirteenth and Early Fourteenth Centuries: the Continental Evidence," *Historical Research: The Bulletin of the Institute of Historical Research* 61, no. 144 (1988): 1-10; Michael Gervers, "The Textile Industry in Essex in the Late 12th and 13th Centuries: A Study Based on Occupational Names in Charter Sources," *Essex Archaeology and History: The Transactions of the Essex Society for Archaeology and History*, 3d series, 20 (1989): 34-73; Edward Miller and John Hatcher, *Medieval England: Towns, Commerce and Crafts, 1086-1348* (London, 1995), 93-127; Wendy Childs, "The English Export Trade in Cloth in the Fourteenth Century," in *Progress and Problems in Medieval England: Essays in Honour of Edward Miller*, ed. Richard Britnell and John Hatcher (Cambridge and New York, 1996), 121-47; Munro, "The Origins of the English 'New Draperies,'" 35-127. Bridbury disputes the thesis of general urban decline, though not evidence for post-1300 decline in some of the formerly major textile towns.

In a renowned thesis that used to dominate the literature, the late Eleanora Carus-Wilson provided a very plausible explanation for not only this rural transformation but also for the English cloth industry's subsequent victory over all its foreign rivals: an "industrial revolution of the thirteenth century" in the spread of water-powered fulling mills.²⁷ Fulling, it must be stressed, was an absolutely essential process in producing genuine heavy-weight good quality woollens, using a combination of water, soap, fullers' earth (hydrous aluminum silicates), urine, along with high levels of pressure and heat for pounding the woven cloth: in order to scour and cleanse it of the butter and other oils used in preparing the yarns, and to force the very short, fine, scaly-fibred wool fibres to shrink, interlock, and mat together as felted cloth. Traditionally, this process, which shrank the surface area by as much as 50 percent, thus giving the cloth its great density and weight, had been achieved underfoot, as it were, through the arduous labour of two or three men who trampled upon the woven cloth in a vat containing this unpleasant mixture, over a period of three to five days. The water-powered mill, using two very large and heavy oaken hammers, pounding the cloth up to 40 times a minute, could achieve the same task with one man in a matter of hours. In contrast to the manufacture of true woollens, most cheap, coarse, light-weight textiles—such as worsteds, says, serges, biffes, stamforts, etc.—underwent only very cursory fulling, chiefly scouring to cleanse the cloth, or much less extensive fulling, for those hybrid serge-type fabrics composed of short-stapled, greased, woollen wefts, and long-stapled dry worsted warps.²⁸

Undoubtedly Carus-Wilson did exaggerate the benefits and consequences of mechanized fulling, thereby inviting those attacks that have largely, though quite unjustly, succeeded in discrediting her thesis. In the first major assault, Edward Miller doubted that mechanized fulling "could have had the large [economic] consequences attributed to it," when "fulling then accounted for about 7-12 percent of the cost of the main manufacturing processes."²⁹ Furthermore, in replying to Carus-Wilson's

²⁷ Carus-Wilson, "Industrial Revolution," 183-210; Carus-Wilson, "Woollen Industry" (1987), 669-90. See also Paolo Malanima, "The First European Textile Machine," *Textile History* 17 (1986): 115-28.

²⁸ See the previous note, and John Munro, "Textile Technology," in *The Dictionary of the Middle Ages*, ed. Joseph R. Strayer et al., 13 vols. (New York, 1982-89), 1: 693-711, reprinted in Munro, *Textiles, Towns, and Trade*, 1-27; Munro, "Industrial Entrepreneurship," 377-88.

²⁹ Miller, "English Textile Industry," 71-72; but subsequently, in Miller and Hatcher, *Medieval England*, 96, table 2.1, he provided data to indicate that fulling and finishing

point that manorial lords had spurred the growth of a rural and a much more mechanized industry by investing in fulling mills, Miller noted that such lords would have exploited their monopoly powers over cloth-working tenants—powers that Carus-Wilson herself had emphasized—by charging relatively high fees (*rents*, for economists), which probably would have eliminated any cost advantage of fulling-mills.³⁰ In an even more trenchant and convincing criticism, A. R. Bridbury contended that, during the later thirteenth and early fourteenth century, the very era of Carus-Wilson's supposed "industrial revolution," any resort to fulling mills would likely have raised production costs, not lowered them, by substituting very expensive capital for what had become dirt-cheap labour in a now densely populated country, especially in the grain-growing or mixed farming regions of the Midlands, East Anglia, and the south-east.³¹

Apart from A. R. Bridbury, few of Carus-Wilson's critics have questioned her view that the English countryside did offer the later-medieval textile industry significant advantages for all, or virtually all, of the industrial processes of cloth-manufacturing, including fulling. Indeed, Miller and several other historians have argued that during the later thirteenth and early fourteenth centuries, many urban clothiers, burdened by rising industrial costs, soaring taxes, and rigid guild restrictions, deserted the traditional eastern textile towns to relocate in the countryside, as the only effective competitive response to a supposed influx of supposedly cheaper and better quality Flemish woollens.³² The primary rural locations so chosen for the "new" English cloth industries, however, were not those adjacent to the major textile towns of eastern lowland England (in Yorkshire, Lincolnshire, Norfolk, Leicestershire, Huntingdonshire,

together accounted for 16% of manufacturing costs at Beaulieu Abbey (1270) and 20% at Laleham (1294-95). See also T. H. Lloyd, "Some Costs of Cloth Manufacture in Thirteenth-Century England," *Textile Industry* 1 (1968-70): 332-36. These data do not indicate, however, whether the fulling was undertaken by a water-mill or by the fullers' feet.

³⁰ Cf. Carus-Wilson, "Industrial Revolution," 199, 201: "the [manorial lords] insisted also that all cloth made on the manor must be brought to the manorial mill and there fulled by the new mechanical method. . . ."

³¹ Bridbury, *Medieval English Clothmaking*, 16-26. He also cited the presence of fulling mills in many other areas of rural England that never became significant cloth-exporting regions.

³² See Miller, "English Textile Industry," 74-81; Miller and Hatcher, *Medieval England*, 107-24. For similar views, see Woodger, "Eclipse of the Burel Weaver," 59-76; Harvey, "English Trade," 369-76. For a response to these views and a new interpretation of the English crisis, see John Munro, "Origins of the English 'New Draperies,'" 56, 66-68; and "The 'Industrial Crisis' of the English Textile Towns, 1290-1330," in *Thirteenth-Century England*, ed. Michael Prestwich, Richard Britnell, Robin Frame, 7 (1998), 103-41.

Northamptonshire, Oxfordshire, Middlesex), but primarily in the West Country (Devon, Somerset, Gloucestershire, Worcestershire, Wiltshire) and secondarily in East Anglia (Suffolk and Essex). That geographical shift is more or less ignored by Carus-Wilson's critics, who focus instead on the obvious, oft-proclaimed benefits of a rural location in general, veritably as a mantra: freedom from guilds, freedom from urban governments and their taxes, and low-wage and thus presumably lower-cost peasant labour.³³ Such factors were not only more important than fulling mills but preceded them as well, in the sense that such mills spread only after cloth-making had already become fully established: for who would invest in a capital-costly mill without a large preexisting clientele of local, resident cloth artisans? For Miller, the true importance of rural locations lay in cheap labour for the carding, combing, spinning, and weaving processes, which together accounted for 70 to 90 percent of the pre-finishing labour costs in producing woollens.³⁴

For Carus-Wilson, however, the true importance of the generally hilly, rural West Country regions, to explain why it indeed became the primary zone of the new English cloth industry, was in offering some of the best possible sites for mechanical fulling mills: with fast-flowing streams that could provide much more efficient and thus cheaper power for the traditional undershot water-wheels, which revolved by the direct impact of the river-flow on their veins or paddles; and, secondly, with lower opportunity-cost sites on such streams in these much more sparsely settled and largely pastoral rural regions.³⁵ The traditional eastern lowland textile towns and their immediately adjacent countryside in contrast suffered from slow-moving streams, presumably too weak to power fulling mills. Furthermore, this far more densely populated urban region of late-thirteenth-century England would have provided far more competition for the use of scarce river sites, especially in the larger towns, thus raising the opportunity costs in establishing fulling mills there.

Bridbury and other critics have pointed out, however, that from the time of Domesday thousands of water-mills can be found in eastern low-

³³ See the sources in nn. 4, 5, 8, 9, 26, 29, 32, 34.

³⁴ Miller, "English Textile Industry," 72-74, 77; Miller and Hatcher, *Medieval England*, 107-14, 120-27, and esp. 95, table 2.1. They estimated that spinning accounted for 40%-50% of manufacturing costs, and weaving for 30%-40%; and presumably the spinning-cost estimates including wool-preparation, combing (warps), and carding (wefts).

³⁵ Carus-Wilson, "Industrial Revolution" (1954), 183-210; see Miller, "English Textile Industry," 72. I have deduced from their writings, which do not employ this language, the basic economic principles involved in their arguments.

land England; and furthermore, that almost all of them served as grain mills, because most manorial lords and towns found flour-milling far more profitable than mechanical fulling. Indeed, very recently Richard Holt has endorsed that contention, after examining the revenues from hundreds of manorial accounts in this region.³⁶ That valid point, however, does not really contradict the implicit assumptions of the opportunity-cost argument; and it is doubtful therefore that it would be equally valid for the more pastoral, thinly populated West Country, especially in the later Middle Ages (for reasons to be noted below).

Carus-Wilson's critics have also overlooked an important technological point: that these eastern mills, in using direct rotary power to grind flour, could not be so readily adapted for fulling. For fulling mills require cam shafts and trip-hammers to convert rotary into reciprocal power, i.e., to lift and drop the heavy oaken fulling-stocks. That in turn required a much a more efficient form of water power, which, however, could be produced by using overshot wheels on any slow-moving river. For they use only about one-quarter as much water as undershot wheels, and derive their power from the weight of the water falling on to the buckets attached to the wheel; and thus the speed of the stream is largely irrelevant. Their disadvantage, in terms of production costs, was a very large capital investment and much higher maintenance costs. Overshot mills were far larger and more complicated in structure than undershot mills, especially in requiring canals to divert the river water, mill ponds and sluice gates to store the water, and mill races with high wooden chutes to pour the water over the top of the wheel, i.e., onto the attached buckets. On the other hand, the location of these structures at some distance from the river may have meant lower opportunity costs and thus lower rentals than for undershot mills located directly on the river site, provided that the necessary canals did not impede river navigation, especially in dams to create millponds, or interfere with alternative uses of the river site.³⁷

³⁶ Richard Holt, *The Mills of Medieval England* (Oxford, 1988), 158; see also Terry S. Reynolds, *Stronger Than a Hundred Men: A History of the Vertical Water Wheel* (Baltimore, 1983), 82-83, 113-14; Leslie Syson, *British Water-Mills* (London, 1965), 76-82.

³⁷ Holt, *Mills*, 157, also denying that mills in the south-west, with swifter streams, were any more profitable; but for contrary evidence, see nn. 40-41, 75-83. The comprehensive map in R. A. Pelham, *Fulling Mills*, Society for the Protection of Ancient Buildings, no. 5 (1958), reprinted in Bridbury, *Medieval English Clothmaking*, 18, demonstrates that the very regions cited by Carus-Wilson for offering the best locations for fulling-mills—namely the south-west and the north—were the very regions that contained the overwhelming majority of fulling-mill sites. In response Bridbury retorted “that mills

Furthermore, overshot wheels might have provided little assistance to the later-medieval English cloth industry, despite their far greater efficiency, because of their rather late introduction into England. The very earliest evidence for them comes from a depiction in the famous Luttrell Psalter of the 1330s; and another from an archeological site at Batsford, Sussex, of this same era. Historians of technology seem generally agreed that overshot fulling-mills were not widely used within England before the early sixteenth century.³⁸ In two other respects, Carus-Wilson has also misdated her “English industrial revolution of the thirteenth century”: first, long before any fulling-mills were established in England (1173), they were being used in Italy (from 962) and Normandy (from 1086); and, secondly, in England, many more can be dated from after the 1320s than from before.³⁹

Certainly from the mid- to later fourteenth century, a large number of chiefly undershot fulling mills came to be employed throughout the English woollen industry; and Carus-Wilson’s critics have been unfair in dismissing the longer term cost advantages of this mechanical process. For quite precise data from later-medieval and early modern textile industries in the Low Countries and Italy (Florence) indicate, by various comparisons, that fulling-mills provided about a 70 percent gain over foot-fulling; and, in the late-medieval Flemish and Dutch draperies, foot-fulling accounted for about 20 percent of the draper’s valued-added manufacturing costs, which could certainly mean a major difference between his profit or loss.⁴⁰ Such comparisons, however, may indeed be

were frequently situated in parts of the country where labour supplies were least satisfactory, where raw materials were poor, and where markets were relatively inaccessible” (17), such as Cornwall, southern Wales, and the Lake District, which never became important cloth-manufacturing centres. While that is a fair comment, nevertheless the West Country and West Riding of Yorkshire did become two of the three leading centres for the reviving English cloth industry after the mid-fourteenth century.

³⁸ Reynolds, *Water-Wheel*, 10-14, 25-26, 36-46, 97-102; Syson, *Water-Mills*, 76-82 (see overshot wheel in fig. 28, p. 64, from Agricola, *De Re Metallica* of 1556); Holt, *Mills*, 128-31, with an overshot wheel shown in pl. 3, p. 130, as part of the famous fourteenth-century Luttrell Psalter.

³⁹ Malanima, “European Textile Machine,” 115-28, for the very early fulling mills in Italy and France. The map in Pelham, *Fulling Mills*, indicates that more fulling mills were established after 1330 than before, especially in the West Country. Kenneth Ponting, *The Woollen Industry of South-West England: An Industrial, Economic, and Technical Survey* (Bath and New York, 1971), 15-16, also contends that the fourteenth rather than the thirteenth century was the real era for the diffusion of fulling mills within England. For the early fourteenth century, however, see also: John Langdon, “Lordship and Peasant Consumerism in the Milling Industry of Early Fourteenth-Century England,” *Past & Present*, no. 145 (1994): 3-46.

⁴⁰ In Leiden and Leuven, in manufacturing high-quality woollens from English wools

valid only from the later-medieval and post-Plague era, when fulling mills may have acquired or increased their relative cost advantages for two major reasons: (1) the evident rise in real wages and thus labour costs, possibly if not indisputably the consequence of drastic depopulations and consequent changes in the land:labour ratios; (2) a relative fall in grain prices—relative to textile prices—especially by the early to mid-fifteenth century, which may have reduced the opportunity costs of using a water-mill for cloth fulling, especially if many grain mills had fallen out of use with the sparser populations and the falling demand for grain and thus falling prices for flour.

To complete her fulling-mill thesis, in explaining the supposedly rural nature of English cloth-making from the fourteenth century, Carus-Wilson cited obstruction from urban fullers' guilds to prevent the installation of any mills that would have led to "technological unemployment." At the most, however, she provided very misleading evidence for such opposition;⁴¹ and she grossly exaggerated the powers of medieval urban

during the 1430s, foot-fulling accounted for 19.8% of the pre-finishing "value-added" costs: 46d. *groot* Flemish, out of a total of 232.1d. (£0.967 *groot*, with £3.094 for the wool, and 214.1d. or £0.982 for the dyes, dyeing, and dressing, for a total cost of £4.953 *groot* for a Leuven broadcloth, vs. £4.450 *groot* for a pair of Leiden *voirvollen halwelaken*). In the Medici's Florentine drapery of 1556-58, water-powered fulling (including burling, scouring, and tentering) cost 0.987 florin or 5.1% of the total finishing manufacturing costs of 19.463 florins for a woollen broadcloth whose final price was 43.334 florins (with 12.977 florins for the Spanish wools = 30.0% of the price). See Nicolaas Posthumus, ed., *Bronnen tot de geschiedenis van de leidsche textielnijverheid, 1333-1795*, vol. 1, *De middeleeuwen* (The Hague, 1910-22), passim; Stadsarchief Leuven, no. 5058 (1434-35) and no. 5072 (1442-43); Van Uytven, *Stadsfinanciën*, 343; Raymond De Roover, "A Florentine Cloth Firm of Cloth Manufacturers: Management of a Sixteenth-Century Business," *Speculum* 16 (1941): 32-33, reprinted in his *Business, Banking, and Economic Thought in Late Medieval and Early Modern Europe: Selected Studies of Raymond De Roover*, ed. Julius Kirshner (Chicago, 1974), 118 (noting on 99 that "the Medici paid the fuller for his work but settled directly with the [fullers'] guild for the use of the fulling mill."). Estimates of a 35-fold gain, which seem excessive, are given in Walter Endrei, "Changements dans la productivité de l'industrie lainière au moyen âge," *Annales: E.S.C.* 26 (1971): 1296-98. But see Raymond Van Uytven, "De volmollen: motor van de omwenteling in de industriële mentaliteit," *Tijdschrift van de kring der alumni van de wetenschappelijke stichtingen* 38 (1968): 61-76, republished as "The Fulling Mill: Dynamic of the Revolution in Industrial Attitudes," *Acta Historiae Neerlandica* 5 (1971): 1-14; Raymond Van Uytven, "Technique, productivité, et production au moyen âge: le cas de la draperie urbaine aux Pays-Bas," in *Produttività e tecnologia nei secoli XII-XVII*, ed. S. Mariotti (Florence, 1981), 285-86. He provides a much more modest estimate of a 3.3-fold productivity gain for the fulling-mill, though not believing that it made a significant difference to the total price of a cloth. The issue, however, is not *total* costs and price, but *value-added* manufacturing costs. See also Munro, "Textile Technology," 705-7; and Munro, "Industrial Entrepreneurship," 377-88; and nn. 116-17 below.

⁴¹ Carus-Wilson, "Industrial Revolution" (1954), 194-209; Carus-Wilson, "Woollen

craft guilds, which, according to recent historians of late-medieval English towns, were really subservient to merchant-dominated urban governments and could not impede industrial innovations.⁴²

Crises in English and Flemish textile manufacturing, 1290-1340: Mediterranean and west European warfare, rising transaction costs, and industrial reorientation

As I have argued at length elsewhere, the undisputed decline of the major textile towns in eastern England had nothing whatsoever to do with fulling mills, urban guilds, town governments, civic taxation, or various other urban restrictions or impediments cited to explain a supposed but undocumented rise in industrial costs and thus a supposed industrial exodus to the countryside.⁴³ Nor did it have anything to do with any "growing influx" of Flemish and Brabantine woollens, a contention also quite unproved in all respects, and also unbelievable with the current industrial crisis that the major drapery towns in the cross-Channel Low Countries were themselves then undergoing. On the contrary, these traditional English textile towns had devoted their export-oriented production during the twelfth and thirteenth centuries primarily to very cheap and light fabrics directed principally to the populous Mediterranean towns (Christian and Muslim) with warm climates that provided ready markets for such textiles; most of the imports of Flemish and Brabantine textiles were far higher quality and more expensive woollens, whose commerce did not vitally affect the traditional English textile industries; and their unquestionably severe industrial crisis, from

Industry" (1987), 667-73. While the London fullers attempted, in 1298, to forbid anyone from using fulling mills (all outside the town), they succeeded only in forbidding anyone who was not the owner of the cloth to do so. See H. Thomas Riley, ed., *Monumenta Gildhallae Londoniensis: Liber Albus, Liber Custumarum et Liber Horn*, vol. 2.i, *Liber Custumarum* (London, 1859-62), 128-29: "ne face porter, mener, ne bailler, hors de la cite nul drap pur fuller as molins, fors ceux memes a qui les draps serront, et les queus draps il voillent pur lour avower" (26 Edward I). For Winchester and other urban draperies that did use fulling mills, see nn. 75-83.

⁴² See in particular Heather Swanson, "The Illusion of Economic Structure: Craft Guilds in Late Medieval English Towns," *Past & Present*, no. 121 (1988): 29-48; Heather Swanson, *Medieval Artisans: An Urban Class in Late Medieval England* (Oxford, 1989), 26-44, 107-26; and especially Stephan R. Epstein, "Craft Guilds, Apprenticeship and Technological Change in Preindustrial Europe," *Journal of Economic History* 58 (September 1998): 684-713, which similarly rejects the view that medieval craft guilds impeded technological innovations. See below, nn. 121-26.

⁴³ See Munro, "Industrial Crisis," 103-41; Munro, "Industrial Transformations," 59-76; Munro, "Origins of the English 'New Draperies,'" 56-83, and n. 26.

the 1290s to the 1330s, was the consequence of exactly the same set of destructive forces that were inflicting, at this very same time, an equally severe crisis upon the cheaper-line *sayetteries* and other *draperies légères*, in towns large and small, in both Flanders and Brabant.

That very complex set of negative economic factors had been bred by warfare, from the 1290s, throughout the entire Mediterranean basin, in western Christian, Byzantine, and Muslim realms alike, and in western Europe itself, and by the consequent disruptions to long-established European trade networks. To be sure, one might well cavil that warfare had never been absent from medieval Europe; but, from the 1290s, warfare did become far more widespread, chronic, indeed incessant, and far more costly and destructive to commerce, especially in the Mediterranean basin, than it had been earlier, in the twelfth and thirteenth centuries.⁴⁴ Flanders' own immediate plight began much closer to home, with the Anglo-French and Franco-Flemish wars, from 1293 to 1318, severely disrupting not only cloth production but even more the Champagne Fairs, which had served as the principal trading conduit to the Mediterranean basin, where most of Flanders' says and other cheap, light fabrics had been sold.⁴⁵ In the western Mediterranean itself, commercial disruptions had begun even earlier, with the Sicilian Vespers War of 1282-1302, involving most of Italy, France, Catalonia, and Aragon. Aragon-Catalonia and Castile then became embroiled in chronic, destructive warfare with neighbouring Muslim states (Granada, Morocco, Tlemcen) from 1291 to 1340. Meanwhile, in Italy, the Sicilian Vespers War had resumed as the Guelf-Ghibelline Wars of 1313-43, involving almost continuous foreign interventions, by Catalan, French, German,

⁴⁴ For the following, see Munro in n. 43 above; and also John Munro, "Patterns of Trade, Money, and Credit," in *Handbook of European History in the Later Middle Ages, Renaissance and Reformation, 1400-1600*, vol. 1, *Structures and Assertions*, ed. James D. Tracy, Thomas A. Brady Jr., and Heiko A. Oberman (Leiden, 1994), 147-95.

⁴⁵ See in particular Chorley, "Luxury Trade," 349-79; and Chorley, "English Cloth Exports," 1-10; Joseph R. Strayer, "The Costs and Profits of War: The Anglo-French Conflict of 1294-1303," in *The Medieval City*, ed. David Herlihy, H. A. Miskimin, and A. Udovitch (London and New Haven, 1977), 269-91; and Robert-Henri Bautier, "Les foires de Champagne: recherches sur une évolution historique," *Bulletin de la société Jean Bodin*, vol. 5, *La foire* (Paris, 1953), 97-145; republished in English translation as "The Fairs of Champagne," in *Essays in French Economic History*, ed. Rondo Cameron (Homewood, Ill., 1970), 42-63, who gives other reasons as well for the decline of the Fairs, most notably "Italian industrialization." But Hoshino, in *L'arte della lana in Firenze* and in "Rise of the Florentine Woollen Industry," 184-204, shows that the real growth of the Florentine woollen industry came from the 1320s, after the full decline of the Champagne Fairs; but he conversely attributes the rise of the Florentine industry to the Flemish industrial crises.

and Hungarian armies. Indeed, in the late 1320s, an Italian merchant blamed these very wars for his inability to transport northern woollens from the Champagne Fairs to Genoa.⁴⁶ Those wars were accompanied and then followed by incessant campaigns of mercenary Free Companies, who ravaged Italy north to south from the 1330s to the 1360s.⁴⁷ In the eastern Mediterranean, commercial disruptions had also begun in 1291, with the Mamluk conquest of Crusader Palestine, followed by papal bans on Muslim trade, the Genoese-Venetian naval wars (1291-99), Turkish advances into the Byzantine Empire from 1303, then depredations of Catalan mercenaries sent to oppose them (1303-12), and finally, from the 1330s, anarchic warfare in the Mongol khanates and Persia, which had become so important to Italian trade.⁴⁸ Immediately thereafter, the outbreak of the Hundred Years' War (1337-1453) and then onslaughts of bubonic plague ensured almost continuous commercial disruptions well into the fifteenth century.

Of course, despite all these adverse conditions, an international trade in textiles continued throughout the later Middle Ages, but it came to be conducted in much smaller volumes, with chiefly high-value cargoes, at far higher unit costs. Both transportation and a much broader range of transaction costs rose sharply, not so much from warfare itself as from the almost incessant piracy, brigandage, and trade bans that accompanied these wars,⁴⁹ and from the various forms of war-financing, in

⁴⁶ For the complaints of the Italian merchant on disruptions in the overland cloth trade, in May 1327: "nec per terra ire potuit communiter propter guerras que presentaliter occurrentes inter Januinos guelfos et guibelines . . ." In Dochaerd, *Les relations commerciales*, 3: 1156, no. 1869. This collection of Genoese notarial documents records a wide range of cheap, light northern textiles exported to the Mediterranean up to ca. 1320, but very few thereafter—just some "Irish says" of unknown provenance, but probably English worsteds (possibly made from Irish wools).

⁴⁷ For the foregoing, see Edouard Baratier and Félix Reynaud, *Histoire du commerce de Marseille*, vol. 2, *De 1291 à 1480* (Paris, 1951), 23-40, 304-13; G. Mollat, *The Popes at Avignon: The "Babylonian Captivity" of the Medieval Church*, trans. Janet Love, 9th ed. (New York, 1963), 67-228; Edward Armstrong, "Italy in the Age of Dante," in *The Cambridge Medieval History*, vol. 7, *Decline of Empire and Papacy*, ed. J. R. Tanner, C. W. Previté-Orton, and Z. N. Brooke (Cambridge, 1958), 1-48; Charles-Emmanuel Dufourcq, *L'Espagne catalane et le Maghrib aux XIII^e et XIV^e siècles: de la bataille de Las Navas de Tolosa (1212) à l'avènement du sultan mérinide Abou-l-Hasan (1331)* (Paris, 1966), 193-587; and sources in nn. 43-45.

⁴⁸ André-Emile Sayous, *Commerce et finance en Méditerranée au moyen âge*, ed. Mark Steele (London, 1988), esp. "Le commerce terrestre de Marseille au XIII^e siècle" [from *Revue historique* 163 (1930): 27-50]. Western states also utilized Crete, Cyprus, and Lajazzo (in Cilicia or Lesser Armenia) as intermediaries to conduct trade with the Muslim Levant, but paid a higher price in doing so. Lajazzo was conquered by the Mamluks in 1347.

⁴⁹ For evidence on this, see sources cited in nn. 43-45, 47; and also Henri Bresp, *Un*

high taxes and interest rates, trade licences at exorbitant prices, and coinage debasements.⁵⁰ Furthermore, because the transactions sector was subject to large scale-economies, depopulations and market contractions themselves raised these unit costs even further.⁵¹

In a similar vein, Van der Wee has argued that disruptions to the arterial overland continental trade routes, and in particular those involving the rapidly declining Champagne Fairs, which earlier, in the thirteenth century, had been so vital to European prosperity, produced a severe commercial contraction and then periodic depressions during the fourteenth and early fifteenth centuries. Reductions in commercial transactions on these routes had very adverse multiplier-accelerator effects, through falling investment, employment, and consumption, radiating through a complex myriad of interlacing subsidiary networks for regional and local trade, which had once served thousands of towns and villages over a vast hinterland.⁵² While a consequent shift to maritime trade

monde méditerranéen: Économie et société en Sicile, 1300-1450, 2 vols. (Rome, 1986), 1: 317, 326, 534, 549 (tables 67, 69, 130, 138).

⁵⁰ For a detailed analysis of overland transport costs in medieval Europe, especially including taxes and tolls, see Michael Postan, "The Trade of Medieval Europe: the North," in Postan and Miller, *Cambridge Economic History of Europe* (1987), 2: 182-204, emphasizing that "local taxation, war and piracy became more disturbing and more difficult to circumvent as the Middle Ages drew to their close" (204). Postan argues, however, that before then transaction costs may have accounted for a smaller proportion of total costs than in modern times, because much greater economies have been achieved in production than in trading since the medieval era. See also evidence on transport costs in Robert-Henri Bautier, *Sur l'histoire économique de la France médiévale: la route, le fleuve, la foire* (London, 1991).

⁵¹ See the works by Douglass North, Douglass North and Robert Thomas, and Clyde Reed cited in n. 13. The transactions sector contains a relatively large fixed-cost component, with a declining, constant, or even rising marginal cost component that is small relative to initial fixed costs. In North and Thomas's view (*Rise of the Western World*, 93-94), certain fixed costs are involved in each of the three essential components of the transactions sector: search and enforcement costs, negotiation, and transportation/distribution facilities; and for these combined components, "as the scale of transactions increases, the unit cost of using the market declines."

⁵² Herman Van der Wee and Theo Peeters, "Un modèle dynamique de croissance interséculaire du commerce mondiale, XII^e-XVIII^e siècles," *Annales: ESC* 15 (1970): 100-28. Thus in 1397, a Bruges-based Italian merchant writing to his Barcelona agent noted that "only cloths of high value can bear the costs of land transport, the others not." The next year, another Italian merchant at Bruges stated that shipping luxury-quality Wervik woollens to Barcelona by sea would cost 15.2% of the price, or 21.7% by land, observing that some other merchants who had recently sent cloths overland had "lost all their profit." But 80 years earlier, transporting Caen says overland to Florence, via the Rhone route (the only safe route), had cost only 8.8% of their much lower value (11.5 florins). See Federigo Melis, "Diffusione nel Mediterraneo occidentale dei panni di Wervicq," 233-34, no. 30; Armando Saporì, *Una compagnia di calimala ai primi del trecento*

may have benefited a periphery of European coastal towns, their relative prosperity could not possibly have compensated, in his view, for the economic decline in the much larger continental hinterland.⁵³ Furthermore, not only were the costs of Mediterranean seaborne trade significantly raised from the 1290s, for reasons just noted, but so were those on Atlantic and Baltic sea routes, with naval warfare and chronic piracy throughout the fourteenth and early fifteenth centuries.⁵⁴

(Florence, 1932), 97-99. See also Chorley, "Luxury Cloth," 369; Munro, "Industrial Transformations," 129; Munro, "Origins of the English 'New Draperies,'" 81-83. Comparing relative coinage values is difficult, except to note that the 1320s was an era of inflation, while the 1390s was one of severe deflation, with a much lower gold: silver ratio than in the early fourteenth century.

⁵³ Nor can we safely assume that a shift to maritime trade meant economic advancement: for then there would be considerable difficulty in explaining both the revival of continental overland trade routes and the rise of new inland international fairs, and consequent European economic expansion, during the later fifteenth and sixteenth centuries. See Munro, "Origins of the English 'New Draperies,'" 85-87; Munro, "Patterns of Trade," 153-57, 165-81; Van der Wee and Peeters, "Commerce mondiale," 100-128.

⁵⁴ Italian galley fleets thus made only infrequent voyages to Flanders during the fourteenth century. In only 35% of the years from the first state subsidies in 1332 to 1400 did Venetian galleys reach Bruges. Alberto Tenenti and Corrado Vivanti, "Le film d'un grand système de navigation: Les galères marchandes vénitienues, XIV^e-XVI^e siècles," *Annales: ESC* 16 (1961): 83-86. Sea transport was generally not so cheap; thus in 1400, for example, shipping salt from Portugal to Bruges accounted for 85% of the landed price, and shipping Baltic grain to Bruges accounted for about 50%. Richard Unger, *The Ship in the Medieval Economy, 600-1600* (London, 1980), 169. The costs of handling and shipping Cotswolds wool to Venice, ca. 1465 were as follows: (a) purchase price per sack, £8 0s. 0d.; (b) packing and transporting to Southampton: 13s. 4d. (8.33% of the purchase price); (c) alien customs and subsidy: £2 13s. 4d. (33.33%); (d) Freight charges on Venetian state galley: £2 0s. 0d. (25.0%); (e) other handling charges and taxes at Venice: £1 4s. 4d. (15.2%); (f) thus total charges equal £6 11s. 0d. (81.9%); (g) sales price at Venice: £20 0s. 0d., for a profit of £5 9s. 0d. "Noumbre of Weyghtes," cited in E. B. Fryde, "Anglo-Italian Commerce in the Fifteenth Century: Some Evidence about Profits and the Balance of Trade," *Revue belge de philologie et d'histoire* 50 (1972): 345-55; E. B. Fryde, "Italian Maritime Trade with Medieval England (ca. 1270-ca. 1530)," *Recueils de la société Jean Bodin* 32 (1974): 291-337, both reprinted in his *Studies in Medieval Trade and Finance* (London, 1983). As Fryde also notes, however, Genoese car-racks offered much lower freight rates though also much less security; and thus their shipping costs for wool were 5.16% of the price (8s. 3d. per sack); those for alum and woad, about 8% of their prices. On Mediterranean naval wars and related piracy in the fourteenth century, see Baratier and Reynaud, *Marseille*, 2: 36-37; Benjamin Kedar, *Merchants in Crisis: Genoese and Venetian Men of Affairs and the Fourteenth-Century Depression* (New Haven and London, 1976), 28-38; André-Francis Sayous, "Les transferts de risques, les associations commerciales, et la lettre de change à Marseille pendant le XIV^e siècle," *Revue historique de droit français et étranger*, 4th ser., 14 (1935): 476-83; and various studies of Frederic Lane in *Venice and History: The Collected Papers of Frederic C. Lane* (Baltimore, 1966); Frederic Lane, *Studies in Venetian Social and Economic History*, ed. Benjamin Kohl and Reinhold Mueller (London, 1987); Irene Katele, "Piracy and the Venetian State: the Dilemma of Maritime Defense in the Fourteenth Century," *Speculum* 63 (1988): 865-89.

Under such worsening, chronically adverse circumstances, many European textile manufacturers undoubtedly found that long-distance trade in cheap textiles was becoming unprofitable during the early fourteenth century: that transport and transaction costs too frequently rose above the floor-price set for such textiles. Clearly most threatened with extinction were those northern producers, Franco-Flemish, Brabantine, and English drapers alike, who had exported most of their output of cheap textiles over such long distances to Mediterranean markets, essentially as *price-takers*, under conditions approaching perfect competition (i.e., with almost flat demand curves). While a very wide range of cheap fabrics had been marketed in the late thirteenth century, any producer's particular fabric in the lowest-price categories—a biffe, say, serge, fustian, or coarse light woollen—was very similar to rival fabrics sold by thousands of other drapers, who individually had almost no power to set prices in these southern markets, especially when they evidently became fully saturated, around 1300.⁵⁵

As the combined production, transport, and transaction costs in exporting such textiles to the Mediterranean basin rose above the prevailing market prices in those regions, producers of those cheap light textiles were evidently forced out of production. The drapers best able to survive under such adverse conditions were those who produced the far higher-value luxury woollens, for which the rising transport and transaction costs thus represented a much smaller proportion of total costs and of the now higher prices, with a lower degree of price-elasticity of demand, and one that such drapers were better able to influence. While some Flemish, Artesian, and Brabantine towns had indeed become famous for high quality woollens well before 1300, such woollens had in fact constituted only a small segment of this region's aggregate textile production during the twelfth, thirteenth, and very early fourteenth centuries. Presumably, however, it constituted a larger segment than in thirteenth-century English cloth outputs, for which only Lincoln scarlets had had any genuine significance in luxury production.⁵⁶

⁵⁵ Hoshino, "Rise of the Florentine Woollen Industry," 195, has pertinently noted that "because of the demand for common cloth [in Mediterranean markets around 1300] many cities competed for the same market with materials which were qualitatively identical."

⁵⁶ See E. M. Carus-Wilson, "Trends in the Export of English Woollens in the Fourteenth Century," *Economic History Review*, 2d ser., 3 (1950), reprinted in her *Medieval Merchant Venturers*, 239-64; Chorley, "Luxury Trade," 349-87; Chorley, "English Cloth Exports," 1-10; Childs, "English Export Trade," 121-47; Munro, "Industrial Transformations," 110-48; Munro, "Origins of the English 'New Draperies'," 35-127; Munro, "Industrial Crisis," 103-41.

Demand-oriented factors in the industrial reorientation of European textile manufacturing

Furthermore, during or by the early fourteenth century, the structure of European demand may have become less propitious for marketing the cheaper textiles. Thus, as many historians currently argue, western Europe, after having experienced unprecedented population growth during the so-called "long thirteenth century" (ca. 1180-ca. 1315), may have experienced a Malthusian crisis, one that grievously aggravated the consequences of the Great Famine of 1315-22, even if its basic causes lay in vagaries of the climate.⁵⁷ The Malthusian proponents have found their best demographic evidence in England, contending that by 1300 it had over six or even seven million inhabitants, well in excess of its population on the eve of the Industrial Revolution; and several recent studies on East Anglia and Norfolk cite data that suggest growing impoverishment in many overcrowded villages.⁵⁸ But more recent studies have reduced the pre-Famine English population estimates to a more credible four

⁵⁷ The most eloquent case for a Malthusian crisis is made in Michael Postan, "The Economic Foundations of Medieval Society," *Jahrbücher für Nationalökonomie* 161 (1951), and "Some Economic Evidence of Declining Population in the Later Middle Ages," *Economic History Review*, 2d ser., 2 (1950), both reprinted in his *Essays on Medieval Agriculture and General Problems of the Medieval Economy* (Cambridge, 1973), 3-27 and 186-213. See also William Jordan, *The Great Famine: Northern Europe in the Early Fourteenth Century* (Princeton, 1996); Henry Lucas, "The Great European Famine of 1315, 1316, and 1317," *Speculum* 5 (1930), reprinted in Carus-Wilson, *Essays in Economic History*, 2: 49-72; Ian Kershaw, "The Great Famine and Agrarian Crisis in England, 1315-1322," *Past and Present*, no. 59 (1973): 3-50, reprinted in *Peasants, Knights, and Heretics*, ed. R. H. Hilton (Cambridge, 1976), 85-132; Wilhelm Abel, *Agricultural Fluctuations in Europe from the Thirteenth to the Twentieth Centuries*, trans. Olive Ordish (New York and London, 1980; 3d ed., 1978), chaps. 1-3; L. R. Poos, "The Historical Demography of Renaissance Europe: Recent Research and Current Issues," *Renaissance Quarterly* 42 (1989): 749-811; Richard M. Smith, "Demographic developments in rural England, 1300-48: a survey," in Campbell, *Before the Black Death*, 25-78. The most effective cases against the Malthusian model are made in: A. R. Bridbury, "Before the Black Death," *Economic History Review*, 2d ser., 30 (1977): 393-410; and Barbara Harvey, "The Population Trend in England Between 1300 and 1348," *Transactions of the Royal Historical Society*, 5th ser., 16 (1966): 23-42; see also Barbara Harvey, "Introduction: The 'Crisis' of the Early Fourteenth Century," in Campbell, *Before the Black Death*, 1-24.

⁵⁸ H. E. Hallam, "Population Movements in England, 1086-1350," and "Rural England and Wales, 1042-1350," in *The Agrarian History of England and Wales*, vol. 2, 1042-1350, ed. H. E. Hallam (Cambridge, 1988), 508-93 and 966-1008; L. R. Poos, "The Rural Population of Essex in the Later Middle Ages," *Economic History Review*, 2d ser., 38 (1985): 515-30; L. R. Poos, *A Rural Society after the Black Death: Essex, 1350-1525* (Cambridge, 1991); Bruce M. Campbell, "Population Pressure, Inheritance, and the Land Market in a Fourteenth-Century Peasant Community," in *Land, Kinship and Life-Cycle*, ed. Richard M. Smith (Cambridge, 1984), 87-134.

million; and, furthermore, a close analysis of the Phelps Brown and Hopkins wage and price data (chiefly for the Oxford-Cambridge region) does not show any appreciable decline in real wages from ca. 1280 to 1314.⁵⁹ Elsewhere in Europe, evidence for a sudden fall in population from the early fourteenth century, especially in Provence and Tuscany, probably reflects the consequences of debilitating warfare and economic crises rather than genuine Malthusian crises.⁶⁰

Nevertheless, in many parts of western Europe rising taxation, with a disproportionate burden borne by the lower classes, combined with all the other war-related economic factors that raised transaction costs in marketing cheaper cloths, may have produced more highly skewed income distributions that reinforced this same relative shift from the cheaper to higher-priced, more luxury oriented textiles in international trade,⁶¹ i.e., fine woollens, linens, and silks.⁶² For the post-plague era of rapid depopulations, which also included most of the Hundred Years' War era (1337-1453), Lopez, Herlihy, Van der Wee and other historians have produced evidence of increasing poverty in many parts of Europe, countering the contentions of many other historians that such depopulations resulted in rising living standards amongst the lower strata of

⁵⁹ Henry Phelps Brown and Sheila V. Hopkins, "Seven Centuries of the Prices of Consumables Compared with Builders' Wage-rates," *Economica* 23, no. 92 (1956), reprinted in their *A Perspective of Wages and Prices* (London, 1981), 13-59 (with additional statistical appendices not in the original). The decennial mean indices of real-wages (mean of 1451-75 = 100) were 55.3 in 1280-89, 50.0 in 1290-99, 56.9 in 1300-09, and 60.5 in 1310-14, and were thus rising before the onset of the Great Famine.

⁶⁰ Georges Lesage, *Marseille angevine: recherches sur son evolution administrative économique et urbaine de la victoire de Charles d'Anjou à l'arrivée de Jeanne Ière (1264-1348)* (Paris, 1950), 184, doc. no. 6 (October 1331); David Herlihy and Christiane Klapisch-Zuber, *Tuscans and Their Families: A Study of the Florentine Catasto of 1427* (London and New Haven, 1985), 60-92.

⁶¹ See the evidence cited in Munro, "Industrial Transformations," 120-39; and in Munro, "Origins of the English 'New Draperies,'" 70-87.

⁶² Such views, however, would seem to contradict the widely held assumption that late-medieval depopulation rewarded the lower classes with rising real incomes (or wages). But much evidence indicates that in much of western Europe the post-plague inflations nullified money-wage gains; and that even in stable England and the Low Countries real wages did not rise until the onset of deflation in the late fourteenth, early fifteenth century. Thus any such rise in real wages came far too late to explain the industrial changes just outlined. See Munro, "Industrial Transformations," 139-43; Munro, "Mint Outputs, Money, and Prices in Late-Medieval England and the Low Countries," in *Münzprägung, Geldumlauf und Wechselkurse/Minting, Monetary Circulation and Exchange Rates*, ed. Eddy Van Cauwenberghe and Franz Irsigler, *Akten des 8th International Economic History Congress, Section C-7*, Budapest 1982 (Trier, 1984), 31-122; Phelps Brown and Hopkins, "Prices of Consumables," 45-50; A. R. Bridbury, "The Black Death," *Economic History Review*, 2d ser., 26 (1973): 557-92; Munro, "Urban Wage Structures," 65-78.

western society.⁶³ For England and the Low Countries, with the best wage and price data, such a relative rise in real wages is not evident

⁶³ See Michael Prestwich, *War, Politics, and Finance Under Edward I* (London, 1972); Michael Prestwich, "Currency and the Economy of Early Fourteenth Century England," in *Edwardian Monetary Affairs, 1279-1344*, ed. Nicholas Mayhew (Oxford, 1977), 45-58; Michael Prestwich, *The Three Edwards: War and State in England, 1272-1377* (London, 1980), 245-300; J. R. Maddicott, *The English Peasantry and the Demands of the Crown, 1291-1341* (Oxford, 1975), reprinted in *Landlords, Peasants, and Politics in Medieval England*, ed. T. H. Aston (Cambridge, 1987), 285-360; Edward Miller, "War, Taxation, and the English Economy in the Late Thirteenth and Early Fourteenth Century," in *War and Economic Development: Essays in Memory of David Joslin*, ed. J. M. Winter (Cambridge, 1975), 11-32. Their views, however, have been disputed by A. R. Bridbury, "The Hundred Years' War: Costs and Profits," in *Trade, Government, and Economy in Pre-Industrial England*, ed. D. C. Coleman and A. H. John (London, 1976), 80-95, and Bridbury, "Before the Black Death," 393-410; but with arguments contradicting some of those in his earlier "The Black Death," 557-92. On the consequences of war financing, see also E. B. Fryde, "Financial Resources of Edward I in the Netherlands, 1294-98: Main Problems and Some Comparisons with Edward III in 1337-40," *Revue belge de philologie et d'histoire* 40 (1962): 1168-87; E. B. Fryde, "Financial Policies of the Royal Governments and Popular Resistance to them in France and England, 1270-1420," *Revue belge de philologie et d'histoire* 57 (1979): 824-60, reprinted in E. B. Fryde, *Studies in Medieval Trade and Finance* (London, 1983); Philippe Contamine, *Guerre, état et société à la fin du moyen âge: études sur les armées des rois de France, 1337-1494* (Paris, 1972); Philippe Contamine, "La guerre de Cent Ans en France: une approche économique," *Historical Research: The Bulletin of the Institute of Historical Research* 48 (1974): 125-49; Philippe Contamine, *War in the Middle Ages* (London, 1984), 119-72, 238-49; Edouard Perroy, *The Hundred Years' War*, trans. David Douglas (London, 1959), chaps. 4-5. For income effects and concentration of wealth, see Robert Lopez, "Hard Times and Investment in Culture," in *The Renaissance: A Symposium*, ed. Metropolitan Museum of Art (New York, 1953), 19-32; reprinted in *Social and Economic Foundations of the Italian Renaissance*, ed. Anthony Molho (London, 1969), 95-116; Harry A. Miskimin, *The Economy of Early Renaissance Europe, 1300-1460* (1969; reissued Cambridge, 1975), 132-63; David Herlihy, *Medieval and Renaissance Pistoia: The Social History of an Italian Town, 1200-1430* (New Haven and London, 1967), 180-97; David Herlihy, "Family and Property in Renaissance Florence," in Miskimin, Herlihy, and Udovitch, *The Medieval City*, 3-24; David Herlihy, "The Distribution of Wealth in a Renaissance Community: Florence 1427," in *Towns in Societies: Essays in Economic History and Historical Sociology*, ed. Philip Abrams and E. A. Wrigley (Cambridge, 1978), 131-58; Herlihy and Klapisich-Zuber, *Tuscans*, 93-130; Kedar, *Merchants in Crisis*, chaps. 3-6; Michael Mollat and Philippe Wolff, *The Popular Revolutions of the Late Middle Ages* (London, 1973), 91-137; Michel Mollat, *Les pauvres au moyen âge: étude sociale* (Paris, 1978), republished as *The Poor in the Middle Ages* (New Haven, 1986); R. Cazelles, "Quelques réflexions à propos des mutations monétaires de la monnaie royale française (1295-1360)," *Le moyen âge* 72 (1966): 83-105, and 251-78; Edouard Perroy, "A l'origine d'une économie contractée: les crises du XIV^e siècle," *Annales. E.S.C.* 4 (1949): 167-82, republished as "At the Origin of a Contracted Economy: The Crises of the 14th Century," in Cameron, *Essays in French Economic History*, 91-105; Edouard Perroy, "Wage Labour in France in the Later Middle Ages," *Economic History Review*, 2d ser., 7 (1955), reprinted in *Change in Medieval Society: Europe North of the Alps, 1050-1500*, ed. Sylvia Thrupp (New York, 1964), 237-48; Wim Blockmans and Walter Prevenier, "Poverty in Flanders and Brabant from the Fourteenth to the Mid-Sixteenth Century: Sources and Problems," *Acta Historiae Neerlandicae* 10 (1977): 20-57; Van der Wee and Peeters, "Commerce mondiale," 100-128; Munro, "Economic Depression

before the late fourteenth century; and for the rest of later-medieval Europe there can be little certitude about trends in real incomes.⁶⁴

There remain two other problems that make a demand-oriented economic model of industrial reorientation rather problematic. First, in Mediterranean markets, many of the very major customers for says and other cheap textiles were aristocratic households, which purchased them as livery for their servants, and sometimes as alms for the poor; and such still wealthy households would thus have been much less influenced by such changes in demand in making their purchases. Even if, with more highly skewed wealth and income distributions, aristocratic households enjoyed a relative increase in the number of their servants, they still did not increase their consumption of says and similar textiles, according to all the contemporary evidence on textile sales.⁶⁵ Secondly, evidence for such Mediterranean cloth sales does not show that the very highest priced luxurious textiles continued to enjoy the best markets. On the contrary, some cheaper versions of quasi-luxury woollens, so long as they were priced above a floor set by the combination of transport and transaction costs, came to displace many of their higher-priced competitors in these markets.⁶⁶

Furthermore, similar shifts from cheaper to more luxury-oriented textile production can be documented elsewhere, and even in the Mediterranean basin itself, particularly in Catalonia and especially in Italy, though this industrial phenomenon was hardly universal.⁶⁷ For undoubtedly

and the Arts," 235-50, reprinted in Munro, *Textiles, Towns, and Trade*; and Munro, "Patterns of Trade," 148-65.

⁶⁴ See note 62 above.

⁶⁵ I am indebted to Prof. David Nicholas for the discussion of this point. For the evidence, see Munro, "Origins of the English 'New Draperies'," 56-60.

⁶⁶ See below nn. 98-99.

⁶⁷ See Claude Carrère, *Barcelone: centre économique à l'époque des difficultés, 1380-1462* (Paris, 1967), 423-528; Claude Carrère, "La draperie en Catalogne et en Aragon au XV^e siècle," in Spallanzani, *Produzione, commercio, e consumo*, 475-510; Manuel Riu, "The Woollen Industry in Catalonia in the Later Middle Ages," in Harte and Ponting, *Cloth and Clothing*, 205-29, on the growth of the quality-woollens industry in Catalonia, superseding the cheap-line cloth industries there; Hoshino, *L'Arte della Lana in Firenze*, and "Rise of the Florentine Woollen Industry," 184-204, on the growth of the Florentine woollen industry, similarly superseding cheap, worsted-type production; Robert M. Lopez, "Market Expansion: The Case of Genoa," *Journal of Economic History* 24 (Month 1964): 445-69; on Genoa and the shift to silks; and especially Maureen Mazzaoui, *The Italian Cotton Industry in the Later Middle Ages, 1100-1600* (Madison, 1981), 129-53, on the decline of the Italian cotton-fustian industry from the late thirteenth century. In England, the Norfolk worsted industry evidently peaked before the mid-fourteenth century; see B. A. Holderness, "The Reception and Distribution of the New Draperies in England," in *The New Draperies in the Low Countries and England, 1300-1800*, ed. Negley B. Harte (Oxford,

some cheap textile industries bordering on the Mediterranean survived on the basis of a major comparative advantage in transport and marketing costs; and even if most of them had evidently been well established by the thirteenth century, some new entrants may have thrived as import-substitution industries to serve local markets precisely because of these rising transaction costs in long-distance trade. The economics of international comparative advantage in cheap textiles, therefore, may have eliminated most remaining holdouts in England and the Low Countries, except for a very few, such as Hondschoote and Arras, that could survive by serving local or particular regional markets that were not yet so adversely affected by rising transaction costs. In fourteenth-century England some considerable exports of cheap, light worsteds, very similar to Flemish says, continued to be supported by sales in Baltic markets, at least until the 1360s; but then they too radically declined, when such markets began to suffer from afflictions similar to those that had plagued the Mediterranean from much earlier in the century.⁶⁸

The resurgence of the English cloth trade from the 1350s: rural or urban-based production?

When the English cloth-export trade recovered to regain and then dramatically to surpass its former importance, from the 1350s, it became

1997), 225-56. Cloth exports cannot be calculated before the imposition of the Cloth Custom in 1347; but thereafter, from the early 1350s, worsted exports fell from 23% of broadcloth exports to under 1% by the 1380s (14 worsteds per broadcloth, by relative export taxes), generally remaining at that low level for almost two centuries. Customs accounts in: Public Record Office (hereafter cited as PRO), Kings Remembrancer Exchequer, E. 101, and Lord Treasurer's Remembrancer, E. 356; see also E. M. Carus-Wilson and Olive Coleman, *England's Export Trade, 1275-1547* (Oxford, 1963), 199-200.

⁶⁸ For some sporadic evidence of Mediterranean trade in cheap, light textiles, Lombard fustians and "Irish says," see John Day, ed., *Les douanes de Gênes, 1376-1377* (Paris, 1963), 1: 353-54; Charles Verlinden, "Draps des Pays-Bas et du nord-ouest de l'Europe au Portugal au XV^e siècle," *Annuario de estudios medievales* 3 (1966): 240-48; Eliyahu Ashtor, "L'exportation de textiles occidentaux dans le Proche Orient musulman au bas moyen âge (1370-1517)," in *Studi in memoria di Federigo Melis*, ed. Luigi de Rosa et al., 2 vols. (Florence, 1978), 2: 349-50; Ashtor, *The Levant Trade in the Later Middle Ages* (Princeton, 1983), 155-56; Baratier-Reynaud, *Marseille*, vol. 2, endpiece table, for 1380-82 only; Munro, "Industrial Transformations," 111-19, 131-33; Munro, "Origins of the English 'New Draperies'," 56-58, 68-71. For the Baltic, see Simone Abraham-Thisse, "Le commerce des draps de Flandre en Europe du Nord: Faut-il encore parler du déclin de la draperie flamande au bas moyen-âge?" in *La draperie ancienne des Pays Bas: débouchés et stratégies de survie (14e-16e siècles)/Draperies Production in the Late Medieval Low Countries: Markets and Strategies for Survival (14th-16th Centuries)*, ed. Marc Boone and Walter Prevenier (Leuven-Appeldoorn, 1993), 167-206; Terence H. Lloyd, *England and the German Hanse, 1157-1611: A Study of Their Trade and Commercial Diplomacy* (Cambridge, 1991), 74-108; Childs, "English

more and more oriented to higher quality, more luxury-oriented woollens: and indeed, in almost mirror-image fashion, broadcloth exports soared while those of worsteds plunged, the latter virtually disappearing from the 1380s. Nevertheless English clothiers and merchants could not or did not seek to compete with the traditional Flemish and Brabantine urban draperies, nor with the newly expanding Florentine cloth industry, in the very uppermost echelons of the luxury markets. Instead, and indeed perhaps more wisely, they concentrated their efforts upon the lower-priced and thus much broader-ranged segment of the luxury or quality markets, with woollens that were from one half to one third the price of the better Flemish, Brabantine, and Florentine luxury woollens. Even so, with cloth exports in the range of £2 0s. 0d. to £2 10s. 0d. sterling apiece (24 yd by 1.75 yd), such woollens were far from being cheap and vastly more expensive than worsteds; and in the later fourteenth century, such broadcloths would have cost an English master mason (Oxford-Cambridge, Exeter, Canterbury), then earning 5d.-6d. per day, from 80 to 120 days' wages, the latter representing over half a year's full income.⁶⁹

That English clothiers and cloth-export merchants were not then more ambitious and indeed not immediately more successful in competing with their cross-Channel rivals in luxury cloth markets is all the more surprising in view of their supposedly decisive advantages in producing high-quality woollens. As already indicated, most historians have assumed that the resurgence of the English cloth industry, with a booming export trade from the 1350s, was based upon the relatively new rural locations whose combination of water-powered fulling and cheap peasant labour permitted much lower-cost production than was enjoyed by the Flemish, Florentine, or any other overseas urban rivals.

As suggested earlier, the one major scholar not sharing these optimistic views on rural advantages is A. R. Bridbury, who has instead shown that this "new" English cloth industry remained largely urban until well into the fifteenth century, when a variety of complex factors

Export Trade," 137-47; Munro, "Patterns of Trade," 160-65; Munro, "Industrial Crisis," 103-41.

⁶⁹ For cloth prices, see Table 2 and John Munro, "Industrial Protectionism in Medieval Flanders: Urban or National?" in Miskimin, Herlihy, and Udovitch, *The Medieval City*, 226-27, table 13.5 [from PRO, E. 122 series and E. 356], reprinted in Munro, *Textiles, Towns, and Trade*; for wages, see Henry Phelps Brown and Sheila Hopkins, "Seven Centuries of Building Wages," *Economica* 22 (1955): 195-206, reprinted in their *Perspective of Wages*, 1-12; Munro, "Urban Wage Structures," 65-78; British Library of Political and Economic Science, Archives, Beveridge Collection, boxes D3, F1, H10-11, P9-10.

finally did combine to produce a somewhat more prominent shift to rural cloth-making.⁷⁰ Curiously enough that later shift, such as it was, occurred at the very time or soon after Edward IV had subjected English cloth production, in town and village alike, to national and crown-supervised industrial regulations (1464-65).⁷¹ For the later fourteenth century, when the English cloth export trade was rapidly expanding, the national aulnage accounts, recording taxes on manufactured woollens, provide quite firm evidence to indicate that well over half of those cloths produced for the market, and evidently an even greater share of the production destined for foreign markets, came from towns, large and small, rather than from agricultural villages. To be sure, Carus-Wilson herself had cast doubts on the validity of the late fifteenth-century aulnage accounts (perhaps to quash any notion of any remaining urban vitality in cloth production);⁷² but Bridbury and, before him, H. L. Gray, do provide good grounds for the credibility of the earlier accounts and for the belief that the locations named were those where the cloth was actually produced, rather than taxed and sold.⁷³ Furthermore, there is much abundant evidence for the impressive importance of both new and older urban centres in cloth production. In the West Country itself, Bristol, Salisbury, Gloucester, Worcester, and Exeter became leading urban cloth-manufacturing centres, most of them dependent upon urban merchants and financiers in expanding their production.⁷⁴

⁷⁰ See Bridbury, *Economic Growth*, 52-82; Bridbury, *English Clothmaking*, 27-36, 62-85. For further evidence of urban cloth production and urban prosperity in this era, see Bartlett, "Decline of York," 17-33; Swanson, "Craft Guilds," 29-48; Swanson, *Medieval Artisans*, 26-44; Derek J. Keene, *Survey of Medieval Winchester*, 2 vols. (Oxford, 1985), 1: 299-316; Derek Keene, "Textile Manufacture: The Textile Industry," in *Object and Economy in Medieval Winchester*, ed. Martin Biddle (Oxford, 1990), 200-40; Derek Keene, "Textile Terms and Occupations in Medieval Winchester," *Ler História* 30 (1996): 135-47. See nn. 155-61, for the subsequent decline of York and other provincial cloth-making towns, by the later fifteenth century.

⁷¹ Great Britain, Record Commission, Publications no. 8, *Statutes of the Realm*, 11 vols. (London, 1836), 2: 403-07, statute 4 Edward IV c. 1 (1464-65): "every whole Woollen Cloth, called Broad Cloth," after fulling and tentering, to be 24 yards long by 2 yards, or at least 7 quarter yards within the lists, "and to every Yard an Inch" [i.e., 37 in. per yd], etc.

⁷² Eleanora Carus-Wilson, "The Aulnage Accounts: A Criticism," *Economic History Review*, 1st ser., 2 (1929), reprinted in her *Medieval Merchant Venturers*, 279-91.

⁷³ H. L. Gray, "The Production and Exportation of English Woollens in the Fourteenth Century," *English Historical Review* 39 (1924): 13-55. For Bridbury, see n. 70 above.

⁷⁴ See Pamela Nightingale, *A Medieval Mercantile Community: the Grocers' Company and the Politics and Trade of London, 1000-1485* (New Haven and London, 1995), 210, 239-41, 327-30, 351-60: for the role of the London Grocer's (Pepperers), from the 1350s, in both selling dyestuffs and advancing credit to clothiers and dyers in Gloucester, Coggeshall,

Of equally great importance is the evidence that virtually all of these West Country and West Midlands cloth towns used fulling-mills, if not necessarily within the town, certainly close by the town, without any interference from resident fullers and their guilds.⁷⁵ They were not alone. The next most important cloth-producing region in later-medieval England, and one whose importance was unfairly ignored by Carus-Wilson, was East Anglia, which contained several towns, such as Colchester, that had earlier achieved importance as textile exporters, during the thirteenth century, and revived in importance, along with many other new towns during the fourteenth and early fifteenth centuries, in particular numerous small towns, but towns nevertheless, which lay on or near the Colne and Stour rivers, the latter forming the boundary between Suffolk and Essex. Many and perhaps most of them also used fulling mills, powered by these same rivers, slow-moving though they were; and again these mills were located either in or more commonly just outside the town walls.⁷⁶ With its many draperies, in both villages and towns, East Anglia with adjacent Norfolk was a region certainly far more prominent than the West Riding of Yorkshire, let alone the industrially marginal Lake District, to which Carus-Wilson gave much greater significance, evidently because they appear to have been more distinctly rural, as water-powered textile producers in the later Middle Ages.⁷⁷

Furthermore, in eastern lowland and southern England, apart from East Anglia, several of the older traditional cloth towns that had supposedly expired during the late thirteenth-century urban industrial crisis subsequently managed to regain an important if lesser role in fourteenth-century English cloth-manufacturing: York, Winchester, London, Lincoln,

Tewkesbury, Bishop's Stortford, Solihull, Saffron Walden—all of which, as she notes, are “cloth-making towns” and not rural villages. See nn. 155-61.

⁷⁵ See the Bristol fullers' ordinances in Francis Bickley, ed., *The Little Red Book of Bristol* (Bristol, 1900), 2: 10-12 (1346), 15-16 (1381), 75-79 (1406); for Salisbury (Wiltshire) and Gloucester, see George Ramsay, *The Wiltshire Woollen Industry in the Sixteenth and Seventeenth Centuries*, 2d ed. (London, 1965), 18-20; for Worcester, see *Statutes of the Realm*, 3: 459-60, 25 Hen VIII c. 18, 1533-34. Exeter is the only one in this list for which fulling-mills have not yet been documented; but for its cloth industry, see Maryanne Kowaleski, *Local Markets and Regional Trade in Medieval Exeter* (Cambridge and New York, 1995). See also Ponting, *Woollen Industry*, 15-16.

⁷⁶ For a verification of the location of fulling-mills in Suffolk and Essex, especially the small towns, see the map published in Pelham, *Fulling Mills*, which shows 11 such mills (and 2 more in Norfolk). See nn. 78-81. For the cloth industry in East Anglia, see Richard Britnell, *Growth and Decline in Colchester, 1300-1525* (Cambridge, 1986), 13-21, 76-78; Gervers, “Textile Industry in Essex,” 48-49, 69.

⁷⁷ See Heaton, *Yorkshire Woollen and Worsted Industry*, 18-88; and the sources cited above in nn. 27-31.

and Leicester.⁷⁸ In so doing, the drapers or clothiers of most of these older cloth towns also resorted to fulling-mills, though chiefly in adjacent rural sites.⁷⁹ To be sure, Lincoln, Leicester, and the other traditional eastern seaboard industrial towns never did regain their former prominence in export-oriented cloth production; but York did come close, before finally declining in the later fifteenth century, for reasons to be examined in the conclusion to this study.⁸⁰

The same was true of Winchester, in the southern county of Hampshire, which, from the mid-fourteenth century, certainly recovered some of its former stature as an export-producer, before also declining in the mid fifteenth century. As this town's eminent historian Derek Keene has demonstrated, the bishop of Winchester built a new fulling-mill in the

⁷⁸ See also Swanson, "Craft Guilds," 29-48; Swanson, *Medieval Artisans*, 26-44; Bartlett, "Decline of York," 17-33; Maud Sellers, "The Textile Industries," in *The Victoria History of the Counties of England: A History of the County of York*, ed. William Page, 3 vols. (London, 1907-13), 2: 406-29.

⁷⁹ See nn. 75-78; and for York ordinances permitting fulling just outside the town, see Maud Sellers, ed., *York Memorandum Book*, 2 vols., Surtees Society, nos. cxx and cxxv (London, 1911-14), 1: 70-72, *ordinacio fullaris* (ca. 1390); but see also 2: 206-7, for an ordinance of 5 March 1464, by which the town government, seeking to alleviate the recent decline of the urban cloth industry, prohibited anyone within the franchise of York to deliver cloths for fulling to "any foreyn walker [fuller] to full or to wirk," with no mention of mills. See also Swanson, *Medieval Artisans*, 41-42 (though emphasising rural advantages for fulling). For Lincoln, see an ordinance issued between 1297 and 1337 requiring fulling-stocks rather than vats, in L. T. Smith, ed., *English Gilds: original Ordinances of the Fourteenth and Fifteenth Centuries*, Early English Text Society, no. 40 (London, 1870), 179-80. For London, see the 1298 ordinance concerning fulling-mills outside the city: a ban limited only to fullers, weavers, dyers, but not drapers, last referred to in 1314; drapers were clearly permitted to full their own cloths in Stratford mills; subsequent bans were issued only for fulling hats and caps at the mills. See Riley, *Liber Custumarum*, 1: 127-29 (text in n. 41); Reginald Sharpe, ed., *Calendar of Letter-Books of the City of London at the Guildhall* (London, 1899-1912), *Letter Book C*: 51-52 (1298), 52-53 (1314); *Letter Book D*: 239-40 (1311). In July 1362, the London civic government issued an ordinance for the "mystery of Hurers" to require that all caps, hats, and bonnets be filled and felted by hand only; and on 2 August and 17 September 1376 the Mayor and Aldermen of London forbade any Hurer to full their caps at any water-powered fulling mills—and specifically "in the mills of Wandsworth, Oldeford, Stratford, and Enefeld, where the Fullers full their cloths." *Letter Book H*: 36 (July 1362), 37 (Aug. 1376), 47-48 (Sept. 1376); see also *Letter Book K*: 220 for the Hurers' petition to have this ordinance properly enforced, on 20 November 1437. In 1482-83, Parliament enacted a statute prohibiting anyone in England from fulling hats, bonnets, and caps "in fulling mills," for "in the said mills the said hurers [hats] and caps be broken and deceitfully wrought and in no wise by the mean of any Mill may be faithfully made." *Statutes of the Realm*, 2: 473-74, 22 Edward IV c. 5. But such bans were never applied to woollen cloths. For an alternative view of some of these bans, see Carus-Wilson, "Industrial Revolution," 194-209; Carus-Wilson, "Woollen Industry" (1987), 667-73.

⁸⁰ See nn. 155-61.

1360s, at Prior's Barton, just outside the city, adjacent to a long established civic fulling-mill (dating from the 1220s), which produced revenues that more than doubled between 1370 and 1400. In 1402, Winchester's town government built an additional fulling-mill; and in 1406, the bishop farmed the Prior's Barton mill to a Winchester entrepreneur, who, sometime before 1422, converted an episcopal water-mill, at Durn's Gate, into yet another fulling-mill.⁸¹ As should be self-evident, with no evidence for any compulsion employed in the use of these mills, they would not have attracted capital investment for their construction, elicited continuous business from the civic fullers and drapers, and increased their mill-revenues, unless they had provided substantial cost-savings over traditional foot-fulling.⁸² Indeed, the urban fullers of Winchester came to own, lease, and operate some of the four town-sponsored fulling-mills, which, in Keene's view, "strengthened the urban industry rather than promoting its migration into the countryside."⁸³

In sum, therefore, the contention that the English cloth industry's supposed shift to a rural location, in the early fourteenth century, to acquire both cheap labour and cheap water power, along with greater "industrial freedom," was the primary factor responsible for its remarkable resurgence and then ultimate victory, is unfounded. First and foremost, low wages do not necessarily mean lower cost labour, even if the actual wage differentials between town and countryside could be measured. If economists are justified in believing that the market wage rate is determined by labour's marginal revenue product (MRP), one might well suspect that labour productivity was indeed lower in the countryside, especially when so many rural textile workers were not specialised craftsmen but part-time workers in both agriculture and industry. Furthermore most worked at home unsupervised, some perhaps in nucleated villages in mixed farming regions, but others, in more pastoral regions, in scattered houses, so that production was all the more difficult to monitor. That monitoring problem explains, of course, why virtually all textile wages were paid by the piece rather than by the day (the latter prevailing in the construction trades).

Such questions of rural productivity and the attendant problems of

⁸¹ Keene, *Medieval Winchester*, 1: 304-7; 2: 1050-52, no. 972; 2: 1082-83, no. 1057; Keene, "Textile Manufacture," 208-10; Keene, "Textile Terms," 140-41. Fulling mill revenues had risen from £7 3s. 0d. in 1370-71 to £16 0s. 0d. in 1400-1401.

⁸² See nn. 40, 75-81, 83, 100-103; and Munro, "Industrial Entrepreneurship," 377-88.

⁸³ Keene, "Textile Terms," 141; Keene, *Medieval Winchester*, 1: 302-9; 2: 1050-52, doc. no. 972; 2: 1082-83, doc. no. 1057; Keene, "Textile Manufacture," 208-12.

monitoring may have been less significant, however, for the preliminary stages of cloth production, even if they did account for perhaps 50-60 percent of pre-finishing labour costs: i.e., wool-beating, sorting, cleansing, and greasing; combing (warps) and carding (wefts), and spinning the two types of yarn (by drop-spindle and the wheel, respectively).⁸⁴ Yet, if we were able to prove that in England, the Low Countries, Italy, and elsewhere such economic advantages were derived from having these preliminary tasks performed in the countryside, and in having dependent female labour perform most of them, such advantages would not necessarily have led to rural locations for cloth-manufacturing *per se*. For much evidence indicates that many urban textile industries in all three of these regions, even in their medieval heyday, had acquired their yarns from the adjacent countryside.⁸⁵ Urban cloth-making thus meant the much more specialised, capital-costly crafts of weaving, fulling, dyeing, shearing, and ancillary finishing processes, which were the only ones to be guild-organized, in both the Low Countries and England.

For mechanical water-powered fulling, however, the advantages for a rural location, in terms of cheaper power and lower opportunity costs, may be accepted as soundly based in economic theory; but even so, as the English historical evidence has indicated, urban clothiers were not precluded from using fulling-mills in the adjacent countryside. The relative advantages of mechanical fulling themselves will be reconsidered later, in the subsequent analysis of the changes imposed on urban draperies in the later-medieval Low Countries, an analysis that will also consider the peculiar advantages of an urban location for performing the crucial tasks of guild-organised dyeing, shearing, weaving, and fulling,

⁸⁴ See Miller, "English Textile Industry," 72-74; Miller and Hatcher, *Medieval England*, 93-98; Munro, "Textile Technology," 693-715; Walter Endrei, *L'évolution des techniques du filage et du tissage: du moyen âge à la révolution industrielle* (The Hague, 1968), 49-135; Walter Endrei, "La productivité et la technique dans l'industrie textile du XIII^e au XVII^e siècle," in *Produttività e tecnologia nei secoli XII-XVII*, ed. Sara Mariotti (Florence, 1981), 253-62; Walter Endrei, "Manufacturing a Piece of Woollen Cloth in Medieval Flanders: How Many Work Hours?" in *Textiles of the Low Countries in European Economic History*, ed. Erik Aerts and John Munro (Leuven, 1990), 14-23; De Roover, "Florentine Firm," 3-33. In the Medici drapery of 1556-58, wool-preparation and spinning together accounted for 66.9% of pre-finishing "value-added" manufacturing costs.

⁸⁵ See evidence for the urban use of rural spun-yarns in Espinas and Pirenne, *Recueil de documents*, 1-4: passim; Posthumus, *Bronnen tot de geschiedenis*, 1: passim; Georges Espinas, ed., *Documents relatifs à la draperie de Valenciennes au moyen âge* (Paris, 1931); Henri De Sagher et al., eds., *Recueil de documents relatifs à l'histoire de l'industrie drapière en Flandre*, part 2, *Le sud-ouest de la Flandre depuis l'époque bourguignonne*, 3 vols. (Brussels, 1951-66), 1-3: passim.

especially in response to growing English competition in the European cloth trades.⁸⁶

The role of taxation and fiscal policies in the rise of the English broadcloth trade, 1336-1429

There remains, however, a third, final, and indeed quite powerful explanation for the rise and ultimate victory of the English cloth trade over most of its continental rivals: a far lower fiscal burden on wools, as the key ingredient and indeed determinant of luxury-quality woollens. The relative changes in those fiscal burdens, involving export taxes, stapling regulations, and various bullionist impositions, in affecting the fortunes of cloth manufacturers on both sides of the Channel, took place during and over five distinct periods, thus explaining in part why the English victory took so long to be achieved: in the 1330s, the 1360s, the 1390s, the 1430s, and the 1460s. In essence, the English crown rightly looked upon the wool-export trade as by far the easiest and by far the most lucrative source of tax revenues and especially of ready cash. For medieval England produced in vast abundance by far the world's best wools, with very curly, extremely fine, short-stapled fibres that had excellent felting qualities when fulled; and that superlative reputation for fineness did not encounter any serious challenge until the mid-sixteenth century, when Spanish *merino* wools, whose production evidently had begun only from the 1340s, finally achieved superior qualities, through some combinations of cross-breeding and changes in flock management.⁸⁷ Evidently

⁸⁶ See John Munro, "Textile Workers," in *Dictionary of the Middle Ages*, ed. Joseph R. Strayer et al., 13 vols. (New York, 1982-88), 11: 711-15, reprinted in Munro, *Textiles, Towns, and Trade*; and also nn. 118-26. David Nicholas, in commenting on this paper, suggested that another possible reason for an urban location in producing luxury woollen broadcloths was the very complex and thus capital-costly broadloom itself, which would have depended upon urban mercantile finance. But rural fulling-mills, especially with overshot wheels, were even more capital-costly; and there is no evidence that the subsequent English shift of broadcloth production from larger to smaller towns in the later fifteenth century involved any changes in the loom. See nn. 153-61.

⁸⁷ From the Welsh Marches of Shropshire and Herefordshire, the Cotswolds (in Gloucestershire, Oxfordshire, Worcester), and thirdly, Lincolnshire. See John Munro, "Wool-Price Schedules and the Qualities of English Wools in the Later Middle Ages, ca. 1270-1499," *Textile History* 9 (1978): 118-69, reprinted in Munro, *Textiles, Towns, and Trade*; Michael Ryder, "British Medieval Sheep and Their Wool Types," in *Medieval Industry*, ed. D. W. Crossley (London, 1981), 16-28. For Spanish wools, see Robert Lopez, "The Origin of the Merino Sheep," *The Joshua Starr Memorial Volume: Studies in History and Philology* (a publication of *Jewish Social Studies*, no. 5, New York, 1953), 161-68; Carla Rahn Phillips and William D. Phillips, Jr., *Spain's Golden Fleece: Wool Production and the*

the English crown perceived a foreign demand for at least the finer English wools that was or became relatively inelastic. Certainly from the 1330s, when the cloth industries of the Low Countries and of Italy, Florence especially, reoriented their textile production more and more towards luxury woollens production, they became exclusively dependent upon those finer English wools, at least for their export trades. When Edward I levied the first export duty, as the Old Custom of 1275, those continental cloth industries were by no means so fully dependent on English wools; and that initial rate was quite modest, at 6s. 8d. per woolsack (of 364 lb), perhaps about 7 percent of the current mean export value.⁸⁸

That tax structure was abruptly and brutally altered in 1336, on the very eve of the Hundred Years' War, and just when the Flemish cloth industry was undergoing its reorientation to luxury production. Edward III and his specially convened Great Council imposed an additional export subsidy of 20s. 0d. per woolsack, which he increased to 33s. 4d. a sack in March 1338 and to 40s. 0d. a sack in November 1341, for a total tax burden of 46s. 8d. a sack (50s. 0d. a sack for aliens).⁸⁹ Subsequent merchant assemblies and parliaments periodically confirmed that high rate up until 1362, when the subsidy was temporarily halved; but the following year, Edward III made the recently conquered French port of Calais the official and compulsory wool staple for all wool exports to northern Europe, governed by a mercantile cartel that was designed to pass this tax incidence more fully on to foreign buyers (i.e., rather than on to the domestic wool-growers in lower prices), in part by fixing uniform minimum wool prices for each county. That same year Parliament

Wool Trade from the Middle Ages to the Nineteenth Century (Baltimore and London, 1997), 40-42, 343; Munro, "Origins of the English 'New Draperies,'" 45-50. For Spanish wools of Roman Andalusia-Extremadura (Baetica), and their evident post-Roman disappearance, see A. T. Fear, "The Golden Sheep of Roman Andalusia," *Agricultural History Review* 40, no. 2 (1992): 151-55.

⁸⁸ Carus-Wilson and Coleman, *England's Export Trade*, 194-96. Wool export duties were temporarily increased by Edward I's *maltote* in 1294-97, to 46s. 8d. per sack, to help finance his war with France. By his *Carta Mercatoria* of 1303, alien merchants had to pay an additional New Custom of 3s. 4d. per sack. For contemporary wool prices, see T. H. Lloyd, *The Movement of Wool Prices in Medieval England* (Cambridge, 1973), 38-41.

⁸⁹ F. R. Barnes, "The Taxation of Wool, 1327-1348," and George Unwin, "The Estate of the Merchants, 1336-1365," both in *Finance and Trade under Edward III*, ed. George Unwin (London, 1918), 143-46, 179-97; Terrence Lloyd, *The English Wool Trade in the Middle Ages* (Cambridge, 1977), 144-47, 193-224; W. M. Ormrod, "The Crown and the English Economy, 1290-1348," in Campbell, *Before the Black Death*, 167-73; Munro, "Industrial Entrepreneurship," 377-88; and nn. 90, 92, 129-30.

restored the wool subsidy to 40s. per sack; and then, in 1369, increased it to 43s. 4d. per sack, for a total duty on native exporters of 50s. 0d. a sack (51s. 7d. with an added Calais Staple import duty).

Arguably, however, for a variety of reasons, the Calais Staple did not become a fully effective cartel in achieving this goal of transmitting the tax burden until the 1390s.⁹⁰ By this time, the *real* burden of the wool-export duties, which were *specific* rather than *ad valorem*, and thus levied as a fixed amount per sack, had increased substantially because of the stark deflation that had beset northwestern Europe from the late 1370s, bringing with it a fall in *nominal* wool prices. As a consequence, the wool export taxes now amounted to virtually 50 percent of the mean export prices of the better grades of English wools; and, according to records of the Flemish, Dutch, and Brabantine urban draperies for the early fifteenth century, these tax-burdened English wools were accounting for about 70 percent of their pre-finishing manufacturing costs.⁹¹

English clothiers, however, were not subjected to any such burdens, for they were able to buy the very same high quality wools totally free of tax to produce cloths, which, when exported, bore a very minor duty of 12d. per broadcloth by Hanseatic merchants (from 1302), and 14d. per cloth by denizen merchants (untaxed before 1347); and these export taxes remained unchanged until 1558. In the late fourteenth, early fifteenth century these specific duties amounted to no more than 2 to 3 percent of the mean value of exported woollens.⁹² In sum, we may

⁹⁰ For the foregoing see Lloyd, *Wool Trade*, 193-224; Munro, "Wool Price Schedules," 135-43; Munro, "Industrial Entrepreneurship," 377-88; Munro, "Industrial Crisis," 103-41. During this period, the crown often undermined the Staple's monopoly powers by allowing Italian and Spanish merchants to bypass the Staple in exporting wools directly by sea to the Mediterranean (1378); by granting other exemptions to ship wools directly to Middelburg and Dordrecht; by selling export licences; and by periodically removing the Staple from Calais (intermittently in 1369-76, in 1382-88, and 1390-92).

⁹¹ For evidence on wool duties, wool prices, cloth production costs, and the price level, see: Lloyd, *Wool Prices*, 41-45; John Munro, "Industrial Protectionism," 254-56, tables 13.1-13.3; John Munro, "The Medieval Scarlet and the Economics of Sartorial Splendour," in Harte and Ponting, *Cloth and Clothing*, 32, table 3.1; 52, table 3.12, both reprinted in Munro, *Textiles, Towns, and Trade*; Munro, "Mint Outputs, Money, and Prices," 31-122.

⁹² See Carus-Wilson and Coleman, *England's Export Trade*, 194-98; Norman S. B. Gras, *The Early English Customs System: A Documentary Study of the Institutional and Economic History of the Customs from the Thirteenth to the Sixteenth Century* (Cambridge, Mass. 1918), 59-84; Munro, "Industrial Protectionism," 265-66, tables 13.3-13.5 (for cloth prices); John Munro, "Anglo-Flemish Competition in the International Cloth Trade, 1340-1520," *Publication du Centre européen d'études bourguignonnes* 35 (1995): 37-60 (published as: *L'Angleterre et les pays*

reckon from all these tax calculations that English fiscal policies had unintentionally but effectively given the native cloth industry a major cost advantage of about 25 to 30 percent, in producing medium-quality woollen cloths.

Some economic consequences of these English fiscal and Staple policies can be readily seen in the export and continental production statistics for the second half of the fourteenth century, expressed in quinquennial means. English wool exports rose, not fell, after the Black Death, to reach a peak of 32,544 sacks (5,373.26 tonnes) in 1355-59; but, thereafter, with the imposition of the Calais Staple requirements and higher export duties, wool exports fell 46 percent by the end of the century, to a mean of 17,546 sacks in 1395-99. A corresponding fall in production indices for some of the Flemish and Brabantine urban draperies can also be seen in Table 1. Meanwhile, English broadcloth exports soared from a mean of just 7,231 pieces in 1355-59 to a peak of 40,096 pieces in 1395-99, a rise of 455 percent. Over this forty-year period, total English exports, measured by combining woolsacks and broadcloths at 4.333 cloths per sack, experienced an overall decline of 22 percent, rather less than the aggregate fall in European population, providing another indication of the inroads that the English cloth trade was making into the contracted markets of its overseas competitors by the end of the fourteenth century.⁹³

The Flemish-Brabantine cloth industries during the disastrous fourteenth century: the traditional urban draperies and the nouvelles draperies in towns and villages

That the urban cloth industries of the southern Low Countries were still managing to survive in the 1390s is all the more amazing when one recites the full litany of disasters that had befallen them in the century since the 1290s: the loss of their Mediterranean markets for cheap and light textiles, probably the largest segment of their industrial pro-

bourguignons: relations et comparaisons, XV^e-XVI^e siècle, ed. Jean-Marie Cauchics [Neufchâtel, 1995]). Other alien merchants, however, had to pay an export duty 2s. 9d. per broadcloth, and subsequently also an *ad valorem* poundage tax of 5%, which the Hanse refused to pay. Not surprisingly, English and Hanse merchants together soon gained the lion's share of the cloth trade; see Carus-Wilson and Coleman, *England's Export Trade*, 75-119.

⁹³ For analyses of these phenomena and the data in Table 1, see Munro, "Industrial Protectionism," 229-68; Munro, "Anglo-Flemish Competition," 37-60; Munro, "Monetary Contraction and Industrial Change," 95-161; Munro, "Economic Depression and the Arts," 235-50; Lloyd, *Wool Trade*, 193-255; and sources cited in nn. 87-92.

duction; the impact of widespread chronic warfare and war related activities in disrupting or contracting markets, and in raising transaction costs in servicing those markets, for the better-quality lines of textiles on which these industries refocused; the rise of the competitive quasi-rural *nouvelles draperies* within the southern Low Countries; the expansion of a rejuvenated and new English cloth trade; and the related impact of tax and other fiscal measures on the English wool trade, on which the Low Countries' draperies had become so dangerously dependent; the Black Death and subsequent drastic depopulations, which, along with the military strife of the Hundred Years' War era, dramatically reduced their remaining markets; and, finally, the so frequently disruptive impact of guild strife, especially between weavers and fullers, within the Flemish urban cloth industries especially.

For Flemish textile production, certainly by far the most destructive manifestation of that guild strife, though by no means the exclusive element within it, was the Ghent-led civil war, or the so-called Second Artevelde Rebellion, of 1379-85, which also involved both English and French military intervention; and even the crushing Burgundian-French victory at West Roosebeke in November 1382 did not bring peace for another three years. Nor did Ghent's submission and the truce of December 1385 permit any real recovery. For the German Hanse towns, led by its Baltic members, after failing to gain reparations for war damages, imposed a trade embargo on Flanders, from 1388 to 1392. Taking very quick and strategic advantage of these Flemish difficulties were both English and Dutch cloth merchants, the latter in particular promoting exports from the recently established Leiden cloth industry, to invade and capture important Baltic markets; and the English successes are clearly reflected in the sharp rise in the export statistics. Yet the English, and to a lesser extent, the Hollanders became involved in their own conflicts with the Baltic Hanse; and as a result, English cloth exports to the Baltic, having peaked around 1402, then experienced an irredeemable decline in this region, an important factor that subsequently encouraged the London-based Merchants Adventurers to seek a new continental outlet for English woollens.⁹⁴ In 1420, they established their

⁹⁴ On these events, see Lloyd, *England and the German Hanse*, 50-109; Nicholas, *The Van Artevelde*, 114-87; Nicholas, *Medieval Flanders*, 227-31, 242-46, 318-22; Richard Vaughan, *Philip the Bold: The Formation of the Burgundian State* (London, 1962), 16-38, 168-97; Michael Postan, "Economic and Political Relations of England and the Hanse from 1400 to 1475," in *Studies in English Trade in the Fifteenth Century*, ed. Eileen Power and Michael Postan (London, 1933), 91-104, republished in Michael Postan, *Medieval Trade and Finance*

Table 1. Exports of English Woolsacks and Broadcloths, Sales of Drapery Tax Farms at Ghent, Ypres, and Mechelen; and Annual Rentals of Drapery Stalls in the Ypres Lakenhalle

Years (5 yrs.)	English wool exports, in sacks (364 lb)	English cloth exports, in broadcloths (24 × 1.75 yd)	Ghent drapery tax farm sales: (a) in shillings groot Flemish	Ypres drapery tax farm sales: (b) in shillings groot Flemish	Ypres drapery stalls, number rented	Mechelen drapery tax farm sales: (c) in pounds oude groot Mechelen	Leuven drapery tax farm sales: (d) in Schilden to 1399; Rijns gulden from 1400
1335-39	22,850		1,721.25			1,230.76	
1340-44	19,732		1,743.20			914.40	
1345-49	24,968	3,196	1,371.30			500.82	3,648
1350-54	30,204	1,621	1,381.17			685.07	3,463
1355-59	32,544	7,231	1,305.10			523.20	4,535
1360-64	30,183	11,035	1,225.50			476.42	8,728
1365-69	29,603	14,684	733.40			597.80	12,998
1370-74	24,081	12,723	498.75			555.80	8,080
1375-79	21,659	13,154	390.00			478.41	8,305
1380-84	18,612	18,978	301.20			407.96	6,181
1385-89	17,412	25,351	220.02			374.05	3,145
1390-94	19,543	36,842	missing			302.25	3,238
1395-99	17,546	40,096	missing			302.49	3,026
1400-04	13,738	37,810	110.33			279.77	2,385
1405-09	14,629	29,216	146.05	5,457.92	430.00	261.04	2,990
1410-14	13,540	27,522	137.50	5,352.99	419.00	278.18	2,518
1415-19	14,705	28,855	177.75	5,341.70	510.70	265.08	1,588
1420-24	14,278	36,449	156.90	5,317.00	433.20	348.43	1,126
1425-29	14,179	41,446	195.05	5,104.67	376.60	365.76	757
1430-34	8,136	40,861	153.12	4,736.87	330.50	280.37	570
1435-39	4,570	42,904	88.71	3,441.10	217.20	151.25	541
1440-44	11,079	57,056	82.62	3,490.07	187.20	198.21	417
1445-49	7,487	49,506	103.58	3,514.33	159.20	156.27	286
1450-54	8,655	37,140	75.10	3,072.33	109.00	144.70	280
1455-59	8,566	37,604	36.05	2,996.93	73.20	135.25	216

1460-64	5,776	31,161	25.03	2,055.73	61.80	147.26	193
1465-69	8,772	35,446	36.96	1,830.40	71.40	159.39	271
1470-74	8,614	36,253	51.20	1,669.20	73.60	186.75	263
1475-79	8,792	45,397	49.42	1,449.64	58.80	223.36	282
1480-84	8,104	55,108	34.37	1,308.67	21.80	219.51	328
1485-89	8,917	48,753	11.68	2,079.02	11.50	262.95	786
1490-94	6,618	56,802	3.00	2,047.48		211.08	672
1495-99	9,747	59,210	7.40	2,692.34		293.87	587
1500-04	7,712	78,790	12.60			235.38	
1505-09	7,166	83,203	8.00			223.28	
1510-14	7,379	83,415	7.75			190.77	
1515-19	7,671	88,881	5.50			187.10	
1520-24	6,356	82,677				189.61	
1525-29	4,628	94,656				148.69	
1530-34	3,166	93,893				133.63	
1535-39	3,736	104,103				102.57	
1540-44	4,616	117,345					

(a) Ghent: sum of the *ramen* and *nieuw huusgeld* in *de ramen* excise tax farms only.

(b) Ypres: sum of the *wullescale*, *lakenen*, *smede*, and *blauwaeruers* excise tax farms.

(c) Mechelen: sum of the *wolle*, *roeghevande*, and *ghereeden ghevande* excise tax farms only.

(d) Leuven: sum of the *laken*, *wolle*, *weet*, *zieden*, *6d. geld*, and *uitwaert* excise tax farms. In 1400-02, the sum of 2,385.13 *Rijns gulden* = 2,069.39 *schilten* ($\text{£}1.65$ *assisegeld* = 1 *schilt*).

Sources:

England: E. M. Carus Wilson and Olive Coleman, *England's Export Trade, 1275-1547* (Oxford, 1963).

A. R. Bridbury, *Medieval English Clothmaking: An Economic Survey* (London, 1982), Appendix F, 118-22.

Ghent: Stadsarchief Gent, Stadsrekeningen, Reeks 400: 4-36, 1335-1504; Espinas and Pirenne, *Recueil de documents*, 2: 624-25.

Ypres: Algemeen Rijksarchief, Rekenkamer, registers nos. 38, 635-722.

Mechelen: Stadsarchief Mechelen, nos. 76-194.

Algemeen Rijksarchief, Rekenkamer, registers nos. 41, 219-72.

Leuven: Stadsarchief Leuven, Stadsrekeningen 1400-1500, nos. 5006-124.

permanent overseas headquarters at Antwerp, the one major port town in the Low Countries that no longer had an important cloth industry to protect and one that readily welcomed the subsequent influx of English woollens.⁹⁵

For the first two decades of the fifteenth century, however, the cloth industries of the southern Low Countries had managed to stage an evident comeback, with some semblance of an Indian Summer of prosperity, though one necessarily based on far smaller and much narrower European markets than these industries had enjoyed a century and more earlier. According to Hektor Amman, in an exhaustive study of early fifteenth-century German and other central European markets, Flemish woollens, especially including those of the *drie steden*, had regained their former preeminence, followed by the Brabantine and then Dutch woollens, while the much cheaper English broadcloths now or still ranked a very distant fourth.⁹⁶ A more recent study by Abraham-Thisse largely supports that view on cloth markets, though her much narrower range of sources indicated a relatively greater prominence in Baltic markets for medium-priced Flemish and Artesian textiles.⁹⁷ In the early fifteenth-century Mediterranean markets, the Florentine and other Italian luxury woollens, from various towns in Tuscany and Lombardy, had gained clear ascendancy, at the direct expense of those from the Flemish *drie steden* and major Brabantine towns. But many of Flanders' smaller-town

(Cambridge and New York, 1973), 232-304; Marian Malowist, "L'expansion économique des Hollandais dans le bassin de la Baltique aux XIV^e et XV^e siècles," *Studia z dziejow rzemiosla w okresie kryzysu feudalizmu w Europie Zachodniej w XIV i XV wieku* (Warsaw, 1954), republished in his *Croissance et régression en Europe, XIV^e-XVII^e siècles* (Paris, 1972), 91-138; De Boer, *Graaf en Grafiek*, 211-32; Blockmans, "Economic Expansion of Holland and Zeeland," 41-58. Nightingale, *Medieval Mercantile Community*, 269-70, 279, 323-26, also notes that Italian merchants, denied ready access to Flemish woollens, increased their exports of English broadcloths from Southampton (over 3,800 per annum) in the early 1380s.

⁹⁵ See sources in nn. 93-94, and: J. A. Van Houtte, "La genèse du grand marché international d'Anvers à la fin du moyen âge," *Revue belge de philologie et d'histoire* 19 (1940): 87-126; J. A. Van Houtte, "Bruges et Anvers: marchés 'nationaux' ou 'internationaux' du XIV^e au XVI^e siècle?" *Revue du Nord* 24 (1952): 89-108; Oskar De Smedt, *De engelse natie te Antwerpen in de 16e eeuw*, 2 vols. (Antwerp, 1950); Van der Wee, *Antwerp Market*, 2: 18-49; E. M. Carus-Wilson, "The Origins and Early Development of the Merchant Adventurers' Organization of London," *Economic History Review*, 1st ser., 4 (1933), reprinted in her *Medieval Merchant Venturers*, 143-82; S. T. Bindoff, "The Greatness of Antwerp," in *The New Cambridge Modern History*, vol. 2, *The Reformation*, ed. G. R. Elton (Cambridge, 1958), 50-59; Munro, "Patterns of Trade," 160-68.

⁹⁶ Hektor Ammann, "Deutschland und die Tuchindustrie Nordwesteuropas im Mittelalter," *Hansische Geschichtsblätter* 72 (1954): 1-63.

⁹⁷ Abraham-Thisse, "Draps de Flandre," 167-206.

nouvelles draperies, especially those of Wervik, Kortrijk, Comen, and Menen, were more than holding their own in selling very good quality and quite high priced heavy-weight woollens, though they would soon face a new challenge from Catalan cloth producers, which were evidently now using better quality *merino* wools, as were some Italian draperies.⁹⁸ But again, as in the Baltic, sales of English broadcloths still fared badly (along with a very few cheap worsteds and “streits”); and indeed the English cloth trade would not succeed in making major gains in the Mediterranean basin, despite all its reputed advantages, until later in the fifteenth century, and especially after the formerly prominent Flemish *nouvelles draperies* of Wervik, Kortrijk, and Comen were themselves suffering a severe industrial and commercial decline, along with the traditional urban draperies of Bruges, Ypres, Ghent, Brussels, Mechelen, and Leuven.⁹⁹

*Urban institutions and the survival of the Low Countries' draperies:
fulling and the fullers' guilds*

Since the ultimate decline of the traditional urban draperies in the southern Low Countries is indisputable, since the evidence of cost advantages of mechanical fulling is compelling, and since fulling was such a crucial process in the manufacture of genuine heavy-weight woollens, now the predominant form of textile manufacturing, the absence, or supposed absence, of fulling-mills in the traditional urban cloth industries of the medieval Low Countries must be reexamined. This question is all the more important in the light of relatively recent evidence that demonstrates the widespread and evidently effective use of fulling-mills in many of the so-called *nouvelles draperies*—not those just listed above—and other cloth industries of sixteenth-century Flanders, Brabant, and the bishopric of Liège (Vesdre region). Must we therefore conclude

⁹⁸ Federigo Melis, “Uno sguardo al mercato dei panni di lana a Pisa nella seconda metà del trecento,” *Economia e storia* 6 (March 1959): 321-65; Melis, “Diffusione nel Mediterraneo occidentale dei panni di Wervicq,” 219-43; Eliyahu Ashtor, “L’exportation de textiles occidentaux dans le Proche Orient musulman au bas moyen âge (1370-1517),” in de Rosa, *Studi in memoria di Federigo Melis*, 303-77; Eliyahu Ashtor, “Catalan Cloth on the Late Medieval Mediterranean Markets,” *Journal of European Economic History* 17 (Fall 1988): 227-57; Hoshino, “Rise of the Florentine Woollen Industry,” 84-204; Hidetoshi Hoshino and Maureen Mazzaoui, “Ottoman Markets for Florentine Woollen Cloth in the Late Fifteenth Century,” *International Journal of Turkish Studies* 3 (1985-86): 17-31; Munro, “Origins of the English ‘New Draperies,’” 66-71; Munro, “Patterns of Trade,” 157-60.

⁹⁹ See nn. 96-98, 118-19, 125-32; and also Fryde, “Anglo-Italian Commerce,” 345-55; Fryde, “Italian Maritime Trade,” 291-337.

that in the medieval Low Countries urban guilds and the governments that supported them are to be faulted for preventing such mechanization and thus industrial innovations in general.¹⁰⁰

Carus-Wilson, in advancing her “industrial revolution” thesis to explain the ultimate English victory in the international cloth trade, necessarily had to consider this particular question, to which she supplied two answers. The first now seems to be clearly wrong: that “Flanders like Lincolnshire is a land of windmills, not water-mills.”¹⁰¹ On the contrary, water-mills proliferated throughout medieval Flanders and all of the southern Low Countries. Furthermore, as Van Uytven has clearly demonstrated, fulling-mills themselves can be found in several small-town draperies in the southern Low Countries during the thirteenth and early fourteenth centuries: in Artois, Namur, the bishopric of Liège, and in Brabant, particularly in the major urban drapery of Leuven.¹⁰² In Flanders, to be sure, the *drie steden* did not use fulling-mills; but their town governments did operate and/or lease water-driven grain mills throughout the entire medieval era.¹⁰³ There was no compelling technological reason why these mills could not have been adapted for fulling, as they were in the late-medieval English cloth towns, certainly if those towns had been both willing and able to invest in the much more complex but more powerful overshot wheels, with mill races.

¹⁰⁰ Van Uytven, “Fulling Mill,” 1-14, based in parts on documents in De Sagher et al., *Receuil*, 1-3: passim.

¹⁰¹ See Carus-Wilson, “Woollen Industry” (1952), 413; but in the 2d edition (1987), 674, she amended that to say that Flanders was “on the whole a land of windmills,” in response to Van Uytven (n. 100), who demonstrated the subsequent use of water-powered fulling-mills in the southern Low Countries. Carus-Wilson, however, never explained why she believed that windmills were unsuitable for powering fulling-mills; perhaps, in her view, they failed to provide continuous reciprocal power with the even motion of water-mills.

¹⁰² Van Uytven, “Fulling Mill,” 1-14.

¹⁰³ Examples of water-mills in: (a) Bruges, 1292: “ad molendinum ad aquam,” in Stadsarchief Brugge (hereafter cited as SAB), Stadsrekening 1291-92; account published in Carlos Wyffels and J. De Smet, eds., *De Rekeningen van de stad Brugge (1280-1319)*, vol. 1, 1280-1302 (Brussels, 1965); (b) Bruges, 1352: “ter Watermuelene ten Wijgaerde,” in SAB, Stadsrekening 1351-52; (c) Ghent, 1334: “vanden viere [4] watermolne ter Braembruggen boven den temmerwerke,” in Stadsarchief Ghent, Stadsrekening 1333-34, reeks no. 400: 3(5), fol. 140r0; account published in Julius Vuylsteke, ed. *Gentsche Stads- en Baljuwsrekeningen, 1280-1336* (Ghent, 1900), 910; (d) Ypres, 1310: “des moulins a ewe” and in 1325: “des molins à yauwe à le porte de Messines,” in Georges Des Marcz and Etienne De Sagher, eds., *Comptes de la ville d'Ypres de 1267 à 1329* (Brussels, 1909-13), 1: 294, no. 21 (1309-10); 1: 426-27, no. 36 (1324-25); (d) Ypres, 1406: receipts from the “watermuelen ter Meesenpoorte, £35 10s. Od. *parisis*,” in Algemeen Rijksarchief België, Rekenkamer, reg. no. 38,635: Stadsrekening, July-Sept. 1406, fol. 2r0.

Carus-Wilson, as she had done for the English part of her thesis, also provided an ancillary, if redundant, reason for the Flemish failure to use fulling-mills: prohibitions by the urban cloth guilds, "which were not less conservative than those in England, and very much more powerful."¹⁰⁴ Powerful they certainly came to be after 1302, especially in the *drie steden*, but there were no such prohibitions, certainly none recorded in the often voluminous guild *keuren* of the *drie steden* and of the smaller towns. By far the most extensive set of fullers' regulations to survive, largely for the second half of the fourteenth century, are those for Ypres, the weakest of the *drie steden*, the one most susceptible to rural competition from the *nouvelles draperies*, and especially those on the nearby Leie river, in a region much more suitable to undershot waterwheels than any other region in Flanders. Yet no reference to fulling-mills can be found within the 114 articles of this Ypres fullers' *keure*, and provisions stipulating that four days' labour be devoted to fulling broadcloths and from two to three days' for "small" (i.e., narrow) woollens clearly establish that foot-fulling was the only mode then considered.¹⁰⁵

Even if mechanical fulling had been technically feasible, the fullers' guilds of the *drie steden* never enjoyed the unilateral power to prevent its use, even when they occasionally participated in urban coalition governments. In all the towns, the fullers, as the wage-earning employees of the weaver-drapers, the true industrial entrepreneurs, were almost always the weaker party, with a clearly defined subordinate status in the town governments of Bruges and Ypres. In Ghent, after many decades of often bitter strife, the defeated fullers were permanently evicted from the ranks of the town *schepenen* (aldermanic council), shortly after 1361; and henceforth town-appointed officials supervised their guild.¹⁰⁶ In the drapery towns of neighbouring Brabant and Holland, the fullers had even less influence with urban governments that merchants and merchant-drapers so strongly dominated; and in Leiden the mercantile *gerecht* brutally suppressed several fullers' strikes and rebellions during the fifteenth century.¹⁰⁷

¹⁰⁴ Carus-Wilson, "Woollen Industry" (1952), 413; modified in 1987 ed., 674.

¹⁰⁵ Espinas and Pirenne, *Recueil de documents*, 3: 568-85, doc. no. 778.

¹⁰⁶ Van Werveke, "De economische en sociale gevolgen," 1-15; Van Werveke, *De koopman-ondernemer*, 5-26; Van Werveke, *Gand*, 48-69; Fris, "Origines de la réforme," 427-59; Nicholas, *Metamorphosis*, 135-77, 235-62; Nicholas, *Medieval Flanders*, 242-46; Munro, "Industrial Entrepreneurship," 377-88. See also the next note.

¹⁰⁷ See documents on Leiden's fullers' strikes in: Posthumus, *Bronnen tot de geschiedenis*, 1: 136-43, nos. 121-30; 1: 179-82, nos. 154-59; 1: 224-40, nos. 187-90; 1: 253-54, no. 215; 1: 342-47, nos. 279-82; 1: 616-63, nos. 506-36 (for the years 1435-80); and also

In all of this guild strife, in Flanders, Brabant, and Holland, the major issue was wages; and if the fullers' wages accounted for about 20 percent of the *value-added* manufacturing costs, the weaver-draper had a very strong incentive not just to control wages but to reduce those labour costs. If, however, they did not seek to do so by installing fulling-mills, not even in the face of steadily rising costs and mounting competition from the English and Italian cloth-export trades, during the later fourteenth and fifteenth centuries, they had good reason to disdain mechanical fulling, which did not offer them any possible avenue of salvation. Having been forced to reorient textile manufacturing for export markets, and thus having so resolutely staked their fortunes on producing the very finest luxury-quality woollens, those who dominated these urban draperies evidently feared that mechanical fulling would have had very adverse consequences upon the international reputation of their woollens. For in this era, the belief was widespread that the incessant pounding of the heavy oaken hammers in fulling-mills would degrade the very finest woollens, made from the most delicate, thin-fibred wools, if not the medium grade woollens. Even if this view had been exaggerated, these urban drapers would have taken no chance that mechanical fulling would debase the cloth-seals that were the veritable *sine qua non* of their success in international markets.¹⁰⁸

Posthumus, *Geschiedenis van de leidsche lakenindustrie*, 1: 308-55, 362-67; K. Spading, "Streik-kämpfe des Vorproletariats in der holländischen Tuchstadt Leiden im 15. Jahrhundert," *Wissenschaftliche Zeitschrift der Ernst-Moritz-Arndt Universität Greifswald, Gesellschafts- und sprachwiss. Reihe* 18 (1969): 171-75; Marc Boone, Hanno Brand, and Walter Prevenier, "Revendications salariales et conjoncture économique: les salaires de foulons à Gand et à Leyde au XV^e siècle," in *Studia Historica Oeconomica: Liber Amicorum Herman Van der Wee*, ed. Erik Aerts, Brigitte Henau, Paul Janssens, and Raymond Van Uytven (Leuven, 1993), 59-74; Boone and Brand, "Vollersproeren," 168-92; Munro, "Industrial Entrepreneurship," 377-88. For Mechelen, see M. G. Willemsen, "La grève des foulons et des tisserands en 1524-1525 et le règlement général de la draperie malinoise de 1544," *Bulletin du cercle archéologique de Malines* 20 (1910): 1-115.

¹⁰⁸ On contemporary views about the impact of mechanical fulling on quality, see *Statutes of the Realm*, 2: 474-74, 22 Edward IV c. 15, 1482-83; Van Uytven, "Fulling Mills," 1-14; and Van Uytven, "Productivity," 285, citing a text of 1403, contrasting the superiority of foot-filled cloths from Lormaye (Nogent-le-Roi) with mill-filled cloths from Chartres; Michel Mollat, "La draperie normande," in Spallanzani, *Produzione, commercio e consumo*, 403-22; in particular with reference to the proposed fulling-mill at Louviers: "on l'accusait de ruiner le renom acquis par la production de Louviers sur la plan international. . ." (418). In fifteenth-century Barcelona, fulling-mills were widely used in the production of cheaper woollens, but for the finest woollens, those made from English wools, foot-fulling was obligatory. Carrère, *Barcelone*, 1: 448-52. See also Carus-Wilson, "Woollen Industry" (1987), 675; Swanson, *Medieval Artisans*, 41-42. On cloth seals, see Walter Endrei and Geoffrey Egan, "The Sealing of Cloth in Europe, With Special Reference to the English Evidence," *Textile History* 13 (1982): 47-76; and n. 79 above.

The governments of the Flemish *drie steden* in particular had all the more reason to be concerned about the international reputation of their woollens and consumer confidence in their cloth sales, because of the noxious competition from many of the domestic *nouvelles draperies* that evidently engaged in imitating, if not counterfeiting, the very fine woollens of the *drie steden*. Contrary to much of the published literature on these industries, the so-called *nouvelles draperies* did not produce cheap, light textiles during the later fourteenth and fifteenth centuries. To be sure, much earlier, during the twelfth, thirteenth and early fourteenth centuries, many of these villages draperies had produced light says, tire-taines, doucken, and other cheap worsted-like fabrics; but from the 1330s those rural draperies that did manage to survive followed the *drie steden* in reorienting production more and more to luxury-quality woollens, as heavy as any of those from the *drie steden*. Some imitated the *drie steden's* woollens not only in their dimensions and textures, but also in their selvages and seals—or so the latter complained.¹⁰⁹ The leading *nouvelles draperies* of this era—Wervik, Kortrijk, Menen, Comen (Comines), Linselles—sold their good quality woollens for prices ranging from one-half to two-thirds those of the *drie steden*, but generally well above those for exported English woollens, as indicated in Table 2. Evidently their drapers were able to do so by using lesser quality English wools, in lesser quantities, with simpler manufacturing techniques. Certainly, with the aid of Italian merchants who invested in their draperies, these particular *nouvelles draperies* proved to be very successful in capturing some Mediterranean markets at the direct expense of the *drie steden*.¹¹⁰

There is no evidence, however, that even those who led or dominated the *nouvelles draperies* situated on the faster-flowing portions of the Leie river in southern Flanders ever sought to reduce costs and thus prices by resorting to fulling-mills—not in this era; and the voluminous fullers' *keure* of Wervik, issued in 1397, differs in no significant respects from the previously discussed *keure* for Ypres, and it certainly has no references to fulling-mills.¹¹¹ Subsequently, however, during the sixteenth

¹⁰⁹ See N. De Pauw, ed., *Ypre jeghen Poperinghe angaende den verbonden: gegingstukken der XIVde eeuw nopens het laken* (Ghent, 1899), 1-180; Espinas and Pirenne, *Recueil de documents*, 3: 168-222, no. 649; Munro, "Industrial Transformations," 114-17; Munro, "Origins of the English 'New Draperies,'" 60-65.

¹¹⁰ See Munro, "Industrial Transformations," 114-20; Munro, "Origins of the English 'New Draperies,'" 64-83; Federigo Melis, *Aspetti della vita economica medievale: studi nell'archivio Datini di Prato* (Florence, 1962), 1: 151-61, 455-729 (part 5: "L'industria laniera").

¹¹¹ De Sagher et al., *Recueil*, 3: 452-78, no. 554.

Table 2. Prices of English Domestic Wools and Broadcloths and Flemish Cloths in the Fifteenth Century, in Quinquennial Means, 1400-04 to 1495-99 (with English and Flemish Composite Price Indices) in Pounds Sterling and Groot Flemish

Years (5 yrs.)	English wool prices per sack, in pounds sterling: domestic mean values	English cloth export prices, in pounds sterling: mean values	Phelps & Brown & Hopkins price index, 1450- 74=100	Flemish price index, 1450- 74=100	Ghent cloth prices, in pounds groot Flemish: Dickedinnen	Ghent cloth prices, in pounds sterling: Dickedinnen	Kortrijk cloth prices, in pounds groot Flemish	Other <i>novelles</i> <i>draperies</i> : mean cloth prices, in pounds groot Flemish
1400-04	5.572	1.666	114.3	88.3	5.919	5.647	3.238	3.118
1405-09	6.057	2.000	103.6	98.7	5.922	5.650	3.421	3.263
1410-14	6.236	2.000	109.5	95.0	5.793	7.206	3.435	2.881
1415-19	4.652	2.000	113.9	108.1	5.935	6.872	3.424	2.646
1420-24	5.136	2.402	99.3	106.3	6.082	5.833	3.550	2.637
1425-29	4.859	2.001	105.4	117.1	6.063	5.675	3.917	2.700
1430-34	5.546	2.464	113.6	128.3	6.835	5.874	4.187	3.675
1435-39	5.550	2.729	113.5	137.7	7.281	6.597	3.750	3.750
1440-44	5.204	2.295	102.0	120.6	7.765	7.035	4.285	3.778
1445-49	5.610	2.731	96.7	107.8	7.925	7.180	4.038	3.380
1450-54	4.514	2.037	100.6	101.3	6.950	6.297	4.000	3.594
1455-59	4.132	2.062	95.1	113.9	7.702	6.978	3.306	3.306
1460-64	4.394	2.215	99.2	93.9	8.000	7.248	3.075	3.075
1465-69	5.906	1.866	106.2	95.0	8.100	8.388	3.125	3.125
1470-74	5.285	2.096	98.8	96.0	8.642	8.340		
1475-79	6.143	2.382	87.2	111.8	8.875	7.535		
1480-84	7.779	2.723	128.9	157.2	10.348	7.272		
1485-89	8.671	2.905	100.0	164.0	14.893	7.366		
1490-94	5.742	2.494	105.4	181.9	16.233	11.422		
1495-99	5.308	2.802	94.5	102.4	14.667	9.833		

Sources:

- England: T. H. Lloyd, *The Movement of Wool Prices in Medieval England* (Cambridge, 1973), 40-44.
 Public Record Office, KR Exchequer, E. 122/76/13, 74/11, 77/11, 73/23, 73/25, 194/14-18, 78/7, 79/5, 81/1-2, 83-2, 139/4, 139/7-8, 141-4, 141/21-22, 209/1; 141/25, 140/62, 141/29, 141/31, 141/33, 141/33-36, 209/2-8, 141/38, 142/1-12.
 LTR Exchequer, E. 356, 19-24.
 E. H. Phelps Brown and S. V. Hopkins, "Seven centuries of the prices of consumables, compared with builders' wage rates," *Economica* 23 (1956): 296-314; republished in E. H. Phelps Brown and S. V. Hopkins, *A Perspective of Wages and Prices* (London and New York, 1981), 13-59.
- Flanders: Stadsarchief Gent, Stadsrekeningen, Reeks 400: 11-35
 Stadsarchief Brugge, Stadsrekeningen, 1400/01-1500/01
 Algemeen Rijksarchief, Rekenkamer, reg. nos. 32, 461-564 (Bruges).
 J. H. Munro, "Mint outputs, money, and prices in late-medieval England and the Low Countries," in *Münzprägung, Geldumlauf und Wechselkurse/Minting, Monetary Circulation and Exchange Rates*, ed. Eddy Van Cauwenberghe and Franz Irsgler, Akten des 8th International Economic History Congress, Section C7, Budapest 1982 (Trier, 1984), 31-122.

century, many of these Leie Valley draperies reoriented production once more towards the production of cheaper fabrics, including semi-worsted and bays, which did require some fulling; and in so doing, they readily adopted fulling-mills. So, during the course of this same century, did many drapers in Leuven, Hasselt, and some other towns in neighbouring Brabant, in manufacturing similarly cheaper fabrics.¹¹² Thus, Leuven's drapers resumed the use of mills that their forefathers had abandoned during the early fourteenth century, when, according to this town's leading historian, Raymond Van Uytven, they had "switched over" to the production of luxury woollens production for export markets.¹¹³ The same had been true of many draperies in Normandy, where, during the later Middle Ages, only a few fulling-mills were retained, principally for *les gros draps bureaux, de grosses et mauvaises laynes*.¹¹⁴

If sixteenth-century drapers, in producing lesser quality woollens and serges, found that mechanical fulling was effective in reducing costs, would the same have been true for those fifteenth-century drapers who produced luxury woollens, had there been no valid concerns about impairing their quality? To be sure, as demonstrated earlier, fulling-mills might have reduced the weaver-drafter's value-added manufacturing costs or labour costs from about 20 percent with foot-fulling to 5 percent with mechanical fulling.¹¹⁵ But that cost saving would not necessarily have enhanced his profit margins by any significant degree, because that cost reduction would have permitted, at best, only a 3 percent reduction in the wholesale prices of his broadcloths.¹¹⁶ The reason

¹¹² Van Uytven, "Fulling Mill," 1-14; De Sagher et al., *Recueil*, 1-3: passim.

¹¹³ Van Uytven, "Fulling Mill," 1-6; Van Uytven, "Technique, productivity," 283-94. For documents on the Leuven fulling-mill in September 1298, see Florent Prims, "De eertse eeuw van de lakennijverheid te Antwerpen," 148, doc. no. 8. For a fulling-mill at Saint-Omer in 1280, see Espinas and Pirenne, *Recueil de documents*, 3: 243, no. 651.

¹¹⁴ Cited in Mollat, "Draperie normande," 418. The *petites draperies* of Artois (Hesdin, St. Pol, Aire) and the Meuse Valley region (Huy, Liège, Verviers, Maastricht) that continued to use fulling-mills evidently also produced only cheap fabrics for local or regional consumption. See Espinas and Pirenne, *Recueil de documents*, 1: 28-32, no. 10 (Aire, 1358); 1: 36-37, no. 13 (Aire, 1359); 1: 38-39, no. 15 (Aire, 1377); 2: 689-90, no. 582 (Hesdin-le-Vieux, 1340); 2: 699-700, no. 587 (Hesdin-le-Vieux, 1377); 4: 69-70 (Hesdin-le-Vieux, 1379); 3: 336, no. 706 (Saint-Pol, 1383); Georges Espinas, *La draperie dans la Flandre française*, 1: 159-60; 2: 212-13, 742-46.

¹¹⁵ See nn. 40, 116.

¹¹⁶ A potential 75% cost-saving from mechanized fulling of two *voirwollen halvelakenen* at Leiden in 1435 and 1449 (75% of 46d.) represents only 3.23% of their price, £4 9s. 0d. *groot*; and only 2.73% of the £7 0s. 0d. *groot* price for a Ghent *dickedinnen* in 1436. Fulling costs from Posthumus, *Bronnen leidsche textielnijverheid*, 1: 136-39, nos. 121, 124. Prices from Gemeente archief te Leiden, *Diversche Rekeningen*, no. 999; Archeif der

for such a very meagre price reduction is, of course, the fact that industrial labour accounted for only about 15-20 percent of his total costs for a finished cloth, while the raw materials—the fine English wools and the costly dyes—accounted for the other 80-85 percent, and thus for most of the wholesale price. Indeed, the structure of English wool export taxes, as a fixed *specific* duty per woolsack, actually encouraged drapers in the Low Countries and Florence to buy the best and most expensive wools, for which this tax would thus represent a lower percentage of the wool price. Since the finer woollens of the Flemish *drie steden* and other drapery towns in the Low Countries were already about three times more expensive than rival English broadcloths (see Table 2), such a very minimal price reduction of 3 percent would not have gained them many new customers; and any such gains would not have offset the loss of former customers who refused to buy mechanically-fulled luxury woollens, not when they still remained so high in price compared to English broadcloths. This point may be better understood by examining the economic principles that explain how most drapers in the Low Countries' came to price their luxury woollens.

Towns and the economics of monopolistic-competition in the Low Countries' draperies

Such a luxury orientation in textile manufacturing certainly found its economic justification by the very survival of the Flemish urban luxury draperies for almost a century, from the 1340s to the 1440s. But the economics of both supply and demand—of wool costs and cloth markets—forced the drapers in the Flemish *drie steden* to exercise their own comparative advantage in the upper-range luxury market, while necessarily relinquishing the lower ranges to rival woollens, especially the English, Norman, and those of the *nouvelles draperies*. Obviously, a market for ultra-luxury woollens, each worth about 160 days' wages for a master mason, at double or triple the price or more of these rival cloths would ultimately become a rather small one.¹¹⁷ If still a lucrative market

secretarie van de Stad, no. 522, fols. 92-93; Stadsarchief Gent, Stadsrekening, Reeks 400: 15, fol. 15ro. See also n. 40.

¹¹⁷ See Table 2. In 1460-64, the mean price for a Ghent *dickedinnen* broadcloth (21.0 m by 1.67 m = 34.91 m², weighing 22.13 kg) was £8.00 *groot*; and a Flemish master mason's daily wage was then 12d. or 1s. *groot* (Bruges and Ghent: Algemeen Rijksarchief, Rekenkamer, reg. nos. 32,514-17). Thus: $8 \times 240/12 = 160$. For comparative cloth dimensions, weights, and prices, see Munro, "Industrial Protectionism," 256-67, tables

for a select coterie of survivors, it became for the Flemish *drie steden* a fiercely competitive one, in quality more than in price. Their products, after all, had to compete with each other's textiles, and with other Flemish, Brabantine, Dutch, Norman, and Florentine luxury-quality woollens, let alone with the English.

Economists would call this *monopolistic competition*, in which the cloth producers had become *price-makers*, rather than *price-takers*, each selling unique or distinctly different woollens, which had, however, close substitutes. For the late-medieval Low Countries, this form of monopolistic competition was also peculiar in that the competitive price-making unit was not the individual draper or family firm or partnership, but rather the urban drapery and its guilds organised as a collective unit, under urban government supervision.¹¹⁸ Ideally, each town drapery would maximize profits, for each brand of cloth, when its marginal costs equalled marginal revenue: i.e., by establishing both optimum output and price from the intersection of $MR = MC$. The marginal revenue itself was determined by the slope of the demand curve for that particular woollen, which in turn was shaped by current consumer preferences for substitute woollens within that price range. Each drapery therefore implicitly strove to steepen that slope, to reduce the price-elasticity of demand, by diverting consumer demand away from rival woollens. That meant enhancing the quality of its own woollens, while distinguishing them from all other rival products. Obviously, the Flemish urban draperies sought considerable assistance from their civic governments in achieving these goals. One of the very first steps taken by the *drie steden*, from at least 1359, was to prohibit any importation and sale of English woollens within Flanders, a ban rigorously and effectively enforced until the late 1490s.¹¹⁹

13.2-13.5; Munro, "Medieval Scarlet," 40-52, tables 3.4-3.11; Munro, "Industrial Transformations," 143-48, appendix 4.1; Munro, "New Draperies," 39-49, tables 1-4. For the decline and scale of production, see statistical tables in John Munro, *Wool, Cloth and Gold: The Struggle for Bullion in Anglo-Burgundian Trade, c. 1340-1478* (Brussels, 1973), 181-86; Munro, "Industrial Protectionism," 229-67; Munro, "Industrial Change," 110-60; Munro, "Economic Depression," 235-50; Nicholas, *Metamorphosis*, 135-77; Van Uytven, "La draperie brabançonne," 85-97.

¹¹⁸ See John Munro, "Urban Regulation and Monopolistic Competition in the Textile Industries of the Late-Medieval Low Countries," in Aerts and Munro, *Textiles of the Low Countries*, 41-52, reprinted in Munro, *Textiles, Towns, and Trade*. Similar arguments for seventeenth-century Mediterranean trade in textiles, in terms of "national" textile products, can be found in Richard Rapp, "The Unmaking of the Mediterranean Trade Hegemony: International Trade Rivalry and the Commercial Revolution," *Journal of Economic History* 35 (September 1975): 513-25.

¹¹⁹ See John Munro, "Bruges and the Abortive Staple in English Cloth: An Incident

For these Flemish draperies in particular, and for late-medieval commerce in luxury textiles, we must reconsider the role of towns themselves and guilds, and especially of guild and urban government industrial regulations. The crucial role that these urban institutions played in their century-long reprieve was in defining and enforcing the requisite quality controls for this international competition: to establish the highest production standards; to provide and supervise proper training of apprentices and journeymen; to impose such standards and training uniformly on all members of the collective drapery; and to provide customers with a convincing guarantee of such quality controls in the form of lead seals that signified inspection by town officials at key stages of production.¹²⁰ Surely such inspection by town-employed officials would not have been effectively enforced without the willing cooperation and internal modes of compulsion or sanctions supplied by the guilds themselves, with their master-apprenticeship training system.

Not only guilds and urban government institutions but urban concentration itself was doubly necessary for effecting such quality controls in cloth production. In the first place, no matter how literate the drapers were, or how efficient in record keeping they became, concentration of the work force permitted a much more effective coordination and monitoring of the very highly refined division of specialized labour required for luxury production. Secondly, that concentration clearly permitted a more effective and efficient inspection and enforcement of industrial regulations. In other words, Van Werveke was correct in his original thesis, but for the wrong reasons.¹²¹

in the Shift of Commerce from Bruges to Antwerp in the Late Fifteenth Century," *Revue belge de philologie et d'histoire* 44 (1966): 1137-59, reprinted in Munro, *Textiles, Towns, and Trade*; Munro, *Wool, Cloth, and Gold*, chaps. 1-4; Munro, "Industrial Protectionism," 229-68. The contentions of some Belgian and North American historians that the Flemish ban on English cloth sales was not enforced are, in my view, erroneous, and based on a misreading of the documents; cf. Wilfrid Brulez, "Engels laken in Vlaanderen in de 14e en 15e eeuw," *Handelingen van het genootschap "Société d'Emulation" te Brugge* 108 (1971): 5-25.

¹²⁰ See nn. 10, 42, 118.

¹²¹ See nn. 10, 13, 42; and Epstein, "Craft Guilds," 684-713, who seems to miss this specific point; furthermore he ignores my previous publications on these issues, to be found in *Textiles, Towns, and Trade*, even though he commented on one of them in draft form. Nevertheless, his approach, while covering all of western Europe over more than five centuries, is similar to mine in defending the generally more positive roles of urban guilds, particularly in ensuring quality controls by closely supervised apprenticeship training. He thus contends that their role "was to share out the unattributed costs and benefits of training among its members," so that "guilds were cost sharing rather than price-fixing [or rent-seeking] cartels" (687-88). His approach is far more useful and far more insightful than that to be found in Steven A. Epstein, *Wage Labor and Guilds in Medieval*

Obviously monopolistic competition in luxury textiles had a long-standing tradition. Thus urban industrial regulations for such high-priced textiles can be found in thirteenth-century Flemish and Artesian towns, well before the shift to luxury production, though of course the bulk of the cheap-textile production that focused on largely undifferentiated production had been left unregulated. Nevertheless, briefly, from ca. 1285 to ca. 1310, the Franco-Flemish towns had subjected one important branch of the cheaper light drapery, the *sayetteries* (or its *draperie-sayetterie* branch) to at least some detailed regulation. That may have represented a valiant but ultimately hopeless attempt to upgrade the quality of these textiles, in the face of rising transaction costs, for the reasons suggested earlier.¹²² Then, from the 1330s, Flemish and Brabantine urban industrial regulation became far more complex, reflecting this more general and increasing shift to luxury cloth production: far more encompassing, detailed, and meticulous in dictating especially quality controls.¹²³ Admittedly some Flemish drapery regulations were designed to protect employment and income, with contracting markets; but obviously also some limitations on entry (of labour and capital), along with stipulated production techniques, were still requisite for the proper training of artisans and for enforcing quality standards. Although many of these industrial *keuren*—in Flanders, Brabant, and Holland—prohibited the use of cards and spinning wheels in the preparation of warp yarns (though generally not the wefts), such bans were fully justifiable on the grounds that these techniques, while greatly increasing productivity, seriously impaired the durability and quality of luxury woollens, or arguably did

Europe (Chapel Hill, 1991). The two authors are unrelated. See also, for another though similar perspective on these issues, chiefly for a later period: James R. Farr, "On the Shop Floor: Guilds, Artisans, and the European Market Economy, 1350-1750," *Journal of Early Modern History: Contacts, Comparisons, Contrasts* 1 (February 1997): 24-54.

¹²² See the regulations in particular for the Bruges and Ypres' *sayetteries* and *stanforts*, for *saves-drapés* especially, in Espinas and Pirenne, *Recueil de documents*, 1: 369-426, nos. 139-41; 3: 466-72, nos. 754-56. Sales of a few of these *saves* by the Del Benc firm, at Florence in 1318-22, are recorded at prices ranging from 8.4 to 18.4 florins (= £1.39 to £3.07 sterling, or 9s. to 19s. 6d. *gros* Flemish), for *saves* of 40-48 ells. Though far cheaper than the luxury Flemish woollens (35-40 ells) also sold there, priced up to 65 florins (and up to 100 florins = £15 sterling, for scarlets), these Franco-Flemish *saves* were, nevertheless, still expensive, in terms of an Oxford-Cambridge master mason's daily wage, then about 4d. sterling (and 2d. for his labourer). See Saponi, *Compagnia di calimala*, 272-303, appendices 1-2; Phelps Brown and Hopkins, "Building Wages," 195-206; and nn. 43-56, 68-69.

¹²³ See Espinas and Pirenne, *Recueil de documents*, 1-4: passim. For Brabant and Holland, see nn. 124, 126.

so before the introduction of the Saxony Flyer-Wheel in the late fifteenth century.¹²⁴

By the 1330s, of course, some members of the Flemish cloth guilds were playing a more active role in town governments, which evidently facilitated the enactment, acceptance, and enforcement of industrial regulations. Furthermore, during the fifteenth century, the Flemish *nouvelles draperies* also came to imitate the *drie steden's* industrial organization as well as their textiles. Certainly the leading draperies, those of Kortrijk, Comen, Menen, Wervik, and subsequently those of Armentières and Neuve-Église as well, lost whatever semi-rural character they had once enjoyed to become more fully urban in their structures, with the full panoply of industrial *keuren*, urban regulations, urban inspections, and cloth seals.¹²⁵ In neighbouring Brabant and Holland, even though craft

¹²⁴ See Munro, "Textile Technology," 693-701; Patrick Chorley, "The Evolution of the Woollen, 1300-1700," in Harte, *The New Draperies*, 7-34. From the 1460s the Brussels and Mechelen draperies did permit the use of cards and spinning wheel in the preparation of warp yarns (Stadsarchief Brussel, no. XVI: *Het Witte Correctieboek*; and no. 1435); and possibly if not indisputably the reason was the introduction of the Saxony Wheel, which, in using the "flyer" with a differential bobbin, permitted continuous drafting, twisting, and winding of the yarn; the discontinuous process with the traditional wheel had meant variations in the twist and thickness of the yarns, thus leading to breakage on the loom. See n. 126.

¹²⁵ Compare the various older industrial regulations (*keuren*) for the major established urban draperies in Flanders, Brabant, and Holland (Leiden), as indicated in nn. 123-24, 126, with the subsequent *keuren* for several of the Flemish *nouvelles draperies* in De Sagher et al., *Recueil*, 1: 101-91, nos. 36-45 (Armentières: six *keuren*, 1510-38); 2: 25-27, no. 215 (Comen: 1428 *keure* of 14 articles); 2: 30-38, no. 220 (Comen: 1451 *keure* of 59 articles); 2: 99-153 (Diksmuide: six *keuren*, from 1483-1546); 2: 644-50, no. 377 (Langemark: *keure* of 1444); 3: 26-27 (Menen: 1501, references to *keuren* now lost); 3: 42-49, no. 400 (Menen: *keure* of c. 1540); 3: 112-20, no. 420 (Neuve-Église: *keure* of 1462); 3: 152-56, no. 438 (Neuve-Église: *keure* of 1551-53); 3: 288-89 (Poperinge: *keure* of 1554); 3: 296-311, nos. 495-504 (Poperinge: *keuren* of 1558-67); 3: 452-78 (Wervik: first *keure*, of 1397, in 231 articles); 3: 532-82, no. 586 (Wervik: second *keure*, with amendments, 1466-80, in 384 articles). The first edition of Armentières drapery *keure* dates from 1510; but though indicated as the "première redaction," it evidently contains some "ordonnances . . . que l'en fait et use anciennement en icelle ville"; and it had utilized cloth seals from at least 1413. In commenting on this issue, David Nicholas suggested that "the growing complexity of urban industrial regulations at this time . . . was not even limited in the case of textiles to places that had a luxury speciality." I must disagree. For the various *nouvelles draperies* issued such regulations and increased their complexity—as in the case of Armentières—long after the *drie steden's* luxury draperies had done so, and only when they had succeeded in competing with them in more luxury-oriented markets. In England, except for ancient ordinances on lengths and widths, there is no real industrial regulation of broadcloths before the statute of Edward IV, in 1464-65 (see n. 71); and it is minimal compared to the *keuren* of the Flemish *drie steden* or even to those of the *nouvelles draperies*. The Hondschoote *sayetterie* did not even begin to regulate its industrial production until April 1534, when it sought to maintain established markets against incursions

guilds were unable to exercise similar political powers in their town governments, the urban drapery regulations became just as meticulous and complex as those in the Flemish *drie steden*.¹²⁶ That difference in craft-guild power may explain, however, why the Flemish *drie steden* had succeeded in enforcing a permanent ban on the import of English woollens, while the drapery towns of Brabant and Holland-Zeeland failed to do so, after one abortive attempt in 1428.¹²⁷ That, of course, took place just when a rapidly growing volume of English cloth imports via Antwerp and Middelburg had become so important to both merchants and cloth-finishers in these two principalities.¹²⁸

The final crisis for the urban draperies of the Low Countries: the Calais Bullion ordinances, 1429-73

In so concentrating upon luxury or quasi-luxury (imitation) woollen production, both the traditional urban draperies in the Low Countries and most of the bigger *nouvelles draperies* had purchased their survival by making their industry hostages to the English crown, which evidently believed that foreign demand for English wool still remained inelastic—even if the demand for the Low Countries' fine woollens was not so very inelastic.¹²⁹ From 1429 to the 1470s, during the crucial dénouement of the Hundred Years' War and its aftermath, the crown sought to extort more bullion and ready cash from the wool trade by imposing the disastrous

from new competitors, and thus resorted to the similar remedy of quality controls; but even so, its *keuren* differ significantly from those of the major Flemish, Brabantine, and Dutch (Leiden) urban draperies. See De Sagher et al., *Recueil*, 2: 346-60, no. 287; and Coornaert, *Hondschoote*, 199-235, 268-314.

¹²⁶ For Mechelen, Brussels, and Leuven, see: Henri Joossen, ed., "Recueil de documents relatifs à l'histoire de l'industrie drapière à Malines, des origines à 1384," *Bulletin de la Commission Royale d'Histoire* 99 (1935): 365-569; Favresse, *Les métiers bruxellois*, 59-74; Stadsarchief Brussel, no. XVI: *Het Wille Correctieboek*; no. 1435; Stadsarchief Leuven, no. 1524 (1482-1519); Van Uytven, *Stadsfinanciën*, 337-91; see also n. 138. The Leiden drapery issued its first *keure* in November 1363 (18 articles), with more detailed amendments up to 1397 (148 articles); and then even more meticulously detailed revisions in 1406, 1416, with further revisions up to February 1436 (172 articles); then another reissue with further revisions and extensions in 1436-45, 1446-51, etc. See Posthumus, *Bronnen leidse textielnijverheid*, 1: 6-8, no. 11; 1: 9-23, no. 12; 1: 44-59, no. 58; 1: 69-95, no. 74; 1: 145-66, no. 132; 1: 186-214, no. 166; Posthumus, *Geschiedenis van de leidse lakenindustrie*, 1: 83-181; Brand, "Leiden Drapery," 121-49; Brand, "Crisis," 52-65, 201-5; Brand, "Urban Policy," 17-34. See below nn. 145-47.

¹²⁷ Munro, *Wool, Cloth, and Gold*, 65-126; Munro, "Industrial Protectionism," 234-53; see n. 119.

¹²⁸ See Van der Wee, *Antwerp Market*, 2: 41-56; and nn. 94-95.

¹²⁹ See Munro, "Wool-Price Schedules," 143-59; and n. 87, for comparisons of English and Spanish wools in the early to mid-fifteenth century; see also nn. 135-42, 145-48.

Calais Staple Partition and Bullion Ordinances. These laws placed the Staple's wool trade more firmly in the hands of a small monopolistic Stapler clique, sharply raised wool prices, and forbade traditional sales credit, requiring full payment in coin and bullion. Burgundian retaliation against the English cloth trade, leading to warfare and military expeditions against Calais, failed to remove these hated Staple regulations. Finally, as the price for the duke of Burgundy's financial assistance in regaining his throne (battles of Barnet and Tewkesbury), Edward IV had Parliament revoke these noxious ordinances in 1473.¹³⁰

During the crucial forty years of these ordinances—years also of plagues, warfare, severe depressions, and especially another ruinous Flemish conflict with the Hanse (1451-57)—the Flemish and Brabantine urban draperies suffered their most precipitous decline, and then virtual collapse before the real onslaught of the English cloth trade, whose expansion from the 1460s was compared in the Low Countries to an *inundacioni maris immensi*.¹³¹ As Table 1 indicates, the mean production indices for the Ghent, Ypres, Leuven, and Mechelen draperies all fell about 70 percent from 1425-29 to 1475-79. More concrete evidence can be found in the 84 percent decline in the number of drapery stalls rented in the Ypres cloth hall over this period, from a mean of 377 stalls to just 59. Equally tangible if less dramatic is the 38 percent drop in mean English wool exports over this same period, from 14,179 sacks to 8,792 sacks (to Calais itself: from 13,255 sacks to 7,590 sacks).¹³² Of

¹³⁰ Great Britain, Parliament, *Rotuli Parliamentorum ut et placita in Parlamento*, 6 vols. (London 1767-77), 4: 358-59, nos. 59-60 (1429); 6: 60, no. 59 (1473). See Munro, *Wool, Cloth, and Gold*, 3-6, 70-179; Lloyd, *English Wool Trade*, 257-87; Eileen Power, "The Wool Trade in the Fifteenth Century," in Power and Postan, *Studies in English Trade*, 39-90. Duke Charles the Rash had supplied Edward with fourteen ships and 50,000 gold florins to invade England and attack Warwick's forces in 1471.

¹³¹ Dietrich Schäfer, ed., *Hanserecesse, 1477-1530*, 3rd ser., 9 vols. (Leipzig, 1881-1913), 3: 105 (1487); Munro, *Wool, Cloth, and Gold*, 155-85; Munro, "Industrial Protectionism," 229-67; Munro, "Industrial Change," 95-161; Munro, "Economic Depression," 235-50; John Hatcher, "The Great Slump of the Mid-Fifteenth Century," in Britnell and Hatcher, *Progress and Problems in Medieval England*, 237-72; Pamela Nightingale, "England and the European Depression of the Mid-Fifteenth Century," *The Journal of European Economic History* 26 (Winter 1997): 631-56. See n. 157.

¹³² The overall decline in total English wool exports from 1350-59 to 1470-79 was, however, 77%. The value of Mechelen's drapery tax-farms fell by 63% from 1425-29 to 1455-59; but it then enjoyed a partial recovery from the 1460s, as this town became both the centre of the Burgundian court and a major entrepôt on the reviving overland continental trade routes, which in turn promoted an expanding German commerce in textiles from the Antwerp fairs to the Rhineland, Bavaria, Austria, and Italy. See Munro, "Patterns of Trade," 160-68; Wencelaus Mertens, "Changes in the Production and Export of Mechelen Cloth, 1330-1530," in Acerts and Munro, *Textiles of the Low Countries*, 114-23; Wencelaus Mertens, "Toenemende economische welvaart," in *De geschiedenis van*

the traditional, urban, English-wool based cloth industries, only the Leiden drapery weathered these storms, with some relative success, because of support from an aggressive Dutch merchant marine that was then invading and displacing the Hanse in the key Baltic markets, while taking advantage of several Flemish-Hanse conflicts to expand Dutch cloth sales there; and by the end of the century the Hollanders had gained a decisive mastery over Baltic commerce.¹³³

In 1467 the Burgundian ambassadors had vainly warned the English that their badly damaged draperies in the Low Countries would soon “be forced to give up cloth-making or else obtain wool from elsewhere.”¹³¹ That may have been an idle threat from the leaders of the traditional urban *draperies de luxe*; but not for many of the younger, more aggressive *nouvelles draperies*. In so far as they had been industrial “counterfeiters,” they were much more inclined to seek out other substitutes, which they were now finding in Spain’s recently improved *merino* wools, even if they remained quite inferior to the finest English wools (March, Cotswold, Lincolnshire), as noted earlier.¹³⁵ For many years, several of the leading *nouvelles draperies*, such as those of Wervik, Kortrijk, Diksmuide, and Langemarck, had all refused to make that substitution, contending that to do so would cost them customers; and Wervik had long required its drapers each year “to swear a holy oath upon the cross to use none but English wools.”¹³⁶ By the 1460s, however, many drapers had adopted Spanish wools, though the Wervik town government permitted them

Mechelen: van heerlijkheid tot stadsgewest, ed. Raymond Van Uytven (Lannoo, 1991), 83-93; and nn. 149, 158 below.

¹³³ See Malowist, “Expansion économique des Hollandais,” 91-138; T. S. Jansma, “Philippe le Bon et la guerre hollando-wende, 1438-1441,” *Revue du Nord* 42 (1960): 5-18; Brand, “Urban Policy,” 17-34; De Vries and Van der Woude, *First Modern Economy*, 350-62; and especially Dieter Seifert, *Holland und die Hanse* (Cologne, 1997). See also bibliographic appendix, for the sources on Holland; and nn. 145-48.

¹³⁴ Rose-Marie Thielemans, *Bourgogne et Angleterre: relations politiques et économiques entre les Pays-Bas bourguignons et l’Angleterre, 1435-1467* (Brussels, 1966), 469-72, doc. no. 8; Munro, *Wool, Cloth, and Gold*, 162-63.

¹³⁵ For Spanish wools, see nn. 87, 129, 136-47. An English poem (“Libelle of Englysshe Polycye,” ca. 1436) contended, undoubtedly with some justice, that: “The wole of Spayne hit cometh not to presse. . . . Hit is lytelle valeue, trust unto me, wyth Englysshe wolle but if it menged [mixed] be”; text in George Warner, ed., *The Libelle of Englysshe Polycye* (Oxford, 1926), 6. The Armentières drapery *keure* of 1510 still required that the Spanish wools be mixed with one third Cotswolds, Lindsey (Lincs.) or Berkshire wools (per cloth). De Sagher et al., *Recueil*, 1: 102, no. 36:2.

¹³⁶ De Sagher et al., *Recueil*, 2: 85-97, 99-102, no. 242 (Diksmuide); 2: 625-35; 649-50, no. 377 (Langemarck); 3: 520-21, no. 517; 3: 527-31, nos. 581-82; 3: 564, no. 586:195 (Wervik, with the 1447 oath); Coornaert, *Hondschvoote*, 191, n. 2 (Kortrijk). Munro, “Industrial Change,” 117-21; and Munro, “Economic Depression,” 235-50.

only for *petits draps*.¹³⁷ Earlier, in the 1440s, Brussels had established a Spanish-wool based *nouvelle draperie*, though its government also required it to be separate from the traditional drapery, which reinforced the traditional ban against adulterating its English Staple wools.¹³⁸ Those governing the Flemish urban draperies, however, refused to engage in such Spanish-wool based cloth-manufacturing until far too late, on the seeming verge of extinction, in the sixteenth century: the Ghent drapery, evidently not before 1519;¹³⁹ and the Bruges drapery, not before 1544.¹⁴⁰

¹³⁷ For evidence that Spanish wools were being used, during this era, in the *nouvelles draperies* of Aalst, Armentières, Baillcul, Comen (Comines), Dendermonde, Dranoûter, Eecke, Eeklo, Flêtre, Geraardsbergen, Godeswaersvelde, Kimmel, Kortrijk, Menen, Meteren, Neuve-Église, Nieppe, Ninove, Oudenaarde, Poperinge, Tourcoing, Warneton, Wervik, Wulvergem, see: De Sagher et al., *Recueil de documents*, 1: 101-3, nos. 35-36 (Armentières); 2: 30-38, no. 220 (Comen/Comines); 3: 2; 3: 32-34, no. 394; 3: 37, no. 396 (all for Menen); 3: 112-20, no. 420 (Nicuwkerke/Neuve-Église); 3: 258; 3: 236-38, nos. 472-74 (Nieppe); 3: 520-21, no. 577; 3: 527-31, nos. 581-824; 3: 564, no. 586:195 (all for Wervik); K. Höhlbaum, ed., *Hansisches Urkundenbuch* (Leipzig, 1939), 10: 639, no. 100; Goswin von der Ropp, ed., *Hanserecesse, 1431-1476*, 2d ser., 7 vols. (Leipzig, 1876-92), 4: 311-12, no. 444:4; Louis Gilliodts-Van Severen, "Les relations de la Hanse teutonique avec la ville de Bruges," *Compte rendu des séances de la Commission Royale d'Histoire*, 4th ser. (1879-80), 7: 216, doc. no. 15; 7: 233, doc. no. 18. It is not clear that Langemarck and Diksmuide (Dixmude) ever did utilize Spanish wools (see n. 87); for the latter, see also De Sagher et al., *Recueil*, 2: 101, no. 242:14: "dat men gheen van dese lakenen mach reden van ceneghe In[g]elscher vulle, ten ware naer der *copmanscepe van Caley van 14 maerc tsaerlyncx* [= £9 6s. 8d. sterling per sack] . . ."

¹³⁸ For Brussels, see Felicien Favresse, "Note et documents sur l'apparition de la 'nouvelle draperie' à Bruxelles, 1441-1443," *Bulletin de la Commission Royale d'Histoire* 112 (1947): 143-67; Felicien Favresse, "Les débuts de la nouvelle draperie bruxelloise, appelée aussi draperie légère," *Revue belge de philologie et d'histoire* 28 (1950): 59-74; Felicien Favresse, "La petite draperie bruxelloise, 1416-1466," *Revue belge de philologie et d'histoire* 29 (1951): 75-84, reprinted in his *Études sur les métiers bruxellois* (1950); Stadsarchief Brussel, no. XVI, and no. 1435 (for 1444 and 1467); Munro, *Wool, Cloth, and Gold*, 1-5. Leuven had authorized a new "small drapery" as early as 1415, using domestic and French wools; but this may not have been an export industry. Spanish wools cannot be documented at Leuven until the revisions of the *keureboek* (drapery regulations) in 1481-1513. Stadsarchief Leuven, no. 1524; Van Uytven, *Standfinancien*, 361-69.

¹³⁹ Stadsarchief Leuven, no. 723, no. 1526, fols. 203-10 (for Ghent, 1519). Marc Boone, however, has recently published undated documents on the Ghent drapery purporting that these indicate the establishment of a "new drapery" based on Spanish wools as early as the 1450s: Marc Boone, "Nieuwe teksten over de Gentse draperie: wolaanvoer, productiewijze en controlepraktijken (ca. 1456-1468)," *Handelingen van de koninklijke commissie voor geschiedenis* 144 (1988): 1-61. While such an establishment is by no means impossible, and while Ghent merchants were then clearly engaged in the Spanish wool commerce (if only to service neighbouring *nouvelles draperies*), I cannot accept his arguments; and from internal evidence I believe that the new drapery ordinances were enacted around 1519 (when they were copied by Leuven, as cited above). The text for the ordinance, which he dates to c. 1453, is in a copy bound in a Cartularium prepared in 1545-48, "ghetrocken uut der originale ordonnantien van der draperie," in Stadsarchief Gent, reeks 93, reg. KK, fol. 103v. Apart from the sixteenth-century spellings in this

Towns and industrial transformation in sixteenth-century textiles in the Low Countries and England

Must we therefore conclude that urban guild-enforced regulation in Flanders, which had rescued the traditional draperies from destruction in the fourteenth century, now doomed most of them to extinction from

document (e.g., *laecken* instead of *laken*), the crucial test comes in the regulation of *Hellemans*, a new type of woollen that appears in registers of Ghent cloth purchases and sales only in 1496 (Stadsarchief Gent, Stadsrekeningen, Reeks 400:32, no. 2, 1495-96, fol. 142 ro). Furthermore, this same collection contains two other well dated Ghent drapery ordinances, for 1456 and 1462, “up dmaecken ende drapieren van den finen lakencne gheheeten *dickedinnen* ende *andere lakenen* die men drapiert ende maect binnen der stede van Ghendt,” which—in using fifteenth-century spellings—make absolutely no mention of these new Spanish-wool based textiles, and require that all [sealed] woollens be made from English Staple wools: March and Middle-March [Shropshire and Herefordshire], Cotswolds [Worcestershire, Gloucester, and Oxfordshire], and Cotswolds-Berkshire wools. I have compared Boone’s published version with the original documents in the Ghent Stadsarchief, as noted above. See also: John Munro, “Textiles as Articles of Consumption in Flemish Towns, 1330-1575,” *Bijdragen tot de Geschiedenis* 81 (1998), 275-288.

¹⁴⁰ Bruges, rather more surprisingly, continued to boast as late as 1533 that its “principal industry” remained cloth-manufacture from English wools: “la draperie qui se fait des laines Dangleterre,” in a letter concerning the German Hanse, to the Dowager Queen of Hungary, in Louis Gilliodts-Van Severen, ed., “Les relations de la Hanse teutonique avec la ville de Bruges au commencement du XVI^e siècle,” *Compte rendu des séances de la Commission Royale d’Histoire*, 4th ser., 7 (1879-80): 272, no. 24. Indeed, in that same year the Bruges magistrates explicitly reaffirmed the traditional ban on non-English wools. Rijksarchief West-Vlaanderen te Brugge, Charters Blauwcnnumers (hereafter cited as RAWV, CB), no. 8321: accusation of the *deken* of the wool-weavers guild, before the college of civic *schepenen*, on 17 November 1533, against a dyer-drapeer who had made some woollens from Flemish and Rhenish wools, “contrarie t’inhouden vanden drientseventich [73rd] article vanden keure vanden voors. ambochte dat expresselic verbiet ende interdiceert eenighe Brugsche lakene te reedene dan van Inghelsche wulle, uutgedhaen smalle lakenen.” A similar case was heard on 19 January 1534 *ns*: RAWV, CB no. 8322. That attitude may explain why an attempt to establish a *nieuwe draperie* with Spanish wools at this very time proved to be abortive. RAWV, CB no. 8320: petitions dated 12 November 1533, concerning the “*nieuwe draperie onlanx upghestelt ende beghonnen binnen der zelve stede van Spaensche wulle*,” to produce woollens in the style of Armentières for three years. See also Louis Gilliodts-Van Severen, ed., *Cartulaire de l’ancien consulat d’Espagne à Bruges*, part 1, 1280 à 1550 (Bruges, 1901), 1: 296-97. Bruges succeeded in establishing a viable Spanish-wool-based drapery only after September 1544; and from June 1548 all woollens, “new” and traditional, were made there exclusively from Spanish wools. The new drapery *keuren* (63 articles) of 20 September 1544 are published in M. G. Willemsen, ed., “Le règlement sur la draperie brugeoise du 20 septembre 1544,” *Annales de l’Académie Royale d’Archéologie de Belgique*, 69 (1921): 5-74: “op te stellen een *nieuwe draperie* ende aldaer te drapierene ende reedene diverse sorte van lakenen van Spaensche wulle [dobbel leeuwen, enkel leeuwen, ghecronde B, grilloen].” In RAWV, CB nos. 8415-19, 8365, 8371-72, there are other contemporary Bruges drapery ordinances (*tempore* Charles V) concerning “*ccne nieuwe draperie*” to produce “*diverse sorte van lakenen van Inghelsche ende Spaensche wulle*” (CB no. 8414); and in others, ordinances for the production of *lammekins* and *effen* woollens: “*vander welke Spaensche wulle men sal moghen maken als hier ghemacet vander Yngelsche wulle*”

the later fifteenth, by refusing to adjust to radically changed circumstances in both wool supplies and markets? The most important commercial changes lay in the dramatic expansion, from the 1460s, of the Brabant Fairs of Antwerp and Bergen-op-Zoom, largely propelled by the booming English cloth trade, the revival of transcontinental routes, and especially a renewed growth of exports to the Mediterranean basin, where a multitude of densely populated markets again favoured the sale of cheaper textiles.¹⁴¹ The evident beneficiaries were, first, some of the newer *nouvelles draperies*, in particular Armentières and Neuve-Eglise (Nieuwerkerke), which had adopted and become more and more reliant on Spanish *merino* wools, whose sales volumes in the Low Countries certainly exceeded those of English wools by the 1520s.¹⁴² Nevertheless, the governments and guilds of the Flemish *drie steden* were not misguided or wrong-headed in refusing to adopt Spanish *merino* wools; for many other *nouvelles draperies* that had resorted wholly or partially to Spanish *merino* wools failed to sustain their earlier growth and had also experienced severe decline in the later fifteenth century.¹⁴³

Furthermore, the case of the sixteenth-century Leiden drapery is most instructive in analysing comparative wool usages. As just noted, the Leiden drapery had been better able to sustain the growing onslaughts from the English cloth trades.¹⁴⁴ But by 1521 Leiden's cloth outputs had peaked (at 29,987 woollens);¹⁴⁵ and in June 1522, after encountering further difficulties at the Calais Staple, the Leiden *gerecht* (magistrates) officially authorized the use of Spanish *merino* wools, which were now 25 percent cheaper than the English. But even so, Leiden's drapers used *merino* wools only in limited quantities, usually mixed with some English wools. Soon complaints arose that Spanish *merino* wools were not only

(CB no. 8419). On 7 July 1546, the Bruges *schepenen* ruled that, while the *nieuwe draperie* with Spanish wools would be regulated by the recent ordinances, the former *keuren* for the *oude draperie* with English wools were to remain in force (CB no. 8365). In June 1548 the drapers of the *oude draperie* stated that because of the great scarcity of English wools at Calais, and the imminent extinction of their drapery, they wished to secure the right to continue making their traditional woollens "van Spaensche wulle" in the very same "maniere als inhoudt ende verclaerst de keure vander ouder draperie vanden Inghelsche wulle" (CB no. 8372).

¹⁴¹ Van der Wee and Pecters, "Commerce mondiale," 100-28; Van der Wee, *Antwerp Market*, 2: 73-142; Munro, "Patterns of Trade," 165-81; Munro, "Origins of the English 'New Draperies,'" 81-87.

¹⁴² See Phillips and Phillips, *Golden Fleece*, 40-42; Munro, "Origins of the English 'New Draperies,'" 48-52; and next note.

¹⁴³ See Stabel, "Décadence ou survie?" 63-84; Stabel, *Dwarfs among Giants*, n. 164.

¹⁴⁴ See n. 133.

¹⁴⁵ Posthumus, *Geschiedenis van de leidsche lakenindustrie*, 1: 370-71; see nn. 126, 147.

less fine than the English, but were more difficult to comb and required more time and effort in fulling and felting. Indeed, the contemporary English writer Clement Armstrong contended (ca. 1535) that “the wolles of Spayn are of such kynds [that] without the wolles of England be myxed with, it can no make no clothe of itself for no durable weryng, to be nother reised nor dressid, by cause it hath no staple”; and indeed many of the leading *nouvelles draperies*, such as Armentières, used a mixture of two thirds Spanish and one third English wools.¹⁴⁶ Subsequently, in 1536, after Leiden’s experiment with *merino* wools had failed to stave off a continued decline in sales, its governing drapers decided once more to use English wools exclusively, despite their high cost, in order to safeguard their woollens’ reputation and thus maintain their now limited cloth markets, in confronting the relentless growth of English competition.¹⁴⁷ The continuing importance of English wools for many of the Low Countries’ draperies is well attested by the royal customs accounts: in 1475-79, as noted earlier, mean wool exports were 8,792 sacks; and in 1515-19, they were just 12.8 percent less: 7,671 sacks. Over this forty-year period, mean exports amounted to 8,012 woolsacks, sufficient to produce at least 34,718 broadcloths (of English measurement).¹⁴⁸

The other major sector of the textile industries in the Low Countries that benefited from the changing structure of European markets and trade routes after the 1460s were the now fully revived *sayetteries*, led by Hondschoote, which, as in the thirteenth century, produced cheap, light semi-worsted textiles, woven from coarse, long-stapled Flemish, Frisian, German (Pomeranian and Rhenish), and French wools. Indeed by the early to mid-sixteenth century they had surpassed the Spanish-wool based *nouvelles draperies* to become the leading manufacturers of textiles (certainly by volume and employment) in the southern Low Countries. According to one recent estimate for the mid-sixteenth century, the *sayetteries* and other *draperies légères* were then producing 3.64 million metres of cloth, while output from the *nouvelles draperies* and the few remaining traditional urban draperies, now led by Mechelen, was only about 2.07 million metres.¹⁴⁹

¹⁴⁶ See R. H. Tawny and Eileen Power, eds., *Tudor Economic Documents*, 3 vols. (London, 1924), 3: 102, section ii.2: “A Treatise Concerninge the Staple and the Commodities of this Realme”; De Sagher et al., *Recueil*, 1: 102-17, no. 36 (Armentières drapery *keure*).

¹⁴⁷ See Posthumus, *Bronnen leidsche textielnijverheid*, 2: 316-17, no. 903; Posthumus, *Geschiedenis van de leidsche lakenindustrie*, 1: 182-235, 368-408; Brand, “Leiden Drapery,” 121-49; Van Houtte, *Economic History of the Low Countries*, 156-62. See n. 126 above.

¹⁴⁸ Carus-Wilson and Coleman, *England’s Export Trade*, 66-74.

¹⁴⁹ Statistics from Hugo Soly and Alfons Thijs, “Nijverheid in de Zuidelijke Nederlan-

Although Hondschoote had once been a village, it had become a full-fledged town by the early sixteenth century, with a fairly extensive and rigorous set of industrial regulations.¹⁵⁰ Furthermore, all of the major towns in the Low Countries themselves established similar *sayetteries* or other *draperies légères* in the course of the sixteenth century; and this important industry had also become almost exclusively urban.¹⁵¹ Then, during the Revolt of the Netherlands against Spanish rule (1568-1609), many Flemish artisans, especially artisans from these *sayetteries*, fled from the Spanish armies that reconquered the south to seek refuge in Holland, especially in Leiden, where they established the *nieuwe draperie*, which supplanted the now declining woollen-based *oude draperie*. Even more settled in East Anglia and Norfolk, especially in and around Norwich, the former medieval homeland of English worsteds. Throughout this region, they also reestablished this worsted and serge-based industry, which, as the so-called New Draperies of Tudor-Stuart England, also outstripped

den," in Van Houtte, *Algemene geschiedenis der Nederlanden*, 7: 27-57. See also: Coornaert, *Hondschoote*, 22-43, 236-53; Émile Coornaert, *Une industrie urbaine du XIV^e au XVII^e siècle: l'industrie de la laine à Bergues-Saint-Winoc* (Paris, 1930); and Coornaert, "Draperies urbaines," 60-96; E. Maugis, "La saietterie à Amiens, 1480-1587," *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 5 (1907): 1-115; Maurice Van Haecck, *Histoire de la sayetterie à Lille*, 2 vols. (Lille, 1910); DuPlessis and Howell, "Reconsidering the Early Modern Urban Economy," 49-84; Florence Edler, "Le commerce d'exportation des sayes d'Hondschoote vers l'Italie d'après la correspondance d'une firme anversoise, entre 1538 et 1544," *Revue du Nord* 22 (1936): 249-65; Donald C. Coleman, "An Innovation and its Diffusion: The 'New Draperies'," *Economic History Review*, 2d ser., 12 (1969): 417-29; Van der Wee, *Antwerp Market*, 2: 133-208, esp. 186-91; Alfons Thijs, *Van "werkwinkel" tot "fabriek": de textielnijverheid te Antwerpen, einde 15de-begin 19de eeuw* (Brussels, 1987); Robert DuPlessis, "The Light Woollens of Tournai in the Sixteenth and Seventeenth Century," and Alfons Thijs, "Les textiles au marché anversoise au XVI^e siècle," both in Munro and Aerts, *Textiles of the Low Countries*, 66-75, 76-86; Robert S. Duplessis, "One Theory, Two Draperies, Three Provinces, and a Multitude of Fabrics: the New Drapery of French Flanders, Hainaut, and the Tournaisis, c. 1500-c. 1800," in Harte, *The New Draperies*, 129-72; Patrick Chorley, "The 'Draperies Légères' of Lille, Arras, Tournai, Valenciennes: New Materials for New Markets?" in Boone and Prevenier, *La draperie ancienne*, 151-65.

¹⁵⁰ Coornaert, *Hondschoote*, 131-68; De Sagher et al., *Recueil*, 2: 341-89.

¹⁵¹ By the 1560s, sayetteries and related *draperies sèches* (producing serges, bayes, ostades, etc.) were operating in: Hondschoote, Bergues-St.-Winoc, Tournai, Lille, Amiens, Arras, St. Omer, Bruges, Ghent, Ypres, Mechelen, Leuven, Brussels, Leiden, Wervik, Armentières, Neuve-Eglise, Baillcul, Béthune, Orchies, Diksmuide, Poperinge, Mennin, Halluin, Oudenburg, Lo, Douai, Valenciennes, Mons, Beauvais, Montreuil, Cambrai, Saint-Quentin, Aubenton, Huy, Péronne, Reims, Abbeville. See Coornaert, *Hondschoote*, 13-14, 81-82, 214-15, 315-34; Coornaert, *Bergues-St.-Winoc*; Duplessis, "New Drapery," 129-72; Chorley, "Draperies légères," 151-65; Van Haecck, *Lille*, 1: 46ff; Maugis, "Amiens," 1-110; Pirenne, "Crise industrielle," 621-43; De Sagher et al., *Recueil*, 1: 192-208 (Armentières); 2: 313-18 (Haubourdin); 2: 346-605; 2: 663-65 (Lo); 3: 189-98 (Neuve-Eglise), 3: 292-96, 308-21 (Poperinge); 3: 593-96 (Wervik).

the traditional woollen-based Old Draperies, by the 1640s. In both Holland and in England this say-based set of New Draperies was distinctly urban in organization and character, thus again raising questions about the supposed advantages of a rural location for early modern textile industries producing for international markets.¹⁵²

Rural textiles in early modern England: Some reflections on the Proto-Industrialization debate

Nevertheless, despite the generally urban character of the New Draperies in Tudor England, one of their most important offshoots, especially for the Stuart and Hanoverian eras, was the hybrid linen-cotton fustian industry that subsequently migrated to Lancashire, adjacent areas of north-west England, and Scotland. It would be absurd to deny that this vital industry, developing into the full-fledged cotton industry of the modern British Industrial Revolution, had distinctly rural foundations in this new region, with a heavy reliance on an agrarian workforce. Clearly even the true cotton manufacturing (in warp and weft) of the early Industrial Revolution era experienced no major shift from countryside to large towns, to steam-powered urban factories, before the 1820s.¹⁵³ Several other crafts as well, the metallurgical in particular, also

¹⁵² See Posthumus, *Geschiedenis van de leidsche lakenindustrie*, 2: 257-79, 305-27; 3: 272-79, 882, 930-41; Charles Wilson, "Cloth Production and International Competition in the Seventeenth Century," *Economic History Review*, 2d ser., 12, no. 2 (1960), reprinted in Charles Wilson, *Economic History and the Historian: Collected Essays* (London, 1969), 94-113; Leo Noordegraaf, "Nijverheid in de Noordelijke Nederlanden, 1490-1580," in Van Houtte, *Algemene geschiedenis*, 6: 14-19; Leo Noordegraaf, "Nijverheid in de Noordelijke Nederlanden, 1580-1650," in Van Houtte, *Algemene geschiedenis der Nederlanden*, 7: 68-73. See also Leo Noordegraaf, "The New Draperies in the Northern Netherlands, 1500-1800"; Martha Howell, "Woman's Work in the New and Light Draperies of the Low Countries"; B. A. Holderness, "The Reception and Distribution of the New Draperies in England"; Luc Martin, "The Rise of the New Draperies in Norwich, 1550-1622"; and Ursula Priestley, "Norwich Stuffs, 1600-1700," all in Harte, *The New Draperies*, 173-196; 197-216; 217-44; 245-74; 275-88.

¹⁵³ Indeed the very term "cotton mills" denotes another decisive facet of its rural foundations: its prior reliance on rural sites for water-power. See Julia de Lacy Mann and Alfred P. Wadsworth, *The Cotton Trade and Industrial Lancashire, 1600-1780* (Manchester, 1931; reprint, 1965); Duncan Bythell, *The Handloom Weavers: A Study in the English Cotton Industry during the Industrial Revolution* (Cambridge, 1969); S. D. Chapman, *The Cotton Industry in the Industrial Revolution* (London, 1972); Eric Kerridge, *Textile Manufactures in Early Modern England* (Manchester, 1985); Maxine Berg, *The Age of Manufactures: Industry, Innovation, and Work in Britain, 1700-1820* (London, 1985); Mary Rose, ed., *The Lancashire Cotton Industry: A History Since 1700* (Preston, 1996); Beverly Lemire, *Fashion's Favourite: the Cotton Trade and the Consumer in Britain, 1660-1800* (London, 1991); Beverly Lemire, *Dress, Culture, and*

followed differing paths towards modern urban industrialization by transforming their fundamentally rural modes of production.

Another set of manufacturing crafts that also did so (by the 1850s), it must now be conceded, were in fact the woollen and worsted industries of early modern England, or many of their members, producing as well *stuffs* and other hybrid fabrics.¹⁵⁴ Even if this study has supported Bridbury's contention that the late-medieval English cloth industry had remained substantially more urban, certainly for export-oriented production, than has been commonly assumed, until well into the fifteenth century, nevertheless a subsequent shift of cloth-manufacturing from the larger provincial towns to much smaller ones, indeed to quasi-villages may certainly be detected.

Thus, Heather Swanson, in an exhaustive regional study, has demonstrated that York still remained a major textile-producing city until the early 1460s, by which time cloth exports from Hull, Ipswich, Boston, and other north-eastern ports had suffered a dramatic and permanent decline, after English defeats in ruinous conflicts with the Hanseatic League and Denmark, and with the final losses of Baltic, Scandinavian, and Prussian markets.¹⁵⁵ Other cloth-producing towns, notably Bristol, suffered from England's final defeat in the Hundred Years' War, and the loss of Gascony, by 1453; and others from conflicts, trade bans, and even sporadic war with the Burgundian Low Countries (1433-67).¹⁵⁶ Indeed, for other reasons as well, primarily demographic, monetary, and financial, the middle decades of the fifteenth century were ones of extremely harsh agrarian, industrial, and commercial depression, during which aggregate English cloth exports fell 45.4 percent, from an annual

Commerce: The English Clothing Trade Before the Factory, 1660-1800 (London, 1997); C. Knick Harley, "Cotton Textile Prices and the Industrial Revolution," *The Economic History Review*, 2d ser., 51 (1998): 49-83.

¹⁵⁴ See Julia de Lacy Mann, *The Cloth Industry in the West of England from 1640 to 1880* (Oxford, 1971); Heaton, *Yorkshire Woollen and Worsted Industries*, 72-144; Ramsay, *Wiltshire Woollen Industry*, 1-30, 101-38; Kerridge, *Textile Manufactures*, 25-59, 67-88, 226-44; Ponting, *Woollen Industry*, 13-44, 69-87, 115-32; Berg, *Age of Manufactures*. The first to establish an urban location with steam-powered machinery were the worsted industries, followed by the woollen or mixed-fabric industries.

¹⁵⁵ Swanson, *Medieval Artisans*, 26-43; Lloyd, *England and the German Hanse*, 173-234. He points out, however, that the decline in cloth exports to the Baltic had set in by 1410 (170-72); see n. 94.

¹⁵⁶ E. M. Carus-Wilson, "The Overseas Trade of Bristol in the Fifteenth Century," in Power and Postan, *Studies in English Trade*, 183-246, reprinted in her *Medieval Merchant Venturers*, 1-97; Munro, *Wool, Cloth, and Gold*, 93-179; Munro, "Bruges and the Abortive Staple," 1137-59.

mean of 57,056 broadcloths in 1440-44 to one of just 31,161 cloths in 1460-64.¹⁵⁷ Thereafter, as noted earlier, the combination of the South German silver-copper mining boom, the dramatic expansion of the overland continental trades linking Italy, South Germany, and the Low Countries, and the consequent flourishing of the Brabant Fairs promoted an eighty-year long boom in the English cloth trade, expanding exports 3.75 fold, to reach an annual mean of 117,345 broadcloths in 1540-44.¹⁵⁸ But, the traditional provincial ports and the major cloth towns that they had long served did not share in this dramatic cloth-export boom, which was almost entirely canalised upon the Antwerp market, as the virtually sole gateway to continental markets. London's share of total cloth exports therefore rose from 42.5 percent in 1430-34 to 68.5 percent in 1495-99 (and to 84.9 percent in 1540-44).¹⁵⁹

In Swanson's view, York's cloth industry experienced a rapid decay from the 1460s chiefly because of this drastic fall in exports from the nearby northeastern ports, which thereby undermined the ability of merchants in those ports and in York itself to finance further cloth production. Cloth manufacturing deserted the town of York for various smaller towns and quasi-villages in surrounding areas of Yorkshire's West Riding: not to escape any urban or guild restrictions, not to seek lower-wage rural labour, but principally to secure the now much more accessible, abundant and cheaper capital supplied by many prosperous landowners and sheep-farmers in this region, with the concomitant growth in the Tudor enclosure movement. Furthermore, during this same era, local clothiers from Halifax, Leeds, Ripon, Wakefield, Bradford, Doncaster, and other small Yorkshire towns bypassed York to establish their own direct connections with London-based merchants.¹⁶⁰

¹⁵⁷ See Table 1; and Nightingale, "England and the European Depression," 631-56; Nightingale, *Medieval Merchant Community*, 432-89; Munro, "Economic Depression and the Arts" and other studies in *Textiles, Towns, and Trade*; and John Munro, "Crisis and Change in the Later Medieval English Economy," *Journal of Economic History*, 58, no. 1 (March 1998): 215-19. See n. 131 above.

¹⁵⁸ See Table 1; and Van der Wee, *Antwerp Market*, 2: 67-142; John Munro, "The Central European Mining Boom, Mint Outputs, and Prices in the Low Countries and England, 1450-1550," in *Money, Coins, and Commerce: Essays in the Monetary History of Asia and Europe (From Antiquity to Modern Times)*, ed. Eddy H. G. Van Cauwenberghe (Leuven, 1991), 119-83; Munro, "Anglo-Flemish Competition," 37-60. As noted in these studies, Edward's IV silver-coinage debasement of 25% effectively reduced English cloth prices on the Antwerp market, in 1464-65; and the subsequent Burgundian debasement of 1466 dramatically altered the gold:silver mint ratio; together they provided major catalysts to attract German merchants with their silver to Antwerp where they purchased English woollens as their major return cargo to southern Germany and central Europe. See n. 132.

¹⁵⁹ See the sources for Table 1; and those cited in nn. 155-58.

¹⁶⁰ Swanson, *Medieval Artisans*, 29-33, 142-49; Swanson, "Craft Guilds," 29-48; Bartlett,

More recently, Pamela Nightingale has offered substantial evidence to support a similar thesis for the contemporary industrial declines of Coventry, Winchester, Colchester, Leicester, with shifts of cloth-manufacturing to neighbouring small towns and villages. She demonstrates in particular the disastrous effects that the severe contractions in the money supply, as well as in overseas commerce, had upon traditional sources of urban credit, during this mid-century depression, but far more so in the provincial towns than in London, whose urban economy experienced relative growth over the entire century. In the countryside that surrounded the formerly prominent provincial cloth-towns, she also found that some relatively prosperous landowners and yeomen farmers readily supplied abundant credit on much easier terms than urban merchants, many of whom indeed were forced to vacate this financial field entirely (except in London). She also analysed the contemporary rise of rural chapmen, as itinerant peddler-broker merchants, operating on very low overheads, who also assisted in financing cloth production in the new cloth-making centres, often providing barter arrangements to secure more woollens for direct transport to London. They also cooperated with the now expanding London-based merchants, who sought out many more industrial clients throughout the small country towns of East Anglia, the Midlands, Yorkshire, and the West Country, to meet the ever more voracious demands for woollens in London's Blackwell Hall, i.e., for re-export to the rapidly expanding Brabant Fairs.¹⁶¹

"Decline of York," 17-33; Jennifer Kermode, "Urban Decline? The Flight from Office in Late-Medieval York," *Economic History Review*, 2d ser., 35 (1982): 179-98; Jennifer Kermode, "Merchants, Overseas Trade, and Urban Decline: York, Beverley, and Hull, c. 1380-1500," *Northern History* 23 (1987): 51-73; and Jennifer Kermode, "Money and Credit in the Fifteenth Century: Some Lessons from Yorkshire," *Business History Review* 65 (Autumn 1989): 475-501; Heaton, *Yorkshire Woollen and Worsted Industries*, 46-84, 89-101. Though Heaton paints the traditional picture of excessive urban regulations, guild restrictions, high taxes, etc., within York, nevertheless his statistics extracted from the aulnage accounts show that this city itself was still in the lead, for 46 weeks of cloth production in 1468-69 (p. 75): York, 1596 cloths; Ripon, 888 cloths; Halifax, 853 cloths; Wakefield, 231 cloths; Leeds, 177 cloths; Almondbury, 160 cloths; Hull, 148 cloths; Bradford, 89 cloths; Doncaster, 36 cloths.

¹⁶¹ Nightingale, *Medieval Mercantile Community*, 365-67, 483-89; Nightingale, "European Depression," 631-56; Nightingale, "Growth of London," 89-106; Nightingale, "Monetary Contraction and Mercantile Credit in Later Medieval England," *Economic History Review*, 2d ser., 43 (1990): 560-75; Keene, *Medieval Winchester*, 1: 295-327, 517-20; Britnell, *Colchester*, 163-89, estimating a peak production in the 1440s, but portraying relative prosperity to the 1460s. See also Charles Pythian-Adams, *Desolation of a City: Coventry and the Urban Crisis of the Late Middle Ages* (Cambridge, 1979), 33-52, showing a city "still flourishing in 1450," but suffering severe crisis by "1518-25"; for the cloth industry and other crafts, see 99-124. See also Peter Clark and Paul Slack, *English Towns in Transition, 1500-1700* (Oxford, 1976), 46-61, 97-110; and Margaret Spufford, *The Great Reclotting of Rural England:*

Thus this study should not be construed as an assault upon the proto-industrialization thesis *per se*, and its now vast literature, which has provided some exceptionally valuable insights into the rural roots of modern industrialization. Rather it seeks to modify aspects of that debate in three respects. First, the evidence adduced here shows that in late-medieval and early modern Europe the countryside did not necessarily offer clear advantages for textile production over towns, many of which continued to offer superior advantages both for ensuring quality production and for marketing textiles, especially the finer ones.¹⁶² Second, the advantage that smaller centres in the countryside came to acquire did not necessarily lie in terms of cheaper labour, but rather, as in the English examples just cited, in more promising developments in financial credit and marketing networks.¹⁶³ Thus, historical analyses of later-medieval and/or early modern shifts of industrial production from traditional towns to the countryside must be more closely examined according to their own peculiar sets of circumstances. Third, in doing so, we must establish more precise definitions of the terms “rural” and “agrarian roots” of industrialization. How many of the smaller and very small cloth-producing centres that came to flourish in the later-medieval or early modern Low Countries and England were truly “rural,” i.e., fundamentally agrarian in their economies? How many that were once quasi-agrarian villages—such as Hondschoote or Armentières in Flanders, and Lavenham, Halifax, or Manchester in England—developed into genuine towns in which agricultural pursuits played only a marginal role in relation to the industrial, commercial, and financial developments that textiles so effectively fostered? Do we gain a better perspective on the economic development of early modern Europe by resorting to unnecessary dichotomies between “town” and “countryside”; or should we instead seek to delineate the factors that came to determine, during these long eras, a complex hierarchy of large cities, major towns, small towns (*kleine staden*, in Flemish), and industrial villages?¹⁶⁴

Petty Chapmen and their Wares in the Seventeenth Century (London, 1984), 1-32, 69-84. For the monetary aspects, see also the several studies in John Munro, *Bullion Flows and Monetary Policies in England and the Low Countries, 1350-1500* (London and Aldershot, 1992).

¹⁶² See n. 5 above.

¹⁶³ See Epstein, “Guilds,” 684, 706, where he contends that rural proto-industry was generally technologically inferior to and thus intrinsically more costly than guild-organized urban craft-industries, which advantages thus “underpinned the craft guild’s long-term survival.”

¹⁶⁴ See John Theibault, “Town, Countryside, and Proto-Industrialization in Early Modern Europe,” *Journal of Interdisciplinary History* 29, no. 2 (1998): 263-72, which appeared while

Appendix

A bibliography of the major secondary sources that concern urban development and the textile industries in the later medieval and early modern Low Countries.

- Bautier, Robert-Henri. "La place de la draperie brabançonne et plus particulièrement bruxelloise dans l'industrie textile au moyen âge." *Annales de la société royale d'archéologie de Bruxelles* 51 (1966): 31-63.
- Blockmans, Willem. "Vers une société urbanisée (XI^e-XV^e siècles)." In *Histoire de Flandre: des origines à nos jours*, edited by Renée Dochaerd, Wim Blockmans, Hugo Soly, Els Witte, and Jan Craeybeckx. Brussels, 1983.
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