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**The West European Woollen Industries and their Struggles for
International Markets, c.1000 - 1500**

by

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The West European Woollen Industries and their Struggles for International Markets, c.1000 - 1500

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Abstract:

Although this paper is, ostensibly, a macro- and micro-economic historical study of competition in the West European woollen textile industries, in France, the Low Countries, England, Italy, and Iberia (Catalonia and Aragon), and of their related wool and cloth trades, covering all of Europe and the Mediterranean basin, from the eleventh to early sixteenth centuries, this paper is actually focused upon four fundamental inter-related questions and theses set forth to furnish some answers to the problems posed:

(1) It seeks to explain why the textile industries of the Low Countries -- Flanders above all -- gained, held, but then ultimately lost their dominance in the production and export of luxury woollen textiles, those based upon the production of fine English wools, the finest before the advent of improved Spanish *merino* wools, by the 16th century (from sheep whose modern descendants provide the world's best quality wools today).

(2) It seeks to show why, from the early 14th to mid 15th centuries, the majority of the prominent textile industries in Western Europe were forced to abandon export-oriented production of cheap, light, mass-market textiles, especially *says* and other semi-worsted fabrics, formerly sent to distant international markets, in order to concentrate more fully upon far higher-priced luxury woollen textiles (those with a far-higher value:weight ratio); and why the components of these industries were transformed from their former role essentially as passive price-takers to become, though fewer in number as survivors, aggressive price-makers, engaging in fierce monopolistic competition. The model employed to explain this industrial and commercial transformation is essentially a North-based transactions-cost model: to demonstrate that, for most of western Europe from the 1290s to the 1450s, the spreading stain of chronic, widespread and violent warfare, involving far greater state involvement in fiscal, monetary, and trade policies, raised the transport, marketing, and transaction costs of long-distant trade in cheap textiles to prohibitive levels: i.e. that so many of these West European producers found that only the trade in luxury textiles 'could bear the freight' and continue to be profitable, for much of the later medieval-era, at least for the few survivors. At the same time, changes in wealth and income distributions resulting from these structural economic changes favoured sales of luxury cloths.

(3) It seeks to explain why and how the English cloth industry, producing good quality woollen textiles, but with an export trade aimed at lower-echelon luxury markets, finally gained supremacy, by the *late* 15th century, over the Low Countries; and how the Low Countries's textile industries, forced to obey the law of comparative advantage, so successfully engaged in and prospered from a revived *sayetteries* industry based on producing, once again, those lighter, cheaper semi-worsted textiles. Contrary to the traditional theories that still ascribe the English success to a combination of rural locations and technological innovations (water-driven fulling-mills), this paper argues that the ultimate English victory was instead based upon: (i) the unintended consequences of fiscal policies, in tax differentials imposed on the wool- and cloth-export trades; but more so, given the century that it took the English to gain this victory, (ii) structural changes in the European international economy that brought about the restoration of relative security, demographic and economic revival, changes in income distributions and market demand, innovations in overland transport and marketing, falling transaction costs, and new continental trade routes, based on South Germany, the Rhineland, and the Brabant Fairs that favoured the English cloth trade over its chief Flemish, Brabantine, and Dutch (and Italian) rivals.

(4) This paper also revisits the *proto-industrialization* thesis and the related debates about the advantages of rural vs. urban location: to show that even for the 'victorious' English cloth industry, and also for the Flemish *sayetteries* and related worsted industries, the chief participants in their respective international textile trades were fundamentally more urban than rural based (despite a rural-urban symbiosis in the production processes).

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The West European Woollen Industries and their Struggles for International Markets, c.1000 - 1500

John H. Munro (University of Toronto)

The international cloth trade during the twelfth and thirteenth centuries: the primacy of the Mediterranean markets

According to most if by no means all economic historians, long-distance trade in textiles from Roman times to the later Middle Ages was largely restricted to silks and luxurious woollens by a combination of very highly skewed income distributions and high transport costs. According to this view, any commerce in cheaper textiles, those lacking a sufficiently high value:weight ratio, was confined to local or at best regional markets. Unfortunately, for the late Roman, Merovingian, and Carolingian eras, the evidence is much too meagre to test this hypothesis. For the later part of this era (c.700 - c.950), the constituent elements of the famous 'Frisian' cloaks (*pallia fresonica*), which were reputedly exported to Baghdad in the eighth century, and of the Anglo-Mercian mantles (*saga*) sold to Charlemagne's court still remain unknown; and archeologists are still unable to reveal the true character and relative values of those elegant lozenge-twilled worsted-style fabrics found in several Baltic and Polish deposits during this same era (see above pp. 000). Nor, for the subsequent eleventh-century dawn of the Commercial Revolution era, does the available literary evidence about occasional transactions involving Oriental silks and European *scarlets* tell us anything about the structure and composition of this era's long-distance trade in textiles.

When the first clear patterns on international commerce do finally emerge, during the twelfth century, for the Mediterranean basin, they contradict those basic assumptions in two clear respects. They demonstrate, first, the substantial importance of cheaper, coarser textiles in long-distance trade, and secondly, the surprising supremacy of far-distant northern towns, principally French and Flemish but also English, in supplying Mediterranean markets with these cheap textiles. Thus, in an analysis of Genoese trade with Sicily, Syria, Egypt, and Constantinople, during the second half of the twelfth century, Krueger (1987) concluded that northern French and Flemish says and serges (*sagie, sargie, saie*) 'were exported more

frequently than other type of cloths'; and collectively the northern cloths, including both English and Franco-Flemish *stanfortes* (stamforts), decisively predominated over all the Italian and other Mediterranean textiles, of which 'only the Lombard fustians formed an impressive item of export'.

In a detailed study on Franco-Flemish cloth exports to the Mediterranean during the thirteenth century, Chorley (1987) similarly found that the majority of those sold, both by value and by volume, were indeed these inexpensive fabrics. According to his and other supplementary sources, they included a wide variety of coarse, cheap woollens, plain-coloured, multi-coloured (*mellés* or medleys), and striped (*rayés*); and also various worsteds and semi-worsted or hybrid says and serges, stamforts, biffes, burels, faudeits, douken, *afforchiés* (evidently with worsted warps), fustians (linen-cotton) and tirectaines (worsted-cotton). The prices of biffes, burels, says, rayés, and similar cloths that Chorley and others have found in various commercial records and tariffs were 'typically about 40-60 per cent of that of the *lowest* grade of coloured woollens' [i.e. from the Franco-Flemish *draperie ointe*]; and in two Iberian price-lists, their values were only 25 - 33 per cent of those for such woollens. One of the few available sets of port records that permit quantitative estimates, those for Castile in 1293, indicate that these very cheap cloths accounted for over 90 per cent of total textile imports. Subsequently, in 1318-23, when Mediterranean markets were already undergoing changes that would no longer favour the cheaper textiles, they still accounted for about 60 per cent of the Franco-Flemish cloths then marketed by the Florentine Del Bene firm, whose price records also show that Flemish say prices ranged from 13 to 33 per cent of those for the better Flemish woollens (and 18 - 42 per cent of the cheaper woollens' median prices).

In several subsequent studies, Chorley (1988), Child (1978, 1996), and Munro (1999) have found a very similar commercial pattern for English cloth exports from the later twelfth to early fourteenth centuries. To be sure, our view of English cloth exports around 1300 might be biased or coloured by the fame that Lincoln *scarlets* then enjoyed; but *scarlets* were so very high-priced (see pp. 000) that they always constituted a minuscule proportion of English cloth exports, generally under one per cent; and very clearly

the bulk of English textile exports of this era, up to ca. 1320, were quite light fabrics, the majority of whose exports were then also directed chiefly to the Mediterranean basin, to Italy especially. Manufactured chiefly in England's eastern lowland towns, from York and Lincoln in the north, Leicester and Northampton in the central Midlands, to Colchester and London in the south, the most important exports were the coarse Northamptons, various 'greys', and the marginally more expensive but still 'comparatively cheap' and ubiquitous *stanforts* or *stamforts*.

As Carus-Wilson (1944), Chorley, and others have cogently argued, this term is more likely based upon *stamen forte* (i.e. strong warp) than upon the place name (Stamford: in SW Lincolnshire, near Rutland and Northants). Many of the continental *draperies légères*, especially those in northern France and the adjacent Low Countries, were then producing similar and similarly priced *stamforts*, chiefly for export as well to the Mediterranean basin. The contemporary French and Flemish guild *keuren*, most of which were far more explicitly detailed than English regulations, indicate that such *estanfortes* were cheap and light textiles, evidently with a strong dry, worsted warp and a greased woollen weft, included in the same '*légère draperie*' category, and thus physically comparable in many if not all respects to the coarse and light says, biffes, burels, and other semi-worsted textiles previously listed, whose weight was then generally about one third or less that of the luxury and pure woollen broadcloths.

In later thirteenth-century England, Winchester, Marlborough, Huntingdon, and London were producing evidently large quantities of similar textiles, apart from the aforementioned *stamforts*: in particular *burels* and *wadmal*, in London often known as *Candelwykstreetes* (from their place of manufacture on what is now Cannon Street), typically weighing about 11 lb or 5 kg (compared to 64 lb or 29.1 kg for the later-medieval English broadcloth), some of them made from the very coarse pre-merino Spanish wools. While weaving a later-medieval Flemish or English broadcloth (24 yds by 7 qtr yds fully finished) required no less than 12 days, these *burels* (35 to 40 yds in length, perhaps 5 qtr yds wide), could be woven in 'two days or three', according to testimony from the London *burellers*' guild in 1321. Obviously the best markets for such

light and cheap textiles would be found in the warm-climate zones of the Mediterranean basin, which also provided many large, very densely populated towns and thus the substantial scale economies necessary to permit their export over such long distances.

As this long-distance trade in textiles became more and more profitable, it attracted new entrants, in particular in the Mediterranean itself, where newly emerging competitors with a more direct access to major markets enjoyed a significant advantage in lower transport and marketing costs. Not surprisingly, therefore, during the thirteenth century dozens of towns, large and small, in Catalonia, Languedoc, Provence, Tuscany, and especially Lombardy expanded their production of a wide variety of cheap textiles: woollens, worsteds and semi-worsted/serge type fabrics, and especially the afore-mentioned fustians, with linen warps and cotton wefts. In an exhaustive monograph on the Lombard fustian crafts, Mazzaoui (1981) contended that this 'mass-production' industry had reached its peak by the beginning of the fourteenth century. By that time the population of the Mediterranean basin had ceased to grow at its former pace, and in many places (Provence and Tuscany) it was falling during the early fourteenth century, i.e. well before the Black Death. As these markets ceased to grow they evidently became saturated with the now very large volume of cheap, coarse textiles supplied by both Mediterranean and northern producers, thus diminishing and then eliminating the rents that the latter had earned from this long-distance trade.

Clearly, however, the northern producers still continued to earn large rents by exporting higher grade luxury woollens to the Mediterranean, a trade in which they had long enjoyed an even greater supremacy than in selling cheaper textiles. Even though such high-priced textiles had accounted for only a minority of their thirteenth-century cloth sales in the Mediterranean basin, they were a very substantial and profitable minority; and in this era, woollen *scarlets* were still probably more important than silks, yielding that primacy to silks, and especially Italian silks, only during the later fourteenth or fifteenth centuries. Many of the northern luxury woollens, however, were dyed and finished in Italy, especially in Florence, and then re-exported; and those finishing and re-export trades explain the prominence and fame of the that town's *Arte di Calimala*,

a much greater fame and prominence, during the thirteenth and early fourteenth centuries, than that enjoyed by the *Arte della Lana*, an organization of Florentine drapers who themselves produced woollens, but mainly cheaper cloths in this era.

The northern woollen industries and the Champagne Fairs during the twelfth, thirteenth, and early fourteenth centuries

During the twelfth, thirteenth, and early fourteenth centuries, the great majority of the textiles exported to the Mediterranean, from very fine to coarse fabrics, were manufactured in hundreds of towns in northern France and the adjacent Low Countries, from the Somme northwards to the Scheldt estuary and eastwards to the Meuse (Maas) valley: in Champagne (Châlons, Troyes), Picardy (Amiens), Normandy (Caen, Rouen), Artois (Arras, Saint-Omer), the French bishopric of Tournai, Flanders, Hainaut (Valenciennes), Brabant, and the bishopric of Liège. Even in the Low Countries, the majority of the leading textile-towns in the thirteenth-century were also francophone, including those in southern Flanders: Douai, Lille, Orchies. Only during the later Middle Ages would these francophone towns be superseded by the more northerly *Vlaams* or *Nederlands* speaking drapery towns: in Flanders, the *drie steden* of Ypres (Ieper), Ghent, and Bruges; in neighbouring Brabant, their comparable *drie steden* of Brussels, Leuven, and Mechelen (though it became the Count of Flanders' seignior in 1356); and in Holland, Leiden and Den Haag.

Why this compact northern region, with so many cloth towns and villages, had achieved such an early primacy and long-held pre-eminence in textiles cannot easily be determined. Some of the reasons often cited may be considered as much consequences as prior causes: i.e. a precociously productive agriculture, with considerable pastoral lands for wool production, rapidly growing populations, extensive urbanization, relatively free and elastic labour supplies. Certainly textiles played a very major if not unique role in making this region, Artois and Flanders in particular, the wealthiest, most densely populated and urbanized, and indeed economically advanced zone of western Europe by the later Middle Ages. But this region's primacy in textiles, celebrated as early as 1068-70 by the German poet Winric of Trier, as *flandria*, in his poem *Conflictus ovis et lini* ('conflict between sheep and flax'), may have had much more ancient roots. For

northern Gaul, especially the Ambiani (Amiens) and Atrebates (Arras) districts, was also the site of extensive export-oriented cloth industries under the later Roman Empire; and coastal Flanders may have been the source of Frisian cloaks in the Carolingian era. The French county of Flanders (comprising Artois as well, up to 1191) itself enjoyed the advantage of political stability, with centralized political and judicial powers, to secure those property rights necessary for industrial growth and commercial expansion.

But equally important was this region's geographic location, which offered so many close and direct links with major markets and international trade routes: by the North Sea with North German and Baltic towns, and directly across the Channel with England, with its far more abundant supplies of superior quality wools; overland via the Bruges-Cologne route, linking England, Flanders, and Brabant with the Rhineland; via the Scheldt (Escaut) into Picardy and north-western France; and via the Meuse and other overland routes, into north-eastern France and the Champagne Fairs, by far the most important agency for the international textiles trades from the twelfth to early fourteenth centuries. That was especially true for the cheaper, coarser, and essentially lighter textiles destined for Mediterranean markets; for, as Chorley (1987) has observed, the vast majority of the hundreds of Franco-Flemish towns and villages trading at the Champagne Fairs produced only these kinds of textiles.

The origins and early development of the Champagne Fairs, despite an enlightening study by Bautier (1953), still remain obscure. Established in the four small Champagne towns of Troyes, Provins, Bar-sur-Aube, and Lagney, they were indeed relatively close to most of those major cloth-producing towns just discussed; but the draperies within the county itself evidently developed only after the Fairs had begun to prosper. The Fairs also lay very near to the most direct and secure overland route from northern France to Italy, a relatively short route of about 600 km, principally via the Rhone, Marseille, and Genoa. The Champagne Fairs were not, however, the only or even the first fairs to engage in the international, north-south cloth trade. Between 1066 and 1127 the counts of Flanders had chartered monthly 'free fairs' at Lille, Ypres, Messines, and Torhout (but only subsequently at Bruges), which evidently did attract some Italian merchants,

even though in this same era some hardy Flemish merchants were themselves transporting northern woollens by these overland routes to Genoa.

Not until a decade later do any of the Champagne Fairs record the presence of Artesian and Flemish cloth merchants: first at Provins, whose subsequent establishment of the Hôtel de Dieu, in 1157-60, attracted a wider range of French merchants. The Italian merchants, principally from Genoa and the Lombard towns, began to frequent the fairs on a regular basis in large numbers only from the 1190s, after these four Champagne towns had established a fully continuous cycle of annual fairs; and only then did they begin to prosper as the predominant international agency for the north-south European cloth trade. By the 1230s, the famous Hanse of Seventeen Towns had emerged as an organization embracing almost all the drapery towns in northern France and the Low Countries to promote, govern, and otherwise protect their interests in selling textiles at the Champagne Fairs. Similarly, in the following decades, Provençal, Lombard, and Tuscan merchants each formed their own collective *societas et universitas*, composed of consuls and an elected captain, to promote and govern their commerce at the Fairs.

As Bautier has demonstrated, the great success of the Fairs rested not so much on their location -- for other potential fair towns lay on the same or even better overland routes -- but rather on the ability of the counts of Champagne to provide and guarantee all merchants, and their mercantile organisations, personal security and security of their property rights, not only in their commerce at the Fairs but also, with full royal support (from 1209), in travelling to and from Champagne. On several occasions the counts even intervened to ensure the presence at the fairs of those French or Italian merchants who had been subjected to papal interdicts. In particular, the counts sought to ensure that all commercial contracts signed at the Fairs were judicially valid throughout western Christendom. They empowered the Fair Wardens to 'outlaw' defaulting merchants, and even their fellow citizens, when judicial institutions in their own towns failed to compel them to honour debts contracted at the Fairs. The enforcement of mercantile security and mercantile contracts does not seem to have suffered any impairment from Philip III's absorption of Champagne into the royal domain

in 1273, on the death of Count Henry III without a male heir. Indeed, the continued success of the Fairs depended much more broadly upon the general peace and security of this era: the ‘long thirteenth century’, from the 1180s to the late 1290s, when most wars were infrequent, short, and of relatively limited impact. That relative peace ensured relatively low-cost transport over this short and direct route between the Fairs and northern Italy. Ironically, that long-era of peace came to an end during the later reign of Philip IV (1285-1314), who, besides inaugurating almost two centuries of continuous French warfare, had married the daughter of that final count of Champagne.

Equally important during this prior era of relative peace was a continuous and often dramatic demographic expansion, combined with a more than proportional growth in urbanization, especially in southern Europe and the Mediterranean basin, which provided the allure of expanding, densely populated markets, with falling transaction costs. Almost as enticing was the slow but steady European-wide inflation from the 1180s, which offered not only the ‘money-illusion’ of greater profits, but some real gains, in reducing the factor-costs of capital (lower real interest rates) and labour (lower real wages). Fundamentally, however, the continued prosperity of the northern textile industries, and especially those producing the cheaper, lighter fabrics in such great abundance, was dependent upon the aggressive expansion of Italian merchants, still the undisputed leaders of the European Commercial Revolution, fortified by superior naval power and commercial organisation, in the Byzantine and especially Muslim markets of Asia Minor, the Levant, Persia, and North Africa, from Egypt to Morocco, and across the Straits into Granada-Andalusia.

Warfare, transaction costs, and the changing structure of the international cloth trade, c. 1290 - c.1430: the Mediterranean world

For many economic historians, past and present, the expansive forces of the Commercial Revolution era, which had propelled such a rapid growth in the international cloth trade, came to a brutal end in 1347-48, with the onslaught of the Black Death and successive waves of bubonic plague, which ultimately cost Europe about 40 per cent of its population. As noted earlier, however, population growth in western Europe had in fact ceased long before these plagues; and many though not all regions did experience some slow but steady

demographic decline during the early to mid-fourteenth century.

Furthermore, the evidence now seems clear -- if less well advertised in the historical literature -- that the currents of commercial expansion had begun to ebb from the 1290s, i.e. even before population growth had ceased, with the onset of chronic, widespread warfare, far more disruptive and economically debilitating in its consequences than any that Europe had experienced since the late Carolingian era, in the tenth century. The eastern Mediterranean, which had become the principal zone of Italian commercial expansion, suffered the two worst blows, both commencing in the year 1291. The first was the Mamluk conquest of Acre and Crusader Palestine, provoking papal embargoes on Muslim trade, which were increasingly supported by most western nations in the early fourteenth century. Although trade with the Mamluk Egypt, the Levant, and Asia did not cease, its volume diminished, as shipping and marketing costs rose with frequent confiscations, and expensive 'fines' or trade licences required to circumvent these bans. The other calamity of this decade, in part a consequence of the first, was Genoese-Venetian naval warfare, over that other major avenue of eastern commerce, the Byzantine trade in the Aegean and Black Seas (1291-99). The early fourteenth century brought more disastrous disruptions to European commerce with the East, afflicting in particular alternative trade routes bypassing Mamluk Egypt: from Ottoman Turkish advances into the Byzantine Empire that began in 1303; from ravages by mercenary Catalans sent to oppose the Turks (1303-12); from Mamluk conquests in Lesser Armenia (Cilicia); and then, during the 1330s, from anarchic warfare in the Mongol khanates, from the Black Sea to Persia, so vital to Italian commerce.

Meanwhile, during the later thirteenth and early fourteenth centuries, even more ferocious, far-ranging conflicts were disrupting western Mediterranean and Italian commerce: in particular, the complex series of Muslim-Christian wars from 1291 to 1340, involving Aragon, Castile, Granada, Morocco, and Tlemcen (Algeria); and the related Aragonese-Angevin wars (1282-1343), fought principally in Italy, which would know no peace for more than a century. The first phase of the latter, known as the 'Sicilian Vespers' War, ended in 1302 with a truce that unleashed Catalan pirates to ravage both the eastern and western

Mediterranean. A decade later, strife was resumed within Italy itself in the form of the Guelf-Ghibelline Wars (1313-43), which attracted almost continuous foreign intervention by Catalan, French, German, and Hungarian armies. From the 1330s to the late 1380s, their soldiers, when disbanded or unemployed, regrouped as mercenary 'Free Companies', which continuously ravaged Italy from north to south, while Genoa and Venice twice more waged bitter war throughout the Mediterranean, in 1350-55 and 1378-81 (the latter finally ensuring Venetian supremacy).

The Italian wars, but most especially the Guelf-Ghibelline wars, also severely disrupted the overland continental trade routes connecting the Champagne Fairs with Italy, either via the Rhone and Genoa, or via the southern Rhine, the Alps, and Milan or Venice. In 1310, and thus even before the formal commencement of the Guelf-Ghibelline wars, the Habsburg Emperor Henry VII led a large-scale and disastrous German invasion of Italy; and after his death three years later, the Habsburg (Holy Roman) Empire was wracked by a decade-long civil war (1313-23).

Meanwhile, from that very same decade of the 1290s, after eighty years of relative peace and prosperity, north-western Europe also experienced the outbreak of economically debilitating warfare. In 1294, Edward I of England and Philip IV of France went to war ostensibly over control of Gascony-Guienne; but that warfare soon spread to involve Scotland and Flanders; and the sporadic Franco-Flemish wars of 1296-1320 themselves led into the Flemish civil wars of 1323-1328. All these wars merged, with only a brief interlude, into the much more famous Hundred Years War (1337-1453), involving not just England and France but periodically the Low Countries, Spain, and the Habsburg-German Empire as well.

Well before the Hundred Years War had commenced, these earlier Anglo-Franco-Flemish wars -- or their consequences -- had already inflicted serious injuries upon this region's textile industries, especially those producing the cheaper fabrics; and, combined with the German-Habsburg and Italian wars, they also dealt a mortal blow to the Champagne Fairs. Many historians, to be sure, have portrayed the decline of the Champagne Fairs in a much more positive light, as the consequence of two supposed advances by Italian

merchants. The first and most famous was a direct sea link to northwest Europe, which, despite Genoese boasts of having sent galleys from Cadiz to Bruges as early as 1277, really became permanent only from 1318; and the second related enterprise was the establishment of permanent agencies or *fondachi* in Bruges and London, whose commerce was based on the recently devised bills of exchange, derived from the earlier *instrumentum ex causa cambii* of the Champagne Fairs. A far stronger case can be made, however, that by 1318 the Italians had instead been *forced* to establish the Atlantic sea route and their merchant-banking *fondachi* precisely because chronic warfare had so badly disrupted the Fairs and the traditional trans-continental routes from the Low Countries to Italy. Though Bautier contends that the proportion of Mediterranean-bound textiles physically exchanged at the Champagne Fairs had been diminishing by the late thirteenth century, the Fairs still remained important for financing the trade and completing commercial contracts. And even if some of the south-bound traffic had circumvented the Fairs, the transport of textiles still necessarily followed overland and river routes increasingly disrupted by all these wars. Indeed, in 1327, an Italian merchant reported that the Guelf-Ghibelline wars had prevented him from transporting his cloths from the now dying Champagne Fairs to Genoa.

This shift from continental to maritime trade routes forms the central locus of an international-trade model that Herman Van der Wee (1970) has employed to explain fluctuations in the European economy from medieval to early-modern times. In this model, the expansion of international trade and the growth of general prosperity during *both* the thirteenth and sixteenth centuries had depended fundamentally upon the continued vitality of these overland, continental routes, and a network of fairs, connecting Italy with the Low Countries. Conversely, commercial contraction along these war-disturbed arterial routes, during the intervening fourteenth and early fifteenth centuries, greatly aggravated by plague-based depopulations, then spread to afflict many tributary routes linking various regional trade networks, with thousands of towns and villages, throughout a vast hinterland in central and western Europe. The decline in overland commerce, by reducing demand for transport, commercial services, manufactures, and foodstuffs along these routes, led to a

disproportionate economic contraction, through a reverse 'multiplier-accelerator' effect, with steadily falling consumption, investment, and aggregate incomes. Even though continental trade by no means disappeared, and sometimes regained its vitality during periodic lulls in warfare, it became more and more oriented towards purely regional fairs, with far smaller trading volumes conducted at much higher cost.

Another economic model, on 'transaction costs', developed by the Nobel prize-winner Douglass North (1973, 1981), illustrates the true costs of late-medieval warfare, especially for the international trade in textiles, and thus further illuminates the significance of the Van der Wee model. The North model embraces all direct and indirect costs in exchanging goods and services, including not only those for transportation, distribution, and marketing, but also the often more important 'search', 'measurement', and 'protection' costs: those incurred in acquiring information about markets, negotiating and enforcing contracts, and especially in gaining or defending property rights. Because all these factors necessarily involved large fixed costs, the entire 'transaction sector' in European commerce enjoyed very considerable scale economies during periods of commercial and demographic expansion; conversely, the late-medieval demographic and commercial contractions meant steeply rising unit transaction costs. If warfare provided the major external force in raising late-medieval transaction costs, those costs are not to be measured merely in terms of military campaigns. Much greater and usually longer-lasting damages ensued from the embargoes, brigandage, and especially piracy that these wars generated, and also from the various tax and other fiscal measures to finance both aggression and defence. Widespread coinage debasements -- beginning with Philip IV in the 1290s, and continuing to the late fifteenth century -- in turn led to various bullionist impositions, especially bans on precious-metal exports, that severely impeded international commercial and financial flows, which were only partially remedied by a resort to bills of exchange.

Nevertheless, most historians evidently still support the deeply imbedded view that both international trade and the European economy benefited from lower transport and marketing costs in this late-medieval shift from continental to maritime trade. Presumably the larger ocean-going ships, cogs and galleys, did offer

greater scale-economies than did wheeled carts and mule-trains, though not necessarily much greater than those provided by some river barges. Undoubtedly, as well, those port towns that specialized in international shipping and maritime trade -- in particular those in Italy, the Low Countries, and the German Baltic -- did make substantial gains from a greater concentration of commerce, wealth, and income in their fewer hands; but such gains could hardly compensate for economic decline in the much vaster continental hinterland of late-medieval Europe.

Nevertheless, maritime trade was indeed often *relatively* less costly to conduct than overland trade in the later Middle Ages, precisely because of the warfare, anarchy, brigandage, and general insecurity that plagued the traditional continental routes. Thus, in 1398, the cost for the Datini firm in shipping fine Wervik woollens from Bruges to Barcelona directly by sea represented 15 per cent of the cloth price, while sending them by overland routes cost 22 per cent of the cloth price (i.e. 5 francs by land and 3.5 francs by sea, for woollens worth 23 francs or 22 gold florins). But these statistics must be compared to the early fourteenth-century costs of transporting Caen says overland, though superior quality says, via the Champagne Fairs and the Rhone, to Florence (1300 km): just 8.8 per cent of their far lower real price (1.01 florin per say worth 11.5 gold florins); and for the shorter overland distance between Ghent and Paris via Lille (270 km), the cost of transporting luxury woollens by wagons in 1292 constituted a mere 1.6 per cent of their value.

Thus, as war, piracy, and general lawlessness spread to the Mediterranean and Atlantic sea routes (and later to the Baltic), the real costs of maritime transport also rose strongly, certainly from as early as the opening decades of the fourteenth century, which Katele (1988) so aptly described as 'a watershed in the history of naval plundering'. As Frederic Lane (1934, 1963, 1969) and others have also shown, the costs of ship construction, with much more heavily armed defences, and thus ocean freight rates soared during this century. According to fourteenth-century Catalan records on shipping costs, arming merchant ships increased freight rates by 25 per cent or more; and, over the span of this century, Sicilian freight rates virtually doubled. Seeking ever better modes of protection, the Italians replaced traditional biremes with much faster, larger

trireme galleys, which, from the 1330s, they armed with large complements of cross-bowmen and more sophisticated weapons, including cannons and mobile small-arms. The most invincible was the Venetian 'great-galley', a costly hybrid military-commercial vessel, heavily armed but very speedy, organized into state-subsidized convoys that became the almost exclusive carriers of precious cargoes. Nevertheless, the departure of these convoys was often prevented by war and corsair raids. From 1332, when subsidies and thus records commenced, to 1400, the Venetian galley fleet completed only 24 northbound voyages (in 35 per cent of the 68 years), compared to 86 voyages in the more peaceful fifteenth century. In the Mediterranean, no galleys operated in 1351-54 and 1378-81, during the wars with Genoa. Of the Mediterranean-based ships carrying cheaper bulk cargoes the most important were the new northern square-rigged cogs, with much higher-built sides to protect their complements of crossbowmen. Meanwhile, Genoa found another way to respond to mounting insecurity on the seas in the insurance contract, which, however, was surprisingly slow to spread elsewhere, in either maritime or overland trade.

Furthermore, maritime routes between most Mediterranean and certainly all Italian ports and north-west Europe were generally far longer and thus also took far longer to complete than the traditional overland routes. As just noted, the distance from Bruges to Venice or Florence by the various overland routes was about 1300 km, while the sea route was more than five times longer, about 7200 km. Thus, even in peaceful and secure times in the fifteenth century, the cost of shipping a sack of expensive Cotswold wools by galley from Southampton to Venice was far from cheap, adding 25 per cent to the basic price (i.e. £2 per sack worth £8 sterling). Those far-flung sea routes also permitted far fewer opportunities for conducting commerce than did the overland routes: in connecting various international fairs and hundreds of inland towns, at least in times of relative peace and security.

While chronic warfare, piracy, and periodic anarchy never succeeded completely in obstructing the main flows of international trade during the later Middle Ages, these conditions, and more particularly their insidious economic consequences, did significantly alter the structure of commerce. By deflecting trade from

long established channels to more costly alternative routes, by sharply increasing risk, by restricting credit, by contributing to periodic depressions, by aggravating the ongoing depopulation, and thus by reducing the aggregate volume of international trade, they sharply raised unit transaction costs. On the supply side, the major consequence was to raise the effective price-floor below which international trade in cheaper commodities ceased to be profitable. On the demand side, apart from the just noted deleterious effects on markets, the most harmful consequence of warfare came from fiscal policies: from extortionate taxation that raised prices by augmenting commercial-transaction costs, while disproportionately burdening the lower-income strata of European society; and from debasement-generated inflations, similarly a tax that transferred incomes from the lower to upper strata of society. All these adverse supply and demand conditions, therefore, seriously undermined those industrial sectors geared towards the mass consumption of cheaper goods: particularly those cheap, light textiles that had become so prominent a feature of international trade during the Commercial Revolution era, above all in the Mediterranean world.

The changing structure of northern markets in the later Middle Ages: Germany and the Baltic zone

The later-medieval cloth trade, however, obviously depended upon markets other than those found in or via the Mediterranean basin. The cloth industries of north-west Europe already enjoyed their own populous regional markets in northern France, the Low Countries, and England; and by the later thirteenth and early fourteenth centuries, they were also gaining important outlets for their woollens in northern Germany, the Baltic zone, including Scandinavia, Mecklenburg, Pomerania, Brandenburg, Prussia, Poland, Lithuania, Livonia, the Courland, and Russia. When northern and especially Flemish textiles first began to penetrate the Baltic regions, eastern Europe, and Russia is uncertain. But from the early to mid- thirteenth century, when Flemish merchants were encountering aggressive Italian commercial expansion and were no longer actively travelling south to Mediterranean ports, Flemish and other Netherlander merchants were venturing into the Baltic zone, some as far East as Novgorod, where Ypres' woollens found special favour. Undoubtedly, as the Flemish and other northern cloth exports encountered greater difficulties and rising

transaction costs in Mediterranean markets from the 1290s, and especially from the 1320s, the German and Baltic markets generally became more and more attractive, and even more so from the 1350s, when the Flemish were losing the English market to native cloth producers.

At the very same time, German merchants, from both the Rhineland and the Baltic, were also finding the now densely populated, highly urbanized, and very wealthy Low Countries, Flanders especially, with its great emporium of Bruges, to be the most important market for their exports: initially, exotic furs (sable, marten), amber, candle-wax; and subsequently, of increasing importance by the fourteenth-century, potash, flax, hemp, naval stores, salted-herring, beer, rye and other grains. Equally important, the German merchants obtained from Flanders and Brabant by far the most important commodity for their return commerce: woollen textiles, which they exported from their *kontor* at Bruges. In the face of this aggressive German expansion, Flemish and Brabantine merchants also withdrew more and more from active engagement in the northern cloth export trade, especially in the Baltic zone. By the fourteenth century, four confederations of German Hanseatic trading towns had emerged: the Wendish League of the western Baltic, headed by Lübeck and Hamburg; the Prussian League, dominated by the Teutonic Grand Master at Marienburg (from 1309) and Danzig; the Livonian League of the eastern Baltic, headed by Riga; and the Rhenish League, headed by Cologne. Subsequently, in the era from the Hanse-Flemish conflict of 1356-9, over control of the Bruges *kontor*, to the Hanse-Danish war of 1367-70 (Treaty of Stralsund), by which the Germans gained control over Baltic sea-lanes and the Scania fisheries, these four regional leagues united into the Hanseatic League, with Lübeck as the *de facto* leader.

By this time, northern Germany and the Baltic zone had clearly displaced the Mediterranean to become the most important market for Flemish, Brabantine, and other Netherlander woollens, and would also become an important market as well for the rising English cloth trade. Since this northern commercial zone was still, by the 1360s, despite the Hanse-Danish war, largely free of the turmoil and dislocations that had afflicted the southern and Mediterranean zones from the 1290s, and since the Baltic itself would not suffer

comparable ravages of piracy before the late fourteenth century, it may have provided some important markets for the cheaper, lighter worsted or semi-worsted fabrics. Certainly German and Polish commercial records indicate that it was, at least periodically, for Arras says, or says of that generic type (*harras*), in the fourteenth and early fifteenth centuries, and subsequently, in the fifteenth century, for those of Tournai and Valenciennes as well; and for much of the fourteenth century Norfolk-based English worsteds also found an outlet in the Hanse towns of the Baltic and northern Germany (see below, pp. 000).

But even under the most propitious conditions, the Baltic and East European zones could never have offered as good a market for these textiles as the Mediterranean had once done – and would do so once again, in the sixteenth century. The much colder northern climate is one obvious reason; but the more important reasons are the relative sparseness of the population, with very few large-sized towns, and low aggregate purchasing power, so that this region could not then provide comparable commercial economies of scale and low transaction costs that the far more populous and urbanized southern and Mediterranean regions had offered in earlier, more peaceful times.

The crisis of the northern textile Industries, c.1290-c.1320: the cheaper-line draperies

Clearly amongst all the European textile industries the chief victims of the warfare and ancillary economic crises that had beset the Mediterranean world from the 1290s were those in north-west Europe that had produced the cheap, light and coarse textiles primarily for this market. In marketing their cheaper textiles over such long and dangerous routes, they suffered the most burdensome rise in both transport and transaction costs; and, since they had functioned as competitive ‘price-takers’ in the Mediterranean, with very narrow profit margins, they were in no position to pass on these rising costs by increasing their prices. Despite the wide variety of textiles that they sold -- says, serges, biffes, burels, stamforts, tiretaines, douken, afforchiés – cloth production within each of these categories was essentially homogenous, so that rival products, northern or southern, were virtually indistinguishable from each other. Thus Franco-Flemish or English drapers would have lost all their customers if they had raised prices for any of these textiles, especially in the

already saturated Mediterranean markets, when many perfectly acceptable substitutes were readily available at the currently prevailing and thus lower market prices.

By and from about the 1320s, virtually all of those cheap, coarse, and light northern textiles that had earlier featured so prominently in Mediterranean markets can no longer be found in Italian or other mercantile records for this region, with the exception of a very few says, chiefly 'Irish' but presumably English. Francesco Pegolotti, in his famed *Pratica della mercatura*, compiled about 1320 (and using earlier records), listed only a few northern says: those from Caen, Gistel (Ghistelles), Hondschoote, and Norfolk worsteds (*saie di Norfolco*). Those first three, as indicated earlier, do appear, along with some Ypres *coveratura*, in the Alberti accounts for 1317 and the Del Bene account books for 1318-21; and although those of Caen and Hondschoote were indeed far cheaper than the Flemish luxury woollens, priced at 9 - 21 per cent of the latter, they were higher priced than most other says. The Del Bene accounts for 1322-3 do list some says of unspecified origin, which may be Italian. Subsequently, however, none of these or any other cheaper northern textiles are found in the account books for the Florentine firms of Alberti (1329), Covoni (1336-8), and Peruzzi (1337-8). In the later account books of Alberti, in 1348-58, recording many thousands of textile sales, only three Hondschoote says are listed, along with several scattered entries for 'Irish' says. The account books for the Balda da Sancasciano firm's transactions at Pisa from 1354 to 1371 record just two isolated sales of northern says: a single Hondschoote say in 1357 (possibly a better quality *saye drapé*, for 13 florins); and four 'Irish' says in 1368 (half the size, at four florins each). In subsequent records of cloth sales in Pisa, by the Datini and Bracci firms, for 1383-1402, northern says are listed in just one transaction, for 1396: 33 'Irish' says, which represented a mere 0.56 per cent of all English cloth sales in this period.

In the textile-producing regions of northwestern France and the Low Countries themselves, most of the export-oriented *sayetteries* and other *draperies légères* similarly disappear from the records between the late 1290s and the 1320s, though undoubtedly they did retain some undocumented production for local markets. In Artois, the once proud drapery town of Saint-Omer, which had become this region's leading say

exporter by the mid-thirteenth century, was unable to sell its annual say-excise farm from 1299; and says were omitted from this town's cloth tariff of 1318. Nor were the elaborate industrial *keuren* for its *sayetterie* renewed or reissued in the fourteenth century, when, according to Derville (1972), Saint-Omer had abandoned says to produce higher-priced striped (ray) cloths and other woollens. Similarly, at Valenciennes, in the neighbouring imperial county of Hainaut, its *sayetterie keuren* received their final revisions between 1294 and 1309, never to be re-issued; and certainly the death of this medieval industry can be deduced from a later petition of 1406, requesting its restoration. In the nearby, formerly great drapery town of Douai, in francophone Flanders, the industrial *keuren* for both its *sayetterie* and the *draperie légère* producing biffes were last amended in 1305, just when Douai, Lille, and Orchies were ceded to France.. Subsequently, during the mid fourteenth century, the Douai magistrates forbade its citizens to engage in any form of say-making; but in 1403 they similarly agreed to resurrect their old *sayetterie*. The nearby French bishopric of Tournai had been an even more important say-exporter in the thirteenth century; and the fourteenth-century demise of its *sayetterie* can also be deduced from an attempt to revive it in 1397 (or an industry producing 'new' cloths with dry worsted warps and greased woollen wefts), an enterprise that evidently proved to be successful only after 1410 (see below pp. 000).

In Flemish-speaking Flanders to the north, the final revisions of the *sayetterie keuren* in both Bruges and Ypres were issued in or about the 1290s. In Bruges, 1298-9 is the last year in the treasurers' accounts to contain entries for salaries paid to the town's *sayetterie* officials (*decano sagorum et suis juratis*). In 1314 the Bruges government issued its final regulations on the sale of *Ghistelsayen*, 'within and without the city', though the town magistrates occasionally purchased Gistel's own says for their servants up to 1341. At Ypres, the town's *Lakenhalle*, having leased numerous stalls for *saies*, *afforchiés* (*pannis enforciatis*) and *estanfors* (stamforts) in the 1280s and 1290s, leased very few in the early fourteenth century, and none at all for any of these cheaper textiles after 1325. Finally, in neighbouring Brabant, there are no further references to the Leuven *sayetterie* after 1298; and Van Uytven (1971, 1976) also detected a similar cessation in exports

of cheap Brabantine textiles, to the Mediterranean, from this very same era, which, along with the contemporary disappearance of fulling mills there, he attributed to a ‘switchover to luxury materials’.

The only large town in this region of northern France and the Low Countries that continued to maintain a *sayetterie* as a viable export industry throughout the later Middle Ages was Arras, though with a reduced prominence after establishing a *nouvelle draperie* for medium-quality woollens in 1337. Included in the general revision of the drapery *keuren* in 1367, its active presence was subsequently confirmed by Valenciennes’s petition of 1406; and much later in the fifteenth century, artisans from Arras helped to re-establish or revivify this industry in some neighbouring towns (at Lille, Mons and Amiens after 1479; see below, pp. 000). Although Arras says also ceased to appear in Italian and other Mediterranean mercantile records by the early fourteenth century, they -- and/or imitations of Arras says (*harras*) – can periodically be found, as noted earlier, in Polish and other Baltic commercial documents for the later fourteenth and fifteenth centuries.

Of the very few Flemish villages and small-towns whose *sayetteries* survived, by far the most important was Hondschoote, though again with a far lesser prominence, as was demonstrated earlier in comparing Italian commercial records before and after the 1320s. Not until 1374 did Hondschoote receive an official charter for its *sayetterie*; and not until 1408 did it secure marketing and stapling privileges from Bruges. As Table 00 indicates, Hondschoote’s say production does not begin to show any truly marked growth (and then substantial growth) until after the mid-fifteenth century. Elsewhere in other Flemish small towns, *sayetteries* serving local or regional markets may have survived at Aire, Cassel, Aalst, and Oudebourg – though evidently not at Gistel, after the 1340s.

The crisis of the English textile towns, c.1290-c.1320

Possibly, though with a lesser degree of certainty, England may also have suffered a similar industrial crisis involving cheap textiles, during this very same era, from the 1290s to the 1320s, in that aforementioned arc of eastern lowland towns from York to London. Most historians, in over a century of debate, have agreed

that these cloth towns did suffer an acute ‘industrial crisis’ in this era; but, if they disagree on what were the most important causes, most agree that those causes were largely internal or endogenous (see below, pp. 000). If, however, as argued earlier, most of these thirteenth-century urban cloth industries had indeed focussed their production on the cheaper textiles for export, chiefly to Mediterranean markets, then the real explanation for the sudden decline of these urban draperies may have been external and the same as for their continental counterparts: a prohibitive rise in transport and transaction costs in marketing these textiles in the now war-torn Mediterranean markets. Since no export statistics are available before the imposition of *Carta Mercatoria* in 1303, the best evidence for a sudden decline in English textile sales can be found in the English fair records. Those for St. Giles (Winchester), St. Ives, Northampton, and Stamford all demonstrate a precipitous decline in cloth sales, commercial transactions, and fair incomes from c. 1290 - c. 1310, a decline that Moore (1985) attributes chiefly to the calamities currently afflicting the eastern seaboard textile towns.

For the early fourteenth century, Nightingale (1995, 1996) has also documented a severe commercial recession for the port of London. As noted earlier, one of the most important English textiles of this era were the light and coarse *burels* and *wadmals* from London, whose sudden decline in production, from the 1290s, is documented in complaints from the London burellers about the drastic reduction in their looms, within ‘recent years’, from 380 to 80 (Munro 1999). Significantly, no evidence for any significant production or export of burels, wadmal, etc. from London, Huntingdon, Winchester (Keene 1985), or elsewhere can be found after the early fourteenth century. To be sure, English kerseys did continue to be exported; but such cloths, though coarse, were actually woollens, and were more generally more expensive than burels, says, wadmal, and similar worsted-based textiles. For such textile producers the one major exception not to suffer, or noticeably so, from this crisis was Norfolk’s worsted industry, which evidently did manage to maintain some, though few, spotty, and sporadic Mediterranean sales, while relying far more on northern and especially Baltic markets. By the later fourteenth century, however, those markets also failed, leading to a virtual collapse of English worsted exports, by the 1380s (see below, pp. 000).

Industrial transformations and turmoil in the fourteenth-century Low Countries: the role of the cloth guilds

Across the Channel, in the Low Countries, many of the traditional urban draperies had responded much more successfully to the loss of their former Mediterranean markets for the very cheap and light textiles. Those specializing in such cheap textiles had faced several unenviable choices, from the early fourteenth century; but cost-reducing industrial innovations and wage-cutting were not then practical solutions, in the face of steeply rising transport and transaction costs. Those northern drapers simply could not compete with Mediterranean producers, who, with much closer access to major markets, could undersell them by virtue of their lower distribution costs; but as will be demonstrated subsequently (pp. 000), many of these Mediterranean textile producers failed to benefit from the plight of the northern producers, suffering a similar fate of extinction. The first and least profitable option for many northern draperies was to direct sales of their says and other cheap textiles to domestic or nearby regional markets, or, as just suggested, possibly to northern Germany and the Baltic.

The second, and potentially far more profitable option was to become industrial ‘price-makers’, reorienting their crafts toward luxury production, striving to distinguish their fine woollens from rival products by superior quality. If successful as quality-oriented price-makers, they would have gained sufficient market power to raise prices to compensate for any rise in transport and transaction costs; and furthermore, the real burden of those transaction costs, as a proportion of final market prices, was much more modest for luxury woollens than it was for the coarser, cheap fabrics. Some evidence suggests that a few northern say-producers had sought to pursue this option by improving the quality of their products as more highly finished *sayes drapés* (with finer greased woollen wefts); but evidently their higher priced products did not sell well in southern markets. The real solution of course lay in the production of the true heavy-weight luxury woollens, woven entirely from very fine short-stapled wools (i.e. of the *draperie ointe*), extensively fulled, felted, shorn, and brilliantly dyed.

The first northern producers to be successful in this industrial transformation, in shedding their

draperies sèches, specializing more fully or solely in these very fine woollens, and in improving their quality with meticulous regulations and supervision were a relatively small number of Flemish-speaking urban draperies: the *drie steden* of Ghent, Ypres, and Bruges in Flanders itself; and the three Brabantine towns of Brussels, Mechelen, and Leuven. Thus under the former industrial structure, the Bruges drapery of the 1280s, as noted in the earlier discussion of medieval wools (pp. 000), had permitted the production of *sealed* cloths from English, Scottish, Irish, and domestic Flemish wools. But from about the mid-fourteenth century, the Bruges drapery *keuren* now stipulated that English wools be used exclusively, except in the production of unsealed *smale laken* (narrow cloths) for domestic consumption. So did the later-medieval industrial *keuren* for these other Flemish and Brabantine drapery towns, and subsequently those for Leiden (Holland) as well, sometimes specifying that only March, Cotswold, or Lindsey wools be used (Munro 1978, 1997, 1999). As the true measure of their success, most of these urban draperies, and most especially the *drie steden*, managed not only to survive but to thrive with a very decent measure of prosperity for another full century, despite all the many adversities that they had faced and were yet to face, from both internal and external causes.

Certainly the Flemish draperies suffered some very considerable physical disruptions and dislocations from the various military conflicts and industrial strife discussed in the previous chapter: *inter alia*, the sporadic Franco-Flemish wars of 1296-1320, ending in onerous indemnities and the loss of the francophone drapery towns (Lille, Douai); the ensuing civil wars, especially the Revolt of Maritime Flanders in 1323-28, which led to the forced exile of thousands of skilled artisans; Flanders' involvement in the initial phase of the Hundred Years War and the Artevelde Revolt (1338-49). As noted in the previous chapter, the major Brabantine urban draperies, experiencing only minor social unrest and brief urban revolts in the very early fourteenth century, did benefit, at least temporarily, by filling whatever void in European markets resulted from the Flemish disruptions; and so, of course, did the newer small-town draperies of Vilvoorde, Tienen, Lier, Diest, and Herentals. Yet the Flemish statistical indices, buttressed by more explicit data on English wool exports, do suggest a remarkable recovery in the *drie steden*'s textile output by the 1350s and early

1360s, despite the Black Death, and war-torn, depopulated markets.

The Flemish recovery was, of course, by no means total, but only relative. The price to be paid for concentrating on luxury-cloth production, a perfectly rational choice in exercising their comparative advantage, necessarily had to be a much reduced production, to serve much narrower if more stable and less price-sensitive European markets, which of course had also become much smaller markets by the 1360s, with the continuing onslaught of bubonic plagues and disruptions from widespread warfare. The still populous and prosperous domestic market in the Low Countries, however, less severely afflicted by the plagues before the fifteenth century, probably fared much better; and it certainly justified some continued (if barely documented) production of the cheaper fabrics, as well as helping to sustain the output of luxury woollens. Furthermore, the aftermath of the Black Death may have brought an artificial veneer of prosperity to some sectors of the European economy, especially in luxury-oriented manufacturing sectors, which evidently benefited from an inflationary hedonistic spending spree, based on suddenly inherited cash balances -- accruing mainly to the richer strata of society.

At the same time, however, all these circumstances involving both demand and supply factors also favoured the production and marketing of silken fabrics -- velvets, satins, and velours -- no longer just Oriental, Byzantine, and Islamic, but increasingly Italian, produced first in Lucca and Bologna from the early to mid thirteenth century, and then in Florence, Milan, Venice, and Genoa; and finally (from 1470), in Tours and other French towns. The very finest Flemish and Brabantine woollens of the late-medieval era were priced dangerously close to medium-quality silks; and, as Chorley (1993) has rightly observed, historians have underestimated the role of this new competition in analysing the late-medieval decline of the Flemish, Brabantine, and Italian urban draperies. But the threat from Italian and later French silks seems to have become much more ominous in the later fifteenth and sixteenth centuries than in the fourteenth; and the colder northern climates provided some regional advantage for the heavy Flemish and Brabantine woollens.

To a considerable extent, major credit for restoring the fortunes of the *drie steden's* drapery

industries should be given to the Flemish textile guilds and the town governments, or at least credit for allowing the Flemish industry to take better advantages of those economic conditions that now favoured luxury production. The prevailing view in the historical literature is, of course, the exact opposite: not to praise but to condemn the guilds, from the very moment that their members gained access to the urban governments. The cloth guilds have been accused of hastening the downfall of the later-medieval Flemish cloth industry by various means: by opposing needed innovations, by restricting industrial entry, by artificially raising wages, by increasing other costs, and thus prices. The analysis of the Flemish textile guilds in the previous chapter, however, demonstrated that they rarely if ever succeeded, collectively or individually, in dominating the urban governments; and it was government legislation, not guild regulations per se, that were imposed on the draperies. Furthermore, there is no compelling evidence that either guilds or town governments succeeded artificially in restricting industrial entry or enterprise, in raising costs and prices, or in preventing the adoption of needed innovations. To be sure, the late-medieval guild or civic industrial regulations in the Flemish urban draperies did ban both wool-cards and spinning wheels in the preparation of warp yarns (though without ever mentioning fulling-mills). But they did so for the very good reasons discussed earlier in the section of textile technology: because these industrial methods would have impaired the quality of luxury woollens at the very time when international market conditions were compelling the Flemish draperies to engage in ‘monopolistic competition’, by which they necessarily had to convince their customers that their woollens were not just of good quality, but superior to those of their rivals.

Thus a more positive reassessment of the fourteenth-century Flemish textile guilds must now be made in the light of the economics involved in the monopolistic competition of this era. In such competition for European cloth markets, the effective industrial unit was not the individual draper (whether merchant-draper or weaver-draper), but rather the urban drapery itself, including not just the ‘collective’ of drapers but also the four major craft guilds as active participants. Although any given urban drapery may have manufactured several varieties of woollens, each type or ‘brand’ of woollen that it produced was meant to be *unique* to

that particular drapery -- as a monopoly; and all drapers within that collective produced the same brand or brands of sealed woollens, as prescribed by civic regulations. But though unique as brands, the woollens of that drapery had close substitutes, i.e., those produced by other similar draperies competing in the same markets. Hence in this form of monopolistic competition the goal of each urban drapery was to shift consumer preference from foreign rival cloths to their own 'unique' woollens, and thus to emphasize their special distinctiveness.

The crucial role of the urban governments and textile guilds was therefore fourfold: to ensure the best possible standards of quality; to impose those standards uniformly upon all producers within the urban drapery, stipulating where necessary those techniques required to ensure desired qualities; to inspect production through the major processes of manufacture; and to fix upon the finished product official civic seals to provide an internationally respected guarantee that the prescribed quality standards had been met. Very clearly, from all the surviving archival evidence, the guild or civic industrial regulations for all the major Flemish, Brabantine, and then Dutch urban draperies become far more meticulous in specifying quality controls from about the mid fourteenth century, certainly far more meticulous than those of the thirteenth and early fourteenth centuries.

According to Van Werveke (1949), Count Louis de Maele (1346-1384) also deserves some credit for rescuing the fortunes of the Flemish cloth industry in the mid-fourteenth century through a series of drastic silver coinage debasements, which, 'although unintentionally on his part', reduced real wages: wages that the drapers paid in devalued silver, while selling their woollens to foreign merchants for florins or other gold coins. Nevertheless, those inflationary debasements also fomented labour unrest, for this very reason; and as the previous chapter has already revealed, the guild structure of the Flemish cloth industry too often led to bloody conflicts between weavers and fullers, which seriously disrupted textile production in the *drie steden*, especially when those conflicts inflamed other civic grievances into civil wars (see above, pp. 000).

Of the three fourteenth-century rebellions, undoubtedly the most destructive for the Flemish cloth industry was the final one, the six-year Ghent War, which broke out in 1379, after Louis de Maele had

permitted Bruges to build a canal to the Leie, threatening Ghent's monopoly on the lucrative river traffic. Ghent, led by Philip Van Artevelde and a new weaver-drapeer regime, quickly gained control over Ypres, Bruges, and most other Flemish towns. Louis de Maele finally appealed for French military intervention; but, despite a decisive French victory at West Roosebeke in November 1382, the submission of Ypres and Bruges, and the death of Van Artevelde, Ghent fought on alone and bitterly for another three years, partly thanks to English military interventions in 1383 ('Bishop Despenser's Crusade') and 1384-85. Finally, in December 1385, an economically weakened Ghent submitted to the new Burgundian ruler, Duke Philip the Bold (1384-1404), son in law of Louis de Maele, though on terms more of truce than abject surrender.

Possibly, however, the most deleterious consequence stemmed from the wartime damages inflicted upon German Hanseatic merchants, whose unsatisfied post-war claims finally led to a general Hanseatic embargo against Bruges, and thus in effect a German embargo against the Flemish-Brabantine cloth trade, from 1388 to 1392. The Ghent War and the ensuing Hanse embargo permitted both the Dutch and the English to expand their own cloth sales in the major Hanseatic markets, especially in Prussia, Poland, and Livonia. For shortly before these conflicts, in the 1370s, their mariners had brilliantly succeeded, with Danish support, in establishing a direct sea route into the Baltic, via the Skagerrak, the Kattegat and the Sund, thus bypassing the direct overland connection between Lübeck and Hamburg, and posing the first concerted challenge to Hanseatic supremacy in Baltic commerce, and to the supremacy of Flemish-Brabantine woollens, at the very time when Hanse markets were seriously contracting.

New competitors in the Low Countries: the rise of Leiden in the fourteenth century

Indeed, one of the most remarkable features of the fourteenth-century industrial transformations in the Low Countries was the emergence and rapid rise, in particular, of Holland's Leiden drapery, from the early 1360s, at the tail-end of that post-Plague era of artificial prosperity. Somewhat surprisingly, the Leiden drapery was established as a major export industry at the very time that the English crown had placed effective control over its now heavily taxed wool exports, those directed to northern Europe, directly placed

in the hands of a quasi-monopolistic merchant cartel (1363), which subsequently raised wool prices even higher (see below, pp. 000). Nevertheless, following the example of the Flemish and Brabantine urban draperies before them, this new Leiden drapery also chose to base its export-oriented production exclusively on the more expensive varieties of English wools: fine March (Herefordshire, Shropshire) or the best Cotswolds, for a relatively small quantity of ultra-luxurious *puik lakenen*; and other Cotswolds, Kesteven, Lindsey, and Holland (Lincolnshire) wools for its major product, the second-quality *voirwollen lakenen*.

The relative success of the Leiden drapery, from the later fourteenth and early fifteenth century, is all the more surprising when we find that most of its exports were oriented to the Baltic and east-European zones whose commerce was then so strongly dominated by the German Hanseatic League. Because of the signal importance of the Bruges *kontor* and mercantile staple to German commerce, the Hanseatic League in general long remained loyal to Flemish and Brabantine woollens, despite increasing their trade in English broadcloths; and many Hanseatic merchants, especially from Lübeck's Wendish League, resented this intrusion of Dutch woollens, all the more so when Dutch ships were carrying them into the Baltic. Most of the fine Leiden woollens exported to this region were rather less expensive than the finest Flemish and Brabantine woollens, though certainly more expensive than most English broadcloth exports of this era. How and why the Leiden cloth industry managed to cope with the growing onslaught of the English cloth trade so much more effectively than other urban draperies in the southern Low Countries, until well into the sixteenth century, will be investigated in a subsequent section of this chapter (see pp. 000).

The Flemish *nouvelles draperies* and conflicts with the *drie steden*

The other set of draperies in the Low Countries to be spawned by the fourteenth-century industrial transformations were the so-called *nouvelles draperies*, the most important of which were located in small towns and villages in southwestern Flanders, in the vicinity of Ypres and along the Leie (Lys) valley; but some others were established in the lands north-east of Bruges (Eeklo, Kaprijke, Lembeke), east of Ghent (Aalst, Geraardsbergen, Dendermonde, Oudenaarde, Ninove), and further east into the duchy of Brabant

(Diest, Lier, Herentals, Tienen). Several draperies in the Leie Valley, especially Wervik, Kortrijk, Menen, Warneton, and Comines (Comen), proved to be remarkably successful in capturing and holding Mediterranean markets during the later fourteenth and early fifteenth centuries, and, along with Poperinge, the Baltic as well during the mid to late fifteenth century, though with a lesser degree of success.

Many of these *nouvelles draperies* were, however, by no means new, but had also been active in the later twelfth and thirteenth centuries, when they were producing entirely different textiles for export markets: chiefly douken, says and various other cheap, coarse, generally lighter fabrics, of the *draperie sèche* or *légère*. Amongst the more prominent of about two dozen small-town or village draperies during the thirteenth century were Kortrijk, Wervik, Diksmuide, Deinze, Dendermonde, Comines, Warneton, Hondschoote, and Poperinge (others listed below, on pp. 000); and, in an age of commercial expansion and growing prosperity, when the Flemish economy was still fundamentally based on the export of a wide range of textiles, these village cloth-producers flourished without any significant opposition from the larger urban draperies. Indeed, Poperinge evidently functioned in close symbiosis with, or as a rural adjunct, of the Ypres drapery; and it is significant to note that the famous ‘Cokerulle Uprising’ of 1280, directed against Ypres’ patrician wool- and cloth merchants, had begun in Poperinge and then spread into Ypres itself, with the active support of Ypres’ weaver-drapers and textile artisans (see above, pp. 000). Subsequently, from about the 1320s, most of these village draperies, with the major exception of Hondschoote, abandoned their coarse, cheap semi-worsted fabrics to emulate the larger urban cloth industries in concentrating on more expensive, genuine heavy-weight woollens, i.e. cloths of the *draperie ointe*. In doing so they earned, in this very era, not only the sobriquet of *nouvelles draperies*, but also the bitter enmity of the Flemish *drie steden*.

Not surprisingly, in view of the difficult crises and painful transformations -- economic, social, and political -- that afflicted these Flemish towns, even before, but especially after the Battle of Kortrijk (1302), they soon lost their former tolerance for these rural draperies; and, with the entry of textile-guild representatives into the urban governments, they took severely protectionist measures against them. Even

as early as 1297, Ghent, the most powerful of the *drie steden*, received from Count Guy de Dampierre (1278-1305) a *Great Charter*, which forbade anyone from having cloths woven or fulled outside the city, and banned the sale of any cloths in Ghent not made there or indeed the sale of any cloths within three leagues or comital miles (*liuwes, mijlen*), i.e. 18 km, of the city walls, except within any chartered *franches villes*. In 1302 and 1304, the guild-dominated Ghent government secured confirmation of these privileges from Count Guy's sons; and in July 1314 Count Robert de Béthune (1305-22) extended their provisions in a draconian ban, which prohibited any form of textile making within five comital miles (30 km) of the city walls, except once more in those *franches villes* that already possessed seigneurial drapery charters. Almost immediately Ghent sent expeditions to suppress rural draperies within this exclusion zone: in Assenede, Gavere, Velzeke, Zottegem, Boekhoute, and even Dendermonde, though it was a chartered *franche ville*.

Subsequently, in October 1322, both Ypres and Bruges received very similar comital cloth-bans, though with a narrower exclusion of zone of three comital miles (18 km); and, as with the Ghent ban, both of these also exempted those draperies in *franches villes* that already possessed official charters. Together, these three comital bans included most of Flanders, except for the north-east and the south-west; and in the south-west the small drapery town of Kortrijk, had its own territorial monopoly. At this very time, in the early to mid 1320s, Count Robert, and his successor Louis de Nevers (1322-46) confirmed or granted charters, with an obligation to issue industrial *keuren*, to a number of village draperies: in particular, Hulst, Aalst, Warneton, Deinze, Lembeke, and Poperinge, most of whom sealed their woollens.

During the 1320s and 1330s, Ghent was the most resolute and vigorous of the *drie steden* in attacking various small neighbouring rural draperies (again in Gavere, Velzeke, Zottegem, and also in Eksaarde, Lokeren, Sinaai, Wetteren, Schellebelle, and Oudburg) partly because it alone had remained neutral in the 1323-28 Revolt of Maritime Flanders, emerging unscathed, with its powers greatly enhanced. Ypres, less embroiled than Bruges in the this bitter and destructive rebellion, did make a weak attempt, in 1325, to curb clothmaking in some of the Leie Valley draperies (probably Wervik, Comines and/or Menen). Subsequently,

in 1327-28, the Yprois launched several armed attacks against Poperinge (stoutly defended by Count Louis de Nevers), its former industrial collaborator, now perceived to be its chief threat, allegedly for imitating or counterfeiting its finer woollens. Indeed, Ypres' drapery privilege of 1322, unlike the other two, had specifically complained of *malvaistiés et faussetés de drapperie* in neighbouring villages; and in the later 1320s, Ypres lodged similar complaints of counterfeiting against Langemark, which had long enjoyed its own drapery charter.

In the next decade, the Flemish and Brabantine urban draperies suffered a far graver crisis when Edward III launched what came to be the Hundred Years War with France. In 1336, hoping to coerce the pro-French Louis de Nevers into a military alliance, Edward exploited Flanders' now strong dependence on English wools by imposing an export embargo and then a royal monopoly on the wool trade. The unanticipated result was the establishment, in January 1338, of a pro-English revolutionary regime in Ghent under Jacob Van Artevelde and the weaver-drapers' guild, a growing Ghent hegemony in Flanders, and then the flight of Louis de Nevers in 1339 (see above, pp. 000).

The 1340s marked the apogee of power for the cloth guilds and the *drie steden* (who divided rule over Flanders between them in 1343), power that faded with the overthrow of the revolutionary Ghent regime in 1349. Yet that power had not been used effectively to suppress rural or village draperies: perhaps because the latter were now too strong; perhaps because Ghent needed, if not their support, at least acquiescence. Or perhaps indeed Ghent's earlier suppressions had been quite successful, for none of those villages attacked in the 1320s and 1330s ever became successful *nouvelles draperies*. In any event, the chief objective of the *drie steden* from the 1340s was to prevent various villages draperies from producing those finer woollens that too closely resembled their own, in size and appearance. From 1342 to 1345, Ghent itself strove, with frequent military threats, but unsuccessfully to make Dendermonde reduce its cloth dimensions, change the selvages (*vouten*), and desist from manufacturing Ghent's own speciality, *strijpte halfflakenen*, finally seeking mediation from Duke Jan III of Brabant; but Ghent did not, as in 1314, seek to crush Dendermonde itself

(apart from attacking the Count's military garrison there, in 1345). Nor did Ghent seek to interfere with other prominent *nouvelles draperies* that then enjoyed their own charters: at Hulst, Aalst, Oudenaerde, and Geraardsbergen. During the 1350s, the new and wily count Louis de Maele, seeking to weaken the economic power of the *drie steden*, readily renewed the charters of these village or small-town draperies, along with those of Menen, Wervik, Comines, Cassel, Deinze, Eeklo, Harelbeke, Bousbecque, Lembeke, and Langemark; but, in 1359, he also more evenhandedly confirmed Ghent's ban on non-chartered draperies within its five-*mijl* exclusion zone.

Only once did Bruges intervene with a neighbouring rural drapery to curb counterfeiting, achieving a reasonably successful settlement with Eeklo, within the Brugse Vrij (Franc), in August 1339, limiting it to cheap grades of small, coarse cloths; and, though Louis de Maele did reconfirm its charter, Eeklo never became a rival or significant imitator of Bruges woollens. Indeed, as Nicholas (1971) has pointed out, Bruges was the most reluctant of the *drie steden* to enforce its drapery ban; and the only one not only to permit but indeed to welcome cloth sales by many of the *nouvelles draperies*, from the 1330s, at its *Lakenhalle*. As Nicholas also observes, Bruges undoubtedly did so because its economy was much more reliant on international trade, especially in textiles with the Hanse, the Italians, and the Spanish, than on actual cloth production. Certainly most of the *nouvelles draperies* did become quite dependent upon Bruges and its international merchant colonies for the international sale of their woollens.

From the 1340s, until well into the sixteenth century, Ypres was both the most active and the least successful of the *drie steden* in enforcing its drapery ban, possibly because it was the smallest, weakest, and economically the most dependent on the cloth industry (with over half its population engaged in textile-related trades). Ypres also had to face the largest, most successful, and most widely spread group of *nouvelles draperies*, especially along the Leie; and, unhappily for Ypres, many in the south-west, in the castellanies of Kortrijk and Veurne, and on the French side of the Leie (Lys), lay quite outside of its 18 km exclusion zone. But within that zone, Langemark and Poperinge, once more accused of unlawful imitations of Ypres'

woollens, were both subjected to military attacks in 1342-3. The outcome at Langemark is uncertain, although after the defeat of Ypres' militia in 1348, Count Louis reconfirmed its drapery charter. The dispute with Poperinge was subjected to rather biased arbitration by the *drie steden*, which ruled that Poperinge had 'only recently' begun to make woollens of the *draperie ointe*, 'to the great prejudice and severe damage of Ypres', and stipulated that henceforth Poperinge must cease making any *strijpte halflakene ende plaine ghesmoutte lakene* [i.e. greased, heavy-weight plain woollens], otherwise restricting its woollens production to small coarse cloths under 12 ells (8.4 m) in length, without lists and selvages. Poperinge's wilful evasions led to more armed conflict and its apparent defeat in May 1344, with the exile of many weavers. Subsequently, Louis de Maele confirmed the *drie steden*'s decrees and Ypres privileges and drapery bans in 1346, 1351, and 1357. That last ban contained a specific condemnation of counterfeiting by village draperies (*contrefaite lakene van vouden, van lijsten, van langhen ende van breedten*), 'as a consequence of which the drapery of Ypres and its woollens would be held in great disrepute, especially in foreign lands, since the counterfeit cloths made all around there are without legitimacy and regulation, are lightly woven, and finished as one pleases'. Specifically exempted, however, from these restrictions on village cloth production, within Ypres' 18 km exclusion zone, were the important draperies of Diksmuide, Belle (Bailleul), and Roeselare, all of whom were then selling good quality woollens at Bruges. Poperinge, however, was not exempted; nor was the most recent new upstart drapery of Nieuwkerke (Neuve-Église), which, after having been assaulted by Yprois forces in 1352, obtained its own charter in 1358, and became Ypres' chief rural opponent in the fifteenth century.

Poperinge, despite the 1357 decree, nevertheless continued to produce woollens resembling those of Ypres until 1373, when its magistrates and drapers were summoned before the Council of Flanders, whose proceedings provide our fullest records of this ongoing dispute. Ypres' magistrates reiterated their claim that Poperinge had consistently violated their drapery's privileges by counterfeiting its fine woollens of the *ghesmoutte draperie*, including *strijpte halflakene*, and thus demanded that Poperinge again be limited to

producing only its former products, namely *lakenen onghesmout ende eenblu* [plain blue cloths of the ‘dry’ worsted-type drapery]. In their defence, the Poperinge drapers readily admitted that in the past they had made only *douken, eenbluwe* and other coarse products of the so-called *gaernine* [dry] *draperie*; but they argued that, when merchants would no longer buy these coarse fabrics and ‘wanted only cloths from the *ghesmoutte draperie*’, about a half-century ago, they had no choice but to manufacture these finer quality woollens. Should they now be forced to surrender their current *ghesmoutte draperie*, they pleaded, ‘not one person in ten could be gainfully employed in producing cloths of the *droghe draperie*’ [the ‘dry’ semi-worsted drapery]. In further justifying their actions, they noted that in the past the Ypres drapery had ‘also made *droghe plaine lakene* and continued to make them so long as they sold well’; and, furthermore, that many other village or small town draperies had similarly abandoned the old *droghe draperie* to produce woollens of the *ghesmoutte draperie*, naming in particular Comines, Kortrijk, Diksmuide, Roulers, Warneton, Menen, Deinze, Dendermonde, Oudenaarde – all of them now prominent *nouvelles draperies* -- and also the less well-known Linselles and Bousbecques. Finally, the Poperinge drapers assured the Council that their woollens were fully regulated and inspected, and in no way imitated those of the Ypres drapery. The Council evidently upheld Ypres’ claim against Poperinge, as it also upheld a similar claim that year against Wervik.

Perhaps for that reason Poperinge had deliberately omitted Wervik (along with Langemark) from its list of fellow-draperies, to which, for this era, should be added: Aalst, Geraardsbergen, Messines, Halluin, Bailleul (Belle), Estaires, Eeke, Meteren, Nieppe, Deinze, Kemmel, Lo, Flêtre, Godewaersvelde, Dranouter, Tourcoing, Bousbecques, and Nieuwkerk (Neuve-Église). From the 1340s, the *drie steden* had sought to regulate cloth production at Wervik, restricting its cloth dimensions and selvages to prevent any imitations of their fine woollens; and their collective decrees were subsequently upheld, after subsequent complaints from Ypres, not only by Louis de Maele in 1373 but again in 1392 by his son-in-law, Duke Philip the Bold, who, however, also forbade the Ypres’ magistrates from interfering further with the Wervik drapery. The other Leie Valley drapery with whom Ypres had a conflict, though of briefer duration, was Comines, after

its seigneurial drapery charter was reconfirmed in 1359. After several fruitless protests, Ypres appealed again to the Council of Flanders, which did annul the Comines charter, in April 1367.

But not long after these seeming victories of the 1360s and 1370s, Ypres, even more than the other *drie steden*, suffered two devastating military sieges, French and then English, during the aforementioned Ghent War (1379-85); and certainly, once Ghent had finally surrendered, the new Burgundian regime of Philip the Bold was unwilling to support the *drie steden* in any further attempts to control cloth-making in their rural *banlieues*. But even in the 1370s, before the Ghent War, when Ypres had enjoyed some support from Count Louis, none of his comital decrees and drapery bans had any noticeable effect upon the growing cloth sales of so many neighbouring *nouvelles draperies*, especially in Italian and other Mediterranean markets, during the second half of the fourteenth century. Indeed, their privileged and secure status was clearly revealed in the next ducal decree that Ypres finally secured, in 1428, from Philip the Good, to restrict the number of village looms and vats within the castellanies of south-west Flanders. Thus such still minor rural draperies as Nieuwerkerk, Niepkerk, Nieppe, Steenwerck, Meteren, Merriss, Noort-Berkin, Zuid-Berkin, Caestre, Steenvoorde, Eecke, Godewaersvelde, Straesele, Flêtre, Boeschêpe, Merville, Wastinbrouc, were accused of producing a ‘grand quantité de draps, tant de laines d’Engleterre et d’Escoce’, without official seals, and thus of inflicting harm not only on Ypres’ industry but also on the now chartered draperies of Wervik, Menen, Comines, Belle (Bailleul), Cassel, Warneton, Messines, and Estaires. Certainly by this time the fine woollens of Wervik, Menen, and Comines had displaced those of Ypres, Ghent, and Bruges from most Italian markets.

In terms of markets, however, Poperinge had differed from the Leie Valley *nouvelles draperies* by selling, as it readily admitted in 1373, virtually all of its woollens (cheap and expensive) to Hanseatic merchants (*Oosterlingen*), who, after marketing them throughout Germany, Central Europe, and the Baltic, had already complained (1347) and would complain again (1379) about defective qualities in Poperinge’s cloths. But Poperinge supplied an unconvincing defence in contending that its German cloth sales posed no

threats to Ypres, on the grounds that the latter marketed most of its woollens elsewhere, in Spain and, by implication, in the Mediterranean. On the contrary, Ypres, by this period, had become all the more dependent as well upon Hanseatic markets, precisely its woollen had lost most of their former Mediterranean markets (to the Florentines as well as to these *nouvelles draperies*).

The Pirenne thesis: on the advantages of rural vs. urban textiles in the Low Countries

No historical analysis of the rise of the Flemish and Brabantine *nouvelles draperies* can conclude without a discussion of Pirenne's seminal 1905 article, 'Une crise industrielle au XVI^e siècle: la draperie urbaine et la nouvelle draperie en Flandre', in which he sought to demonstrate, how, from the later fifteenth-century, the old 'medieval', 'corporate', 'regulated', and 'moribund' Flemish urban draperies finally succumbed to the twin assault of the newer rural-based, guild-free, and innovative cloth industries in both England and Flanders itself, the latter as the *nouvelles draperies*. Thus a critique of the Pirenne thesis is also vital in understanding the factors involved in the supposed 'rise and victory of the English cloth trade' over all its rivals in later-medieval, early-modern Europe. In Pirenne's view, both that English victory and the contemporaneous victory of the Flemish *nouvelles draperies* represented the advent of a more modern and 'liberal' age of 'mercantile capitalism'. Pirenne, it must be noted, unfortunately confused and improperly mixed together the classic *nouvelles draperies* with various village *sayetteries* and other *draperies légères*. Thus only the former, producing true woollens, will be considered here; and the subsequent, very important role of the reviving *sayetteries*, led once again by Hondschoote, from the later fifteenth century, must be left to a later section (on pp. 000).

This Pirenne thesis is all the more important as the unacknowledged intellectual antecedent of the modern 'proto-industrialization' thesis, which stresses the crucial role of rural textiles in 'paving the way' for modern industrialization in the early-modern era (a debate that largely ignores the late Middle Ages). Furthermore, even those many economic historians who find the 'proto-industrialization' debate unpalatable, especially for its neo-Marxian overtones, would nevertheless strongly support the contention that the

countryside in much of later-medieval western Europe had acquired almost insuperable cost advantages for textile manufactures and other industries over the older, traditional industrial towns. By this era, according to this still popular thesis, most of these western industrial towns had fallen under the dominance of rigid oligarchic governments and protectionist guilds, whose selfish, restrictionist, and protectionist policies had robbed urban industries of the comparative advantages that they had enjoyed much earlier, over the formerly feudal countryside, when towns had truly had been mercantile 'islands of freedom', with an elastic labour force and unfettered property rights. While towns were losing their economic freedoms, the countryside of western Europe was conversely gaining far more entrepreneurial freedom, as feudal power, judicial and economic, waned, and as serfdom and other peasant constraints withered away, to provide or permit new rural industries a much more elastic and cheaper labour force.

Rural labour could have been supplied more abundantly at much lower cost, according to this thesis, because of both fewer constraints, in particular the absence of guilds and oppressive governments, and lower opportunity costs, which reflected much cheaper living costs. Thus, rural artisans should have quite willingly accepted lower wages than their urban counterparts, because most of them were part-time agricultural labourers and underemployed members of large farming families who grew almost all their own food and worked in their own homes, with far lower (implicit) rents and taxes, and ample free time to accept this supplementary employment.

That the Flemish countryside in particular was not more successful in attracting cloth-making away from the larger towns during the early fourteenth century -- and clearly it was not -- may seem surprising. For it should have offered a more fully-free, more abundant, and mobile peasant labour force than did most of rural England, which presumably was then still subject to more severe feudal-manorial constraints; and yet rural England in this very era *appears* to have experienced a much more significant growth in village cloth-making (see pp. 000). According to Pirenne and other historians, however, those Flemish rural advantages were offset, during the fourteenth century, by the combined political, judicial, and economic

powers that the Flemish *drie steden* then allegedly exercised over their *banlieues* in their surrounding countryside, powers far greater than those enjoyed by English towns, up to the early fifteenth century, with the more effective assertion of Burgundian rule. But, the deliberately detailed history of the conflicts between the *drie steden* and the rival *nouvelles draperies* just presented has already revealed some fatal flaws in the Pirenne model. Thus, even when the *drie steden* were able to exercise their greatest judicial powers, between 1302 and 1349, they failed to prevent the successful growth of a large number of village draperies, most with thirteenth-century origins (see above pp. 000). After 1349, the *drie steden* could do little but seek ineffectual comital bans against alleged imitations or counterfeiting by a mere handful of these now numerous draperies; and after 1385, when the *drie steden* lost so much power under the new Burgundian régime, their influence over the rival *nouvelles draperies* had largely evaporated. If Ypres was alone in continuing the struggle (to 1428), with indifferent ducal support, it was clearly now the weakest of the *drie steden*, and furthermore faced the largest and most powerful set of *nouvelles draperies*, many of whom were completely outside the territorial jurisdiction granted the *drie steden* in prior comital bans.

Elsewhere in the Low Countries, there were very few incidents of serious conflicts between urban and rural draperies. The one major, if less enduring, exception took place in the adjacent French county of Artois (originally part of Flanders, until 1191). Between 1325 and 1385, the once great textile town of Saint-Omer did periodically engage in armed conflicts with some rural draperies in neighbouring *villes champêtres*, headed by Arques, accusing them of counterfeiting its better woollens. That conflict ended in 1385 with a mutually acceptable decree from the Parlement de Paris, which required Saint-Omer to respect Arques' independence, provided that Arques ceased imitating its woollens. No further urban-rural conflicts there, or anywhere else in Artois, have been recorded. Nor can any such conflicts be found in neighbouring francophone Flanders, with the formerly great textile towns of Lille and Douai, ceded to France in 1305 (but restored to Flanders 1384, with the accession of Duke Philip the Bold, though never economically reintegrated). As Clauzel and Calonne (1990) have observed, not only did Lille abstain from opposing its

neighbouring rural draperies during the late Middle Ages, but, in strong contrast to the Flemish *drie steden*, it achieved an effective economic symbiosis with them. Unable to stave off the irredeemable decline of its traditional fine-woollens drapery, after its initial separation from Flanders, Lille wisely and readily welcomed the woollens of its rural neighbours, including many in the Leie (Lys) Valley, within its walls for dyeing and finishing. Clauzel-Calonne also note that the French kings consistently and readily protected the small-town and rural draperies, in Artois and in francophone Flanders, especially along the French side of the Lys, if only to thwart the Flemish *drie steden*, who too frequently favoured the English cause. Furthermore, during the mid to late fourteenth century Lille, Saint-Omer, and Arras established their own *nouvelles draperies*, producing much cheaper though reasonably good quality woollens, and subsequently some *draperies sèches*, as well, none of whose market reputations suffered from rural imitations. For Saint-Omer itself, Sortor (1993) has more recently argued that its drapery, in the second half of the fifteenth century, enjoyed fruitful economic relationships with neighbouring villages, similar to those found at Lille.

Nor in the neighbouring eastern duchy of Brabant do we find any significant conflicts between its great drapery towns of Brussels, Mechelen, and Leuven, and their neighbouring *nouvelles draperies* -- of which Diest, Lier, Herentals, Tienen, and Vilvoorde were the most prominent. In the first place, a succession of very strong dukes, until the death of Jan III in 1356, never allowed these towns to exercise control over their adjacent countryside. Second, from the early to mid-fifteenth century, first Leuven and then Brussels established their own cheaper-line *nouvelles draperies*, using non-English wools (see below, pp. 000). Finally, the few *nouvelles draperies* that did flourish in late-medieval Brabant never posed any serious threat to the major cloth towns.

Furthermore, in both Flanders and Brabant, the supposedly stark dichotomy between urban and rural draperies breaks down, certainly by the late fourteenth century, when many of the drapery villages had developed into small towns, and indeed were known as the *smale (kleine) steden*. By that time, some of the more renowned *nouvelles draperies* had already enjoyed an urban status for about a century: in particular

Kortrijk (the largest), Dendermonde, Aalst, Geraardsbergen, and Lier; and those that came to assume more or less a town identity by this era included Poperinge, Wervik, Comines, Menen, Warneton, Deinze, Ninove, Herentals, Diest, Tienen, and Vilvoorde. Most of their draperies, moreover, could also boast a full panoply of detailed industrial regulations (*keuren*) and quality controls, official seals, and civic inspections -- no different in kind from those imposed on the more traditional draperies in the major Flemish, Brabantine, and Dutch drapery towns. Certainly, these *nouvelles draperies* do not or no longer appear, from their industrial *keuren*, to be any more 'liberal' or innovative than the traditional urban draperies. To be sure, the extent of truly corporate guild structure was much less in the *nouvelles draperies*, and non-existent in some, though Kortrijk, Wervik, Menen, and Warneton did have guilds for their weavers, fullers, and finishers.

Subsequently, during the very late fifteenth and early sixteenth centuries, these 'classic' *nouvelles draperies* of the Leie valley were superseded by two neighbouring newcomers: Nieuwkerk, already noted as a very minor player in the later fourteenth century, and then Armentières (chartered in 1413). They also followed the same road towards civic regulation, quality controls, and a more highly urbanized status. Armentières was clearly the more successful of the two, in producing very good quality heavy-weight woollens, woven from a mixture of high quality English wools (Cotswolds) and Spanish merino and, priced at £3 2s 6d *groot* Flemish when first appearing on the Bruges market in 1467. Pirenne was certainly better justified in viewing these later and 'newer' *nouvelles draperies*, along with some of their surviving older cousins (e.g. Menen) as, collectively, the leading textile manufacturers in the early sixteenth-century southern Low Countries. The original and 'classic' Leie Valley *nouvelles draperies* were not only eclipsed by these and other newcomers, but most also failed, contrary to the essence of the Pirenne thesis, to outlive the even older luxury draperies of the of the *drie steden*, for reasons to be explored in the subsequent analysis of the international competition in European textiles during fifteenth century, especially from the 1440s.

The competitive advantages of the classic Leie Valley *nouvelles draperies*, c.1340 - c.1440

These Leie Valley *nouvelles draperies* proved so successful, from after the mid-fourteenth century,

precisely because they were able to under sell their rivals by producing lower-cost yet still attractive woollens in direct imitation of those from the major Flemish and Brabantine drapery towns: in weight, textures, dimensions, colours, selvages, and finishing. They were evidently able to do so primarily by using less costly wools and dyestuffs, in lesser quantities; and only secondarily, if at all, by employing simpler spinning, weaving, dyeing, shearing, and finishing processes, presumably with lower overall labour costs. Chorley (1997) has contended that both the true *nouvelle* status and the prime cost advantage of these Leie Valley draperies lay in their pioneering the use of much-lower cost wheel-spun carded wefts (see above pp. 000). But there is no concrete evidence for any part of this hypothesis; and, when some of the major traditional urban draperies (e.g. Ypres, Mechelen, and also Florence) can be documented using the very same type of wefts, the price gap between their fine woollens and those of the *nouvelles draperies* in no way diminished during the later Middle Ages.

According to many historians, these *nouvelles draperies* also benefited from much cheaper *units* of labour; for wage rates were generally lower in the small towns and villages than in the Flemish *drie steden*. Thus, in early fifteenth-century Bruges and Ghent, the daily (summer) wages for master masons and their journeymen were 10d and 5d *groot* Flemish, respectively; in Kortrijk, 8d to 9d for masters and 4d to 5d for journeymen; and in Aalst, 7d to 8d for masters and 4d for journeymen. The current wages for fullers, however, were then in fact *higher* in both Kortrijk and Wervik than in Ghent. For each full-sized broadcloth fulled in three days, the master fuller and his two journeymen received 36d in Kortrijk, 35d in Wervik (4.67d daily for the journeymen), but only 32d in Ghent. Thus, only in those truly rural textile industries that produced especially the very cheap and coarse worsted-type products of the *draperies légères* would the unit-labour costs have been relatively low, since their manufacture required much less skilled artisans, little or no training and monitoring (i.e. regulation and inspection of industrial processes); and consequently the valued-added manufacturing processes would have accounted for a higher proportion of total costs than in luxury woollens. Nevertheless, from the financial point of view of the individual draper in producing the higher-

grade, more luxury-oriented woollens of the *nouvelles draperies*, the labour component of such value-added production costs might have determined the difference between profit and loss, though less so than his success in marketing the woollens. That depended fundamentally on the quality of his wools, dyestuffs, and cloth-finishing, which, to repeat the prime point, accounted for the prime differences in production costs, quality, and prices between their woollens and those of the older, traditional urban draperies.

Nevertheless, even though the woollens of the *nouvelles draperies* were often considerably less expensive than those of the leading Flemish and Brabantine drapery towns, they were far from being the cheap, coarse, and light cloths portrayed by Henri Pirenne (1905), and by most other historians following him. Instead they were woollens of genuinely good quality, as heavy as any broadcloths currently manufactured in the Low Countries, Italy, or England (see Table 00). Indeed most of them were far more costly than the majority of English broadcloths, exported during the later fourteenth and early fifteenth century. Thus, in the 1360s, when these English broadcloths had an average export value of under £2 or 13 Florentine florins per cloth (24 yds by 1.75 yds finished), the mean price for similarly sized woollen broadcloths from Wervik, Kortrijk, Menen, Aalst, Diest, Lier, and Herentals sold in Pisa was 27.16 florins or £4.07 sterling. That latter amount was equivalent to 195 days wages for a master mason in a small English town (Exeter, Oxford, Canterbury), 140 days wages for the better paid London mason, or 92 days wages for the well paid Bruges mason. In Polish markets, in the 1390s, a wide variety of woollens from the *nouvelles draperies* of Kortrijk, Geraardsbergen, and Dendermonde in Flanders, and those of Tienen, Lier, and Herentals in Brabant were selling for prices (per cloth of 35 ells or 24.5 m long) that ranged from 17.50 florins (£2.63 sterling) to 35.00 florins (£5.25 stg). By any definition, these were luxury textiles.

Certainly many of the later fourteenth-century *nouvelles draperies* did gain some crucial edges in marketing and thereby also in financing production. Far more so than the older more insular draperies of the *drie steden*, they evidently sought out and received the marketing and commercial facilities of some leading Italian and German mercantile firms, along with considerable amounts of investment capital and short-term

credit. Thus, for example, the Florentine firm of Diamante e Altobianco degli Alberti dominated the Wervik drapery during the 1390s, while various Hanse merchants financed the Poperinge drapery. As Murray (1990) has recently demonstrated, the role of Flemish merchant-bankers, such as Ruweel and De Marke, did play a role of some significance in financing the fourteenth-century Bruges cloth industry. Yet overall the Italian mercantile firms seemed to have been predominant promoting Flemish cloth exports during this era.

From the mid fourteenth to early fifteenth centuries, as just indicated, the *nouvelles draperies* of the Leie had found by far their largest and most promising markets in Italy and the Mediterranean basin. In records of the Baldo da Sancasciano firm, for Pisan cloth sales during the years 1354-71, the Leie Valley woollens accounted for 32.5 per cent of the cloths imported from the Low Countries (while Brabantine woollens, principally from Brussels and Mechelen, with an average value of 41.35 florins or £6.20 sterling, accounted for another 53.7 per cent); and collectively, the Flemish and Brabantine woollens (averaging 33.46 florins in price) accounted for 28.6 per cent of its total cloth sales by value. Subsequently, from 1383 to 1402, Flemish and Brabantine woollens accounted for only 6.6 per cent of cloth sales in Pisa, but almost all of them (97.8 per cent) were from the Flemish *nouvelles draperies*, with an average value of 26.40 florins or £3.96 sterling. In the scattered commercial records for the Datini firm from 1380 to 1402, woollens from Wervik and other *nouvelles draperies*, priced from 26 to 32 florins (£3.90 to £4.80 sterling), once more predominated in sales of northern woollens in Naples and Sicily. Finally, in the records for Datini cloth sales in Spain during the years 1394-1410, 28.5 per cent of the 5,727.5 woollens sold were Flemish, almost all from Wervik, Kortrijk, Comines, and Menen, with an average value of 27.9 florins (£4.19 sterling), while the few from Bruges and Douai sold for an average price of 44.0 florins (£6.60 sterling); Brabantine woollens, chiefly from Brussels, Mechelen, and Leuven but also from the *nouvelles draperies* of Lier, Herentals, and Diest, accounted for 6.1 per cent of cloth sales, with a mean value of 44.2 florins (£6.63 sterling). Not surprisingly, 63.3 per cent of the woollens sold were Spanish and Italian, but English cloths then accounted for a meagre 1.9 per cent (including a few 'Irish says', probably English worsteds, valued at 5 florins each).

The relative popularity in Mediterranean markets of these medium-priced, if still quite costly woollens of the *nouvelles draperies* suggests that the fourteenth-century changes in the international cloth trade were based more on supply than demand factors. For if a much more highly skewed distribution of wealth and income, combined with a hedonistic spending spree of acquired wealth, had proved to be the predominant market force, we might expect that the most luxurious woollens from the traditional urban draperies would have consistently outsold those from the upstart *nouvelles draperies*. But so long as the prices for their products were set above that ‘floor’ determined by the combination of production, transport, marketing, and other transaction costs, those prices, relatively lower prices for what appeared to be good quality luxury woollens, gave them a significant competitive edge over their more traditional rivals, and allowed both the producing draperies and the merchants who sold them, especially the Italians, to prosper.

Then, rather suddenly, from the later 1430s or 1440s, the popularity of Leie Valley woollens, or almost all except those from Menen, began to wane in these Mediterranean markets, chiefly because newer and more powerful rivals had now appeared on the scene, with equally attractive but lower priced woollens, while the costs and prices of the finer Leie Valley woollens had risen, for reasons to be explored later (see below, pp. 000). Though cheaper English broadcloths were certainly now beginning to make a breakthrough in these markets, more important were woollens from various Italian and Catalan draperies. For the Leie Valley draperies, the loss or decline in their Mediterranean markets was, to an unmeasurable extent, offset by increased Baltic sales of newer types of woollens, now using Spanish merino wools; but when we return to the Flemish draperies in the fifteenth century we shall find that Wervik, Kortrijk, Comines, and other Leie Valley draperies would not really find in the Baltic zone the prosperity that they had earlier enjoyed in fourteenth-century Mediterranean markets.

The changing structure of the Italian cloth Industries during the thirteenth, fourteenth and fifteenth Centuries.

From the later fourteenth and fifteenth centuries, the lion’s share of Mediterranean cloth markets

were being claimed by the Florentine, other northern Italian, and then Catalan draperies, which had also undergone industrial and commercial transformations strikingly similar to those in north-west Europe, but changes that also brought to an end the Franco-Flemish textile predominance of the past two centuries.

Previously, during the twelfth, thirteenth, and early fourteenth centuries, when the Franco-Flemish draperies had so decisively dominated the markets for fine woollens, most of the exports supplied by the Lombard, Venetian, and Tuscan textile industries were in the form of very cheap, coarse, light cloths. Along with the previously mentioned linen-cotton fustians, the Italians were also manufacturing similar light fabrics, called *tiretaines*, made from mixtures of woollen, linen, and cotton fibres, and a wide variety of says, semi-worsted, and coarse woollens, woven from low-priced, mediocre Italian and western Mediterranean wools, which were marketed under a variety of names: such as *stametto*, *trafilato*, *tritana*, *taccolino*, *saia*, *saia cotonata*. During this era, the Umiliati of Florence, a lay brotherhood founded in 1140, and reaching its peak in the 1270s, was famed for producing very cheap textiles for the poor and lower classes. In discussing a Venetian price-list of imported and domestic textiles, dated 1265, Carus-Wilson (1952) had observed that ‘almost without exception the Italian cloths are cheap; even the costliest do not approach in value those of Ypres, Douai, and Cambrai’. Subsequently, for the early fourteenth-century, Hoshino (1980, 1983) also found that these coarse fabrics accounted for the vast majority of domestic textile transactions recorded in sale registers of the great Florentine merchant firms. Even the better quality Florentine cloths of this era sold for no more than the competing Franco-Flemish says and biffes (from Paris, Saint-Denis, Caen, Poperinge, Arras, Ypres, Hondschoote, and Gistel), whose median prices ranged from 0.8 to 1.8 florins; and thus, as in the earlier Venetian tariff, they were then worth no more than 10 to 30 per cent of the current median values for better quality Flemish and Brabantine woollens.

Around 1300, the Florentine *lanaiuoli* or cloth manufacturers of the *Arte della Lana* were evidently still less important to the city’s economy than were the mercantile cloth-importers and cloth-finishers of the *Arte della Calimala*, who still prospered by re-exporting these finished Franco-Flemish woollens to various

Mediterranean markets. From the 1320s, however, the Guelf-Ghibelline, other Italian and Imperial wars, whose destructive effects on the commerce of the Champagne Fairs have already been noted, were certainly hindering the imports of Franco-Flemish woollens, or raising their distribution costs and prices, to the detriment of and then permanent injury to the fortunes of the *Arte della Calimala*.

For in that very decade of the 1320s, the Florentine cloth manufacturers of the *Arte della Lana* began to shift their production more and more to so-called *panni alla francesca* – i.e. fine woollens that imitated Franco-Flemish styles, woven principally from English wools, and subsequently from merino wools as well, as their quality improved; and this ‘import-substitution’ industry became so successful that the Florentine draperies evidently reduced and then shed the production of their once prominent cheap-line textiles, at least for export markets, for much the same reasons as the northern Franco-Flemish draperies. Such a transition is indeed suggested in the Florentine chronicles of Giovanni Villani (*Cronica*, Book XI, ch. 94), who contended that Florentine cloth production had fallen from about 100,000 pieces around 1310 to about 75,000 in the years 1336-38; and the number of drapery firms, from 200 to 150 (supposedly employing 30,000 artisans). Villani’s estimate of the latter output’s value, at 1.2 million gold florins (16 florins per cloth), was nevertheless still much larger than the value for the much larger output of 1310, ‘when English wools were not imported’, because those earlier cloths ‘were coarser and worth only half as much’. Hoshino (1980), the eminent historian of the Florentine cloth industry, has firmly contended that Villani’s estimates for the late 1330s were grossly exaggerated, so that annual cloth outputs could not have exceeded 24,000 to 30,000 woollens (with about 300 *bottega* producing 80 to 100 cloths a year). His estimate, however, is rather too close to the accepted data on annual cloth outputs for the years from 1373 to 1381 (see above, pp. 000 and below pp. 000). That would suggest, most improbably, that Florence had been able to maintain its general level of cloth production over these five tumultuous decades, despite having suffered drastic depopulation from bubonic plagues, and severely contracted Mediterranean markets.

In any event, if most numbers in medieval chronicles are suspect, some credence may be placed in

Villani's views about the qualitative changes in the Florentine cloth industry, views fully endorsed in this crucial respect by Hoshino (1973, 1980, 1983). By the late 1330s, the now very fine woollens had become the most important exports for the great Florentine merchant houses, evidently accounting for about 75 per cent of their cloth sales. In Hoshino's view, however, the Florentine cloth industry did not really achieve its much more complete shift to luxury production, with even higher priced woollens, before the mid- to late fourteenth century, when its woollens had clearly become by far the most expensive to be found in Mediterranean markets. In cloth sales recorded at Pisa for the years 1354-71, the mean price of Florentine woollens was now 43.35 gold florins or £6.50 sterling (with a maximum of 115 florins or £17.25 sterling) -- substantially higher than the prices suggested by Villani; and by the 1390s, their mean price had risen to 55.9 florins (£8.38 sterling). In the late fourteenth and early fifteenth centuries, they had become the single most important woollens sold in Spain by the Datini firm, producing 27 per cent of its sales revenues, with an average value of 64.43 florins (£9.66 sterling). Florentine woollens were also the most expensive sold in Syrian and Egyptian markets during this era (1390-1405), and amongst the most popular, priced between 35 and 54 florins (£5.25 to £8.10 sterling), compared to prices of 38.5 florins (£5.78 stg.) for Mechelen's woollens and 19.2 florins (£2.84 stg.) for Wervik's woollens; but Florentine woollens may have been 20-30 per cent longer than their rivals' cloths.

Finally, in Poland, the most popular Italian woollens during the 1390s were certainly Florentine; but they were less popular than Flemish and Brabantine broadcloths, and considerably less expensive than their finest. Woollens of 35 ells in length made in Bruges and Brussels were then selling for 43.75 florins (£6.56 sterling) and 46.67 florins (£7.00 sterling), respectively, while the mean price for Florentine woollens of the same length was 32 florins (£4.81 stg); but in sharp contrast, the more infrequent imports of western *harras* -- presumably Arras says -- then sold for an average price of only 4.37 florins at Cracow (i.e. about the same price for English worsteds in Spain and Italy).

During the second half of the fourteenth century, other Tuscan and Lombard towns, Milan especially,

were evidently imitating the less expensive varieties of Florentine woollens, but still well in the luxury range. In Lombardy itself by far the most important was Milan (with 363 drapery firms in the 1390s); but other important cloth-towns were Como, Monza, Cremona, Parma, Bergamo, Brescia, Verona, Padua, Vicenza, Treviso, and Mantua. In Tuscany, apart from Florence as the undisputed leader, the other major cloth towns were Prato, Pisa, Lucca, Bologna, and Perugia. In the Pisan commercial accounts for 1354-71, Tuscan cloths from Siena, Prato, and Pisa sold for an average price of 20.43 florins (£3.06 sterling); and Lombard woollens from Milan and Como, evidently of a somewhat higher quality, had an average price 27.55 florins (£4.13 sterling). Both the Tuscan and Lombard cloths were far more expensive than even the very best (non-scarlet) English broadcloths exported during this era; and the Lombard cloths were priced higher than all but the very best woollens from the Flemish *nouvelles draperies*. Despite such relatively high prices, the Tuscan and Lombard woollens collectively accounted for 57 per cent of the Pisan cloth sales of this era. In the Datini accounts for cloth sales in Spain from 1394 to 1410, the only Italian woollens to appear along with the Florentine were from Prato and Genoa, in very small numbers (86 cloths vs. 2652 Florentine). Their mean price of 30.78 florins (£4.62 sterling) was less than half that for the Florentine woollens (64.43 florins), but still higher than the mean price of 27.9 florins for 1618 woollens from the leading Flemish *nouvelles draperies* of Wervik, Kortrijk, Comines and Menen.

In none of these late fourteenth-century accounts -- whether Spanish, Sicilian, Byzantine, Syrian, Egyptian, or Polish -- do we find any evidence for the sale of those very cheap Florentine and Lombard woollen-worsted and *saia* that had featured so prominently in twelfth- and thirteenth-century Mediterranean markets, though undoubtedly their production did continue for local Italian consumption. Indeed, the only cheap, light Italian textiles that did continue to maintain some presence in Mediterranean and Central European markets were the previously mentioned fustians from Lombardy.

Nevertheless, according to Mazzaoui (1981), the Lombard fustians industry had begun a slow and irredeemable decline from the early fourteenth century. The evidence for very marked decreases in the

populations of Tuscany and Provence, during this period (pp. 000), would indicate a possible contraction in its Mediterranean markets; and perhaps the Lombard industry had similarly fallen victim to those same forces so seriously impeding international trade in cheap textiles, in particular rising transport and transaction costs from chronic warfare. Certainly warfare was the major factor responsible for the rise of the very competitors who would become the chief nemesis responsible for the final downfall of the Lombard fustian industry. For in the 1370s, after continuous military strife in northern Italy had seriously disrupted the supply of fustians marketed in South Germany, the major towns of this region -- Ulm, Augsburg, Ravensburg, Constance, and Basel -- began converting their own domestic-oriented, low-quality linens crafts into the manufacture of linen-cotton fustians. Though beginning as a local 'import-substitution' industry, the South German fustian manufacturers subsequently expanded to become, by the mid fifteenth century, the most important supplier of these relatively inexpensive light textiles for European markets; and thus they represent the first important example of a cheaper-line textile industry that achieved a major growth in output in the later-medieval European economy.

Meanwhile, in Italy, just after the Black Death in the mid-fourteenth century, the Florentine woollen cloth industry began experiencing an evidently steep fall in outputs, despite its apparent successes in capturing Mediterranean and other European luxury markets. Thus, whatever credence may be placed in Villani's figures for the late-1330s, the accepted estimate of Florentine cloth production in 1373 was about 30,000 pieces; five years later, in 1378, when the Ciompi artisans staged their famous revolt against the *lanaiuoli* and the Florentine government, they demanded a guaranteed annual production of 24,000 cloths. Not surprisingly they were unsuccessful, and the Revolt itself certainly did not improve the industry's fortunes; for, by 1382, according to Davidsohn (1928), Florence's annual cloth output had fallen to 19,000 pieces. To be sure, the later 1370s and early 1380s were years of especially severe recession in international trade, marred by social strife in Flanders, France, and England as well; but even when commercial circumstances became more favourable after the 1430s, when Florence took advantage of the plight of its

Flemish and Brabantine rivals (pp. 000), its cloth sales rarely exceeded 30,000 pieces a year (Luzzatto 1961).

By this era, the demand factors to be cited in explaining this falling output have become an all too familiar litany: contracting or disrupted markets from plagues and warfare; high prices that restricted cloth sales to the wealthy few; competition from Italian silks in these aristocratic markets. But the force of these arguments is somewhat weakened by evidence that in or by the early fifteenth century Florence was also marketing newer varieties of more medium priced woollens. Furthermore, certain supply factors may have had just as powerful an impact on Florence's industrial 'decline', if that is truly the appropriate word, in particular labour and raw materials. According to Lopez (1970, 1987), Florence's population had fallen from about 90,000 in 1338 to just 40,000 in 1427 (as measured by the *catasto* or tax census): a precipitous drop of 56 per cent. Certainly there were no technological innovations in textile production that could have offset the consequent, if not directly proportional, loss of manpower. The increasingly higher and higher costs of English wools, which were to prove to be so very deleterious for the Flemish and Brabantine cloth industries by the early fifteenth century, may also be cited as a powerful negative factor. On the other hand, many of the Italian draperies had mitigated that blow by resorting to the use of at least some Spanish merino wools, as early as the 1380s or 1390s, long before their northern rivals. But if these merino wools had become the 'next best' to the English wools, they were still, in this era, much inferior to and cost only about 35 - 40 per cent as much as the Middle March, Cotswolds, and Lincolnshire (Lindsey-Kesteven) wools. Even so, the fifteenth-century Florentine cloth industry had not forsaken these fine English wools, certainly not for their better quality woollens, lest they should lose customers in the upper echelons of European luxury markets (see pp. 000).

The Catalan and other Spanish cloth industries during the later Middle Ages

A similar structural shift can be detected in the Spanish and especially Catalan textile industries of the High and later Middle Ages. Thus earlier, during the twelfth and thirteenth centuries, when Franco-Flemish woollens had so decisively dominated their domestic luxury markets, about twenty Spanish towns

had developed an impressive textile industry that then produced almost exclusively cheap and coarse fabrics, competing with similar Franco-Flemish, Lombard, and other Italian fabrics. That Spanish industry evidently reached its apogee shortly before or around 1300; subsequently, during the later Middle Ages, these coarse Spanish textiles cannot be found in records of Mediterranean cloth sales, while the presence of much finer woollens from Catalonia became especially prominent by the later fourteenth and fifteenth centuries.

Indeed, Barcelona, Perpignan, Gerona, and other Catalan towns had begun producing such fine cloths, in direct imitation of Franco-Flemish woollens, from the early fourteenth century, when the supply of textiles from north-west France and the Low Countries was frequently disrupted by the renewal of the Aragonese-Angevin wars (1314-1343). Woven from good-quality Majorcan, Burgundian, and subsequently the finer merino wools, these Catalan woollens appear to have become comparable to the contemporary English broadcloths, in size, weight, and value, by the mid fourteenth century. Typically they measured 25 metres long (26.6 English cloth yds) and 1.5 m wide, weighing about 22.5 kg (50 lb). In the Sancasiano accounts for the Pisan market in 1354-71 (Table 00), the mean price of Catalan woollens was 22.7 florins (£3.40 sterling); for Florentine woollens, 43.5 florins; for Mechelen woollens, also 43.05 florins; for the Flemish *nouvelles draperies*, 25.9 florins; for Lombard woollens, 27.6 florins; and for English woollens, 25.4 florins (i.e. £3 16s sterling). But exceptionally fine woollens from Perpignan then dominated Catalan cloth sales, while the English broadcloths sold in this era were also atypically of much higher quality. Subsequently, in the Bracci records for Pisan cloth sales during the 1390s, the mean price for Catalan woollens was only 18.0 florins (24.1 florins for Perpignan cloths), while the mean English cloth price was now even lower, at just 13.0 florins (£1.95 sterling), but chiefly for Essex *straits* and *dozens* (small narrow half-cloths, measuring 12 yds by 1 yd).

The Catalan cloth trade appears to have achieved its major and quite dramatic expansion from about the 1420s, when it made very major inroads into the markets of southern Italy, especially Naples and Sicily, at the expense of previously imported woollens from Lombardy, Tuscany, and Languedoc, even though many

of these, especially the French cloths, were lower-priced. Thus, according to Ashtor (1988), in his analysis of the Palermo cloth market in the 1450s, 64 per cent of the woollens sold there by Pisan merchants were Catalan, ranging in price from 10.7 florins (£1.96 stg., at 3s 8d per florin) to 38.6 florins (£7.08 stg.); 20 per cent were Flemish, chiefly from the *nouvelles draperies* (priced from 21.5 to 25.75 florins); but only 9 per cent were English, while Languedoc and Tuscan woollens accounted for a mere 3 and 2 per cent, respectively, of these Pisan cloth sales. For the longer period 1443-59 the market shares were: Spanish woollens, 85.9 per cent; Italian, 0.6 per cent; French, 1.1 per cent; Flemish, 6.8 per cent; English, 5.8 per cent. For the roughly contemporaneous period of 1440-57, Bresc (1986) has provided an estimate for aggregate Sicilian textile consumption, based on cloth inventories, that favours Florentine woollens over those of Catalonia, but which still remains impressive for the latter: Catalan woollens, 24 per cent (vs. 14 per cent in 1340-99); Florentine woollens, 34 per cent (vs. 49 per cent in 1340-99); English woollens, 12 per cent (vs. 2 per cent in 1340-99), chiefly again as Essex *straits* and *dozens*.

What particular supply and demand factors promoted this fifteenth-century growth of the Catalan cloth industry and trade? Presumably the chief stimulus came from the steady improvement in the quality and the increasing supplies of merino wools (Phillips 1997), perhaps rivalling at least the medium to fine wools of the central English Midlands by the 1430s. Nevertheless, we find that at this very time the Barcelona cloth industry was importing finer English wools in order to imitate Flemish and particularly Wervik woollens, evidently in an attempt to capture a greater share of the luxury market, as suggested by the cloth prices just cited. But Ashtor (1978, 1983) has also suggested that the Catalan and Italian cloth industries were then benefiting from an irreversible industrial decline in fifteenth-century Mamluk Egypt and Syria, which, in his view, promoted growing sales of medium-priced Western textiles in Levantine markets.

Certainly textiles were the single most important industrial commodity that the Catalans and Italians were exporting to the Levant (ever since the papal ban on Mamluk trade had been lifted, in 1345). Although Venice was gaining an increasing supremacy in Levantine commerce by the 1450s, accounting for 65 per cent

of all European trade in Syrian and Egyptian ports by value, she encountered her strongest rival in Barcelona, which benefited from the aggressive use of Catalan naval power under King Alfonso V (1416-58), especially in fending off Turkish, North African, and Genoese corsairs. But subsequently, the increasing Catalan attacks on Mamluk ships and ports, and then rebellion against Aragonese rule and civil wars within Catalonia itself, from 1461 to 1472, had debilitating consequences for Barcelona's Levantine commerce, and hastened the decay of Catalonia's once prominent woollen industries. Finally, although the marriage of Ferdinand and Isabella in 1479, uniting the crowns of Aragon and Castile, did bring political stability to Spain, their increasingly absolutist and protectionist policies seem to have favoured Castile at the expense of the commercial and industrial interests of Catalonia.

At the same time, however, the Levantine market itself evidently diminished in the course of the fifteenth century, especially if population decline in Mamluk Egypt and Syria became as severe as most Islamic historians now portray. Furthermore, the aggregate value of western manufactures and raw materials that the Italians and Catalans were able to sell in Levantine ports -- in textiles, glassware, soap, paper, copper, salt, grains, olive oil, and dried fruits -- amounted to no more than 35-40 per cent of the value of Asian goods that they acquired there, chiefly Oriental spices and Syrian cotton; and thus they had to make up for this 'balance of payments' deficit with increasing amounts of precious metals. From the 1460s, a German-dominated silver-copper mining boom in Central Europe did permit Venice, in particular, with its close commercial connections with South Germany, to expand its Levantine trade in the later fifteenth century, with growing silver exports; by the 1490s their mean annual value, according to Ashtor (1976, 1983), was 660,000 ducats, an amount equivalent to 27,768 kg of pure silver (see below, pp. 000).

Venice itself would become an important exporter of woollen textiles only in the next century, from the 1520s, by taking advantage of the economic dislocations that the Tuscan and Lombard cloth industries suffered during the various Franco-Spanish-Italian wars of 1494-1559 (see below pp. 000). But in the second half of the fifteenth century, Venetian commerce played a major role in the history of European textile

industries by using these silver (and copper) exports to finance growing imports of Syrian cotton that furnished the now rapidly expanding fustian industries of South Germany (Ravensburg, Regensburg, Constance, Basel, Augsburg, and Ulm), whose fortunes became propitiously linked to the rapid expansion of both the Antwerp market and the English cloth trade from the 1460s.

Thus, for the history of European textiles in the fifteenth century, by far the most important economic transformations occurred not in the Mediterranean world or Central Europe, but in the north-west, with Antwerp as the true fulcrum: with the final victory of the English woollen cloth industry and trade over most of its continental rivals; and with the decline of the luxury-oriented urban draperies in Flanders and Brabant, which in turn were displaced, as this region's pre-eminent textile industries, by the small-town *nouvelles draperies* and then by the resurrected *sayetteries*. The economic factors involved in these industrial transformations in both England and the Low Countries were closely intertwined, but equally dependent upon exogenous, international factors; and to this final, major story of this chapter we now turn.

The 'rise' and expansion of a 'rural' English cloth industry in the fourteenth century: the debate about the origins of the 'English Victory'

Indeed no subject has engendered more debate amongst medieval textile historians than this supposed victory of the English cloth industry over its Flemish, Brabantine, and other continental rivals. Most historians, however, have not provided any convincing explanations for this supposed English victory, because the generally cited 'root causes' must be dated, both in origins and in their major impact, to the first half of the fourteenth century, long before the English cloth trade had begun to expand. Not until the later fifteenth century could the English justifiably claim any such 'victory'; and, as just noted, English broadcloths did not make significant inroads into Mediterranean markets before the mid fifteenth century.

Furthermore, it is misleading to speak of the 'rise of the English cloth trade' in the fourteenth century, when, as noted earlier, England had already enjoyed a significant cloth-export industry in the later twelfth and thirteenth centuries, based on that aforementioned arc of eastern lowland towns, from York to London. Many historians, however, have indeed begun their story of the English cloth industry's ultimate

victory by treating the demise of that older urban industry, c.1290-c.1320, as a necessary first step in liberating labour, enterprise, and resources for the establishment of a far lower cost, more economically viable, and aggressive cloth industry in more hospitable rural areas, a new industry that would capture the home market by the mid-century, and most foreign markets during the ensuing century, or less.

Thus, wittingly or not, most historians have found an explanation for that English victory in some variant of the previously-discussed Pirenne thesis: on the ultimately and supposedly superior advantages of a rural industrial location over urban production. If this thesis has been found wanting for the late-medieval Flanders itself, and the rest of the Low Countries, nevertheless many historians would still contend that it should be applicable to the economy of early fourteenth-century England, more so indeed than to any other region of late-medieval Europe. For such historians, therefore, the urban industrial crisis of c.1290-1320 was fundamentally due to the obvious factors just suggested and so often cited: oppressive town governments, excessive taxation, and restrictionist guilds, all of which made these urban cloth industries uncompetitive with both foreign and domestic rural competition, especially with a supposedly 'rising tide' of 'lower priced' Flemish woollen imports (Miller 1965, 1995). In desperation, according to this thesis, English draper-clothiers deserted the eastern industrial towns to seek greater freedom of enterprise, lower production costs, and thus especially much 'cheaper' labour in the countryside, nearby or distant.

This compelling thesis may, however, be challenged on three factual and on other theoretical grounds as well. First, there is no concrete evidence that, in the late thirteenth or early fourteenth century, the traditional English cloth towns were suffering from truly oppressive guild restrictions, crushing taxes, or from any growing influx of Flemish cloth imports, especially not when the Flemish cloth industry itself was then experiencing severe difficulties. The so often cited and so colourful contemporary pleas of economic distress from various town authorities, obviously designed to secure tax reductions, cannot be taken at face value; local officials and entrepreneurs invariably, in almost all eras, sought tax reductions. Second, an alternative hypothesis for this industrial 'crisis' was offered earlier in this chapter: i.e., that it was part of a

much more general contemporary economic crisis, of rising transport and transaction costs in the now war-torn Mediterranean market, that afflicted exports of the cheaper textiles from north-west Europe in general (see above, pp. 000). Third, those historians who still contend that the late-medieval west European countryside had gained such formidable industrial-cost advantages over towns in textile manufactures have failed to supply any evidence that directly compares urban and rural production in terms of real wages, labour productivity, financial, transaction, and other costs. The previously cited evidence from the Flemish *nouvelles draperies* does not support this thesis of rural -- or small-town -- advantage in labour costs; and none is forthcoming for late-medieval England.

The Carus-Wilson thesis on fulling-mills, rural industry, and the ‘English Victory’

On balance, during the later Middle Ages, rural England may have offered a greater freedom for industrial enterprise – free from guilds -- and possibly also cheaper labour than did Flanders and Brabant, even though the English draperies, urban and rural alike, subsequently did come to be subjected to national industrial regulation: in the reign of Edward IV (Statute 4 Ed IV c.1, 1464). For Eleanora Carus-Wilson (1941, 1952, 1987), the most renowned historian of the English cloth industry, by far the greatest advantage that rural England enjoyed during the later Middle Ages was instead cheap and efficient water-power for fulling mills, to produce what she rather rashly called an ‘an industrial revolution of the thirteenth century’.

In the previous chapter, considerable attention was devoted to this topic of fulling-mills, but Carus-Wilson’s thesis itself was necessarily left to this chapter. In essence, she argued that fulling mills provided the decisive factor responsible for three closely related industrial phenomena that forever changed the structure of the late-medieval international cloth trade: (1) in later-medieval England, the rise of a new, vibrant, aggressive rural cloth industry, especially in the West Country; (2) the *consequent* decline of the old urban cloth industries in that eastern lowland arc from York to London; and finally, if much later, (3) the decisive victory of this rural-based English cloth industry and its export trade over all its continental rivals, most especially the Flemish and Brabantine urban draperies (the Dutch are ignored).

Carus-Wilson thus believed that, in England, the old traditional cloth-making towns doomed themselves to extinction by their unwillingness and indeed inability to use these water-powered fulling mills, which, in the upland streams of the West Country and the West Riding, became the focal points for new rural cloth industries, for they also offered all the previously cited advantages of industrial freedom and cheaper labour. For Carus-Wilson it was self evident that the protectionist-minded urban textile guilds would have strenuously opposed these labour-saving fulling-mills. But even if guild opposition had failed, the economics of industrial location in the eastern lowland cloth towns would presumably have prevented their installation. First of all, in this densely populated region of the eastern Midlands, East Anglia, and the Home Counties, those urban draperies that succeeded in securing the use of scarce and fixed river sites for their mills would have been burdened with very exorbitant land rentals, reflecting the necessarily high opportunity costs for alternative uses of those sites. Second, virtually all of the eastern cloth-manufacturing towns that did have direct access to water-power were located downstream on slow-moving rivers that would have required -- or so Carus-Wilson assumed -- the much more capital-costly though more efficient overshot wheels. As noted earlier, no overshot wheels are recorded in England before the 1330s, and very few (on slow-moving rivers) before the sixteenth century. Undershot wheels for corn mills, on the other hand, using standard rotary power, were quite thickly strewn along almost all of these eastern lowland rivers, certainly in the textile districts of East Anglia, from the time of Domesday (1086); but Carus-Wilson assumed or implied that these downstream river sites could not have generated sufficient waterflow for an efficient production of reciprocal power, as certainly required for fulling mills.

Not surprisingly, Carus-Wilson's broad-ranging and provocative 'industrial revolution' thesis has, in recent years, provoked considerable opposition, chiefly from English historians. In 1965, Miller mounted the first serious challenge, essentially with a re-assertion of that older model on 'rural superiority': contending that the major diffusion of English fulling mills had *followed*, and not preceded, the flight of cloth artisans and clothiers from eastern drapery towns into rural areas during the later thirteenth century. Noting

Carus-Wilson's failure to demonstrate any cost advantages from mechanization, Miller argued that they would have been of little significance compared to the savings derived from using rural locations, especially with their cheap and abundant supplies of agricultural labourers. Bridbury (1982) went one step further in asserting that, in the overpopulated England of the later thirteenth and early fourteenth century, any resort to fulling mills would have increased, not decreased, cloth-production costs because of the necessary substitution of very expensive capital for dirt-cheap labour. He also contended that, in grain-growing or mixed-farming regions of the thickly settled Midlands, East Anglia, and the south-east, manorial lords would have earned far greater profits or rentals from corn mills than from fulling mills. In the most recent attack, which also provides the first comprehensive survey of English mills, Holt (1988) flatly asserted that no 'power revolution' took place in medieval Europe. Furthermore, as noted earlier (pp. 000), Holt found very substantial statistical evidence to validate Bridbury's conclusions about the unprofitability of manorial fulling mills, compared to corn mills, in the Midlands and East Anglia, to explain their virtual absence in manorial records for these regions.

Nevertheless, Holt did concede that investments in fulling-mills would have been more justifiable in the more thinly settled and chiefly pastoral regions of western and northern England, indeed in the very regions that contain the overwhelming majority of fulling-mill sites shown on Pelham's 1958 map. In response to this map, Bridbury (1982) retorted 'that mills 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', such as Cornwall, southern Wales, and the Lake District, which never became important cloth-manufacturing centres. Quite true; but nevertheless many fulling mills were also located in those regions that did become, from the early to mid fourteenth century, major centres of the new or revived woollen cloth industry, especially in the West Country, and also, if to a much lesser extent, in the West Riding. Surely Carus-Wilson was correct in asserting that these regions did offer economically superior sites for fulling mills: on much faster flowing and more powerful upland streams, with fewer settlements, lower

opportunity costs, and thus lower rentals. Furthermore, even if Carus-Wilson did fail to produce evidence on productivity for mechanical fulling on such sites, her English critics are badly remiss in ignoring the continental evidence, reviewed in the last chapter (pp. 000), that demonstrates three to four-fold productivity gains, or about 75 per cent, for mechanical fulling (which, in other words, could cost only 25 per cent as much as traditional foot-fulling methods). Since the continental evidence is based on slower-moving rivers, possibly the swifter West Country steams provided an even greater advantage.

Regional Shifts in late-medieval English cloth-manufacturing: Urban vs rural production

By the late fourteenth century, the locus of English textile production had decisively shifted from east to west, so that the West Country became England's leading cloth-producing region, responsible for over half the national output of broadcloths. According to the aulnage accounts of the 1390s, Somerset led the nation in producing 12,000 cloths, followed by Wiltshire, with some 7,000; and at some distance behind them were Bristol; York and its hinterland; Warwickshire; and Suffolk. In the West Country the leading districts were: (1) in Somerset, the Mendips, Bath, Wells, Frome, Bridgwater, and Taunton; (2) in Dorset to the south-east; and in Devon, to the south-west, with Exeter and its hinterland; (3) in Gloucestershire, to the north of Somerset: Gloucester, Cirencester, and the Cotswolds district of the Stroud Valley, with its famed 'Stroudwaters'; (4) in Wiltshire, the Bradford-Avon district, Castle Combe, the Wylie and Kennet Valleys, and Salisbury; (5) the Berkshire Downs; and (6) finally Hampshire, with Winchester. For this entire region, the leading textiles had become the short, heavy woollen broadcloth (24 yds by 1.75 yds, or 22.6m by 1.6 m); but in the south-west in parts of Somerset, Dorset, and especially in Devonshire, the manufacture of the somewhat coarser and smaller kerseys (18 yards by 1 yd) had assumed a relatively greater importance.

The second most important cloth-manufacturing region, certainly by the early to mid-fifteenth century, was East Anglia, for both kerseys and good-quality broadcloths, despite its far greater distance from England's best wools (i.e. in the Welsh Marches, Cotswolds, and Lincolnshire). In Essex, to the south, was especially important for those even smaller and those cheaper narrow half-cloths known as *dozens* and *straits*;

and in this county Colchester maintained its former importance as a major cloth-making town, as did Coggeshall and Maldon; and also Bury St. Edmunds in Suffolk. By the mid-fifteenth century, however, the greatest industrial concentration was to be found in the Stour Valley, forming the border between Essex and Sussex, with such small cloth-towns and villages as: Dedham, East Bergholt, Stratford, Nayland, Sudbury, Long Melford, Glemsford, Cavendish, Clare, Haverhill; and along the Stour tributaries, Hadleigh, Kersey, Lavenham, Boxford, Great and Little Waldingfield. Indeed, by this era, and certainly by the 1470s, Suffolk had risen from sixth to first place in national cloth production (so that Somerset and Wiltshire now ranked second and third, respectively). To the north, Norfolk, once so important for worsteds, did experience a relative industrial decline in the fifteenth century, though Norwich, then one of England's largest towns, continued to be a major textile manufacturer; and in the next century Norfolk would regain its importance for worsteds and especially for the New Draperies. The third and distinctively less important export-oriented cloth-producing region, particularly important again for the cheaper kerseys, was Yorkshire, despite the continued importance of York itself (for better quality woollens); and during the course of the fifteenth century this region experienced some shift in textile production from the East to West Ridings by the fifteenth century, with the growth there of Bradford, Halifax, Leeds, and Wakefield (see below, pp. 000).

In all three English regions, the economic distinction between rural and urban cloth-making had become rather moot by the fifteenth century, as indeed it had already become in Flanders. For Carus-Wilson, who so unfairly neglected the many burgeoning cloth towns of East-Anglia, the most impressive industrial growth of the fifteenth century took place in such small, chiefly rural West Country centres as: Stroud, Castle Combe, Chalford, Wickwar, Dursley, Wotton-under-Edge, Bath, Trowbridge, Bradford-on-Avon, Newbury, Malmesbury, Bridgwater, Taunton, Barnstaple, Tiverton, Cullompton, and Totnes. Newbury indeed was the home of the famed clothier Jack Winchcombe (d.1519), whose employees reputedly numbered over a thousand. Nevertheless, as Gray (1924), Bridbury (1962, 1982), and most recently Hare (1999) have contended, the larger towns continued to account for the predominant share of national cloth production,

certainly well more than half of the market-oriented output, until well into the fifteenth century, when smaller-town or village draperies evidently began to take a greater share of aggregate production. Thus evidence from the aulnage accounts of the mid-1390s indicates that Salisbury then accounted for 89 per cent of Wiltshire's cloth production (and 90 per cent of the cloths sealed belonged to drapers enrolled on this town's registers in 1396-97); Sherborne, for 87 per cent of Dorset's cloth production; and Winchester, for 77 per cent of Hampshire's production. To be sure, Carus-Wilson did demonstrate (in 1929-30) that the post 1468-aulnage accounts for the West Country were fabrications of current aulnagers (who had bought the tax farms); but Bridbury, and, more recently, several other historians have supplied cogent evidence to validate the earlier aulnage accounts, for these and other districts (Keene 1985, Britnell 1986, Swanson 1989, Goldberg 1992, Hare 1999).

Bridbury also sought to cast doubt on the severity of the supposed 'urban crisis' of c.1300; and argued that York, as perhaps the leading urban cloth producer in the later thirteenth century, maintained or regained that role in the fourteenth century, while London, Leicester, Coventry, Winchester, and Gloucester (if not Lincoln) did retain at some of their former importance. Indeed, from a close examination of both aulnage and customs accounts, Swanson (1989) found that York succeeded in expanding both its cloth production and exports from the nearby Humberside port of Hull during the second half of the fourteenth century; and, even if subsequent growth rates in the next century were less impressive, York still remained a vital textile town, at least until the 1460s (see below, pp. 000). Finally, in Carus-Wilson's own West Country, clearly many of the major cloth-producing centres listed above were major towns (including Bath, Wells, and Frome in Somerset).

Obviously, therefore, towns still retained some advantages over rural sites for late-medieval cloth production, especially for better quality woollens, for several compelling reasons. First and foremost, towns and cities -- in England, the Low Countries, and Italy -- offered a more effective labour force than did villages, in the form of large, elastic but congregated supplies of better trained, full-time, more highly skilled

and thus more professional artisans, especially for the cloth-finishing processes that determined luxury qualities. Second, town governments provided superior mechanisms for inspecting cloth production and the necessary police powers to ensure and enforce the requisite quality controls. Third, such towns had far better access to credit and to other mercantile facilities for securing industrial inputs (wools, dyestuffs) and for marketing or exporting the finished woollens than did most villages.

Fourth, and finally, such important cloth-manufacturing towns as Bristol, Winchester, Salisbury, Leicester, Worcester, Gloucester, London, and Colchester did in fact come to use fulling mills, either within or more generally just outside their walls, despite the apparent disadvantages of their locations on slower moving rivers. The reasons and evidence for urban-controlled fulling mills were fully explored in the last chapter (pp. 000), which, in particular demonstrated how their profitability led the fullers and town government of Winchester to establish more fulling mills from the 1360s. In Italy, the renowned Florentine drapery also used such mills, on the nearby Arno River; and although Carus-Wilson did concede this point, she never commented on what advantages the Florentine industry may have derived from using fulling mills.

Fullers and fulling-mills in the late-medieval Low Countries

Carus-Wilson (1941, 1952) was, however, quite certain that the far more important rivals, in the Flemish and Brabantine drapery towns, large and small, did fail to use fulling mills: with the inevitable consequence that they suffered extinction, after necessarily succumbing to the growing onslaught of the mill-propelled English cloth trade. Initially, she attributed that Flemish failure to geographic reasons: for 'Flanders like Lincolnshire is a land of windmills, not water-mills'; and presumably she intended that verdict to apply to neighbouring Brabant as well. In fact, however, watermills proliferated throughout medieval Flanders, and indeed through all of the southern Low Countries. Van Uytven (1969, 1971, 1981), furthermore, also demonstrated that in the medieval era, or rather during the thirteenth and early fourteenth centuries, fulling-mills themselves can be found in several small-town draperies: in Artois, Namur, the

bishopric of Liège, and in Brabant, particularly in the major urban drapery of Leuven.* If no fulling mills can be documented for the late-medieval *drie steden*, certainly a profusion of very profitable water-powered corn mills, leased by the town governments, can be found in Bruges, Ghent, Ypres, and most other Flemish towns. Surely the late-medieval Flemish draperies could have emulated their East-Anglian rivals, cursed with equally slow-moving rivers, in adapting some of these water-mills to mechanical fulling, provided that they or their town governments had the resources for the required capital investments (more especially so for the more costly overshot wheels).

But Carus-Wilson had also offered an ancillary, if seemingly 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’. Powerful they certainly came to be after 1302 in the *drie steden*, but there were no such prohibitions; and even the most meticulous and detailed fullers’ *keuren*, those for Ypres and Wervik, make no mention of fulling mills. Nor did the fullers guilds ever enjoy any power to prevent the installation of fulling mills, even when their members enjoyed representation in some town governments. By 1361, after decades of guild strife, the Ghent fullers were permanently evicted from the town government, whose officials henceforth governed their guild; and in the other two town governments, those fullers serving as *schepenen* (aldermen) were reduced to subordinate status. In the drapery towns of neighbouring Brabant and Holland, the fullers had even less influence with governments so strongly dominated by merchants and merchant-drapers; and in Leiden, as noted in the previous chapter, the *gerecht* brutally suppressed several strikes and rebellions by the fullers during the fifteenth century. Furthermore, the absence of fulling-mills should in no way be attributed to guild-opposition, when we observe that, in England, urban fullers’ guilds participated in and promoted the operation of fulling-mills (see above pp.000).

* In the 2nd edition of the *Cambridge Economic History*, 2:685 (1987), responding to Van Uytven’s evidence on water-powered fulling mills in the southern Low Countries, Carus-Wilson now responded by stating that ‘Flanders was *on the whole* a land of windmills’, though still without explaining why windmills would have been unsuitable or uneconomic for fulling.

The previous analysis of industrial transformations in the fourteenth-century Low Countries should now readily explain why the governing weaver-draper or merchant-draper regimes did not use their considerable powers to establish fulling mills. Indeed they did not even contemplate using them to seek salvation for their declining draperies, even with the mounting dangers from English and Italian competition during the later fourteenth and fifteenth centuries. Having so resolutely staked their future on the export of fine luxury quality woollens, while concerned that inferior imitations from the *nouvelles draperies* were injuring their international reputation, they rightly feared the adverse consequences of mechanical fulling for that golden reputation. 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 (if not medium grade woollens). Why would these draperies have taken any chance that mechanised fulling would debase the cloth-seals that were the veritable *sine qua non* of their success in international markets? To be sure, as was shown in the previous chapter, traditional foot-fulling did account for about twenty per cent of the weaver-draper's *value-added* manufacturing costs (see above pp. 000); but even if mechanisation would have allowed the draper to reduce the share from fulling to just five per cent of those value-added manufacturing costs, he would not have enhanced his profit margins, because that cost reduction would have permitted, at best, only a three per cent reduction in the wholesale prices of his broadcloths. To provide two concrete and compelling examples: in 1435, in the Leiden drapery, the cost of foot-fulling two *voirwollen halvelakenen* was 46d. *groot* Flemish; and a 75 percent potential savings from mechanization would represent only 3.23 per cent of their price, £4 9s 0d *groot*; and, in that same year, only 2.73 per cent of the price of a Ghent *dickedinnen*, at £7 0s 0d *groot*.

The reason for such a very meagre price reduction is, of course, the fact that industrial labour accounted for only about 15 - 20 per cent 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 per cent, and thus of the wholesale price. Since the finer woollens of the Flemish *drie steden* and other drapery towns in the Low Countries were already three times more expensive than rival English broadcloths (see Table 00), such a very minimal price reduction

from mechanisation 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.

The late-medieval Low Countries provide additional evidence of considerable significance about the adverse relationship between mechanical fulling and an orientation towards luxury cloth production. Thus Leuven and other drapery centres, including some as well in Normandy, that had utilized mechanical fulling-mills in the thirteenth century abandoned them during the early fourteenth century precisely when, as noted earlier, they ‘switched over’ to luxury woollens (Van Uytven 1971; see p. 000). In Normandy, only a few fulling mills were retained in the later Middle Ages, principally for *les gros draps bureaux, de grosses et mauvaises laynes* (cited in Mollat 1976). The *petites draperies* of Artois (Hesdin, St. Pol, Aire) and the Meuse Valley region (Huy, Liège, Verviers, Maastricht) that continued to use fulling mills during the later Middle Ages evidently also produced only or chiefly cheap fabrics for local or regional consumption.

Furthermore, the Flemish *nouvelles draperies* along the Leie Valley, which presumably did enjoy more efficient and lower cost sources of water-power than did the *drie steden*, were just as resolute in eschewing the fulling-mill during the fourteenth and fifteenth centuries, when they had also focussed more on the luxury segment of the cloth markets (albeit on somewhat lower-priced ranges), imitating the woollens of the *drie steden*. During the sixteenth century, however, when many of these Leie Valley draperies re-oriented production once more to cheaper fabrics, including semi-worsted and bays, which did require some fulling, they very readily adopted fulling-mills, and profited from doing so. So did Leuven, Hasselt, and some other draperies in neighbouring Brabant, during the course of this same century (see below pp. 000).

As this analysis has indicated, the crucial economic factor determining gains or losses from mechanical fulling in the Low Countries was the relative quality and costs of the wools involved in cloth production. By the fifteenth century, the costs of fine English wools, when subjected to heavier fiscal burdens, would also prove to be a very crucial factor in determining the ultimate victory of the English cloth

trade over most of its rivals in the Low Countries and Italy.

The English taxation of wool exports and the Calais Staple: 1275 to 1410

In these two chapters no subject can claim greater importance than wool itself. For medieval England, producing such large quantities of Europe's finest, along with some admittedly mediocre wools, they had long supplied her most lucrative export, which thus became the prime source of tax revenue for fiscally straitened monarchs. In 1275, Edward I imposed the first levy (the Old Custom), at the modest rate of 6s 8d per sack (of 364 lb = 165.45 kg). Subsequently, in 1294-97, during his wars with Scotland and France, he added the temporary *maltôte*, an extortionate levy of 40s per sack, setting an unfortunate precedent for his successors; and finally, by the *Carta Mercatoria* of 1303, he increased the customs duty on aliens to 10s 0d per sack (the New Custom, abolished under the Lords Ordainer in 1311, but restored in 1322).

But not until the reign of his grandson Edward III (1327-77) would the crown's fiscal policies begin to have a truly decisive impact upon the wool trade and thus upon the fortunes of the textile industries in both the Low Countries and England. In September 1336, in order to finance his coming campaigns in France, commencing the Hundred Years' War, Edward secured from the Nottingham Assembly of Merchants an additional levy or 'subsidy' of 20s per sack. In order to exact this levy, Edward temporarily banned all wool exports and organized a royal wool monopoly, with a select syndicate of English merchants.

As noted earlier (pp. 000), Edward had also hoped that, by imposing such measures on the wool trade, formally enacted in statute 11 Edward III c.1-5, he could coerce the Flemish into supporting his anti-French alliance and his claim to the French throne. These coercive measures also involved a ban on all foreign cloth imports, and a specific invitation to Flemish and other overseas artisans to settle and practise their textile crafts within England, under royal protection. Despite the fact that George Unwin (1918) had so clearly elucidated the true motives and the political and fiscal elements of this statute, far too many historians since then have continued to praise Edward for adopting a supposedly proto-mercantilist or protectionist policy specifically designed to foster the 'rejuvenation' of the English cloth industry. To be

sure, a few Flemish cloth artisans, fleeing the current turmoil in their land, did settle in England. Carus-Wilson (1952), however, asserted that most 'seem to have settled in eastern and southern England, so that they probably contributed little to the development of the newer industrial districts,' i.e. in the West Country. If her view is perhaps biased by her neglect of East Anglia's cloth production (admittedly not yet that important), more credence might be given to the well researched views of Herbert Heaton (1965): that, in York's industrial revival from the 1350s, 'there were more cloth workers from Lincoln than from the whole of the Low Countries'. Derek Keene (1985), in investigating Winchester's reviving cloth industry from the same era, similarly found that the Flemish role was negligible. In any event, Edward III, after establishing his royal wool monopoly, quickly abolished the bans on both wool exports and foreign cloth imports, so that, as the customs accounts clearly show, Flemish woollens continued to reach these shores (Munro 1999).

Subsequently, the crown also increased the wool export duties to 33s 4d per sack in March 1338 and then to 40s 0d a sack in November 1341 (by royal decree) for a total burden of 46s 8d per sack (50s 0d a sack for aliens), a rate that was periodically re-confirmed by subsequent merchant assemblies and parliaments up to 1362. But despite such very heavy export taxes, the maladroit administration of various royal wool syndicates, disruptions from continental warfare, and the ravages of the Black Death, English wool exports to the Low Countries and Flemish cloth production enjoyed a surprising boom in the 1350s and early 1360s, exceeding levels previously achieved in the early 1330s (see Table 00). Perhaps the royal wool purveyances and fiscal policies themselves had artificially boosted wool exports; and possibly the post-Plague prosperity, promoting hedonistic consumption expenditures, also helped to maintain these surprising levels of luxury cloth outputs and thus of wool exports.

But another major factor, at least partly responsible for maintaining this high level of wool exports, was the nature of the tax-incidence: the fact that more of the burden was borne, not by the Flemish, Brabantine, and Florentine draperies in higher purchase prices, but rather by English wool growers in lower prices. Certainly petitions in the Commons had frequently made that very charge in the 1340s and 1350s,

especially after Parliament's attempt to fix minimum wool prices by county in both 1336 (the Nottingham Assembly) and 1343 had failed. As Lloyd (1977) has observed, domestic wool prices were amongst the very few that failed to rise during the rampant post-Plague inflation. Since strenuous opposition from woolgrowers in Parliament threatened to undermine royal fiscal policy, now so heavily dependent on the wool subsidies, the crown had to find a more effective alternative solution, especially when, in 1362, a peace-oriented Parliament (following the Treaty of Brétigny, 1360) cut the wool subsidy in half, to 20s per sack.

In that same year, while the wool staple was still in Bruges, Edward conferred with a group of English merchants and then selected the recently conquered (1346) port of Calais, in north-west France, as the new compulsory overseas staple for wool exports. The royal writs of 1 March 1363 also established a Company of the Staple, vested in the hands of 24 merchant-aldermen, with the power to supervise the sale of all English wools at Calais. This new Staple Company, which immediately fixed minimum, uniform prices for the wools of each county – and also tried but failed to exact full payment in coin and bullion -- was evidently designed to pass the tax incidence more fully on to the foreign buyers. In October 1363, Parliament restored the wool subsidy to 40s per sack, accepting as well a new Calais import duty of 3s 4d per sack (later reduced to 1s 7d); and in 1369, it again increased the subsidy, to 43s 4d per sack, for a total duty on native exporters of 50s 0d a sack (51s 7d with the Calais duty). Nevertheless, the Staplers took almost three decades to become fully effective as a cartel in achieving those goals; and during this period, the crown often undermined their 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).

Finally, by the mid-1390s, the crown's fiscal policies were having a truly deleterious effect on both wool exports and cloth production in the Low Countries. Not only was the Calais Staple fully restored with fewer exemptions and licences to impede its powers, but a further increase in export taxes on 'aliens',

principally Italians, in 1398 virtually eliminated their role in the wool trade; meanwhile the crown again burdened wool exporters with foolish requirements to furnish some of the sales proceeds in gold bullion.

But the most damaging blow came from the steep, stark deflation of this era, a fall in the price level of about 35 per cent in both England and the Low Countries (from c.1380 to c.1410), which included a fall in *nominal* wool prices. Since the wool customs and subsidies were both *fixed* and *specific* (rather than *ad valorem*), that price-fall substantially increased the *real* tax burden, which now represented almost 50 per cent of the mean value of exported wools. And in this era, as noted before, such tax-burdened English wools were accounting for 70 to 75 per cent of the pre-finishing manufacturing costs for the luxury urban draperies in the Low Countries (see pp. 000).

English fiscal policies, furthermore, proved to be even more harmful for these cross-Channel draperies by giving the English cloth industry and export trade a very substantial and growing, though quite unintentional, relative cost advantage. For English clothiers were able to buy the very same fine March, Cotswold, Lincolnshire or other Midlands wools totally tax-free at home for the manufacture of fine woollens, which bore no export duties before the Cloth Custom of 1347, at least when shipped by native merchants; and thereafter, they paid just a minimal duty of 14d per standard cloth for natives, while Hansards still paid only 12d per cloth (a duty first imposed in 1303), rates that remained unchanged until 1558. Other aliens, however, had to pay both a higher duty of 33d per broadcloth and subsequently an *ad valorem* poundage tax of five per cent (which the Hanse rejected). Not surprisingly, English and Hanse merchants together soon gained the lion's share of the cloth trade. During the later fourteenth and early fifteenth centuries, their cloth-export duties amounted to about 2.5 per cent of the mean value of broadcloths that they shipped (i.e. about £2 to £2 10s 0d per broadcloth); and by that era the cost advantage of the English cloth trade over its continental rivals was about 25 to 30 per cent.

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

decennial means. Wool exports, having achieved a mid-century peak of 31,504 sacks in 1350-9, declined only slightly by the next decade, to a mean of 29,893 sacks (down 5.1 per cent); but then between 1360-9 -- with the imposition of the Calais Staple and higher export duties -- and 1390-9, wool exports fell by 38 per cent, to a mean of 18,546 sacks; and a corresponding fall in production indices for some of the Flemish and Brabantine urban draperies can also be seen in Table 00. Meanwhile, broadcloth exports soared from a mean of just 4,426 pieces in 1350-9 to a peak of 38,469 pieces in 1390-9, a rise of 769 per cent. Over this same period, total English exports, measured by combining wooolsacks and broadcloths at 4.33 cloths per sack, experienced an overall decline of 16 per cent, much less than the aggregate fall in European population, providing another indication of the inroads that the English cloth trade was then making into the markets of its overseas competitors.

In the Low Countries, despite all these adverse circumstances, the export-oriented draperies did not yet seek out some alternative, lower cost source of wool. Even though Spanish merino wools were being used in some Italian draperies by the 1390s, as noted earlier, their quality evidently still remained too mediocre; and in the Low Countries, where the prejudice against the pre-merino Spanish wools remained strong, very few if any draperies would employ them, except a few of the lesser *nouvelles draperies*, as a substitute not so much for English as for Scottish wools (see above, pp. 000; and below, pp. 000). Obviously the other petty draperies, in both towns and villages, that produced for domestic or regional markets were quite unaffected by the problems of the English wool trade, since they had always used the far coarser and cheaper wools from the Low Countries, Scotland, Ireland, Germany, and France.

The prosperity of the Low Countries' textile industries, however, was never and could not be based solely on domestic markets; and the large urban draperies, including the Dutch newcomer, at Leiden, having so strongly committed themselves to the higher ends of the European luxury market, had necessarily become all the more dependent on the finer English wools from the Calais Staple. At the same time, the purchase of such wools was favoured by nature of the export taxes themselves, which, in being *specific*, thus imposed a

relatively lighter burden on the more expensive wools. The fact that the price differential between the very best and most mediocre wools (even of those sold at Calais) was far greater in the fifteenth century than in the fourteenth or thirteenth, while possibly a consequence of changes in supply, with a greater orientation towards peasant wool production, undoubtedly also reflects those changes in demand favouring the finest English wools. Indeed all these demand factors and the consequent Flemish-Brabantine dependence fully explain why the English crown was able to maintain such exorbitant taxes on the wool trade during the later fourteenth and fifteenth-centuries.

Despite the costs of such a dependence, and despite the market restrictions that high-cost, high priced woollens necessarily imposed, the policy of luxury orientation and monopolistic competition was surely the only viable option for the Flemish and Brabantine draperies to pursue in the economic climate of late-medieval Europe. Some vindication for their judgement may be found in an exhaustive study by Ammann (1954) on German and Central European textile markets in the early fifteenth century. For he found that Flemish woollens, including those of the *drie steden*, had regained their former pre-eminence, after their late-fourteenth century setbacks, followed by the Brabantine and then Dutch woollens, while the much cheaper English broadcloths still ranked a distant fourth. A more recent study of later-medieval markets by Abraham-Thisse (1993), for fewer and more selected periods, generally supports that view, although she found a wider array of medium-priced Flemish and Artesian textiles in these German markets. As noted in the earlier survey of Mediterranean markets, where even costlier Florentine and other Italian luxury woollens had become pre-eminent, English broadcloths fared even worse, and did not achieve major gains in Mediterranean markets until much later in the fifteenth century.

Expansion and setbacks in the English cloth trade: the Low Countries and the Baltic Zone, 1350- 1410

Such evidence on the relative success of the Flemish and Brabantine draperies is all the more surprising in view of the English cloth export statistics for the later fourteenth century, even if the growth that they demonstrate was not to prove continuous. Significantly, the rapid expansion in broadcloth exports

was mirrored by an almost corresponding decline in the exports of the much cheaper and coarser worsted fabrics (see pp. 000). When total cloth exports, by both native and alien merchants were first fully recorded in 1347, with the first levy of the Cloth Custom, worsted exports in that year actually exceeded broadcloth exports in number: 7,256 worsteds but only 4,423 broadcloths, even though the Norfolk worsted industry had already passed its peak. After equating worsteds of various sizes to broadcloths by relative export duties, we find that total worsted exports fell from 23 per cent of mean broadcloth exports in the 1350s to less than one per cent by the late 1380s, perhaps because of increasing commercial difficulties in the Baltic regions. Thereafter, for almost two hundred years, worsted exports generally remained at this same low level, while retaining some meagre markets in the Low Countries, Germany, and eastern Europe.

The apparent expansion in kersey exports from the 1380s, when they were first recorded separately, cannot really account for this decline in the worsted trade, because kerseys were true woollens and not a substitute for worsteds. Though coarser and smaller than broadcloths, as noted earlier (pp. 000), they were much more comparable in weight, (1.41 lb vs. 1.52 lb per square yard), and certainly much heavier than worsteds (0.37 lb per sq yd). Kerseys, to be sure, were cheaper than standard broadcloths, costing only 70 percent as much on average as broadcloths in the Royal Wardrobe accounts of the 1430s; but they were five times as expensive as the worsteds in those accounts. If some kerseys were indisputably cheap, those sold in Alexandria, c. 1500, were priced around £2 7s 3d ster (11 ducats), compared to prices of £3 0s 0d to £4 12s 0d (14 - 20 ducats) for Wiltshire-Hampshire broadcloths, and of just 10s 9d to 25s 10d for 'Irish' says (i.e. Norfolk worsteds, at 2.5 to 6 ducats). In any event kerseys did not come to play a major role in English cloth exports until the end of the fifteenth century, when they were accounting for about 20 percent of English cloth sales, by number, at the Brabant Fairs (11,115 out 55,868 cloths in 1495-98); and the period of their greatest export growth came later in the sixteenth century.

During the later fourteenth and early to mid fifteenth century, the majority of the English broadcloths exported in this era were also, as noted earlier, much cheaper than the luxury woollens from urban draperies

of Lombardy, Tuscany and the Low Countries, cheaper even than most from the Flemish *nouvelles draperies*. Nevertheless, they were still a quite costly luxury for most urban craftsmen in late-medieval western Europe. For example, around 1400, a master mason in London, whose annual earnings were then second only to those for a Bruges mason, would have required almost three months of wages (at 7½d per day) to buy just a single medium-quality broadcloth, then priced about £2 to £2 5s 0d sterling; and these woollens then cost about seven or eight times more than standard worsteds, per linear yard.

For the Flemish, the threat posed by the rising English cloth trade had become apparent as early as the 1350s, when the *drie steden* and the Count Louis de Maele imposed a ban on the importation or sale of all English woollens, a ban that remained rigorously enforced thereafter until 1540. By their treaty with the Hanse negotiated in 1359-60, the Flemish grudgingly allowed German merchants, and they alone, the qualified right of transporting or transshipping English cloths, ‘bound in bales, unpacked, and not displayed for sale’, in transit through Bruges. Though this Flemish cloth ban later came to include English kerseys, it always exempted says or worsteds (English and Irish).

Denied access to Bruges, by far the pre-eminent port in northern Europe and the best potential outlet for their woollens, and now loath to venture into the war-torn, *routier*-ravaged Gascon markets, English cloth merchants selected the relatively peaceful Baltic as their most promising remaining avenue for commercial expansion. Avoiding conflict with Lübeck’s powerful Wendish League in the western Baltic, the English focussed instead upon Prussia in the eastern Baltic. By the mid 1370s, they had established a successful merchant colony in Danzig, and began a campaign to secure reciprocal trading privileges. Later in that decade, English as well as Dutch cloth merchants took advantage of those two prolonged disruptions in supplies of Flemish and Brabantine woollens to the Baltic zone, discussed earlier, from the Ghent War (1379-85) and the Hanseatic embargo imposed on Bruges (1388-92). The English, however, very quickly and foolishly provoked bitter hostility from the Prussians by competing directly with them in the local cloth trade, by deliberately evading Hanse staple towns and German brokers in selling their broadcloths, by engaging in

piracy, but especially by Parliamentary threats to make Hanse privileges in England conditional upon receiving reciprocal rights in Danzig. Concerned about their own English trade, and the safety of their London Steelyard, other Hanse towns pressured the Prussians into granting those privileges, by the 1388 Treaty of Marienburg. Nevertheless the Prussian towns, demanding compensation for English piracy, delayed executing the treaty for over twenty years. Finally, in December 1410, after finally receiving some compensation, the Teutonic Grand Master did ratify a revised version of this treaty (negotiated in 1409), even more favourable to England, despite opposition this time from other League members.

For the English cloth merchants, however, the commercial tide had already turned, to make a mockery of their seeming diplomatic victory. Woollen exports to the Baltic had already peaked around 1400, by which time the worsted trade had virtually disappeared; and from the first decade of the early fifteenth century those exports and the Baltic trade in general entered upon a prolonged and irreversible slump. Aggregate English cloth exports fell by 27 per cent from 1390-9 to 1410-9 (Table 00). According to Nightingale (1990), a prominent factor responsible for this commercial slump was a deflationary credit contraction; but even more powerful and more enduring causes may be found in the combination of military strife, naval wars, corsair and piracy raids, and economic dislocation in the Baltic, certainly from the later 1390s. In July 1410, at Tannenberg, a combined Polish-Lithuanian army inflicted a terrible defeat on the Teutonic Order, which led to a severe contraction in Hanseatic commercial revenues; that in turn made the Hanse towns more determined to resist further incursions by English and Dutch merchant fleets. From the later 1420s, Lübeck, the most powerful Hanse town, itself became embroiled in naval wars with first the Dutch and then with the English; and the subsequent Dutch victories and English defeats (in conflicts with Denmark as well) discouraged further attempts to expand English commerce in the Baltic zone.

The English cloth trade to Middelburg and Antwerp

Well before then, however, English cloth exporters had found two alternative if initially minor outlets across the Channel in ports adjacent to the still-forbidden Flanders. The first and smallest was Middelburg,

in Zealand, where English merchants can be found as early as the 1380s; and the tribulations of the Baltic trade from the later 1390s may have promoted its subsequent growth as a cloth market that served the counties of Holland Zealand. Much more important was the next outlet, in Antwerp, on the Scheldt estuary. No longer having a cloth industry of its own to protect, Antwerp eagerly welcomed this new trade in English cloth, which soon spawned an important new industry in dyeing and finishing those woollens. In 1421, the Merchants Adventurers, a subsidiary of the London-based Mercers Company, chose Antwerp as their overseas residence, for the next 150 years. At the Brabant Fairs, their dyed and finished woollens were purchased chiefly by merchants from Cologne and other Rhineland towns, who marketed them throughout Central and Southern Germany, principally via the newly flourishing Frankfurt Fairs.

Somewhat ironically, as more and more English cloth merchants were convinced of the advantages in having those woollens dyed and finished in Antwerp and in other neighbouring towns, these Netherlander towns were seriously undermining one of the few remaining comparative advantages of the Flemish, Brabantine, and Dutch cloth industries. But the reason why English cloth exporters chose to do so was not necessarily the superior expertise in cloth-finishing to be found in the Low Countries. The equally or more important reason, as suggested in the previous chapter, was that these processes were really more commercial than purely industrial and thus that cloth-dyers and finishers in the Low Countries had, through contacts at the Brabant Fairs, a much better grasp of the currently favoured colours and fashions in continental markets than did English dyers. Indeed many of the Netherlander dyers and finishers acted on commissions from German and other foreign merchants buying cloths at these Fairs.

The very rapid surge in English cloth exports during the 1420s, a growth of 38 per cent over the previous decade, much of it directed to the Antwerp Fairs, soon alarmed the Dutch and Brabantine drapery towns; and in 1428, their two governments responded to their urgent demands with protectionist bans on English woollen imports. But, unlike the long-standing Flemish cloth ban, these two edicts proved difficult to enforce; and by 1430 Holland's ban was allowed to lapse, under pressure from those Dutch merchants and

textile-finishers who were profiting from the English cloth trade. In Brabant, the ban endured a year longer, despite similar domestic opposition; but in 1431, after Cologne's Rhenish Hanse had imposed a boycott on the Brabant Fairs, Duke Philip the Good (1419-67) was forced to rescind it. Subsequently, after a severe mid-century slump in northern commerce (for reasons analysed in the next section), the Brabant Fairs would enjoy an explosive growth that would transform the economic map of northern and central Europe and play perhaps the most decisive role in the ultimate 'victory' of the English cloth trade.

English fiscal-monetary policies: the Calais Staple Bullion Ordinances

England's subsequent supremacy in the international cloth trade was, however, also partly dependent upon a new set of even more ill-advised fiscal and monetary policies, also dating from the 1420s, that the crown imposed on the Calais Staple. Shortly after re-opening the Calais mint in 1422 (closed since 1404), the crown evidently instructed the Staplers once more to exact at least partial payment for wools in English gold coin or bullion. Despite some initial successes, however, and despite that decade's commercial boom, the Calais mint outputs began to slump in the later 1420s, creating chronic coin shortages in paying the Staple military garrison. In 1429, rightly suspecting that the post-1425 Burgundian coinage debasements were to blame, in diverting precious metals away from English mints, the crown took more resolute action through parliamentary statutes known as the Calais Staple Partition and Bullion Ordinances. These laws, re-enacted and strengthened in 1433, gave a small clique of wealthy Staplers (the 'Fellowship') complete control over wool sales by 'partitioning' all revenues according to each merchant's wool-stocks held at the Staple rather than by his wool sales. In return for this monopoly power, the Staplers were instructed to raise prices, abolish credit sales, and exact full and immediate payment in 'ready money': at least a third in bullion, to be minted at Calais, and the rest in English gold coin.

Such regulations, especially the credit ban, were disastrous for the small, capital-poor drapers who produced the great majority of fine woollens in the Low Countries, for they had long depended upon a chain of sales credit that ran from wool growers in the Cotswolds to the cloth buyers in various far-flung European

markets. Normally, wool-merchants and drapers from the Low Countries purchased their wools at the Staple with a one-third cash down payment (usually with Flemish coin), and with two or more 'bills obligatory' for the remainder, payable in six and twelve months at various fairs in the Low Countries, in Flemish currency, which was then used to purchase bills of exchange drawn on London correspondents (Mercers and Adventurers), without shipping any specie. Obviously, the Flemish, Brabantine, and Dutch drapers could settle their bills only after they had received their own sales proceeds, having similarly sold their woollens on credit. Now most of them were forced to resort to money lenders and merchant-bankers, chiefly Italian or Hansard, probably at high rates of interest, in order to procure the large quantities of bullion and English coin required at Calais -- if such specie were in fact available; and Table 00 does indicate a rise in Flemish and Brabantine cloth prices from the 1430s, i.e. rising real prices, despite the ensuing deflation.

After fruitless negotiations, Duke Philip the Good, now ruler of a much expanded Burgundian Low Countries (acquiring Namur in 1421, Holland-Zeeland and Hainaut in 1428, and Brabant in 1430), responded in 1434 with strictly enforced bans on bullion and coin exports and a more general ban on imports of English cloth, closing off in particular those promising new ports of Middelburg and Antwerp. In 1436, this conflict flared into full-scale war, beginning with an abortive siege of Calais and ending in 1439 with a Burgundian defeat and a peace treaty that restored the English cloth trade to its former Dutch and Brabantine marts. In 1442, rebel Staplers 'of their owne auctorite' revoked the mutually harmful Calais payment regulations; but twice thereafter the crown sought to reimpose them (in 1445 and 1463), each time provoking a renewal of the general Burgundian ban on English cloth imports: in 1447-52, and 1464-67. Only after a Burgundian-financed expeditionary force had enabled Edward IV to regain his throne in battle (at Barnet and Tewkesbury, 1471) did the English finally relent. Shortly after, in 1473, Parliament formally revoked the Calais bullion regulations, explicitly permitting credit sales and payments by bills of exchange; and in July 1478, during the Anglo-Burgundian treaty negotiations at Lille, the Staplers formally repudiated the Calais laws, article by article, in return for a Burgundian promise (never fulfilled) to ban all foreign wools not

purchased from the Calais Staple.

By the 1470s, however, the Flemish and Brabantine urban draperies had already suffered a disastrous if by no means fatal blow, as reflected in plummeting production indices as well as in Calais wool sales (Table 00). Thus, from 1420-9 to 1470-79, the mean decennial indices for the Ghent, Leuven, and Ypres draperies all fell about 70 per cent (though the Mechelen index fell by only 39 per cent, for reasons to be seen later). More concrete evidence can be found in the 83 per cent decline in the number of drapery stalls rented in the Ypres cloth hall over this period, from a mean of 397.7 to just 66.2 stalls. Equally tangible if less dramatic is the 42 per cent drop in mean wool exports to Calais over this same period, from 13,328 sacks to 7,762 sacks (from 1350-9, the overall decline was 77 percent). The reasons why Calais wool sales declined at a lesser rate than did the production indices for the traditional urban draperies in Flanders and Brabant may be revealed by examining the experiences of textile industries in the fifteenth-century Low Countries.

Spanish wools, the *nouvelles draperies*, and the old urban draperies

The crisis of the Calais bullion laws produced a strikingly different response from many though by no means all of the *nouvelles draperies*, both old and new. For it was precisely from the imposition of these laws in the later 1420s that many of them began to utilize Spanish merino wools in a regular fashion, often in a mixture with English or other wools. In northwestern Europe, the earliest documented use of Spanish wools was a drapery ordinance of July 1407 issued by the French bishopric of Tournai (an enclave within Flanders) for the manufacture of new ‘draps appelés vacques’, a coarse, cheap woollen cloth, with a weft ‘composée des grosses laines d’Espagne et d’Alemaigne’ (Dubois 1950). Subsequently, in the English Parliament of 1420, a petitioner complained that the Flemish were now permitting the use of Spanish wools in violation of a supposedly ‘long-standing agreement’ to use English wools exclusively, in return for English ‘acquiescence’ in the Flemish ban against English woollen cloth imports; but the crown evidently ignored his dubious assertions. The first concrete evidence that at least one Flemish *nouvelle draperie* had officially adopted Spanish merino wools is an ordinance from Estaires (in the Leie Valley, near Armentières) dated

September 1428. A decade later, in 1438, during the aforementioned Anglo-Burgundian war, Dutch ambassadors in London contended that the Calais Staple Bullion Ordinances were directly responsible for the precipitous fall in English wool exports -- by more than a half, and consequently for a more than three-fold rise in sales of Spanish and Scottish wools in the Burgundian Low Countries. Possibly, by this era, the quality of Spanish merino wools had indeed finally improved, perhaps as a result of cross-breeding and better flock management, to rival at least medium-grade English Midlands wools. Nevertheless the contemporary but anonymous English author of the *Libelle of Englysshe Polycye* (c.1436) had boasted that Spanish wools were no good for cloth-making unless mixed with English wools; and a century later (c.1536) Clement Armstrong repeated these very same views in his *Treatise Concerninge the Staple* [of Calais], declaring that ‘withowt the wolles of England be myxed with it [Spanish wool], it can make no clothe of it self, for no durable weryng, by cause it hath no staple’. Indeed, in several sixteenth-century revisions, the drapery *keuren* of Armentières stipulated that its best *draps outtreffins* were to be woven from two thirds merino wools and one-third fine English wools (Cotswolds, Berkshires, and Lincolnshire Lindseys). Undoubtedly many successful *nouvelles draperies* continued using at least some English wools to maintain some claim to luxury qualities; and that helped to sustain to some extent wool sales at Calais, though always at a far lower level than those prior to 1425.

Presumably many of those earlier fifteenth-century *nouvelles draperies* producing inferior imitations of woollens from the Flemish *drie steden* were not too concerned that their reputations would suffer unduly from using merino wools, alone or in some mixture. Those draperies documented as using Spanish wools by the 1460s were, besides, Armentières and Estaires, the following: Nieuwkerke (Neuve Église), Poperinge, Menen, Dendermonde, Aalst, Oudenaarde, Kortrijk, Geraardsbergen, Comines, Warneton, Bailleul (Belle), Ninove, Tourcoing, Nieppe, Meteren, Godewaersvelde, Eecke, Flêtre, Eeklo, Dranouter, Kemmel, and Wulvergem. Indeed, for many if not all of these *nouvelles draperies* their resort to the much cheaper Spanish wools may have been the major factor in their continued survival, and, for some, quite impressive growth.

Nevertheless, a few of the older *nouvelles draperies*, in particular Wervik, Diksmuide and Langemark, former leaders who had prided themselves on the quality of their woollens, had obdurately refused to use any Spanish wools. From the 1440s, Wervik's magistrates had required all the town's drapers 'to swear an oath annually upon the holy cross to use none but English wools'. But in 1463, during the final crisis of the Calais bullion laws, the ducal government intervened to nullify this edict and permit the establishment of a new Wervik drapery utilizing Spanish, Scottish, and Flemish wools, though limiting its production to *petits draps*, setting it apart from the traditional drapery, and forbidding it to use English wools.

Needless to say, in perhaps a vain effort to safeguard both their reputations and their fortunes, most of the export-oriented urban draperies in the Low Countries also refused to use any merino or Scottish wools in their sealed woollens until much too late, in the early to mid-sixteenth century, when several of the *nouvelles draperies*, led by Armentières and Nieuwkerk, had displaced most of them as leading suppliers of good quality woollens. Rather surprisingly, however, two Brabantine towns had already done so in the fifteenth century, though in the completely new and separate draperies that were forbidden to produce any traditional woollens or use English wools. Leuven, with a long-declining and the weakest traditional drapery, was the first to do so, in 1415, with a *nieuwe draperie* that employed French, Scottish, and domestic wools, but not any merino wools before the 1480s (or later). In 1443, Brussels thus became the first traditional urban drapery to specify the use of Spanish merino wools, along with Scottish and domestic wools, in its own *nieuwe draperie*, producing *bellaerts*. Evidently Mechelen, the most successful Brabantine drapery, did not resort to merino wools before the early sixteenth century, first officially regulating their use in 1544.

In neighbouring Flanders, the Ghent drapery probably adopted Spanish wools before any of the other *drie steden*: not in the 1450s, as recently contended, and not before the 1490s, but certainly from at least 1519, when Leuven copied Ghent's ordinance on cloths made from these wools (Boone 1988; Munro 1997, 1999). At Bruges, however, early sixteenth-century attempts to establish a *nieuwe draperie* with non-English wools proved abortive; and as late as 1533, its magistrates, boasting that their 'principal industry' was the

luxury drapery based on English wools, re-affirmed their long standing ban on any other wools. Only after September 1544 did the town finally succeed in creating a viable drapery using Spanish wools, and from June 1548 Spanish wools were used exclusively in all of Bruges' woollens, 'new' and 'traditional'. Around this time, in 1545, the use of Spanish wools can be documented with certainty for the first time at Ypres, still the weakest of the *drie steden*.

Holland: the Leiden drapery, the Baltic trades, and Spanish wools

In Holland, the cheaper-line woollen draperies of Amsterdam, The Hague, and Gouda (about which little is known) were evidently using Spanish merino wools by the later fifteenth century, but not the Leiden drapery -- officially, at least, not until much later. Its continued reliance upon high-priced Staple wools, though not the very most expensive English wools, has to be understood in the light of its relative success during the second half of the fifteenth century, when it fared better than any other traditional urban drapery in the Low Countries. Certainly one important reason was Leiden's strict quality controls, through extensive industrial inspections, and thus its ability to retain its reputation for high quality, while marketing its woollens at reasonable prices, generally below those for rival Flemish and Brabantine luxury woollens (see Table 00).

But even more important was the commercial and financial support that the Leiden drapery gained from Holland's actively aggressive and now powerful merchant marine, in contrast to the Flemish and Brabantine draperies, which remained so reliant upon Italian, Hanse, and other foreign merchants. From the early fifteenth century, the major arena for Dutch maritime expansion was the Baltic zone, from the very time that the English cloth trade was experiencing commercial reverses in Prussia and elsewhere in this region. Subsequently the Dutch cloth trade benefited enormously from both Hanseatic and also Danish retaliation against English privateering (and other transgressions), which, by the 1450s, had succeeded in excluding most English ships from the Baltic.

But even before then, first in the 1420s, and, following a brief truce, again from 1438, the Dutch seafaring towns had waged their own successful privateering war, in alliance with Denmark, against Lübeck's

Wendish Hanse. By the Danish-sponsored Treaty of Copenhagen with the Wendish League, signed in August 1441, followed by a separate treaty with the Prussian League in September, the Dutch gained full freedom of trade in the Baltic (at least for ten years). In this very same era, the Dutch also took full advantage not only of England's conflicts with the Hanse and Denmark, but of the even more important Hanseatic conflicts with Flanders. Yet another German embargo of the Bruges staple from 1451 to 1457, and a migration of Hanse merchants to neighbouring Dutch and Brabantine towns, seriously disrupted the flow of Flemish woollens to Germany and the Baltic, and thereby allowed the Dutch cloth trade to achieve major and permanent gains in those markets. In February 1474, by the Treaty of Utrecht, the Hanseatic League formally re-affirmed all Dutch trading rights in the Baltic, while effectively denying the English any such privileges. Finally, even though Lübeck had resumed its conflict with Holland, both before and after the Utrecht treaty, the Dutch managed to gain predominance in the Baltic trades by the 1490s. By then, the overwhelming majority of ships that paid the Danish Sund tolls were Dutch; and with superior naval power, more efficient cargo boats (ancestors of the *fluitschip*), lower freight charges, and better merchandising, the Dutch gained increasing commercial support from the Prussian and Livonian town leagues.

Thus the Leiden drapery, despite the burdens of the Calais Staple laws and the rising costs of English wools, was able to expand its cloth outputs during the second half of the fifteenth and the early sixteenth centuries. But by 1521 Leiden's cloth outputs had peaked at 28,987 pieces (*halvelakenen*), with a sharp drop the following year to 21,616 pieces (Table 00). In June 1522, encountering further difficulties at the Calais Staple, the Leiden magistrates officially authorized the use of Spanish merino wools, now 25 per cent cheaper than the English. In 1522-3, some 1,856 bales of merino wools were imported; 2,556 bales the following year, but generally lesser amounts thereafter (Table 00). Thus Leiden's drapers came to use merino wools in rather limited quantities, usually mixed with some English wools. For soon complaints arose that Spanish merino wools were not only less fine than the English, but were more difficult to comb and required more time and effort in fulling and felting. Subsequently, in 1536, after this experiment with merino wools had

failed to stave off continued decline, the Leiden drapery decided once more to use English wools exclusively, despite their high cost, in order to safeguard its reputation and thus maintain its now limited cloth markets, in confronting the ever more relentless growth of English competition (Brand 1991, 1993).

The revival of transcontinental trade, the rise of the Antwerp market, and the final victory of the English cloth trade

Quite clearly, therefore, as the experience of Leiden suggests, the ultimate success of the English cloth industry and export trade did not depend just on the consequences of the Calais bullion laws and related fiscal policies, but at least as much on structural changes in international trade: in particular, those based upon the Antwerp market and the Brabant Fairs. On the other hand, not until the conflict over the Calais bullion laws and the cloth bans had ended in the 1460s could the English finally take full advantage of Antwerp's recent but quite spectacular growth.

Antwerp had achieved that growth through a transformation of the Brabant Fairs from a purely regional foodstuffs fair to become a truly international entrepôt and the predominant commercial and financial centre of early-modern Europe; and, as Van der Wee (1963, 1970) has shown, in an extension of his thesis on commercial structures secular trends in the European economy (see pp. 000), the fundamental force in that transformation was the revival in overland, transcontinental trade between Italy and the Low Countries during the early to mid-fifteenth century. This revival also marked a reversal of those economic and political forces that had so constricted transcontinental trade flows and redirected commerce more towards maritime routes from the early fourteenth century. But, rather than following the trajectory that had predominated during the thirteenth-century heyday of the Champagne Fairs, the north-south overland trade was now flowing predominantly by a more easterly and much shorter route, untouched by the Hundred Years' War or now freed from chronic insecurity: from the Brabant Fairs and the eastern Low Countries, south via the Rhineland into South Germany, across the Brenner Pass into Lombardy and Venezia, a route, as noted earlier, that was only 20 percent of the distance by sea.

Possibly the initial impetus had come from Venice and northern Italy, whose demographic and

economic recovery had begun much earlier than elsewhere. From the later fourteenth century, as was also noted earlier (pp. 000), Venice had been supplying Syrian cotton to the new fustian industries of South Germany, in exchange for this region's copper and silver. During the early fifteenth century, prominent South German copper merchants, in particular the Fuggers, were marketing these fustians at the Frankfurt Fairs, just when Cologne merchants were bringing larger quantities of English woollens to these same fairs.

The truly decisive economic catalyst that led to a dramatic expansion in transcontinental trade, and to South German dominance over those routes and the commerce of the Brabant Fairs, was a veritable revolution in silver mining that commenced in the 1460s, near the end of a prolonged and severe phase of monetary contraction and deflation. The fall in the general price index (32 per cent in the Flemish index from 1435-9 to 1460-64) thus raised the *real* value of precious metals, to provide a strong incentive to search for and economize on the extraction of silver especially. By the mid-century, South German mining engineers had achieved two major innovations: first, in mechanical engineering, powered waterpumps and drainage adits to permit much deeper mining shafts, free from flooding; and in chemical engineering, the *Seiger* smelting process to separate silver from argentiferous-cupric ores, then lying in vast and untapped deposits throughout South Germany and Central Europe. That revolution produced a five-fold increase in the output of mined silver and copper from the 1460s to its peak in the late 1530s, with annual outputs averaging between 84,200 kg and 91,200 kg of silver -- more silver than would come in from the Americas before the 1560s. Ultimately the lion's share of those two metals flowed down the Rhine to the Antwerp market.

Indeed virtually this entire era of the Central European silver-mining boom coincides almost precisely with an eighty-year boom in English cloth exports based on the Antwerp market. Antwerp's success in capturing the market in both English cloth and South German silver, diverting that silver from Venice, its natural outlet in the south, and from Danzig and Lübeck in the north, was in no small measure due to the combined monetary policies and competitive coinage debasements of England and the Burgundian Low Countries. In 1464-5, Edward IV initiated this mint competition, partly to gain seigniorage revenues, partly

to remedy a still severe scarcity of specie, by very aggressive debasements of both coinages: decreasing the silver contents by 20 per cent, and the gold contents by 26 per cent. That produced an immediate if not commensurate fall in the exchange rate to stimulate exports, i.e., by reducing the foreign cost of acquiring sterling currencies. But, with persistent deflation, this debasement did not lead to any rise in the internal English price level; and the consequent fall in real prices for English woollens on the Antwerp market directly enhanced their appeal as a very marketable commodity for not only the Rhenish merchants, but even more for the growing number of South German merchants who would soon displace them in dominating this trade in English cloth, so enhanced in value by Brabantine and Dutch dyers and finishers.

Shortly after, in 1466, Philip the Good responded with a more modest debasement of the Flemish-Burgundian coinages (initially, silver by 13 per cent, gold by 4 per cent), whose most important consequence was a dramatic change in the bimetallic ratio to become very strongly pro-silver, while the English mint ratio now conversely favoured gold more strongly. Thus Antwerp and its new mint, established in 1474, to supplement the Bruges mint, were able to attract a larger and larger proportion of South German silver flows by offering a higher real value for silver, in relation to both gold and goods, than other competing mints. In the quarter century 1475-99, the Burgundian mints struck three times more pure silver (153,645 kg) than in the preceding quarter-century, and indeed more than at any time since the mid-fourteenth century.

Undoubtedly those two combined monetary changes contributed to the sudden, explosive onset of that prolonged boom in the English cloth export trade. From the late 1440s to the 1460s the cloth trade had been in severe doldrums, slumping by 38 per cent, thanks to a combination of exceptionally adverse circumstances: the aforementioned Anglo-Burgundian conflicts, Anglo-Hanseatic strife, the final phase of the Hundred Years' War, serious warfare elsewhere, continued depopulation, monetary and credit contractions, and other deleterious forces promoting a general commercial depression. But thereafter, from the later 1460s, English cloth exports rose inexorably inspiring a merchant in the Low Countries to compare them to a veritable flood from the sea (*inundacionis maris immensis*): virtually a three-fold rise, from a mean

of 33,302 cloths in 1460-9 to one of 98,998 cloths in 1530-9 (the last decade with complete statistics for exports from all ports). Over this period, London's share of those exports, most of which were sent to Antwerp, had risen from 53 to 82 per cent; thereafter, London's exports rose even more dramatically, from a mean of 80,736 broadcloths (or equivalents) in 1530-9 to one of 110,135 cloths in 1540-9, peaking at 135,594 cloths in 1553-4, when total English exports can be reliably estimated at 150,563 cloths.

This entrepôt commerce in English cloth and South German metals had very quickly attracted merchants and merchandise from all over Europe, at the expense of Bruges, and thereby established the first two and strongest legs of the tripod that supported Antwerp's century-long commercial hegemony. That boom in Antwerp's textile trades was powerful enough to embrace and foster the growth of other cloth producers in the Southern Low Countries: not only the aforementioned *nouvelles draperies*, but also the more luxury-oriented Mechelen drapery, which, more successfully than any other traditional drapery in the southern Low Countries, sought out these trade channels to reach Rhenish, South German, Central, and Eastern European markets. Thus Mechelen managed, from the 1450s, to stave off what had seemed to be imminent and irreversible decline. As Mertens (1990) has demonstrated, Mechelen's cloth production, almost exclusively in costly fine woollens, more than doubled from an historic low in the 1450s to peak in the 1490s, almost, but not quite, regaining the level of output that it had enjoyed in the late 1420s, just before the Calais bullion laws were imposed. From about 1500, however, Mechelen's cloth production resumed its steep decline, and 'after 1530 the textiles of Mechelen disappeared altogether from the markets in central and eastern Europe', though some fine Mechelen woollens were still to be found on the Antwerp market in the 1570s (Thijs 1990).

The last important national group to be attracted from Bruges to Antwerp were the Portuguese, who sought not woollens but rather German silver and copper, as their required trading goods for acquiring spices from their new East Indies empire. By establishing their spice staple at Antwerp in 1501 they added the third and final leg of her commercial tripod. The Spanish, however, remained loyal to Bruges, retaining their

rapidly growing staple in merino wools, so important in provisioning the expanding *nouvelles draperies* and even the Leiden cloth industry, though, for reasons already noted, with only mixed success (see pp. 000).

Structural Changes in the English Cloth Industry: the decline of some older urban centres and a more pronounced shift of cloth manufacturing to smaller-town and rural sites

Within England itself, however, by no means all of the cloth towns and cloth ports enjoyed the fruits of this Antwerp-based export boom. Some had never recovered from the mid-century depression (Hatcher 1996), while others suffered directly from the forces that had funnelled cloth exports into the London-Antwerp nexus. Thus, the final English defeat in the Hundred Years' War and the loss of Gascony-Guienne, combined with concerted Italian determination to exclude English merchants from the Mediterranean, harmed the cloth-export trade from Bristol, Exeter, and Southampton, and some of the older clothmaking towns in Gloucester and the West Country that had serviced these ports. Even worse were the English conflicts with the German Hanse and Denmark, with the consequent loss of direct access to Scandinavian and Baltic markets; and by the mid century, those reverses had taken a devastating toll on the commerce of Hull, Boston, Ipswich, and other north-eastern ports. Thus, Antwerp remained effectively the only available outlet for the export and sales of English woollens to continental markets.

These combined factors, the drastic decline in the commerce of the north-eastern ports and the canalization of the cloth trade on the Antwerp market, may explain the decline of the York cloth industry from this very era, of the 1460s, and also the evident spread of rural clothmaking in Yorkshire. Thus, in her detailed study of this old urban industry, Swanson (1989) contends that merchants in those north-eastern ports, as well as merchants in York who had serviced the export trade, could no longer effectively finance the town's cloth production, forcing its draper-clothiers to migrate to various smaller towns and quasi-villages in surrounding areas of the West Riding to secure the now much more accessible, abundant and cheaper capital supplied by many prosperous landowners and sheep-farmers in this region, especially with the concomitant growth in the Tudor enclosure movement. Furthermore, pointing out that York's cloth guilds were weak and subservient to the town government, she contends that the relocation of such clothiers

elsewhere in the West Riding had nothing at all to do with any supposed guild restrictions or any incentives to seek lower-wage rural labour. At this very same time, the already established local clothiers from Halifax, Leeds, Ripon, Wakefield, Bradford, Doncaster, and other small Yorkshire towns were bypassing York to establish their own direct connections with London-based merchants at Blackwell Hall, to send their woollens to the Antwerp market.

Some considerable support for Swanson's thesis can be found in recent publications of Nightingale (1995-97) that help to explain the contemporary industrial declines of Coventry, Winchester, Colchester, Leicester, and the concomitant expansion of textile production in neighbouring smaller towns and villages. Her analysis begins with that mid-century slump, with combined sharp contractions in both overseas commerce and the money supply, both of which severely reduced the available supply of mercantile credit, far more so in the smaller provincial towns than in London whose proportional share of national commerce had continued to grow, as already noted, throughout the fifteenth century. While many merchants in the provincial cloth towns were forced to vacate their former financial roles, relatively prosperous yeomen farmers and landowners in the surrounding countryside became more and more willing to supply fairly abundant credit on much easier terms, but more so to the village clothiers with whom they had closer social and economic contacts. Of particular importance in this respect, in financing these rural or smaller town clothiers, were the ever more numerous 'chapmen', those itinerant pedlar-broker merchants and money-lenders who operated with very low overheads, sometimes offering barter terms to secure more woollens for direct transport to London. The rural chapmen also co-operated with agents of the London-based Merchants Adventurers or brokers from Blackwell Hall, who were seeking to increase their supplies of woollens for export to the Brabant Fairs by establishing more permanent client relationships with clothiers in the small country towns of East Anglia, the Midlands, the West Country, as well as in Yorkshire. Certainly all these developments are all linked to a relative growth in rural or quasi-rural cloth manufacturing in later fifteenth century England. Nevertheless cloth-manufacturing still enjoyed a very considerable importance in such

major towns as Bristol, Exeter, Worcester, Norwich, Lavenham, and also Salisbury – even if Salisbury’s share of Wiltshire’s cloth production had fallen to 23 percent, by 1467.

Macro-economic forces and technological innovations: structural changes in later fifteenth-century textile markets and the changing fortunes of the newer *nouvelles draperies* and of the *sayetteries* (*draperies légères*)

The success of the burgeoning English cloth export trade from the 1460s, chiefly and more and more exclusively directed to the Antwerp market, and the growing success of all the other textile trades based on the Brabant Fairs, must also be sought in the broader macro-economic forces that transformed the structure of international trade between the 1460s and the 1550s. By the 1460s, the economies of western Europe and the Mediterranean basin were clearly benefiting from a diminution in both the bubonic plagues and the widespread, chronic, and chaotic warfare and brigandage that had proved so disruptive for the past two centuries, especially with the end of the Hundred Years’ War in 1453. Thus they began to experience both demographic and commercial expansion, strongly fortified, as already demonstrated, by the revival in transcontinental trade, and the rapid expansion in Central European copper-silver mining. Those forces in turn promoted much more rapid urban growth and rising middle-class incomes.

At the same time, transportation and transaction costs in international trade were also steadily falling. If increased scale economies (i.e. with larger, more concentrated markets) and greater security were primary reasons, innovations in transport, commercial organization, and financial institutions also played a prominent role, especially in reducing real interest rates from about 20-25 per cent in the 1450s to about 10 per cent in the 1540s. In maritime transport, by far the most momentous innovations (c.1420-60) were those that produced the speedy, heavily-armed, very capacious (600-ton) full-rigged carrack, known as the ‘Atlantic Ship’, whose diffusion contributed to a 25 per cent fall in ocean freight rates by 1500 (Lane 1934). For overland transport, according to Van der Wee (1963, 1991), ‘the progress achieved was even more remarkable’, with the development of large, four-wheeled Hesse carts, specialized cartage firms, commission merchants, and regular, systematic postal services, all of which made overland routes speedier, more reliable,

more efficient than maritime routes; and as we have already seen, the overland route between Antwerp and Venice was so much shorter than the sea-route. Thus these factors explain the ultimate termination of the galley service to north-west Europe. No more Florentine galleys arrived after 1478; and the Venetians, having maintained generally regular annual service up to 1491, sent few galleys thereafter (in 1493-95, 1498, 1500-01, 1503-8, 1516-17, 1519-20, 1530), ceasing all northbound service in 1533.

From all of these innovations and macro-economic forces, the textile markets that evidently benefited and grew the most were those that ranged from the lower-priced semi-luxury cloths to the cheaper, medium-priced fabrics. Whether by default or by design, in pursuing their own comparative advantage, English clothiers and cloth merchants had directed most of their broadcloth and kersey exports to these very markets, or at least towards the lower strata of the luxury markets. At the same time, however, these very same market forces also favoured the expansion of the cheaper line *nouvelles draperies*, in particular Poperinge, Armentières, and Nieuwkerk and others producing woollens at prices below those of standard English broadcloths (whose average value had risen to £3 4s 0d sterling by 1510-19).

By no means all of the *nouvelles draperies* proved to be so successful in using Spanish wools, or with the proper mix, and thus not all managed to thrive in this era; most of the older classic Leie Valley draperies fared little better than did the traditional urban draperies. Furthermore, by the early to mid-sixteenth century, even the newer *nouvelles draperies* were being challenged for industrial supremacy by a collection of various *draperies légères*, and especially by the *sayetteries*, once more led by Hondschoote, producing, as in the thirteenth century, a wide variety of cheap, coarse, generally light worsted and semi-worsted fabrics, again with about one-third to one-half the weight of standard broadcloth (Table 00). Their revival and renewed expansion represents perhaps the most remarkable industrial transformation to be found in the Low Countries at the dawn of the modern era. Thus according to one recent estimate (Soly-Thijs 1979), for the southern Low Countries in the mid-sixteenth century, the production of woollens from the *nouvelles draperies* and from the few remaining traditional urban draperies was about 2.07 million metres of cloth, while output from

the various *sayetteries* and other *draperies légères* was about 76 per cent greater, amounting to 3.64 million metres.

The francophone towns of Douai, Lille, and Valenciennes, may have been the first to re-establish their *sayetteries* or *seques draperies*, in 1403-06, joining the two stalwart survivors of Hondschoote and Arras. Shortly thereafter, in 1410, Tournai (so prominent a say producer in the thirteenth century) issued a new *keure pour le sayetterie encommencie à faire en la ditte ville*, focussing on narrow says *faittes de deux estains* (two warps). Like Arras before them, they now directed their sales chiefly to Germany and the Baltic, while Hondschoote sought out its former Mediterranean markets, via Bruges and then Antwerp. In 1433, Bergues-Saint-Winoc, a neighbour of Hondschoote, founded or re-established a very successful export-oriented *sayetterie*. The much more effective re-establishment of Lille's *sayetterie*, in gaining foreign markets, along with those of Mons and Amiens, has been attributed by many historians to refugees from Arras, after Louis XI had sacked that town in 1479; and according to Clauzel and Calonne (1990), the Lille *sayetterie* 'realized its days of glory only from the end of the fifteenth century and in the modern era'. Indeed, not until 1497 was Saint-Omer was successful in re-establishing its *sayetterie*.

Certainly from the later fifteenth century, these *sayetteries* and other *draperies légères* were benefiting, along with those aforementioned *nouvelles draperies*, from the same general forces of economic expansion, and more especially from the relatively greater rate of demographic, urban, and market growth in the Mediterranean basin, with a generally warmer climate that favoured the consumption of these lighter textiles. By the early to mid-sixteenth century, new *sayetteries* can also be found in such major urban centres as Bruges, Ghent, Ypres, Mechelen, Leuven, Brussels, Leiden, and Armentières; and by the 1560s, they had been joined by Nieuwkerke, Bailleul (Belle), Béthune, Orchies, Diksmuide, Poperinge, Menen, Halluin, Oudenburg, Lo, Douai, Mons, Beauvais, Montreuil, Cambrai, Saint-Quentin, Aubenton, Huy, Péronne, Reims, and Abbeville, some of whom were also producing various serges, ostades, bays, and other 'newfangled' fabrics. But the history of these early-modern *draperies légères*, and especially the prominent

role that says and bays played on the sixteenth-century Antwerp market, more properly lies in a study of West European textiles in the early-modern era, and up to the Industrial Revolution.

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Tables on Textiles: Production, Sales/Export, and Prices

Table 1. Prices of English Wools, in Pounds Sterling per Sack of 364 lb., Export Taxes in shillings per sack and Price Indices for English Wools, for Phelps Brown & Hopkins Composite Price Index and for the Farinaceous and Livestock Indices, with the mean of 1451-75 =100

Year	Mean Price per Sack	Index 1451-75 = 100.00	Mean Price per Sack	Index 1451-75 = 100.00	Phelps Brown & Hopkins Composite 1451-75=100	PB&H Farinaceous Index 1451-75=100	PB&H Livestock Index 1451-75=100
	All wools	£3.4917 st.	2-5, 10-13	£4.8544 st.			
1209-10	2.6576	76.11	2.8002	57.68			
1211-15	2.3986	68.70	2.6163	53.89			
1216-20	2.5859	74.06	2.6445	54.48			
1221-25	2.7658	79.21	2.9696	61.17			
1226-30	2.5703	73.61	2.7131	55.89			
1231-35	3.9028	111.77	3.9884	82.16			
1236-40	3.6790	105.36	3.8324	78.95			
1241-45	3.8393	109.96	3.8090	78.46			
1246-50	3.7844	108.38	4.0517	83.46			
1251-55	3.2514	93.12	3.6105	74.37			
1256-60	3.9299	112.55	3.9477	81.32			
1261-65	4.9503	141.77	4.1838	86.19	82.44	80.00	88.00
1266-70	4.6341	132.72	4.6889	96.59	81.25	95.01	76.60
1271-75	4.8873	139.97	5.0608	104.25	103.84	130.06	96.60
1276-80	6.6916	191.64	6.7912	139.90	96.61	110.67	100.80
1281-85	5.6157	160.83	5.6996	117.41	104.80	133.83	93.20
1286-90	6.0590	173.53	6.28	129.39	80.52	90.42	84.53
1291-95	5.1069	146.26	5.40	111.28	107.45	148.28	82.27
1296-1300	5.5202	158.10	5.5084	113.47	102.34	124.21	91.60
1301-05	5.4982	157.47	5.4409	112.08	92.35	106.11	90.00
1306-10	7.0628	202.27	7.0059	144.32	109.81	126.33	104.17
1311-15	5.7749	165.39	6.0870	125.39	115.33	120.66	122.53
1316-20	6.7335	192.84	7.0119	144.44	161.91	215.74	132.00
1321-25	7.4461	213.25	7.8335	161.37	137.97	167.84	122.07
1326-30	6.2110	177.88	6.6489	136.96	111.07	118.72	108.07
1331-35	5.0309	144.08	5.3697	110.61	114.12	131.16	104.47
1336-40	4.2636	122.11	4.6456	95.70	94.32	91.45	96.27
1341-45	4.4985	128.83	4.9472	101.91	90.06	90.32	93.47
1346-50	4.2219	120.91	4.7133	97.09	102.70	111.53	98.60
1351-55	3.9233	112.36	4.4456	91.58	132.18	146.68	115.00

Table 1. Prices of English Wools, in Pounds Sterling per Sack of 364 lb., Export Taxes in shillings per sack and Price Indices for English Wools, for Phelps Brown & Hopkins Composite Price Index and for the Farinaceous and Livestock Indices, with the mean of 1451-75 =100

1356-60	4.0504	116.00	5.2432	108.01	129.46	129.74	111.60
1361-65	4.3056	123.31	5.6056	115.47	146.64	168.60	123.80
1366-70	5.6243	161.08	6.6894	137.80	146.10	161.46	128.13
1371-75	6.4220	183.92	7.8951	162.64	135.26	130.45	134.13
1376-80	6.5817	188.49	7.5362	155.24	110.62	105.00	110.00
1381-85	5.0965	145.96	5.9950	123.49	112.90	114.19	109.13
1386-90	4.1110	117.74	5.0711	104.46	102.53	96.54	106.20
1391-95	4.2657	122.17	4.9534	102.04	106.33	110.89	102.80
1396-1400	4.8135	137.86	5.2412	107.97	110.84	117.42	109.00
1401-05	5.0648	145.05	5.7018	117.46	114.84	126.71	107.20
1406-10	4.9737	142.44	5.7594	118.64	111.23	114.81	108.47
1411-15	5.4256	155.38	5.9540	122.65	108.11	106.66	107.53
1416-20	4.1552	119.00	4.5916	94.59	113.40	121.80	107.50
1421-25	4.2046	120.42	5.2689	108.54	101.48	106.80	94.26
1426-30	4.6128	132.11	5.0145	103.30	112.27	119.95	102.38
1431-35	4.9279	141.13	5.6134	115.63	108.48	115.53	101.40
1436-40	4.4399	127.16	5.3218	109.63	122.01	143.87	106.80
1441-45	4.1877	119.93	5.2013	107.15	92.53	80.40	98.80
1446-50	4.1190	117.96	5.3785	110.80	100.90	96.21	106.20
1451-55	3.1841	91.19	4.6989	96.79	100.25	103.53	97.40
1456-60	2.9228	83.71	3.7752	77.77	97.06	92.02	100.80
1461-65	4.0562	116.17	5.1857	106.82	102.73	107.04	100.00
1466-70	4.3873	125.65	5.6446	116.28	106.75	101.47	111.80
1471-75	2.9081	83.29	4.9679	102.34	97.76	98.94	96.00
1476-80	2.9744	85.18	5.8475	120.46	90.06	94.25	79.20
1481-85	5.4730	156.74	8.6212	177.59	127.38	145.47	120.00
1486-90	3.3575	96.16	7.4620	153.71	102.77	97.84	105.80
1491-95	3.2301	92.51	5.7681	118.82	106.80	104.36	111.80
1496-1500	3.3761	96.69	5.2650	108.46	96.70	95.61	95.80

**Table 1. Prices of English Wools, in Pounds Sterling per Sack of 364 lb.,
Export Taxes in shillings per sack and Price Indices for English Wools, for Phelps Brown & Hopkins
Composite Price Index and for the Farinaceous and Livestock Indices, with mean of 1451-75 =100**

Year	Denizen Export Duties on Woolsacks in shillings	Denizen Export Duties as Percent of Wool Prices	Alien Export Duties on Woolsacks in shillings	Alien Export Duties as Percent of Wool Prices
1209-10				
1211-15				
1216-20				
1221-25				
1226-30				
1231-35				
1236-40				
1241-45				
1246-50				
1251-55				
1256-60				
1261-65				
1266-70				
1271-75	5.334	5.27%	5.334	5.27%
1276-80	6.667	4.91%	6.667	4.91%
1281-85	6.667	5.85%	6.667	5.85%
1286-90	6.667	5.31%	6.667	5.31%
1291-95	14.667	13.58%	14.667	13.58%
1296-1300	22.667	20.58%	22.667	20.58%
1301-05	6.667	6.13%	8.667	7.96%
1306-10	6.667	4.76%	10.000	7.14%
1311-15	6.667	5.48%	6.667	5.48%
1316-20	8.332	5.94%	9.166	6.54%
1321-25	8.000	5.11%	12.000	7.66%
1326-30	12.227	9.19%	15.560	11.70%
1331-35	10.373	9.66%	14.559	13.56%
1336-40	29.556	31.81%	41.501	44.67%
1341-45	40.247	40.68%	43.333	43.80%
1346-50	40.000	42.43%	43.333	45.97%
1351-55	40.000	44.99%	43.333	48.74%
1356-60	40.000	38.14%	43.333	41.32%
1361-65	42.776	38.16%	46.110	41.13%
1366-70	46.667	34.88%	50.000	37.37%

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Export Taxes in shillings per sack and Price Indices for English Wools, for Phelps Brown & Hopkins
Composite Price Index and for the Farinaceous and Livestock Indices, with mean of 1451-75 =100**

1371-75	50.000	31.67%	53.333	33.78%
1376-80	50.000	33.17%	53.333	35.38%
1381-85	50.000	41.70%	53.333	44.48%
1386-90	48.516	47.84%	52.166	51.43%
1391-95	49.830	50.30%	53.163	53.66%
1396-1400	50.000	47.70%	56.555	53.95%
1401-05	51.187	44.89%	61.187	53.66%
1406-10	50.000	43.41%	60.000	52.09%
1411-15	50.000	41.99%	60.000	50.39%
1416-20	50.000	54.45%	68.000	74.05%
1421-25	43.841	41.60%	62.658	59.46%
1426-30	40.000	39.88%	53.333	53.18%
1431-35	40.000	35.63%	57.103	50.86%
1436-40	40.000	37.58%	62.267	58.50%
1441-45	40.000	38.45%	63.333	60.88%
1446-50	40.000	37.19%	63.333	58.88%
1451-55	42.981	45.74%	77.244	82.19%
1456-60	50.000	66.22%	110.000	145.69%
1461-65	48.833	47.08%	106.110	102.31%
1466-70	40.000	35.43%	76.667	67.91%
1471-75	41.200	41.47%	80.667	81.19%
1476-80	40.000	34.20%	76.667	65.56%
1481-85	40.000	23.20%	76.667	44.46%
1486-90	40.000	26.80%	76.667	51.37%
1491-95	40.000	34.67%	76.667	66.46%
1496-1500	40.000	37.99%	76.667	72.81%

* Prices for wools from Wiltshire, Hampshire, and St. Swithin's manors of the Bishop of Winchester, Wiltshire and the Berkshire Downs, the Vale of White Horse to Thames Valley; Oxfordshire, Berkshire, and adjacent Wiltshire; Worcestershire, the Cotswolds (Oxfordshire, Gloucestershire, and adjacent Wiltshire); the Chilterns (Oxon, Bucks, Herts); NE Oxfordshire and north Bucks.

Sources: Terence H. Lloyd, *The Movement of Wool Prices in Medieval England*, Economic History Review Supplements no. 6 (Cambridge, 1973), Statistical Appendix, cols. 2-5, 10-13; pp.35-51; *Calendar of the Fine Rolls, Edward II - Henry VII*, Vols. IV (1327-1337) to XXI (1471-1485); *Rotuli parliamentorum ut et petitiones et placita in Parlamento*, 6 vols. (London, 1767-77), Vols. II - V; F.R. Bames, 'The Taxation of Wool, 1327-1348', in G. Unwin, ed., *Finance and Trade Under Edward III* (London, 1918), pp. 137-77; N.S.B. Gras, *The Early English Customs System* (Cambridge,

Mass., 1918), pp. 76-80; E.M. Carus Wilson and Olive Coleman, eds., *England's Export Trade, 1275-1547* (Oxford, 1963), pp. 194-96; W.M. Ormrod, 'The Crown and the English Economy, 1290-1348', in Bruce M.S. Campbell, ed., *Before the Black Death: Studies in the 'Crisis' of the Early Fourteenth Century* (Manchester, 1991), pp. 149-83; E.H. Phelps Brown and S.V. Hopkins, 'Seven Centuries of the Prices of Consumables Compared with Builders' Wage-Rates,' *Economica*, 23 (Nov. 1956), reprinted in their *A Perspective of Wages and Prices* (London, 1981), pp. 24-50, containing additional statistical appendices.

Table 2. Prices of English Wools, by Sack Weight, at the Calais Staple, in 1475 and 1499

No.	Name of Wool: and County of Origin	1475 Calais Weight in £ sterling	1475 English Sack Weight in £ ster	1475 English Sack Weight in £ groot Flemish	1499 Calais Weight in £ sterling	1499 English Sack Weight in £ ster	1499 English Sack Weight in £ groot Flemish	1499 Index % of Leominster Wool Price
1	Leominster, Hereford				22.333	25.807	37.498	100.0
2	March Wools, Shropshire/Hereford	13.333	15.407	18.134	17.000	19.644	28.543	76.1
3	Middle Leominster				15.667	18.104	26.305	70.2
4	Fine Cotswolds (Glouc., Worc. Oxf.)	12.000	13.867	16.321	13.000	15.022	21.827	58.2
5	High Lindsey, Lincolnshire	11.000	12.711	14.961	9.333	10.785	15.670	41.8
6	Fine Berkshire	11.000	12.711	14.961	11.667	13.482	19.589	52.2
7	Leominster Refuse				11.000	12.711	18.469	49.3
8	Middle March: Shropshire/Hereford				11.000	12.711	18.469	49.3
9	Fine Young Cotswolds				10.333	11.940	17.349	46.3
10	Middle Cotswolds				9.000	10.400	15.111	40.3
11	Low Lindsey, Lincolnshire				9.000	10.400	15.111	40.3
12	Kesteven, Lincolnshire	10.333	11.940	14.054	8.667	10.015	14.552	38.8
13	Wiltshire	10.333	11.940	14.054				
14	Oxfordshire: Henley	10.333	11.940	14.054				
15	Nottinghamshire	10.000	11.556	13.601				
16	Clay Wolds	10.000	11.556	13.601				
17	Nottinghamshire: Hatfield	9.833	11.363	13.374				
18	Warwickshire	9.833	11.363	13.374				
19	Lindsey Marsh, Lincolnshire	9.833	11.363	13.374				
20	North Holland, Lincolnshire	9.833	11.363	13.374	8.333	9.629	13.991	37.3
21	South Holland, Lincolnshire	9.833	11.363	13.374	8.333	9.629	13.991	37.3
22	Leicestershire	9.667	11.170	13.148				
23	Rutland	9.667	11.171	13.148	8.333	9.629	13.991	37.3
24	March Refuse				8.333	9.629	13.991	37.3
25	Middle Berkshire				8.333	9.629	13.991	37.3
26	Staffordshire	9.500	10.978	12.921				
27	Buckinghamshire	9.333	10.785	12.694				
28	Northamptonshire	9.333	10.785	12.694				
29	Bedfordshire	9.333	10.785	12.694				
30	Huntingdonshire	9.333	10.785	12.694				
31	Hertfordshire	9.167	10.593	12.467				
32	Cambridgeshire	9.167	10.593	12.467				
33	Derbyshire	9.167	10.593	12.468				
34	Hampshire	9.167	10.593	12.467				

Table 2. Prices of English Wools, by Sack Weight, at the Calais Staple, in 1475 and 1499

No.	Name of Wool: and County of Origin	1475	1475	1475	1499	1499	1499	1499
		Calais Weight in £ sterling	English Sack Weight in £ ster	English Sack Weight in £ groot Flemish	Calais Weight in £ sterling	English Sack Weight in £ ster	English Sack Weight in £ groot Flemish	Index % of Leominster Wool Price
35	Surrey	8.833	10.207	12.014	7.333	8.474	12.313	32.8
36	Yorkshire Wolds	8.833	10.207	12.014				
37	Derbyshire: Peak District	8.333	9.629	11.334				
38	Dorset	8.667	10.015	11.787				
39	Essex	8.333	9.630	11.334				
40	Sussex	8.333	9.629	11.334				
41	Kent	8.000	9.244	10.881	7.667	8.860	12.873	34.3
42	Norfolk	7.667	8.859	10.427	7.333	8.474	12.312	32.8
43	Yorkshire	7.000	8.089	9.521				
44	Middle Young Cotswolds				7.000	8.089	11.753	31.3
45	Cotswolds Refuse				6.333	7.318	10.634	28.4
46	Middle Kesteven				6.000	6.933	10.074	26.9
47	Middle Holland				5.666	6.547	9.513	25.4
48	Middle Rutland				5.667	6.548	9.514	25.4

Calais sack = 315 lb.

Source: 'Noumbre of Weyghtes', in British Library, Cotton Vespasian E. IX, fo. 106r-7r; Algemeen Rijksarchief België, Rekenkamer, doc. no. 1158, fo. 226; 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.

Table 3. English Woolsack and Broadcloth Exports, in 5 year means, 1281-5 to 1541-45

Years (5) Michaelmas	Woolsacks: by Denizens	% of Total	Woolsacks: by Aliens	% of Total	Total Sacks	Equivalent Broadcloths	Broadcloth Exports	Total as Equivalent Broadcloth
1281-85					26,897.20	116,554.44		116,554.44
1286-90					26,040.80	112,843.38		112,843.38
1291-95					27,919.20	120,983.11		120,983.11
1296-00					23,041.20	99,845.12		99,845.12
1301-05					32,344.00	140,157.23		140,157.23
1306-10	23,041.60	59.30%	15,974.60	40.70%	39,016.20	169,070.07		169,070.07
1311-15	n.a.		n.a.		35,328.60	153,090.48		153,090.48
1316-20	n.a.		n.a.		26,084.60	113,033.18		113,033.18
1321-25	14,074.30	55.56%	11,241.73	44.44%	25,315.40	109,699.98		109,699.98
1326-30	17,888.87	70.76%	7,108.73	29.24%	24,997.60	108,322.85		108,322.85
1331-35	24,633.00	72.97%	9,012.60	27.03%	33,645.60	145,797.49		145,797.49
1336-40	13,180.00	69.44%	7,344.80	30.56%	20,524.80	88,940.73		88,940.73
1341-45	10,565.51	58.09%	7,510.07	41.91%	18,075.58	78,327.43		78,327.43
1346-50	n.a.		n.a.		27,183.13	117,793.45	2,556	120,349.12
1351-55	10,169.40	34.39%	20,581.00	65.61%	30,750.40	133,251.63	1,921	135,172.83
1356-60	n.a.		n.a.		32,666.40	141,554.29	9,061	150,615.29
1361-65	20,899.95	69.03%	9,229.25	30.97%	30,129.20	130,559.77	11,717	142,276.97
1366-70	16,345.60	56.81%	10,106.20	43.19%	26,451.80	114,624.38	14,527	129,151.58
1371-75	16,712.02	64.39%	9,155.78	35.61%	25,867.80	112,093.71	12,211	124,305.11
1376-80	16,898.00	82.67%	3,572.20	17.33%	20,470.20	88,704.13	13,643	102,346.73
1381-85	13,886.80	78.97%	3,630.60	21.03%	17,517.40	75,908.67	22,242	98,150.67
1386-90	15,574.20	80.07%	3,737.80	19.93%	19,312.00	83,685.27	25,610	109,295.27
1391-95	13,593.20	72.00%	4,920.60	28.00%	18,513.80	80,226.40	39,525	119,751.60
1396-00	14,515.80	86.15%	2,373.80	13.85%	16,889.60	73,188.21	38,775	111,963.31
1401-05	11,803.40	91.57%	1,100.80	8.43%	12,904.20	55,918.16	34,570	90,487.76
1406-10	13,392.80	89.41%	1,575.40	10.59%	14,968.20	64,862.15	31,746	96,608.35
1411-15	12,633.20	92.72%	960.00	7.28%	13,593.20	58,903.82	27,183	86,087.22
1416-20	13,355.40	92.98%	1,009.60	7.02%	14,365.00	62,248.29	27,977	90,225.49
1421-25	13,363.60	93.77%	881.60	6.23%	14,245.20	61,729.15	40,275	102,003.75
1426-30	12,429.00	92.60%	929.60	7.40%	13,358.60	57,887.22	40,406	98,292.82
1431-35	8,679.40	85.18%	705.20	14.82%	9,384.60	40,666.57	40,027	80,693.97
1436-40	4,197.80	41.65%	1,181.00	58.35%	5,378.80	23,308.12	47,072	70,380.12
1441-45	6,502.20	69.96%	1,527.20	30.04%	8,029.40	34,794.04	56,456	91,249.84
1446-50	9,176.80	88.50%	588.40	11.50%	9,765.20	42,315.83	45,847	88,162.63
1451-55	7,654.60	84.61%	1,136.20	15.39%	8,790.80	38,093.44	36,700	74,793.44
1456-60	5,246.80	81.17%	1,139.60	18.83%	6,386.40	27,674.38	36,489	64,163.38
1461-65	5,902.40	90.94%	483.60	9.06%	6,386.00	27,672.65	29,002	56,674.25

Table 3. English Woolsack and Broadcloth Exports, in 5 year means, 1281-5 to 1541-45

1466-70	8,508.80	91.12%	784.80	8.88%	9,293.60	40,272.24	37,447	77,719.64
1471-75	7,381.20	86.13%	1,072.20	13.87%	8,453.40	36,631.37	36,537	73,168.57
1476-80	7,822.80	81.99%	913.20	18.01%	8,736.00	37,855.97	50,441	88,296.77
1481-85	6,669.60	88.46%	951.80	11.54%	7,621.40	33,026.04	54,198	87,223.84
1486-90	8,923.60	91.51%	827.40	8.49%	9,751.00	42,254.30	50,005	92,259.50
1491-95	5,881.20	83.48%	874.00	16.52%	6,755.20	29,272.51	56,945	86,217.11
1496-00	8,676.80	96.98%	260.40	3.02%	8,937.20	38,727.84	62,583	101,311.24
1501-05	6,735.20	85.62%	1,071.60	14.38%	7,806.80	33,829.44	77,271	111,100.24
1506-10	6,230.40	83.97%	1,095.80	16.03%	7,326.20	31,746.84	84,803	116,549.44
1511-15	6,758.80	95.30%	328.40	4.70%	7,087.20	30,711.18	86,592	117,303.18
1516-20	7,521.60	92.23%	672.80	7.77%	8,194.40	35,509.04	90,099	125,607.84
1521-25	4,598.60	89.47%	533.00	10.53%	5,131.60	22,236.92	82,269	104,505.72
1526-30	4,491.00	92.91%	343.80	7.09%	4,834.80	20,950.78	93,534	114,485.18
1531-35	2,235.20	75.23%	770.00	24.77%	3,005.20	13,022.52	94,087	107,109.32
1536-40	3,815.60	96.90%	135.80	3.10%	3,951.40	17,122.72	109,278	126,400.72
1541-45	3,879.33	84.01%	696.67	15.99%	4,576.00	19,829.32	118,056	137,884.92

Sources: E.M. Carus Wilson and Olive Coleman, eds., *England's Export Trade, 1275-1547* (Oxford, 1963), pp. 36-119; A.R. Bridbury, *Medieval English Clothmaking: An Economic Survey* (London, 1982), Appendix F, pp. 118-22.

Table 4.

**Exports of English Broadcloths of Assise
in quinquennial means, 1346-50 to 1551-55**

Years: Michaelmas	Denizen Exports	Hansard Exports	Other Aliens Exports	TOTAL EXPORTS	London Denizens	London Hansards	London Other Aliens	London Total% of Total	London: London:
1346-50	2,246		310	2,556					
1351-55	1,586		335	1,921					
1356-60	7,376	174	1,511	9,061					
1361-65	9,099	1,020	1,598	11,717					
1366-70	10,978	1,310	2,240	14,527					
1371-75	9,102	1,240	1,869	12,211					
1376-80	9,673	1,383	2,586	13,643					
1381-85	13,949	2,800	5,493	22,242					
1386-90	17,192	3,125	5,293	25,610					
1391-95	22,974	6,346	10,205	39,525					
1396-00	23,318	5,646	9,811	38,775					
1401-05	19,450	6,548	8,571	34,570					
1406-10	12,997	6,568	12,181	31,746	4,889	3,406	5,956	14,251	44.89%
1411-15	12,284	4,980	9,919	27,183	4,295	2,426	7,771	14,493	53.31%
1416-20	14,051	5,722	8,205	27,977	3,869	2,862	5,967	12,698	45.39%
1421-25	21,180	6,935	12,160	40,275	6,076	3,857	6,879	16,812	41.74%
1426-30	20,334	5,304	14,768	40,406	4,975	3,995	8,528	17,498	43.30%
1431-35	25,474	4,062	10,492	40,027	11,034	2,958	3,077	17,069	42.64%
1436-40	22,864	9,145	15,063	47,072	6,485	5,036	6,603	18,124	38.50%
1441-45	28,163	11,336	16,957	56,456	10,071	7,831	6,035	23,938	42.40%
1446-50	25,286	9,301	11,259	45,847	6,356	5,721	2,152	14,229	31.04%
1451-55	20,785	8,214	7,701	36,700	8,484	6,749	1,186	16,419	44.74%
1456-60	18,911	10,017	7,562	36,489	7,829	7,643	690	16,162	44.29%
1460-65	16,046	8,584	4,371	29,002	8,965	6,407	668	16,041	55.31%
1466-70	21,255	5,807	10,386	37,447	13,789	4,357	2,642	20,788	55.51%
1471-75	20,705	3,415	12,417	36,537	13,727	3,061	6,540	23,328	63.85%
1476-80	32,185	8,226	10,030	50,441	19,283	7,033	8,128	34,444	68.29%
1481-85	29,191	13,439	11,568	54,198	16,160	12,434	7,700	36,293	66.96%
1486-90	25,892	13,740	10,373	50,005	14,369	12,465	8,288	35,122	70.24%
1491-95	29,513	15,100	12,332	56,945	14,135	13,868	7,890	35,893	63.03%
1496-00	35,668	17,175	9,740	62,583	20,047	16,282	6,417	42,746	68.30%
1501-05	44,803	17,638	14,830	77,271	21,224	16,819	8,567	46,611	60.32%
1506-10	46,832	16,984	20,987	84,803	27,352	16,473	8,566	52,390	61.78%
1511-15	49,110	21,621	15,861	86,592	33,493	20,739	8,025	62,257	71.90%
1516-20	51,128	20,411	18,559	90,099	36,485	19,766	6,834	63,084	70.02%
1521-25	48,675	18,457	15,137	82,269	35,565	18,120	8,170	61,854	75.19%

Table 4.

**Exports of English Broadcloths of Assise
in quinquennial means, 1346-50 to 1551-55**

Years: Michaelmas	Denizen Exports	Hansard Exports	Other Aliens Exports	TOTAL EXPORTS	London Denizens	London Hansards	London Other Aliens	London Total% of Total	London: Total%
1526-30	56,942	20,402	16,190	93,534	42,657	19,486	10,207	72,350	77.35%
1531-35	53,966	24,274	15,847	94,087	40,988	24,083	10,431	75,503	80.25%
1536-40	61,008	30,747	17,523	109,278	46,704	30,666	14,360	91,731	83.94%
1541-45	n.a.	n.a.	n.a.	118,056	n.a.	n.a.	n.a.	101,550	86.02%
1546-50	n.a.	n.a.	n.a.	135,190	n.a.	n.a.	n.a.	123,780	91.56%
1551-55	n.a.	n.a.	n.a.	126,595	n.a.	n.a.	n.a.	110,888	87.59%

Notes: English Broadcloth = 24 yds by 1.75 yds,
for cloths of assise.:

4 straits and dozens = 1 broadcloth; and 3 kerseys = 1 broadcloth.

From one sack of wool, 4.333 broadcloths could be manufactured

Sources: E.M. Carus Wilson and Olive Coleman, eds., *England's Export Trade, 1275-1547* (Oxford, 1963), pp. 36-119; A.R. Bridbury, *Medieval English Clothmaking: An Economic Survey* (London, 1982), Appendix F, pp. 118-22.

Table 5. Annual Sales of the Drapery Excise-Tax Farms and Other Production Indices for the Woollen Cloth and Sayetterie Industries of Flanders: quinquennial means, 1315 - 1540

Years Ending	Ghent: Cloth Outputs: Ramen and Nieuw Huusgeld in £ paiement (a)	Ghent: Total Drapery & Related Tax Farms in £ paiement (b)	Ypres: Total Drapery Tax Farms in £ paris (c)	Ypres: Total Stalls Rented in the Wulle and Lakenhallen (d)	Hondshoote Say Tax Farm in £ paris	No. of Says in Tax Farm (e)	No. of Says Exported
1316-20	7,442.28	7,442.28					
1321-25	4,136.92	4,395.72					
1326-30	3,408.60	4,787.80					
1331-35	4,339.40	6,011.30					
1336-40	3,516.50	4,946.40					
1341-45	3,360.60	5,002.80					
1346-50	2,689.60	4,375.12					
1351-55	2,755.00	4,580.20					
1356-60	2,468.80	4,511.40					
1361-65	2,231.10	3,873.00					
1366-70	1,383.60	2,697.00					
1371-75	912.00	1,908.85					
1376-80	774.18	1,572.44			44.000	1,320	
1381-85	576.07	896.86			29.600	888	
1386-90	469.70	942.01			37.600	1,128	
1391-95	missing	missing			39.200	1,176	
1396-1400	missing	missing			50.000	1,500	
1401-05	235.40	617.30			54.800	1,644	
1406-10	306.17	641.19	2,198.30	422.33	78.000	2,340	
1411-15	292.37	619.93	3,202.83	437.80	85.600	2,568	
1416-20	330.13	711.28	3,202.94	500.90	117.600	3,528	
1421-25	344.93	824.76	3,187.60	421.20	152.800	4,584	
1426-30	373.23	945.93	2,997.80	367.30	165.800	4,974	
1431-35	290.70	892.55	2,823.92	325.60	172.000	5,160	
1436-40	170.67	591.31	1,872.26	192.60	176.000	5,280	
1441-45	176.73	577.23	2,117.44	182.40	180.000	5,400	
1446-50	190.93	580.47	2,129.40	152.20	278.000	8,340	
1451-55	138.17	435.96	1,812.20	97.00	345.600	10,368	
1456-60	70.57	396.36	1,761.76	70.00	388.000	11,640	
1461-65	52.17	445.77	1,121.12	63.80	404.000	12,120	
1466-70	75.13	580.73	1,123.72	70.60	435.200	13,056	

Table 5. Annual Sales of the Drapery Excise-Tax Farms and Other Production Indices for the Woollen Cloth and Sayetterie Industries of Flanders: quinquennial means, 1315 - 1540

Years Ending	Ghent: Cloth Outputs: Ramen and Nieuw Huusgeld in £ paiement (a)	Ghent: Total Drapery & Related Tax Farms in £ paiement (b)	Ypres: Total Drapery Tax Farms in £ parisis (c)	Ypres: Total Stalls Rented in the Wulle and Lakenhallen (d)	Hondshoote Say Tax Farm in £ parisis	No. of Says in Tax Farm (e)	No. of Says Exported
1471-75	110.40	1,224.00	983.84	77.80	464.000	13,920	
1476-80	74.30	1,105.85	795.42	40.80	424.000	12,720	
1481-85	70.20	1,185.00	832.52	24.90	455.000	13,650	
1486-90	17.17	882.70	1,306.37	8.40	488.700	14,661	
1491-95	7.60	861.33	1,235.42	0.00	399.950	11,999	
1496-1500	19.20	1,055.20	1,723.72	0.00	424.000	12,720	
1501-05	22.00	1,466.00			588.000	17,640	
1506-10	15.60	1,672.60			667.200	20,016	
1511-15	16.20	1,720.20			757.600	22,728	
1516-20	10.40	1,846.40			980.000	29,400	
1521-25					1,071.60	32,148	
1526-30					1,163.20	34,896	31,583.44
1531-35					1,452.80	43,584	41,184.50
1536-40					1,439.20	43,176	42,761.40

Notes:

(a) The *pond* or *livre de paiement* was worth 6d. groot Flemish (6s. *parisis*); and thus £1 *groot* Flemish = £40 *paiement*.

(b) Ghent: the sum of the Ramen, Nieuw Huusgeld, Repe, Elle de Vrijdag Marekt, and Stallen in de Wulhuus, to which was added the Waghe (weighing scales) in the 15th century. The last two excise-tax farms are commercial and evidently cover other commodities, as well as wool and cloth.

(c) Ypres: the sum of the Waghe and Wullescale, Lakene, Snede (Retail), and Blauvaerwers (blue-dyers) excise farms. The *livre (pond) parisis*, with 20s per *livre*, was worth 20d. *groot* Flemish; and thus £1 *groot* Flemish = £12 *parisis* = £40 *paiement*.

(d) Hondshoote: Each say produced was taxed at 8d. *parisis*; and thus each *livre parisis* represented the output of 30 say.

Source s: Stadsarchief Gent, Stadsrekeningen, Reeks 400:4-43, 1335-1520; Algemeen Rijksarchief België, Rekenkamer, reg. nos. 38,635-72; Émile Coornaert, *La draperie-sayetterie d'Hondschoote, XIVE-XVIIIe siècles* (Paris, 1930); calculated from Appendix IV, pp. 485-90.

Table 6.

**Annual Sales of the Drapery Excise-Tax Farms and other Production Indices
for the Woollen Cloth Industries of Brabant and Holland: Mechelen, Leuven, and Leiden
in quinquennial means, 1316-20 to 1546-50**

Year Ending	Mechelen: Total Drapery Tax Farms in £ oude groot (a)	Leuven: £ assisegeld (b) rate-adjusted	Leuven: Total Drapery Tax Farms £ oude groot actual	Rijn- Gulden	Leiden: Woolfell Imports (c)	Leiden: Equivalent Woolsacks	Leiden: Cloth Outputs Halvelaken
1316-20	1,177.17	17,004.72	250.29				
1321-25	1,210.02	16,497.32	240.81				
1326-30	1,277.82	18,670.87	351.44				
1331-35	1,563.71	25,817.38	709.40				
1336-40	1,045.05	24,072.47	803.34				
1341-45	782.31	15,551.40	525.56				
1346-50	506.86	13,558.63	564.94				
1351-55	707.91	9,463.95	394.33				
1356-60	467.72	6,218.75	259.11				
1361-65	496.24	5,393.53	224.73				
1366-70	597.66	4,091.02	169.34				
1371-75	540.70	3,306.44	135.07	2,252.999			
1376-80	471.24	4,164.30	170.87	2,801.349			
1381-85	397.29	3,482.17	143.18	2,374.656			
1386-90	353.35	1,979.51	81.77	1,471.874			
1391-95	297.67	1,426.88	58.93	989.317			
1396-1400	300.80			685.180			
1401-05	270.29			567.118			
1406-10	272.01			513.357			
1411-15	275.45			344.486			
1416-20	276.33			302.180			
1421-25	357.12			277.769			
1426-30	352.71			211.771			
1431-35	220.53			213.642			
1436-40	186.98			257.438			
1441-45	190.88			286.892			
1446-50	162.95			268.322	171,393.00	714.14	
1451-55	140.63			451.771	288,911.40	1,203.80	
1456-60	136.15			998.364	308,069.80	1,283.62	
1461-65	154.52			458.636	297,906.00	1,241.28	
1466-70	162.74			590.210	286,951.50	1,195.63	14,745.00

Table 6.

**Annual Sales of the Drapery Excise-Tax Farms and other Production Indices
for the Woollen Cloth Industries of Brabant and Holland: Mechelen, Leuven, and Leiden
in quinquennial means, 1316-20 to 1546-50**

Year Ending	Mechelen: Total Drapery Tax Farms in £ oude groot (a)	Leuven: £ assisegeld (b) rate-adjusted	Leuven: Total Drapery Tax Farms £ oude groot actual	Rijn- Gulden	Leiden: Woolfell Imports (c)	Leiden: Equivalent Woolsacks	Leiden: Cloth Outputs Halvelaken
1471-75	185.39				342,359.90	1,426.50	16,555.50
1476-80	225.44				409,500.12	1,706.25	24,198.50
1481-85	235.75				402,846.80	1,678.53	24,259.70
1486-90	258.11				240,073.45	1,000.31	21,289.00
1491-95	212.67				129,472.00	539.47	20,780.00
1496-1500	243.39				321,236.60	1,338.49	22,223.60
1501-05	224.30				290,307.40	1,209.61	25,148.20
1506-10	224.33				298,237.30	1,242.66	23,782.80
1511-15	185.16				324,643.20	1,352.68	24,673.20
1516-20	190.05				344,888.40	1,437.04	26,244.90
1521-25	181.21				190,610.60	794.21	24,334.60
1526-30	143.71				194,221.00	809.25	23,094.20
1531-35	127.51				168,948.00	703.95	17,257.60
1536-40	94.97				228,837.00	953.49	16,646.20
1541-45	115.40				190,428.81	793.45	14,971.00
1546-50	87.75						11,747.00

Sources: Stadsarchief Mechelen, Stadsrekeningen, 1316-1550, Series I: nos. 3-225; Algemeen Rijksarchief, Rekenkamer, reg. nos. 41,219-85; Stadsarchief Leuven, Stadsrekeningen, 1345-1500, nos. 4986-5124; Nicolaas W. Posthumus, *Geschiedenis van de Leidsche lakenindustrie*, 3 vols. (The Hague, 1908-1939), Vol. I: *De Middeleeuwen, veertiende tot zestiende eeuw* (1908), pp. 370-425; Nicholas W. Posthumus, ed., *Bronnen tot de geschiedenis van de leidsche textielnijverheid, 1333-1795*, 3 vols. (The Hague, 1910-1922), Vol. II, 317-20.

Table 7. Weights of Selected Textiles from France, the Low Countries, and England

Date From	Date To	Place	Name	Length ells	Width qtr ells	Square ells Flemish (0.49m)	Length yards	Width yards
medieval semi-worsted								
1278		Bruges	dicke saye	30.000	8.000	60.000	22.966	1.531
1278		Bruges	dinne saye	38.000	8.000	76.000	29.090	1.531
1281		Saint Omer	saye drappée	37.000	8.000	74.000	28.325	1.531
1284		Ypres	saye	39.000	9.500	92.625	29.856	1.818
1294	1302	Valenciennes	dyed biffes	37.000	7.000	64.750	28.325	1.340
1294	1302	Valenciennes	renforchiés	37.000	7.500	69.375	28.325	1.435
1294	1302	Valenciennes	sans roies draps	25.000	7.000	43.750	19.138	1.340
1294	1302	Valenciennes	estainfors couvertures	20.000	7.000	35.000	15.311	1.340
1294	1302	Valenciennes	draps pers (biffe?)	42.000	7.000	73.500	32.152	1.340
1294	1302	Valenciennes	grand drap rayé	33.000	7.000	57.750	25.262	1.340
1300		Arras	saye endrappée	50.000	8.000	100.000	38.276	1.531
1300		Arras	biffes	40.000	8.000	80.000	30.621	1.531
1300		Arras	couvertures d'estanfort	25.000	8.000	50.000	19.138	1.531
1333		Arras	drap entier (?)	52.000	7.500	97.500	39.808	1.435
1333		Arras	grand drap	55.000	7.000	96.250	42.104	1.340
1394		Douai	plain drap oint	40.000	9.500	95.000	30.621	1.818
1394		Douai	dicquedune oint	40.000	9.500	95.000	30.621	1.818
early-modern semi-worsted								
1537		Bergues-St. Winoc	fine narrow say	40.000	4.000	40.000	30.621	0.766
1571	1586	Hondschoote	small say	35.000	3.500	30.625	26.794	0.670
1571	1586	Hondschoote	broad double say	35.000	6.500	56.875	26.794	1.244
1578		Colchester	single bays	44.414	5.225	58.017	34.000	1.000

Table 7. Weights of Selected Textiles from France, the Low Countries, and England

Date From	Date To	Place	Name	Length ells	Width qtr ells	Square ells Flemish (0.49m)	Length yards	Width yards
1578		Colchester	broad say	13.063	5.225	17.064	10.000	1.000
1578		Colchester	silk say	19.594	5.225	25.596	15.000	1.000
1578		Coggeshall	Coxall bay	73.152	9.144	167.225	56.000	1.750
1578		Coggeshall	Coxall bay minikin	41.801	7.838	81.906	32.000	1.500
1578		Essex	double bays	44.414	7.185	79.773	34.000	1.375
1578		Essex-Suffolk	double bay	44.414	10.450	116.034	34.000	2.000
1578		Essex-Suffolk	single bays	44.414	9.144	101.530	34.000	1.750
1578		Essex-Suffolk	Rasse	31.351	7.838	61.430	24.000	1.500
1578		Essex-Suffolk	Stam inett	28.738	7.838	56.311	22.000	1.500
1578		Essex-Suffolk	narrow worsted	19.594	5.225	25.596	15.000	1.000
1578		East-Anglia, Norfolk	Norwich grogaines	18.288	5.225	23.889	14.000	1.000
1578		East-Anglia, Norfolk	Double Mockadoes	18.288	5.225	23.889	14.000	1.000
1578		East-Anglia, Norfolk	Single Mockadoes	18.288	5.225	23.889	14.000	1.000
1578		East-Anglia, Norfolk	Plommets	18.288	5.225	23.889	14.000	1.000
1578		East-Anglia, Norfolk	Mockaodes, tuft	18.288	5.225	23.889	14.000	1.000
1578		East-Anglia, Norfolk	Carells	18.288	5.225	23.889	14.000	1.000
1578		Naples	Fustians	18.288	5.225	23.889	14.000	1.000
medieval, early-modern woollen broadcloths								
1456	1546	Ghent	dickedinnen five seals	30.000	9.500	71.250	22.966	1.818
1510	1546	Armentières	Oultreffin	30.000	8.000	60.000	22.966	1.531
1510	1546	Armentières	Moiens	30.000	8.000	60.000	22.966	1.531
1519		Leuven	Oppersten Zegel	30.000	10.000	75.000	22.966	1.914
1523	1546	Diksmuide	Grooten Claus	30.000	8.500	63.750	22.966	1.627

Table 7. Weights of Selected Textiles from France, the Low Countries, and England

Date From	Date To	Place	Name	Length ells	Width qtr ells	Square ells Flemish (0.49m)	Length yards	Width yards
1539		Haubourdin	Oultreffins	30.000	8.500	63.750	22.966	1.627
1544		Bruges	Dobbel	30.000	8.500	63.750	22.966	1.627
			Leeuwen					
1544		Bruges	Inkel Leeuwen	30.000	8.500	63.750	22.966	1.627
1544		Bruges	Gheecroonde B	30.000	8.000	60.000	22.966	1.531
1544		Bruges	Griffoen	30.000	8.000	60.000	22.966	1.531
1544		Mechelen *	Gulden Aeren	30.000	10.000	72.661	22.605	1.884
			White					
1544		Mechelen *	Aeren: Other	30.000	9.500	69.028	22.605	1.790
1544		Mechelen *	Witte Maecht	30.000	8.000	58.129	22.605	1.507
			(Pucelle)					
1544		Mechelen *	Witte Griffoen	30.000	8.000	58.129	22.605	1.507
1544		Mechelen *	Witte	30.000	8.000	58.129	22.605	1.507
			Ghecroonde					
1552		Suffolk, Essex	Short coloured broadcloth	31.351	9.144	71.668	24.000	1.750
1552		Worcester	Short coloured broadcloth	31.351	9.144	71.668	24.000	1.750
1552		Worcester, Coventry	Long white broadcloths	39.189	9.144	89.585	30.000	1.750
1552		Worcester, Coventry	Long coloured broadcloths	39.189	9.144	89.585	30.000	1.750
1552		East Anglia	kers eys	23.513	5.225	30.715	18.000	1.000
1552		Devonshire	Devon kerseys: dossens	15.675	5.225	20.477	12.000	1.000
1552		England	steites and "checkarsey"	23.513	5.225	30.715	18.000	1.000
1552		England	Sorting kerseys	23.513	5.225	30.715	18.000	1.000
1552		Wales	friezes	47.026	3.919	46.072	36.000	0.750

Table

7b.

Weights of Selected Textiles from France, the Low Countries, and England

Date From	Place	Name	Length metres	Width metres	Square metres	Weight Local lb.	Weight kilograms	Weight grams per sq metre
medieval semi-worsted								
1278	Bruges	dicke saye	21.000	1.400	29.400	28.000	12.989	441.810
1278	Bruges	dinne saye	26.600	1.400	37.240	30.000	13.917	373.711
1281	Saint Omer	saye drappée	25.900	1.400	36.260	39.000	18.092	498.955
1284	Ypres	saye	27.300	1.663	45.386	40.000	18.556	408.846
1294	Valenciennes	dyed biffes	25.900	1.225	31.727	30.000	13.917	438.642
1294	Valenciennes	renforchiés sans roies	25.900	1.313	33.994	30.000	13.917	409.399
1294	Valenciennes	draps estainfors	17.500	1.225	21.437	21.000	9.742	454.433
1294	Valenciennes	couvretures	14.000	1.225	17.150	18.000	8.350	486.892
1294	Valenciennes	draps pers (biffe?)	29.400	1.225	36.015	31.000	14.381	399.303
1294	Valenciennes	grand drap rayé	23.100	1.225	28.297	30.000	13.917	491.810
1300	Arras	saye endrappée	35.000	1.400	49.000	47.000	21.803	444.965
1300	Arras	biffes	28.000	1.400	39.200	30.000	13.917	355.026
1300	Arras	couvretures d'estanfort	17.500	1.400	24.500	16.000	13.917	568.041
1333	Arras	drap entier (?)	36.400	1.313	47.775	47.000	21.803	456.375
1333	Arras	grand drap	38.500	1.225	47.163	40.000	18.556	393.448
1394	Douai	plain drap oint	28.000	1.663	46.550	40.000	18.556	398.625
1394	Douai	dicquedune oint	28.000	1.663	46.550	38.000	17.628	378.694
early-modern semi-worsted								
1537	Bergues-St.Winoc	fine narrow say	28.000	0.700	19.600	11.000	5.103	260.352
1571	Hondschoote	small say	24.500	0.613	15.006	11.000	5.103	340.052
1571	Hondschoote	broad double say	24.500	1.138	27.869	16.000	7.257	260.416
1578	Colchester	single bays	31.090	0.914	28.428	22.000	9.979	351.025
1578	Colchester	broad say	9.144	0.914	8.361	2.750	1.247	149.185
1578	Colchester	silk say	13.716	0.914	12.542	13.500	6.124	488.243
1578	Coggeshall	Coxall bay	51.206	1.600	81.940	80.000	36.287	442.851
1578	Coggeshall	Coxall bay m inikin	29.261	1.372	40.134	50.000	22.680	565.097

Table 7b. Weights of Selected Textiles from France, the Low Countries, and England

Date From	Place	Name	Length metres	Width metres	Square metres	Weight		
						Local lb.	kilograms	grams per sq metre
1578	Essex	double bays	31.090	1.257	39.089	28.000	12.701	324.915
1578	Essex-Suffolk	double bay	31.090	1.829	56.857	44.000	19.958	351.025
1578	Essex-Suffolk	single bays	31.090	1.600	49.750	24.000	10.886	218.821
1578	Essex-Suffolk	Rasse	21.946	1.372	30.101	42.000	19.051	632.908
1578	Essex-Suffolk	Staminett	20.117	1.372	27.592	32.000	14.515	526.054
1578	Essex-Suffolk	narrow worsteds	13.716	0.914	12.542	7.000	3.175	253.163
1578	East-Anglia, Norfolk	Norwich grogaines	12.802	0.914	11.706	5.000	2.268	193.747
1578	East-Anglia, Norfolk	Double Mockadoes	12.802	0.914	11.706	4.000	1.814	154.998
1578	East-Anglia, Norfolk	Single Mockadoes	12.802	0.914	11.706	3.000	1.361	116.248
1578	East-Anglia, Norfolk	Plommets	12.802	0.914	11.706	4.000	1.814	154.998
1578	East-Anglia, Norfolk	Mockaodes, tuft	12.802	0.914	11.706	6.000	2.722	232.497
1578	East-Anglia, Norfolk	Carells	12.802	0.914	11.706	4.000	1.814	154.998
1578	Naples	Fustians	12.802	0.914	11.706	6.000	2.722	232.497
medieval, early-modern woollen broadcloths								
1456	Ghent	dickedinnen five seals	21.000	1.663	34.913	51.000	22.126	633.766
1510	Armentières	Oultreffin	21.000	1.400	29.400	52.000	24.123	820.503
1510	Armentières	Moiens	21.000	1.400	29.400	52.000	19.484	662.714
1519	Leuven	Oppersten Zegel	21.000	1.750	36.750	53.182	24.872	676.777
1523	Diksmuide	Grooten Claus	21.000	1.488	31.238	50.000	23.195	742.537
1539	Haubourdin	Oultreffins	21.000	1.488	31.238	48.000	22.267	712.836
1544	Bruges	Dobbel Leeuwen	21.000	1.488	31.238	48.000	22.267	712.836
1544	Bruges	Inkel Leeuwen	21.000	1.488	31.238	44.000	20.412	653.433
1544	Bruges	Ghecroonde B	21.000	1.400	29.400	40.000	18.556	631.156
1544	Bruges	Griffoen	21.000	1.400	29.400	38.000	17.628	599.599
1544	Mechelen *	Gulden Aeren White	20.670	1.723	35.604	58.000	27.216	764.416
1544	Mechelen *	Aeren: Other	20.670	1.636	33.824	58.000	27.216	804.648
1544	Mechelen *	Witte Maecht (Pucelle)	20.670	1.378	28.483	58.000	27.216	955.520
1544	Mechelen *	Witte Griffoen	20.670	1.378	28.483	58.000	27.216	955.520
1544	Mechelen *	Witte Ghecroonde	20.670	1.378	28.483	58.000	27.216	955.520

Table 7b. Weights of Selected Textiles from France, the Low Countries, and England

Date From	Place	Name	Length metres	Width metres	Square metres	Weight Local lb.	Weight kilograms	Weight grams per sq metre
1552	Suffolk, Essex	Short coloured broadcloth	21.946	1.600	35.117	64.000	29.030	826.656
1552	Worcester	Short coloured broadcloth	21.946	1.600	35.117	64.000	29.030	826.656
1552	Worcester, Coventry	Long white broadcloths	27.432	1.600	43.897	84.000	38.102	867.988
1552	Worcester, Coventry	Long coloured broadcloths	27.432	1.600	43.897	80.000	36.287	826.656
1552	East Anglia	kers eys	16.459	0.914	15.050	23.000	10.433	693.185
1552	Devonshire	Devon kerseys: dossens	10.973	0.914	10.034	14.000	6.350	632.908
1552	England	steites and "checkarsey"	16.459	0.914	15.050	24.000	10.886	723.324
1552	England	Sorting kerseys	16.459	0.914	15.050	23.000	10.433	693.185
1552	Wales	friezes	32.918	0.686	22.575	48.000	21.772	964.431

Sources:

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d'Hondschoote vers Italie d'après la correspondance d'une firme anversoise, entre 1538 et 1544', *Revue du Nord*, 22 (1936), 255-6; Guy De Poerck, *La draperie médiévale en Flandre et en Artois: Technique et terminologie*, 3 vols. (Bruges, 1951); Patrick Chorley, 'The Cloth Exports of Flanders and Northern France During the Thirteenth Century: A Luxury Trade?' *Economic History Review*, 2nd ser. 40 (1987), 349-79; A. P. Usher, *The Industrial History of England* (Boston, 1920), p. 200; J.E. Pilgrim, 'The Rise of the "New Draperies" in Essex', *University of Birmingham Historical Journal*, 7 (1959-60), 36-59; John Munro, 'The 'Industrial Crisis' of the English Textile Towns, 1290 - 1330,' *Thirteenth-Century England: VII*, ed. Michael Prestwich, Richard Britnell, and Robin Frame (Woodbridge, UK: Boydell Academic Press, 1999), pp. 103-41.

**Table 8. Dimensions, Compositions, and Weights
of Selected Textiles in the Low Countries and England**

Drapery: Town	Name of Textile	Dates of the Ordinances	Wools Used	Warp Count	Weight in kg on Loom
A. Traditional Old Draperies: Woollens					
Ghent	Dickedinnen 5 Seal	1456-62; 1546	English: Fine March, Cotswolds, Berkshire	2066	38.179
Leuven	Oppersten Zegel	1519	English: Middle March, Cotswolds, Berkshire	2400	42.090
Mechelen	Gulden Aeren	1544	English: Leominster (Herefordshire)	3120	n.s
Suffolk, Essex	Suffolk Short Cloths	1552	English: short-stapled	n.s	n.s
B. Nouvelles Draperies: Woollens					
Armentières	Oultreffin	1510; 1546	Spanish (2/3) + English: Cotswolds, Lindsay, Berks.	1800	40.823
Diksmuide	Grooten Claus	1523; 1546	Spanish, English, Scottish, Rhenish, Flemish	1968	38.968
Haubourdin	Oultreffin	1539	Spanish (2/3) + English	1800	38.040
Bruges	Dobbel Leeuwen	1544	Spanish merino exclusively	2010	n.s
C. Draperies Légères: Worstedes, Says, Stuffs					
Bergues-St.-Winoc	Fine narrow say	1537	Flemish, Artesian	1400	n.s

**Table 8. Dimensions, Compositions, and Weights
of Selected Textiles in the Low Countries and England**

Drapery: Town	Name of Textile	Dates of the Ordinances	Wools Used	Warp Count	Weight in kg on Loom
Hondshoote	Small double say	1571; 1576	Flemish, Scottish, Frisian, Kempen	1800	n.s
Colchester (Essex)	Single bays	1579	English long (warp) & short (weft)-stapled	n.s	n.s
Essex	Broad says	1579	English long stapled (warp); wefts n.s.	n.s	n.s

Table 8b. Dimensions, Compositions, and Weights of Selected Textiles in the Low Countries and England

Name of Textile	Length on Loom in m.	Width on Loom in m.	Final Length Metres	Final Width Metres	Area in m ²	Warps per cm	Weight in kg.	Weight g/m ²
A. Traditional Old								
Draperies:								
Woollens								
Dickedinnen 5 Seal	29.750	2.5375	21.0000	1.663	34.913	12.43	22.126	633.77
Oppersten Zegel	29.885	2.7800	20.8500	1.738	36.227	13.81	25.254	697.11
Gulden Aeren	33.072	2.7560	20.6700	1.723	35.604	18.11	27.217	764.42
Suffolk Short Cloths	n.s	n.s	22.5552	1.645	37.095	n.s	29.030	782.58
B. Nouvelles								
Draperies:								
Woollens								
Oultreffin	29.400	2.1000	21.0000	1.400	29.400	12.86	24.123	820.50
Grooten Claus	28.700	2.5375	21.0000	1.488	31.238	13.23	23.195	742.54
Oultreffin	29.400	2.1000	21.0000	1.488	31.238	12.10	22.267	712.84
Dobbel Leeuwen	30.800	2.4500	21.0000	1.488	31.238	13.51	22.267	712.84
C. Draperies								
Légères:								
Worstedes, Says, Stuffs								
Fine narrow say	n.s	n.s	28.0000	0.700	19.600	20.00	5.103	260.35
Small double say	28.000	1.006	25.7250	0.875	22.509	20.57	7.257	322.42
Single bays	n.s	n.s	31.9532	0.940	30.030	n.s	9.979	332.31
Broad says	n.s	n.s	9.3984	0.940	8.833	n.s	1.247	141.19

Source:

Georges Espinas and Henri Pirenne, eds., *Recueil de documents relatifs à l'histoire de l'industrie drapière en Flandre: Ire partie: des origines à l'époque bourguignonne*, 4 vols. (Brussels, Commission royale d'histoire, 1906-1924); Georges Espinas, ed., *Documents relatifs à la draperie de Valenciennes au moyen âge* (Paris, 1931); Georges Espinas, *La draperie dans la Flandre française au moyen âge*, 2 vols. (Paris, 1923); Henri De Sager et al., eds., *Recueil de documents relatifs à l'histoire de l'industrie drapière en Flandre, IIe partie: le sud-ouest de la Flandre depuis l'époque bourguignonne*, 3 vols. (Brussels, 1951-66); Octave Delepierre and M.F. Willems, eds., *Collection des keuren ou statuts de tous les métiers de Bruges* (Ghent, 1842); Marc Boone, 'Nieuwe teksten over de Gentse draperie: wolaanvoer, productiewijze en controlepraktijken (ca. 1456 - 1468)', *Bulletin de la commission royale d'histoire de Belgique*, 154 (1988), 40, doc. no. 3:v; M. Lameere, H. Simont, eds., *Recueil des ordonnances des Pays Bas: deuxième série, 1506 - 1700*, vol. V (Brussels, 1910); Stadsarchief Leuven, no. 1526, fo. 203r-10v; Great Britain, Record Commission, *Statutes of the Realm*, 6 vols. (London, 1810-22), Vol. IV:i, 136-7 (5-6 Edward VI, cap. 6, pt. 1); H. De Schryver, *De oude landmaten in Vlaanderen* (Brussels, 1968), pp. 15-8; Émile Coornaert, *Une industrie urbaine; du XIVe au XVIIIe siècle: l'industrie de la laine à Bergues-Saint-Winoc* (Paris, 1930); Émile Coornaert, *La draperie-sayetterie d'Hondschoote, XIVe-XVIIIe siècles* (Paris, 1930); Florence Edler, 'Le commerce d'exportation des sayes d'Hondschoote vers Italie d'après la correspondance d'une firme anversoise, entre 1538 et 1544', *Revue du Nord*, 22 (1936), 255-6; Guy De Poerck, *La draperie médiévale en Flandre et en Artois: Technique et terminologie*, 3 vols. (Bruges, 1951); Patrick Chorley, 'The Cloth Exports of Flanders and Northern France During the Thirteenth Century: A Luxury Trade?' *Economic History Review*, 2nd ser. 40 (1987), 349-79; A. P. Usher, *The Industrial History of England* (Boston, 1920), p. 200; J.E. Pilgrim, 'The Rise of the "New Draperies" in Essex', *University of Birmingham Historical Journal*, 7 (1959-60), 36-59; John Munro, 'The "Industrial Crisis" of the English Textile Towns, 1290 - 1330,' *Thirteenth-Century England: VII*, ed. Michael Prestwich, Richard Britnell, and Robin Frame (Woodbridge, UK: Boydell Academic Press, 1999), pp. 103-41.

Table 9. Woollen Cloth Production in the Medici Drapery, 1556 - 1558
Costs in Florentine Gold Florins (fiorini d'oro)
For 71 woollen cloths made from Spanish merino wools

Process/Materials	florins	soldi	denari	florins	florins per piece	% of pre-finishing	% of Total Costs
Manufacturing							
wool-washing	19	14	0	19.700	0.277	1.43%	0.64%
wool-beating	56	19	8	56.983	0.803	4.12%	1.85%
wool-combing (warps)	106	15	9	106.788	1.504	7.73%	3.47%
wool-carding (wefts)	90	8	7	90.429	1.274	6.54%	2.94%
wool-preparation				273.900	3.858	19.82%	8.90%
spinning	650	11	1	650.554	9.163	47.08%	21.14%
warping	22	5	0	22.250	0.313	1.61%	0.72%
weaving	365	2	3	365.113	5.142	26.42%	11.87%
Weaving				387.363	5.456	28.03%	12.59%
burling	18	17	7	18.879	0.266	1.37%	0.61%
scouring	27	15	5	27.771	0.391	2.01%	0.90%
fulling	13	19	2	13.958	0.197	1.01%	0.45%
tentering	9	8	10	9.442	0.133	0.68%	0.31%
Fulling				70.050	0.987	5.07%	2.28%
Subtotal: Pre-Finishing				1381.867	19.463	100.00%	44.91%
Shearing	23	6	0	23.300	0.328		0.76%
Mending	1	8	8	1.433	0.020		0.05%
Twisting selvage	5	10	9	5.538	0.078		0.18%
Shearing/Finishing				30.271	0.426		0.98%
Woad-washing	10	19	7	10.979	0.155		0.36%
Dyeing	309	5	6	309.275	4.356		10.05%
Dyeing costs				320.254	4.511		10.41%

Table 9.

Woollen Cloth Production in the Medici Drapery, 1556 - 1558
Costs in Florentine Gold Florins (fiorini d'oro)
For 71 woollen cloths made from Spanish merino wools

Management costs

tools	12	10	0	12.500	0.176	0.41%
rent	52	0	0	52.000	0.732	1.69%
administration	98	5	10	98.292	1.384	3.19%
salaries	128	13	4	128.667	1.812	4.18%
brokerage	7	15	0	7.750	0.109	0.25%

Sub-total management

299.208 4.214 9.72%

Raw Materials

Wools: Spanish	921	6	11	921.346	12.977	29.95%
Dyestuffs	36	12	10	36.642	0.516	1.19%
Oil	53	8	5	53.421	0.752	1.74%
Soap	33	14	9	33.738	0.475	1.10%

Sub-total: materials

1045.146 14.720 33.97%

TOTAL COSTS

3076.746 43.334 100.00%

Source: Raymond De Roover, 'A Florentine Firm of Cloth Manufacturers: Management of a Sixteenth-Century Business,' *Speculum*, 16 (1941), 3-33; 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), pp. 85-118.

Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
						10d/day	6.67/day
A. Traditional Woollens							
Ypres	Scarlet (full-grained)	35	12.567	60.322	11.383	86.17	129.26
Ypres	Black Broadcloth	35	7.000	33.600	6.341	48.00	72.00
Bruges	Scarlet (full-grained)	33	11.000	52.800	9.964	80.00	120.00
Bruges	Black Broadcloth	33	8.000	38.400	7.246	58.18	87.27
Ghent	Dickedinnen	30	7.000	33.600	6.341	56.00	84.00
Mechelen	Blue Broadcloth	30	7.275	34.920	6.590	58.20	87.30
Leuven	Fine Broadcloth	30	4.152	19.930	3.761	33.22	49.82
Leiden	Pair halvelakenen	36	5.304	25.459	4.804	35.36	53.04
B. Nouvelles Draperies							
Wervik	Scarlet (full-grained)	20	7.000	33.600	6.341	84.00	126.00
Wervik	Fine Black Broadcloth	20	5.750	27.600	5.208	69.00	103.50
Wervik	Dark Green	27	3.900	18.720	3.533	34.67	52.00
Kortrijk	Red Broadcloth	30	3.500	16.800	3.170	28.00	42.00
Men in	Fine Black Broadcloth	30	6.000	28.800	5.435	48.00	72.00
Men in	Perse-Blue Broadcloth	30	4.600	22.080	4.167	36.80	55.20
Neuve-Eglise	Medley Broadcloth	30	2.125	10.200	1.925	17.00	25.50
Hesdin	Green Broadcloth	30	3.000	14.400	2.717	24.00	36.00
Niepkerke	Red Broadcloth	30	2.125	10.200	1.925	17.00	25.50
Roeselaere	Red Broadcloth	30	2.500	12.000	2.264	20.00	30.00
Diest (Brabant)	Green Broadcloth	30	2.687	12.898	2.434	21.50	32.24

Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
C. Draperies Légères (Sèches)							
Eecke	dukers, witkins	30	0.563	2.702	0.510	4.50	6.76
Munikerede	dukers, witkins	30	0.563	2.702	0.510	4.50	6.76

II. Prices of English Woollens and Worsteds and Foreign Linens in the Royal Wardrobe Accounts, 1438 - 1439

Place	Textile	Yds Long	Value in £ groot Flemish	Value in Florentine Florins: 44d	Value in £ sterling	Number of Days Wages For a Mason to Buy 8 yds London 8d/daily	Oxford 6d/daily
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Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
England	Scarlet (highest value)	30	31.464	155.455	28.500	228.00	304.00
England	Scarlet (mean value)	30	19.911	98.373	18.035	144.28	192.37
England	Dyed Long Cloth (highest)	30	15.456	76.364	14.000	112.00	149.33
England	Dyed Long Cloth (mean)	30	8.237	40.698	7.461	59.69	79.59
England	Dyed Short Cloth (highest)	24	4.416	21.818	4.000	40.00	53.33
England	Dyed Short Cloth (mean)	24	2.810	13.882	2.545	25.45	33.93
England	Dyed Short Cloth (lowest)	24	1.546	7.636	1.400	14.00	18.67
England	Kersey (mean)	18	1.485	7.335	1.345	17.93	23.91
England	Straits (mean)	12	0.364	1.800	0.330	6.60	8.80
England	Worsted	12	0.258	1.276	0.234	4.68	6.24
Holland	linens	12	1.607	7.942	1.456	29.12	38.83
Brabant	linens	12	0.349	1.724	0.316	6.32	8.43

III. Prices of Flemish, French, Italian, Spanish, and English Woollens in Spain (Barcelona, Valencia, Majorca): Sales by the Datini Firm, 1394 - 1410

Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
Place/Town	Textile	Rank	Value in £ groot Flemish 34d/florin	Value in Florentine Florins	Value in £ sterling 36d/florin		
Flanders							
Wervik, Kortrijk	dyed woollen broadcloths	mean	3.953	27.900	4.185		
Comines, Menin	dyed woollen broadcloths	mean	3.953	27.900	4.185		
Bruges	dyed woollen broadcloths	mean	6.235	44.010	6.602		
Brabant							
Brussels	dyed woollen broadcloths	mean	6.259	44.180	6.627		
Mechelen	dyed woollen broadcloths	mean	6.259	44.180	6.627		
France							
Montivilliers	dyed woollen broadcloths	mean	4.460	31.480	4.722		
Italy							
Florence	dyed woollen broadcloths	mean	9.128	64.430	9.665		
Prato, Genoa	dyed woollen broadcloths	mean	8.873	62.630	9.395		
Spain							
Perpignano	dyed woollen broadcloths	lowest	1.512	10.670	1.601		
Perpignano	dyed woollen broadcloths	mean	1.930	13.620	2.043		
Perpignano	dyed woollen broadcloths	highest	2.645	18.670	2.801		
Puigcerda	dyed woollen broadcloths	mean	1.512	10.670	1.601		
Villefranca	dyed woollen broadcloths	mean	1.247	8.800	1.320		

Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
Villefranca	dyed woollen broadcloths	mean	1.190	8.400	1.260		
Barcelona	dyed woollen broadcloths	mean	1.680	11.860	1.779		
England							
Essex	straits (dozens)	mean	0.867	6.120	0.918		

IV. Prices of Italian, Catalan, French, Flemish Woollens sold in Naples and Sicily, 1380 - 1410:

Place/Town	Textile	Rank	Value in £ groot Flemish 34d/florin	Value in Florentine Florins	Value in £ sterling 36d/florin
Italy					
Florence	San Martino woollens	lowest	8.293	58.540	8.781
Florence	San Martino woollens	mean	8.605	60.740	9.111
Florence	San Martino woollens	highest	8.915	62.930	9.440
Milan, Como	dyed woollen broadcloths	lowest	5.667	40.000	6.000
Milan, Como	dyed woollen broadcloths	mean	6.143	43.360	6.504
Milan, Como	dyed woollen broadcloths	highest	6.375	45.000	6.750

Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
Prato, Pisa, Siena	dyed woollen broadcloths	lowest	3.071	21.680	3.252		
Prato, Pisa, Siena	dyed woollen broadcloths	mean	3.686	26.020	3.903		
Prato, Pisa, Siena	dyed woollen broadcloths	highest	4.300	30.350	4.553		
Catalonia							
Perpignano	dyed woollen broadcloths	mean	2.408	17.000	2.550		
Villefranca	dyed woollen broadcloths	mean	1.327	9.370	1.406		
France							
Languedoc	dyed woollen broadcloths	mean	2.267	16.000	2.400		
Gignac, Beziers	dyed woollen broadcloths	mean	2.479	17.500	2.625		
Carcassonne	dyed woollen broadcloths	mean	2.692	19.000	2.850		
Flanders							
Wervik	dyed woollen broadcloths		3.683	26.000	3.900		

V. Prices for Italian, Catalan, French, Flemish, Brabantine, and English Textiles in the Levant (Alexandria.

Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
Damascus, and Constantinople, c.1390 - 1435							
Place/Town	Textile	Place of Sale and date	Value in £ groot Flemish 34d/florin 50d/florin	Value in Florentine Florins	Value in £ sterling 36d/florin 40d/florin		
Florence	grade 1 woollens	D: 1390	4.958	35.000	5.250		
Florence	grade 2 woollens	D: 1390	6.517	46.000	6.900		
Florence	grade 3 woollens	D: 1390	7.650	54.000	8.100		
Florence	panni di fontego	D: 1390	3.825	27.000	4.050		
Florence	grade 1 woollens	D: 1398	4.250	30.000	4.500		
Florence	grade 2 woollens	D: 1398	6.134	43.300	6.495		
Florence	grade 2 woollens	D: 1398	6.375	45.000	6.750		
Florence	grade 1 woollens	A: 1400	4.250	30.000	4.500		
Florence	grade 1 woollens	A: 1402	5.313	37.500	5.625		
Catalonia							
Villefranca	dyed woollen broadcloths	D: 1390	2.338	16.500	2.475		
Villefranca	dyed woollen broadcloths	D: 1395	2.054	14.500	2.175		
Barcelona	dyed woollen broadcloths	D: 1390	2.196	15.500	2.325		
Barcelona	dyed woollen broadcloths	D: 1395	1.700	12.000	1.800		
Puigcerda	dyed woollen broadcloths	D: 1395	1.771	12.500	1.875		
Perpignano	woollen 'simples'	D: 1395	2.054	14.500	2.175		
Perpignano	panni alla francesca	D: 1395	2.451	17.300	2.595		

Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
France							
Louviers	dyed woollen broadcloths	A:1390	3.613	25.500	3.825		
Narbonne	dyed woollen broadcloths	A: 1396	1.488	10.500	1.575		
Narbonne	dyed woollen broadcloths	D: 1396	1.488	10.500	1.575		
Narbonne	dyed woollen broadcloths	A: 1399	2.754	19.440	2.916		
Flanders							
Wervik	dyed woollen broadcloths	D: 1395	2.720	19.200	2.880		
Wervik	dyed woollen broadcloths	C: 1436	5.896	28.300	4.717		
Wervik	dyed woollen broadcloths	C: 1436	4.583	22.000	3.667		
Brabant							
Mechelen	dyed woollen broadcloths	D: 1395	5.454	38.500	5.775		
England							
Worcestershire	Cotswolds	D: 1405	4.958	35.000	5.250		
	Cotswolds	D: 1410	2.083	14.700	2.205		
	Panni Bastardi	D: 1414	3.542	25.000	4.167		
	Panni Bastardi	D: 1414	3.967	28.000	4.667		
	Panni Bastardi	D: 1416	2.833	20.000	3.333		
Salisbury	Wiltshires	D: 1416	2.833	20.000	3.333		
Essex	straits (dozens)	D: 1416	0.850	6.000	1.000		
Norfolk or Ireland?	Saia d'Irlanda	D: 1394	0.638	4.500	0.675		
Norfolk or Ireland?	Saia d'Irlanda	D: 1395	0.751	5.300	0.795		
Norfolk or Ireland?	Saia d'Irlanda	D: 1397	0.850	6.000	0.900		

Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
Norfolk or Ireland?	Saia d'Irlanda	D: 1398	0.503	3.550	0.533		

VI. Prices for Italian, English, Flemish, Brabantine, Dutch, French, and Rhenish Textiles in Poland (Cracow), c. 1400

Prices for Woollens of 35 Flemish Ells

Place/Town	Textile	Groszes per ell	Value in £ groot Flemish 34d/florin	Value in Florentine Florins	Value in £ sterling 36d/florin
Italy					
Florence	dyed woollen broadcloths	20	4.132	29.170	4.376
Florence	dyed woollen broadcloths	22	4.545	32.080	4.812
Flanders					
Bruges	dyed woollen broadcloths	30	6.198	43.750	6.563
Dendermonde	dyed woollen broadcloths	15	3.098	21.870	3.281
Kortrijk	dyed woollen broadcloths	12	2.479	17.500	2.625
Geraardsbergen	dyed woollen broadcloths	12	2.479	17.500	2.625
Brabant					
Brussels	dyed woollen broadcloths	20	4.132	29.170	4.376
Brussels	dyed woollen broadcloths	32	6.612	46.670	7.001
Mechelen	dyed woollen broadcloths	17	3.512	24.790	3.719
Leuven	dyed woollen broadcloths	16	3.305	23.330	3.499

Table 10.

Woollen Cloth Prices in the 15th Century

I. Prices of Flemish, Brabantine, and Dutch Woollens as Purchased by Various Town Governments in the Low Countries, c. 1438 - 1443

Town	Textile	Ells Long	Value in £ groot Flemish	Value in Florentine Florins: 50d	Value in £ sterling	Number of Days Wages For a Mason to Buy 10 ells in Bruges	in Antwerp
Lier	dyed woollen broadcloths	24	4.958	35.000	5.250		
Lier	dyed woollen broadcloths	18	3.719	26.250	3.938		
Tienen	dyed woollen broadcloths	14	2.893	20.420	3.063		
Tienen	small cloths	9	1.859	13.120	1.968		
Herentals	dyed woollen broadcloths	18	3.719	26.250	3.938		
Holland							
Leiden ?	Ostrodomm ensis	15	3.098	21.870	3.281		
England							
London	dyed woollen broadcloths	12	2.479	17.500	2.625		
London	dyed woollen broadcloths	24	4.958	35.000	5.250		
unspecified	dyed woollen broadcloths	14	2.893	20.420	3.063		
Artois							
Arras	sayes	3	0.619	4.370	0.656		
Enghien	unspecified	8	1.653	11.670	1.751		
Rhineland							
Aachen	unspecified	8	1.653	11.670	1.751		

Sources: Based upon cloth-price sources utilized in John Munro, 'Industrial Protectionism in Medieval Flanders: Urban or National?' in Harry Miskimin, David Herlihy, and A. L. Udovitch, eds., *The Medieval City* (New Haven and London, 1977), pp. 229-6; John Munro, 'The Medieval Scarlet and the Economics of Sartorial Splendour,' in , ed. Negley B. Harte and Kenneth G. Ponting, eds., *Cloth and Clothing in Medieval Europe: Essays in Memory of Professor E. M. Carus-Wilson* Pasold

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Table 11

**Price Relatives for Ghent Dickedinnen Broadcloths and the Flemish Commodity Basket
In Decennial Means, from 1340-9 to 1530-9: Mean of 1400-9 = 100**

Decade	Prices of Ghent Dicke-dinnen in £ groot Flemish	Value of £ sterling in £ groot Flemish	Prices of Ghent Dicke-dinnen in £ sterl	Price Relatives of Ghent Dickedinnen Cloths 1400-9=100	Value of Flemish Commodity Basket in d groot Flemish	Value of Flemish Commodity Basket in shillings groot Flem	Price Relatives of the Flemish Commodity Basket (FCB) 1400-9=100	Ratio of Price Relatives for Ghent Dicke-dinnen Broadcloths 1400-9=100	Quantities of Flemish Commodity Baskets to be exchanged for 1 Ghent Dickedinnen
1340-9	2.615	0.522	5.005	44.16	68.52	5.710	57.43	76.900	9.159
1350-9	3.929	0.607	6.477	66.36	88.52	7.377	74.19	89.438	10.653
1360-9	5.243	0.801	6.549	88.55	124.71	10.393	104.53	84.715	10.090
1370-9	6.800	0.968	7.024	114.85	147.30	12.275	123.46	93.022	11.079
1380-9	7.500	1.124	6.674	126.67	152.37	12.698	127.71	99.184	11.813
1390-9	5.748	1.049	5.481	97.08	119.04	9.920	99.77	97.298	11.589
1400-9	5.921	1.049	5.646	100.00	119.31	9.943	100.00	100.000	11.910
1410-9	5.864	0.841	6.969	99.04	129.87	10.823	108.85	90.984	10.837
1420-9	6.073	1.055	5.754	102.57	142.69	11.891	119.60	85.761	10.215
1430-9	7.058	1.132	6.235	119.20	169.72	14.143	142.25	83.797	9.981
1440-9	7.845	1.104	7.108	132.49	145.70	12.142	122.12	108.496	12.922
1450-9	7.326	1.104	6.637	123.73	137.24	11.437	115.03	107.564	12.811
1460-9	8.050	1.030	7.819	135.96	120.49	10.041	100.99	134.625	16.035
1470-9	8.759	1.115	7.854	147.93	132.54	11.045	111.09	133.165	15.861
1480-9	12.621	1.721	7.334	213.16	204.90	17.075	171.74	124.118	14.783
1490-9	15.450	1.480	10.436	260.94	181.36	15.113	152.01	171.660	20.446
1500-9	14.500	1.453	9.976	244.89	169.54	14.128	142.10	172.341	20.527
1510-9	13.110	1.453	9.020	221.42	196.25	16.354	164.48	134.612	16.033
1520-9	13.294	1.511	8.800	224.52	247.45	20.621	207.40	108.254	12.894
1530-9	14.181	1.343	10.563	239.50	254.52	21.210	213.32	112.272	13.372

Sources:

Ghent Cloth: Stadsarchief Gent, Stadsrekeningen, Reeks 400: vols. 1-58; Algemeen Rijksarchief België, Rekenkamer, reg. nos. 34,862.

Price Indices: John 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, *Trierer Historische Forschungen, 7: Akten des 8th International Economic History Congress, Section C-7, Budapest 1982* (Trier: University Press, 1984), pp. 31-122; Herman Van der Wee, 'Prijzen en lonen als ontwikkelingsvariabelen: Een vergelijkend onderzoek tussen Engeland en de Zuidelijke Nederlanden, 1400 - 1700,' in *Album offert à Charles Verlinden à l'occasion de ses trente ans de professoriat* (Ghent, 1975), pp. 413-35.