

Department of Economics
and
Institute for Policy Analysis
University of Toronto
150 St. George Street
Toronto, Ontario M5S 3G7
Canada

10 July 2000

WORKING PAPER NO.

UT-ECIPA-MUNRO-00-02

**Flemish Woollens and German Commerce during the Later Middle Ages: Changing
Trends in Cloth Prices and Markets, 1290 - 1550**

by

John Munro

Copyright © by John Munro 2000
Department of Economics
University of Toronto

Author's e-mail: munro5@chass.utoronto.ca
<http://www.economics.utoronto.ca/munro5>

On-line version: <http://www.chass.utoronto.ca/ecipa/wpa.html>

JEL Classification Codes: F1-2, J3, L1-2, L6, N4, N6-7.

Flemish Woollens and German Commerce during the Later Middle Ages: Changing Trends in Cloth Prices and Markets, 1290 - 1550

by John H. Munro (University of Toronto)

Abstract:

This paper analyses the major changes in textile products, production costs, prices, and market orientations during the era when the cloth industries of the late-medieval Low Countries had become increasingly dependent upon northern markets and the German Hanseatic League as the major vehicle in marketing their textiles. In previous articles, I examined the major factors that had led to the industrial and commercial reorientations of the Low Countries' cloth industries during the 14th and 15th centuries. In brief, the spreading stain of widespread warfare, piracy, and general insecurity, especially in the Mediterranean basin, from the 1290s to the 1460s, led to a rise in transport and transaction costs that, in turn, had three major consequences for the Low Countries' textile industries (1) to cripple the export-oriented production of cheap and light fabrics, most of which had been sent to Mediterranean markets and had comprised the bulk of northern textile exports to this region; (2) to encourage their draperies to engage in monopolistic competition and re-orient their export-oriented production towards high-priced ultra-luxury quality woollens, which could 'bear the freight' of higher transaction costs; such woollens were necessarily woven from finer-grade English wools, which came to be burdened with high export taxes; and (3) to force the Flemish and Brabantine draperies, facing increasing difficulties in Mediterranean commerce, to become more dependent on the Hanseatic towns for their cloth sales, certainly by the mid-14th century. But in effecting these industrial and commercial orientations, the Low Countries' draperies encountered a new, more dangerous challenge from expanding English competition in textiles, which enjoyed the signal advantage of abundant high quality wools, which, for the domestic cloth industry, were tax-free and much cheaper. Nevertheless, the English took well more than a century to achieve final victory in the woollen broadcloth trade, though one that came to be fundamentally based upon German commercial forces, along with other commercial, monetary, and industrial factors outlined in this paper. Obeying the law of comparative advantage, the textile industries of the Low Countries responded to this English victory by once more re-orienting production to the cheap, light worsted-says; but they were able to do so only when structural changes in European markets and trading networks, with falling transaction costs, from the later 15th century, once more favoured the export-oriented production of such cheap textiles.

Our perceptions of changes in medieval consumer markets are necessarily dependent upon an intimate knowledge of the actual products, with their relative values, sold there. The major contributions of this paper, therefore, also lie in analysing production, product, cost, and price-changes in late-medieval and early-modern textiles, both cheap worsted and luxury woollens, based on nine tables: (1) export and production statistics for the English and Low Countries' textile industries, 1280 - 1549; (2) dimensions, weights, and composition of selected Flemish and English woollens and worsted-says; (3) English wool prices at the Calais Staple, 1475-99; (4) Price relatives for Ghent woollens and Flemish 'commodity baskets', 1340-1540; (5) Rank-order of cloth values at Ghent (from cheap to luxury woollens), for 1360-69, relative to the values of a standard 'commodity basket' and the purchasing power of a mason's wages; (6) Prices of selected Ghent woollens, large (luxury) and small (cheap), 1340-1412, in Flemish pounds *groot* and Florentine florins; (7) Prices of luxury woollens from Ghent, Mechelen, and Leiden and of cheap Hondschoote says, related to the purchasing power of a mason's wage, for 1535-45; (8) Prices of English wools (with wool-export duties), English and Ghent woollens, in pounds sterling and Flemish pounds *groot*, with English-Flemish monetary ratios, and with English, Flemish, and Brabantine commodity price-indices, 1320-1550; (9) Prices of various English, Flemish, Brabantine, and Dutch woollens (in pounds sterling and Flemish pounds *groot*), 1400-1520.

JEL Classification Codes: F1-2, J3, L1-2, L6, N4, N6-7.

Flemish Woollens and German Commerce during the Later Middle Ages: Changing Trends in Cloth Prices and Markets, 1290 - 1550

by John H. Munro (Toronto)

.....

Flemish Woollens and German Commerce in the Later Middle Ages

Of all the manufactured commodities entering into German Hanseatic commerce during the later medieval and early modern eras, none was more important than woollen cloth. Ultimately, by the late fifteenth century, for reasons now well known, English woollen broadcloths and kerseys gained an overwhelming ascendancy in German, Central and Eastern European markets; and merchants of the Rhenish Hanse in particular had played an important role in helping the English cloth trade achieve its most decisive breakthrough: that based upon Antwerp and the Brabant Fairs, from the 1420s.¹ Prior to that commercial breakthrough, however, the draperies of the southern Low Countries had enjoyed pre-eminence in German cloth markets, in no measure thanks to the loyalty of other groups of Hanseatic merchants from the Baltic-based Wendish, Prussian, and Livonian leagues. For they had rightly deemed the trade in Flemish and Brabantine woollens to be a vital component of their long-held commercial hegemony in this region's populous and lucrative markets. Indeed many of them retained that loyalty long after comparative advantages in both production and trade had shifted to the English cloth industry, whose consequences can be seen in Table 1: demonstrating both the expansion in English cloth exports, in which the Hanseatic share continued to rise (to almost 30 percent) until the 1490s, and also the stark decline in the Flemish-Brabantine cloth production indices, especially from the mid fifteenth century.

¹ John H. Munro, 'Patterns of Trade, Money, and Credit,' in *Handbook of European History, 1400-1600: Late Middle Ages, Renaissance and Reformation*, Vol. I: *Structures and Assertions*, ed. Thomas A. Brady, jr., Heiko O. Oberman, and James D. Tracy (Leiden/New York/Cologne, 1994), pp. 147-9; John Munro, *Textiles, Towns, and Trade: Essays in the Economic History of Late-Medieval England and the Low Countries*, Variorum Collected Studies series CS 442 (Aldershot, 1994); John Munro, 'Anglo-Flemish Competition in the International Cloth Trade, 1340 - 1520,' in *L'Angleterre et les pays bas bourguignons: relations et comparaisons, XVe - XVIe siècle*, ed. Jean- Marie Cauchies [*Rencontres d'Oxford (septembre 1994)*], annual issue of *Centre Européen d'Études Bourguignonnes*, 35 (1995), pp. 37-60; John Munro, 'The Symbiosis of Towns and Textiles: Urban Institutions and the Changing Fortunes of Cloth Manufacturing in the Low Countries and England, 1270 -1570,' *The Journal of Early Modern History: Contacts, Comparisons, Contrasts*, 3:1 (February: 1999), 1-74; John Munro, 'Textiles as Articles of Consumption in Flemish Towns, 1330 - 1575,' *Bijdragen tot de geschiedenis*, 81:1-3 (1998), 275-88.

If these long-standing ties of mutual dependence in Flemish-Hanseatic trade did not prevent but merely postponed the inevitable demise of the traditional urban draperies of the southern Low Countries, they had nevertheless proved to be much more effective in rescuing the fortunes of the Flemish cloth industry much earlier, in the early to mid-fourteenth century, well before the rise of English competition, when the spreading stain of chaotic warfare and piracy deprived not only the Flemish but many other north-west European draperies of their major and most important markets: in the densely populated, highly urbanized Mediterranean basin. As I have sought to demonstrate elsewhere, the consequences of steeply rising transport and transaction costs for Flanders' long-distance trade in textiles with the Mediterranean during the early fourteenth century were fourfold:² (1) to cripple, or virtually to cripple, the export-oriented production of the very cheap and light fabrics that had comprised the bulk of northern textile shipments to this region; and of the northern producers of cheap says, worsteds, and other *draps légers*, so prominent in the thirteenth century, only Arras and Hondschoote survived, almost totally restricted to northern markets; (2) thus to encourage most Flemish and Brabantine draperies to shift their export-oriented cloth production more and more towards high-priced ultra-luxury quality woollens, woven exclusively from the finer English wools; (3) to give the Italian and Catalan cloth industries, who were then similarly reorienting their production away from cheap, light textiles, a comparative advantage in Mediterranean markets for most woollens, including the most luxurious, because of their relatively lower transport and transaction costs; and thus (4) with such overwhelming Italian-Catalan dominance in Mediterranean markets, to force the Flemish and Brabantine cloth industries (and indeed the English as well) to become far more dependent on Hanseatic

² See sources in n. 1, and also John Munro, 'Industrial Transformations in the North-West European Textile Trades, c. 1290 - c. 1340: Economic Progress or Economic Crisis?' in *Before the Black Death: Studies in the 'Crisis' of the Early Fourteenth Century*, ed. Bruce M. S. Campbell (Manchester, 1991), pp. 110 - 48; John Munro, 'The Origins of the English 'New Draperies': The Resurrection of an Old Flemish Industry, 1270 - 1570,' in *The New Draperies in the Low Countries and England, 1300 - 1800*, ed. Negley B. Harte, Pasold Studies in Textile History no. 10 (Oxford and New York, 1997), pp. 35-127; 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, 1999), pp. 103-41; John Munro, 'The Low Countries' Export Trade in Textiles with the Mediterranean Basin, 1200-1600: A Cost-Benefit Analysis of Comparative Advantages in Overland and Maritime Trade Routes', *International Journal of Maritime History*, 11:2 (Dec. 1999), 1 - 30.

merchants and towns for their cloth exports, most certainly by the time that the Hanseatic League had become a more formally established institution by the mid-fourteenth century, certainly by the 1370s. Ironically, one of the major initial events in the formation of the League had been a Hanseatic boycott of their most important commercial entrepôt, the major Flemish port and drapery town of Bruges.³

The Hanseatic markets, to be sure, did not offer the trading volumes, concentrated urban densities, and indeed the purchasing power that the Flemish had found in the earlier Mediterranean markets; and for these reasons, along with a much colder climate, they could never provide as effective a market for the cheap, light textiles, though certainly some says, worsteds, and cheap kerseys were periodically sold in this region, in small numbers⁴. Nor, of course, were the Hanseatic markets -- with the possible exception of Poland -- immune to the forces of the later-medieval demographic contractions and economic depressions, which struck northern Europe with considerable power, not so much at the time of the Black Death, but rather a generation later, from the 1370s; and their effect upon both the English wool trade and Flemish cloth production can also be seen in the accompanying table 1, which reveals a 42 percent decline in the

³ The two most decisive events leading to more formal Hanseatic Union were: (1) the Hansetage of 1356, which sent representatives of the Wendish-Saxon, Westphalian-Prussian, and Gotland-Livonian town circles to Bruges to subject its *kontor* to the combined authority of these towns in their dispute with Flanders over reparations for piracy damages, which in turn led to the Hanseatic embargo of Bruges in 1358-60; and (2) the Hanseatic War with Valdemar IV of Denmark, in 1362-69, involving the creation of the Cologne Confederation in 1367 (formally enduring to 1385), and resulting in the Hanse victory over Denmark in September 1369, and the Peace of Stralsund in May 1370, giving the Hanse effective control over Scania and the Sund commercial traffic.

⁴ In English textile exports, worsteds, which by number had amounted to 23 percent of broadcloth exports in the 1350s, had fallen to just about 1 percent of broadcloth exports by the 1380s, and generally remained at that low thereafter throughout the fifteenth and early sixteenth centuries. Kerseys were woollens and not worsteds, and generally more expensive than worsteds and says. Though their exports did increase from the 1380s, while worsted exports declined, they accounted for no more than 20 percent of English cloth exports at the end of the fifteenth century (as received at the Antwerp market). See Munro, 'Industrial Transformations', p. 134; Munro, 'Symbiosis of Towns and Textiles', pp. 1-74; Munro, 'Industrial Crisis', pp. 103-42; John Munro, 'Bruges and the Abortive Staple in English Cloth: An Incident in the Shift of Commerce from Bruges to Antwerp in the Late Fifteenth Century', *Revue belge de philologie et d'histoire/Belgisch tijdschrift voor filologie en geschiedenis*, 44 (1966): 1137-59; reprinted in Munro, *Textiles, Towns, and Trade*.

aggregate volume of English wool and cloth exports (combined), from 1355 to 1415.⁵ But certainly before and even well after the onset of these economic adversities, the Flemish and Brabantine draperies did enjoy, particularly for their now more luxury-oriented textile products, an access to these German markets that did involve much shorter-distance, generally more peaceful and secure trading routes, with lower transaction costs -- at least until piracy and warfare became more destructive and costly to Baltic trade by the early fifteenth century, and until the English cloth trade achieved its decisive breakthrough into the Antwerp Fairs and from there into the German markets, from the 1420s.

By that time, of course, not only English but also Dutch seafaring and cloth-bearing merchants were making serious inroads into Baltic commerce, and thus into the prime markets for Flemish and Brabantine woollens. Some of the blame for those inroads must be placed upon both the Flemish Civil War of 1379 - 85 and yet another Hanseatic embargo of Bruges, from 1388 to 1392 . But the seemingly more ominous English threat to the latter's Baltic markets quickly waned, by as early as 1410, when, along with the aforementioned disturbances, England's political and economic conflicts with the Prussian towns led to a severe decline in her once promising cloth export-trade to the Baltic zone, which never really recovered its former levels in this century.⁶ Not until the aforementioned breakthrough of the 1420s at Antwerp and the Brabant Fairs did English cloth merchants once more gain direct and major access to German markets; and indeed, with the subsequent mid-century depression in northern commerce, by far the most severe of the late-medieval era, the English cloth trade did begin its sustained upswing, one that would swamp its continental rivals, until the 1460s (see Table 1).⁷

Evidence for the Textile Trades: the Cloth Price Series and their Nature in England and the Low

⁵ See A.R. Bridbury, 'The Black Death,' *Economic History Review*, 2nd ser. 26 (1973), 557-92; and the essays in Munro, *Textiles, Towns, and Trade*; and John H. Munro, *Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500* (London, 1992); and also the sources cited in nn. 1-2.

⁶ See Terence H. Lloyd, *England and the German Hanse, 1157 - 1611: A Study of Their Trade and Commercial Diplomacy* (Cambridge, 1991), pp. 74-108; David Nicholas, *Medieval Flanders* (London, 1992), pp. 227-31, 302-03. nn. 1-2 above; and pp. 000 below.

⁷ See nn. 1-2, above; and pp. 000 below.

Countries

We are now so well informed about the changing fortunes of the English cloth trade, in its rivalries with the various Netherlander draperies, chiefly because the Public Record Office in London has retained a source unique in the annals of medieval commerce: the virtually unbroken series of the Enrolled Customs Accounts, along with a sizeable number of Particulars accounts, which, as tax records, detail the specific quantities of woolsacks exported from the Old Custom of 1275 and woollen broadcloths, though in full only from a later date, the Cloth Custom of 1347 (with cloth exports by aliens recorded from the New Custom of 1303).⁸ No such custom accounts exist, unhappily, for the Low Countries; and, for estimates of cloth production and possible exports, we must instead utilize the far more imperfect evidence from the various sales of cloth seals and of tax-farms, i.e. the right to collect certain excise duties imposed cloth-production in various urban draperies. These constitute the basis for the data presented on Flemish and Brabantine cloth production. also in Table 1.⁹

Nevertheless, for a considerable number of the Flemish, Brabantine, and Dutch urban draperies, equally unique and valuable records are available for an even longer span of time: entries in their civic treasurers' accounts for purchases of textiles, often including various woollens supplied from draperies outside the town as well. Furthermore, many of these purchase records also specify the costs of dyeing and finishing the better quality woollens; and those that do not usually indicate the colours, styles, and dimensions of the textiles purchased. They also list the civic officials (or foreign dignitaries) who received these cloths; and these accounts thus provide a wide range of textile prices from the cheaper to the most luxurious woollens, of which the 'scarlets' were by far the most costly -- as costly as the better silks -- each

⁸ Public Record Office of London, Exchequer, Lord Treasurer's Remembrancer (LTR), E.356 series; King's Remembrancer, E.122 series.

⁹ For a further discussion of these statistical sources, see Peter Stabel, 'International Trade and Flemish Cloth Manufacture: Time-series on cloth output in the 14th, 15th, and 16th centuries', in this volume.

forming consistent and consecutive annual series.¹⁰ Of course, economic historians would welcome even more consistent and continuous series of prices for these cloths when they were sold in foreign markets. Obviously such continuous series do not exist (or have not yet been found); but various Italian merchant firms, chiefly Florentine, have left us fairly voluminous commercial records of at least sporadic sales prices of Flemish woollens in Italian, Catalan, and Levantine markets, supplemented by various Polish records for eastern Europe, enough at least to justify our confidence in the prices recorded in the Flemish and Brabantine town accounts.¹¹ For the Hanseatic commercial zone, the most valuable records are the commercial books of the Vickos von Geldersen firm (1367-92), those of the Veckinhusen firm (1410-20), and the *Pfundzollbücher von Lübeck*, for 1492-96, as well as various scattered references published in the *Hansisches Urkundenbuch* and the *Curlandische Urkundenbuch*.¹²

Archival Sources: the Low Countries

Over the past 30 years, I have collected tens of thousands of these textile prices from the treasurers' accounts of various towns in the Low Countries, from the early fourteenth to mid-sixteenth centuries: (1) in

¹⁰ See John Munro, 'The Medieval Scarlet and the Economics of Sartorial Splendour', in *Cloth and Clothing in Medieval Europe: Essays in Memory of Professor E. M. Carus-Wilson*, ed. N.B. Harte and K. G. Ponting, Pasold Studies in Textile History no. 2 (London, 1983): pp. 13-70, reprinted in Munro, *Textiles, Towns, and Trade*.

¹¹ See the various sets of cloth-price tables in Munro, 'Industrial Transformations', Appendix 4.1, pp. 143-48; Munro, 'Origins of the English New Draperies', Table 3, pp. 42-44; Munro, 'Industrial Protectionism in Medieval Flanders', tables 13.3-13.5, pp. 267-68; and Munro, 'The Medieval Scarlet', pp. 13-70.

¹² See in particular H. Nirnheim, *Das Handlungsbuch Vickos von Geldersen, 1367-1392* (Hamburg-Leipzig, 1895); M.P. Lesnikov, *Die Handelsbücher des hansische Kaufmannes Veckinhusen* (Berlin 1973); F. Bruns, 'Statistik des Lübecker Schiffesverkehrs und Warenhandels in 1492-96', *Hansische Geschichtsblätter*, 5 (1904), 109-31; 8 (1907), 457-99; 9 (1908), 357-407. For a general survey, see Simonne Abraham-Thisse, 'Le commerce des draps de Flandre en Europe du Nord: Faut-il encore parler du déclin de la draperie flamande au bas moyen-âge?' in *La draperie ancienne des Pays Bas: débouchés et stratégies de survie (14e - 16e siècles)/ Drapery Production in the Late Medieval Low Countries: Markets and Strategies for Survival (14th-16th Centuries)*, ed. Marc Boone and Walter Prevenier, Studies in Urban Social, Economic and Political History of the Medieval and Modern Low Countries (Leuven, 1993), pp. 167-206; and even more important, Hektor Ammann, 'Deutschland und die Tuchindustrie Nordwesteuropas im Mittelalter', *Hansische Geschichtsblätter*, 72 (1954), 1-63.

the county of Holland, for Leiden, from 1372 to 1570¹³; (2) in the duchy of Brabant, for Leuven, from 1345 to 1500;¹⁴ and in Mechelen, from 1315 to 1551;¹⁵ (3) in Flanders, for Ghent, for 1292, 1302¹⁶ and then from 1314 to 1570;¹⁷ for Bruges, from 1302 to 1496, when these cloth-price entries cease;¹⁸ for Ypres (Ieper), from 1406, our earliest extant account, to 1498;¹⁹ for Kortrijk (Courtrai), from 1393 to 1444 (when these price series also cease).²⁰ The Bruges civic accounts are also valuable for supplying prices, for various years, for woollens from a wide variety of the younger so-called *nouvelles draperies*, of both Flanders and Brabant, as purchased on the Bruges markets, including: Wervik, Kortrijk, Menen, Roeselare (Roulers), Belle (Bailleul), Eeklo, Diksmuide, Armentières, Nieuwkerke (Neuve-Église), Hesdin, Gistel, Mesen, Oudenaarde (Audenarde), Dendermonde (Termonde), Diest, Lierre (Lier), Zichem, Linselles, and also several French draperies (Lille, Rouen, Montivilliers). The surviving accounts from the Franc de Bruges (Het Bruges Vrij),

¹³ Nicolaas Posthumus, ed., *Bronnen tot de geschiedenis van de Leidsche textielnijverheid*, vol. 1: 1333-1480 (The Hague, 1910), doc nos. 14-96, pp. 24-11 [for cloth prices 1371-1424]; Gemeente Archief Leiden, Archief der Secretarie van de Stad Leiden, 1253-1575, nos. 511-640 (for cloth prices from 1391-1570).

¹⁴ Stadsarchief Leuven, Stadsrekeningen 1345-1500, nos. 4986-5125.

¹⁵ Stadsarchief Mechelen, Stadsrekeningen 1315-1499, Series I:3-169; Algemeen Rijksarchief [België], Rekenkamer, doc. nos. 41,205-279.

¹⁶ 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, 1906-1924), II, doc. no. 405, p. 385; Louis Gilliodts-van Severen, ed., *Cartulaire de l'ancienne estaple de Bruges: Recueil de documents concernant le commerce intérieur et maritime, les relations internationales et l'histoire économique de cette ville*, 2 vols. (Bruges, De Plancke, 1904-05), I, doc. no. 167, pp. 101-03.

¹⁷ Stadsarchief Gent, Stadsrekeningen 1314/15-1569/70, Reeks 400:1-77.

¹⁸ Stadsarchief Brugge, Stadsrekeningen 1302/03 to 1496/97, supplemented by accounts in Algemeen Rijksarchief, Rekenkamer, doc. nos. 32,461-550. From October 1496, the accounts record only cash allowances provided for textile purchases, but no further individual cloth prices.

¹⁹ Algemeen Rijksarchief [België], Rekenkamer, doc. nos. 38, 636-721 [stadsrekeningen 1406-1500]. Because of the destruction of the Ypres' archives in World War I, the only extant civic accounts are the copies of those deposited in the Burgundian Chambre de Comptes at Lille, beginning in 1406. From 1499, cash allowances only are provided in the accounts.

²⁰ Algemeen Rijksarchief [België], Rekenkamer, doc. nos. 33, 148-190 [stadsrekeningen 1393-4 to 1437-8].

from 1395 to 1451, also supply market prices for woollens from several of these *nouvelles draperies* -- especially Wervik and Kortrijk -- and also from the large urban drapery in Ypres.²¹ Similarly, the fifteenth-century town accounts for Aalst (Alost) and Veurne (Furnes) provide scattered prices for woollens from their own draperies but also for woollens from the Flemish *drie steden*, i.e. Ghent, Bruges, Ypres, and other draperies, as purchased on the open markets.²² Thus such accounts from the smaller drapery towns provide, at least periodically, a good and proper check on the cloth prices recorded in the civic accounts of the *drie steden*, along with the afore-mentioned cloth prices periodically recorded in foreign markets.

Archival Sources: England

The available archival evidence for contemporary English cloth prices is far less detailed and complete, sporadic rather than generally consecutive, though by no means meagre, and certainly sufficient to provide some valid comparisons with the Flemish, Brabantine, and Dutch price data of this era. Cloth prices or evaluations are available from both the Enrolled Customs Accounts and the Particular Accounts, for the following English ports: Bridgewater (1460-1, 1485)²³; Boston (1365-6, 1390, 1409, 1412, 1436-9, 1461, 1467-9)²⁴; Bristol (1376-9, 1391, 1402-04, 1407-08, 1461, 1465-7, 1469-70, 1473-75, 1479-81, 1483);²⁵ Exeter-Dartmouth (1393, 1398-9, 1410-11, 1415, 1460-3, 1468-71, 1480-1);²⁶ Hull (1383-4, 1391-2, 1395-6, 1398-99, 1401, 1436-7, 1461, 1466, 1471-7, 1483-4);²⁷ Ipswich (1386-88, 1397-8, 1400-01, 1404,

²¹ Algemeen Rijksarchief [België], Rekenkamer, doc. nos. 42,521-563.

²² Algemeen Rijksarchief [België], Rekenkamer, doc. nos. 31,412-485 (Aalst: 1395-1500); 34,536-648 (Veurne: 1395-1520).

²³ PRO, LTR Exchequer, E.356/21-23.

²⁴ PRO, KR Exchequer, E.122/7/10, 122/7/21/, 122/8/17, 122/8/21a-b, E.356/18, 356/19, 356/21, E.122/10/7, E.122/10/11.

²⁵ PRO, E.122/15/18, 122/16/4, 122/16/21, 122/17/6, 122/17/8, 122/17/10/, 122/17/37, E.356/20, E.122/19/1-7, 10, 14-15, 122/162/5, 122/20/1, E.356/22.

²⁶ PRO, E.122/40/18, 122/40/23, 122/40/30-31, 122/40/35, 122/40/10, E.356/21, E.122/41/2-3, E.356/22.

²⁷ PRO, E.122/59/8, 122/59/19, 122/59/23-5, 122/59/11, 122/60/2, E.356/19, E.122/62/1, E.356/21, E.122/62/17, 122/62/9, E.356/22.

1406, 1410-11, 1413-14, 1436-37, 1447-48, 145-59, 1461-9, 1470-3);²⁸ King's Lynn (1388, 1390-93, 1405, 1457, 1461, 1464-8);²⁹ London (1383, 1389-90, 1426-33, 1442-3, 1446, 1449-50, 1461-83, 1485-8, 1494-5, 1506-14);³⁰ Newcastle (1388, 1401-03, 1406-07, 1436-7);³¹ Poole (1459-62, 1465-73, 1487-8, 1492-3, 1525-6);³² Plymouth (1378-83, 1400, 1410-11, 1435-38, 1456-57, 1461-3, 1479-82, 1486, 1499-1500, 1504-08, 1511-12, 1519-20);³³ Sandwich (1386-87, 1457, 1461, 1466, 1469-70, 1478-9);³⁴ Southampton (1371-2, 1383-4, 1403-04, 1424-5, 1430-4, 1436-44, 1447-9, 1454-61, 1463-4, 1467-76, 1480-1, 1487-92, 1496-7, 1500-01, 1512-17);³⁵ and Yarmouth (1388, 1392-3, 1396-1401, 1413, 1418, 1447-9, 1452-3).³⁶

These custom-account prices can be usefully supplemented with price data from several other English sources: the London Aulnagers' accounts of cloth sales (1408-10, 1413-29, 1432-47, 1452-6, 1462-3, 1467-70, 1482-3);³⁷ cloth prices recorded in the Alien Hosting Accounts (London: 1440-4);³⁸ cloth purchases

²⁸ PRO, E.122/50/30, 122/50/33, 122/193/33, 122/51/11, 122/51/15, 122/51/27, 122/51/39, E.356/18-21, E.122/52/42, 122/52/45, 122/176/6, 122/52/46, 122/52/48-49, E.356/22.

²⁹ PRO, E.122/94/9, 122/94/12-14, 122/94/23, 122/95/8, 122/95/12, 122/95/27, E.356/20-21, E.122/97/3-4, 7-8.

³⁰ PRO, E.122/71/8, 122/71/13, 122/76/13, 122/74/11, 122/77/1, 122/73/5, 122/74/4, 122/73/20, 122/73/23, 122/73/25, 122/94, 14-18, E.356/21-23, E.122/78/7, 122/79/5, E.356/24, E.122/81/1-2, 122/83/2.

³¹ PRO, E.122/106/19, 122/106/3, 122/106/32, 122/106/42, E.356/18.

³² PRO, E.356/21, E.122/119/2, 5, 7-12, 15, 19, 122/120/3-4, 122/207/2.

³³ PRO, E.122/190/1, 122/113/4, 122/113/2, 122/183/19, E.356/20, E.122/114/1-2, 122/114/11, 122/114/3, 122/114/14, 122/115/3, 8, 10, 12, 122/206/1, 3.

³⁴ PRO, E.122/126/6, E.356/20-22, E.122/128/16.

³⁵ PRO, E.122/137/19, 122/138/11, 122/139/4, 7-9, 122/141/4, 122/141/21-2, E.356/18, E.122/209/1, 122/141/23-25, E.356/19, E.122/140/62, 122/141/29-36, 122/209/8, E.356/21-4, E.122/141/38, 122/142/1-3, 8, 10, 11-12, 122/143/1, 122/209/2.

³⁶ PRO, E.122/149/22, 27, 28, 33-34, 122/150/2, 5, 122/151/21, 122/194/9, 122/151/70.

³⁷ PRO, E.101/340/30, 101/341/2-21, 101/342-2.

³⁸ PRO, E.101/128/30-31.

by several of the London guild houses (Brewers Guild: 1418-39; Grocers Guild: 1448-70).³⁹ Finally there are the invaluable series of Royal Wardrobe accounts: for Edwards I -III (1304-06, 1311-12, 1323-9, 1342-3, 1361-2, 1369-70);⁴⁰ for Henry IV and V (1406-13, 1419-20);⁴¹ and for Henry VI and Richard III (1422-23, 1438-44, 1483-4).⁴² For domestic sales of English woollens, we do possess the important but little used series of prices that J. A. Thorold Rogers collected from the purchase accounts of various colleges at Cambridge and Oxford Universities (see Table 6).⁴³

For many years, my research on these cloth price and cloth-output data has been unaided by either computers or research assistants; but those deficiencies have been remedied more recently with research grants from the Social Sciences and Humanities Research Council of Canada and most recently with a grant from the *Forschungsstelle für die Geschichte der Hanse und des Ostseeraums*, in the Hansestadt Lübeck, drawing upon funds from the Volkswagen-Stiftung, both of which have permitted me to employ research assistants to enter the previously collected data, from my handwritten records, into computer-based spreadsheet programmes.

The Ghent Cloth Prices Series (1294-1570): Types of Woollen Textiles

We have now completed the Ghent cloth price data (1294-1570), which is the most continuous and complete and the most highly detailed in its entries, in describing the cloths so purchased for civic officials and their aristocratic guests (as presents). The cloths were usually purchased by the piece, according to the standard and officially prescribed dimensions; but if not, the accounts record the ells (0.70 m = 70 cm) or part-cloths (halves, quarters, thirds) so purchased. In the fourteenth century, a standard, fully finished

³⁹ Corporation of the City of London, Guildhall Manuscripts Library, Ms. no. 5440 (Brewers); Ms. no. 11,571 (Grocers).

⁴⁰ PRO, E.101/368/6, 101/368/12, 101/374/19, E.361/3-4.

⁴¹ PRO, E.101/405/14, 101/405/22, 101/406/9, 101/407/1, E.361/6.

⁴² PRO, E.101/407/13, 101/409/2,6,12; LC 9/50.

⁴³ James A. Thorold Rogers, *History of Agriculture and Prices in England*, I: 1259 - 1400 (Oxford, 1867); and IV: 1401 - 1582 (Oxford, 1882).

broadcloth (*breedelaken*) was 35-36 ells in length (=24.5m to 25.2 m). By the very early fifteenth century, throughout Flanders, the standard length had been reduced to 30 ells (21 m). Whether or not that meant much more intensive fulling and shrinkage or whether it meant that cloths were woven to a shorter length on the loom, i.e. with lesser amounts of wool, we cannot really tell, though the former reason seems more likely. We know that by this time very extensive fulling had reduced the width -- much more proportionally than the length -- of Ghent *dickedinnen* broadcloths from 3.625 ells on the loom to 2.375 ells (1.663 m), and shrunk the overall area by just over half: 53.8 percent (from 75.5 m² to 34.913 m²).⁴⁴

Throughout the fourteenth and early fifteenth century, the Ghent drapery produced three types of heavily fulled and felted woollen broadcloths. The most popular, and certainly the predominant cloth of the later fifteenth and sixteenth centuries, was the *pleine dickedinnen*, which literally means a 'plain' (not square, as in modern Dutch) cloth, dyed in one colour, that was 'thick and thin' in texture or weave. It was evidently woven in 2/1 or 1/2 [one weft over and under two warps] twill, using a three-treadle, triple-shed loom -- even if most other fulled broadcloths had a standard tabby [1/1] weave. A second, variant, and usually also a *dickedinnen*, was the *ghemingden laken (drap mellé)*: a medley cloth, composed of differently coloured wools. The third type, which achieved its greatest popularity in the fourteenth and early fifteenth century, though it continued to be manufactured until well into the sixteenth, was the *strijptelaken (drap rayé)*: a true woollen cloth, probably in a twilled weave, whose warps appeared as differentially coloured stripes (i.e. different from the weft background).

Fortunately, many documents provide quite explicit and specific information about the production of the Ghent *dickedinnen* in both the fifteenth and sixteenth centuries, unchanged between 1456 and 1546,

⁴⁴ See Table 1; and Octave Delepierre and M.F. Willems, eds., *Collection des keuren ou statuts de tous les métiers de Bruges* (Ghent, 1842); Marc Boone, ed., 'Nieuwe teksten over de Gentse draperie: wolaanvoer, productiejze en controlpraktijken (ca.1456-1468)', *Bulletin de la Commission royale d'Histoire*, 154 (1988); M.J. Lameere, H. Simont, et al, eds., *Recueil des ordonnances des Pays Bas, deuxième série: 1506-1700*, V: 272-83; M.G. Willemsen, 'Technique et l'organisation de la draperie à Bruges, à Gand, et à Malines au milieu du XVIe siècle', *Annales de l'Academie royale d'archéologie de Belgique*, 68 (1920), 5-69, 109-75.

and indeed almost certainly unchanged from the 1340s or 1350s.⁴⁵ Table 2 compares the composition, dimensions, and weight of a Ghent *dickedinnen* broadcloth with those for the following textiles: an English broadcloth (Sussex); a fine *oultreffin* woollen from the leading *nouvelle draperie* of Armentière; a lightweight, semi-worsted Hondschoote say; an even lighter, full-worsted say from Bergues-St.-Winoc; and an English worsted (mid sixteenth century). For the later fifteenth-century, table 3 provides prices of English wools, in pounds sterling and pounds *groot* (gros) Flemish, per English sack weight of 364 lb (or 165.11 kg), at the Calais Staple, the obligatory staple for the sale of all such wools to northern Europe (see below, pp.). Each sack furnished the wool for about 4 1/3 English broadcloths. In turn, from each of these woollen broadcloths, a tailor could cut and produce about three full suits for a well-dressed medieval man. Table 4 provides the prices, in pounds *groot* Flemish, of the luxurious Ghent *dickedinnen*, from 1340 to 1540 (in decennial mans); table 5, the prices of the various woollen broadcloths produced in the Ghent drapery in the 1360s – from relatively cheap *strijptelaken* to ultra-luxurious *scarlaken* (scarlets); table 6, of prices for both large, luxurious *dickedinnen* and small-cloths, in both Flemish *ponden groot* and Florentine florins, from 1340 to 1412. Together these three tables also relate the cloth prices to the annual values of a standard consumer ‘basket of commodities’ (serving as a commodity-price index) and also to a master mason’s daily wage, in order to indicate how many days’ wages would be required to buy one of these cloths. Table 7 compares the prices of luxury woollens from Ghent, Mechelen, and Leiden with those for the very cheap and light Hondschoote says, in the decade 1535-45, indicating as well the number of days’ wages that a master mason would have buy to buy either a Ghent *dickedinnen* or a Hondschoote say, during these year.

Employing decennial means for the 23-year period from 1320 to 1550, Table 8 compares the prices of English wools (by sack), English broadcloths (exports), Ghent *dickedinnen*, and commodity prices for

⁴⁵ See Table 1, and its sources; see also See John Munro, ‘Textile Technology,’ in *Dictionary of the Middle Ages*, ed. Joseph R. Strayer, et al., 13 vols. (New York: Charles Scribner's Sons/MacMillan, 1982-88), 11: *Scandinavian Languages to Textiles, Islamic*: 693-711; reprinted in Munro, *Textiles, Towns, and Trade*; John Munro, ‘Medieval Woollens: Textiles, Textile Technology, and Industrial Organization, c. 1000 - 1500’, and ‘The West European Woollen Industries and their Struggles for International Markets, c.1000 - 1500,’ in *The Cambridge History of Western Textiles*, ed. David Jenkins (Cambridge and New York, forthcoming).

England, Flanders, and Brabant. Finally, Table 9, using quinquennial means for the period 1400 to 1520, provides the prices of Ghent *dickedinnen* and *strijpte lakenen*; of fine woollens from the two other Flemish *drie steden*, i.e. of Bruges and Ypres; those from the Flemish *nouvelles draperies* of Kortrijk, Wervik, Neuve-Église, and then of woollens from the Brabantine and Dutch draperies of Leuven, Mechelen, Leiden; and finally the prices of English woollen broadcloths England (domestic and export sales), along with a comparison of the values of the English pound sterling and the Flemish *pond groot*. Without such a combination of all this comparative information, these Ghent cloth price series would be of rather dubious value.

These tables reveal clearly that the woollen broadcloths from Ghent, Armentières, and Sussex weighed two to three times as much as the Flemish says or English worsteds; and, per square metre, these broadcloths weighed somewhat more than a modern-day heavy woollen overcoat. The Hondschoote say, it should be noted, was a hybrid with a long-stapled dry worsted warp and a short-greased woollen weft, while the much lighter weight say from Bergues-St.-Winoc was a pure worsted say, in both warp and weft. It should also be noted that virtually all wool-based textiles made today, for both men's and women's dress, are worsted rather than woollen, except for overcoats and the robes of cardinals at the Vatican.⁴⁶ The heavy weight of a true woollen broadcloth is a function of both the density of the very short (2 cm) curly fibres that compose the warp and weft yarns and of the extent of the fulling: i.e. of the shrinkage and felting, which forces those fibres to be both highly compressed and interlocked. True worsteds underwent virtually no fulling beyond a simple cleansing; and the straighter, coarser, thinner worsted fibres were much lighter (despite the higher warp count in the weaves).⁴⁷

Textile Prices and Manufacturing Costs: Wools, Dyestuffs, and Labour

These tables together also clearly demonstrate how terribly expensive the true woollen broadcloths

⁴⁶ For a discussion of the evidence for these cloth weights, see Munro, 'Origins of the English New Draperies', pp. 35 - 127; Munro, 'Industrial Crisis', pp. 109-15.

⁴⁷ See Munro, 'Textile Technology'; Munro, 'Origins of the English New Draperies', pp. 35-53; Munro, 'Medieval Woollens'.

were, especially those of Ghent and Mechelen – or had become by the sixteenth century; and also how relatively cheap were the worsted says. Thus in 1540, a Ghent *dickedinnen* would have cost a highly skilled master mason in Antwerp, a very high status craftsman, more than a year's full pay: 284 days' wages, when the normal working year in Antwerp then consisted of about 210 days (Table 7). That same Antwerp mason, however, could purchase a Hondschoote single say with just 16 days' wages: much more in accordance with our own expenditure patterns on clothing today.

Rising Wool Costs, from the 1340s:

As suggested earlier, the major factor that explains most of these large differences in textile prices is the raw-material components: both the quantity but especially the quality and thus the prices of the dyestuffs and wools-- the wools above all. As Table 2 indicates, the Ghent *dickedinnen* broadcloths and also the Mechelen *rooslakenen* in Table 7 (and of course the Sussex/Essex broadcloths) were all made exclusively from the finest English wools, which were then and long had been unrivalled in quality, for their very short (2 cm), curly, serrated fine fibres, excellent for felting, and the most expensive in Europe. For Spanish *merino* wools, whose production did not even commence until the mid-fourteenth century, did not sufficiently improve in quality, through cross-breeding and sheep-management (*transhumance*), to begin the challenge the supremacy of the finer English wools before the mid-sixteenth century.⁴⁸

In the Low Countries, the first to begin using Spanish *merino* wools were the so-called *nouvelles draperies*, which had much earlier, from the mid-fourteenth century, risen to prominence as serious competitors to the traditional and now luxury-oriented draperies of the Flemish *drie steden*, by imitating the latter's fine woollens, at a lower cost and sales price, using lesser quantities of lower-quality English (and perhaps also Scottish) wools. Thus, so readily accused of being 'counterfeiters' of other fine woollens, the

⁴⁸ See Munro, 'New Draperies', pp. 33-52; Robert S. Lopez, 'The Origin of the Merino Sheep,' *The Joshua Starr Memorial Volume: Studies in History and Philology*, Jewish Social Studies, no. 5 (New York, 1953), pp. 161-68; and also Carla Rahn Phillips and William D. Phillips, *Spain's Golden Fleece: Wool Production and the Wool Trade from the Middle Ages to the Nineteenth Century* (Baltimore and London: The Johns Hopkins Press, 1997), chapters 1-2, which, however, fail to make clear the origins and evolution of the *merino* wools, in particular the reasons for improvements in their quality.

nouvelles draperies were much less reluctant than the Flemish *drie steden*, the major Brabantine, and Dutch (Leiden) drapery towns to switch to Spanish wools; but they did so only from the 1430s, only after English wools became prohibitively expensive, for reasons discussed below (pp. 000). Even so, Armentières, the sixteenth-century leader of the *nouvelles draperies*, still required that fine English Cotswolds, Berkshire or Lindsey wools compose a third of the wools in its *oultreffin* broadcloths.⁴⁹

The Flemish *sayetteries* and similar *draperies légères* never used any English or Spanish merino wools, but only the far cheaper, coarser, straight- and long-stapled wools from Flanders, France, Germany, or Scotland; and enjoying the force of economic and demographic expansion and renewed access to burgeoning Mediterranean markets, they had made a remarkable comeback to become the leading Flemish textile producers of the sixteenth century, as they had been in the thirteenth century, under very similar economic conditions, when all the Low Countries draperies had made a very wide range of textiles from an equally wide range of wools.⁵⁰

But subsequently, however, during the early to mid-fourteenth century, when the traditional urban draperies forsook, and then the *nouvelles draperies*, had decided to focus production more and more upon higher-priced luxury quality woollen broadcloths, they had necessarily become dangerously dependent upon the finer English wools, a dependency that the English crown was neither slow nor loath to exploit.⁵¹ Indeed, from the very outset of the Hundred Years' War in 1337 to the end of the fourteenth century, the tax burden on and thus the cost of those English wools rose steadily, to the detriment of almost all the traditional major

⁴⁹ Henri De Sagher, 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), I: 102-17, no. 36. See also John Munro, 'Wool-Price Schedules and the Qualities of English Wools in the Later Middle Ages, ca. 1270 - 1499,' *Textile History*, 9 (1978), 118-69; reprinted in Munro, *Textiles, Towns, and Trade*; Munro, 'Symbiosis of Towns and Textiles', pp. 37-45; Munro, 'New Draperies', pp. 35-53. See also above nn. 1-2, 40.

⁵⁰ See Munro, 'New Draperies', pp. 35-128; Munro, 'Industrial Transformations', pp. 110-48; Munro, 'Symbiosis of Towns and Textiles', pp. 1-74; Munro, 'The 'Industrial Crisis' of the English Textile Towns, pp. 103-41; Munro, 'Export Trade in Textiles', pp. 18-30.

⁵¹ See above, nn. 1-2, 48-9.

draperies in the Low Countries (see Table 8). In order to finance his coming military campaigns, Edward III had sharply increased the export-tax levy from the traditional 6s 8d per sack (established in 1275) to 26s 8d, then to 40s 0d in 1338, and to 46s 8d in 1342 (50s 0d for aliens), a rate that was retained until 1362. Initially, however, much of the wool-tax incidence was borne not by foreign buyers but by English landlords as wool-sellers, whose opposition forced Edward to adopt an alternative solution in 1363: the establishment of the Calais Wool Staple under the control of a mercantile cartel, which eventually succeeded in shifting almost all of that tax incidence on to the foreign buyers. By 1369, that rate had risen to 50s 0d per sack (51s 7d with the added ‘Calais levy’). Because those wool export duties (customs and subsidies) were fixed and *specific* rather than *ad valorem*, their effective real burden rose as the nominal prices of wool fell with deflation in the last quarter of the fourteenth century (a price fall of 16 percent from 1360-9 to 1390-9, less than the overall decline of 25 percent in the Phelps Brown-Hopkins price index). As a consequence, the total burden of English wool-export taxes amounted to almost 50 percent of the mean domestic price of Cotswolds and Midlands wools by the 1390s; and a further consequence the real price of Flemish woollens also rose, in relation to the overall Flemish price indices (and the deflation at the end of the century).⁵² Unfortunately for the Low Countries, their urban draperies would suffer further and more disastrous blows from English fiscal and monetary policies in the fifteenth century (see below, pp. 000). Indeed, the decennial mean wool prices, and the related export taxes, shown in Table 8 should be compared with the wool prices in Table 2, for the Calais Staple during the late fifteenth century, demonstrating that the Staple’s wool prices had risen to well more than double the domestic English price by the 1490s.

Not surprisingly, therefore, the cost of these English wools came to form a very high proportion of total production costs for the Flemish, Brabantine, and Dutch draperies by the early fifteenth century. Thus

⁵² See the evidence in John Munro, ‘Industrial Protectionism in Medieval Flanders: Urban or National?’ in *The Medieval City*, ed. Harry Miskimin, David Herlihy, and A. L. Udovitch (New Haven and London, 1977), pp. 229-68; and Munro, ‘Industrial Transformations’, pp. 133-38; W. M. Ormrod, ‘The Crown and the English Economy, 1290-1348’, *Before the Black Death: Studies in the ‘Crisis’ of the Early Fourteenth Century*, ed. in Bruce Campbell (Manchester, 1991), pp. 149-83. For the Phelps Brown & Hopkins price index, see n. 65 below.

for example, in producing a fine woollen black broadcloth at Leuven in 1434, the English wool accounted for 76.2 percent of the pre-finishing manufacturing costs and for 62.5 percent of the total cost, while dyeing and dressing the cloth accounted for 18.0 percent of total costs -- most of that in the woad and madder dyes themselves, so that the remaining share of manufacturing costs amounted to only 19.5 percent of total costs. In the Ypres drapery, the fine Cotswold wool used in producing a black woollen broadcloth in 1500 accounted for 64.2 percent of pre-finishing manufacturing costs and for 52.0 percent of total costs (and indeed the price for Cotswolds wool at Calais corresponds to the costs in the Ypres accounts for 1500, when one adds on transport and marketing costs). In the other manufacturing costs, the finishing process of dyeing and dressing again accounted for 19.2 percent of total costs (17.7 percent in dyes and 1.5 percent in shearing costs); but this time somewhat more extensive and skilful labour in spinning, weaving, fulling, and tentering accounted for 26.2 percent of total production costs.⁵³

Dyeing Costs: and the Special Case of the Medieval Scaerlaken (scarlets):

The special significance of dyestuffs, and their costs, can be found in the purchase records of these Flemish and Brabantine urban accounts for what seems to be a fourth and entirely different type of textile, an incredibly expensive one known as *scaerlaken*, which, for example, in the Ghent accounts of the early 1350s would have cost a master mason or carpenter his full wages for 390 days (for just over 22 months of work). The Flemish term *scaerlaken* means ‘scarlet’; and in Italian, it is rendered as *scarlatto*; in French, as *écarlate*; in Spanish and Portuguese, as *escarlat*; in modern German, as *Scharlach*; in modern Dutch, as *scharlaken*; and in modern Swedish, as *scharlakan*. It refers not to the particular or peculiar manufacture of the textile, nor -- as if often claimed -- to its finishing in terms of extensive shearing, but rather to its dyestuffs. Used either to dye the wools before manufacturing, or more commonly, in the piece, after fulling and tentering, that dyestuff is now known as *kermes* (from the Arabic *qirmiz*, meaning ‘worm’), which was extracted at enormous cost from the eggs of Mediterranean and Caucasian (Georgian) scale-insects of the

⁵³ For the data sources, see John Munro, ‘Industrial Protectionism’, Table 13.2, p. 256; and Munro, ‘Medieval Scarlet’, Table 3.12, p. 52. See also the next note, and n. 39 above.

genus *Kermococcus vermilio* (sometimes referred to incorrectly as *Coccus ilicis*). For some medieval ‘scarlets’ this dyestuff cost more than the fine English wools used in weaving them. Unfortunately, the Ghent cloth-price accounts provide very meagre data on the actual costs of dyeing and finishing *scaerlakenen* in the fourteenth century; but those for Mechelen provide very precise and detailed data on such costs continuously each year from 1361 to 1419. During this period, the cost of the kermes (grain) used in producing the *scaerlakenen* ranged from a low of 24.4 percent (1403, with 17.67 lb. grain per cloth) to a high of 62.3 percent (1379, with 51.75 lb. grain per cloth) of the scarlet-textile’s price, for an overall mean of 39.8 percent ; but the mean cost of the labour involved in both dyeing and shearing was only 2.7 percent of the cloth price. In the fifteenth-century Ypres accounts (for 1406 - 86), the mean cost of the kermes dyestuffs (averaging 29.85 lb. per cloth), as a proportion of the total cloth price, was 36.1 percent ; the labour cost of dyeing, 3.4 percent ; and the cost of shearing and finishing, just 1.5 percent of the cloth price.⁵⁴

Although the dyestuff itself is famous for its vivid orangish-red and thus scarlet colour, as is its early modern Mexican successor *cochineal*, a ‘scarlet’, and in particular a Flemish *scaerlaken*, did not necessarily appear to be scarlet in colour, despite containing ample quantities of this dyestuff. For very frequently such textiles were woven from wools that had been dyed blue in woad-indigo, and then re-dyed in the piece, with kermes-scarlet, to provide very rich colours with hues of black, perse-blue, brown, sanguine (blood-red), and even green.⁵⁵ The textile itself, so transformed into a scarlet-*scaerlaken*, could have been a *strijptelaken* – and there are many examples of *strijpte scaerlakenen* in the Ghent accounts -- or a *ghemijnghede* (*gemengd*) *laken*; but most were standard broadcloths, and in Ghent specifically the aforementioned *dickedinnen*; and

⁵⁴ See Munro, ‘The Medieval Scarlet’, pp. 13-70, in particular tables 3.4-3.5, pp. 40-01. See also Dominique Cardon, *Les ‘vers’ du rouge: insectes tinctoriaux (Homoptera: Coccoidea) utilisés dans l’ancien monde au moyen-âge: essai d’entomologie historique*, Cahiers d’histoire et de la philosophie des sciences no. 28, Société française d’histoire des sciences et des techniques (Paris, 1990). For the old traditional view that it meant a heavily shorn cloth, see Jean-Baptiste Weckerlin, *Le drap “escarlata” au moyen âge: essai sur l’étymologie et la signification du mot écarlate et notes techniques sur la fabrication de ce drap de laine au moyen âge* (Lyon, 1905).

⁵⁵ For evidence on this, see Munro, ‘The Medieval Scarlet’, pp. 13-70, in particular tables 3.4-3.5, pp. 40-01.

the later-medieval and sixteenth-century *scaerlaken* seem to have been almost uniquely *dickedinnen* in Ghent or similar broadcloths in the other major draperies.

Labour Costs and Manufacturing Time

Nevertheless, even if the major proportion of manufacturing costs lay in the raw materials, vast quantities of labour-time -- reflecting a very low level of productivity -- were still required to produce one of these fine Flemish woollen broadcloths, most certainly by the later fourteenth and fifteenth centuries. A typical draper, employing two male weavers (or a master-weaver employing a journeyman weaver), female warpers and weft-winders, required a minimum of two weeks (at least 12 working days, 10-12 hours per day) in order to weave one such broadcloth measuring 30 metres by 2.8 metres on the loom (42 ells by 4 ells), using 38.2 kg of wool (88 lb.: with 38 lb. warp and 50 lb. weft). At the same time, 12 or more days' labour was expended in wool-beating, carding, combing, and spinning yarns for the same cloth, involving in total the labour of 26-30 persons; and, after the cloth was woven, from three to five days (six in winter), depending on the grade of the cloth, were devoted to fulling, and another week to dyeing, shearing, and finishing. With about 210-240 working days a year, annual output averaged about 20 such broadcloths per loom, or 10 cloths per weaver, with a possible maximum of 30 broadcloths per loom per year.⁵⁶

⁵⁶ See Walter Endrei, *L'evolution des techniques du filage et du tissage: du moyen âge à la révolution industrielle*, trans. by Joseph Takacs and Jean Pilisi, École Pratique des Hautes Études-Sorbonne, Vie section: Industrie et artisan no. 4 (Paris and The Hague, 1968); Walter Endrei, 'Changements dans la productivité de l'industrie lainière au moyen âge,' *Annales: E.S.C.*, 26 (1971), 1291-99; Walter Endrei, 'La productivité et la technique dans l'industrie textile du XIIIe au XVIIe siècle,' in *Produttività e tecnologia nei secoli XII-XVII*, ed. Sara Mariotti (Florence, 1981), pp. 253-62; Walter Endrei, 'The Productivity of Weaving in Late Medieval Flanders,' in *Cloth and Clothing in Medieval Europe: Essays in Memory of Professor E. M. Carus-Wilson*, ed. Negley B. Harte, and K. G. Ponting, Pasold Studies in Textile History no. 2 (London, 1983), pp. 108-19; Walter Endrei, 'Manufacturing a Piece of Woollen Cloth in Medieval Flanders: How Many Work Hours,' in *Textiles of the Low Countries in European Economic History*, ed. Erik Aerts and John Munro, Proceedings of the Tenth International Economic History Congress, Studies in Social and Economic History, Vol. 19 (Leuven, 1990), pp. 14-23; Raymond Van Uytven, 'Technique, productivité, et production au moyen âge: le cas de la draperie urbaine aux Pays-Bas,' in *Produttività e tecnologia nei secoli XII-XVII*, ed. S. Mariotti (Florence, 1981), pp. 283-94. Productivity evidently did not increase further before the Industrial Revolution. According to an English Parliamentary commission report on woollen manufacturing in the period 1781-96, two men and a boy weaving a superfine broadcloth of 34 yards, with 70 lb. of wool, then required 364 man-hours (= 14.5 days); and another 888 man-hours were spent in wool preparation, spinning, reeling, and warping. See Ephraim Lipson, *The History of the Woollen and Worsted Industries* (London, 1921), Appendix I:A, p. 258, based upon *Parliamentary Papers* (London, 1840), vol. 23, p. 439

Unfortunately the records for the production of medieval says and similar light worsted-type textiles are far less detailed; but clearly their manufacture required far less labour-time. Thus, in 1321, London's merchant burellers' guild contended that a worsted-like *burel* (evidently 40 yards long by 1.5 yds wide) could be woven in 'two days or three', though the weavers' guild was demanding the right to take four days.⁵⁷ In this same era (1314), furthermore, the Bruges civic government limited the number of *Ghistelsayen* that any draper (who might employ several looms) could bring to the cloth-hall each year to 800.⁵⁸

Variations and Ranges in the Ghent Textile Price-Series

To appreciate the range in cloth prices for the three main varieties of woollens produced in the Ghent drapery in the mid-fourteenth century, consider the sample spreadsheet offered in Tables 5a and b. These good-quality woollens -- the *strijptelaken*, *ghemijngkede laken*, *dickedinnen breede laken* -- are those that the civic government had purchased in the market, chiefly from local drapers, in order to provide the required clothing or ceremonial dress for a wide range of civic officials and employees: the *schepenen*-aldermen, the clerks, the guild deans, the sergeants, musicians, and servants (*garsoene*). Presumably, from a variety of qualitative evidence, the quality and thus the price of these textiles was in accordance with the recipient's rank within the hierarchy of the civic government.

As stressed earlier, as one of the key points of this paper, the price of these textiles was to a very large extent determined by the cost of the wools, dyestuffs, and other raw materials. As also noted earlier, the concerted policy of the Flemish *drie steden* and of the major Brabantine drapery towns to concentrate on the production of very fine, luxury-quality woollens, had necessarily made them almost fully dependent

et seq; Julia de Lacey Mann, *The Cloth Industry in the West of England from 1640-1880* (Oxford, 1971), Appendix III, pp. 316-21.

⁵⁷ H. Thomas Riley, ed., *Munimenta Gildhallae Londoniensis: Liber Albus, Liber Custumarum et Liber Horn*, 2 vols. (London, 1859-62), *Liber Custumarum*, II.i, lxvi-lxviii, and 416-25. See also Munro, 'Industrial Crisis', pp. 105-15. Other London cloths produced in this era, such as *wadmal*, had weights per piece of 11 lb. or less, compared to the weight of a later-medieval West Country or East Anglian broadcloth: 64 lb.

⁵⁸ Espinas and Pirenne, *Recueil de documents*, I, no. 141, pp. 407-12. The previous limitation, of 1284, had been 500 says per year.

on the finer and heavily-taxed English wools, though they would not bear the full burden or tax incidence until well after the establishment of the Calais Staple in 1363 (see above, pp. 000). Thus, even if the *drie steden* and other draperies had reinforced that industrial policy with bans on non-English wools (but only for export-oriented sealed cloths), by the 1350s, that restriction still permitted some considerable variations in the types and corresponding prices of English wools that were subsequently sold at the Calais Staple; for, as Table 3 indicates, the cheapest wool sold at Calais (in 1475-99) cost only 25 percent as much as the most expensive, the Leominster Ryelands from Herefordshire in the Welsh Marches, or 44 percent as much as standard Cotswolds wools.⁵⁹ In Ghent, and several other draperies, however, the range of wools that were permitted in the *dickedinnen* and comparable fine sealed woollens had become ever more restricted, certainly by the fifteenth century, to the better, more costly Staple wools: Fine March and Middle-March wools from Herefordshire and Shropshire, fine Cotswolds (from adjacent Gloucestershire, Worcestershire, and Oxfordshire), fine ‘Cotswolds Berkshires’ to the west, and ‘no others’.⁶⁰ Very similar ordinances so restricting the wools to those of the finer English grades sold at the Calais Staple can be found in this era’s drapery *keuren* for Bruges, Brussels, Leiden, although these restrictions still permitted some considerable

⁵⁹ Indeed, many other English wools -- those from the northern counties of Westmorland, Cumberland, Durham, northern Yorkshire, and from the extreme south-west, in Cornwall and Devon -- were excluded from the Calais Staple because they were of too poor a quality to be sold, ‘bearing the charges of the Staple’. See John Munro, ‘Wool-Price Schedules and the Qualities of English Wools in the Later Middle Ages, ca. 1270 - 1499,’ *Textile History*, 9 (1978): 118-69; reprinted in John Munro, *Textiles, Towns, and Trade: Essays in the Economic History of Late-Medieval England and the Low Countries*, Variorum Collected Studies series CS 442 (Aldershot, Hampshire; and Brookfield, Vermont: Ashgate Publishing Ltd., 1994).

⁶⁰ Ghent, 1456: ‘Dit es dordonnantie gheorindeert bij heere ende bij wette up dmaecken ende drapieren van den finen lakenen, gheheeten dickedinnen, ender andere lakenen die men drapiert ende maect binnen der stede van Ghendt...: ghedaen int jaer M III^e LVI: (1) Eerst, zal men maken de voorseide lakenen van fijnder maertse ende middlemaertse wulle, fijne cootswale ende fine cootswale bartsiere ende van gheender andere...’ In Boone, ‘Nieuwe teksten over de Gentse draperie’, p. 32: from Stadsarchief Gent, reeks 93, register KK, f^o 103, which I myself have examined. The punctuation is mine. In the Ghent *stadsrekeningen* of May 1546-May 1548, a purchase account specifies that a Ghent *dickedinnen*, priced at £16 0s 0d *groot* Flemish, contained *vandaer alder beste ende fynste Yngelscher wulle*, with one third Fine March and two thirds Cotswolds wool. Stadsarchief Gent, Reeks 400:54, fo. 280^r.

variance in the prices of wools acquired there (Tables 2-3).⁶¹

The ‘Small’ (Narrow) Cloths: with non-English wools

A closer inspection of the Ghent cloth-price series in Tables 5 - 6 reveals rather different textile purchases for some of the lower ranks of officials, in the form of cloths called *smaele* or *smalle laken*, a term best translated not so much as ‘small’ as ‘narrow’ cloths. Indeed, unlike the true broadcloths, which required the very large and elaborate broadloom and the labour of two male weavers working side by side, these *smalle laken* were woven on the much simpler and smaller narrow loom, which conversely required only weaver (often a female). Unfortunately, since the manufacture of these cloths was not regulated, we do not know their precise dimensions: but presumably they were no more than 1.5 ells [= 1.05 m] in width, and perhaps they can be compared with English kerseys, straits (*streit* = narrow), and dozens, which were also narrow woollens with a width of one cloth yard (37 inches = 1.343 Flemish ell = 0.94 metre). Straits and dozens were only 12 yards long -- half the length of a ‘short’ broadcloth, while kerseys were 18 yards long; and possibly the Flemish *smalle lakenen* were of similar dimensions. Not subjected to industrial regulations, their Flemish producers were free to use whatever wools they pleased; and indeed the Bruges drapery *keuren*, from at least the mid-fourteenth century and then reiterated up until 1534, stated that: ‘no one shall be permitted to make or prepare any Bruges’s cloths other than with English wools, except for *smalle lakene*’.⁶² The Ghent drapery *keure* of February 1462 was more explicit in its permissiveness for such

⁶¹ For Leiden: see Posthumus, *Bronnen Leidsche textielnijverheid*, I, p. 150, no. 132:ii.16 (1441); p. 156, no. 130:iii:28 (1442); p. 191, no. 166:ii:13 (1445-51); p. 195, no. 166:ii:25 (1448); pp. 300-1, no. 263 (1453-72); pp. 508-9, no. 440 (1472-1541): Fine March or Fine Cotswolds only for its best quality *puiklakenen*; or at least (minimum quality) Lincolnshire wools: High Lindsey, Kesteven, or Holland, for all other sealed woollens; furthermore, a Leiden drapery *keure* forbade the importation of Scottish, Irish, Flemish, or any other wools not purchased from the English wool staple at Calais. See Ibid., p. 74, no. 74 (*keure* of 1423, repeated in 1434, etc. in Ibid., p. 132, no. 115). For Brussels, see Stadsarchief Brussel, Het Wit Correctieboek no. XVI, fo. 193^r: the finest March wools (Herefordshire and Shropshire), or the best Cotswolds, or at the least the best Lincolnshire Lindsey wools, for its quality sealed woollens (*lakenen van de drie staten, scaerlakenen*). But as noted in n. 44 below, Brussels did establish an entirely separate and segregated *nieuwe draperie* to produce *bellaerts*, which did permit the use of Spanish, Flemish, and other non-English wools. See Munro, ‘Wool-Price Schedules’, pp. 118-69.

⁶² Reconfirmation of 14th-century Bruges drapery *keuren* in 1408: ‘niemene en gheoorloft eenigher Bruchsche lakene te reedene danne van Ynghelscher wullen, ute ghedaen smalle lakene.’ Text in Octave

cheap cloths: while requiring each draper ‘to swear on his oath that his cloths do not contain any wools other than English wools,’ it reiterated, as the one permissible exception, the ‘ordinance concerning the *smalle lakenen*, which one may make from *plootwulle, lamwulle ende schuerlinc*’ (waste wools, lamb’s wool, wools from dead/diseased sheep).⁶³

Do we find such textiles on the export markets; or were they produced almost entirely for local, domestic consumption? Because their production was unregulated, they were not sealed. For after all the purpose of cloth seals was to indicate that these cloths had met the specified industrial standards in weaving, fulling, dyeing, and shearing, and had thus passed the official civic inspections for quality controls, to satisfy in particular foreign consumers.⁶⁴ Much evidence indicates that Hanseatic, Italian, and other foreign merchants were reluctant to buy *unsealed* woollens (as distinct from says and other worsted products) for the export markets; and the evidence for Flemish cloth prices on those foreign markets (certainly for the *drie steden* of Bruges, Ypres, and Ghent) does not indicate significant sales of such ‘small’ and cheap woollens. But we have no reason to doubt that some considerable volumes of these ‘small’ cheap woollens were sold within the Low Countries themselves, or at least within the local town markets.

In fifteenth-century Brabant, two of the formerly prominent urban draperies producing for export markets did establish subsidiary *nieuwe draperies* using French, Scottish, and domestic wools: those of Leuven (1415) and Brussels (1443), the latter employing Spanish wools. Evidently these *nieuwe draperies* produced for the domestic and regional markets; for they were kept completely segregated from the

Delepierre and M.F. Willems, ed., *Collection des keuren ou statuts de tous les métiers de Bruges*, p. 42. See also the trial of a Bruges dyer-draper in November 1533, for using Flemish and Rhenish wools, ‘contrarie t’inhouden vanden drientseventich [73rd] article vanden keure vanden voors. ambochte dat expresslic verbiet ende interdiceert eeinghe Brugsche lakene te reedene dan van Inghelsche wulle, uuteghedaen smalle lakenen’. Rijksarchief West-Vlaanderen te Brugge, Charters Blauwenummers, no. 8321; also no. 8322 (for a similar case in January 1534).

⁶³ Boone, ‘Nieuwe teksten’, doc. no. 3, p. 42; SAG, Reeks 93, Reg. KK: article XII.

⁶⁴ See Walter Endrei, and Geoffrey Egan, ‘The Sealing of Cloth in Europe, With Special Reference to the English Evidence’, *Textile History*, 13 (Spring 1982), 47-76.

traditional draperies that still used English wools exclusively.⁶⁵ For Leuven, we possess two distinctly different sets of textile prices for these two different draperies; and such textile prices, therefore, serve as useful indicators for the purchasing power ranges in the domestic markets compared with the export markets.⁶⁶

Comparisons of Textile Prices with other Commodity Prices and Wages

Nevertheless, all of these accumulated textile-price data would still be of rather limited significance if we did not possess other comparable price data, including labour in the form of daily wages. Fortunately, our project's data collection now also includes the daily wages for a wide range of craftsmen, labourers, and agricultural workers in England and the southern Low Countries, urban and rural, for the fourteenth, fifteenth, and early sixteenth centuries. That permits us in particular to calculate, as already demonstrated in Tables 5 and 7, the number of days' wages required, by such craftsmen, to purchase these textiles in the later-medieval and early modern eras. Furthermore, a vast range of commodity prices for southern England, Flanders, and Brabant, are now available: sufficient to permit the creation of broadly-based consumer -- or 'basket-of-consumables' -- price-indices for these three regions. The most famous and widely used is, of course, that for southern England: the Phelps Brown and Hopkins price-index, which extends from 1264 to 1954, with those for the medieval era based upon the budgets of the Savernak household in Dorset for 1453-60 (80 percent for foodstuffs, 7.5 percent for fuel and light, 12.5 percent for clothing).⁶⁷ Subsequently,

⁶⁵ Stadsarchief Brussel, no. XVI, fo. 183'; Felicien Favresse, 'Note et documents sur l'apparition de la 'nouvelle draperie' à Bruxelles, 1441-1443', *Bulletin de la Commission Royale d'Histoire*, 112 (1947), 143-67; Felicien Favresse, 'Les débuts de la nouvelle draperie bruxelloise, appelée aussi draperie légère', *Revue belge de philologie et d'histoire*, 28 (1950), reprinted in his *Etudes sur les métiers bruxellois au moyen âge* (Brussels, 1961), pp. 59-74. For Leuven, see Stadsarchief Leuven, no. 1524, fos. 287'-9'; and Raymond Van Uytven, *Stadsfinanciën en stadseconomie te Leuven van de XIIe tot he einde der XVIe eeuw*, *Verhandelingen van de koninklijke Vlaamse academie voor wetenschappen, letteren en schone kunsten van België*, klasse der letteren, vol. XXIII (Brussels, 1961), pp. 361-9.

⁶⁶ Stadsarchief Leuven, stadsrekeningen 1435-1500, nos. 5058-125.

⁶⁷ E.H. Phelps Brown and Sheila Hopkins, 'Seven Centuries of the Prices of Consumables, Compared with Builders' Wage Rates', *Economica*, 23 (1956); reprinted in E.H. Phelps Brown and Sheila V. Hopkins, *A Perspective of Wages and Prices* (London, 1981), pp. 13-59.

Prof. Herman Van der Wee used the Phelps Brown & Hopkins model to construct a similar, but far more broadly based, consumer price index for Brabant (Antwerp-Lier region) for the three centuries from 1400 to 1700.⁶⁸ I then used both models to construct a similar price index for Flanders (Bruges-Ghent region) from 1350 to 1500; but my index contained fewer commodities than the Van der Wee index; and my data sources did not permit me to construct a complete index beyond those two dates.⁶⁹ Nevertheless for the later Middle Ages -- from the Black Death for England and Flanders, and for the entire fifteenth and sixteenth centuries as well for Brabant -- we can readily compare the trends in textile prices with these price indices, as composite indices, and then as more specific indices for grain, livestock, and industrial prices, as demonstrated in Tables 4, 5 and 8.

Prices and Changing Monetary Values: Coinage Debasements and Secular Price Trends

Furthermore, in examining the trends in these three sets of price indices, we are much better able to understand much if not all of the nature of their fluctuations by the exact data that we now possess on the coinages and monetary systems of England, Flanders, and Brabant, with virtually complete mint indentures and mint-outputs for all three regions. The late-medieval English monetary system was characterized by remarkable stability, for the late-medieval era, with very few coinage debasements, more in the nature of defensive adjustments, about every half century: in 1351, 1411, 1464-65, 1526, and 1542 (marking the beginning of the atypically aggressive 'Great Debasement' of Henry VIII). The Flemish monetary system was subjected to a considerably greater degree of instability with far many more debasements, both defensive and aggressive -- i.e. profit-seeking, though never on the scale of those that devastated late-medieval France

⁶⁸ Herman Van der Wee, 'Prijzen en lonen als ontwikkelingsvariabelen: een vergelijkend onderzoek tussen Engeland en de zuidelijke Nederlanden, 1400 - 1700', in *Hulde aan Charles Verlinden* (Antwerp, 1975), pp. 413-47; reprinted in English translation, but without the detailed annual tables, as 'Prices and Wages as Development Variables: A Comparison between England and the Southern Netherlands, 1400-1700', *Acta Historiae Neerlandicae*, 10 (1978), 58-78.

⁶⁹ 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, 1984), pp. 31-122 (price-index tables in 5-year means only).

(for which we also possess exact monetary and coinage data, though not complete mint accounts).⁷⁰ The monetary history of the imperial duchy of Brabant lay in between these two, though with periodic instability that matched the French.⁷¹ Fortunately for our purposes, however, the Brabantine monetary system, along with the Dutch, was absorbed and amalgamated with the Flemish, as part of the great Burgundian monetary reform of 1433-35: and the Brabantine money-of-account was henceforth fixed and frozen at a ratio 1.5:1 Flemish (i.e. £1 10s 0d Brabant = £1 0s 0d *groot* Flemish).⁷² Since, furthermore, the economy of the southern Low Countries had become quite highly integrated by 1500, we are thus permitted -- *faute de mieux* -- to use the Van der Wee Brabant price-index as a reasonable proxy for a Flemish price-index during the sixteenth century.

The price-indices for Flanders (1350 - 1500) and Brabant (1400 - 1700; but here, to 1550) have one other significant advantage over the Phelps Brown and Hopkins price-index for England: the fact they can both be presented in terms of physical baskets of consumer commodities – of grains, drink, fish, livestock products, textiles (woollens, linens, canvas), fuels, candles etc. – while the Phelps Brown and Hopkins index exists only in the form of disembodied index numbers. Thus, with the Flemish and Brabantine indices, we can show how exactly many physical units of each of these two commodity baskets a Ghent *dickedinnen* or other Flemish, Brabantine, or Dutch textile was worth each year, from 1350 to 1550, as well as demonstrating

⁷⁰ See A. Blanchet, and A. Dieudonné, *Manuel de numismatique française*, 2 vols. (Paris, 1916); Jean Lafaurie, *Les monnaies des rois de France*, I (Paris, 1951); Raymond Cazelles, 'Quelques réflexions à propos des mutations de la monnaie royale française, 1295 - 1360', *Le Moyen Age*, 72 (1966), 83-105, 251-78.

⁷¹ See John Munro, 'Monnayage, monnaies de compte, et mutations monétaires au Brabant à la fin du moyen âge,' in *Études d'histoire monétaire, XIIe - XIXe siècles*, ed. John Day, Études de l'Université de Paris VII et du Centre National des Lettres (Lille, 1984), pp. 263-94; reprinted in Munro, *Bullion Flows and Monetary Policies in England and the Low Countries*.

⁷² See the previous note; and the various studies published in Munro, *Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500* (London, 1992); Christopher Challis, ed., *A New History of the Royal Mint* (Cambridge, 1992); Herman Van der Wee, *The Growth of the Antwerp Market and the European Economy, Fourteenth - Sixteenth Centuries*, 3 vols. (The Hague, 1963), I: *Statistics*; II: *Interpretation*, pp. 32-125; Louis Deschamps de Pas, *Essai sur l'histoire monétaire des comtes de Flandre de la maison d'Autriche et classement de leurs monnaies, 1482-1556* (Paris, 1874). See also the next note.

how many days' wages a master mason or carpenter or a Bruges policeman would need to buy both the textile and the units of these commodity baskets, in Flanders and Brabant.

Changing Gold:Silver Mint Ratios

At the same time, the aforementioned monetary and coinage data would also permit us to convert the textile prices into their precious metal equivalents: i.e. to express them in grams of silver and/or gold. But this technique, commonly employed by other economic historians, has a very dubious utility, in failing to account for two salient facts: (1) that textiles, like all other commodities, were priced in terms of silver- (or gold-) based moneys-of-account, usually based on the current local coinage, and were sold or exchanged in terms of currencies, not in bullion and thus not in terms of quantities of precious metals; and (2) that the values or purchasing powers of both gold and silver changed considerably over the later medieval and early modern eras, as did the ratios between the two metals. As for the latter, the gold:silver ratio rose, on average, in western Europe, from about 12:1 in the 1260s to over 14:1 in the 1320s, and then plummeted to almost 9:1 in the 1350s, rising to over 10:1 by 1400, rising further to about 12:1 by the mid to later fifteenth century; and thereafter, with the vast influxes of silver, first from Central Europe, and then from the Americas, to almost 16:1 by the seventeenth century.⁷³

Secular Price Trends: Inflation and Deflation, 1300 - 1600

Changes in monetary stocks and flows, as well as changes in the composition of particular national

⁷³ See Peter Spufford, *Money and Its Use in Medieval Europe* (Cambridge, 1988), Tables 4-7, pp. 291, 295, 322, 354; and John Munro, 'The Monetary Origins of the 'Price Revolution' Before the Influx of Spanish-American Treasure: The South German Silver-Copper Trades, Merchant-Banking, and Venetian Commerce, 1470-1540', in *Monetary History in Global Perspective, 1500 - 1808*, ed. Dennis Flynn, (Aldershot and London, forthcoming); E.J. Hamilton, *American Treasure and the Price Revolution in Spain, 1501-1650* (Cambridge, Mass., 1934; reissued 1965), Table 4, p. 71; Table 8, p. 123: indicating that the official ratios of the gold and silver coined *marcs* were: 10.11 in 1497-1536; 10.61 in 1537-65; 12.12 in 1566-1608; 13.33 in 1609-42; and 15.45 in 1643-50. For other European bimetallic ratios after 1500, see Frank Spooner, *The International Economy and Monetary Movements in France, 1493-1725* (Cambridge, Mass., 1972), 20-33 (especially Table 1, p. 21). Kurti N. Chaudhuri, 'Treasure and Trade Balances: the East India Company's Export Trade, 1660-1720,' *Economic History Review*, 2nd ser. 21 (Dec. 1968): Table 1, 497-99, which indicates, for 1661-65, a bimetallic ratio of 15.08:1 in London and 16.16:1 in India; and also K. N. Chaudhuri, 'Circuits monétaires internationaux, prix comparées et spécialisation économique, 1500 - 1750,' in *Études d'histoire monétaire, XIIIe - XIXe siècles*, ed. John Day (Lille, 1984), 49-68.

coinages, thus force us to seek deeper explanations for the major trends in secular prices in the period from 1300 to 1600: severe inflation at the beginning of the fourteenth century (commencing in the later thirteenth century); sudden and severe deflation from the 1320s to the eve of the Black Death; a very severe post-Black Death inflation, in almost all of western Europe, extending into the later fourteenth century (to the mid-1370s in England, to the late 1380s in the Low Countries), followed by a stark deflation into the early fifteenth century, which was thereafter punctuated by periodic, war-induced inflations, during the final phases of the Hundred Years' War; and then prolonged deflation, until more war-induced supply shocks took place in the late 1480s and early 1490s, followed by more deflation, until the onset of the very prolonged sixteenth-century Price Revolution, commencing about 1520.⁷⁴ Thus, any conversion of textile prices into gold and silver equivalents must be used with extreme caution in comparing such converted prices with these secular price trends, in the light of our current knowledge about both coinage debasements and these deeper monetary oscillations.

A much better and more useful expression of textile prices may be obtained by converting them into Florentine gold florins, the veritable dollar of the later Middle Ages. In the first place, even when textiles were priced in terms of silver-based moneys-of-account -- such as the English pound sterling, the Flemish pound *groot*, or the French *livre tournois* -- they were frequently sold for gold coins; and many of the Ghent accounts, especially for the fourteenth century, give the prices in terms of gold coins as well as in the standard silver-based money of account (i.e. pounds *groot* Flemish). In the second place, many late-medieval Italian merchant firms recorded a wide-ranging series of textile prices in Florentine florins: a price series that readily permits a comparison of Flemish, Brabantine, Dutch, and English textile prices in silver-based

⁷⁴ See John Munro, 'Patterns of Trade, Money and Credit'; and the various studies in Munro, *Bullion Flows and Monetary Policies* (1992); John Munro, 'Precious Metals and the Origins of the Price Revolution Reconsidered: The *Conjuncture* of Monetary and Real Forces in the European Inflation of the Early to Mid-Sixteenth Century,' in *Monetary History in Global Perspective, 1500 - 1808*, ed. Clara Eugenia Núñez, Proceedings of the Twelfth International Economic History Congress at Madrid, August 1998 (Seville, 1998), pp. 35-50.

moneys-of-account (i.e. pound *groot* and *sterling*) with these prices.⁷⁵

Cloth Prices and Secular Price Trends: Late-Medieval English Fiscal Policies, Burgundian Monetary Policies, the Wool Trade, and Flemish Industrial Crises, 1340 - 1500

These general analyses of monetary factors and longer-term price trends will facilitate a better understanding of changes in cloth production costs, textile prices, and the industrial fortunes of the Low Countries' draperies, and thus of Hanseatic commerce in their woollens, from the mid-fourteenth to early sixteenth centuries, in four key respects.

First, as already noted, the steep rise in the taxation of cost of English wools in the second half of the fourteenth century, which became especially burdensome by the 1390s (see above, pp. 000), led to a corresponding rise in the real price of Flemish textiles, a price rise that also reflected the reorientation towards greater luxury quality. Thus such textile prices did diverge from the more general deflationary trends of the late fourteenth century, as indicated by the columns in Tables 4 and 8 for the Flemish and English price-indices, from the 1380s.

Second, however, a contributory factor that exacerbated the Flemish deflation in particular was the very stark monetary reform that Duke Philip the Bold of Burgundy undertook in 1389-90, a reform that also altered the mint ratio much more strongly in favour of silver, from 10.41:1 to 9.68:1, and thus correspondingly raised the relative purchasing power of silver: as reflected in the exchange rate on the Flemish gold *noble*, which fell from 8s 6d *groot*, i.e. 102 silver pence, to 6s 0d *groot* (72d).⁷⁶ In so far as Flemish drapers had to purchase English wools at Calais in gold, they derived at least a short-term benefit from this alteration in the mint ratio --and also from the use of Flemish counterfeits of English gold noble coins that Duke Philip struck for their benefit; and that change can be detected in the fall in Ghent cloth

⁷⁵ See n. 9 above. Thanks to Peter Spufford's invaluable *Handbook of Medieval Exchange* (London: Royal Historical Society, 1986), the textile prices in all the accounts used for this essay can readily be converted into Florentine florins, even when not given in the original sources.

⁷⁶ See John Munro, 'Mint Policies, Ratios, and Outputs in the Low Countries and England, 1335-1420: Some Reflections on New Data', *Numismatic Chronicle*, 8th ser., 141 (1981), 85-86; reprinted in Munro, *Bullion Flows and Monetary Policies*; Munro, *Wool, Cloth, and Gold*, pp. 43-92; Munro, *Wool, Cloth, and Gold*, pp. 43-64.

prices after 1390 (Table 6). Perhaps those measures assisted the Flemish (and Brabantine) cloth industries in recovering from the even greater disasters of the Second Artevelde or Ghent Revolt of 1379-85, and the ensuing Hanseatic Blockade of Bruges in 1388-92, undertaken to force the Flemish to provide compensation for damages inflicted on German merchants during that revolt.⁷⁷ Indeed, as the assiduous research of Hektor Ammann on the late-medieval German cloth markets has demonstrated, the Flemish and Brabantine draperies made a remarkable comeback to regain first and second place, respectively in Hanseatic markets during the early fifteenth century, followed by the Dutch, with the English a distant fourth.⁷⁸ His survey has found some support in a more recent publication of Simonne Abraham-Thisse, though one focussing on more regional studies for shorter periods, which *inter alia* indicate a broader range of textile sales, including some cheaper Flemish and Brabantine textiles.⁷⁹ Reinforcing Amman's view are the production indices displayed in Table 1, which show that the Flemish and Brabantine cloth industries maintained relative prosperity until the very late 1420s, when yet another and this time much more fatal disaster struck them.

Third, therefore, from the 1430s, as indicated in Table 9, Flemish and Brabantine cloth prices rose once again, and again diverged from the more general deflationary trends that affected or afflicted the economy of north-west Europe, especially in the mid-fifteenth century -- which for some historians represents the true nadir of the late-medieval 'Great Depression'.⁸⁰ The primary reason for this behaviour of Flemish-Brabantine cloth prices, and the aforementioned industrial disaster, lay once more, as suggested earlier, in yet another set of ill-advised English fiscal policies: the notorious and nefarious Calais Staple Bullion and

⁷⁷ See sources cited in nn. 1-2; and also Richard Vaughan, *Philip the Bold: The Formation of the Burgundian State* (London, 1962), pp. 16-38, 113-50, 168-87; Nicholas, *Medieval Flanders*, pp. 227-31, 302-03.

⁷⁸ Ammann, 'Deutschland und die Tuchindustrie', pp. 1-63; see also sources cited in n. 3.

⁷⁹ Abraham-Thisse, 'Le commerce des draps de Flandre', pp. 167-206.

⁸⁰ For the most recent study, see John Hatcher, 'The Great Slump of the Mid Fifteenth Century', in *Progress and Problems in Medieval England*, ed. Richard Britnell and John Hatcher (Cambridge and New York, 1996), pp. 237-72. See also Pamela Nightingale, 'England and the European Depression of the Mid-Fifteenth Century', *The Journal of European Economic History*, 26:3 (Winter 1997), 631-56; Munro, *Textiles, Towns, and Trade* (1994); and *Bullion Flows and Monetary Policies* (1992).

Partition Ordinances of 1429-33. Reacting against French and Burgundian coinage debasements, and desperately seeking a greater cash flow and larger outputs from the Calais mints, in order to pay the military garrison there, the crown had Parliament enact the following provisions for the Calais Staple: (1) that credit would no longer be permitted in any wool sales, so that all wools had to be sold for 'ready money', with full payment on delivery; (2) that one third of this full payment had to be made in gold bullion, and the rest in English gold nobles; (3) that wool prices were to be raised; (4) that sales receipts were to be partitioned amongst the merchant Staplers according to their wool stocks at the Staple, rather than their actual sales, thus benefiting the richest and most powerful Staplers who were pledged or bribed into enforcing these onerous laws.⁸¹ It was indeed these Calais Ordinances which forced or encourage a number of the *nouvelles draperies* to switch to, or to adopt, the use of the now improving Spanish *merino* wools, as suggested earlier (see pp. 000), though not all were so successful in doing so; and some of the older more traditional *nouvelles draperies*, Wervik in particular were reluctant to do so, before the last stage of the Calais Bullion Laws, in the 1460s.⁸²

Because the traditional draperies of the Flemish *drie steden* and other major drapery towns of the southern Low Countries were even more loath to switch to Spanish wools, lest they compromise their reputation for ultra-luxurious woollens, the Calais Staple Bullion Ordinances, from 1429 to their revocation in 1473, had disastrous consequences for almost all of them.⁸³ The typical entrepreneur in these draperies

⁸¹ See sources cited in n. 1-2; and Munro, *Wool, Cloth, and Gold*, pp. 65-126; Munro, *Bullion Flows and Monetary Policies*; Munro, *Textiles, Towns, and Trade* (1994); Terence Lloyd, *The English Wool Trade in the Middle Ages* (Cambridge, 1977), pp. 257-87.

⁸² See Munro, 'Symbiosis of Towns and Textiles', pp. 58-66; Munro, 'Anglo-Flemish Competition', pp. 37-60; Munro, *Wool, Cloth, and Gold*, pp. 93-185. See also Peter Stabel, *De kleine stad in Vlaanderen, 14de-16de eeuwen*, Verhandelingen van de Koninklijke Academie voor Wetenschappen, Letteren en Schone Kunsten van België, Klasse der Letteren Jaargang 57 (Brussels, 1995).

⁸³ See Great Britain, Parliament, *Rotuli Parliamentorum ut et petitiones et placita in Parlamento*, 6 vols (London, 1767-77), VI: no. 59, p. 60; by the Anglo-Burgundian Treaty of July 1478, the English made a *pro forma* promise to renounce forever these Calais payment regulations. See Thomas Rymer, ed., *Foedera, conventiones, literae, et acta publica*, 12 vols. (London, 1709-12), XII: 74-78. See Munro, *Wool Cloth, and Gold*, pp. 171-78.

was a small and capital-poor weaver-draper, who faced a sudden and sharp increase in his costs, along with great difficulties in borrowing sufficient sums of ready cash to acquire the wools. These Flemish and Brabantine drapers were forced to raise their cloth prices, just when commodity prices began to fall, and very steeply from the late 1430s to the early 1470s. Together, Tables 1 and 9 depict not only the relative rise in Flemish and Brabantine textile prices, but a catastrophic fall in their production indices, and then, especially from the 1460s, the inexorable expansion in English cloth exports, which, by the beginning of the century had effectively vanquished the luxury woollen industries in Flanders and Brabant – except for those *nouvelles draperies* that had successfully adopted Spanish wools – usually a mix of Spanish and English wools (see above pp. 000).

Two partial exceptions to the plight of the old, traditional urban draperies may be noted. The first and most important was Leiden's woollen-cloth industry, which managed to thrive until the 1520s. For it enjoyed the very significant advantage of support from the Dutch mercantile marine, which, at this very moment, had virtually vanquished the Wendish Hanse in gaining control of Baltic markets, while gaining support or acquiescence from the Prussian and Livonian Leagues. It also succeeded in producing very good quality *voirwollen* cloths at somewhat lower prices than those of the major Flemish and Brabantine drapery towns, evidently by using the second-rank Calais Staple wools (Tables 1, 2, and 9).⁸⁴

⁸⁴ Hanno Brand, 'Crisis, beleid en differentiatie in de laat-middeleeuwse Leidse lakkennijverheid', in *Stof uit het Leidse verleden: zeven eeuwen textielnijverheid*, ed. J.K.S. Moes and B.M.A. De Vries (Leiden, 1991), 52-65, 201-05 (notes); Hanno Brand, 'Urban Policy or Personal Government: The Involvement of the Urban Elite in the Economy of Leiden at the End of the Middle Ages,' in *Economic Policy in Europe Since the Late Middle Ages: The Visible Hand and the Fortune of Cities*, ed. Herman Diederiks, Paul Hohenberg, and Michael Wagenaar (Leicester and New York, 1992), pp. 17-34; Hanno Brand, 'A Medieval Industry in Decline: The Leiden Drapery in the First Half of the Sixteenth Century,' in *La draperie ancienne des Pays Bas: débouchés et stratégies de survie (14e - 16e siècles)/ Drapery Production in the Late Medieval Low Countries: Markets and Strategies for Survival (14th-16th Centuries)*, ed. Marc Boone and Walter Prevenier, Studies in Urban Social, Economic and Political History of the Medieval and Modern Low Countries (Leuven, 1993), pp. 121-49; Nicolaas W. Posthumus, *Geschiedenis van de Leidsche lakenindustrie*, 3 vols. (The Hague, 1908-1939), I: *De Middeleeuwen, veertiende tot zestiende eeuw* (1908); Posthumus, *Bronnen tot de geschiedenis van de leidsche textielnijverheid*, vols. I and II; T.S. Jansma, 'L'industrie lainière des Pays Bas du Nord et spécialement celle de Hollande, XIVe - XVIIe siècles', in *Produzione, commercio et consumo dei panno di lana*, ed. Marco Spallanzani (Florence, 1976), 51-56; Marian Malowist, 'L'expansion économique des Hollandais dans le bassin de la Baltique aux XIVe et XVe siècles', *Studia z dziejow rzemiosla w okresie kryzysu feudalizmu w Europie Zachodniej w XIV i XV*

The other was the Brabantine drapery of Mechelen, which, like the other traditional draperies in the other Brabantine towns (Brussels and Leuven) and in the Flemish *drie steden*, had similarly suffered a very sharp decline from the impact of the Calais Staple Bullion Ordinances and the consequent sharp rise in the real cost of acquiring English wools (Tables 1, 2, and 9). From the 1460s, however, the Mechelen drapery was able to stage a powerful recovery by the end of the century, quite unlike its fellow draperies in the southern Netherlands. Evidently it did so on the basis of rapid commercial expansion along the revived transcontinental, overland trade routes, linking South Germany with both Venice and the Italian markets in the south and the Brabant Fairs in the north, an expansion that had received its strongest impetus from the contemporary Central European silver-copper mining boom, one dominated by the Fuggers and other South German merchant-banking firms. Focusing chiefly on more luxurious and thus more expensive woollens than the Leiden drapery, Mechelen proved to be aggressively successful in gaining German, Central, and eastern European markets, both via the Antwerp market and via the agency of Rhenish and South German cloth merchants who were also trading at the now burgeoning Frankfurt Fairs, a major link in the transcontinental routes.⁸⁵ As Mertens has recently demonstrated, Mechelen's cloth production 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

wieku (Warsaw, 1954), republished in his *Croissance et regression en Europe, XIVe - XVIIe siècles* (Paris, 1972), 91-138; Wim Blockmans, 'The Economic Expansion of Holland and Zeeland in the Fourteenth-Sixteenth Centuries', in *Studia Historica Oeconomica: Liber Amicorum Herman Van der Wee*, ed. Erik Aerts, Brigitte Henau, Paul Janssens, and Raymond Van Uytven (Leuven, 1993), 41-58; T.S. Jansma, 'Philippe le Bon et la guerre hollando-wende, 1438-1441', *Revue du Nord* 42 (1960): 5-18; Dieter Seifert, *Holland und die Hanse* (Cologne, 1997); Jan De Vries and Ad Van der Woude, *Nederland 1500 - 1815: De eerste ronde van moderne economische groei* (Amsterdam, 1995); republished in English translation as *The First Modern Economy: Growth, Decline, and Perseverance of the Dutch Economy, 1500 - 1815* (Cambridge, 1996), pp. 235-362; Munro, 'Patterns of Trade, Money, and Credit,' pp. 160-8; 176-81; Munro, 'Medieval Woollens', in *Cambridge History of Western Textiles* (forthcoming).

⁸⁵ See Munro, 'Export Trade in Textiles', pp. 18-30; Munro, 'Patterns of Trade', pp. 165-70; Van der Wee, *Antwerp Market*, II, pp. 32-120.

to be found on the Antwerp market in the 1570s.⁸⁶

Fourth, this South German-Central European silver mining boom, which proved to be such a powerful force in promoting the very rapid growth of the Brabant Fairs (Antwerp and Bergen op Zoom) and the Frankfurt Fairs, had two other momentous consequences for European commerce in textiles and more generally for the European economy as a whole. For, it proved to be decisively instrumental in propelling an eighty-year momentous boom in the English cloth-export trade, almost entirely based on the Antwerp market: a 3.7-fold growth in cloth exports from a decennial mean of 33,303.6 broadcloths in 1460-9 to one of 123,653.0 in 1540-9, a veritable rising tide of exports to which even the Mechelen and Leiden draperies eventually succumbed. The actual catalyst sparking this cloth-export boom may have been the unintended consequences of both English and Burgundian monetary policies, competitive debasements, in 1464-5: the former produced a 20 percent depreciation in sterling, thus cheapening the sales prices of English woollens on the Antwerp market; the latter produced a sharp alteration in bimetallic mint ratios, so strongly favouring silver that it ultimately attracted the lion's share of Central European silver outputs away from Venice and Danzig to the Antwerp market. Thus South German merchants who brought those increased stocks of silver and copper to the Brabant Fairs found their most desirable and profitable return cargo in the form of English woollens, principally finished in Brabantine and Dutch towns.⁸⁷ At the same time, this rapidly growing

⁸⁶ Wenceslaus Mertens, 'Changes in the Production and Export of Mechelen Cloth, 1330 - 1530', in Erik Aerts and John Munro, ed., *Textiles of the Low Countries in European Economic History*, (Leuven, 1990), 114-23; Wencelaus Mertens, 'Toenemende economische welvaart', in *De geschiedenis van Mechelen: van heerlijkheid tot stadsgewest*, ed. Raymond Van Uytven (Lannoo, 1991), 83-93; Raymond Van Uytven, 'La draperie brabançonne et malinoise du XIIe au XVIIe siècle: grandeur éphémère et décadence', in *Produzione, commercio et consumo dei panno di lana*, ed. Marco Spallanzani (Florence, 1976), 85 - 97; Alfons Thijs, 'Les textiles au marché anversois au XVIe siècle', in *Textiles of the Low Countries in European Economic History*, ed. Erik Aerts and John Munro (Leuven, 1990), 66-75; Herman Van der Wee and Theo Peeters, 'Un modèle dynamique de croissance interseculaire du commerce mondiale, XIIe - XVIIIe siècles', *Annales: ESC* 15 (1970): 100-28; Van der Wee, *Growth of the Antwerp Market, II: Interpretation*, pp. 32-125. See also the next note.

⁸⁷ See sources cited in nn. 1-2, 61-65, and 85; and also John Munro, 'The Central European Mining Boom, Mint Outputs, and Prices in the Low Countries and England, 1450 - 1550', in *Money, Coins, and Commerce: Essays in the Monetary History of Asia and Europe (From Antiquity to Modern Times)*, ed. Eddy Van Cauwenberghe (Leuven, 1991), pp. 119-83; and Munro, 'The Monetary Origins of the Price Revolution', forthcoming; Van der Wee, *Growth of the Antwerp Market*, I, pp. 126-8, Table XV; II, pp. 80-

influx of Central European silver stocks, especially into the Antwerp market, was a major factor in terminating the late-medieval ‘bullion’ famine in north-western Europe, and, in contributing to the monetary expansion that ultimately, by the 1520s, in combination with revolutionary changes in credit, produced that century-long secular rise in prices known as the Price Revolution.⁸⁸

The price trends, for both textiles and a weighted ‘basket of commodities’, for both England and the Low Countries, can be seen in Tables 4, 8, and 9. Note the very anomalous rise of prices for textiles and other commodities during the very drastic and thus very inflationary debasements undertaken by Archduke Maximilian and the Flemish towns during the revolt era of the 1480s and early 1490s; but with the end of that conflict, that temporary inflation was followed by a return to a stronger coinage, with a consequent deflation, followed by another, rather milder coinage debasement in the mid 1490s. Thereafter, prices generally did remain low, in both England and the Low Countries, until about 1515-20, when, as noted, the general European sixteenth-century Price Revolution commenced, with a sudden and dramatic upsurge in prices, just when the South German silver-mining boom was at last in full swing.⁸⁹ At the same time, demographic forces leading to a renewed growth in population may also have been producing diminishing

101.

⁸⁸ See the sources cited in n. 65; and also John Munro, ‘Bullion Flows and Monetary Contraction in Late-Medieval England and the Low Countries’, in *Precious Metals in the Later Medieval and Early Modern Worlds*, ed. John F. Richards (Durham, North Carolina, 1983), pp. 97-158; reprinted in John Munro, *Bullion Flows and Monetary Policies*; Munro, ‘Patterns of Trade, Money, and Credit’, pp. 147-57; 165-75; Spufford, *Money and Its Use*, pp. 339-77; John Day, ‘The Great Bullion Famine of the Fifteenth Century’, *Past and Present*, no. 79 (May 1978), 1-54; reprinted, with other important essays in monetary history, in John Day, *The Medieval Market Economy* (Oxford, 1987); Pamela Nightingale, ‘Monetary Contraction and Mercantile Credit in Later Medieval England’, *Economic History Review*, 2nd ser. 43 (November 1990), 560 - 75; Nightingale, ‘England and the European Depression’, pp. 631-56; Herman Van der Wee, ‘Anvers et les innovations de la technique financière aux XVI^e et XVII^e siècles’, *Annales: E.S.C.*, 22 (1967), pp. 1067-89, republished as ‘Antwerp and the New Financial Methods of the 16th and 17th Centuries’, in Herman Van der Wee, *The Low Countries in the Early Modern World* (Cambridge, 1993), pp. 145-66; John Munro, ‘English ‘Backwardness’ and Financial Innovations in Commerce with the Low Countries, 14th to 16th centuries,’ in *Internationale Handel in de Nederlanden (14de-16de eeuw): Kooptieden, Organisatie en Infrastructuur/International Trade in the Low Countries (14th-16th centuries): Merchants, Organisation, and Infrastructure*, ed. Peter Stabel and Bruno Blondé, Colloque Universiteit Gent - Universiteit Antwerpen, IUAP-Stedelijke Samenlevingen in de Laatmiddeleeuwse Nederlanden, (Ghent, 2000), pp. 105-67.

⁸⁹ See sources cited in nn. 64-66.

returns and thus an upward pressure on agricultural prices; for clearly these prices (for both arable and livestock products) were now rising at a much faster rate than were industrial prices, including the prices of Flemish, Brabantine, Dutch, and English textiles. But if that meant that proportionally more consumer income was spent on foodstuffs and less on industrial products, those price phenomena did not bode well for the textile industries of north-west Europe in the sixteenth century -- unless they reflected other economic phenomena that increased employment and incomes, especially in the non-industrial sectors of the European economy.

Conclusion: In Defence of the Flemish and Brabantine Cloth Price Series

Finally, I must offer a defence against the charge or suggestion put forward recently by the eminent Belgian historian Marc Boone that my Ghent cloth prices, specifically ones that I had earlier published, are fallacious, if not fictitious.⁹⁰ In the first place, he contended that the Ghent cloth prices were unrepresentative principally because they are only those for the ultra-luxurious woollens purchased for aldermanic magistrates and other senior 'patrician' officials in the civic governments. That charge is, however, highly misleading; for, as was demonstrated earlier (see pp. 000), the cloth-price series from the civic records of Ghent and other major drapery towns in fact contain a very wide range of textiles and textile prices, including those purchased for musicians and other petty officials and servant. My previous publications of a necessarily very selective series of cloth-prices from many towns, subject to severe space limitations, thus did present only the upper range, those for *dickedinnen* woollens, which I nevertheless consider to be quite representative of the cloths sent to the major export markets in the fifteenth century. Certainly the prices given for the finer woollens from Ghent and other drapery towns in the southern Low Countries correspond well to their prices, in terms of Florentine florins, as recorded in Mediterranean and Polish markets.⁹¹

⁹⁰ Marc Boone, 'L'industrie textile à Gand au bas moyen âge, ou les résurrections successives d'une activité réputée moribonde', in Marc Boone and Walter Prevenier, eds., *La draperie ancienne des Pays Bas: débouchés et stratégies de survie (14e - 16e siècles)/ Drapery Production in the Late Medieval Low Countries: Markets and Strategies for Survival (14th-16th Centuries)*, Studies in Urban Social, Economic and Political History of the Medieval and Modern Low Countries (Leuven, 1993), pp. 15-61.

⁹¹ See above nn. 8-9, and nn. 79-80 below.

Furthermore, as several tables have now demonstrated, the prices given even for this very selective range of Ghent textiles accord very well with the prices for rival luxury woollens from other Flemish and Brabantine textile towns.⁹² Indeed, as an even more compelling reply, we have the actual market prices -- in several instances, prices on the Antwerp and Bruges markets -- for Ghent's *dickedinnen* woollens and for Ypres' broadcloths, along with other textile prices, as recorded in various accounts of several other towns, large and small: Bruges itself, Mechelen (throughout most of the fourteenth century), Aalst, the Franc de Bruges, and Veurne, none of which had any reason to inflate or falsify these textile prices for Ghent's and Ypres' woollens.⁹³

Boone's case, however, essentially rests on a conspiracy theory, which, like so many other such theories, has no foundation in recorded facts, even when disguised by an umbrella of other facts. He contends from a prosopographic analysis of 260 cloth merchants identified in the Ghent accounts from 1400 to 1453 that just 23 or 10.6 percent of them sold the town governments cloths that amounted in value to 74 percent of the aggregate purchases (thus leaving the other 89.4 percent of the merchants with a 26 percent share). Therefore he concludes that 'la possibilité d'une collusion généralisée est en soi peu suprenante dans une ville et à une époque où les relations informelles, exprimés par les dons, occupaient une place de choix dans la sociabilité'. But he offers no proof that the Ghent government -- then composed of an uneasy tripartite alliance among the wealthy mercantile *poorterie*, the small industrial craft guilds (*kleine neringe*), and three drapery guilds (weavers, dyers, and shearers -- the fullers were effectively excluded) -- actually entered into such collusion with these 23 merchant-drapers to cheat the government and the town as a whole by purchasing their textiles at prices above those prevailing in the market prices. We are simply asked to believe that, in 'the climate of the times', such things were possible, and therefore true. But why, we might ask in posing an alternative scenario of machinations by this civic government, were the cloth prices not set

⁹² See the previous note; and nn. 1-2 above.

⁹³ Algemeen Rijksarchief (België), Rekenkamer, reg. nos. 31,414 - 485 (Aalst: 1402-1500); nos 34,547-572 (Veurne, 1410-42, with cash purchases only registered thereafter).

below those prevailing in the current market? In other words, might such drapers acting in collusion with the government have offered to sell their cloths for a lower price in return for certain illicit privileges or rewards? Surely one hypothetical conspiratorial hypothesis is as good as another?

The one scintilla of supposed evidence offered concerns not this period but rather the quasi-revolutionary era of 1487-88, when civic resistance against the German Habsburg ruler, Maximilian (widower of the Burgundian duchess Marie, daughter of the last Burgundian Duke, Charles the Rash) resulted in a radical change in the Ghent civic government. The newly selected *schepenen* decided to avenge themselves on some of their predecessors, those who had been supporters of Maximilian by demanding restitutions of certain cash allowances that were supposed to have been used in the purchase of some *strijptelaken*, on the grounds that they had been given sums ranging from 15d to 17d *groot* per ‘stripe’ (i.e. *strijpte*), when the price had only been 6d per stripe. Perhaps that is evidence for civic malfeasance, but not evidence for falsification of textile prices, since only cash sums and not actual cloth purchases had been recorded; and it is worth noting that in this era, several of towns had switched from actual cloth purchases to grants of cash to allow officials to buy their own woollens.⁹⁴

If we are asked to believe that the recorded textile prices have been inflated above true market values, over this entire 250 year period -- and, if for the moment we also choose to ignore the evidence on actual market prices -- are we then expected to believe that such efforts were consistently and uniformly successful over this entire period in all these towns? Furthermore, are we supposed to believe that all of the town officials successfully colluded with officials from other towns to record prices that were consistently in the same range, if by no means identical? Are we also to believe that these prices should also consistently rise in fall in accordance with other observed economic facts -- those mentioned in part earlier in this essay, which are more obvious to us in historic hindsight than would have been to the officials of the day? If so, they must have been amongst the most successful conspirators ever recorded in European history.

⁹⁴ See n.17 above.

Table 1a:

**Textile Export and Production Statistics for England and
the Low Countries, in quinquennial means
1280-84 to 1545-49**

Five-Year Period	England: Wool Exports in Sacks [364 lb = 165.11 kg	England: Hanseatic Exports of English Broadcloths from 1345-49 [24 by 1.75 yds] =20.07 by 1.46m]	England: Broadcloth Exports from 1345-49 [24 by 1.75 yds] =20.07 by 1.46m]	England: Total Exports Combined as Broadcloths [@4.33 cloths per per wool-sack]	Ghent A: Drapery Tax Farm Sales in shillings groot Flem.	Ghent B Drapery Tax Farm Sales in shillings groot Flem.
1280-84	26,980.4					
1285-89	25,646.8					
1290-94	30,058.4					
1295-99	20,062.6					
1300-04	29,391.8					
1305-09	41,313.0					
1310-13	36,050.2					
1315-19	26,048.0					
1320-24	26,579.0					
1325-29	24,160.2					
1330-34	32,687.2					
1335-39	22,850.4			99,010.78	2,286.60	1,721.25
1340-44	19,731.8			85,497.89	2,417.40	1,743.20
1345-49	24,967.7		3,196	111,380.33	2,141.80	1,371.30
1350-54	30,203.5		1,621	132,492.57	2,249.60	1,381.17
1355-59	32,543.6	56	7,231	148,242.22	2,213.20	1,305.10
1360-64	30,183.4	708	11,035	141,819.47	1,999.00	1,225.50
1365-69	29,602.8	1,546	14,684	142,952.53	1,355.60	733.40
1370-74	24,081.2	1,180	12,723	117,067.04	987.20	498.75
1375-79	21,658.8	1,086	13,154	107,001.18	772.80	390.00

1380-84	18,611.8	2,593	18,978	99,623.13	476.80	301.20
1385-89	17,412.4	3,202	25,351	100,798.53	385.18	220.02
1390-94	19,542.8	5,660	36,842	121,520.95	missing	missing
1395-99	17,546.4	5,682	40,096	116,124.65	201.93	201.93
1400-04	13,737.6	7,030	37,810	97,334.82	110.30	110.33
1405-09	14,629.0	6,187	29,216	92,603.86	146.10	146.10
1410-14	13,540.0	5,228	27,522	86,191.02	137.50	137.50
1415-19	14,704.6	5,175	28,855	92,570.03	177.80	177.80
1420-24	14,278.2	7,041	36,449	98,316.84	156.90	156.90
1425-29	14,179.4	5,856	41,446	102,885.54	195.10	195.10
1430-34	8,135.6	3,759	40,861	76,112.95	153.10	153.10
1435-39	4,569.8	8,204	42,904	62,704.94	88.70	88.70
1440-44	11,078.6	10,914	57,056	105,059.77	82.60	82.60
1445-49	7,487.4	10,571	49,506	81,949.10	103.60	103.60
1450-54	8,655.2	7,479	37,140	74,643.38	75.10	75.10
1455-59	8,566.4	10,320	37,604	74,721.81	36.10	36.10
1460-64	5,775.6	8,942	31,161	56,187.07	25.00	25.00
1465-69	8,771.6	6,325	35,446	73,453.14	37.00	37.00
1470-74	8,614.2	3,410	36,253	73,578.33	54.00	51.20
1475-79	8,792.2	6,739	45,397	83,493.80	49.40	49.40
1480-84	8,104.0	12,717	55,108	90,223.03	34.40	34.40
1485-89	8,916.9	13,622	48,753	87,390.33	9.50	11.68
1490-94	6,618.4	14,778	56,802	85,479.33	3.00	3.00
1495-99	9,747.2	17,197	59,210	101,444.82	7.40	7.40
1500-04	7,712.2	17,585	78,790	112,206.56	12.60	12.60
1505-09	7,166.2	18,222	83,203	114,254.34		8.00
1510-14	7,378.6	19,644	83,415	115,386.27		7.75
1515-19	7,670.8	21,252	88,881	122,118.78		5.50
1520-24	6,356.2	17,618	82,677	110,218.81		
1525-29	4,627.8	20,419	94,656	114,707.86		
1530-34	3,166.4	23,229	93,893	107,612.61		
1535-39	3,736.4	30,558	104,103	120,292.62		
1540-44	4,616.0	25,955	117,345	137,346.33		

Table 1b:

**Textile Export and Production Statistics for England and
the Low Countries, in quinquennial means
1280-84 to 1545-49**

Five-Year Period	Ypres Drapery Tax Farm Sales in shillings groot Flem.	Ypres Drapery Stalls Leased	Mechelen Drapery Tax Farm Sales in shillings groot Flem.	Leuven Drapery Tax Farm Sales in Rijns gulden [number]	Leiden: Output of Voirwollen Halvelakenen	Hondschoote Says represented by tax farm: at 8d. per cloth	Hondschoote Exports of Says
1280-84							
1285-89							
1290-94							
1295-99							
1300-04							
1305-09							
1310-13							
1315-19							
1320-24							
1325-29							
1330-34							
1335-39							
1340-44							
1345-49							
1350-54							
1355-59							
1360-64							
1365-69							
1370-74							
1375-79							
1380-84						1,320.00	
1385-89						1,530.00	
1390-94						1,176.00	
1395-99						1,440.00	
1400-04			6,194.00	2,385		1,632.00	

1405-09	5,458.00	430.00	5,918.00	2,990		2,076.00	
1410-14	5,354.00	419.00	6,204.00	2,518		2,712.00	
1415-19	5,394.00	510.70	5,930.00	1,588		3,336.00	
1420-24	5,322.00	433.20	7,656.00	1,126		4,248.00	
1425-29	5,106.00	376.60	7,918.00	757		4,956.00	
1430-34	4,724.00	330.50	6,100.00	570		5,112.00	
1435-39	3,456.00	217.20	3,524.00	541		5,250.00	
1440-44	3,486.00	187.20	4,422.00	417		5,400.00	
1445-49	3,506.00	159.20	3,504.00	286		7,500.00	
1450-54	3,082.00	109.00	3,308.00	344		9,888.00	
1455-59	3,018.00	73.20	3,166.00	216		11,760.00	
1460-64	2,060.00	61.80	3,366.00	193	16,892	11,760.00	
1465-69	1,830.00	71.40	3,744.00	271	11,107	13,056.00	
1470-74	1,650.00	73.60	4,306.00	263	15,752	13,680.00	
1475-79	1,450.00	58.80	5,128.00	282	22,973	13,200.00	
1480-84	1,312.00	21.80	5,086.00	328	24,851	12,990.00	
1485-89	2,074.00	11.50	5,812.00	786	21,345	14,874.00	
1490-94	2,006.00	0.00	4,698.00	672	21,638	12,637.50	
1495-99	2,692.00	0.00	5,126.00	587	21,019	12,048.00	
1500-04					25,420	16,560.00	
1505-09					23,873	19,800.00	
1510-14					23,711	21,240.00	
1515-19					26,236	29,040.00	
1520-24					24,740	30,756.00	
1525-29					23,173	35,064.00	30,508.50
1530-34					18,893	41,136.00	39,612.00
1535-39					16,680	43,344.00	42,845.50
1540-44					15,451	47,496.00	43,483.60
1545-49					11,303	48,456.00	45,391.00

Sources:

England: 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;

Ghent A: Total drapery excise farms; Ghent B: Excises for 'Ramen en Nieuwe Huusgeld' only: all from: Stadsarchief Gent, Stadsrekeningen, Reeks 400:4-43, 1335-1520; Algemeen Rijksarchief België, Rekenkamer, reg. nos. 38,635-72;

Ypres: Algemeen Rijksarchief België, Rekenkamer, reg. nos. 38,636-722.

Mechelen: Stadsarchief Mechelen, Stadsrekeningen, 1316-1550, Series I: nos. 3-225; Algemeen Rijksarchief, Rekenkamer, reg. nos. 41,219-85;

Leuven: Stadsarchief Leuven, Stadsrekeningen, 1345-1500, nos. 4986-5124;

Leiden: 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;

Hondschoote: Émile Coornaert, *La draperie-sayetterie d'Hondschoote, XIVe-XVIIIe siècles* (Paris, 1930); calculated from Appendix IV, pp. 485-90.

Table 2. The Dimensions and Compositions of Selected Flemish and English Woollens and Says, 1456 - 1576

DRAPERY	GHENT	ARMENTIERES	ENGLAND	HONDSCHOOTE	BERGUES-ST. WINOC
Name of Textile	Dickedinnen Five Seals	Oultreffin	Short Broadcloth: Suffolk, Essex	Small Double Say	Fine Narrow Say
Ordinance Date	1456-62, 1546	1510, 1546	1552	1571; 1576	1537
Wools Used	English: Fine March, Cotswolds, Berkshires	2/3 Spanish merino + 1/3 English: Cotswolds, Lindsey, Berkshires	English: short-stapled (unspecified)	Flemish, Scottish, Frisian, Pomeranian, Kempen	Flemish, Artesian
Warp Count	2066	1800	n.s.	1800	1400
Length on Loom	42.5 ells ^a = 29.75 m	42 ells ^a = 29.4 m	n.s.	40 ells ^a = 28.0 m	n.s.
Width on Loom	14.5 qtr ells = 2.5375 m	12 qtr ells = 2.10 m	n.s.	5.75 qtr ells = 1.006 m	n.s.
Weight on Loom	88 lb ^b = 38.179 kg	88 lb. ^c = 40.823 kg	n.s.	n.s.	n.s.
Length after Fulling	30 ells = 21.0 m	30 ells = 21.0 m	24 yards ^c = 32.22 ells= 22.555 m	36.75 ells = 25.725 m	40 ells = 28.0 m
Width after Fulling and/or Tentering	9.5 qtr ells= 1.6625 m	8 qtr ells = 1.400 m	7 qtr yds = 9.4 qtr ells = 1.645 m	5 qtr ells = 0.875 m	4 qtr ells = 0.700 m
Warps per cm	12.46	12.86	n.s.	20.60	20.0
Final Weight	51.0 lb ^b = 22.126 kg	52.0 lb ^c = 24.123 kg	64 lb. ^d = 29.030 kg	16.0 lb ^d = 7.257 kg	11 lb. ^c = 5.103 kg
Area in sq. m.	34.913 sq m	29.400 sq m	37.103 sq m	22.509 sq m	19.600 sq m
Weight: per sq metre in grams	633.8 g	820.5 g	782.4 g	322.4 g	260.4 g

Notes:

a. Flemish ell = 0.700 m b. Ghent pound = 433.85 g c. Bruges pound = 463.90 g d. English pound avoirdupois = 453.593 g
e. English cloth yard = 37 in. = 0.9398 m = 1.343 Flemish ell

Sources:

Ghent (Gand, Gent): M. J. Lameere, H. Simont, et al, eds., *Recueil des ordonnances des Pays Bas*, deuxième série, **1506 - 1700**, Vol. V (Brussels, 1910), pp. 272-83.

England (woollen shortcloths): Great Britain, Parliament, *Statutes of the Realm*, Vol. IV:1, pp. 136-37 (statute 5-6 Edwardi VI, c. 6).

Armentières: Henri De Sagher, et al eds., *Recueil de documents relatifs à l'histoire de l'industrie drapière en Flandre*, deuxième série, 3 vols. (Brussels, 1951-65), Vol. I, pp. 102-17, no. 36; pp. 144-49, nos. 40-41.

Bergues-Saint-Winoc: De Sagher (1951-65), Vol. I, pp. 530-31, no. 163; p. 538, no. 165; pp. 561-67, nos. 176-77.

Hondschoote: De Sagher (1951-65), Vol. II, pp. 362-69, no. 290; pp. 378-81, no. 291; p. 415, no. 299.

England (bays and says): J. E. Pilgrim, 'The Rise of the 'New Draperies' in Essex,' *University of Birmingham Historical Journal*, 7 (1959-60), 36-59. A. P. Usher, *The Industrial History of England* (Boston, 1920), p. 200;

**Table 3. Prices of English Wools at the Calais Staple, in English Sack-Weights
For 1475 and 1499, in Pounds Sterling and Pounds Groot Flemish**

County of Origin of the Wools	Calais Weight in £ ster	English Sack Weight in £ ster	English Sack Weight in £ groot ling	Calais Weight in £ ster	English Sack-Weight in £ ster	English Sack Weight in £ groot	Index % of Leominster Wool
	1475	1475	1475	1499	1499	1499	1499
Leominster, Hereford				22.333	25.807	37.498	100.0
March Wools, Shropshire/Hereford	13.333	15.407	18.134	17.000	19.644	28.543	76.1
Middle Leominster				15.667	18.104	26.305	70.2
Fine Cotswolds (Glouc., Worc. Oxf.)	12.000	13.867	16.321	13.000	15.022	21.827	58.2
High Lindsey, Lincolnshire	11.000	12.711	14.961	9.333	10.785	15.670	41.8
Fine Berkshire	11.000	12.711	14.961	11.667	13.482	19.589	52.2
Leominster Refuse				11.000	12.711	18.469	49.3
Middle March: Shropshire/Hereford				11.000	12.711	18.469	49.3
Fine Young Cotswolds				10.333	11.940	17.349	46.3
Middle Cotswolds				9.000	10.400	15.111	40.3
Low Lindsey, Lincolnshire				9.000	10.400	15.111	40.3
Kesteven, Lincolnshire	10.333	11.940	14.054	8.667	10.015	14.552	38.8
Wiltshire	10.333	11.940	14.054				
Oxfordshire: Henley	10.333	11.940	14.054				
Nottinghamshire	10.000	11.556	13.601				
Clay Wolds	10.000	11.556	13.601				
Nottinghamshire: Hatfield	9.833	11.363	13.374				
Warwickshire	9.833	11.363	13.374				
Lindsey Marsh, Lincolnshire	9.833	11.363	13.374				
North Holland, Lincolnshire	9.833	11.363	13.374	8.333	9.629	13.991	37.3
South Holland, Lincolnshire	9.833	11.363	13.374	8.333	9.629	13.991	37.3
Leicestershire	9.667	11.170	13.148				
Rutland	9.667	11.171	13.148	8.333	9.629	13.991	37.3
March Refuse				8.333	9.629	13.991	37.3
	1475	1475	1475	1499	1499	1499	1499

County of Origin of the Wools	Calais Weight in £ ster	English Sack Weight in £ ster	English Sack Weight in £ groot ling	Calais Weight in £ ster	English Sack-Weight in £ ster	English Sack Weight in £ groot	Index % of Leominster Wool
	1475	1475	1475	1499	1499	1499	1499
Middle Berkshire				8.333	9.629	13.991	37.3
Staffordshire	9.500	10.978	12.921				
Buckinghamshire	9.333	10.785	12.694				
Northamptonshire	9.333	10.785	12.694				
Bedfordshire	9.333	10.785	12.694				
Huntingdonshire	9.333	10.785	12.694				
Hertfordshire	9.167	10.593	12.467				
Cambridgeshire	9.167	10.593	12.467				
Derbyshire	9.167	10.593	12.468				
Hampshire	9.167	10.593	12.467				
Surrey	8.833	10.207	12.014	7.333	8.474	12.313	32.8
Yorkshire Wolds	8.833	10.207	12.014				
Derbyshire: Peak District	8.333	9.629	11.334				
Dorset	8.667	10.015	11.787				
Essex	8.333	9.630	11.334				
Sussex	8.333	9.629	11.334				
Kent	8.000	9.244	10.881	7.667	8.860	12.873	34.3
Norfolk	7.667	8.859	10.427	7.333	8.474	12.312	32.8
Yorkshire	7.000	8.089	9.521				
Middle Young Cotswolds				7.000	8.089	11.753	31.3
Cotswolds Refuse				6.333	7.318	10.634	28.4
Middle Kesteven				6.000	6.933	10.074	26.9
Middle Holland				5.666	6.547	9.513	25.4
Middle Rutland				5.667	6.548	9.514	25.4

Calais sack = 315 lb.

English sack weight = 364 lb.

Sources:

1475: 'Noumbre of Weyghtes', in British Library, Cotton Vespasian E. ix, fo. 106r-7r.

1499: Algemeen Rijksarchief België, Rekenkamer, reg. 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; reprinted in John Munro, *Textiles, Towns, and Trade: Essays in the Economic History of Late-Medieval England and the Low Countries*, Variorum Collected Studies series CS 442 (Aldershot, Hampshire; and Brookfield, Vermont: Ashgate Publishing Ltd., 1994).

Table 4

**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.

Table 5a. The Purchase Prices of Ghent Woollens: by rank order of values, 1360-69
Values in £ groot Flemish, units of Commodity Baskets of equivalent value, and
the number of a master mason's day's wages required to purchase each cloth

Year	Name of the Cloth	Description of the Cloth in the Stadsrekeningen	Purchase Price of Cloth in £ groot Flem	Price of Cloth in florins	Value of florin in d gros
1362	Striped Cloth	Strijpten	1.4000	15.273	22.000
1360	Striped Cloth	Strijpten	1.5833	17.273	22.000
1365	Striped Cloth	Strijpten	1.6125	14.333	27.000
1365	Striped Cloth	Strijpten	1.6125	14.333	27.000
1361	Striped Cloth	Strijpten Lakekenen	1.6194	17.667	22.000
1366	Striped Cloth	Strijpten	1.8275	16.244	27.000
1367	Striped Cloth	Strijpten	2.0425	18.156	27.000
1360	Medley Dickedinnen	Ghemingden Dickedinne	2.0458	22.318	22.000
1362	Small Dickedinnen	Smaele Dickedinne	2.0500	22.364	22.000
1365	Small Dickedinnen	Smaele Dickedinne	2.1500	19.111	27.000
1366	Half (?) Dickedinnen	Alvere Dickedinne	2.1500	19.111	27.000
1362	Striped Cloth	Strijpten	2.1625	23.591	22.000
1362	Medley Dickedinnen	Ghemingden Dickedinnen	2.1958	23.955	22.000
1368	Striped Cloth	Strijpten	2.2042	19.593	27.000
1361	Medley Dickedinnen	Gehmingden Dickedinnen	2.2667	24.727	22.000
1365	Striped Cloth	Strijpten Laken	2.3111	20.543	27.000
1369	Striped Cloth	Strijpten	2.3111	20.543	27.000
1366	Striped Cloth	Strijpten	2.3139	20.568	27.000
1361	Medley Dickedinnen	Ghemingden Dickedinne	2.3500	25.636	22.000
1365	Dickedinnen	Dickedinne	2.3667	21.037	27.000
1365	Dickedinnen	Dickedinne	2.3667	21.037	27.000
1365	Dickedinnen	Dickedinne (alve)	2.3667	21.037	27.000
1361	Red Dickedinnen	Roeden Dickedinne	2.4000	26.182	22.000
1365	Dickedinnen	Dickdedinnen	2.4183	21.496	27.000
1366	Small Dickedinnen	Smaele Dickedinne	2.4188	21.500	27.000
1360	Dickedinnen	Dickedinne	2.4750	27.000	22.000
1367	Dickedinnen	Dickedinne	2.4750	22.000	27.000
1360	Striped Cloth	Strijpten	2.4750	27.000	22.000
1361	Striped Cloth	Strijpte Lakenen	2.4833	27.091	22.000
1362	Striped Cloth	Strijpten Lakenen	2.4833	27.091	22.000
1362	Dickedinnen	Dickedinne	2.4833	27.091	22.000
1361	Medley Dickedinnen	Ghemingden Dickedinnen	2.4833	27.091	22.000

Year	Name of the Cloth	Description of the Cloth in the Stadsrekeningen	Purchase Price of Cloth in £ groot Flem	Price of Cloth in florins	Value of florin in d gros
1362	Dickedinnen	Dickedinne	2.4833	27.091	22.000
1365	Dickedinnen	Dickdedinnen	2.5792	22.926	27.000
1367	Dickedinnen	Dickedinne	2.5792	22.926	27.000
1360	Medley Dickedinnen	Ghemingden Dickedinne	2.5833	28.182	22.000
1362	Striped Cloth	Strijpten Lakene	2.5917	28.273	22.000
1366	Green Dickedinnen	Groenen Dickedinnen	2.7417	24.370	27.000
1366	Dickedinnen	Dickedinne	2.7958	24.852	27.000
1366	Dickedinnen	Dickedinne	2.7958	24.852	27.000
1368	Dickedinnen	Dickedinnen	2.7958	24.852	27.000
1360	Striped Cloth	Strijpten	2.8000	30.545	22.000
1369	Dickedinnen	Dickedinne	2.8500	25.333	27.000
1360	Striped Cloth	Strijpten Lakene	2.8792	31.409	22.000
1367	Dickedinnen	Dickedinne	2.9028	25.802	27.000
1367	Dickedinnen	Dickedinne	2.9042	25.815	27.000
1366	Striped Cloth	Strijpten	2.9042	25.815	27.000
1367	Striped Cloth	Strijpten	3.0083	26.741	27.000
1367	Striped Cloth	Strijpte	3.0125	26.778	27.000
1368	Dickedinnen	Dickedinnen	3.0625	27.222	27.000
1365	Striped Cloth	Strijpten	3.1167	27.704	27.000
1365	Striped Cloth	Strijpten	3.1167	27.704	27.000
1368	Dickedinnen	Dickedinne	3.2250	28.667	27.000
1368	Dickedinnen	Dickedinne	3.2250	28.667	27.000
1361	Striped Cloth	Strijpte Lakenen	3.2389	35.333	22.000
1368	Striped Cloth	Strijpten	3.3333	29.630	27.000
1369	Dickedinnen	Dickedinnen	3.3333	29.630	27.000
1360	Red-Orange cloth	Roede Haraengeren [laken]	3.4958	38.136	22.000
1362	Striped Ghesterts Cloth	Srijpten Ghesteert	3.6000	39.273	22.000
1367	Blue Striped Cloth	Blauwen Strijpte	3.7625	33.444	27.000
1369	Striped Cloth	Strijpten	3.9792	35.370	27.000
1360	Blue cloth	Blaeuwen Sticwerke	4.0000	43.636	22.000
1365	Geleiden Cloth	Gheleiden Lakenen	4.0375	35.889	27.000
1365	White Cloth	Witten Sticwerke	4.2500	37.778	27.000
1362	Dickedinnen Broadcloth	Breeden Dickedinnen	4.3208	47.136	22.000
1366	White Striped Cloth	Witten Strijpten	4.4083	39.185	27.000

Year	Name of the Cloth	Description of the Cloth in the Stadsrekeningen	Purchase Price of Cloth in £ groot Flem	Price of Cloth in florins	Value of florin in d gros
1361	Brownish Cloth	Buxhoernen Lakenen Sticwecken	4.5000	49.091	22.000
1368	Striped Cloth	Strijpte Lakene	4.5167	40.148	27.000
1368	Striped Cloth	Strijpten	4.8375	43.000	27.000
1369	Striped Cloth	Strijpten Lakenen	5.1625	45.889	27.000
1360	Brown Striped Scarlet	Brune Scaerlakene Strijpte	6.7833	74.000	22.000
1362	Brown Striped Scarlet Cloth	Brunen Scaerlakenen Strijpten	7.5000	81.818	22.000
1360	Striped Scarlet	Strijpten Scaerlakene	7.5250	82.091	22.000
1362	Red Striped Scarlet	Roeden Strijpten Scaerlakene	7.9917	87.182	22.000
1365	Red Striped Scarlet	Roeden Strijpten Scaerlakenen	8.4917	75.481	27.000
1362	Red Scarlet Cloth	Roeden Scaerlakenen	8.7778	95.758	22.000
1361	Striped Scarlet	Scaerlaken Strijpten	9.1537	99.859	22.000
1360	Brown Scarlet	Bruunen Scaerlakene	9.7500	106.364	22.000
1361	Perse Scarlet Broadcloth	Breeden Persen Scaerlaken	10.0000	109.091	22.000
1365	Brown Scarlet	Brunen Scaerlakenen	10.6167	94.370	27.000
1366	Red Scarlet	Roeden Scaerlakenen	11.1222	98.864	27.000
1367	Brown Striped Scarlet	Brunen Scaerlakene Strijpte	11.8250	105.111	27.000
1366	Gheleiden Cloth	Gheleiden Lakene	12.0000	106.667	27.000
1367	Perse Scarlet	Persen Scaerlakene	13.5000	120.000	27.000
1369	Brown Striped Scarlet	Brunen Scaerlakenen Strijpte	13.5458	120.407	27.000
1368	Red Striped Scarlet	Roeden Strijpten Scaerlakene	13.9000	123.556	27.000
1369	Red Scarlet	Roeden Scaerlakenen	14.0000	124.444	27.000
1368	Brown Scarlet	Brune Scaerlakene	14.0000	124.444	27.000

Table 5b.

The Purchase Prices of Ghent Woollens: by rank order of values, 1360-69

Values in £ groot Flemish, units of Commodity Baskets of equivalent value, and the number of a master mason's day's wages required to purchase each cloth

Year	Name of the Cloth	Value of Commodity Basket in d groot Fl.	Flemish Price Index 1450-74=100	Units of CB per Cloth	Daily Wage of Master Mason in d. groot Flemish	Days' Wages to Buy One Cloth: Master mason
1362	Striped Cloth	89.20	69.92	3.767	6.75	49.78
1360	Striped Cloth	124.08	97.26	3.063	6.00	63.33
1365	Striped Cloth	131.57	103.13	2.941	7.50	51.60
1365	Striped Cloth	131.57	103.13	2.941	7.50	51.60
1361	Striped Cloth	145.08	113.72	2.679	6.00	64.78
1366	Striped Cloth	124.59	97.66	3.520	8.00	54.83
1367	Striped Cloth	136.52	107.01	3.591	8.00	61.28
1360	Medley	124.08	97.26	3.957	6.00	81.83
	Dickedinnen					
1362	Small	89.20	69.92	5.516	6.75	72.89
	Dickedinnen					
1365	Small	131.57	103.13	3.922	7.50	68.80
	Dickedinnen					
1366	Half (?)	124.59	97.66	4.142	8.00	64.50
	Dickedinnen					
1362	Striped Cloth	89.20	69.92	5.818	6.75	76.89
1362	Medley	89.20	69.92	5.908	6.75	78.07
	Dickedinnen					
1368	Striped Cloth	142.87	111.99	3.703	8.00	66.13
1361	Medley	145.08	113.72	3.750	6.00	90.67
	Dickedinnen					
1365	Striped Cloth	131.57	103.13	4.216	7.50	73.96
1369	Striped Cloth	117.75	92.30	4.711	8.00	69.33
1366	Striped Cloth	124.59	97.66	4.457	8.00	69.42
1361	Medley	145.08	113.72	3.888	6.00	94.00
	Dickedinnen					
1365	Dickedinnen	131.57	103.13	4.317	7.50	75.73
1365	Dickedinnen	131.57	103.13	4.317	7.50	75.73
1365	Dickedinnen	131.57	103.13	4.317	7.50	75.73
1361	Red	145.08	113.72	3.970	6.00	96.00

Year	Name of the Cloth	Value of Commodity Basket in d groot Fl.	Flemish Price Index 1450-74=100	Units of CB per Cloth	Daily Wage of Master Mason in d. groot Flemish	Days' Wages to Buy One Cloth: Master mason
	Dickedinnen					
1365	Dickedinnen	131.57	103.13	4.411	7.50	77.39
1366	Small	124.59	97.66	4.659	8.00	72.56
	Dickedinnen					
1360	Dickedinnen	124.08	97.26	4.787	6.00	99.00
1367	Dickedinnen	136.52	107.01	4.351	8.00	74.25
1360	Striped Cloth	124.08	97.26	4.787	6.00	99.00
1361	Striped Cloth	145.08	113.72	4.108	6.00	99.33
1362	Striped Cloth	89.20	69.92	6.682	6.75	88.30
1362	Dickedinnen	89.20	69.92	6.682	6.75	88.30
1361	Medley	145.08	113.72	4.108	6.00	99.33
	Dickedinnen					
1362	Dickedinnen	89.20	69.92	6.682	6.75	88.30
1365	Dickedinnen	131.57	103.13	4.705	7.50	82.53
1367	Dickedinnen	136.52	107.01	4.534	8.00	77.38
1360	Medley	124.08	97.26	4.997	6.00	103.33
	Dickedinnen					
1362	Striped Cloth	89.20	69.92	6.973	6.75	92.15
1366	Green	124.59	97.66	5.281	8.00	82.25
	Dickedinnen					
1366	Dickedinnen	124.59	97.66	5.386	8.00	83.88
1366	Dickedinnen	124.59	97.66	5.386	8.00	83.88
1368	Dickedinnen	142.87	111.99	4.697	8.00	83.88
1360	Striped Cloth	124.08	97.26	5.416	6.00	112.00
1369	Dickedinnen	117.75	92.30	5.809	8.00	85.50
1360	Striped Cloth	124.08	97.26	5.569	6.00	115.17
1367	Dickedinnen	136.52	107.01	5.103	8.00	87.08
1367	Dickedinnen	136.52	107.01	5.105	8.00	87.13
1366	Striped Cloth	124.59	97.66	5.594	8.00	87.13
1367	Striped Cloth	136.52	107.01	5.289	8.00	90.25
1367	Striped Cloth	136.52	107.01	5.296	8.00	90.38
1368	Dickedinnen	142.87	111.99	5.145	8.00	91.88
1365	Striped Cloth	131.57	103.13	5.685	7.50	99.73
1365	Striped Cloth	131.57	103.13	5.685	7.50	99.73

Year	Name of the Cloth	Value of Commodity Basket in d groot Fl.	Flemish Price Index 1450-74=100	Units of CB per Cloth	Daily Wage of Master Mason in d. groot Flemish	Days' Wages to Buy One Cloth: Master mason
1368	Dickedinnen	142.87	111.99	5.418	8.00	96.75
1368	Dickedinnen	142.87	111.99	5.418	8.00	96.75
1361	Striped Cloth	145.08	113.72	5.358	6.00	129.56
1368	Striped Cloth	142.87	111.99	5.599	8.00	100.00
1369	Dickedinnen	117.75	92.30	6.794	8.00	100.00
1360	Red-Orange cloth	124.08	97.26	6.762	6.00	139.83
1362	Striped Ghesterts Cloth	89.20	69.92	9.686	6.75	128.00
1367	Blue Striped Cloth	136.52	107.01	6.614	8.00	112.88
1369	Striped Cloth	117.75	92.30	8.110	8.00	119.38
1360	Blue cloth	124.08	97.26	7.737	6.00	160.00
1365	Geleiden Cloth	131.57	103.13	7.365	7.50	129.20
1365	White Cloth	131.57	103.13	7.753	7.50	136.00
1362	Dickedinnen Broadcloth	89.20	69.92	11.626	6.75	153.63
1366	White Striped Cloth	124.59	97.66	8.492	8.00	132.25
1361	Brownish Cloth	145.08	113.72	7.444	6.00	180.00
1368	Striped Cloth	142.87	111.99	7.587	8.00	135.50
1368	Striped Cloth	142.87	111.99	8.126	8.00	145.13
1369	Striped Cloth	117.75	92.30	10.522	8.00	154.88
1360	Brown Striped Scarlet	124.08	97.26	13.121	6.00	271.33
1362	Brown Striped Scarlet Cloth	89.20	69.92	20.179	6.75	266.67
1360	Striped Scarlet	124.08	97.26	14.555	6.00	301.00
1362	Red Striped Scarlet	89.20	69.92	21.502	6.75	284.15
1365	Red Striped Scarlet	131.57	103.13	15.490	7.50	271.73
1362	Red Scarlet Cloth	89.20	69.92	23.617	6.75	312.10

Year	Name of the Cloth	Value of Commodity Basket in d groot Fl.	Flemish Price Index 1450-74=100	Units of CB per Cloth	Daily Wage of Master Mason in d. groot Flemish	Days' Wages to Buy One Cloth: Master mason
1361	Striped Scarlet	145.08	113.72	15.143	6.00	366.15
1360	Brown Scarlet	124.08	97.26	18.859	6.00	390.00
1361	Perse Scarlet	145.08	113.72	16.543	6.00	400.00
	Broadcloth					
1365	Brown Scarlet	131.57	103.13	19.366	7.50	339.73
1366	Red Scarlet	124.59	97.66	21.425	8.00	333.67
1367	Brown Striped Scarlet	136.52	107.01	20.788	8.00	354.75
1366	Gheleiden Cloth	124.59	97.66	23.116	8.00	360.00
1367	Perse Scarlet	136.52	107.01	23.733	8.00	405.00
1369	Brown Striped Scarlet	117.75	92.30	27.609	8.00	406.38
1368	Red Striped Scarlet	142.87	111.99	23.350	8.00	417.00
1369	Red Scarlet	117.75	92.30	28.535	8.00	420.00
1368	Brown Scarlet	142.87	111.99	23.518	8.00	420.00

Sources:

Stadsarchief Gent, Stadsrekeningen, Reeks 400:vols. 9-10.

Peter Spufford, *Handbook of Medieval Exchange*, Royal Historical Society Handbook no. 13 (London, 1986), pp. 215-21 (with some extrapolations from values for virtually identical Genoese *genoins* or *florins* and Venetian *ducats*).

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.

Table 6.

**Prices of Ghent's Woollen Cloths:
Dickedinnen Broadcloths and Small Cloths*
in Pounds Groot Flemish and Florentine Florins:
1340 - 1412**

Year	Dicke- dinnen Broad- cloth in £ groot	Dicke- dinnen Broad- cloth in Florins	Dicke- dinnen Small- cloth in £ groot	Dicke- dinnen Small- cloth in Florins	Exchange Rate of the Florin in d groot	Grams of Silver in the Flem. d groot
1340	2.350	37.6	1.150	18.4	15.000	2.908
1349	2.613	37.3	1.363	19.4	16.833	2.067
1353			1.704	21.4	19.083	1.835
1354			1.979	23.7	20.000	1.747
1361	4.958	54.1	2.583	28.2	22.000	1.629
1367	5.163	50.4	2.796	27.3	24.583	1.372
1369	5.592	49.0	3.225	28.2	27.416	1.229
1370	5.913	44.3	3.333	25.0	32.000	1.173
1377	6.000	45.0	3.550	26.6	[32.000]	1.114
1378	7.600	57.0	3.667	27.5	[32.000]	1.114
1380	7.500	56.3	4.000	30.0	[32.000]	1.011
1382	7.500	56.3	4.000	30.0	[32.000]	1.011
1389					42.500	0.781
1390	5.958	45.4			31.500	1.018
1391	5.538	42.2			31.500	1.008
1402	5.667	41.2			33.000	1.018
1403	6.000	43.6			33.000	1.018
1412	5.700	41.5			33.000	1.182

* dickedinnen broadcloths purchased annually for the aldermen (schepenen) and dickedinnen small cloths purchased for the civic clerks (clerken).

Sources:

Stadsarchief Gent, Reeks 400:5 - 10, Stadsrekeningen 1347/48 to 1391/92; Peter Spufford, *Handbook of Medieval Exchange*, Royal Historical Society Handbook no. 13 (London, 1986), pp. 215-21 (with some extrapolations from values for virtually identical Genoese *genoins* or *florins* and Venetian *ducats*).

Table 7. Prices of Fine Woollen Broadcloths of Ghent, Mechelen, and Leiden, and Prices of Hond schoote Says, Compared with a Master Mason's Daily Wage at Antwerp, in Pence and Pounds Gros Flemish, in 1535 - 1545

Year	Mason's Daily Wage^a	GHENT Dicke-dinnen^b	GHENT Helleman Trauwen^b	MECHELEN Black Roos-laken^{ac}	LEIDEN Pair of Halve-lakenen^d	HONDSCHOOTE Single Says^e	Double Says^f	Number of Days Wages of Master Mason to buy Ghent Dickedinnen Hondschoote Single Say	
	in d groot	in £ groot	in £ groot	in £ groot	in £ groot	in £ groot	in £ groot		
1535	10.33	14.150	11.150	10.667	5.367			328.66	
1536	11.00	14.250	11.250	10.667	5.717			310.91	
1537	11.67	14.500	11.500	11.333	8.400			298.28	
1538	12.67	14.500	11.500	11.333	8.867	0.967	2.278	274.73	18.32
1539	12.67	15.000	11.500	11.333	6.329	0.945	2.184	284.20	17.90
1540	12.67	15.000	11.500	11.333	8.750	0.835	1.961	284.20	15.82
1541	12.67	15.500	12.000	11.333	9.100	0.879	2.015	293.68	16.65
1542	12.67	14.500	11.500	11.333		0.838	2.005	274.73	15.88
1543	14.00	14.000	11.000	11.333		0.783	1.775	240.00	13.42
1544	14.00	14.000	11.000	11.333		0.908	1.942	240.00	15.57
1545	15.00	14.500	11.500	11.333				232.00	

Notes:

a. Converted from Brabant groten: 1.5d Brabant groot = 1.0d Flemish gros (groot)

b. Ghent woollens (dickedinnen and helleman): 30 ells by 9.5 quarter ells (made from English March and Cotswolds wools).

- c. Mechelen woollens (Rooslaken): 30 ells by 10 quarter ells (March wools).
- d. Leiden woollens (halvelakenen): pair, each 16 ells by 9 quarter ells (made from English and Spanish wools, predominantly the former).
- e. Hondschoote single says: 18 ells by 5 quarter ells: Hondschoote price.
- f. Hondschoote double says: 36.75 ells by 5 quarter ells: Antwerp price.

Sources:

Stadsarchief Gent, Stadsrekeningen 1534/5-1544/5, Reeks 400: nos.46-52;

Stadsarchief Mechelen, Stadsrekeningen 1534/5-1544/5, nos.209-19;

Herman Van der Wee, *Growth of the Antwerp Market and the European Economy, 14th to 16th Centuries*, 3 vols. (The Hague, 1963), 1:457-68 (Appendix 39);

Henri De Sagher, et al eds., *Recueil de documents relatifs à l'histoire de l'industrie drapière en Flandre*, deuxième série, Vol. II (Brussels, 1954), pp. 362-69, no. 290; pp. 378-81, no. 291; p. 415, no. 299.

Émile Coornaert, *La draperie-sayetterie d'Hondschoote, XIVe-XVIIIe siècles* (Paris, 1930); calculated from Appendix IV, pp. 485-90.

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), 249-65.

Table 8. Prices of English Wools in Sacks, English Broadcloths, and Ghent Dickedinnen Broadcloths in Pounds Sterling and Pounds Groot Flemish, with the English and Flemish Price Indices, in Decennial Means, 1320-9 to 1530-9

[illegible]

Table 8, continued:

Decade	Price- Relatives of English Broadcloths 1400-9=100	Price- Relatives of English Wools 1400-9=100	English Price Index 1450-74= 100	English Price Index 1400-9= 100	Value of Brabantine Commodity Basket in d groot Brabant	Value of Brabantine Commodity Basket in d groot Flemish
1320-9		128.16	121.55	111.60		
1330-9		89.77	105.27	96.65		
1340-9		82.30	94.32	86.60		
1350-9		80.87	126.78	116.40		
1360-9		103.58	139.60	128.17		
1370-9		133.01	129.04	118.47		
1380-9		99.00	106.35	97.64		
1390-9		87.15	107.14	98.37		
1400-9	100.00	100.00	108.92	100.00	155.83	
1410-9	110.02	93.62	111.68	102.53	173.63	
1420-9	120.04	85.96	102.31	93.93	215.75	
1430-9	159.27	95.42	113.56	104.26	262.90	175.27
1440-9	149.61	92.60	99.35	91.21	243.38	162.25
1450-9	123.10	73.99	97.87	89.85	243.34	162.23
1460-9	121.00	88.58	102.70	94.29	222.41	148.27
1470-9	127.83	95.82	93.03	85.41	246.13	164.09
1480-9	170.67	136.86	114.44	105.07	378.63	252.42
1490-9	160.95	95.03	99.94	91.76	299.10	199.40
1500-9			102.90	94.47	279.60	186.40
1510-9			109.71	100.73	323.65	215.77
1520-9			146.01	134.05	408.10	272.07
1530-9			153.02	140.49	419.75	279.83
1540-9			189.52	174.00	468.15	312.10

Sources:

English Wool: 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. Barnes, '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.

English Cloth: London, Public Record Office, King's Remembrancer Exchequer, Particular Accounts: Customs, E.122/76/13, 74/11, 77/4, 77/11, 77/4, 72/33, 73/25, 194/14-18, 78/7, 79/5, 81/1-2; Lord Treasurer's Remembrancer Exchequer, Enrolled Customs Accounts, E.356/19-24.

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

Price Indices: 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; 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.

Table 9: Prices of Flemish, Brabantine, and English Woollen Broadcloths, in Quinquennial Means, in Pounds Groot Flemish and Sterling English

Years	Ghent Undyed Dickedinnen Broad Cloths 30 ells x 9.5 qtr	Ghent Dyed Dickedinnen Broad Cloths 30 ells x 9.5 qtr	Ghent Strijpte Lakenen	Bruges Fine White Breede Laken	Bruges Dyed Breede Lakenen Mean of May & Oct: 30 ells	Ypres Fine Dyed Breede Laken	Kortrijk Dyed Cloths 30 ells	Wervik Dyed Cloths 30 ells	Neuve-Église Dyed Woollens 30 ells
1400-04	n.a.	5.919	n.a.	n.a.	7.244	n.a.	3.238	3.534	n.a.
1405-09	5.725	5.922	5.336	4.500	6.870	5.419	3.422	3.750	n.a.
1410-14	5.650	5.793	4.838	4.710	6.104	5.334	3.435	3.723	n.a.
1415-19	5.865	5.935	4.924	4.720	5.920	5.517	3.424	n.a.	n.a.
1420-24	5.845	6.082	4.806	4.260	5.922	5.060	3.550	3.070	n.a.
1425-29	5.835	6.063	5.118	4.500	6.198	5.359	3.917	n.a.	1.935
1430-34	6.230	6.835	5.487	5.290	6.849	6.000	4.187	4.125	2.165
1435-39	6.675	7.281	5.517	5.333	7.160	6.468	3.750	4.207	2.083
1440-44	6.920	7.765	5.641	7.400	7.462	n.a.	4.285	3.978	2.172
1445-49	6.720	7.925	5.700	7.300	7.413	7.694	4.038	3.720	2.263
1450-54	n.a.	6.950	5.635	8.000	6.831	7.583	4.000	3.819	2.316
1455-59	n.a.	7.702	5.656	8.000	7.057	7.907	n.a.	3.777	2.037
1460-64	n.a.	8.000	5.410	n.a.	6.808	7.510	n.a.	3.555	2.428
1465-69	n.a.	8.100	4.863	n.a.	6.804	7.671	n.a.	n.a.	2.002
1470-74	n.a.	8.642	5.375	n.a.	7.483	7.773	n.a.	n.a.	1.771
1475-79	n.a.	8.875	6.225	n.a.	7.153	7.667	n.a.	n.a.	1.900
1480-84	n.a.	10.348	8.170	n.a.	8.677	10.190	n.a.	n.a.	2.250
1485-89	n.a.	14.893	11.100	n.a.	12.505	11.487	n.a.	n.a.	5.344
1490-94	n.a.	16.233	13.750	n.a.	11.281	12.233	n.a.	n.a.	n.a.
1495-99	n.a.	14.667	11.700	n.a.	n.a.	13.411	n.a.	n.a.	n.a.
1500-04	n.a.	14.667	11.000	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1505-09	n.a.	14.333	11.600	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1510-14	n.a.	13.130	12.575	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1515-19	n.a.	13.090	13.500	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Years	Leuven (a) Dyed Woollens 30 ells	Mechelen Pleine Lakenen 30 ells (b)	Leiden Pairs of Halvelaken in £ groot Fl	English (c) Broadcloths Exported: in £ sterling	English (c) Broadcloths Exported: in £ groot Flem	English Cloth (c) Purchased at Cambridge in £ sterl	English Cloth (c) Purchased at Cambridge in £ gr. Flem.	Value of £ ster in £ groot Flemish
1400-04	3.226	7.461	n.a.	1.666	1.747	2.175	2.281	1.0487
1405-09	3.755	8.692	n.a.	2.000	2.024	2.183	2.210	1.0122
1410-14	3.780	10.938	n.a.	2.000	1.555	2.130	1.656	0.7773
1415-19	3.771	11.564	n.a.	2.000	1.871	2.100	1.964	0.9353
1420-24	4.465	n.a.	n.a.	2.402	2.505	2.113	2.203	1.0427
1425-29	4.773	8.141	4.439	2.001	2.197	2.838	3.116	1.0981
1430-34	6.061	8.948	4.448	2.494	2.869	2.400	2.761	1.1504
1435-39	6.171	6.719	n.a.	2.729	3.013	2.075	2.291	1.1040
1440-44	4.195	6.579	n.a.	2.295	2.534	2.100	2.318	1.1040
1445-49	4.030	6.435	n.a.	2.731	3.015	2.117	2.337	1.1040
1450-54	3.595	6.765	n.a.	2.037	2.249	2.400	2.650	1.1040
1455-59	4.181	n.a.	n.a.	2.062	2.276	2.625	2.898	1.1040
1460-64	5.130	n.a.	5.400	2.215	2.329	2.625	2.760	1.0514
1465-69	5.681	5.597	5.636	1.866	1.868	2.600	2.602	1.0009
1470-74	5.496	6.392	5.483	2.096	2.231	2.400	2.555	1.0646
1475-79	5.831	7.958	5.926	2.382	3.015	n.a.	0.000	1.2658
1480-84	6.531	8.736	6.833	2.723	3.687	2.400	3.250	1.3542
1485-89	8.563	9.659	8.653	2.905	6.341	2.733	5.965	2.1827
1490-94	7.587	8.234	6.704	2.494	2.929	2.725	3.201	1.1745
1495-99	7.700	9.843	6.245	2.802	4.100	2.633	3.852	1.4631
1500-04	n.a.	9.940	n.a.	2.491	3.733	2.400	3.597	1.4986
1505-09	n.a.	10.031	n.a.	2.910	4.515	2.400	3.724	1.5517
1510-14	n.a.	10.632	n.a.	3.219	4.995	3.250	5.043	1.5517
1515-19	n.a.	11.204	n.a.	n.a.	n.a.	4.120	6.393	1.5517

a. Prices for Leuven and Mechelen Woollens converted from pounds groot Brabant:
at variable rates up to 1435; at a ratio of 1.5 Brabant groot:1.0 Flemish groot from 1435;

b. Mechelen shifts to the production of ‘bellaerts ghecaerde lakenen’

c. All English woollen broadcloths valued in terms of the cloth of assize of 24 yards by 7 qtr yds. fulled and finished.

Sources:

Ghent Cloths: Stadsarchief Gent, Stadsrekeningen, Reeks 400: vols.11-44; Algemeen Rijksarchief België, Rekenkamer, reg. nos. 38,635-72.

Bruges Cloths: Stadsarchief Brugge, Stadsrekeningen, 1399/1400 - 1499/1500; Algemeen Rijksarchief België, Rekenkamer, reg. nos. 32,461-551.

Ypres Cloths: Algemeen Rijksarchief België, Rekenkamer, reg. nos. 38,636-722.

Mechelen Cloths: Stadsarchief Mechelen, Stadsrekeningen, 1316-1550, Series I: nos. 76-169; Algemeen Rijksarchief, Rekenkamer, reg. nos. 41,218-79.

Leuven Cloths: Stedelijk Archief Leuven, Stadsrekeningen, 1345-1500, nos. 5006-5125.

Leiden Cloths: Gemeente Archief Leiden, Archief der Secretarie vande Stad Leiden, 1253-157: Archief van poortmeesters en burgemeesters, nos. 512 - 80. Nicolaas, Posthumus, ed., *Bronnen tot de geschiedenis van de leidsche textielnijverheid, 1333-1795*, 3 vols. (The Hague, 1910-1922), I: *De Middeleeuwen*, nos. 44-96, pp. 37-111.

Cloths of the ‘Nouvelles Draperies’ (Flemish): Stadsarchief Brugge, Stadsrekeningen, 1399/1400 - 1499/1500; Algemeen Rijksarchief België, Rekenkamer, reg. nos. 32,461-564; 33,152-190 (Kortrijk); 42,524-563 (Brugse Vrije).

English Cloths purchased at Cambridge: Archives of the British Library of Political and Economic Sciences, Phelps Brown Papers, Box 1a.324; James Edwin Thorold Rogers, *A History of Agriculture and Prices in England, From the year after the Oxford Parliament (1259) to the Commencement of the Continental War (1793)*, 7 vols. (Oxford, Clarendon Press, 1866-1902), III: 1401-1582, 494-508; IV: 1401-1582, 551-89.