



Munich Personal RePEc Archive

**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**

Munro, John H.

Department of Economics, University of Toronto

March 1999

Online at <http://mpa.ub.uni-muenchen.de/15903/>  
MPRA Paper No. 15903, posted 24. June 2009 / 20:13

---

**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**

**John H. Munro**

---

The question that is implicit in the title of this article might warrant the briefest of answers. For is it not self evident that seaborne trade was always much cheaper to conduct than overland continental trade? Is it not a fact that in pre-modern economies overland transport costs could effectively double the commodity price of grains, lumber, metallic ores and other bulk goods within fifty to seventy km., while sea transport could deliver such cargoes much more cheaply over longer distances? From such cost comparisons has arisen one of the basic axioms in economic history: that, before the nineteenth-century transport revolution in steam-powered railways, economic development fundamentally depended upon maritime transport and the exercise of seapower.<sup>1</sup>

Much evidence for this thesis should be found in the late medieval and early modern Low Countries, where economic growth, fueled principally by international trade, outpaced that of all other regions in northern Europe. Yet this is not altogether the case. As this article

---

<sup>1</sup> I wish to thank the Social Science and Humanities Research Council of Canada (Grants 410-96-0306 and 410-99-0274) for financial support in conducting the research for this article. A careful scholar might qualify this axiom on transport costs in the pre-railway era by noting the importance of canals in many countries as the necessary precursors to railroads; but in so doing one should emphasize the obvious point that canals obviously involved waterborne transport. One should also recall that the Nobel prize-winning economic historian, Robert Fogel, first made his name in the art of "counterfactual cliometrics" by contending that the "net social savings" derived from having railroads displace canals (or more accurately, by adding railroads to the existing transportation complex) was well under five percent: Robert W. Fogel, *Railroads and American Economic Growth: Essays in Econometric History* (Baltimore, 1964); see also William O. Aydelotte, Allan G. Bogue and Robert William Fogel (eds.), *The Dimensions of Quantitative Research in History* (Princeton, 1972).

**International Journal of Maritime History, Vol. XI, No. 2  
(December 1999), 1-30.**

demonstrates, the means by which the key manufactured products of northwest Europe, textiles, were transported to their most important markets, those in the Mediterranean basin, varied over time according to a range of factors, the most important of which was warfare. For much of the medieval and early-modern eras, overland transport played a vital role in the distribution of goods across Europe and served to stimulate market expansion and economic growth. This contention lends broad support to Herman Van der Wee's thesis that such land-based continental trade was a prime influence in the economic development of medieval and early-modern Europe. Although Van der Wee first advanced such views as long ago as 1963 (see note 6 below), this interpretation of the pattern and significance of comparative transport costs has since been subject to the maligned neglect of most economic historians. The message in this article is that they should reflect more carefully about these issues.

## I

In analysing the history of the Low Countries, which collectively played such a dominant role in European economic development over an eight-hundred year span, no historian would dare, of course, to neglect the importance of maritime factors; and virtually all would agree, for example, that the Dutch hegemony in the seventeenth-century economy was fundamentally based upon the seapower that the northern Low Countries so skilfully exercised in their maritime commerce with the Baltic and the East Indies. In the southern Low Countries, maritime commerce with England, the North Sea littoral, and the Baltic had certainly played a vital role in their precocious economic growth from at least the late eleventh or early twelfth century.<sup>2</sup> Yet an even more powerful element in their subsequent develop-

---

<sup>2</sup> See, for example, Jan De Vries and Ad Van der Woude, *Nederland 1500-1815: De eerste ronde van moderne economische groei* (Amsterdam, 1995; republished in English as *The First Modern Economy: Growth, Decline, and Perseverance of the Dutch Economy, 1500-1815* [Cambridge, 1996]); Jonathan I. Israel, *Dutch Primacy in World Trade, 1585-1740* (Oxford, 1989); Violet Barbour, "Dutch and English Merchant Shipping in the Seventeenth Century," *Economic History Review*, First Series, II (1930) (reprinted in E.M. Carus-Wilson [ed.], *Essays in Economic History*, I [London, 1954], 227-253); Richard W. Unger, *Ships and Shipping in the North Sea and Atlantic, 1400-1800* (Aldershot, 1997); Unger, *Dutch Shipbuilding Before 1800: Ships and Guilds* (Assen, 1978); Unger, *The Ship in the Medieval Economy, 600-1600* (London, 1980); F. Ketner, *Handel en scheepvaart van Amsterdam in de vijftiende eeuw* (Leiden, 1946); Dick E.H. De Boer, *Graaf en Grafiek: sociale en economische ontwikkelingen in het middeleeuwse, Noordholland, tussen 1345 en 1415* (Leiden, 1978); Herman Van der Wee, *The Low Countries in the Early Modern World*

ment, notably in the expansion of the Flemish and Artesian textile industries during the twelfth and thirteenth centuries, was the overland trade with the Champagne Fairs of northeastern France. This provided a significant conduit for a rising tide of Flemish, Artesian, and other northern textiles sent to Italy and the Mediterranean basin, which was not yet linked to northwest Europe by sea transport. A densely populated, extensively urbanized region, this was still by far the most advanced zone in the European economy. Accordingly, it provided the largest export market for northern textiles, particularly for the lighter, coarser and cheaper textiles, which evidently then constituted the bulk of northern textile exports – Flemish, French, English, and German – both by volume and value.<sup>3</sup>

---

(London, 1993); and J.A. van Houtte, *An Economic History of the Low Countries, 800-1800* (London, 1977).

<sup>3</sup> See Renée Doehaerd (ed.), *Les relations commerciales entre Gênes, la Belgique, et l'Outremont, d'après les archives notariales génoises aux XIII<sup>e</sup> et XIV<sup>e</sup> siècles* (3 vols., Brussels, 1941); R.L. Reynolds, "The Market for Northern Textiles in Genoa, 1179-1200," *Revue belge de philologie et d'histoire*, VIII (1929), 831-850; Hilmar Krueger, "The Genoese Exportation of Northern Cloths to Mediterranean Ports, Twelfth Century," *Revue belge de philologie et d'histoire*, LXV (1987), 722-750; Robert-Henri Bautier, "Recherches sur les routes de l'Europe médiévale, I: De Paris et des Foires de Champagne à la Méditerranée par le Massif Central," *Bulletin philologique et historique (jusqu'à 1610), année 1960* (Paris, 1961), 99-143; Bautier, "Recherches sur les routes de l'Europe médiévale, II: Le grand axe routier Est-Ouest du Midi de la France: d'Avignon à Toulouse," *Bulletin philologique et historique (jusqu'à 1610), année 1961* (Paris, 1963), 277-308; Bautier, "Les foires de Champagne: recherches sur une évolution historique," *Recueils de la Société Jean Bodin, V: La Foire* (Brussels, 1953), 97-147; Patrick Chorley, "The Cloth Exports of Flanders and Northern France During the Thirteenth Century: A Luxury Trade?" *Economic History Review*, Second Series, XL, No. 3 (August 1987), 349-379; Chorley, "English Cloth Exports During the Thirteenth and Early Fourteenth Centuries: The Continental Evidence," *Historical Research*, LXI (February 1988), 1-10; Wendy Childs, "The English Export Trade in Cloth in the Fourteenth Century," in Richard Britnell and John Hatcher (eds.), *Progress and Problems in Medieval England* (Cambridge, 1996), 121-147; John Munro, "Industrial Transformations in the North-West European Textile Trades, c. 1290-c. 1340: Economic Progress or Economic Crisis?" in Bruce M.S. Campbell (ed.), *Before the Black Death: Studies in the "Crisis" of the Early Fourteenth Century* (Manchester, 1991), 110-148 (reprinted in Munro, *Textiles, Towns, and Trade: Essays in the Economic History of Late-Medieval England and the Low Countries* [London, 1994]; Munro, "The Origins of the English 'New Draperies': The Resurrection of an Old Flemish Industry 1270-1570," in Negley B. Harte (ed.), *The New Draperies in the Low Countries and England, 1300-1800* (Oxford, 1997), 35-127; Munro, "The Symbiosis of Towns and Textiles: Urban Institutions and the Changing Fortunes of Cloth Manufacturing in the Low Countries and England, 1270-1570," *Journal of Early Modern History*, III, No. 1 (February: 1999), 1-74; Munro, "The 'Industrial Crisis' of the English Textile Towns, 1290-1330," in

As the textbooks tell us, however, the Champagne Fairs, enjoying only an ephemeral glory, did not survive beyond the early fourteenth century, because supposedly radical advances in maritime transport during this era had made their continental-oriented commerce quite redundant. As early as c.1274, the Genoese had made the first direct maritime contact with Flanders; and by 1317 the Italians had instituted a fairly regular annual galley service to Bruges. The Venetians, after founding their Bruges consulate in 1322 and establishing a maritime link with Southampton, came to dominate that northern galley trade.<sup>4</sup> According to Raymond De Roover, ancillary commercial developments also help to explain the post-1320 redundancy of the Champagne Fairs and the itinerant trade of its visiting merchants. From this decade, the great Italian merchant-banking houses began establishing branch offices in Bruges, Paris, London and other northern towns, with permanently stationed factors, who transacted their long-distance commerce by a sedentary principal-agent system involving the newly devised bills of exchange. These simple, informal four-party holograph documents quickly displaced the more costly and cumbersome notarized *instrumenta ex causa cambii* (“lettres de foire”), which merchants had long been required to use in person, in conducting trade at these Fairs.<sup>5</sup>

---

Michael Prestwich, Richard Britnell, and Robin Frame (eds.), *Thirteenth-Century England*, VII (Woodbridge, UK, 1999), 103-141.

<sup>4</sup> Renée Doehaerd, “Les galères génoises dans la Manche et la Mer du Nord à la fin du XIII<sup>e</sup> siècle et au début du XIV<sup>e</sup> siècle,” *Bulletin de l’Institut historique belge de Rome*, XIX (1938), 5-76; Georges Yver, *Le commerce et les marchands dans l’Italie méridionale au XIII<sup>e</sup> et au XIV<sup>e</sup> siècle* (Paris, 1903); Alfons Schaube, “Die Anfänge der venezianischen Galeerenfahrten nach der Nordsee,” *Historische Zeitschrift*, 3rd series, CI (1908), 28-89; R. Cessi, “Le relazioni commerciali tra Venezia e le Fiandre nel secolo XIV,” *Nuovo Archivio Veneto*, new series, XXVII (1914); E.H. Byrne, *Genoese Shipping in the Twelfth and Thirteenth Centuries* (Cambridge, MA, 1930); and Federigo Melis, “La formazione dei costi nell’industria laniera alla fine del Trecento,” *Economia e storia: Rivista italiana di storia economica e sociale*, I (June-September 1954), 31-53. On the costs of the sea transport of textiles, see Armando Saporì, *Le marchand italien au moyen âge*, École Pratique des Hautes Études, VI<sup>e</sup> section: Affaires et gens d’affaires (Paris, 1952), part IV: “Routes et transports,” 64-74; Robert Lopez, *Studi sull’economia genovese nel medio evo* (Turin, 1936); and Lopez, “The Trade of Medieval Europe: The South,” in M.M. Postan and E.E. Rich (eds.), *Cambridge Economic History of Europe, II: Trade and Industry in the Middle Ages* (Cambridge, 1952), 257-354.

<sup>5</sup> Raymond De Roover, “The Commercial Revolution of the Thirteenth Century,” *Bulletin of the Business Historical Society*, XVI (1942), 34-39 (reprinted in F.C. Lane and Jelle Riemersma [eds.], *Enterprise and Secular Change* [New York, 1953], 80-85); De

For those who entertain concepts of linear progress, however, the trade-based theses of Herman Van der Wee subsequently provided an unpleasant surprise. In his 1963 monograph, and then more generally in an article of 1970, Van der Wee contended that the relative balance between maritime and continental trade, and the relative prosperity of the latter, had played the fundamental role in determining long waves, or cycles of expansion and decline, in the European economy up to the eighteenth century. Thus, the revival, spread, and intensification of overland trade between northwest Europe and the Mediterranean from the eleventh century promoted a general European economic prosperity that lasted until the early fourteenth century. Moreover, the vitality of overland commerce, both north-south and then east-west, contributed to general economic growth via backward and forward linkages throughout a vast continental hinterland. In particular, under-utilized resources were diverted from the large, generally backward agrarian sector into the more productive industrial, commercial, and financial sectors. Conversely, he argued, the relative shift of international trade from transcontinental to the new maritime routes in the early fourteenth century ultimately had a negative, depressing impact on the aggregate economy of late medieval Europe.

The consequent contraction in overland, continental trade, beginning with the Champagne Fairs and its arterial routes, soon spread via many more tributary routes into the regional and local trade networks that serviced thousands of towns and villages throughout the vast continental hinterland. The demand for transport and commercial services, labour, manufactures, foodstuffs and other goods diminished as a result. Declining consumption, in turn, reduced investment and aggregate incomes by a reverse multiplier-accelerator effect. While the diversion of international trade flows into new shipping lanes certainly benefited the major partici-

---

Roover, "Money, Banking, and Credit in Medieval Bruges," *Journal of Economic History*, II (1942), *Supplement*, 52-65; De Roover, "Le contrat de change depuis la fin du treizième siècle jusqu'au début du dix-septième," *Revue belge de philologie et d'histoire*, XXV (1946-1947), 111-128; De Roover, *Money, Banking and Credit in Mediaeval Bruges: Italian Merchant-Bankers, Lombards, and Money Changers: A Study in the Origins of Banking* (Cambridge, MA, 1948); De Roover, *L'évolution de la lettre de change, XIVe-XVIIIe siècles* (Paris, 1953); De Roover, "New Interpretations of the History of Banking," *Journal of World History*, II (1954), 38-76 (reprinted in Julius Kirshner [ed.], *Business, Banking, and Economic Thought in Late Medieval and Early Modern Europe: Selected Studies of Raymond de Roover* [Chicago, 1974], 200-238); and De Roover, "The Organization of Trade," in M.M. Postan and E.E. Rich (eds.), *Cambridge Economic History of Europe. III: Economic Organization and Policies in the Middle Ages* (Cambridge, 1963), 42-118.

pants – the seaports of Italy, Catalonia, the Netherlands, the Baltic, and even England – their impressive gains could not offset the much greater aggregate economic decline in the continental hinterlands of late medieval Europe. Furthermore, this diversion of international trade tended to concentrate wealth and income flows into fewer hands, especially in the maritime states. This in turn had such negative economic consequences as increased hoarding, non-productive expenditures on ostentatious display, and excessive imports of eastern luxury goods, whose consumption required a growing and deflationary drain of precious metals from western Europe to the Baltic and especially the Levant.<sup>6</sup>

Some may find Van der Wee's international trade model redolent of the old Pirenne thesis on Mediterranean trade in the early medieval economy,<sup>7</sup> and the more recent Miskimin thesis, on late medieval international trade deficits with, and consequent bullion outflows to, the East.<sup>8</sup> Van

---

<sup>6</sup> Herman Van der Wee, *The Growth of the Antwerp Market and the European Economy, 14th to 16th Centuries* (3 vols., The Hague, 1963), II, 34-120; Van der Wee and Theo Peeters, "Un modèle dynamique de croissance interseculaire du commerce mondiale, XIIe-XVIIIe siècles," *Annales: E.S.C.*, XV (1970), 100-126; and partly reiterated in Van der Wee, "Structural Changes in European Long-Distance Trade, and Particularly in the Re-export Trade from South to North, 1350-1750," in James D. Tracy (ed.), *The Rise of Merchant Empires: Long-Distance Trade in the Early Modern World, 1350-1750* (Cambridge, 1990), 14-33.

<sup>7</sup> In essence, Pirenne posited an economic retrogression in early medieval Europe, with a rapid decline in seaborne international trade, as a consequence of Muslim conquests of Mediterranean sea-lanes; subsequently, there was an Italian counter-attack – the revival of both Mediterranean seaborne and overland long-distance trade – which fostered economic revival, urban growth, and general economic development from the early eleventh century. See Henri Pirenne, *Mahomet et Charlemagne* (Paris, 1937; in English translation, *Mohammad and Charlemagne* [London, 1939]); Pirenne, *Histoire économique de l'occident médiéval* (Bruges, 1951); A.F. Havighurst (ed.), *The Pirenne Thesis: Analysis, Criticism, and Revision* (New York, 1958); William Carroll Bark, *Origins of the Medieval World* (London, 1957); Robert LaTouche, *The Birth of the Western Economy: Economic Aspects of the Dark Ages* (London, 1956); Robert S. Lopez, "Mohammad and Charlemagne: A Revision," *Speculum*, XXVIII (1943); Eliyahu Ashtor, "Quelques observations d'un orientaliste sur la thèse de Pirenne," *Journal of Economic and Social History of the Orient*, XIII (1970), 166-194; and Eliyahu Ashtor, "Nouvelles réflexions sur la thèse de Pirenne," *Revue Suisse d'histoire*, XX (1970), 601-607 (reprinted in Ashtor, *Studies on Levantine Trade in the Middle Ages* [London, 1978]).

<sup>8</sup> In essence, the Miskimin thesis contends that a post-Plague hedonistic spending spree of inherited cash balances on costly luxury goods, combined with Papal taxation and warfare, drained bullion from northern to southern Europe. As Europe collectively increased

der Wee's seemingly similar model has thus enjoyed no more support from current economic historians than have these two earlier theses. For instance, Raymond Van Uytven has contended that the Brabant land toll registers contradict the view that "a shift from continental trade to maritime shipping [was] a cause of the economic decline of the later Middle Ages."<sup>9</sup> However, this attack on the Van der Wee thesis may be rebutted on three counts. First and foremost, an international trade model concerning overland commercial flows between northwest Europe and Italy can hardly be tested by one isolated, local set of land tolls, especially when the bases of its numeric data are not fully clear. Second, the Brabant land toll registers commence far too late, in 1406, to provide such a test, especially since they become continuous only from 1433, almost a century after the beginning of the shift in maritime trade that the Van der Wee model has posited. Third, these land

---

its imports of eastern luxury goods (from both the Baltic and eastern Mediterranean), thereby worsening its balance of payments deficit with the East, such trade led to an increased bullion outflow. The consequent monetary contraction exacerbated Europe's late medieval economic contraction, or "great depression." See Harry Miskimin, "Monetary Movements and Market Structures: Forces for Contraction in 14th and 15th Century England," *Journal of Economic History*, XXIV (1964), 470-490 (reprinted in Harry A. Miskimin, *Cash, Credit, and Crisis in Europe, 1300-1600* [London, 1989]); Miskimin, *The Economy of Early Renaissance Europe, 1300-1460* (1969; reprint, Cambridge, 1975); Robert Lopez and Miskimin, "The Economic Depression of the Renaissance," *Economic History Review*, Second Series, XIV (1962), 408-426; Lopez, Miskimin, and A.L. Udovitch, "England to Egypt, 1350-1500: Long-Term Trends and Long-Distance Trade," in M.A. Cook (ed.), *Studies in the Economic History of the Middle East* (London, 1970), 93-128. For related, if variant, views, see John Day, "The Great Bullion Famine of the Fifteenth Century," *Past and Present*, No. 79 (May 1978), 1-54 (reprinted in Day, *The Medieval Market Economy* [Oxford, 1987], 1-54); and Peter Spufford, *Money and Its Use in Medieval Europe* (Cambridge, 1988), 339-395. For a critique of this model, see Clyde Reed, "Price Movements, Balance of Payments, Bullion Flows, and Unemployment in the Fourteenth and Fifteenth Centuries," *Journal of European Economic History*, VIII (1979), 479-487. For a more general overview, see John Munro, "Patterns of Trade, Money, and Credit," in James Tracy, Thomas Brady, Jr., and Heiko Oberman (eds.), *Handbook of European History in the Later Middle Ages, Renaissance and Reformation, 1400-1600, Vol. I: Structures and Assertions* (Leiden, 1994), 147-195. See note 28 below for the relevance of this debate for the topic of this article.

<sup>9</sup> Raymond Van Uytven, "The Economics of Land Transport in the Late-Medieval and Early-Modern Low Countries: The Case of the Duchy of Brabant in the 15th and 16th Centuries" (Paper Presented to the Economic History Workshop, University of Toronto, 1 February 1993). This was subsequently published in revised form as "Landtransport durch Brabant im Mittelalter und im 16. Jahrhundert," in F. Burgard and A. Haverkamp (eds.), *Auf den Römerstrassen im Mittelalter: Beiträge zur Vehrkersgeschichte zwischen Maas und Rhein von der Spätantike bis ins 19. Jahrhundert* (Mainz, 1998), 471-499.

toll registers indicate a rise in overland commercial traffic that virtually accords with an important aspect of Van der Wee's model. For he contends that a fifteenth-century revival of transcontinental trade flows stimulated both a renewed expansion of the European continental economy and the transformation of Antwerp from a merely regional foodstuffs fair (the Brabant Fairs) to become Europe's leading commercial and financial entrepôt, a role that it enjoyed for well more than a century.<sup>10</sup>

Indeed, the chief strength of the Van der Wee thesis lies in the detailed evidence that it offers on this latter phenomenon.<sup>11</sup> Furthermore, if that previous, fourteenth-century shift from transcontinental to maritime routes, along with the move from itinerant fair-commerce to "sedentary" branch-firm commerce, had been the manifestation of economic progress, as most earlier historians argued, how do we explain the indisputable revival and expansion of transcontinental trade from the mid-fifteenth to early seventeenth centuries? And, more strikingly, how do we account for the revival of periodic international fairs, and seasonal cycles of adjacent fairs, along the overland routes, not only in Brabant itself - the four fairs of Antwerp and Bergen-op-Zoom - but also in Frankfurt, Besançon, Lyons, Geneva, and Cremona?<sup>12</sup>

---

<sup>10</sup> See note 11.

<sup>11</sup> Van der Wee, *Antwerp Market*. This monograph was built on the scholarship of J.A. Goris, *Étude sur les colonies marchandes méridionales à Anvers de 1488 à 1567* (Leuven, 1925); Emile Coornaert, *Les français et le commerce international à Anvers, fin du XVe-XVIe siècle* (2 vols., Paris, 1961); Jan A. Van Houtte, "La genèse du grand marché international d'Anvers à la fin du moyen âge," *Revue belge de philologie et d'histoire*, XIX (1940), 87-126; Van Houtte, "Bruges et Anvers: marchés 'nationaux' ou 'internationaux' du XIVe au XVIe siècle?" *Revue du Nord*, XXIV (1952), 89-108; Van Houtte, "Anvers aux XVe et XVIe siècles," *Annales: E.S.C.*, XVI (1961), 248-278; Van Houtte, "The Rise and Decline of the Market of Bruges," *Economic History Review*, Second Series, XIX (1966), 29-47; Oskar De Smedt, *De engelse natie te Antwerpen in de 16e eeuw* (2 vols., Antwerp, 1950); Wilfrid Brulez, "L'exportation des Pays-Bas vers l'Italie par voie de terre au milieu de XVIe siècle," *Annales: Économies, sociétés, civilisations*, XIV (1959), 461-491. See also Brulez, "Le commerce international des Pays-Bas au XVIe siècle: essai d'appréciation quantitative," *Revue belge de philologie et d'histoire*, XLVI (1968), 1205-1221 (republished as "The International Trade of the Low Countries in the Sixteenth Century," in *Acta Historiae Neerlandicae*, IV [1970]); and Brulez, "Bruges and Antwerp in the 15th and 16th Centuries: An Antithesis?" *Acta Historiae Neerlandicae*, VI (1973), 1-26.

<sup>12</sup> Moreover, if the supposedly superior bill of exchange, as a feature of sedentary branch-firm commerce, had fully superseded the earlier fair-letters (*instrumenta ex causa cambii*), then how do we explain the phenomenon of the bill or letter obligatory? The direct

The fundamental weaknesses of the Van der Wee thesis stem from his attempt to construct an international trade model spanning six centuries in just sixteen pages.<sup>13</sup> In particular, the explanation of the earlier, fourteenth-century shift from transcontinental to maritime trade is inadequate, largely because the chronology of this transition is left vague, though presumably it was underway by the 1320s. He seems to suggest, more in line with traditional views than with the logic of his own model, that it took place because the Italians had found the direct sea route to Flanders more cost effective and advantageous, chiefly because of technical advances in ship design and navigation. But most of these improvements, especially the emergence of the caravel design, the full-rigged carrack, the quadrant and astrolabe, etc., came a full century after this maritime trade had assumed its ascendancy.<sup>14</sup> Moreover, Russell Menard has recently

---

ancestor of the modern promissory note, it had become a fully negotiable bearer bill, much more so than the Italian bill of exchange, by the later fifteenth century, and was far more prominent than bills of exchange in transacting commerce and finance – including short-term public lending – both in London and in Antwerp during the later fifteenth and sixteenth centuries. See Michael Postan, “Credit in Medieval Trade,” *Economic History Review*, First Series, I (1928), 234-261 (reprinted in Michael Postan, *Medieval Trade and Finance* [Cambridge, 1983], 1-27); Postan, “Private Financial Instruments in Medieval England,” *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, XXIII (1930; reprinted in his *Medieval Trade and Finance*, 28-64); Herman Van der Wee, “Anvers et les innovations de la technique financière aux XVIe et XVIIe siècles,” *Annales: E.S.C.*, XXII (1967), 1067-1089 (republished as “Antwerp and the New Financial Methods of the 16th and 17th Centuries,” in Van der Wee, *Low Countries*, 145-166; Van der Wee, *Growth of the Antwerp Market*, II, 333-368; Van der Wee, “Monetary, Credit, and Banking Systems,” in E.E. Rich and Charles Wilson (eds.), *Cambridge Economic History of Europe. V: The Economic Organization of Early Modern Europe* (Cambridge, 1977), 310-335; Van der Wee, “The Medieval and Early-Modern Origins of European Banking,” in Dino Puncuh and Giuseppe Felloni (eds.), *Banchi pubblici, banchi privati e monti di pietà nell’Europa preindustriale: Amministrazione, tecniche operative e ruoli economici* (2 vols., Genoa, 1991), II, 1157-1173; and John Munro, “The International Law Merchant and the Evolution of Negotiable Credit in Late-Medieval England and the Low Countries,” in *ibid.*, I, 49-80 (reprinted in Munro, *Textiles, Towns, and Trade*).

<sup>13</sup> Furthermore, the data-free econometric model (Peeters, “Un modèle dynamique”) that constitutes the remaining nine pages of the article serves only to obfuscate the model and, I fear, to dissuade many historians from taking it as seriously as this seminal article should be.

<sup>14</sup> See in particular Richard Unger, “Dutch Ship Design in the Fifteenth and Sixteenth Centuries,” *Viator*, IV (1973), 387-412; Unger, *Dutch Shipbuilding before 1800*; Unger, *The Ship in the Medieval Economy*; Unger, “Warships and Cargo Ships in Medieval

argued that such changes in naval technology had little impact on direct shipping costs, from the fourteenth to the eighteenth centuries, whose decline he attributes instead to those political and commercial developments that provided greater maritime security.<sup>15</sup> On this point, Menard quotes Michael Postan to the effect that “medieval communications, like other trading activities, suffered much more from instability and uncertainty, political in origin, than from high costs of an inefficient transport service.”<sup>16</sup>

These issues do play a role in Van der Wee’s trade model, in the form of the Hundred Years War (1336-1453). In his view, even if that conflict had begun much too late to explain the initial shift to maritime trade, it reinforced and prolonged that development by so frequently disrupting the major overland trade routes. Van der Wee, however, overlooked an earlier series of wars, more debilitating than any since the Carolingian era, which even more directly disrupted these overland routes, forcing the Italians to turn to a safer sea route to northwest Europe. In northwest Europe, this new era of widespread warfare had commenced during the 1290s, with the Anglo-French and Franco-Flemish conflicts, followed by the Flemish civil wars (to 1328). In the south, the Angevin-

---

Europe,” *Technology and Culture*, XXII (April 1981), 233-252; Unger, “Portuguese Shipbuilding and the Early Voyages to the Guinea Coast,” in *Vice-Almirante A. Teixeira Da Mota, In Memoriam*, I (Lisbon, 1987), 229-249; Carlo Cipolla, *Guns, Sails, and Empires: Technological Innovation and the Early Phases of European Expansion 1400-1700* (New York, 1965); Charles R. Boxer, *The Portuguese Seaborne Empire, 1415-1825* (London, 1969); Martin Elbl, “The Portuguese Caravel and European Shipbuilding: Phases of Development and Diversity,” *Revista da Universidade de Coimbra*, XXXIII (1985), 543-572; Elbl, “The Caravel and the Galleon,” in Robert Gardiner (ed.), *Conway’s History of the Ship. III: Cogs, Caravels and Galleons* (London, 1994), 91-98; and Archibald Lewis and Timothy Runyan, *European Naval and Maritime History, 300-1500* (Bloomington, 1985).

<sup>15</sup> Russell Menard, “Transport Costs and Long-Range Trade, 1300-1800: Was There a European ‘Transport Revolution’ in the Early Modern Era?” in James Tracy (ed.), *The Political Economy of Merchant Empires: State Power and World Trade, 1350-1750* (Cambridge, 1991), 228-275. For similar views, see Munro, “Industrial Transformations,” 110-148, and the sources in note 3.

<sup>16</sup> Michael Postan, “The Trade of Medieval Europe: The North,” in Postan and Rich (eds.), *Cambridge Economic History of Europe*, II, 203-204, continues: “Inefficient the service certainly was, wasteful of manpower and other resources; but so was medieval industry and agriculture...To put it more abstractly, the proportion of trading costs to total costs was probably less in the Middle Ages than now, which is merely another way of saying that far greater economies have resulted from industrial revolutions of the eighteenth and nineteenth centuries than from corresponding improvements in transport and distribution.”

Aragonese wars, embroiling Aragon-Catalonia, southern France, Sicily, Naples, and the Papacy, had begun even earlier but reached their peak just before the truce of 1302. Shortly after, in 1310, Imperial German armies invaded Italy and thereby turned festering Angevin-Aragonese strife into the far more ferocious and destructive Guelf-Ghibelline wars (1313-1343). For the next four decades, Italy was devastated by the repeated incursions of Catalan, French, German, and Hungarian forces, and the constant depredations of mercenary Free Companies of disbanded soldiers.<sup>17</sup> In 1327, an Italian merchant cited these Guelf-Ghibelline wars as the reason why he was no longer able to transport his cloths from the now dying Champagne Fairs to Genoa.<sup>18</sup>

Certainly, during the fourteenth century, the maritime routes between Italy and Flanders provided cheaper transport than the overland routes that continued to function. In the 1390s, an Italian merchant firm reported that the cost of sending luxury Wervik woollens from Bruges to Barcelona was fifteen percent of the price (twenty-two gold florins) by sea and twenty-two percent of the price by land. The report also noted that other merchants had “lost all their profit” by sending their woollens overland.<sup>19</sup>

---

<sup>17</sup> For the evidence on the economic consequences of such warfare, particularly in rising transport and transaction costs, see Munro, “Industrial Transformations,” 110-148; Munro, “Resurrection of an Old Flemish Industry,” 35-127; Munro, “Industrial Crisis of the English Textile Towns,” 104-142; and the sources in notes 3 and 26.

<sup>18</sup> Doehaerd, *Relations commerciales*, III, 1156: “Nec per terra ire potuit communiter propter guerras que presentaliter occurentes inter Januinos guelfos et guibelines.” Subsequently (1343), Marseilles conducted a civic inquest that also blamed those wars for the drastic decline in its trade. The text in Georges Lesage, *Marseille angevine: recherches sur son evolution administrative économique et urbaine de la victoire de Charles d’Anjou à l’arrivée de Jeanne Ire (1264-1348)* (Paris, 1950), 184-186, goes on: “quod deterioratio et diminutio dictorum reddituum provenit propter diminucionem boni status civitatis Massilie, nam sicut civitas in personis et divitiis a tempore quo perdita fuit Acon et propter perdicionem ipsius et propter guerras quas habuerent ipsi Massilienses et sicut omnes redditus quos civitas ipsa habeat in communi et successive habuit dominus noster Rex et precessores sui diminuti sunt et reducti ad minorem quantitatem.” See also Edouard Baratier and Félix Reynaud, *Histoire du commerce de Marseille. II: De 1291 à 1480* (Paris, 1951), 38-40, 207-228 and 304-313.

<sup>19</sup> Federigo Melis, “La diffusione nel Mediterraneo occidentale dei panni di Wervicq e delle altre città della Lys attorno al 1400,” in *Studi in onore di Amintore Fanfani III: Medioevo* (Milan, 1962), 233-234, n. 30, letter of Gulgielmo Barberi to Datini Co., Barcelona, 10 May 1398: for transporting a Wervik woollen cloth, worth twenty-three gold francs (or about twenty-two gold florins): by land, five francs; by sea, 3.5 francs. Just one

Yet some eighty years earlier, the cost of transporting relatively cheap Norman says, a fairly coarse semi-worsted product, from the Caen *sayetteries* overland to Florence via the Rhone (then the only feasible route), was only 8.8 percent of its much lower value, about half that of the Wervik woollens.<sup>20</sup>

Thus, since warfare and related forms of violence were hardly confined to land, the costs of maritime transport also rose, though not as much as did land transport costs, during the later Middle Ages. As Irene Katele has argued, the fourteenth century marked “a watershed in the

---

of these woollens, then worth twenty-two gold florins or £3 0s 6d *groot* Flemish, would have cost a Bruges master-mason, then the highest paid in northern Europe, his full wages for seventy-three days (at ten pence per day). On 28 May 1397, the Alberti firm in Bruges informed Datini that only high-priced cloths could be shipped overland: “*perch e’ panni di grande pregio possono meglio che que’ di piccoli pregi [sopportare il viaggio terrestre]; anzi, lo possono e gli altri non.*” *Ibid.* See also E.B. Fryde, “Italian Maritime Trade with Medieval England (ca. 1270-c. 1530),” *Recueils de la société Jean Bodin*, XXXII (1974), 310; Fryde, “The English Cloth Industry and the Trade with the Mediterranean, c. 1370-c. 1530,” in Marco Spallanzani (ed.), *Produzione, commercio e consumo de panni di lana nei secoli XII - XVII* (Florence, 1976), 343-367; Fryde, “Anglo-Italian Commerce in the Fifteenth Century: Some Evidence about Profits and the Balance of Trade,” *Revue belge de philologie et d’histoire*, L (1972), 345-355; all three are reprinted in Fryde, *Studies in Medieval Trade and Finance* (London, 1983). For the relative coinage values, see Peter Spufford, *Handbook of Medieval Exchange* (London, 1986), 179 and 191. For wages, see John Munro, “Urban Wage Structures in Late-Medieval England and the Low Countries: Work-Time and Seasonal Wages,” in Ian Blanchard (ed.), *Labour and Leisure in Historical Perspective, Thirteenth to Twentieth Centuries*, Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte Beiheft series no. 116 (Stuttgart: Franz Steiner Verlag, 1994), 67, Table 4-1.

<sup>20</sup> Armando Saponi, *Una compagnia di calimala ai primi del trecento* (Florence, 1932), 97-99. The Caen says were then priced at 11.5 florins; and the cost of transporting 133 says was 1.01 florin per say (total marketing costs amounted to 2.20 florins per say, or 19.2%). In another account, total marketing costs for sixty-four Caen says were 2.41 fl. per say, or 9.5% more per say in the smaller shipment. Caen says were then the most expensive. See also Chorley, “Cloth Exports of Flanders,” 369. Comparing relative gold values is difficult, except to note that the early fourteenth century was a period of inflation; the late fourteenth century, one of deflation. For other evidence on the relatively low costs of overland transport in thirteenth-century Europe, see Bautier, “Recherches sur les routes,” especially 99-143; and James Masschaele, “Transport Costs in Medieval England,” *Economic History Review*, Second Series, XLVI, No. 2 (May 1993), 266-279.

history of naval plundering.”<sup>21</sup> The typical response was to build and fit out much bigger, more heavily armed ships, with larger complements of specialized crossbowmen, steel-plated body armour even for the sailors, naval artillery (from the 1330s), and more mobile small arms. Freight rates thus rose with such substantial additions to shipping costs. Catalan evidence indicates that arming merchant ships increased freight rates by twenty-five percent between 1275 and 1330, while Sicilian naval records show that freight rates virtually doubled over the fourteenth century.<sup>22</sup> The Venetians found their most cost effective solution in the heavily-armed, three-masted great-galley, a speedy military and commercial hybrid vessel that became the exclusive carrier of precious cargoes.<sup>23</sup> Yet even these powerful ships would not risk Atlantic shipping lanes when menaced by naval war or fleets of corsairs. Accordingly, Venetian shipping records indicate that the Flanders galleys made only twenty-four northbound voyages from 1332, when state-subsidies commenced, to 1400, as against eighty-six in the

---

<sup>21</sup> Irene B. Katele, “Piracy and the Venetian State: The Dilemma of Maritime Defense in the Fourteenth Century,” *Speculum*, LXIII (October 1988), 865-889. See also Benjamin Kedar, *Merchants in Crisis: Genoese and Venetian Men of Affairs and the Fourteenth-Century Depression* (New Haven, 1976); and note 23 below.

<sup>22</sup> Charles-Emmanuel Dufourcq, *L’Espagne catalane et le Maghrib aux XIII<sup>e</sup> et XIV<sup>e</sup> siècles: de la bataille de Las Navas de Tolosa (1212) à l’avènement du sultan mérinide Abou-l-Hasan (1331)* (Paris, 1966), 534-542. Shipping costs ranged from £200 Barcelonese for small ships (thirty-forty sailors) to £400 for galleys (eighty-120 rowers and 100-150 sailors); and costs of arming such ships against corsairs ranged from £50 to £100 extra per month. For Sicily, see Henri Bresc, “Course et piraterie en Sicile (1250-1450),” *Anuario de estudios medievales*, X (1980), 751-757; and Henri Bresc, *Un monde méditerranéen: Économie et société en Sicile, 1300 - 1450* (2 vols., Rome, 1986), I, 350-352.

<sup>23</sup> Katele, “Piracy,” 865-889; Frederic Lane, *Venetian Ships and Shipbuilders of the Renaissance* (Baltimore, 1934), 6-26, 36-46 and 129-134; Lane, “From Biremes to Triremes,” *Mariner’s Mirror*, XLIX (1963), 48-50 (reprinted in *Venice and History: The Collected Papers of Frederic C. Lane* [Baltimore, 1966], 189-192); Lane, “Merchant Galleys, 1300-34: Private and Communal Operations,” *Speculum*, XXXVIII (1963), 179-205 (reprinted in *Venice and History*, 193-226); Lane, “The Crossbow in the Nautical Revolution of the Middle Ages,” in David Herlihy, Robert Lopez, and Vsevolod Slessarev (eds.), *Economy, Society, and Government in Medieval Italy: Essays in Memory of Robert L. Reynolds* (Kent, OH, 1969), 161-172; Lane, *Venice: A Maritime Republic* (Baltimore, 1973), Cipolla, *Guns, Sails, and Empire*, 75-79; Dufourcq, *L’Espagne catalane*, 534-542; Lewis and Runyan, *European Naval and Maritime History*, 121-128; Unger, *Ship in the Medieval Economy*, 176-182; and Unger, “Warships and Cargo Ships,” 238-248.

commercially more propitious fifteenth century.<sup>24</sup> Even then, sea transport was hardly cheap, for shipping a sack of English Cotswold wool to Venice by galley added twenty-five percent to the cost.<sup>25</sup>

## II

Elsewhere, I have argued that steep increases in transport costs by both land and sea, together with rising marketing, protection, and transaction costs, were amongst the most harmful economic consequences of late medieval warfare. For both the Low Countries and England, their once predominant export trade in cheaper, lighter textiles had virtually ceased by the 1320s, when the combined production and marketing costs had risen above the prevailing market prices in the Mediterranean basin. In this situation, the rational response of many northern cloth producers was to transform themselves from serving as mere “price-takers,” selling largely undifferentiated textiles under conditions of “pure competition,” to become instead quality-oriented “price-makers,” engaging in “monopolistic competition.” Thus, in Flanders, Brabant and later in Holland as well – more so than

---

<sup>24</sup> Alberto Tenenti and Corrado Vivanti, “Le film d’un grand système de navigation: Les galères marchandes vénitiennes, XIV<sup>e</sup> - XVI<sup>e</sup> siècles,” *Annales: économies, sociétés, civilisations*, XVI (January-June 1961), 83-86, and pull-out chart. No Venetian galley fleets were sent to northwestern Europe in 1333, 1337-1346, 1348-1356, 1359-1373, 1377-1383, 1388 and 1391; up to 1390, galleys went to Bruges in only sixteen years. Their galley fleets usually operated in the Mediterranean, but not at all in 1351-1354 or 1378-1381, during the wars with Genoa. For the Florentines, see Fryde, “Italian Maritime Trade,” 321-326.

<sup>25</sup> Wool shipped to Venice at £2 in shipping costs per sack purchased for £8 sterling; other charges raised total marketing costs to £6 11s sterling per sack (81.9%). British Library, “Noumbre of Weyghtes,” in Cotton MS Vespasian, E. IX, fo. 106r-108v, partially presented in H. Hall and F.J. Nicholas (eds.), “Select Tracts and Table Books Relating to English Weights and Measures, 1100-1742,” *Camden Miscellany*, XV (*Camden Third Series*, vol. XII, London, 1929), 120-20; and also partially cited in Fryde, “Anglo-Italian Commerce,” 355. The Genoese usually employed the much cheaper round ships or cogs, and later, the carracks; Fryde “Italian Maritime Trade,” 309-310, states that Genoese freight rates for wool were only 5.16% of the price (8s 3d per sack); those for alum and woad, about eight percent of their prices. See also Fryde, “English Cloth Industry,” and Eliyahu Ashtor, “Catalan Cloth on the Late Medieval Mediterranean Markets,” *Journal of European Economic History*, XVII (Fall 1988), 249-250. But other shipping costs were much higher. According to Unger, *Ship in the Medieval Economy*, 169, shipping salt from Portugal to Bruges accounted for eighty-five percent of the landed price; and shipping Baltic grain from Danzig to Bruges was about half the landed price, c. 1400.

elsewhere – most drapers came to concentrate more and more of their production on the much more expensive luxury woollens, which could far better sustain rising transport and transaction costs in long-distance trade.<sup>26</sup>

My current concern is to examine changes in the Netherlands' textile industries in the context of the changing modes and cost structures of international transport and trade during the late fifteenth and early sixteenth centuries. Such industrial changes followed the revival and expansion of the transcontinental trade routes and produced an industrial structure more akin to that prevailing in the thirteenth than in the intervening late medieval centuries. The genesis of this revival in transcontinental trade, which fully restored the overland links between Italy and the Low Countries – though via newer, more easterly routes, away from the battlefields of the Hundred Years War – lay principally in southern imperial Germany (Bavaria-Austria-Bohemia).

Previously an economic backwater, this region's economic growth was partly spurred by a new trade in cheap flax-based textiles. Southern Germany had long provided a small, though receptive, market for the cheap, light, mixed linen-cotton fabrics produced by the Italian fustians industry. However, in the 1380s, many South German towns, finding that warfare had cut off their regular supply of Lombard fustians, began converting their domestic flax-based linen crafts into a fustian industry, exchanging locally mined silver for Venetian imports of Syrian cotton. By the 1420s, this new German fustian industry had displaced its declining Lombard rival, marking the first major revival of such cheap textiles in international trade. At the now prominent Frankfurt Fairs, South German merchants met Cologne merchants who, in travelling south from the resurgent Brabant Fairs, were offering English woollen broadcloths, an important commodity that was

---

<sup>26</sup> Munro, "Industrial Transformations," 110-148; Munro, "Resurrection of an Old Flemish Industry," 35-27; Munro, "Symbiosis of Towns and Textiles," 1-74; Munro, "Industrial Crisis of the English Textile Towns," 103-141; and Munro, "Textiles as Articles of Consumption in Flemish Towns, 1330-1575," *Bijdragen tot de geschiedenis*, LXXXI (1998), 275-288. On the economics of transaction costs in international trade (usually with high fixed costs and thus considerable scale economies), see Douglass North, "Government and the Cost of Exchange in History," *Journal of Economic History*, XLIV (June 1984), 255-264; North, "Transaction Costs in History," *Journal of European Economic History*, XIV (Winter 1985), 557-576; North, "Institutions, Transaction Costs, and the Rise of Merchant Empires," in Tracy (ed.), *Political Economy of Merchant Empires*, 22-40; North, and Robert P. Thomas, *The Rise of the Western World: A New Economic History* (Cambridge, 1973); Clyde Reed, "Transactions Costs and Differential Growth in Seventeenth Century Western Europe," *Journal of Economic History*, XXXIII (March 1973), 177-190.

soon to prove instrumental in the expansion of both the Brabant Fairs and Rhenish-South German overland trade.<sup>27</sup>

An even more important catalyst of the rapid expansion in this German-based overland trade with the Brabant Fairs was the Central European silver and copper mining boom. By the 1450s, a veritable “bullion famine,” marked by plunging mint outputs in western Europe, produced a very severe and prolonged deflation (with price falls of about thirty-five percent), which thus meant a corresponding increase in the purchasing power of silver.<sup>28</sup> Such conditions, in promoting an increased demand and

---

<sup>27</sup> See Van der Wee, *Antwerp Market*, II, 34-120; and the sources in note 6 above. For the Venetian trade in Syrian cotton and South German metals and fustians, see Eliyahu Ashtor, *Levant Trade in the Later Middle Ages* (Princeton, 1983), 103-200 and 433-512; Ashtor, *A Social and Economic History of the Near East in the Middle Ages* (London, 1976), 319-331; Ashtor, “The Venetian Supremacy in Levantine Trade: Monopoly or Pre-Colonialism?” *Journal of European Economic History*, III, No. 1 (Spring 1974), 5-53; Ashtor, “The Volume of Levantine Trade in the Later Middle Ages (1370-1498),” *Journal of European Economic History*, IV, No. 3 (Winter 1975), 573-576; Ashtor, “Profits from Trade with the Levant in the Fifteenth Century,” *Bulletin of the School of Oriental and African Studies*, XXXVII (1975), 250-275; Ashtor, “The Venetian Cotton Trade in Syria in the Later Middle Ages,” *Studi Medievali XVII* (Spoleto, 1976), 675-715 (the last four articles are reprinted in Ashtor, *Studies on Levantine Trade in the Middle Ages* [London, 1978]); Hermann Kellenbenz, “The Fustian Industry of the Ulm Region in the Fifteenth and Early Sixteenth Centuries,” in Negley B. Harte and Kenneth G. Ponting (eds.), *Cloth and Clothing in Medieval Europe: Essays in Memory of Professor E.M. Carus-Wilson* (London, 1983), 259-278; Wolfgang von Stromer, *Die Gründung der Baumwollindustrie in Mitteleuropa: Wirtschaftspolitik in Spätmittelalter* (Stuttgart, 1978); Van Houtte, “La genèse d’un grand marché,” 87-112; Van Houtte, “Bruges et Anvers,” 89-108; and John Munro, “Anglo-Flemish Competition in the International Cloth Trade, 1340-1520,” in *Publication du centre européen d’études bourguignonnes*, XXXV (1995), 37-60.

<sup>28</sup> See John Munro, “Bullion Flows and Monetary Contraction in Late-Medieval England and the Low Countries,” in John F. Richards (ed.), *Precious Metals in the Later Medieval and Early Modern Worlds* (Durham, 1983), 97-158 (reprinted in Munro, *Bullion Flows and Monetary Policies in England and the Low Countries, 1350-1500* [Aldershot, 1992]); Munro, “Mint Outputs, Money, and Prices in Late-Medieval England and the Low Countries,” in Eddy Van Cauwenberghe and Franz Irsigler (eds.), *Münzprägung, Geldumlauf, und Wechselkurse/Minting, Monetary Circulation, and Exchange Rates: Akten des 8th International Economic History Congress* (Trier, 1984), 31-122; Munro, “The Central European Mining Boom, Mint Outputs, and Prices in the Low Countries and England, 1450-1550,” in Eddy Van Cauwenberghe (ed.), *Money, Coins, and Commerce: Essays in the Monetary History of Asia and Europe from Antiquity to Modern Times* (Leuven, 1991), 119-183, especially tables 1-5; Day, “The Great Bullion Famine,” 1-54; Spufford, *Monetary Problems and Policies*, 106-129, 141-146 and 180-193; Spufford, *Money and Its Use*, 339-368; Van der Wee, *Antwerp Market*, I, 127-128, and II, 95-112; and

search for that metal, precipitated technological changes in mining and smelting that permitted a five or six-fold increase in the mined output of both silver and copper in South Germany and adjacent Central Europe, from the 1460s to the 1540s. The first stage was an innovation in mechanical engineering: new drainage pumps and adits (downward-sloping tunnels) that eliminated the longstanding problem of flooded mine shafts in this mountainous region. The second was an even more important innovation in chemical engineering: the *Seigerhütten* process, by which a lead catalyst was used in smelting silver-copper ores, to separate these previously inseparable metals. The copper so extracted from the vast ore deposits also had considerable value, for it was the chief ingredient used in making bronze artillery, which had already played a major role in ending the Hundred Years' War.<sup>29</sup>

Virtually the entire era of the Central European mining boom coincided with the rise, expansion, and initial apogee of both the English cloth trade and the Antwerp market (see table 2). Two coincidental monetary changes, both of them coinage debasements, evidently inspired by bullion scarcities, helped to ensure that Antwerp and the Brabant Fairs would gain the lion's share of trade in both English woollens and South German metals. First, in 1464-1465, the English crown devalued its silver coinage by twenty percent and gold by twenty-six percent, immediately producing a fall in the exchange rate on the pound sterling, yet without any inflationary consequences.<sup>30</sup> The consequent drop in English cloth prices on

---

the sources cited in note 8 above.

<sup>29</sup> John Nef, "Silver Production in Central Europe, 1450-1618," *Journal of Political Economy*, XLIX (1941), 575-591; Nef, "Mining and Metallurgy in Medieval Civilisation," in Postan and Rich (eds.), *Cambridge Economic History of Europe*, II, 691-761; Philippe Braunstein, "Innovations in Mining and Metal Production in Europe in the Late Middle Ages," *Journal of European Economic History*, XII (1983), 573-591; Munro, "Central European Mining Boom," 119-184; Michael North, *Geldumlauf und Wirtschaftskonjunktur im südlichen Ostseeraum an der Wende zur Neuzeit (1440-1570)* (Sigmaringen, 1990); and Spufford, *Money and Its Use*, 349-355 and 365.

<sup>30</sup> See Nicholas Mayhew, "The Monetary Background to the Yorkist Recoinage of 1464-1471," *British Numismatic Journal*, XLIV (1974), 62-73; Mayhew, "From Regional to Central Minting, 1158-1464," and Christopher Challis, "Lord Hastings to the Great Silver Recoinage, 1464-1699," in Challis (ed.), *A New History of the Royal Mint* (Cambridge, 1992), 83-178 and 179-397; Munro, "Bullion Flows and Monetary Contraction," 97-158, especially tables 7-10; John Munro, *Wool, Cloth and Gold: The Struggle for Bullion in Anglo-Burgundian Trade, ca. 1340-1478* (Brussels, 1973), 155-186 and 198-200; and Munro,

the Antwerp market made these woollens an even more attractive return cargo for Rhenish and South German merchants exploiting the now growing markets in Central and eastern Europe. Shortly after, in 1466, the Burgundian government undertook a more modest coinage debasement (silver by thirteen percent and gold by four percent), but one that produced a very sharp alteration in the bimetallic ratio at the new Antwerp mint. By offering much higher prices for silver bullion, it attracted more and more of the South German silver away from competing mints, a success reflected in burgeoning coinage outputs.<sup>31</sup>

Such monetary changes contributed to a rapid expansion of English cloth exports. From 1461-1465 to 1496-1500, London-based exports, principally to the Brabant Fairs, more than doubled, from a quinquennial mean of 20,788 broadcloths to one of 42,746 cloths, to account for almost seventy percent of total English cloth exports. That trade prompted a Burgundian observer to compare the rising tide of English woollen imports to an *inundacionis maris immensis*.<sup>32</sup> Nothing succeeds like success.

---

“Central European Mining Boom,” 119-184, especially tables 2, 4, and 5. By this debasement, the fine metal content of the silver penny was reduced exactly twenty percent from 0.8991 g. to 0.7193 g., which thereby raised the value of a Tower Pound of silver by twenty-five percent, from 30s 0d. to 37s 6d. sterling (or, per kilogram of fine silver, from £4.634 to £5.793). The reciprocal relationship between a debasement and the corresponding increase in the money-of-account value of the mint-weight of fine silver or gold is expressed by the equation:  $\Delta T = [1/(1 - x)] - 1$ , in which T (*traite*) is the coined value of the mint weight (Tower Pound) in money-of-account, and  $x$  is the percentage reduction in the fine-metal content of the penny or other link-money for this money-of-account. In August 1464 and in March 1465, Edward IV reduced the fine gold content of the noble from 6.998 g. to 5.184 g., a reduction of 25.92%, which raised the value of gold coinage (angel-noble and the new ryal or rose noble) by thirty-five percent, from £16.667 to £22.50 per Tower Pound of fine gold, the equivalent of a twenty-five percent debasement, by this formula. See Munro, *Bullion Flows and Monetary Policies*.

<sup>31</sup> Munro, “Bullion Flows and Monetary Contraction,” 97-158, especially tables 4-10; Munro, *Wool, Cloth and Gold*, 155-186 and 198-200; Munro, “Central European Mining Boom,” 119-184, especially tables 2-5; Van der Wee, *Antwerp Market*, II, 80-84; and the sources in notes 6 and 27.

<sup>32</sup> In fairness, it should be noted that commercial and monetary disputes had led to a temporary Burgundian ban on English cloth imports in the Low Countries, in 1464-1465; Munro, *Wool, Cloth, and Gold*, 155-180; John Munro, “Industrial Protectionism in Medieval Flanders: Urban or National?” in Harry Miskimin, David Herlihy and Avrom Udovitch (eds.), *The Medieval City* (New Haven, 1977), 229-268. Total English cloth exports rose from a quinquennial mean of 37,447 broadcloths in 1466-1470 to 62,583 cloths in 1496-1500, while London’s share rose from 55.31% to 68.3%. These data are from

Exchanges of English broadcloths for South German silver and copper and the related commerce lured merchants from all over Europe to the Brabant Fairs. Finally, in 1501, the Portuguese arrived with their newly acquired trade in Asian spices to complete the tripod that underpinned Antwerp's economic hegemony for the next half century.<sup>33</sup>

**Table 1**  
**Values of Imports into the Southern Netherlands, c. 1560**  
**in Million of Gulden (Carolus Florins of 40d groot Flemish)**

<b>Textile Product Imports</b>	<b>Value in Millions of Gulden</b>	<b>Per Cent of Total Import Values</b>	<b>Other Imports</b>	<b>Value in Millions of Gulden</b>	<b>Per Cent of Total Import Values</b>
Raw Silk and Italian Silks	4	21.6%	Baltic Grains	3	16.2%
English Woollens	3.24	17.5%	Portuguese Spices	2	10.8%
Spanish Wools	1.25	6.8%	French Wines	1.15	6.2%
English Wools	0.5	2.7%	Rhenish Wines	0.72	3.9%
French Woad	0.4	2.2%	Italian/Spanish/Portuguese Wines	0.5	2.7%
German Fustians	0.24	1.3%	Portuguese Salt	0.25	1.4%
Italian/Spanish Alum	0.24	1.3%	French Salt	0.25	1.4%
Spanish-American Cochineal	0.225	1.2%	Spanish Olive Oils	0.2	1.1%
			Spanish Salt	0.175	0.9%
			German Copper	0.16	0.9%

---

Eleanora M. Carus-Wilson and Olive Coleman, *England's Export Trade, 1275 -1547* (Oxford, 1963), 89-119; and Anthony R. Bridbury, *Medieval English Clothmaking: An Economic Survey* (London, 1982), appendix F. For the quotation, see Dietrich Schäfer (ed.), *Hanserecesse, 1477-1530* (9 vols., Leipzig, 1881-1913), III, 105.

<sup>33</sup> See note 11 above.

Textile Product Imports	Value in Millions of Gulden	Per Cent of Total Import Values	Other Imports	Value in Millions of Gulden	Per Cent of Total Import Values
<b>Totals</b>	10.095	54.6%	<b>Totals</b>	8.405	45.4%

*Note:* "Spanish wools" were principally *merino* wools imported via Bruges.

*Source:* Wilfrid Brulez, "Le commerce international des Pays-Bas au XVI<sup>e</sup> siècle: essai d'appréciation quantitative," *Revue belge de philologie et d'histoire*, XLVI (1968), 1205-1221, based upon Ludovico Guicciardini, *Description de la cité d'Anvers, 1560* (1582; reprint, Antwerp, 1920).

**Table 2**

**Exports of Woollen Broadcloths from London and All English Ports:  
Decennial Means, 1451-1460 to 1541-1550**

Decade	London: Broad-Cloth Exports	Index: Mean 1411-20 = 100	Total English Broadcloth Exports	London as Percentage of Total English Cloth Exports
1451-60	16,291	119.83	36,595	44.52%
1461-70	18,414	135.45	33,225	55.42%
1471-80	28,886	212.47	43,489	66.42%
1481-90	35,708	262.65	52,102	68.54%
1491-00	39,320	289.22	59,764	65.79%
1501-10	49,501	364.1	81,037	61.08%
1511-20	62,761	460.68	88,345	70.94%
1521-30	67,102	493.57	87,902	76.34%
1531-40	83,617	615.05	101,682	82.23%
1541-50	112,665	828.71	126,623	88.98%

*Note:* Broadcloths are quantities of cloth measuring twenty-four yds. by 1.75 yds. per unit, including kerseys reckoned at three kerseys per notional broadcloth.

*Source:* Calculated from data in E.M. Carus-Wilson and Olive Coleman, *England's Export Trade, 1275-1547* (Oxford, 1963); and F.J. Fisher, "Commercial Trends and Policy in Sixteenth-Century England," *Economic History Review*, First Series, X

(1940); and Anthony Bridbury, *Medieval English Clothmaking: An Economic Survey* (London, 1982), appendix F, 118-122.

During the early sixteenth century, as table 1 shows, textiles and related products clearly dominated the imports, domestic exports, and foreign re-exports of the Brabant Fairs. According to Guicciardini's mid-century survey of Antwerp's commerce, textile products (including dyestuffs and wool, both English and Spanish) accounted for fifty-five percent of all imports by value. The two most important imports were Italian silk products and English woollens, accounting for twenty-two percent and eighteen percent respectively, with Baltic grain a close third, at sixteen percent.<sup>34</sup> In the export trades, despite the lack of a similarly comprehensive, global survey, various accounts and toll registers of the 1540s indicate that textile products, led by English broadcloths and much cheaper kerseys, were even more dominant.<sup>35</sup> Long before this era, of course, England's relatively less expensive woollen broadcloths had displaced the finer and now far more costly Flemish and Brabantine luxury woollens, both at the Brabant Fairs and in most European markets. Within the Netherlands, other domestic heavy-weight woollens, lower-priced imitations from the no longer new *nouvelles draperies*, led by Armentières and Neuve-Église, had also superseded these old traditional luxury draperies to command a large foreign market and considerable sales at the

---

<sup>34</sup> Brulez, "Commerce international," based upon Ludovico Guicciardini, *Description de la cité d'Anvers, 1560* (1582; reprint, Antwerp, 1920). See also Herman Van der Wee Jan and Materné, "Antwerp as a World Market in the Sixteenth and Seventeenth Centuries," in J. Van der Stock (ed.), *Antwerp: Story of a Metropolis, 16th-17th Century* (Gent, 1993), 19-31.

<sup>35</sup> See Brulez, "Exportation des Pays Bas," 461-491; Brulez, "Commerce international," 1205-1221; Hugo Soly and Alfons Thijs, "Nijverheid in de Zuidelijke Nederlanden," *Algemene geschiedenis der Nederlanden*, VI (Haarlem, 1979), 27-57; Thijs, *Van 'werkwinkel' tot 'fabriek': de textielnijverheid te Antwerpen, einde 15de - begin 19de eeuw* (Brussels, 1987); Thijs, "Les textiles au marché anversoïse au XVIIe siècle," in Erik Aerts and John Munro (eds.), *Textiles of the Low Countries in European Economic History* (Leuven, 1990), 76-86; Herman Van der Wee, "Structural Changes and Specialization in the Industry of the Southern Netherlands, 1100-1600," *Economic History Review*, Second Series, XXVIII (1975), 203-221; Van der Wee, "Industrial Dynamics and the Process of Urbanization and De-Urbanization in the Low Countries from the Late Middle Ages to the Eighteenth Century: A Synthesis," in Herman Van der Wee (ed.), *The Rise and Decline of Urban Industries in Italy and in the Low Countries: Late Middle Ages-Early Modern Times* (Leuven, 1988), 307-381; and Van der Wee and Materné, "Antwerp as a World Market," 19-31; Van der Wee, *Antwerp Market*, II, 95-135. See also notes 36 and 38.

Brabant Fairs.<sup>36</sup> But by the mid-sixteenth century another branch of cloth manufacturing was on the verge of overtaking the *nouvelles draperies* to become the predominant textile industry of the southern Low Countries. Known as the *draperies légères*, they produced light, coarse, and much cheaper worsted or mixed woollen-worsted fabrics. As in the thirteenth century, the most renowned were again the *sayetteries*, whose products, if not precisely identical to the medieval says, certainly represented a resurrection of that once popular form of cloth making. Indeed, Hondschoote, a leading *sayetterie* in thirteenth-century Flanders, whose says were then so prominent in Italian markets, survived to become the leading Flemish say exporter to Italy and the Mediterranean by the late fifteenth and sixteenth century (see table 3). According to recent estimates by Soly and Thijs, the various worsted or semi-worsted *draperies légères*, decisively led by a multitude of *sayetteries*, were then producing about 3.64 million metres of cloth. The *nouvelles draperies*, and the few remaining traditional luxury-woollen draperies, now led by Mechelen, produced no more than 2.07 million metres.<sup>37</sup>

---

<sup>36</sup> See the sources in note 35.

<sup>37</sup> Statistics from Soly and Thijs, "Nijverheid in de Zuidelijke Nederlanden," 27-57. See also Emile Coornaert, *La draperie-sayetterie d'Hondschoote, XIVe-XVIIIe siècles* (Paris, 1930), 22-43 and 236-253; Coornaert, "Draperies rurales, draperies urbaines: l'évolution de l'industrie flamande au moyen âge et au XVI siècle," *Revue belge de philologie et d'histoire*, XXVIII (1950), 60-96; Coornaert, *Une industrie urbaine du XVe au XVIIIe siècle: l'industrie de la laine à Bergues-Saint-Winoc* (Paris, 1930); E. Maugis, "La saietterie à Amiens, 1480-1587," *Vierteljahrschrift für Sozial-und Wirtschaftsgeschichte*, V (1907), 1-115; Maurice Van Haeck, *Histoire de la sayetterie à Lille* (2 vols., Lille, 1910); Robert S. DuPlessis and Martha C. Howell, "Reconsidering the Early Modern Urban Economy: The Cases of Leiden and Lille," *Past and Present*, No. 94 (February 1982), 49-84; 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*, XXII (1936), 249-265; Donald C. Coleman, "An Innovation and Its Diffusion: The 'New Draperies,'" *Economic History Review*, Second Series, XII (1969), 417-429; Van der Wee, *Antwerp Market*, II, especially 186-191; Robert DuPlessis, "The Light Woollens of Tournai in the Sixteenth and Seventeenth Century," and Thijs, "Les textiles au marché anversois," 66-75 and 76-86; Robert S. Duplessis, "One Theory, Two Draperies, Three Provinces, and a Multitude of Fabrics: the New Drapery of French Flanders, Hainaut, and the Tournaisis, c.1500- c.1800," in Harte (ed.), *New Draperies*, 129-172; Patrick Chorley, "The 'Draperies Légères' of Lille, Arras, Tournai, Valenciennes: New Materials for New Markets?" in Marc Boone and Walter Prevenier (eds.), *Drapery Production in the Late Medieval Low Countries: Markets and Strategies for Survival* (Leuven, 1993), 151-165; Munro, "Textiles as Articles of Consumption," 275-288; Munro, "Symbiosis of Towns and Textiles," 62-70; and Munro, "Resurrection of an Old Flemish Industry," 35-127.

How did these says reach the Mediterranean? One might suppose, in view of the evidence cited for transport costs in the textile trades during the later fourteenth century, that the well-established maritime routes would have still enjoyed a greater relative cost advantage in shipping the far cheaper says to Mediterranean markets during the fifteenth and sixteenth centuries. One might also suppose that only the commerce in very costly, luxurious woollens and silks would have benefited from the revival of transcontinental trade routes, especially in servicing fairs and markets in the Rhineland, South Germany, Central Europe, and northern Italy. Nevertheless, the well documented fact that the overland transcontinental routes were used almost exclusively for transporting Flemish says, other products of the various *draperies légères*, English kerseys, and even lower-priced woollens to Italy, is rather astonishing.<sup>38</sup>

Table 3

Production and Export of Says from the Hondschoote Sayetterie  
in Quinquennial Means, 1401-1405 to 1591-1595

Year	Hondschoote Draperies Tax Farm in £ parisis 240d per £ parisis	Cloths represented by tax far 8d. per cloth	Hondschoote Cloth Sales: Ex- ports in Single Says*
1401-05	54.80	1644	
1406-10	78.00	2340	
1411-15	85.60	2568	
1416-20	117.60	3528	
1421-25	152.80	4584	
1426-30	165.80	4974	
1431-35	172.00	5160	
1436-40	176.00	5280	
1441-45	180.00	5400	
1446-50	278.00	8340	
1451-55	345.60	10,368	
1456-60	388.00	11,640	
1461-65	404.00	12,120	

<sup>38</sup> Edler, "Le commerce d'exportation;" Edler, "Winchcombe Kerseys in Antwerp (1538-1544)," *Economic History Review*, First Series, VII (1936-1937), 57-62; Wilfrid Brulez, "Les routes commerciales d'Angleterre en Italie au XVIe siècle," in *Studi in onore di Amintore Fanfani* (4 vols., Milan, 1962), IV, 123-184; Walter Endrei, "English Kerseys in Eastern Europe with Special Reference to Hungary," *Textile History*, V (1974), 90-99; Brulez, "Exportation des Pays Bas," 461-491; and Munro, "Resurrection of an Old Flemish Industry," 35-127. See also the sources in notes 35 and 40-41.

Year	Hondschoote Draperies Tax Farm in £ parisis 240d per £ parisis	Cloths represented by tax far 8d. per cloth	Hondschoote Cloth Sales: Ex- ports in Single Says*
1466-70	435.20	13,056	
1471-75	464.00	13,920	
1476-80	424.00	12,720	
1481-85	455.00	13,650	
1486-90	488.70	14,661	
1491-95	399.95	11,998	
1496-1500	424.00	12,720	
1501-05	588.00	17,640	
1506-10	667.20	20,016	
1511-15	757.60	22,728	
1516-20	980.00	29,400	
1521-25	1,071.60	32,148	
1526-30	1,163.20	34,896	31,583.44
1531-35	1,452.80	43,584	41,184.50
1536-40	1,439.20	43,176	42,761.40
1541-45	1,580.80	47,424	44,547.60
1546-50	1,634.80	49,044	45,453.40
1551-55	2,228.80	66,864	57,387.40
1556-60	2,472.40	74,172	67,026.20
1561-65	2,946.40	88,392	89,699.60
1566-70	2,987.20	89,616	93,057.20
1571-75	2,716.00	81,480	82,772.40
1576-80	2,224.00	66,720	81,550.50
1581-85	384.00	11,520	16,961.20
1586-90	494.00	14,820	12,127.80
1591-95	724.00	21,720	20,039.70

*Note:* \*A fine narrow say measured twenty-eight metres (forty ells) by 0.7 m. (one ell), with a finished area of 19.60 metres<sup>2</sup>, and with a weight of 260.4 grams per square metre; a small double say measured 25.725 m (36.75 ells) by 0.875 m. (1.25 ells), with a finished area of 22.509 m<sup>2</sup>, and with a weight of 322.4 grams per square metre. In the 1540s, at the Antwerp market, Hondschoote single says sold for £0.783 to £0.967 *groot* Flemish (15s 8d. to 19s 4d. *groot* Flemish), which represented, in value, 13.42 days' wages to 18.32 days wages for an Antwerp master mason, then earning 12.67d. (1540-1542) to fourteen d. *groot* per day (from 1543).

*Source:* Emile Coornaert, *La draperie-sayetterie d'Hondschoote, XIVE-XVIIIe siècles* (Paris, 1930); calculated from 485-490, appendix IV (data extracted from: Archives départementales du Nord, Section B, État général, 4068-4236, 17600); 493-495, appendix V (data extracted from Stadsarchief Hondschoote, Series GG 53, 54, 70, 38, 398, 82; CC 89, 40-50, 61-82; and HH 12-13). *Note:* double says

are counted as two single says; John Munro, "Textiles as Articles of Consumption in Flemish Towns, 1330-1575," *Bijdragen tot de geschiedenis*, LXXXI, Nos. 1-3 (1998), 275-288.

The evidence for such overland transport comes from three principal sources: the voluminous records of the Hondschoote *sayetterie*, so thoroughly studied by Coornaert;<sup>39</sup> the papers of several Flemish exporting firms, notably the Van der Molen, della Faille, and van der Heyden companies, for the 1540s;<sup>40</sup> and thirdly, from the same period, the registers for a special commercial levy, a one percent ad valorem tax on all goods exported from the Habsburg Netherlands from 1542 to 1545.<sup>41</sup> All but one of the accounts in these latter registers concern exports to southern and Mediterranean Europe by land. Indeed, Brulez, who has thoroughly examined these registers, has concluded that maritime exports to Italy in this period were of quite "minimal importance."<sup>42</sup> Other commercial records confirm that the Mediterranean basin was the destination for most of the textile exports of northwest Europe, with virtually all of the Flemish says and English kerseys reaching Italy by overland routes.<sup>43</sup>

Not until well into the next century, when the Thirty Years War (1618-1648) made these overland routes so frequently impassable, was a

---

<sup>39</sup> Coornaert, *Draperie-sayetterie d'Hondschoote*, 236-254; 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, 1951-1966), II, 363-415.

<sup>40</sup> Edler, "Le commerce d'exportation," 249-265; and Wilfrid Brulez, *De firma Della Faille en de internationale handel van Vlaamse Firma's in de 16 eeuw* (Brussels, 1959). See also the sources in notes 38-39.

<sup>41</sup> Levy of one percent tax on the value of all merchandise exported from the Habsburg Netherlands from 10 February 1543 to 22 September 1545, in Algemeen Rijksarchief België, Rekenkamer, nos. 23, 357-364, analyzed by J. Goris, *Étude sur les colonies marchandes méridionales à Anvers* (Leuven, 1925), and by Brulez, "Exportation des Pays Bas," 461-491.

<sup>42</sup> Brulez, "Exportation des Pays Bas," 462: "Il est certain, en tout cas, que le rôle de l'exportation par mer vers l'Italie, comparé à celui de l'exportation par terre est, en ces années, d'importance minime." The only example of sea transport was a shipment of 280 wagues of lead from Veere to Genoa in October 1544.

<sup>43</sup> See Edler, "Le commerce d'exportation," 249-265; Edler, "Winchcombe Kerseys," 57-62; Brulez, "Les routes commerciales d'Angleterre en Italie," 123-184; and Endrei, "English Kerseys in Eastern Europe," 90-99.

sea route utilized to transport these textiles to the Mediterranean, generally via Amsterdam.<sup>44</sup> Of course, military conflict still loomed large in sixteenth-century Europe, especially the Franco-Imperial and Ottoman Wars. But such warfare was much more organized and localized, without that chronic, widespread, and debilitating anarchy that so plagued both fourteenth-century and mid-seventeenth-century Europe. If local wars often blocked one route, a safer alternative was generally available. From Antwerp and the Brabant Fairs, there were two major southbound routes, each with its own set of regional alternatives. The western route ran via either Luxembourg, Trier, Lorraine, and Franche Comté, or the Rhine and Cologne and Frankfurt, through Switzerland (Basel) and the Alps, across the Saint-Gotthard Pass into Lombardy to terminate at Milan and Genoa. The easterly route proceeded via the Rhineland and Frankfurt to Augsburg-Nürnberg, and Salzburg-Innsbruck, and across the Brenner Pass into Venice.<sup>45</sup>

Unfortunately we still lack sufficient evidence to prove that in the sixteenth century these overland routes had become cheaper than the maritime routes. Accordingly, the converse view remains deeply rooted in the annals of European economic history.<sup>46</sup> Nevertheless, we may, at the outset, deduce from various developments in the sixteenth-century economy that transaction costs had again fallen sufficiently in long-distance trade, and especially overland trade, to permit the Netherlands to be competitive once more in Mediterranean markets for cheaper textiles. The most obvious factor was the restoration of relative security along the major trade routes, more so on land than by sea. But equally important, when the transaction sector was so subject to scale economies, was the rapid demographic, urban, and commercial expansion in sixteenth-century Europe, especially in the Mediterranean basin. This widened and deepened markets considerably, stimulating the development of concentrated, large scale, and efficient commercial flows. Moreover, international trade in sixteenth-century Europe benefited from many significant commercial-financial innovations.

---

<sup>44</sup> Coornaert, *Draperie-sayetterie d'Hondschoote*, 247.

<sup>45</sup> Van der Wee and Peeters, "Modèle dynamique de croissance interseculaire," 200-228; Van der Wee, *Antwerp Market*, II, 323-364; Brulez, "Exportation des Pays Bas," 461-491; Brulez, "Les routes commerciales d'Angleterre en Italie," 123-184.

<sup>46</sup> Van der Wee and Peeters, "Modèle dynamique," though still partially wedded to orthodox views on maritime transport, nevertheless believe that the cost differences had become much narrower, without citing specific evidence. See, however, Van der Wee, *Antwerp Market*, II, 225-264.

The most important were: fully transferable and negotiable commercial bills and other improvements in both public and private finance, which had halved interest rates by the 1550s; printed and widely disseminated “currents” for both commodity prices and exchange rates; the rise of specialized “commission” houses (such as the Van der Molen firm); embryonic joint-stock companies; and large-scale warehousing facilities.<sup>47</sup>

Since maritime commerce also shared in some of these improvements, the crucial innovations were those unique to overland transport. First and foremost was the rapid emergence of professional and specialized transport or cartage firms, which promoted the deployment of the new, larger scale, lower cost Hesse wagons (carts) in well organized convoys. These new transport firms offered both large and small merchants, in nearby or in distant overland markets, fully insured passage for their goods at predetermined, fixed rates. They also provided an efficient overland postal service. Beginning with the Antwerp-Italy routes, these new modes of commercial transport soon spread to other overland routes servicing France, Germany, and Central Europe. Both Brulez and Van der Wee believe that these major developments in overland transport soon made the continental overland routes both speedier and more reliable than the shipping routes from northwest Europe into the Mediterranean.<sup>48</sup> But, even without these innovations, as Robert Lopez once observed, Italian merchants were able to reach northeast Europe “faster by an overland shortcut,” at least when relative security prevailed, than by the sea route.<sup>49</sup> Indeed, for this textile

---

<sup>47</sup> Van der Wee, *Antwerp Market*, II, 177-194 and 325-364; Van der Wee and Peeters, “Modèle dynamique,” 200-228; Edler, “Le commerce d’exportation,” 249-265; Edler, “Winchombe Kerseys,” 57-52; Brulez “Exportation des Pays Bas,” 461-491; Endrei, “English Kerseys,” 90-99; Munro, “Industrial Transformations,” 128-138; Munro, “Resurrection of an Old Flemish Industry,” 60-95; Van der Wee, “Structural Changes in European Long Distance Trade,” 14-33; and Van der Wee and Materné, “Antwerp as a World Market,” 19-31. See also the documents and analysis in John McCusker and Cora Gravesteijn, *The Beginnings of Commercial and Financial Journalism: The Commodity Price Currents, Exchange Rate Currents, and Money Currents of Early Modern Europe* (Amsterdam, 1991).

<sup>48</sup> Van der Wee, *Antwerp Market*, II, 177-194; Brulez, “Exportation des Pays Bas,” 461-491; Brulez, *De firma Della Faille*; Brulez, “Commerce international des Pays Bas,” 1205-1221.

<sup>49</sup> Lopez, “Trade of Medieval Europe: The South,” 354. There was little incentive to develop a sea-route before the 1270s, “when commercial opportunities in the western Iberian states seemed too modest to warrant the effort, while the Atlantic coast of France and

export trade from the Low Countries to Italy, the distance – from Antwerp or Bruges to Venice in particular – was no more than 1300 km., less than twenty percent of the sea distance between these ports. Further, both in the thirteenth and sixteenth centuries, the shorter overland routes offered much greater volumes of commerce to be transacted en route, with far more frequent transactions, at lower marginal costs, than did maritime commerce with northwest Europe.

The final proof of the economic superiority of the overland routes in sixteenth-century Europe must lie in the fact that they commanded such an overwhelmingly dominant share of the commercial traffic between Italy and the Low Countries. At the same time, the expansion of the overland continental routes coincided with the sharp decline in the Italian galley service to Flanders and England, which had clearly become an uneconomic form of commercial transport. The last Florentine galley arrived in 1478; and the Venetian galleys, after making annual voyages for most of the fifteenth century, failed to arrive in twenty-four of the forty-two years between 1491 and 1533, when the last sailing was completed.<sup>50</sup> Yet equally responsible for that decline, and also for the decreasing use of more standard cargo vessels, was the rapid development, from the mid fifteenth century, of the so-called “Atlantic-ship” or carrack. In these heavily-armed, full-rigged ships, the square sails of northern cogs, still ideal for their power and speed, were combined with the lateen sails of the Arab-influenced caravels for much improved manoeuvrability. In Italian commerce with the Levant, according to Frederic Lane, these new carracks (almost impervious to Muslim corsairs), and other advances in maritime navigation, were responsible for a twenty-five percent reduction in freight rates by the early sixteenth century. By then, the Italians were re-exporting a significant proportion of their northern textiles, especially English kerseys and Flemish says, to Levantine markets.<sup>51</sup> Finally, we may best appreciate the

---

northern Europe could be reached faster by an overland shortcut.”

<sup>50</sup> But Fryde, “Italian Maritime Trade with Medieval England,” 331, notes that by the 1480s the Genoese shipping trade was “in catastrophic decline.” See also Fryde, “English Cloth Industry,” 362; Lane, *Venetian Ships and Shipbuilders*, 26-28; and Tenenti-Vivanti, “Les galères marchandes vénitiennes,” 83-86, and pull-out map.

<sup>51</sup> Lane, *Venetian Ships and Shipbuilders*, 26-28; Unger, *Ship in the Medieval Economy*, 176-201; Unger, “Warships and Cargo Ships in Medieval Europe,” 233-252; Unger, “Portuguese Shipbuilding,” 229-249; Elbl, “Portuguese Caravel and European Shipbuilding,” 543-572; and Elbl, “Caravel and the Galleon,” 91-98.

complementarity between maritime and overland transport in textiles by remembering that English textiles, both broadcloths and kerseys, could reach the Antwerp market, to begin their long journeys, only by sea transport.