

Abstract: Munro 99 - 001**‘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’**

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This paper challenges the conventional wisdom in European economic history that long-distance maritime transport was always more cost-effective than overland trade routes. Thus the majority of historians in the past century have attributed the rapid decline of the medieval Champagne Fairs, governing the textile trades between the Low Countries, northern France, and Italy, to the establishment of an effective and ‘permanent’ direct sea-route between Italy and north-west Europe from the early 14th century (though the first, a Genoese galley, can be dated to 1277). In my paper, I contend that a spreading stain of chronic, continuous warfare throughout western Europe and the Mediterranean basin from the 1290s, leading into the Hundred Years’ War (1336-1453), with a consequent sharp rise in transport and transaction costs in international trade, was instead the major factor in the decline of the Champagne Fairs, in the concomitant decline of the overland continental trade routes associated with them, and with a forced shift to the maritime trading routes between Italy and north-west Europe. During this war-torn, plague-disrupted period of economic contraction, up to the 1450s, the costs of shipping luxury woollens by the maritime route was certainly cheaper than by overland routes; but the relative cost of the maritime route was still higher than the cost of transporting cheap textiles (says) overland in the late 13th century. Indeed, this steep rise in late-medieval transaction costs in international trade had forced the north-western European textile industries to give up the export of the very cheap, light textiles and focus instead on luxury woollens that could better ‘bear the freight’. Subsequently, however, from the 1450s, with the establishment of alternative, more easterly overland routes in areas free from warfare, principally via the Rhine, then with the restoration of relative peace after the end of the Hundred Years’ War, and with the South German silver-copper mining boom, the overland continental trade routes rapidly revived, and with them a series of newer continental-trade based fairs (Antwerp, Frankfurt, Geneva, Lyons). During the later 15th and 16th centuries, these continental trade routes and their associated fair-system were virtually the sole mechanism by which textiles from north-west Europe were exported to Italy and the Mediterranean basin, because, *inter alia*, the overland distance from the Antwerp Fairs to Venice was only about 20% of the distance by the often hazardous sea routes. The principal textiles involved in this overland, trans-continental trade were : luxury-quality English woollens, medium-quality *kerseys*, and especially the very cheap, light Flemish says from the revived *sayetteries*, which had become the principal textile industry of the southern Low Countries. The paper concludes by examining the various factors and forces that led to a fall in transport and transaction costs in the international textile trades, via the overland routes, including river routes, between north-west Europe and the Mediterranean basin from the later 15th to early 17th centuries (i.e. to the eve of the Thirty Years War, which again seriously disrupted the overland, continental routes).

JEL Classifications: F1, F2, L1, N6, N7

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*

The question that is implicitly posed in this title, on relative transport costs in international trade, should promise the briefest of answers. For is it not self-evident that maritime or seaborne trade was always much cheaper to conduct than overland continental trade? As a student I was taught, and as a professor I have similarly stated, that in pre-modern economies overland transport costs could effectively double commodity prices for bulk goods within 50 - 70 km, while sea transport could deliver such bulk goods as grains, lumber, and metallic ores fairly cheaply over long 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 has fundamentally depended upon maritime transport and the exercise of sea-power.¹

Much support for this thesis can or should be found in the late-medieval and early-modern Low Countries, whose economic growth, fuelled principally by international trade, outpaced all other regions in northern Europe. In the early-modern era, no one would dispute the proposition that the Dutch hegemony in the European economy was fundamentally based upon sea-power, and especially

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¹ The more careful scholar might qualify that axiom to note the importance of canals in many countries, in North America as much as in Europe, as a necessary precursor to railroads, though in so doing one should emphasize that canals obviously involved water-borne transport. One should also recall that the Nobel-prizing winning economist and economic historian, Prof. Robert Fogel, first made his name in the art of 'counter-factual 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 5%: Robert W. Fogel, *Railroads and American economic growth: essays in econometric history* (Baltimore, Johns Hopkins Press: 1964); and see also *The Dimensions of quantitative research in history*, ed. William O. Aydelotte, Allan G. Bogue, and Robert William Fogel (London, Oxford University Press; and Princeton, Princeton University Press, 1972).

upon their maritime commerce with both the Baltic and the East Indies. In the southern Low Countries, which had enjoyed a very precocious economic growth from at least the late eleventh century, few would doubt the importance of maritime commerce with both the Baltic zone and England.²

To be sure, an even more powerful element in their subsequent development, especially 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 north-east France. Their primary importance was in providing a conduit for a rising flow of Flemish, Artesian, and other northern textiles to Italy and the Mediterranean basin, which was not yet linked to NW Europe by sea. This densely populated, extensively urbanized region, still by far the most advanced zone in the European economy, thus provided the largest export market for northern textiles, especially, with its generally warm climate, 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.³

² See, inter alia: Jan De Vries and Ad Van der Woude, *Nederland 1500 - 1815: De eerste ronde van moderne economische groei* (Amsterdam: Balans, 1995); republished in English translation as *The First Modern Economy: Growth, Decline, and Perseverance of the Dutch Economy, 1500 - 1815* (Cambridge and New York: Cambridge University Press, 1996); Jonathan I. Israel, *Dutch Primacy in World Trade, 1585 - 1740* (Oxford: Clarendon Press, 1989); Violet Barbour, 'Dutch and English Merchant Shipping in the Seventeenth Century', *Economic History Review*, 1st Ser. 2 (1930); reprinted in E.M. Carus-Wilson, ed., *Essays in Economic History*, 1 (London, 1954), 227-53; the several important studies in Richard W. Unger, *Ships and Shipping in the North Sea and Atlantic, 1400 - 1800*, Variorum Collected Series CS 601 (Aldershot and Brookfield, Vt., Ashgate, 1997); Richard Unger, *Dutch Shipbuilding Before 1800: Ships and Guilds* (Van Gorcum, 1978); Richard Unger, *The Ship in the Medieval Economy, 600-1600* (London and Montreal, 1980); F. Ketner, *Handel en scheepvaart van Amsterdam in de vijftiende eeuw* (Brill, 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*, translated by Lisabeth Fackelman (London, Variorum, 1993); J.A. Van Houtte, *An Economic History of the Low Countries, 800-1800* (London, 1977).

³ See Renée Doehaerd, ed., *Les relations commerciales entre Gênes, la Belgique, et l'Outremont, d'après les archives notariales génoises aux XIII^e et XIV^e siècles*, 3 vols., Institut Historique Belge de Rome:

As the textbooks tell us, however, the role of the Champagne Fairs and its transcontinental trade was a transitory one, because of supposedly radical changes in maritime transport. As early as 1277 Genoese and then Majorcan galleys had established a direct sea link to Flanders and England; and by the 1320s, a regular annual galley service, in which the Venetians soon became predominant, had evidently made the Champagne Fairs redundant.⁴ The late Raymond De Roover, still the most

Études d'histoire économique et sociale (Brussels: Palais des Academies, 1941); R. L. Reynolds, 'The Market for Northern Textiles in Genoa, 1179-1200', *Revue belge de philologie et d'histoire*, 8 (1929), 831-50; Hilmar Krueger, 'The Genoese Exportation of Northern Cloths to Mediterranean Ports, Twelfth Century', *Revue belge de philologie et d'histoire*, 65 (1987), 722-50; 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; and Robert-Henri 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; and Robert-Henri Bautier, 'Les foires de Champagne: recherches sur une évolution historique,' *Recueils de la Société Jean Bodin, V: La Foire* (Brussels, 1953), 97-147: all republished in Robert-Henri Bautier, *Sur l'histoire économique de la France médiévale: la route, la fleuve, la foire*, Variorum Collected Studies series CS 340 (London, 1991); Patrick Chorley, 'The Cloth Exports of Flanders and Northern France During the Thirteenth Century: A Luxury Trade?' *Economic History Review*, 2nd ser. 40:3 (August 1987), 349-79; Patrick Chorley, 'English Cloth Exports During the Thirteenth and Early Fourteenth Centuries: the Continental Evidence,' *Historical Research: The Bulletin of the Institute of Historical Research*, 61:144 (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 and New York, 1991), 110 - 48; 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 (London, 1994); John 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*, Pasold Studies in Textile History no. 10 (Oxford and New York, 1997), 35 - 127; 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, 'The 'Industrial Crisis' of the English Textile Towns, 1290 - 1330,' in Michael Prestwich, Richard Britnell, and Robin Frame, eds., *Thirteenth-Century England*, VII (Woodbridge, UK, 1999), 103-41.

⁴ Renée Doehaerd, 'Les galères génoises dans la Manche et la Mer du Nord à la fin du XIIIe siècle et au début du XIVe siècle', *Bulletin de l'Institut historique belge de Rome* (1938); Georges Yver, *Le commerce et les marchands dans l'Italie méridionale au XIIIe et au XIVe siècle* (Paris, 1903); Alfons Schaube, 'Die Anfänge der venetianischen Galeerenfahrten nach den Nordsee', *Historische Zeitschrift* (1908); R. Cessi, 'Le relazioni commerciali tra Venezia e le Fiandre nel secolo XIV', *Archivio Veneto* (1914);

eminent authority on medieval banking, further argued that an ancillary Italian commercial development helps to explain the post-1320 redundancy of the Champagne Fairs and its itinerant trade: the establishment of branch firms and permanently-stationed factors. They transacted trade and finance by a sedentary principal-agent system involving the new four-party bills of exchange, which quickly displaced the two- or three-party *lettres de foire*, or the *instrumenta ex causa cambii*, which merchants had long been using at the Champagne Fairs.⁵

For those who entertain concepts of linear progress, however, the trade-based theses of Herman Van der Wee have provided an unpleasant surprise, especially those who thought that the new sciences of historical demography had made such old-fashioned views on the primacy of international trade as redundant as the Champagne Fairs had become. In his 1963 monograph on *The Growth of the Antwerp Market* and then more generally in an *Annales* article of 1970, Van der Wee

E.H. Byrne, *Genoese Shipping in the Twelfth and Thirteenth Centuries* (Cambridge, Mass., 1930); Federigo Melis, 'La formazione dei costi nell'industria laniera', *Economia e storia* (1954): on the costs of sea transport of textiles; Armand Saponi, *Le marchand italien au moyen âge* (Paris, 1952); Robert Lopez, *Studi sull'economia genovese nel medio evo* (Turin, 1936); Robert Lopez, 'The Trade of Medieval Europe: the South', in M. M. Postan and E.E. Rich, eds., *Cambridge Economic History of Europe, 2: Trade and Industry in the Middle Ages* (Cambridge, 1952), 257-354; reissued in partly revised form in the 2nd edn., ed. M.M. Postan and Edward Miller (Cambridge, 1987), 306-473.

⁵ Raymond De Roover, 'The Commercial Revolution of the Thirteenth Century,' *Bulletin of the Business Historical Society*, 16 (1942), 34-39, reprinted in F.C. Lane and Jelle Riemersma, eds., *Enterprise and Secular Change* (New York, 1953), 80-85; Raymond De Roover, 'Money, Banking, and Credit in Medieval Bruges,' *Journal of Economic History*, 2 (1942): *Supplement*, 52-65; Raymond 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*, 25 (1946-47), 111-28; Raymond De Roover, *Money, Banking and Credit in Mediaeval Bruges: Italian Merchant-Bankers, Lombards, and Money Changers: A Study in the Origins of Banking* (Cambridge, Mass.: Mediaeval Academy of America, 1948); Raymond De Roover, *L'évolution de la lettre de change, XIVe-XVIIIe siècles* (Paris, 1953); Raymond De Roover, 'New Interpretations of the History of Banking', *Journal of World History*, 2 (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 - 38; Raymond De Roover, 'The Organization of Trade', in M.M. Postan and E.E. Rich, eds., *Cambridge Economic History of Europe, 3: Economic Organization and Policies in the Middle Ages* (Cambridge, 1963), 42 - 118.

propounded the thesis that the relative balance between maritime and continental trade, and the relative prosperity of the latter, had played a 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 NW Europe and the Mediterranean from the eleventh century promoted a general European economic expansion that lasted until the early fourteenth century; and the expanding vitality of overland commerce, both north-south and then east-west, contributed to general economic growth through its backward and forward linkages throughout a vast continental hinterland, especially in diverting underutilised resources 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 various regional and local trade networks that serviced thousands of towns and villages throughout the vast continental hinterland, thus reducing the demand for transport and commercial services, labour, manufactures, foodstuffs and other goods. Declining consumption in turn reduced investment and aggregate incomes by a reverse multiplier-accelerator effect. To be sure the diversion of international trade flows into new shipping lanes certainly benefited the major participants: the maritime towns of Italy, Catalonia, the Netherlands, the Baltic, and even England; but their impressive gains could not offset the much greater aggregate economic decline in late-medieval Europe's continental hinterlands. Furthermore, this diversion of international trade tended to concentrate wealth and income flows into fewer hands, especially in those maritime towns, with

negative consequences: increased hoarding, non-productive expenditures, and excessive consumption of eastern luxury goods, from both the Levant and the Baltic, which were acquired by a steady and deflationary drainage of precious metals from western Europe.⁶

Some may find Van der Wee's international-trade model, especially in this oversimplified summary, somewhat redolent of the old Pirenne thesis on Mediterranean trade for the early medieval economy,⁷ and also of the more recent Miskimin thesis, on international trade deficits with and consequent bullion outflows to East, for the late-medieval economy.⁸ If those two theses find little

⁶ Herman Van der Wee, *The Growth of the Antwerp Market and the European Economy, 14th to 16th Centuries*, 3 vols. (The Hague, 1963), 2: 34-120; Herman Van der Wee, and Theo Peeters, 'Un modèle dynamique de croissance interseculaire du commerce mondiale, XIIe-XVIIIe siècles,' *Annales: E.S.C.*, 15 (1970), 100-28; and partly reiterated in Herman 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 and New York, 1990), 14 - 33.

⁷ In essence, Pirenne's thesis posited an economic retrogression in early medieval Europe, with a rapid decline in its seaborne international trade, as the consequence of Muslim conquests of Mediterranean sea-lanes; and subsequently, 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); Henri Pirenne, *Histoire économique de l'occident médiéval*, ed. Emile Coornaert (Bruges, 1951); A.F. Havighurst, ed., *The Pirenne Thesis: Analysis, Criticism, and Revision*, Heath Series in European History (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*, 28 (1943); Eliyahu Ashtor, 'Quelques observations d'un orientaliste sur la thèse de Pirenne,' *Journal of Economic and Social History of the Orient*, 13 (1970), 166-94; Eliyahu Ashtor, 'Nouvelles réflexions sur la thèse de Pirenne,' *Revue Suisse d'histoire*, 20 (1970), 601-07; reprinted in Eliyahu Ashtor, *Studies on Levantine Trade in the Middle Ages*, Variorum Reprints CS74 (London: 1978).

⁸ 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, and as Europe collectively increased its imports of eastern luxury goods (from both the Baltic and eastern Mediterranean), worsening Europe's balance of payments deficit with the East, such trade led to an increased bullion outflow to such eastern regions; and 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*, 24 (1964), 470-90; reprinted with related articles in Harry A. Miskimin, *Cash*,

sympathy amongst current economic historians, neither has the Van der Wee thesis, though it has suffered more malign neglect than outright scorn. Recently, his Belgian colleague Raymond Van Uytven, has provided one example of the latter by contending 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.’⁹

But Van Uytven's attack on the Van der Wee thesis may be challenged on three grounds. First and foremost, an international trade model concerning overland commercial flows between north-west Europe and Italy can hardly be tested by one isolated, local set of land tolls, especially when the bases for its numeric data are not fully clear. Second the Brabant land-toll registers commence far too late to provide such a test: in 1406; and they are continuous only from 1433, almost a century after the commencement of the shift to maritime trade that the Van der Wee model has posited.

Credit, and Crisis in Europe, 1300-1600 (London: Variorum Reprints, 1989); Harry Miskimin, *The Economy of Early Renaissance Europe, 1300-1460* (1969; reissued Cambridge, 1975); Robert Lopez and Harry Miskimin, ‘The Economic Depression of the Renaissance,’ *Economic History Review*, 2nd ser. 14 (1962), 408-26; R. S. Lopez, H.A 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. See 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 John Day, *The Medieval Market Economy* (Oxford, 1987), 1-54; Peter Spufford, *Money and Its Use in Medieval Europe* (Cambridge, 1988), 339-95. 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*, 8 (1979), 479-87. For a more general overview, see John Munro, ‘Patterns of Trade, Money, and Credit,’ in *Handbook of European History in the Later Middle Ages, Renaissance and Reformation, 1400 - 1600*, Vol. I: *Structures and Assertions*, ed. James Tracy, Thomas Brady Jr., and Heiko Oberman (Leiden: E.J. Brill, 1994), 147-95. See below n. 28 for the relevance of this debate for the topic of this article.

⁹ 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, on 1 February 1993. Subsequently published in revised form as: Raymond Van Uytven, ‘Landtransport durch Brabant im Mittelalter und im 16. Jahrhundert’, in F. Burgard and A. Haverkamp, eds., *Auf den Römerstrassen ins Mittelalter: Beiträge zur Vehrkersgeschichte zwischen Maas und Rhein von der Spätantike bis ins 19. Jahrhundert* (Mainz, 1998), 471-99.

Third, these land-toll registers indicate a rise in overland commercial traffic virtually in accordance with the subsequent part of the Van der Wee model, which contends that a revival of trans-continental trade flows, following new routes, provided the major stimulus for both the rise of the Antwerp market, converting the formerly regional Brabant Fairs into an international entrepôt, and for the renewed expansion and growth of the European economy, especially its continental hinterland, from the late fifteenth to early seventeenth centuries.¹⁰

Indeed, the chief strength of the Van der Wee trade model lies in the detailed evidence for this latter phenomenon that he supplied in monograph on *The Rise of the Antwerp Market*, which itself was partly built upon the prior historical scholarship of his Belgian and French predecessors: Coornaert, Goris, De Smedt, Van Houtte, and Brulez.¹¹ Furthermore, if that prior, fourteenth-century shift from transcontinental to maritime routes, along with the shift from itinerant fair-commerce to ‘sedentary’ branch-firm commerce, had been the manifestation of economic progress, as most earlier historians had argued, how do we explain not only the indisputable revival and

¹⁰ See n. 11 below.

¹¹ 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 grande marché international d’Anvers à la fin du moyen âge,’ *Revue belge de philologie et d’histoire*, 19 (1940), 87-126; J. A. Van Houtte, ‘Bruges et Anvers: marchés ‘nationaux’ ou ‘internationaux’ du XIVe au XVIe siècle?’ *Revue du Nord*, 24 (1952), 89-108; J. A. Van Houtte, ‘Anvers aux XVe et XVIe siècle,’ *Annales: E.S.C.*, 16 (1961), 248-78; J. A. Van Houtte, ‘The Rise and Decline of the Market of Bruges,’ *Economic History Review*, 2nd ser., 19 (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*, 14 (1959), 461-91; Wilfred Brulez, ‘Le commerce international des Pays-Bas au XVIe siècle: essai d’appréciation quantitative,’ *Revue belge de philologie et d’histoire*, 46 (1968), 1205-21; republished as ‘The International Trade of the Low Countries in the Sixteenth Century,’ in *Acta Historiae Neerlandicae*, 4 (1970); Wilfred Brulez, ‘Bruges and Antwerp in the 15th and 16th Centuries: An Antithesis?’ *Acta Historiae Neerlandicae*, 6 (1973), 1-26.

expansion of transcontinental trade from the mid-fifteenth to early seventeenth centuries, but more strikingly, the revival of periodic international fairs along those overland routes: the very numerous fairs, and seasonal cycles of adjacent fairs, not only in Brabant itself -- the four fairs of Antwerp and Bergen-op-Zoom but also in Frankfurt, Besançon, Lyons, Geneva, and Cremona.¹²

The fundamental weaknesses of the Van der Wee thesis, however, lies in the construction of his *Annales* article; for, in the space of just 16 pages, he obviously could not provide much additional evidence for an international-trade model that spans six centuries.¹³ But even more serious is the inadequate explanation for the earlier, fourteenth-century shift from transcontinental to maritime trade, whose actual timing is left vague, though it was presumably already underway by the 1320s.

¹² 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 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, i.e. in the Brabant Fairs, during the later fifteenth and sixteenth centuries. See Michael Postan, 'Credit in Medieval Trade,' *Economic History Review*, 1st. ser. 1 (1928): 234-61, reprinted in Michael Postan, *Medieval Trade and Finance* (Cambridge, 1983), 1-27; Michael Postan, 'Private Financial Instruments in Medieval England,' *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, 23 (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.*, 22 (1967): 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*, (1993), 145-66; Herman Van der Wee, *The Growth of the Antwerp Market*, 2: 333-68 ; Herman Van der Wee, Herman, 'Monetary, Credit, and Banking Systems,' in *Cambridge Economic History of Europe*, 5: *The Economic Organization of Early Modern Europe*, ed. E.E. Rich and Charles Wilson (Cambridge, 1977), 310-35; Herman 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*, Atti della società Ligure di storia patria, new series, vol. 31, 2 vols. (Genoa, 1991), 1157 - 73; John Munro, 'The International Law Merchant and the Evolution of Negotiable Credit in Late-Medieval England and the Low Countries,' in *Banchi pubblici, banchi privati e monti di pietà nell'Europa preindustriale* (Genoa, 1991), 49 - 80; reprinted in John Munro, *Textiles, Towns, and Trade: Essays in the Economic History of Late-Medieval England and the Low Countries* (1994).

¹³ Furthermore, the data-free econometric model (by his colleague Theo Peeters) that constitutes the remaining nine pages of the article only serves to obfuscate the model and, I fear, to dissuade many historians from taking it as seriously as this seminal article most certainly should be taken.

He seems to suggest, more in accordance with traditional views than with the logic of his model, that it took place because the Italians found the direct-sea route to Flanders more cost-effective and advantageous, especially with various advances in both ship design and navigation. But most of the supposed cost-savings advances, and especially the advances in naval technology that finally produced the caravel-designs and the full-rigged carracks came a full century after that shift to maritime trade.¹⁴ In any event, Russell Menard has more recently argued that, from the fourteenth to eighteenth centuries, such changes in naval technology had little impact on direct shipping costs, whose changes were much more a function of political and commercial developments, especially in terms of providing relative security.¹⁵ Indeed on this very issue he quoted Michael Postan to the effect that 'medieval communications, like other trading activities, suffered much more from instability and

¹⁴ See in particular Richard Unger, 'Dutch Ship Design in the Fifteenth and Sixteenth Centuries,' *Viator*, 4 (1973), 387-412; Richard Unger, *Dutch Shipbuilding Before 1800: Ships and Guilds* (Van Gorcum, 1978);

Richard Unger, *The Ship in the Medieval Economy, 600-1600* (London and Montreal, 1980); Richard Unger, 'Warships and Cargo Ships in Medieval Europe,' *Technology and Culture*, 22 (April 1981), 233 - 52; Richard Unger, 'Portuguese Shipbuilding and the Early Voyages to the Guinea Coast,' in *Vice-Almirante A. Teixeira Da Mota, In Memoriam*, 1 (Lisbon, 1987), 229-49; 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*, 33 (1985), 543-72; Martin Elbl, 'The Caravel and the Galleon,' in Robert Gardiner, ed., *Conway's History of the Ship, 3: Cogs, Caravels and Galleons* (London: Conway Maritime Press, 1994), 91-98; Archibald Lewis and Timothy Runyan, *European Naval and Maritime History, 300 - 1500* (Bloomington, 1985).

¹⁵ 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 University Press, 1991), 228 - 75. For similar views published in the same year, see Munro, 'Industrial Transformations', 110 - 48. See also the sources cited in n. 3.

uncertainty, political in origin, than from high costs of an inefficient transport service.’¹⁶

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 both reinforced and prolonged that shift 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 establish the safer sea route to north west Europe. This new era of widespread warfare had commenced, in north-west Europe, during the 1290s, with the Anglo-French and Franco-Flemish wars, followed by Flemish civil wars (to 1328). In the south the Angevin-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 under the banner of Emperor Henry VII whose death in 1313 led to a decade-long civil war in southern Germany, and worse, to a resumption of the long-festering Angevin-Aragonese strife to become the even more ferocious and destructive Guelf-Ghibelline wars (1313-43). They devastated Italy for the next four decades, with almost continuous foreign intervention by Catalan, French, German, and Hungarian armies, and constant devastations from mercenary Free Companies

¹⁶ Michael Postan, 'The Trade of Medieval Europe: the North,' in M.M. Postan, ed., *The Cambridge Economic History of Europe, 2: Trade and Industry in the Middle Ages*, 2nd rev edn. (Cambridge: Cambridge University Press, 1987), 203-04 [unchanged from the 1952 edn]. Postan 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.'

of disbanded soldiers.¹⁷ 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.¹⁸

Certainly, during the fourteenth century, the maritime routes between Italy and Flanders provided relatively cheaper transport than did those overland routes that continued to function. In the 1390s, an Italian merchant firm reported that the cost of sending quite expensive luxury-quality Wervik woollens from Bruges to Barcelona was 15% of the price (22 gold florins) by sea and 22% of the price by land; and the report also noted that some other merchants had ‘lost all their profit’ by sending their woollens overland.¹⁹ Yet some 80 years earlier, the cost of transporting relatively

¹⁷ For the evidence on the economic consequences of such warfare, particularly in rising transport and transaction costs, see Munro, ‘Industrial Transformations’, 110-48; Munro, ‘Resurrection of an Old Flemish Industry’, 35-127; Munro, ‘Industrial Crisis of the English Textile Towns’, 104-42; and sources cited in n. 3 above; and n. 26 below.

¹⁸ Doehaerd, *Relations commerciales*, 3: no. 1869, p. 1156: ‘Nec per terra ire potuit communiter propter guerras que presentaliter occurrentes inter Januinos guelfos et guibelines...’ Subsequently (1343), Marseilles conducted a civic inquest that also blamed those wars for the drastic decline in its trade. 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), doc. no. 7, 184-86: ‘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 domnus noster Rex et precessores sui diminuti sunt et reducti ad minorem quantitatem.’ See also Edouard Baratier, and Félix Reynaud, *Histoire du commerce de Marseille, 2: De 1291 à 1480* (Paris, 1951), 38-40, 207-28, 304-13.

¹⁹ Federigo Melis, ‘La diffusione nel Mediterraneo occidentale dei panni di Wervicq e delle altre città della Lys attorna al 1400,’ in *Studi in onore di Amintore Fanfani*, 3: *Medioevo* (Milan, 1962), 233-4, n. 30. Letter of Guglielmo Barberi to the Datini Co. in Barcelona, 10 May 1398: for transporting a Wervik woollen cloth, worth 23 gold francs (or about 22 gold florins = £3 6s 0d sterling): by land, 5 francs; by sea, 3.5 francs. Earlier, on 28 May 1397, the Alberti firm in Bruges informed the Datini Company in Barcelona 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*, 233-4, n. 30. See also: E.B. Fryde, ‘Italian Maritime Trade with Medieval England (ca. 1270 - c. 1530)’, *Recueils de la société Jean Bodin*, 32 (1974), 310; E.B. 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: Olshcki, 1976), 343-67; E.B. Fryde, ‘Anglo-Italian Commerce in the Fifteenth Century: Some Evidence about Profits and the Balance of Trade,’ *Revue belge de philologie et d'histoire*, 50 (1972), 345-55;

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% of its much lower value, about half the relative cost for those expensive Wervik woollens (each then worth 132 days' wages for an Oxford master mason).²⁰

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 history of naval plundering.'²¹ The predominant response was to build much bigger and more extensively, heavily armed ships: with larger complements of specialized crossbowmen, steel-plated body armour even for other sailors, naval artillery (from the 1330s), and more mobile small-arms. The consequence was far more costly naval construction, and thus higher freight rates. Catalan records on shipping costs from 1275 to 1330 indicate that arming merchant ships increased freight rates by 25%; and Sicilian

all three reprinted in E. B. Fryde, *Studies in Medieval Trade and Finance* (London, 1983). For the relative coinage values, see Peter Spufford, *Handbook of Medieval Exchange* (London, 1986), 179, 191.

²⁰ Armando Sapori, *Una compagnia di calimala ai primi del trecento*, Biblioteca storica toscana, Vol. 7 (Florence: Olschki, 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 64 Caen says were 2.41 fl. per say, or 9.5% more per say in the smaller shipment. Caen says were then most expensive sold. See also Chorley, 'Cloth Exports of Flanders,' p. 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 13th-century Europe, see also Bautier, 'Recherches sur les routes, I: de Paris et des Foires de Champagne', 99-143; and especially James Masschaele, 'Transport Costs in Medieval England,' *Economic History Review*, 2nd ser., 46:2 (May 1993), 266-279.

²¹ Irene B. Katele, 'Piracy and the Venetian State: The Dilemma of Maritime Defense in the Fourteenth Century,' *Speculum*, 63 (Oct. 1988), 865 - 89; see also Benjamin Kedar, *Merchants in Crisis: Genoese and Venetian Men of Affairs and the Fourteenth-Century Depression* (New Haven and London, 1976); and n. 23 below.

naval records show that freight rates virtually doubled over the fourteenth century.²² The Venetians found their most cost-effective solution in the heavily-armed three-masted great-galley, a speedy hybrid military and commercial vessel that became the exclusive carriers of precious cargoes.²³ But even these powerful ships would not risk the Atlantic shipping lanes when menaced by naval war or fleets of corsairs; for Venetian shipping records, when they become continuous from 1332 (with state subsidies), show that the Flanders Galleys made only 24 northbound voyages from then to 1400 or for only 35% of those years, vs. 86 in the commercially more propitious fifteenth century.²⁴ Even in the latter century, sea transport was hardly cheap: for shipping a sack of English Cotswold wool to

²² Charles-Emmanuel Dufourcq, *L'Espagne catalane et le Maghrib aux XIII^e et XIV^e siècles: de la bataille de Las Navas de Tolosa (1212) à l'avènement du sultan mérinide Abou-l-Hasan (1331)* (Paris: Presses universitaires de France, 1966), 534-42: shipping costs ranged from £200 Barcelonese for small ships (30-40 sailors) to £400 for galleys (80-120 rowers and 100-150 sailors); and costs of arming such ships against corsairs ranged from £50 to £100 extra, monthly. For Sicily, see Henri Bresc, 'Course et piraterie en Sicile (1250-1450),' *Anuario de estudios medievales*, 10 (1980), 751-57; and Henri Bresc, *Un monde méditerranéen: Économie et société en Sicile, 1300 - 1450*, 2 vols. (Bibliothèque des Écoles françaises d'Athènes et de Rome, no. 262), Rome: École française de Rome, 1986, 1: 350-52.

²³ Katele, 'Piracy,' 865-89; Frederic Lane, *Venetian Ships and Shipbuilders of the Renaissance* (Baltimore, 1934), 6-26; 36-46; 129-34; Frederic Lane, 'From Biremes to Triremes,' *The Mariner's Mirror*, 49 (1963), 48-50, reprinted in *Venice and History: The Collected Papers of Frederic C. Lane* (Baltimore, 1966), 189 - 92; Frederic C. Lane, 'Merchant Galleys, 1300-34: Private and Communal Operations,' *Speculum*, 38 (1963), 179-205, reprinted in *Venice and History*, 193-226; Frederic C. 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, Ohio, 1969), 161-72; Frederic Lane, *Venice: A Maritime Republic* (Baltimore, 1973), Cipolla, *Guns, Sails, and Empire*, 75-79; Dufourcq, *L'Espagne catalane*, 534-42; Lewis and Runyan, *European Naval and Maritime History*, 121-28; Unger, *Ship in the Medieval Economy*, 176-82; Unger, 'Warships and Cargo Ships', 238-48.

²⁴ Alberto Tenenti and Corrado Vivanti, 'Le film d'un grand système de navigation: Les galères marchandes vénitiennes, XIV^e - XV^e siècles,' *Annales: économies, sociétés, civilisations*, 16 (Jan.-June 1961), 83-86.

and pull-out chart. No Venetian galley fleets were sent to north-west Europe in 1333, 1337-46, 1348-56, 1359-73, 1377-83, 1388, 1391; i.e. up to 1390, galleys went to Bruges in only 16 years. Their galley fleets usually operated in the Mediterranean, but not at all in 1351-54 and 1378-81, during the wars with Genoa. For the Florentines, see also Fryde, 'Italian Maritime Trade', 321-26.

Venice by galley added 25 per cent to the cost.²⁵

Elsewhere I have argued that steep increases not only in transport costs by both land and sea, but also more generally in other marketing, protection, and transaction costs, subsuming various other costs from taxes, trade-licences, and coinage debasements, were amongst the most harmful economic consequences of late-medieval warfare. For Low Countries, in particular, the once dominant export-trade in cheaper, lighter textiles, especially from the aforementioned semi-worsted *sayetteries*, had virtually ceased by the 1320s, after these costs had risen above the prevailing market prices the Mediterranean basin; and the rational if not necessarily universal response of cloth producers was to become ‘price-makers’ rather than ‘price-takers’ based on quality-competition and thus reorient production to much more expensive, luxury quality woollens, which could better sustain these rising transportation and, in general, the complex set of transaction costs.²⁶

²⁵ Wools shipped to Venice, at £2 in shipping costs per sack purchased for £8 sterling; other charges raised total marketing costs to £6 11s 0d ster. per sack (81.9%). British Library, ‘Noumbre of Weyghtes,’ also cited in Fryde, ‘Anglo-Italian Commerce,’ 355. The Genoese usually employed cheaper carracks; and Fryde ‘Italian Maritime Trade’, 309-10, states that Genoese freight rates for wool were only 5.16% of the price (8s 3d per sack); those for alum and woad, about 8% of their prices. See also E. B. 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), 357-58, reprinted in his *Studies in Medieval Trade and Finance* (London, 1983); Eliyahu Ashtor, ‘Catalan Cloth on the Late Medieval Mediterranean Markets,’ *Journal of European Economic History*, 17 (Fall 1988), 249-50. But other shipping costs were much higher, according to Unger, *Ship in the Medieval Economy*, p. 169: shipping salt from Portugal to Bruges accounted for 85% of the landed price; and shipping Baltic grain from Danzig to Bruges, about 50% of the landed price, ca. 1400.

²⁶ Munro, ‘Industrial Transformations’, 110-48; also in Munro, *Textiles, Towns, and Trade*; 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’, 103-41; and see also John Munro, ‘Textiles as Articles of Consumption in Flemish Towns, 1330 - 1575,’ *Bijdragen tot de geschiedenis*, 81:1-3 (1998), 275-88. 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*, 44 (June 1984), 255-64; Douglass North, ‘Transaction Costs in History,’ *Journal of European Economic History*, 14 (Winter 1985), 557-76; Douglass North, ‘Institutions, Transaction Costs, and the Rise of Merchant Empires,’ in James Tracy, ed., *The Political Economy of Merchant Empires: State Power and*

The chief objective of this current study, as a sequel to the former, is to examine changes in the Netherlands' textile industries in the context of changing modes and cost structures of international transport and trade during the later fifteenth and early sixteenth-centuries: industrial changes that followed the revival and expansion of the transcontinental trade routes, and which 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, restoring to full vitality the overland links between Italy and the Low Countries, but following newer, more easterly routes, away from the Hundred Years' Wars, lay principally in southern imperial Germany (Bavaria-Austria-Bohemia). Previously an economic backwater in the late-medieval economy, its initial economic growth was partly spurred by a new trade in cheap flax-based textiles. This region had provided a small though receptive market for the Italian fustians industry, which had long produced cheap, light mixed linen-cotton fabrics, though in steadily declining quantities from the early fourteenth century. 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 long-declining Lombard rivals, marking the first major revival of such cheap textiles in international trade. At the now prominent Frankfurt Fairs, South German merchants met Cologne merchants travelling south from the newly expanding Brabant Fairs, along the now much safer Rhine, bearing an important commodity: English woollen broadcloths,

World Trade, 1350 - 1750 (Cambridge University Press, 1991), 22 - 40; Douglass C. North, and Robert P. Thomas, *The Rise of the Western World: A New Economic History* (Cambridge: University Press, 1973); Clyde Reed, 'Transactions Costs and Differential Growth in Seventeenth Century Western Europe,' *Journal of Economic History*, 33 (March 1973), 177 - 90.

which soon proved instrumental in the expansion of both the Brabant Fairs and Rhenish-South German overland trade.²⁷

An even more important catalyst sparking a rapid expansion in this German-based overland trade with the Brabant Fairs was the Central European silver and copper mining boom. By the 1450s, what some historians have called a ‘bullion famine,’ marked by plunging mint outputs, produced a very severe and prolonged deflation (with price falls of about 35%), which in turn meant a corresponding increase in the purchasing power of silver.²⁸ The economic response to those

²⁷ See Van der Wee, *Antwerp Market*, 2: 34-120; and other publications cited in n. 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, 433-512; Eliyahu Ashtor, *A Social and Economic History of the Near East in the Middle Ages* (London, 1976), 319-31; Eliyahu Ashtor, ‘The Venetian Supremacy in Levantine Trade: Monopoly or Pre-Colonialism?’ *Journal of European Economic History*, 3:1 (Spring 1974): 5 - 53; Eliyahu Ashtor, ‘The Volume of Levantine Trade in the Later Middle Ages (1370 - 1498),’ *Journal of European Economic History*, 4:3 (Winter 1975): 573 -6; Eliyahu Ashtor, ‘Profits from Trade with the Levant in the Fifteenth Century,’ *Bulletin of the School of Oriental and African Studies*, 37 (1975): 250-75; Eliyahu Ashtor, ‘The Venetian Cotton Trade in Syria in the Later Middle Ages,’ *Studi Medievali XVII* (Spoleto, 1976): 675-715. The last four articles cited have been reprinted in Eliyahu Ashtor, *Studies on Levantine Trade in the Middle Ages*, Variorum Reprints CS74 (London, 1978); and 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*, Pasold Studies in Textile History no. 8 (London, 1983), 259-78; Wolfgang von Stromer, *Die Gründung der Baumwollindustrie in Mitteleuropa: Wirtschaftspolitik in Spätmittelalter* (Stuttgart, 1978). See also Van Houtte, ‘La genèse d’un grand marché’, 87-112; Van Houtte, ‘Bruges et Anvers’, 89-108; John Munro, ‘Anglo-Flemish Competition in the International Cloth Trade, 1340 - 1520,’ in *Publication du centre européen d’études bourguignonnes*, 35 (1995): 37-60, published as: *Rencontres d’Oxford (septembre 1994): L’Angleterre et les pays bas bourguignonnes: relations et comparaisons, XVe - XVIe siècle*, ed. Jean- Marie Cauchies; Munro, *Textiles, Towns, and Trade*.

²⁸ 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 John Munro, *Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500*, Variorum Collected Studies series CS 355 (Aldershot, 1992); 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: Akten des 8th International Economic History Congress*, ed. Eddy Van Cauwenberghe and Franz Irsigler, *Trierer Historische Forschungen*, vol. 7 (Trier, 1984), 31-122; John Munro, ‘The Central European Mining Boom, Mint Outputs, and Prices in the Low Countries and England, 1450 - 1550,’ in ed. Eddy Van Cauwenberghe, ed., *Money, Coins, and Commerce: Essays in the Monetary History of Asia and Europe from Antiquity to*

conditions was a technological revolution in both mining and smelting that increased the output of both silver and copper in South Germany and adjacent Central Europe about five- or six-fold by the 1520s. The first stage was an innovation in mechanical engineering: new drainage pumps and adits (downward-slanted tunnels) that eliminated the long-pervasive problem of flooded mine shafts in mountainous Central Europe. The second was an even more important innovation in chemical engineering: the *Seigerhütten* process, using a lead catalyst in smelting silver-copper ores, to separate these previously inseparable metals. The copper so extracted from what became quite vast ore deposits also had considerable value, as the chief ingredient in making bronze artillery, which had already played a major role in ending the Hundred Years War.²⁹

Virtually the entire era of the Central European mining boom, from the 1460s to the 1540s, coincides 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 1464-65, the English crown devalued the silver coinage by 20% and gold by 26%, immediately producing a fall

Modern Times, Studies in Social and Economic History, Katholieke Universiteit Leuven, no. 22 (Leuven, 1991), 119-83, especially Tables 1-5 (pp. 154-62); Day, 'The Great Bullion Famine', 1-54; See in particular Peter Spufford, *Monetary Problems and Policies in the Burgundian Netherlands*, 106-29, 141-46, 180-93; Spufford, *Money and Its Use*, 339-68; Van der Wee, *Antwerp Market*, 1: 127-28, and 2:95-112; and sources cited in n. 8 above.

²⁹ John Nef, 'Silver Production in Central Europe, 1450-1618', *Journal of Political Economy*, 49 (1941): 575-91; John Nef, 'Mining and Metallurgy in Medieval Civilisation,' in M. M. Postan and E. E. Rich, eds., *The Cambridge Economic History of Europe, 2: Trade and Industry in the Middle Ages*, 2nd rev. edn., (Cambridge, 1987), 691-761 (1st edn. published in 1952); Philippe Braunstein, 'Innovations in Mining and Metal Production in Europe in the Late Middle Ages,' *The Journal of European Economic History*, 12 (1983): 573-91; Munro, 'Central European Mining Boom,' 119-84; Michael North, *Geldumlauf und Wirtschaftskonjunktur im südlichen Ostseeraum an der Wende zur Neuzeit (1440-1570)*, Kieler Historische Studien, vol. 35 (Sigmaringen: Jan Thorbecke Verlag, 1990); Spufford, *Money and Its Use*, 349-55, 365.

in the exchange rate on the pound sterling, with no inflationary consequences.³⁰ The consequent drop in English cloth prices on the Antwerp market made these woollens an even more attractive return cargo for Rhenish and South German merchants exploiting growing markets in Central and eastern Europe. Shortly after, in 1466, the Burgundian government undertook a more modest coinage debasement (silver by 13% and gold by 4%), but one that produced a very sharp alteration in the bimetallic ratio at the new Antwerp mint, to become strongly pro-silver, thus diverting South-German silver away from competing mints, a success immediately reflected in burgeoning mint outputs.³¹

Certainly those monetary changes contributed to a sudden explosion of English cloth exports. From 1461-65 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 70% of total English cloth exports, prompting a Burgundian observer to compare such

³⁰ See Nicholas Mayhew, 'The Monetary Background to the Yorkist Recoinage of 1464-1471', *British Numismatic Journal*, 44 (1974): 62-73; Nicholas Mayhew, 'From Regional to Central Minting, 1158-1464,' and Christopher Challis, 'Lord Hastings to the Great Silver Recoinage, 1464 - 1699,' in *A New History of the Royal Mint*, ed. Christopher Challis (Cambridge, 1992), 83-178, 179-397; Munro, 'Bullion Flows and Monetary Contraction', 97-158, especially tables 7-10 (pp. 141-52); John Munro, *Wool, Cloth and Gold: The Struggle for Bullion in Anglo-Burgundian Trade, ca. 1340-1478* (Brussels, 1973), 155-86, 198-200; Munro, 'Central European Mining Boom', 119-84, especially tables 2, 4, and 5 (pp. 156-63). By this debasement, the fine metal content of the silver penny was reduced exactly 20.00% from 0.8991 g. to 0.7193 g., which reduction thereby raised the value of a Tower Pound of silver 25.00%: 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: $T = [1/(1 - x)] - 1$: 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 the gold coinage (angel-noble and the new ryal or rose noble) by 35.0%, from £16.667 to £22.50 per Tower Pound of fine gold, the equivalent of a 25% debasement, by this formula. See Munro, *Bullion Flows and Monetary Policies*.

³¹ Munro, 'Bullion Flows and Monetary Contraction', 97-158, especially tables 4-10 (pp. 134-52); Munro, *Wool, Cloth and Gold*, 155-86, 198-200; Munro, 'Central European Mining Boom', 119-84, especially tables 2 - 5 (pp. 156-63); Van der Wee, *Antwerp Market*, 2: 80-84; and sources cited in n. 6, 27 above.

imports to an *inundacionis maris immensis*.³² Nothing succeeds like success. Exchanges of English broadcloths for South German silver and copper, along with the concurrent expansion in the Brabant Fairs, attracted merchants from all over Europe, finally including the Portuguese (1501). With their newly acquired Asian spices, they completed the Antwerp tripod and the foundations for its commercial-financial hegemony for the next half century.³³

During the early to mid-sixteenth century, textiles and related textile products clearly dominated the commerce of Antwerp and the Brabant Fairs, in all respects, as Table 1 shows: in terms of imports, domestic exports, and foreign re-exports. According to Guicciardini's mid-century survey of Antwerp's commerce, textile products (including dyestuffs and wool, both English and Spanish) accounted for 55% of all imports by value; and the two most important imports were Italian silk products and English woollens, accounting for 22% and 18% respectively (with Baltic grains a close third, at 16%).³⁴ In the export trades, despite the lack of a similarly comprehensive, global survey,

³² 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 1464-65; Munro, *Wool, Cloth, and Gold*, 155-80; John Munro, 'Industrial Protectionism in Medieval Flanders: Urban or National?' in Harry Miskimin, David Herlihy, Avrom Udovitch, eds., *The Medieval City* (New Haven and London, 1977), 229-68. Total English cloth exports rose from a quinquennial mean of 37,447 broadcloths in 1466-70 to one of 62,583 cloths in 1496-1500; and London's share rose from 55.31% to 68.3%. Data from: Eleanora M. Carus-Wilson and Olive Coleman, *England's Export Trade, 1275 - 1547* (Oxford, 1963), 89-119; Anthony R. Bridbury, *Medieval English Clothmaking: An Economic Survey*, Pasold Studies in Textile History (London, 1982), Appendix F, pp. 118-22. For the quotation, see: Dietrich Schäfer, ed., *Hanserecesse, 1477-1530*, 3rd ser., 9 vols. (Leipzig, 1881-1913), 3:105 (1487).

³³ See sources cited in n. 11 above.

³⁴ Wilfrid Brulez, 'Le commerce international des Pays-Bas au XVI^e siècle: essai d'appréciation quantitative,' *Revue belge de philologie et d'histoire*, 46 (1968), 1205-21, based upon Ludovico Guicciardini, *Description de la cité d'Anvers, 1560*, trans. François de Belleforest, 1582; published in Antwerp, 1920). See also Van der Wee, Herman, and Materné, Jan, '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*, Antwerp 93, Hessenhuis 25 June - 10 October 1993 (Gent: Snoeck-Ducaju en Zoon, 1993), 19-31.

various accounts and toll registers of the 1540s indicate that textile products, led by English cloths, both broadcloths and much cheaper kerseys, were even more overwhelmingly dominant.³⁵ Long before this era, of course, English woollen broadcloths had displaced the finer Flemish and Brabantine luxury woollens, both at the Brabant Fairs and in most European markets. Within the Netherlands, other domestic woollens, lower-priced imitations from the *nouvelles draperies*, no longer new, led by Armentières and Neuve-Église, had also superseded these old traditional luxury draperies to achieve as well a large foreign demand and considerable sales at the Brabant Fairs.³⁶ But, by the mid-sixteenth century, yet a third branch of cloth-making was on the verge of overtaking the *nouvelles draperies* to become the predominant textile industry of the southern Low Countries. Collectively its members are again known as the *draperies légères*, in producing far lighter, coarser, and much cheaper worsted or mixed woollen-worsted fabrics; and this branch was again dominated, as in the thirteenth century, by 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,

³⁵ See Brulez, 'Exportation des Pays Bas', 461-91; Brulez, 'Commerce international', 1205-21; Hugo Soly, and Alfons Thijs, 'Nijverheid in de Zuidelijke Nederlanden,' *Algemene geschiedenis der Nederlanden*, 6: (Haarlem, 1979), 27-57; Alfons Thijs, *Van 'werkwinkel' tot 'fabriek': de textielnijverheid te Antwerpen, einde 15de - begin 19de eeuw* (Brussels, 1987); Alfons Thijs, 'Les textiles au marché anversois au XVI^e siècle,' in Erik Aerts and John Munro, eds., *Textiles of the Low Countries in European Economic History*, Proceedings of the Tenth International Economic History Congress, Studies in Social and Economic History, Vol. 19, Herman Van der Wee, general editor (Leuven: Leuven University Press, 1990), 76-86; Herman Van der Wee, 'Structural Changes and Specialization in the Industry of the Southern Netherlands, 1100-1600,' *Economic History Review*, 2nd ser. 28 (1975), 203-21; Herman 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: Leuven University Press, 1988), 307-81; Van der Wee, Herman, and Materné, Jan, '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*, Antwerp 93, Hessenhuis 25 June - 10 October 1993 (Gent: Snoeck-Ducaju en Zoon, 1993), 19-31; Van der Wee, *Antwerp Market*, 2: 95-135. See also n. 36 and n. 38 below.

³⁶ See sources in n. 35 above.

a leading *sayetterie* in thirteenth-century Flanders, whose says were then so prominent in Italian markets, and the only important survivor during the later Middle Ages, surviving on domestic and regional markets, had again, by the later fifteenth and sixteenth century, become the leading Flemish say exporter to Italy and the Mediterranean (see Table 3). According to recent estimates by Soly and Thijs for textile production in the mid-sixteenth century Low Countries, 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 few remaining traditional urban luxury-woollen draperies, now led by Mechelen, and the now more important branch of the true-heavy weight woollens industry known as the *nouvelles draperies*, which produced cheaper and imitation varieties of the traditional luxury woollens, collectively were producing only about 2.07 million metres.³⁷

³⁷ Statistics from Hugo Soly and Alfons Thijs, 'Nijverheid in de Zuidelijke Nederlanden,' 27-57. See also: Emile Coornaert, *La draperie-sayetterie d'Hondschoote, XIVe-XVIIIe siècles* (Paris, 1930), 22-43, 236-53; Emile 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*, 28 (1950), 60-96; Émile Coornaert, *Une industrie urbaine du XIVe 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* 5 (1907): 1-115; Maurice Van Haec, *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* 22 (1936): 249-65; Donald C. Coleman, 'An Innovation and its Diffusion: The 'New Draperies',' *Economic History Review*, 2nd ser., 12 (1969): 417-29; Van der Wee, *Antwerp Market*, 2:133-208 (especially 186-91); Robert DuPlessis, 'The Light Woollens of Tournai in the Sixteenth and Seventeenth Century,' and 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, 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 Negley Harte, ed., *The New Draperies in the Low Countries and England, 1300 - 1800* (Oxford, 1997), 129-72; 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), 151-65; John Munro, 'Textiles as Articles of Consumption in Flemish Towns, 1330 - 1575,' *Bijdragen tot de geschiedenis*, 81:1-3 (1998), 275-88 [Special issue on: 'Proeve 't al, 't is prysselyck': Verbruik in Europese steden (13de - 18de eeuw)/Consumption in the West European City (13th - 18th Century): Liber Amicorum Raymond Van Uyven, ed. Bruno Blondé.]; Munro, 'Symbiosis of Towns and Textiles', 62-70; Munro, 'Resurrection of an Old Flemish Industry', 35-127.

How did these says reach the Mediterranean? Since evidence has already shown that, in the late fourteenth century, the cost of transporting textiles, even very costly luxury woollens, from Flanders to the Mediterranean was cheaper by sea than by overland routes, the now well-established maritime routes should have enjoyed an even greater relative cost advantage in shipping the far cheaper says to their Italian markets in the later fifteenth and sixteenth centuries, despite the revival of transcontinental routes. Those routes, to be sure, would have always retained an obvious cost advantage in transporting the more expensive English broadcloths and refinished fine linens, silks, brocades, tapestries, and carpets from the Brabant Fairs to inland markets, along the Rhine, South Germany, Bohemia, Hungary, and elsewhere in Central Europe. 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*, and also English kerseys and even English wools to Italy, is rather astonishing.³⁸

The evidence for such overland transport comes from three principal sources: the voluminous records of the Hondschoote *sayetterie*, so thoroughly studied by Coornaert in 1930, and subsequently published by the Belgian Royal Historical Commission,³⁹ the papers of several Flemish exporting

³⁸ 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; Edler, Florence, 'Winchcombe Kerseys in Antwerp (1538-44),' *Economic History Review*, 1st ser. 7 (1936-37), 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), 4: 123-84; Walter Endrei, 'English Kerseys in Eastern Europe with Special Reference to Hungary,' *Textile History*, 5 (1974), 90-99; Brulez, 'Exportation des Pays Bas', 461-91; Munro, 'Resurrection of an Old Flemish Industry', 35-127; see sources in n. 35 and nn. 40-41 below.

³⁹ Coornaert, *Draperie-sayetterie d'Hondschoote*, 236-54; 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), 2: 363-415, nos. 290-91.

firms, notably the Van der Molen, della Faille, and van der Heyden firms, for the 1540s;⁴⁰ and thirdly, from the same period, the registers for a special commercial levy, a 1% ad valorem tax on all goods exported from the Habsburg Netherlands from 1542 to 1545.⁴¹ For exports to southern and Mediterranean Europe, all but one single account in these tax registers record exports uniquely by the land routes; and Brulez, who has examined these registers and sixteenth-century transport the most thoroughly has concluded that maritime exports to Italy in this period were of quite ‘minimal importance.’⁴² In any event, the other commercial records for both Flemish says and English kerseys confirm that all, or virtually all, of these textiles were sent to Italy by overland routes; and certainly the Mediterranean basin, from Spain to the Levant, commanded by far the greatest share of those aggregate textile exports from north-west Europe.⁴³

Not until well into the next century, when the Thirty Years War (1618-48) made these overland routes so frequently impassable, was a sea route utilized to transport these textiles to the Mediterranean, generally via Amsterdam.⁴⁴ To be sure, in sixteenth century Europe, warfare still

⁴⁰ Edler, ‘Le commerce d’exportation des sayes,’ 249-65; Wilfrid Brulez, *De firma Della Faille en de internationale handel van Vlaamse Firma's in de 16 eeuw* (Brussels, 1959). See also sources in nn. 38-39.

⁴¹ Levy of 1% tax on the value of all merchandise exported from the Habsburg Netherlands from 10 February 1543 to 22 September 1545, in Algemeen Rijksarchief, Rekenkamer, nos. 23,357-364, analysed by J. Goris, *Étude sur les colonies marchandes méridionales à Anvers* (Leuven, 1925), and by Brulez, ‘L’exportation des Pays Bas’, 461-91.

⁴² 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 minimale.’ The only example of sea-transport was a shipment of 280 wagues of lead from Veere to Genoa in October 1544.

⁴³ See Edler, ‘Le commerce d’exportation des sayes’, 249-65; Edler, ‘Winchcombe Kerseys in Antwerp,’ 57-62; Brulez, ‘Les routes commerciales d’Angleterre en Italie’, 123-84; Endrei, ‘English Kerseys in Eastern Europe’, 90-99.

⁴⁴ Coornaert, *Draperie-sayetterie d’Honschoote*, 247.

seemed to loom large, 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, an alternative safe route was generally available. From Antwerp and the Brabant Fairs, there were two major southbound routes, each with its own set of regional alternatives: (1) the western route, running either via Luxembourg, Trier, Lorraine, and Franche Comté, or via the Rhine and Cologne and Frankfurt, through Switzerland (Basel) and the Alps, across the Saint-Gotthard Pass into Lombardy, terminating at Milan and Genoa; or (2) the eastern route via the Rhineland and Frankfurt to Augsburg-Nürnberg, and Salzburg-Innsbruck, across the Brenner Pass, into Venice.⁴⁵

Unfortunately we still lack sufficient evidence to prove that in the sixteenth-century these overland routes had become cheaper than the maritime routes, not when the converse view remains so deeply rooted in the annals of European economic history.⁴⁶ Nevertheless we may, at the outset, deduce from various developments in the sixteenth-century economy that transaction costs had again sufficiently fallen in long-distance trade to permit the Netherlands to be competitive once more in Mediterranean markets for cheaper textiles. The most obvious factor, already cited, was the restoration of relative security along the major trade routes, but perhaps 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

⁴⁵ Van der Wee and Peeters, 'Modèle dynamique de croissance interseculaire', 200-28; Van der Wee, *Antwerp Market*, 2: 323-64; Brulez, 'Exportation des Pays Bas', 461-91; Brulez, 'Les routes commerciales d'Angleterre en Italie', 123-84.

⁴⁶ 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, however, citing specific evidence. See, however, Van der Wee, *Antwerp Market*, 2: 325-64.

Mediterranean basin, which dramatically widened and deepened markets, providing much a more concentrated, larger-scale, and efficient commerce. markets. Thirdly, international trade in sixteenth-century Europe benefited from many significant commercial-financial innovations: fully transferable and negotiable commercial bills and other improvements in both public and private finance, which halved interest rates by the 1550s; printed and widely disseminated ‘currents’ for both commodity-price 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.⁴⁷

Since maritime commerce also shared in these improvements, the crucial innovations to be cited were those unique to overland transport. First and foremost was the rapid emergence of professional and specialized transport or cartage firms, which promoted the development of the new, larger-scale, lower-cost Hesse wagons (carts), in well organized convoys. These new transport firms offered merchants, both large and small, those selling in nearby or in distant overland markets, fully insured passage for their goods at predetermined, fixed rates; and 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 Atlantic shipping routes from north-

⁴⁷ Van der Wee, *Antwerp Market*, 2: 177-94, 325-64; Van der Wee and Peeters, ‘Modèle dynamique’, 200-28; Edler, ‘Le commerce d’exportation des sayes’, 249-65; Edler, ‘Winchombe Kerseys’, 57-52; Brulez ‘Exportation des Pays Bas’, 461-91; Endrei, ‘English Kerseys’, 90-99; Munro, ‘Industrial Transformations’, 128-38; Munro, ‘Resurrection of an Old Flemish Industry’, 60-95; Van der Wee, ‘Structural Changes in European Long Distance Trade’, 14-33; 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*, NEHA-Series III (Amsterdam, 1991).

west Europe into the Mediterranean.⁴⁸ But, even without these innovations, as Robert Lopez once observed, Italian merchants were able to reach NE Europe ‘faster by an overland shortcut,’ at least when relative security prevailed, than by the sea route.⁴⁹ Indeed, for this textile 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 20 per cent of the distance by sea between these ports. Furthermore, both in the thirteenth and sixteenth centuries, the shorter overland routes probably 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 north-west Europe.

Finally, if the proof is in the pudding, the final proof for 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. Furthermore, paralleling the expansion of the overland continental routes was the sharp decline in 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 regular trips for most of the fifteenth century, failed to arrive in 1492, 1496-7, 1499, 1502, 1509-15, 1518, 1521-29, and 1531-32, making their final voyage in 1533.⁵⁰ Yet equally responsible for that

⁴⁸ Van der Wee, *Antwerp Market*, 2: 177-94; Brulez, ‘L’exportation des Pays Bas’, 461-91; Brulez, *De firma Della Faille*; Brulez, ‘Commerce international des Pays Bas’, 1205-21.

⁴⁹ Lopez, ‘Trade of Medieval Europe: the South,’ 354: That 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 northern Europe could be reached faster by an overland shortcut.’

⁵⁰ But Fryde also notes that, by the 1480s, the Genoese carrack trade was ‘in catastrophic decline.’ See Fryde, ‘Italian Maritime Trade with Medieval England’, 331; Fryde, ‘English Cloth Industry and the Trade with the Mediterranean’, 362; Lane, *Venetian Ships and Shipbuilders*, 26-28; Tenenti-Vivanti, ‘Les galères marchandes vénitiennes,’ 83-6, and pull-out map.

decline was the revolutionary transformation of the much cheaper, more mundane cog-style cargo boats from the mid-fifteenth century, to become the so-called Atlantic-ship or carrack: heavily-armed, full-rigged ships, combining the square sails of northern cogs, for power and speed, with the lateen sails of Arab-influenced caravels, for 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 25% reduction in freight rates by the early sixteenth century; and the Italians were then re-exporting a significant proportion of their northern textiles, especially both English kerseys and Flemish says, to Levantine markets.⁵¹ Finally we may best appreciate the 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.

⁵¹ Lane, *Venetian Ships and Shipbuilders*, 26-28; Unger, *Ship in the Medieval Economy*, 176-201; Unger, 'Warships and Cargo Ships in Medieval Europe,' 233 - 52; Unger, 'Portuguese Shipbuilding,' 229-49; Elbl, 'Portuguese Caravel and European Shipbuilding', 543-72; Elbl, 'Caravel and the Galleon,' 91-98

Table 1.

Values of Imports into the Southern Netherlands c. 1560
in Million of Gulden (Carolus Florins of 40d gros Flemish)

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
Raw Silk and Italian Silks	4.000	21.6%	Baltic grains	3.000	16.2%
English Woollens	3.240	17.5%	Portuguese Spices	2.000	10.8%
Spanish Wools*	1.250	6.8%	French wines	1.150	6.2%
English wools	0.500	2.7%	Rhenish wines	0.720	3.9%
French woad	0.400	2.2%	Italian/Spanish/ Portuguese wines	0.500	2.7%
German fustians	0.240	1.3%	Portuguese salt	0.250	1.4%
Italian/Spanish alum	0.240	1.3%	French salt	0.250	1.4%
Spanish-American cochineal	0.225	1.2%	Spanish olive oils	0.200	1.1%
			Spanish salt	0.175	0.9%
			German copper	0.160	0.9%
Totals	10.095	54.6%	Totals	8.405	45.4%

* Spanish *merino* wools imported chiefly via Bruges

Source: Wilfrid Brulez, 'Le commerce international des Pays-Bas au XVIe siècle: essai d'appréciation quantitative,' *Revue belge de philologie et d'histoire*, 46 (1968), 1205-21, based upon Ludovico Guicciardini, *Description de la cité d'Anvers, 1560*, trans. François de Belleforest, 1582; published in Antwerp, 1920).

Table 2.

Exports of Woollen Broadcloths from London and All English Ports:*
Decennial Means, 1490-09 to 1560-9

Decade	London: Broad-Cloth Exports	Index: Mean 1411-20 = 100	Percentage of Total Cloth Exports	TOTAL ENGLISH BROADCLOTH 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%

* Quantities of cloth measuring 24 yds by 1.75 yds per unit, including kerseys reckoned at 3 kerseys per notional broadcloth. A broadcloth of assize was supposed to weigh 64 lb., with an area of 37.095 m² = 782.6 grams per square metre. Great Britain, Parliament, *Statutes of the Realm*, 4:1, 136-37 (statute 5-6 Edwardi VI c. 6).

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*, 1st ser. 10 (1940); Anthony Bridbury, *Medieval English Clothmaking: An Economic Survey* (London, 1982), Appendix F, pp. 118-22.

Table 3.

**Production and Export of Says from the Hondschoote Sayetterie
in quinquennials means, 1401-05 to 1596-1600**

Year	Hondschoote	Cloths	Hondschoote
	Drapery Tax Farm	represented	Cloth Sales:
	in £ parisis	by tax farm	Exports
	240d per £ parisis	8d. per cloth	in Single Says*
1401-05	54.80	1,644	
1406-10	78.00	2,340	
1411-15	85.60	2,568	
1416-20	117.60	3,528	
1421-25	152.80	4,584	
1426-30	165.80	4,974	
1431-35	172.00	5,160	
1436-40	176.00	5,280	
1441-45	180.00	5,400	
1446-50	278.00	8,340	
1451-55	345.60	10,368	
1456-60	388.00	11,640	
1461-65	404.00	12,120	
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

* A fine narrow say measured 28.0 m (40 ells) by 0.7 m (1 ell), with a finished area of 19.60 m², and with a weight of 260.4 grams per sq. 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 m², and with a weight of 322.4 grams per sq. 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 (1540-42) to 14.00 d *groot* per day (from 1543).

Source: Emile Coornaert, *La draperie-sayetterie d'Hondschoote, XIVe-XVIIIe siècles* (Paris, 1930); calculated from Appendix IV, pp. 485-90 (data extracted from: Archives départementales du Nord, Section B. État général, 4068-4236, 17600); Appendix V, pp. 493-95 (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*, 81:1-3 (1998): 275-88.