

**TRADING COSTS AND THE PATTERN OF TRADE
IN PRE-INDUSTRIAL EUROPE***

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ABSTRACT: The development of pre-industrial Europe was driven by the expansion of trade. This paper describes the patterns of trade and shows how they can be understood in terms of differences in trading costs. It discusses how the different levels of trade—from local to transoceanic-contributed, both quantitatively and qualitatively, to the process of growth.

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The pattern of trade in pre-industrial Europe was largely determined by trading costs. The rise of trading costs with distance imposed a sort of hierarchy of trade. At the lowest level of the hierarchy—at the shortest distances where trading costs were lowest—came local and regional trade; next, at greater distances and higher trading costs, came inter-regional trade within the two great zones of European commerce—the Mediterranean and Northwest Europe; and at the top of the hierarchy, where distances were greatest and trading costs highest, came trade between the two zones of Europe and between these and other zones in Asia, Africa, and the Americas.

This hierarchy of trade reflected a gradient of decreasing volume and increasing margins. At the local and regional level, where trading costs were lowest, the volume of trade was high and the range of goods broad. Trade encompassed lower-margin goods—bulky commodities, such as salt and grain, and inexpensive manufactures, such as cheap textiles and utensils. As distance and trading costs rose, the volume of trade decreased and the range of goods traded grew narrower, encompassing only those offering a margin great enough to cover the higher costs of trade. At the top of the hierarchy, inter-zone trade was largely limited to high-margin goods with a high ratio of value to weight—goods such as spices, bullion, and luxury textiles.

The specific goods that were the objects of trade at the various levels reflected the nature of the pre-industrial economy—the composition of its expenditure and its output. Their composition was very different from what it is today, both because income was so much lower and because it was so unequally distributed. In pre-industrial Europe, food accounted for roughly half of total expenditure (in the advanced economies today, it is perhaps a fifth). Of total expenditure on food, as much as half was on bread: average *per capita* consumption of grain exceeded a pound a day.¹ The well-to-do devoted 10-30% of their budget to clothing; for others it was a luxury.² Little was left for anything beyond food, clothing, and shelter. The highly unequal distribution of income meant that the demand of the wealthy—princes, nobles, clergy, and merchants—was of disproportionate importance. This was especially true for luxury goods, such as the spices and quality

¹Braudel (1972) estimates annual per capita consumption at over two quintals (200Kg); Masschaele (1997) estimates one quarter of wheat (nearly 400lbs) as necessary for subsistence.

²The numbers are from Cipolla (1994).

manufactures that were the mainstay of inter-zone trade.³ However, as the period progressed, the demand of the middle class—bourgeoisie and gentry—and even of richer peasants and artisans grew in importance and supported an increasing trade in foodstuffs and simple manufactures. The output of the pre-industrial economy reflected the pattern of expenditure. Production was overwhelmingly agricultural: mainly of food, but also of natural raw materials for the production of clothing. The principal manufacturing industry was textiles.

The expansion of trade was the driving force of economic growth in the pre-industrial economy. How did the different levels of trade compare in terms of their contribution to this process? Quantitatively, local and regional trade were certainly the largest; inter-regional trade within the two zones was much smaller; and inter-zone trade was, in comparison, almost negligible. However, as we shall see, in terms of their effect on economic growth, inter-regional trade and inter-zone trade played a far more important role. Each in its own way made important *qualitative* contributions. Together, they helped to transform both the technology of trade and the technology of production.

LOCAL AND REGIONAL TRADE

In pre-industrial Europe, people produced themselves much of what they consumed: many grew their own food, made their own clothing, and built their own homes. It was not only the rural population that grew much of its own food: townsmen kept pigs and chickens, tended vegetable gardens, and frequently owned agricultural land outside the city walls. And it was not only the poor who produced much of what they consumed: the aristocracy relied for much of its food on the cultivation of demesne lands and on the receipt of rents in kind.⁴ For example, grain was the most important commodity, accounting for perhaps 40% of total output. However, only something like 10% of it was actually traded: the rest was consumed directly by producers and landowners.⁵ Trade was initially marginal, especially for the overwhelming rural majority. It was a way to raise money for taxes and rents and to obtain the few goods that could not be produced at

³“To a degree that is difficult for modern men to grasp, orders for industrial products came from the great princes and still more from the Church...” p722 Nef (1987).

⁴Demesne lands were lands that feudal lords retained under their own direct control.

⁵These are Braudel’s estimates for the Mediterranean zone in the sixteenth century (Braudel (1972)).

home. However, as time progressed, trade expanded, and it became increasingly attractive to specialize and to exploit comparative advantage. As this happened, production for own use declined.

Trade at the level of the village was extensive. Villagers traded with one another poultry, eggs, firewood, peat, butchered meat, bread, fish, cheese, carts and wheels, cloth, candles, hay, and dozens of other commodities. Much of this trade was conducted by women as part of routine household management. There was also some specialized production at the village level: most villages had a smith who supplied the villagers with ploughshares, locks, and handtools.⁶

At the next level up was the market town. It was generally small, with a population of 300 to 1,000, and typically served a hinterland defined by a single day's round trip by foot—a radius of no more than six to twelve miles.⁷ The town market mediated trade among villages in its hinterland, between them and the inhabitants of the town, and among the inhabitants of the town themselves. The concentration of trade in a central location reduced search costs and increased the range of goods available: “For a villager, towns offered especially ‘full’ markets, where sales were likely to be brisker and prices higher than those found in rural markets.”⁸ Depending on the volume of trade, markets would be held weekly, twice a week, or even daily. Regular contact between traders facilitated the extension of credit.⁹ The larger volume of trade justified investment in market infrastructure—permanent trading facilities, security for participants, regulation of weights and measures and of trading procedures, mechanisms for conflict resolution.¹⁰ Western Europe was covered by a dense network of market towns. For example, by 1300 England had some 550.¹¹

The market town was also a center of specialized production, since the relatively large number of potential customers could support a variety of specialized artisans. Indeed,

⁶Masschaele (1997) Ch. 2

⁷Clay (1984)

⁸Masschaele (1997) p147

⁹Several recent studies have shown that countrymen were both creditors and debtors in this trade, often in ongoing commercial relationships. Masschaele (1997)

¹⁰Kowaleski (1995)

¹¹Masschaele (1997). Also, see Jones (1997) on Italy.

when founding a new market, a local lord would often provide accommodation for artisans as part of its infrastructure.¹² The products of the market town might include processed foodstuffs, textiles, leather goods, pottery, glassware, metal goods, and other inexpensive household items. Artisans would rely on the town market to obtain their raw materials. Market towns provided services, too, for their hinterlands—medical, religious, educational, and administrative.¹³

In addition to its local function, the market town also connected its hinterland with the higher levels of the hierarchy of trade. It gathered local output—such as grain, wool and flax, tanned hides, linens and woolens—for sale in regional markets and sometimes for distribution farther afield. And it distributed goods imported from the regional center to local customers. Such trade with regional markets was already more problematic than trade at the local level, and therefore tended to be in the hands of professional merchants. Mostly, these came from the regional center or from even farther to scour local markets for the supplies they needed and to find an outlet for their wares; but sometimes it was the locals who took the initiative and developed the connections.¹⁴ Market towns supported a few shops, mostly as outlets for goods imported from a distance. These might include grocers, mercers, stationers, and booksellers. For example, in 1585, a bookseller in Astbury, a small market town in Cheshire, carried no fewer than 2,500 volumes of 500 titles.¹⁵ Shopkeepers offered their customers credit and allowed payment by installment. As nodes in the network of trade, market towns were necessarily also centers of transportation, providing carriage by land and water and inns to serve the traveling public.¹⁶

The regional town was to the small market town as the latter was to the village. In 1300, England had some 50 regional towns compared to its 550 market towns.¹⁷ Regional towns themselves formed a hierarchy, smaller ones feeding into larger ones. London was to Norwich and Exeter as the latter were to the smaller towns and villages in their

¹²Britnell (1996) Ch 1.

¹³Clay (1984)

¹⁴Masschaele (1997) p147

¹⁵Willan (1976)

¹⁶Clay (1984) p 180

¹⁷Masschaele (1997)

hinterlands. The larger regional towns—such as Milan, Genoa, Venice, Paris, Bruges, Antwerp, Geneva, Augsburg, and London—often played an important role in zone trade and in trade between the zones. In size, regional towns varied from a few thousand to over 100,000.

The regional town served, of course, as a market center for its own immediate hinterland, but, compared to the market town, this role was much less important than its role as a producer and as an intermediary in the hierarchy of trade. The regional town was often an important locus of manufacturing. Although some regional towns exported their output further afield, most produced mainly for their own region. In addition to being the focus for regional trade, the regional town was also the conduit for inter-regional trade. To serve this function, many regional towns established periodic fairs. By concentrating a large volume of trade at a particular time, fairs made it worthwhile for merchants to attend from other regions or even from other zones. The fundamental difference between a fair and a local market was that trade at the fairs was wholesale rather than retail: participation was largely limited to professional merchants.¹⁸ The great international fairs, such as those of Champagne, Castile, and Brabant, all began by serving a regional function and then went on to become centers of inter-regional and inter-zone trade. In addition to their periodic fairs, regional towns also supported numerous permanent shops¹⁹: for example, in 1555 Chester boasted some 17 drapers, 9 mercers, 18 butchers and 6 ironmongers.²⁰ Regional towns were generally important transportation centers—frequently ports—as well as major centers of administration.

Local and regional trade was probably much larger, quantitatively, than inter-regional and inter-zone trade. Writing at the end of the seventeenth century, Gregory King estimated that the internal trade of England was four times its overseas trade; earlier, when the trading costs of long-distance trade were higher, the balance must have been even more to the advantage of local and regional trade.²¹ The internal trade of England was particularly well developed because of its relatively low internal transportation costs:

¹⁸Pirenne (1937)

¹⁹This had happened in Genoa as early as the twelfth century: see Lopez (1987).

²⁰Willan (1976)

²¹Palliser (1983) p267

by the sixteenth century its regions had essentially merged into one large region with London as its center.²² But the general picture was the same everywhere: throughout Europe, the majority of trade took place at the local and regional level.²³ Despite its importance, however, local and regional trade has attracted much less attention than long-distance trade. This is partly because it has left fewer records. It is partly because international trade has always been a political issue and so a focus of intense scrutiny. And it is partly because of the mystique of the long-distance merchant: “The potent figure of the international merchant has been allowed to distract attention from the humbler men and women who handled the bulk of commercial transactions.”²⁴

Apart from its greater quantitative importance, local and regional trade was generally the basis from which inter-regional and inter-zone trade subsequently developed. Most production served the local and regional market. Sometimes, a particular product attracted buyers from further afield, and as trade developed the region came to specialize in its production. This was the story with woolen cloth in Northwest Europe in the eleventh and twelfth centuries; with cottons in Italy in the thirteenth; with fustians and armaments in South Germany in the fourteenth and fifteenth; and with dairy products, herring, and beer in the Netherlands in the fifteenth and sixteenth. In this way, a vigorous local and regional trade provided the basis for inter-regional and inter-zone trade and for economic growth.²⁵

With respect to institutional development—to the lowering of trading costs—local trade contributed virtually nothing. Involving, as it did, repeated transactions among members of a small community, local trade required little or no commercial or financial organization. Producers mostly sold directly to consumers and there was no need for

²²See Kohn (2001d) on the quality of England's inland transportation system.

²³For example, see Lopez (1987) p 368 on southern Europe; Epstein (1991) on Sicily; de Vries and van der Woude (1997) on the Netherlands.

²⁴Palliser (1983) p267

²⁵Szostak (1991) argues that the pattern was no different of the eighteenth century: the growth of overseas trade in English industrial products followed an Industrial Revolution driven by the rapid expansion of internal trade.

professional traders. Although credit was widespread, it was direct: there was no need for the intervention of intermediaries or organized markets.²⁶

At the regional level, trade was already more problematic—involving, as it did, transactions among strangers and transportation over greater distances. Consequently regional trade was largely in the hands of professional merchants. For example, the supply of grain to larger regional cities, such as Paris and London, involved quite elaborate organization. London, with a population of perhaps 80,000 by 1300, was drawing supplies from a considerable distance by road, river, and coastal shipping.²⁷ This trade was organized by merchants—called ‘cornmongers’ or ‘bladers’—some of them small, but some substantial enough to buy up the crop of an entire manor.²⁸ One cornmonger, Hamo Chamwell, was, in addition, a wealthy importer of wine, a fish merchant, and a London alderman. His boats carried wine and fish up the Thames to Henley, a regional grain market, and he may have become involved in the grain trade to provide his boats with backcargo. Another cornmonger, Roger le Palmer, owned land in Berkshire, granaries in Henley, and bakehouses in London. Such vertical integration was not uncommon: cornmongers often expanded their operations to include mills, bakeries, breweries and even agricultural land. Once they brought their grain to London, the cornmongers kept it in storehouses “for release when the price was right”.²⁹ They sold some of it directly to consumers, especially those who bought in bulk, but most of it they sold to retailers at the Billingsgate market.

As the example of Hamo Chamwell illustrates, regional merchants often participated in trade at the inter-regional or even inter-zone level. For example, it was common for merchant staplers in seaports and road hubs to specialize in offering in quantity the regional staple—whether wool, wine, or cloth—to long-distance merchants. They would accumulate stocks over a period of time by purchasing in local markets or by buying directly from producers (often paying in advance to secure supplies). Part of the service

²⁶See Kohn (1999a) and Kohn (1999b) on the widespread use of credit.

²⁷Masschaele (1997)

²⁸The following description is based on Farmer (1991).

²⁹Farmer (1991) p372

they provided the long-distance merchant was their ability to deal with local officials charged with taxing, or even preventing, the export of the commodities in question.³⁰

In the more difficult trading environment faced by the regional merchant, there was a greater need to develop commercial and financial institutions. Moreover, the volume of regional trade and the scale of operations of the individual merchant justified the fixed cost of investing in such institutions.³¹ So regional trade, although it was not as fruitful in this respect as trade between regions and zones, did give rise to a number of important institutional innovations—the regional fair, for example, and a few innovations in finance.³²

THE TWO ZONES OF EUROPEAN TRADE

Moving up the hierarchy from trade within a region to trade between regions, the degree of difficulty, and so the level of trading costs, increased yet again. Not only did inter-regional trade involve trade between strangers, but those strangers might also speak a different language, belong to a different culture or religion, and be subject to a different political and legal jurisdiction. With greater distances, the cost of transportation increased significantly. Not only was the cost of carriage greater, but the crossing of political jurisdictions also increased predation costs—including piracy and banditry as well as tolls and taxes. Because of the greater distances, goods spent longer in transit, making finance more important. Longer distances and slow communications meant that information was less up-to-date and this significantly increased market risk.

We shall define a zone of trade as a group of regions among which trading costs were not yet so high as to preclude trade in low-margin, bulky goods. Because the profitability of trade in such goods depended crucially on the cost of transportation, it was largely transportation costs that determined the boundaries of a trading zone. Moreover, since transportation by water was far cheaper than transportation by land—one twentieth the

³⁰Lopez (1987) p 369

³¹Reed (1973)

³²For example, the development of the annuity market in northwest Europe in the thirteenth century and the development of share companies in the Netherlands in the fifteenth (see Kohn (1999e)). Munro (1998) argues that important innovations in the use of commercial paper, usually attributed to Antwerp in the sixteenth century, actually reached there from England, where they had developed earlier in its internal trade (see Kohn (1999)d on commercial paper).

cost by sea and one twelfth by river³³—the core of any trading zone was a group of regions mutual accessible by water. There were two such zones of trade in Europe—a southern zone centered on the Mediterranean and a northern zone centered on the Atlantic coast of Northwest Europe.

Within each of these two zones, trade in bulky, low-margin goods existed even at the beginning of the period. However, its volume increased as trading costs fell, especially from the middle of the fifteenth century. Falling trading costs also caused the geographic boundaries of both zones to expand. After Constantinople fell to the crusaders in the thirteenth century, the southern zone expanded eastwards into the Black Sea. In the fifteenth century, it expanded westwards into the Atlantic to include the islands off the coast of Northwest Africa. The northern zone expanded into the Baltic in the twelfth and thirteenth centuries as a result of the eastward movement of German colonists and traders. And it steadily expanded southwards to include first the Bay of Biscay and then the Iberian peninsula. In each case of expansion, the pioneers were motivated initially by trade in high-margin goods—slaves, furs, and Asian luxuries in the Black Sea, African gold in the Atlantic, furs in the Baltic. However, as trading costs fell, trade broadened to include low-margin, bulky goods. For example, in the Baltic trade, as the cost of shipping fell, first Baltic beer and then Baltic grain and timber became competitive in the markets of Northwest Europe.³⁴

Throughout the period, the two zones of European trade remained largely separate from one another. While there certainly was trade between them, as there was with other zones of trade outside Europe, this inter-zone trade was of relatively small volume and restricted mainly to high-margin goods. In the southern zone around 1500, “the sixty million or so people who inhabited the countries bordering the inland sea produced between them most of the food, many of the raw materials and almost all the manufactured goods which they consumed. They built their own ships and carried their own trade.”³⁵ This picture began to change towards the end of the sixteenth century, as

³³Cipolla (1956), Willan (1976)

³⁴See Kohn (2001) for more details.

³⁵Parry (1967) p 155

bulk goods began to arrive in the Mediterranean from the northern zone. However, it was not until the eighteenth century that the two zones of Europe trade would merge into one.

THE TWO CENTRAL REGIONS

Trade within the two trading zones, just like trade at the local and regional level, focused on an urban center. However, in the case of the zone, the urban center was not a single city but rather an entire urbanized region. In the South, that region was Northern Italy; in the North, it was the southern Low Countries. Within each of these urbanized central regions, the dominant city or cities changed over time. In the southern zone, Genoa, Venice, Milan, and Florence shared dominance in varying degrees at different times. In the northern zone, Bruges rose to dominance in the fourteenth century and was replaced by Antwerp in the sixteenth. The two central regions were *economic* regions—not political or ethnic ones. The central region of the southern zone included many independent Italian city states, and it later extended north to include parts of southern Germany. The central region of the northern zone initially had its heartland in northern France before it migrated to Flanders and then Brabant; it later expanded to encompass Holland and southeast England. Throughout the period, so long as the two zones remained distinct, each retained its own central region. However, as the two zones gradually merged after 1600, the northern central region came to dominate and the southern central region slowly withered.³⁶

Like the market town and the regional city at lower levels of the hierarchy of trade, the urbanized central regions of the two zones performed three important functions. They mediated trade within their hinterlands—in this case within the two great zones of trade. They connected their hinterlands with the next level of the hierarchy—in this case, with other zones. And they were themselves important centers of production. The two central regions differed, however, in the order in which these functions evolved.

Northern Italy began with trade. By the middle of the thirteenth century its maritime cities had come to dominate maritime trade in the Mediterranean and in the Black Sea.³⁷ From the early Middle Ages, Venice had conducted a profitable trade with Constantinople and the Muslim Levant, trading bulk commodities from the Adriatic for

³⁶Van der Wee (1988)

³⁷Jones (1997)

eastern luxuries. Venice's great rival, Genoa, emerged later, in the eleventh century, in the struggle to free the western Mediterranean from Muslim dominance. The Genoese were initially more active in piracy and plunder than in trade. The economies of Genoa and Venice received a major boost from the Crusades—both from transporting and supplying the Crusaders and from the resulting expansion of trade with the East. These two great cities became aggressive commercial rivals throughout the southern zone, resorting to diplomacy and even to open warfare in their struggle for dominance. Eventually Venice gained the upper hand in trade with the Muslim Levant, and it also developed strong commercial ties with southern Germany and central Europe. Genoa was increasingly pushed into the western Mediterranean, focusing on trade with North Africa and Iberia, and becoming the main terminus for overland trade with Northwest Europe.

From being a center of trade, Northern Italy naturally became a center of production. Of course, trade itself created a demand for certain goods, such as ships, provisions, packaging, and armaments. In addition, goods arriving in trade provided local manufacturers with models to imitate. As the quality of the imitations improved, many were added to the region's exports.³⁸ The growth of manufacturing was aided by the availability of imported raw materials—itsself the result of extensive trade and better transportation connections. For example, the reputation of Venetian glassmakers owed much to their use of high-quality sand and of soda ash rather than potash. Both were imported from Syria: both made ideal ballast for ships carrying cotton, which was bulky but light.³⁹ Manufacturing developed throughout Northern Italy, with important centers at Florence, Milan, and other inland cities, as well as at Genoa and Venice themselves. Regional agriculture developed to feed the growing population and to supply expanding industries with raw materials. And the growth of production and of population in the region further stimulated trade, expanding the demand for imported raw materials and foodstuffs. The same forces were at work, of course, in the smaller urban centers of the lower levels of the hierarchy of trade—trade stimulating production and production stimulating trade. However the forces were far more powerful at the level of the zone: its many different regions encompassed a much greater diversity of goods; and its urban

³⁸Jacobs (1969) sees this process as being fundamental to the growth of cities.

³⁹Lane (1973) Ch. 12

center was much larger, offering a greater concentration of demand and greater opportunities for internal trade and specialization.

While Northern Italy began with trade and then developed production, the central region of the northern zone—the Low Countries—began with production and then became a center of trade. The production of woolen cloth in Northwest Europe went back to Roman times. However, it received a significant boost in the eleventh century from expanding trade with Scandinavia. During the twelfth century, the center of the industry migrated from northern France to Flanders, and, as the industry expanded there, the region underwent rapid urbanization. Growing output, increasing wealth, and rising population stimulated trade with neighboring regions both in raw materials—especially wool from England and Spain—and in foodstuffs, such as grain from northern France, fish from Scandinavia, and wine from Bordeaux and the Rhine. Strong demand also stimulated local agriculture and local industries such as brewing and brickmaking. As trade in the northern zone expanded, the economic importance of the Low Countries, together with its central location, made it a natural focus for trade within the zone. In the thirteenth century, it became the focus, too, of inter-zone trade with Northern Italy: once again it was woolens that provided the impetus. Although the Low Countries were at the center of inter-regional and inter-zone trade, natives of the region never dominated commerce in the way the northern Italians did in the southern zone. The merchants trading in Bruges and later in Antwerp were mainly foreigners—Germans, Englishmen, Portuguese, Spaniards, and, of course, Italians.

GEOGRAPHY AND TRADE

While the growth of trade within the two zones stimulated urbanization and production in the central regions it also transformed the peripheral regions by promoting agricultural specialization. This effect was greater in the northern zone, perhaps because it encompassed a greater variety of climatic conditions. The southern zone stretched east-west, rather than north-south like the northern zone, so growing conditions within it were more uniform. As a result, there was less agricultural specialization in the southern zone, and the same basic crops were grown everywhere.

The pattern of production within the two zones resulted in two types of trade flow. The first was between the center and the periphery, with foodstuffs and raw materials flowing to the urbanized central regions, and manufactures and goods imported from

other zones flowing back in return. The second type of trade flow was among the regions of the periphery: as agricultural regions specialized, they increasingly traded with one another. In the northern zone, this trade among the peripheral regions largely flowed through the central region, while in the South, much of it flowed directly from one peripheral region to another. This difference was again partly a result of differences in geography. In the northern zone, the Low Countries were not only economically central, they were also geographically central. It was natural, therefore, that trade between the Baltic and Spain, or between England and Germany, should pass through the Low Countries. In the southern zone, Northern Italy was not a natural crossroads for trade in the Mediterranean. It made more sense to ship directly from Sicily to Spain or from Constantinople to Egypt (however, much of this trade was organized by merchants from Northern Italy and carried in their ships). A second reason why trade in the southern zone was less centralized than in the North was that Northern Italy, unlike the Low Countries, was not the only important urbanized region in its zone: Catalonia, Constantinople, Syria, Egypt, and South Germany, were all at various times important competitors.

THE COMPOSITION OF TRADE WITHIN THE TWO ZONES

The composition of trade reflected, as one would expect, the composition of production and of expenditure. Not surprisingly, the bulk of trade in both zones consisted of foodstuffs, and, among these, the most important was grain.⁴⁰

Despite its importance, however, the inter-regional trade in grain accounted for only a small proportion of the total quantity of grain produced and consumed. Much of the total was consumed directly by producers, and most of the remainder traded at the local and regional level. Even Sicily, the great breadbasket of the South, exported no more than 20% of its output; Poland, its equivalent in the North, exported an even smaller proportion.⁴¹ In the sixteenth century, the 60 million inhabitants of the Mediterranean zone consumed some 120 million quintals of grain annually (roughly two quintals or 200

⁴⁰“It was principally foodstuffs that entered into the Mediterranean trade. Bulk goods such as corn, salt, salt victuals, oil and wine made the greatest demands on shipping space.” Glamann (1977)

⁴¹See Epstein (1991) Ch. 6 on Sicily and de Vries (1974) on Poland.

Kg *per capita*); of this total, overseas trade accounted for no more than 10 million quintals or 8%.⁴²

The reason inter-regional trade in grain was so limited was, of course, the cost of transportation. For example, bringing grain to Rome 100 miles overland from Ancona added 80% to its price; bringing it 500 miles by sea from Sicily added 60%.⁴³ As this example illustrates, transportation by water was much less expensive than transportation by land. Indeed, bringing grain to the nearest port by land frequently cost as much or more than shipping it from there to its final destination by sea. It was no coincidence, therefore, that almost every major city was easily accessible by water. Accessibility by water was no less vital for regions that exported grain: suitable agricultural conditions meant nothing if grain could not be brought to market at reasonable cost.

In addition to the cost of carriage, the transportation of grain involved considerable risk of loss—through shipwreck, spoilage, or piracy. For example, of five ships dispatched from the Baltic to Venice at the end of the sixteenth century, only three arrived: one was lost at sea; another had to be unloaded at Lisbon and the cargo sold, because the grain was deteriorating so rapidly.⁴⁴ Piracy was particularly common in the Mediterranean. Much of it was official: in times of shortage, cities would send out armed galleys to waylay grain transports and bring them back to their home ports (the Knights of Malta were notorious for victualling their island almost entirely in this manner). While cities did pay for the grain they seized, it was they themselves who set a ‘fair’ price.⁴⁵ Predation was not limited to piracy: the grain trade was an easy target for tolls and taxes.⁴⁶ For example, exporting grain from Apulia and Sicily required a license or *tratta* from the government, at a cost of 25-50% of the price of the grain. The various costs of bringing grain to market soon added up. Grain on the farm in Sicily cost 10 Spanish *reales*. To this had to be added the overland transport to the nearest port, 3 *reales*; an

⁴²Braudel (1972) p 420.

⁴³Ball (1977) Ch 6

⁴⁴Braudel (1972)

⁴⁵Parry (1967)

⁴⁶“Fiscal greed was as insatiable over grain as it was over salt.” Braudel (1972) p572

export license, 5; freight to Spain, 3.5; and insurance, 1. Grain delivered to Spain therefore cost 22.5 *reales*, more than double the original price at the farm gate.⁴⁷

Even though the inter-regional trade in grain involved no more than a fraction of total output, it was nonetheless vital to economic development. Since both urbanization and agricultural specialization created chronic local shortages of grain, neither would have been possible without imported supplies. While cities generally relied on their own hinterlands for most of their grain, the larger ones outgrew their local supply and necessarily became dependent on imports.⁴⁸ In the southern zone, Constantinople, Genoa, Venice, and Florence all depended on imported grain, as, in the northern zone, did the urbanized Low Countries (imports accounted for some 14% of their grain in the sixteenth century⁴⁹).

Similarly, agricultural regions were able to specialize in non-grain crops only so long as they could earn their daily bread through trade. Without trade, local grain prices would have remained too high for producers to have even considered specializing in other crops. In the southern zone, as central Spain increasingly specialized in wool and southern Spain in wine and oil, Spain went from being an exporter of grain to being a major importer. Spain imported grain, therefore, not because it could not produce enough itself, but because, *given the opportunity to trade*, other crops were more profitable. The chronic ‘shortage’ of grain was therefore not a cause of trade so much as a consequence of it. In the northern zone, the same story could be told of Norway, which specialized in fish, of the Low Countries, which specialized in dairy products and industrial crops, and of Gascony, which specialized in wine. Each of these regions depended heavily on imported grain.⁵⁰ In the same way, of course, the chronic ‘surpluses’ of the exporting regions were

⁴⁷Parry (1967) These numbers were not atypical. In 1321, the cost of transporting grain from Armenia to southern Italy added 160% to its price ([Cipolla, 1956 #903]). In 1584, the cost of transporting grain from Spain to Tuscany added 120% to its price (Braudel (1972))

⁴⁸Parry (1967) p 156

⁴⁹Unger (1983)

⁵⁰Postan (1970). See Van der Wee (1993) Ch 3 on the Netherlands. The importance of overseas trade in grain was therefore *at the margin*. To argue, as Ball (1977) does, that it was grain exports from the Baltic that sustained the large increase in Europe’s population in the sixteenth century is clearly mistaken.

consequences of trade: they would not have occurred had producers not been able to import the non-grain goods that they desired.

The principal exporters of grain in the southern zone were Sicily and Apulia, the Black Sea, and Egypt. Sicily and Apulia supplied Spain Northern Italy (as well as Rome and Naples). The Black Sea and Egypt supplied Constantinople and, in some periods, Northern Italy too. Initially, the most important exporting region in the northern zone was northern France. However, from the late fifteenth century, the Baltic began to export large quantities of grain and soon became the dominant supplier. Apart from these major exporters, any region, when it enjoyed a particularly good harvest, might occasionally export grain. For example, England was often an exporter, and even Spain found itself exporting grain occasionally (as it did to Rome in 1555⁵¹).

In addition to meeting chronic shortages caused by urbanization and agricultural specialization, overseas trade in grain also played an important role in alleviating acute shortages. Because grain and grain-based food were so important, a relatively small shortfall in the local harvest had a large impact on price: according to ‘Gregory King’s Law’, a 10% drop in supply raised the price by 30%.⁵² A particularly poor harvest could cause local prices to double in a matter of months.⁵³ However, “[as] soon as scarcity became apparent in a particular area, merchants flocked towards it, dispatched their boats, and cleared their stocks.”⁵⁴ For example, London relied mainly on regional supply, but the local harvest sometimes proved inadequate (in the sixteenth century, about one harvest in seven was really bad).⁵⁵ However, imports helped to alleviate the shortage: “merchants in the Netherlands, Germany, and the Baltic, carefully watched the London grain market, and their shipments helped to steady prices.”⁵⁶

Population increased by 20 million, raising grain consumption by roughly 4 million tons (at 200 Kg per capita): Baltic exports never exceeded 200,000 tons per annum.

⁵¹Braudel (1972)

⁵²Michell (1977), Harvey (1991)

⁵³Nielsen (1997)

⁵⁴Braudel (1972) p 574

⁵⁵Hoskins (1964)

⁵⁶Fisher (1935) p 52

The degree to which trade could mitigate local shortages was limited, not only by transportation costs, but also by the considerable risks of overseas trade. Apart from the risks of transportation (already enumerated), the overseas trade in grain involved far greater market risk than local and regional trade. Prices changed rapidly, and, because of slow communications, market response was very imprecise. For example, in 1572 Simón Ruiz of Medina del Campo made a profit of nearly a million *maravedís* from importing grain to Spain. But in 1582 he lost nearly a million and a half when no fewer than 250 vessels arrived there from various destinations almost simultaneously, depressing the price of grain from 170 *reis* to 120 in a few days.⁵⁷ The risk of such market overreaction caused merchants to hold back. In 1578, when merchants in Sicily heard of a terrible famine in Spain, they gathered together 24,000 *salme* of grain, but initially sent off only 6,000. “As for the rest they were unwilling to commit themselves in advance, ‘for it may happen’, they explained, ‘that everyone hastens to the place where he thinks there is most profit and then there is an overabundance of grain’ and of course commercial disaster.”⁵⁸

The grain market in the northern zone was eventually able to mitigate this market risk. This was partly due to its more favorable geography, which, as we have seen, tended to centralize trade. However, it also owed much to the commercial skills of the Dutch. The Dutch first became involved in the grain trade in the fifteenth century to meet their own domestic needs.⁵⁹ Because the soil of Holland was unsuitable for the cultivation of grain, its price there was among the highest in Europe. Dutch merchants, therefore, could make a profit by seeking out cheaper sources overseas. Initially, their imports came mainly from northern France. Although grain was cheaper in the Baltic, the high cost of transportation made importing it from there unprofitable. However, during the sixteenth century, Dutch shipbuilders and merchants succeeded in bringing down the cost of transportation—by building more efficient ships, by finding profitable backcargo, and by lowering the cost of finance and insurance. Since transportation costs accounted for roughly half the price of Baltic grain delivered in Amsterdam, reducing them by 10% or 15% had a significant impact on profitability. As transportation costs were brought down,

⁵⁷Ball (1977) Ch 6

⁵⁸Braudel (1972) p575

⁵⁹Blockmans (1993)

imports of grain from the Baltic to Amsterdam soared. Moreover, with lower transportation costs, Baltic grain became competitive, not only in Holland, but all along the Atlantic coast.⁶⁰ The Dutch therefore re-exported an increasing proportion of the grain they brought from the Baltic—to Antwerp, England, France, Portugal, and Spain. While Antwerp and Spain were such regular customers that Dutch ships increasingly sailed there directly from the Baltic, trade with other markets was more intermittent. Therefore, much of the grain was off-loaded in Amsterdam and stored there ready to be sent to wherever prices were highest.⁶¹ As Amsterdam developed as a market, producers in France, England and the southern Low Countries found it more attractive to send their surpluses there rather than to seek out markets of opportunity.⁶² As a result, the grain trade in the northern zone became increasingly centralized on Amsterdam. It was this centralization that reduced market risk. Whenever there was a shortage anywhere, the response came almost exclusively from Amsterdam. Because information on the amounts being sent was soon common knowledge there, the danger of over-reaction was reduced, and there was less need to hold back.

As the trade in grain illustrates, transportation costs were the principal limiting factor in the trade in foodstuffs. The heavier or bulkier a foodstuff relative to its value, the less profitable it was to transport it over great distances. However, a second limiting factor was perishability. Transportation was slow—no more than 100 miles a day by sea and 25 by land—so only foodstuffs that kept reasonably well were candidates for inter-regional trade. Even grain was not improved by a lengthy sea voyage. Consumers who could afford it preferred to eat the local product: ‘wheat from overseas’ was seen as a last resort for the poor.⁶³

After grain, the next most important foodstuff in the northern zone was fish—not fresh fish, of course, but fish that was dried or salted. Scandinavia was the traditional exporter—dried cod from Norway and Iceland and herring from Schonen in the Baltic.⁶⁴ The North Sea too was a source of herring: Flanders exported salted herring to France and

⁶⁰de Vries and van der Woude (1997) Ch. 9 Foreign trade to mid-17C

⁶¹Unger (1998 [1979])

⁶²Glamann (1972)

⁶³Braudel (1972)

England in the fourteenth century.⁶⁵ In the fifteenth century, the Schonen fishery declined, and the Dutch were quick to fill the gap. Herring became a major Dutch export, much of it going to the Baltic (a profitable backcargo for the grain trade).⁶⁶ The Portuguese pioneered the development of more distant fisheries—the North African and Irish coasts, whaling in the Atlantic, and the great cod fisheries of Newfoundland after these were discovered in 1497; the Portuguese supplied both the northern zone and the southern.⁶⁷ There were also exporters of fish in the southern zone—Sicily, where the tunny industry grew rapidly from the mid-fourteenth century, and the Black Sea, which exported salt fish and caviar.⁶⁸

Next in importance after grain and fish came wine. Although it remained a relative luxury, being consumed only by the well-to-do, wine became a major item of trade in the northern zone as a result of regional specialization.⁶⁹ Wine was initially produced widely throughout Northwest Europe. However, as inter-regional trade expanded during the twelfth and thirteenth centuries, its production became concentrated in the areas with the most favorable growing conditions—a few regions of France, the Rhine, Portugal, and Spain. In the largest single wine trade, between Gascony and England through Bordeaux, shipments reached 100,000 tons a year by 1300.⁷⁰ In the face of imports of better and cheaper wine from overseas, local wines—for example in England and in the Low Countries—were unable to compete, and local production collapsed.⁷¹ In the southern zone, where growing conditions were less varied, there was less regional specialization and wine continued to be widely produced. However, fortified sweet wine—malmsey—

⁶⁴de Vries and van der Woude (1997) Ch. 7

⁶⁵Nicholas (1992)

⁶⁶de Vries and van der Woude (1997) Ch. 7; Unger (1998 [1979])

⁶⁷Davis (1973) Ch. 1

⁶⁸Epstein (1991) CH. 6

⁶⁹However, those who could afford it consumed it in large quantities—perhaps 50 liters a year per capita in the Middle Ages. Alternative beverages, such as hopped beer, spirits, tea, and coffee, were not yet available. Renouard (1970) Ch. 6

⁷⁰Menard (1991)

⁷¹See Van der Wee (1963) on Brabant.

became an important item of trade, exported first from Greece, then from the Italian colonies on Cyprus and Crete, and eventually from Madeira.

In the northern zone, the drink of those who could not afford wine was beer. The overseas trade in beer illustrates rather well the importance of perishability and transportation costs. Before 1200, beer, much like bread, was produced locally—by housewives in the country and by specialized producers in the towns. There was no long-distance trade, because beer spoiled rapidly and had to be consumed soon after it was brewed. In the thirteenth century, however, urban brewers in North Germany began to use hops rather than *gruit* (a mix of herbs, mostly dried myrtle) to preserve and to enhance the flavor of their beer. Because hopped beer kept much longer, trade became feasible. The Hanseatic ports, Hamburg in particular, began to export beer to the Baltic, to England, and especially to the Low Countries. In Flanders, imported beer became so popular that it began to displace both the local product and imported wine. Because of the importance of transportation costs, the Dutch, with their more efficient ships, largely took over the beer trade (this was a prelude to their taking over the rest of the Baltic trade). In the fourteenth century, the Dutch began to substitute their own production of beer, and by the fifteenth, they had largely taken over the market in the Low Countries. Being closer to market, they could undercut German beer. Now, instead of bringing beer from the Baltic, their ships began to bring the grain they needed to produce it. Exports of German beer continued, but only of expensive, high-quality beers that could compete despite the higher transportation costs.⁷²

The problems of perishability and transportation were generally solved for meat by walking the product to market. Herds of cattle and pigs were typically driven from areas of production to areas of consumption and fattened there for slaughter. This was one case where overland transportation was more than competitive with water transportation. Initially, most of the trade in livestock was regional. However, from the late fifteenth century improvements in commercial and financial organization facilitated the development of an enormous long-distance trade in cattle. Jutland in the North supplied the Low Countries and Germany. Hungary, Poland, and the Ukraine in the east supplied

⁷²See Unger (1989) on the beer trade.

the urbanized central regions of both zones. By the 1570s the long-distance cattle trade involved some 250,000 animals a year, and was worth some three million ducats.⁷³

Seaborne trade was largely consisted of animal products rather than live animals.⁷⁴ Salted butter and cheese were important items of trade.⁷⁵ Flanders was an early exporter of dairy products, but from the late fifteenth century it was overshadowed by Holland.⁷⁶ In the thirteenth century, Italian producers found a new solution to the perishability problem—hard cheese (the first being *caciocavallo* and *parmesan*). Sardinia became a major exporter of cheese, and cheese exports from Sicily in the 1370s rivaled its grain exports in value.⁷⁷ Another important animal product was leather, which saw a broad range of uses—saddlery and harness, boots and shoes, gloves, furniture and book covers. There was, consequently, a significant trade in hides, especially in the Mediterranean: North Africa, the Balkans, and the Black Sea were the main exporters; Northern Italy the main importer. Spain, a major producer of leather goods, largely relied on its own supply of hides, but supplemented it with imports.

The trade in fruit and vegetables was again limited by perishability. Onions and garlic kept well and so were an item of trade. There was a substantial trade in olive oil in the Mediterranean, with Greece, Southern Italy, Southern Spain, and Djerba in North Africa being the main exporters. Initially, the only fruit that traded in quantity in the North was apples, but by the sixteenth century Spain and Portugal were sending north sufficient quantities of oranges, raisins, dried figs, and almonds for them to cease to be considered luxuries. In the Mediterranean, dates from Egypt and the Levant, nuts from Provence, and raisins and currants from Zante and Cephalonia in the Aegean traded widely (the last even reaching the northern zone, where they were quite popular in Elizabethan England).

The principal sweetener in the Middle Ages was honey: sugar was very expensive—a luxury ‘spice’ rather than a commodity of mass consumption. The major exporters of

⁷³Blanchard (1986)

⁷⁴Although Sicily was shipping 10,000 head of cattle a year, mainly to Naples, in the mid-fifteenth century (Epstein (1991) CH. 6). There was also an overseas trade in horses, from Sicily and elsewhere, principally for military use.

⁷⁵Unger (1998 [1979])

⁷⁶Van der Wee (1963)

⁷⁷Epstein (1998)

honey were North Africa and Russia (via both the Baltic and the Black Sea). Europeans became acquainted with cane sugar as a result of the Crusades. Initially, they imported it from the Levant and from Egypt (which was also famous for its sugar candy). However, northern Italian merchants soon established sugar plantations geared to export in Palestine, Crete, and Cyprus. In the fourteenth and fifteenth centuries, they were also instrumental in establishing plantations in Sicily, southern Spain and Portugal, and then in the Atlantic islands; by the late sixteenth century, production had spread to the West Indies and Brazil. With each expansion of the area of production, the price of sugar fell, and by the sixteenth century it was being consumed in large quantities by the middle classes.⁷⁸

With clothing the second item of expenditure after food, it is no surprise that textile raw materials, especially fibers, were important items of trade. Wool was produced widely in both zones, but its quality varied. The best wool came from England, which increasingly specialized in its production and became the major supplier first of Flanders and later of Northern Italy. By 1300, England was exporting annually some 30,000 sacks of wool (nearly 11 million pounds).⁷⁹ From the late fourteenth century, however, restrictions on English exports increasingly forced Flemish and Italian producers to turn to Spain for their supplies.⁸⁰ Spain had long been a supplier of low-quality wool, but the introduction of merino sheep there led to a dramatic improvement in quality. Other major exporters of lower-quality wool included North Africa, the Balkans, and Syria.⁸¹ Cotton and silk textiles and fibers had originally been imported into the Mediterranean zone from the East. However, in the early Middle Ages, the cultivation of first cotton and then silk had been introduced by the Byzantines and Muslims, and by the time of the Commercial Revolution there was a brisk trade in cotton fiber and raw silk throughout the southern zone. Major exporters included Syria, southern Spain, and Sicily. The major importers of fibers were the silk and cotton industries of Northern Italy. The best raw silk still came from outside the zone (from Turkestan and China). However, cotton, which was bulkier

⁷⁸Masefield (1967)

⁷⁹Masschaele (1997) Ch. 2

⁸⁰Miller (1971)

⁸¹Lopez (1987)

and less valuable than silk could not bear the cost of overland transportation.

Consequently, European manufacturers had to rely on suppliers within the southern zone (for climatic reasons, cotton was never cultivated in the northern zone). Flax and hemp were the least valuable fibers, being used in the production of cheaper fabrics, as well as of sacking, canvas, and rope. Consequently, they could not bear much in the way of transportation costs and there was little inter-regional trade or specialization in their production (although some flax and hemp was exported from the Baltic). Flax and hemp were produced widely and sold to textile producers mainly at the local and regional level.

In addition to fibers, textile production required a number of other raw materials. Dyestuffs were an important item of trade. Some were produced in one or other of the two zones—madder, woad (especially from the region around Toulouse), saffron (from Italy, Spain and Cilicia), indigo (from Sicily), gall-nut (from the Black Sea coast), and cramoisy (from Asia Minor, Greece, and Spain).⁸² However, many dyestuffs were available only from the East. There was a significant trade in alum, a mordant used in fixing dyes. The main source in the Middle Ages was Phocea in Asia Minor, which was under the control of two rival Genoese syndicates. Because of its bulk and weight, transportation costs were crucial for the alum trade and this provided an incentive for some important innovations in shipping.⁸³ With the capture of Phocea by the Ottomans in 1455, an acute shortage of alum developed—prices rising by as much as 500%. This stimulated a feverish search for new sources. A major find at Tolfa in the Papal States turned the Vatican into the principal supplier of this essential chemical (although marketing remained in the hands of the Genoese).⁸⁴

Wood was probably the most important structural material of the Middle Ages. Its many uses included construction; shipbuilding (planks and masts); packaging (casks for fish, wine, and beer); furniture; wagons and carriages; farm implements, tools, utensils, and machinery (all were made mostly from wood); wood products such as pitch, tar, and potash (used as alkali for the textile industry and in the production of soap, glass, and saltpeter); and fuel as firewood or charcoal. Given the scope and the extent of this

⁸²Laven (1966)

⁸³See Kohn (2001d).

⁸⁴Ball (1977)

demand, it is hardly surprising that local supplies ran out in some regions, especially in the more arid southern zone. As a result, there developed a substantial trade in timber. Since transportation costs could amount to twenty times the price at the stump, accessibility by water was vital.⁸⁵ In the southern zone, the Adriatic and the Dauphiné (via the Rhône) were important suppliers. In the northern zone, Scandinavia was the principal supplier through the thirteenth century, with the Baltic taking over in the fourteenth. Because of the cost of transporting timber, much of it was traded in the form of wood products: the Baltic exported staves, planks, boards, ships, potash, pitch, and tar as well as logs.

As a result of the increasing scarcity of firewood and charcoal, especially in urbanized regions, consumers increasingly turned to alternative fuels such as peat and coal. The Low Countries relied mainly on local supplies. However, in the late fifteenth century, increasing demand, especially from Antwerp, caused prices to rise steeply. This encouraged the importation of peat from the northern Netherlands and of coal from the north of England. Most of the coal shipped from the north of England, however, went to London—some 170,000 tons a year by the end of the sixteenth century.⁸⁶ Another fuel that entered inter-regional trade was wax. Wax candles spread to Europe from the Muslim countries in the thirteenth century, replacing tapers, oil lamps, and other weaker and less reliable sources of light—at least for the well-to-do.⁸⁷ Important exporters of wax included Greece, North Africa (Bougie), and Russia (via both the Black Sea and the Baltic). By 1525, England alone was importing some 600 tons of wax a year from the Baltic.⁸⁸

The principal mineral of zone trade was salt. Salt was used not only for flavoring but in large quantities to preserve meat, dairy products, and above all fish; by the sixteenth century, it was also used extensively in various chemical processes. In the Mediterranean, although much salt was produced locally, large quantities shipped from Venice, Istria, Ibiza, Cyprus, Chios, and Sicily. In the northern zone, the traditional sources of sea salt

⁸⁵Parry (1967)

⁸⁶Palliser (1983) p257

⁸⁷Mazzaoui (1981)

⁸⁸Scammell (1981) Ch. 2

were, for climatic reasons, the west coast of France (especially the Bay of Bourgneuf) and Portugal. The salt springs of Lüneberg, via Lübeck, were a major source for the Baltic. The great salt fleets of the Hanse (sometimes comprising as many as 100 ships) dominated the salt trade on the Atlantic coast until it was taken over by the Dutch in the sixteenth century. Dutch ships bringing grain south from the Baltic to Iberia found salt to be a perfect backcargo. By 1570 the tonnage of salt that the Dutch were bringing into the Baltic amounted to about half the tonnage of the grain they were bringing out.⁸⁹

Metals, too, traded extensively. This was, however, the age of silver, not of iron: in the early sixteenth century, Europe's output of silver was 2-3 million ounces, about the same as it is today, while its output of iron was no more than 100,000 tons, a small fraction of today's output.⁹⁰ Silver traded widely within the two zones as well as being an important item of inter-zone trade. It flowed from the main producing regions of Central Europe to the central regions of the two zones—to the Low Countries in the North and to Northern Italy in the South. It then flowed from the Low Countries to the Baltic (and later in Portuguese ships to Asia) and from Northern Italy to the Levant. Although some gold was mined in Hungary, most of Europe's supply came from West Africa via the Maghreb and Egypt.⁹¹ The demand for copper increased with the growing use of bronze cannon from the fifteenth century. It received a major boost with the discovery of extensive deposits of calamine (zinc), which led to the renewed production of brass.⁹² The growing urban demand for copper and brass products, especially in the two urbanized central regions, stimulated production in Hungary and Sweden.⁹³ The increased production of copper in turn stimulated the demand for lead and tin (traditional English exports): lead was needed to extract silver from argentiferous copper ore; tin was added to copper to produce bronze.⁹⁴ Iron production grew rapidly in the sixteenth century, stimulated by growing demand for iron tools and hardware, and by the increasing use of iron in place of bronze in the casting of canon. However, because sources of iron were widespread, inter-

⁸⁹Ball (1977); Unger (1998 [1979])

⁹⁰Nef (1964)

⁹¹ For more on bullion flows, see Kohn (1999b).

⁹²Nef (1987)

⁹³Van der Wee (1981)

⁹⁴Palliser (1983) Ch. 8

regional trade was relatively modest, Spain and Sweden being the most important exporters.⁹⁵

As at all levels of the hierarchy of trade, zone trade in manufactured goods was dominated by textiles. While only the more valuable fabrics could bear the costs of inter-zone commerce, and while trade in the cheapest was limited to the local and regional level, a very broad range of fabrics—finished and unfinished—was traded at the zone level. Woolens predominated in the North. The Low Countries and England exported woolens to the Baltic and to Iberia as well as to the southern zone via Northern Italy. Woolens were important in the South, too, with Northern Italy marketing its own fabrics, as well as those of the North, throughout the southern zone. In addition, the southern zone saw an extensive trade in silks and cottons. These came originally from the Levant, but Northern Italy soon became an important producer and exporter. Although its fabrics were generally inferior to those produced in the Levant, they found a wide market—even in Syria and Egypt—because of their lower cost. Large quantities of cotton were shipped to the Black Sea ports, partly for re-export to Russia and Central Asia; the trade was so important there that cotton cloth became the measure of value by which the prices of other goods were reckoned.⁹⁶ Linens, produced widely in both zones, traded mostly at the regional level, but the better qualities—from Normandy, the Low Countries, Switzerland, Germany, and Egypt—traded more widely. The situation was the same with respect to leather goods: only the better qualities—in this case from Italy and Spain (cordovans)—entered into inter-regional and inter-zone trade.

A large array of other manufactured goods entered into trade, but in much smaller quantities than textiles. Exports of metals, like exports of wood, were sometimes embodied in manufactured goods. For example, England exported pewter (from tin) and South Germany exported copper goods, especially pots. Venice, the center of the bullion trade, exported silverware, jewelry, and minted coins. There was also a brisk trade in arms and armor: in the northern zone, Cologne and Liège were significant exporters; in the southern zone, it was Milan and Brescia and later Augsburg and Nuremberg. Exporters showed little hesitation in selling arms to the enemy: Venice supplied the

⁹⁵Sella (1977)

⁹⁶Mazzaoui (1981)

Muslims during the Crusades, and the Dutch continued to supply Spain during the Revolt.⁹⁷ The urbanized central regions exported a wide variety of other goods: Northern Italy exported glass, soap, ceramics, paper, and books; the Low Countries exported bricks and tiles, ceramics, books, tapestries and paintings.

The southern zone was home to a significant slave trade. Domestic slavery had always been widespread in the Mediterranean, but the numbers involved were generally small. However, the slave trade expanded considerably from the thirteenth century for two reasons. First, the Mamelukes (themselves former slaves) came to power in Egypt, and they required slaves in large numbers to fill the ranks of their armies. Second, the Italians, especially the Genoese, faced with a shortage of manpower in their plantations and mines in the eastern Mediterranean, turned increasingly to slave labor. The principal slave traders were the Venetians, Genoese, and Catalans (these were, of course, the principal traders in most things). And the principal exporters of slaves were the Balkans (Greeks initially, but then mainly Slavs) and the Black Sea (mainly Caucasians); Candia and Tana, respectively, were the main entrepôts for these trades. When the Spanish and Portuguese, under Genoese tutelage, established plantations, they too relied on slave labor. By the 1440s, the Portuguese had reached West Africa and were importing African slaves to Portugal, both for their plantations in the Algarve and for domestic service. When the natives of the Atlantic islands proved to be an insufficient source of slave labor for the plantations there, the Spanish and Portuguese began to use African slaves too. By the sixteenth century, the Portuguese were shipping African slaves across the Atlantic to supply the expanding sugar plantations of the Americas.⁹⁸

In both zones, in addition to the trade in goods, there was an extensive trade in services. The great maritime traders—the Venetians, Genoese, Catalans, Portuguese, and the Hansa—in addition to carrying their own goods, provided transportation services to others. For example, it was mainly the Genoese who carried the maritime trade of

⁹⁷Scammell (1981) Ch. 3

⁹⁸Lane (1973) Ch. 10; Scammell (1981) Chs. 3 and 4; Phillips (1998); Davis (1973) Ch. 1. It is Verlinden (1970) who established the continuity between the use of slave labor in Genoese and Venetian colonies, such as Chios and Crete, in the Middle Ages and the use of slave labor in the Atlantic islands and the Americas, as well as the role of the Genoese in transferring this system.

Florence, which had no port of its own until 1421.⁹⁹ There were, in addition, several cities and nations that specialized in the provision of shipping services—in the South, Ancona and Ragusa (the latter specializing in bulk cargo); in the North, the Basques, Bretons, and Dutch.¹⁰⁰ Everyone, however, had ships: thousands of small ships of every possible origin plied the coastal trade in both zones and carried much of the total cargo.¹⁰¹ The transportation of passengers was another important service—especially in the Mediterranean. Genoese and Venetian galleys carried Christian pilgrims and Crusaders to the Holy Land, and they also carried Moslem pilgrims and merchants between North Africa and Alexandria.¹⁰² Inland transportation was important too—carrying goods and passengers along rivers, canals, and roads to urban centers and ports. Commerce was itself an important service. For example, the Venetians and Genoese earned substantial profits from their trade within the Black Sea (mainly between the Black Sea ports and Constantinople), between Constantinople and Alexandria, and between Alexandria and North Africa.¹⁰³ Financial services and insurance were important service exports, especially for the Florentines and Genoese.¹⁰⁴ Military services—the provision of mercenaries—were a significant source of service income, especially for the Genoese, Catalans, and Swiss. And the biggest service industry of all—a monopoly for most of the period—was the Church.¹⁰⁵

⁹⁹Fryde (1974)

¹⁰⁰Parry (1967). Since inter-zone transportation costs for shipping services were low, almost by definition, they were also an item of inter-zone trade. Basque, Biscayan, Breton, and Norman ships were providing transportation services in the Mediterranean in the fifteenth and sixteenth centuries. Braudel (1972)

¹⁰¹Laven (1966)

¹⁰²Scammell (1981) Ch. 3

¹⁰³Scammell (1981) Chs. 3 & 4

¹⁰⁴See Part 2

¹⁰⁵Ekelund and al (1996)

THE IMPORTANCE OF INTER-REGIONAL TRADE

Inter-regional trade within the two zones was quantitatively smaller than local and regional trade, but much larger than inter-zone trade.¹⁰⁶ For example, total trade in the Mediterranean in the sixteenth century has been estimated at some 300 million ducats a year.¹⁰⁷ Of this, the grain trade amounted to perhaps 40-50 million ducats: this alone was ten times the value of American silver arriving in Spain each year.¹⁰⁸ The inter-regional cattle trade in the sixteenth century was worth over three million ducats: this was more than double the value of the Asian spice trade (worth between one and one and a half million ducats a year).¹⁰⁹ Despite the numbers, however, trade within the zones has typically received much less attention than trade between them. Perhaps this is because a cargo of spices or silver, won on a long and perilous ocean voyage, has a greater claim on the imagination than a cargo of rye or a herd of cattle. Or perhaps it is because historians have too readily adopted the bias of contemporaries, who themselves often gave greater status to inter-zone trade. Venice, for example, in the fourteenth century banned all trade in foodstuffs from St. Marks and the Rialto (its 'central business districts'), which were henceforth to be reserved exclusively for grand commerce with the East.¹¹⁰

¹⁰⁶Zone trade is better documented than local and regional trade. The merchants involved were more substantial, so that their records are more likely to have survived. Moreover, a large part of zone trade was subject to customs duties, port charges, and transit fees, the records of which are, in some cases, quite voluminous.

¹⁰⁷Braudel (1972)

¹⁰⁸See Braudel (1972) on the grain trade. The value of silver arriving from the Americas was about 5 million ducats a year: Barrett (1990) estimates annual production in the Americas at about 290 tons a year, and exports to Europe at about 200 tons. A ducat bought about 43 grams of silver, so one million would have bought about 43 tons.

¹⁰⁹See Blanchard (1986) on the value of the cattle trade. Subrahmanyam and Thomaz (1991) estimates the total amount of spices arriving annually in Europe at about 3,000 tons. The price of pepper, the largest import, varied from 20-40 ducats a quintal (200-400 ducats a ton). This gives a total of 0.6 million to 1.2 million ducats.

¹¹⁰Jones (1997) Certainly, many historians have understood the relative importance of zone and inter-zone trade. For example: "When the history comes to be written not only of the alum trade but of the trade in wine and grain, salt, cotton and even sugar and silk, we shall see a very different economic history of the Mediterranean world emerge, in which pepper and drugs will only play a very minor role, particularly after

Trade within the zone, in addition to its greater quantitative importance, arguably contributed more than inter-zone trade to economic development. As we shall see, inter-zone trade certainly did have an important contribution to make. However, it was principally trade within the zone that was the driving force in transforming both the technology of production and the technology of trade. It transformed the technology of production through its effects on regional specialization and on the growth of the urbanized central regions. Regional specialization raised productivity by exploiting comparative advantage and by promoting technological progress.¹¹¹ Inter-regional trade within the zone had a greater impact on specialization than trade at the local and regional level, because the zone encompassed a greater diversity of conditions, and because its much larger population supported a finer division of labor. Inter-regional trade also had a greater impact than inter-zone trade, which was generally too small, by itself, to induce much specialization. The growth of the urbanized central regions of the two zones—Northern Italy and the Low Countries—was fueled primarily by the expansion of trade within each zone, although, as we shall see, inter-zone trade was also important to them. As the central regions grew, they supported an increasing internal division of labor in their industries. The demands of growing industry and of growing population stimulated local agricultural production. As a result, the two central regions became hotbeds of technological progress both in manufacturing and in agriculture.¹¹²

Another reason why trade within the zone was so important for economic development was its focus on mass-market goods. The production of mass-market goods was ultimately much more important for technological progress than the production of luxuries. The clientele for mass-market goods was the middle, or even lower, classes. Demand for such goods was therefore highly sensitive to price, so that reducing costs could expand sales considerably. Moreover, because margins were typically low, a small reduction in costs could mean a large increase in profits.¹¹³ The incentive to lower costs stimulated innovation in the production of mass-market goods and in the transportation of

the fourteenth century...” (Jacques Heers, *Revue du Nord*, January-March, 1964, quoted by Braudel (1972)).

¹¹¹See Kohn (2001b) and Kohn (2001c).

¹¹²These themes are pursued in greater detail in Kohn (2001c) and Kohn (2001b).

¹¹³Unger (1980) Introduction

raw materials. For example, the mass-market cotton industry of Northern Italy pioneered innovations in the organization and technology of textile manufacturing that were subsequently adopted by other, more up-market, industries.¹¹⁴ While low-margin goods were important in local and regional trade too, these markets were too small, in the absence of inter-regional trade, to make innovation worthwhile. On the other hand, inter-zone trade dealt mainly in luxuries for the wealthy—a market more concerned with quality than with price. Because margins were high, cost-cutting was not a priority.¹¹⁵

As we have seen, trade at the level of the zone involved greater difficulties than trade at the local and regional level: it was more impersonal; transportation costs were higher; finance was more important; and market risk was greater. Because the challenges were greater, inter-regional trade played a correspondingly greater role in institutional development. It was a more important source of innovations in commercial and financial techniques and organization. Some historians have argued that compared to the risks of inter-zone trade, trade within the zones was relatively routine and risk-free.¹¹⁶ While this may have been true for some sectors—the wine trade, for example—it was far from true for others. The grain trade, in particular, was rich enough for any merchant's blood. Indeed, it was too rich for Simón Ruiz: after his losses in 1582 he decided to quit the grain trade and concentrate on spices (the inter-zone good *par excellence*), where risks were more manageable.¹¹⁷ Indeed, because of its challenges, the grain trade was particularly important in stimulating institutional innovation—from the Italian 'supercompanies' of the thirteenth century to the Amsterdam grain market of the sixteenth and seventeenth. Innovations in the technology of trade devised to meet the challenges of inter-regional trade were often adapted subsequently to meet the needs of inter-zone trade. The supercompanies, while they began in the grain trade, went on to become inter-zone traders in English wool as well as important international financiers. The Amsterdam market, which began as an intermediary in the inter-regional trade in

¹¹⁴Mazzaoui (1981) p 48-53.

¹¹⁵See Kohn (2001b) and Kohn (2001c) for a detailed discussion of productivity and innovation in agriculture and industry respectively.

¹¹⁶Lopez (1987) p375

¹¹⁷Braudel (1972)p444

grain, went on, in the seventeenth century, to revolutionize the inter-zone trade in spices and bullion.

INTER-ZONE TRADE

Trading costs between zones were, by definition, significantly higher than trading costs within zones: it was the steep rise in trading costs that separated one zone from another. The component of trading costs that was most responsible for this separation was the cost of transportation. While transportation within a zone was largely by water, transportation between zones was either by land or, if by water, then over especially long and hazardous routes. There were, in pre-industrial Europe, three important inter-zone trades—trade between the two zones of Europe, trade with Asia, and trade with the Americas.

As one would expect, inter-zone trade was mediated by the urbanized central regions. Being centers of trade within their zones, they offered the greatest range of trade goods together with the best commercial and financial facilities. As transportation hubs, they offered the lowest transportation costs. Trade between the zones of Europe was largely conducted between the urbanized central regions of the two zones—the Low Countries and Northern Italy. Before the sixteenth century, Northern Italy also played the role of entrepôt linking the northern zone of Europe with Asia and Africa. Northern Italy had links with Asia via the Levant and with Africa via the Maghreb and Egypt. With the development of the transoceanic maritime routes, however, the northern zone increasingly traded with other parts of the world directly.

The extent of inter-zone trade was, of course, limited by the level of trading costs. The high cost of transportation between zones meant that only goods of high value relative to weight or bulk were traded: land transportation of heavy or bulky goods over long distances was prohibitively expensive. For example, during the grain crisis of the late sixteenth century, Venice sent its secretary of state, Marc Ottobon, to the Baltic to search out supplies. He found that sending grain overland to Venice was out of the question, since the cost of transportation would have quadrupled its price.¹¹⁸ In contrast, for goods that had high value relative to their bulk or weight, the cost of overland transportation was less of an obstacle. For example, carrying silks and spices overland

¹¹⁸Glamann (1977)

from China to the Middle East, a journey that might take a year, added only 14% to their price.¹¹⁹ However, in addition to higher transportation costs, inter-zone trade often incurred higher transactions costs and, because of the lengthy shipping times and high risk, a higher cost of finance. Consequently, even among goods that had high value relative to weight or bulk, only those offering a significant margin—a large difference between buying price and selling price—were potentially profitable items of inter-zone trade.

Inter-zone trade was limited, therefore, at least initially, to goods that had *both* a high value relative to weight or bulk *and* commanded a significant margin—goods such as spices, bullion, and luxury textiles. Indeed, it was generally the search for goods such as these that led to the opening of new trading routes. It was, for example, the search for bullion and spices that motivated the great explorations of the late fifteenth century. Given the nature of the goods involved, inter-zone trade was initially governed largely by the demands of the wealthy. However, where trading costs declined, the range of goods expanded. As transactions costs and the cost of finance fell, it became profitable to trade in goods commanding a more modest margin, although still with a high value relative to weight or bulk. As transportation costs fell, it became profitable to trade some relatively valuable bulk goods.

TRADE BETWEEN THE TWO ZONES OF EUROPE

Contact between the two zones of European trade was initiated in the early twelfth century by Flemish merchants seeking markets for their woolen cloth. These merchants made the long and arduous journey overland to Northern Italy—to Genoa, in particular. There, from the proceeds of their sales, they purchased for their return trip products of the Mediterranean zone—such as silks, Cordovan leather, and sugar—as well as gold and ivory from Africa and, above all, spices from Asia.¹²⁰

During the twelfth century trade between the northern and southern zones was largely taken over by merchants from Northern Italy. Their competitive advantage came from their ability to lower trading costs. Because the urbanized central region of the North lacked a major commercial center that could be the focus of inter-zone trade, the Italians

¹¹⁹Rossabi (1990)

¹²⁰Van der Wee (1993)

created one themselves at the Fairs of Champagne near Paris. The Italians transformed what had been a regional fair into an international emporium. The centralization of trade at the Fairs, the sophisticated trading facilities that they provided, and the settlement system provided by the Italian bankers, all had the effect of lowering transactions costs. That is, the organization of the Fairs made it easier, and so cheaper, for strangers to trade with one another. In addition, the money market at Champagne, developed by Italian merchant bankers, helped to lower the cost of financing inter-zone trade. And the cost of transportation was lowered by specialized carriers or *vectuarii* from Asti and Genoa who ran a regularly weekly service to and from the Fairs.¹²¹

As trading costs declined, the range of goods traded between the two zones expanded to include lower-margin items. However, since overland transportation remained expensive, such goods still needed to have a relatively high value-to-weight ratio. The trade in textiles, for example, was originally limited to luxury woolens from Flanders and luxury silks from the East: both high-margin fabrics sold only to the wealthy. As trading costs fell, however, the trade in textiles expanded to include a variety of lower-priced fabrics. The Italians began to import cheaper and lighter woolens from the Low Countries and from England. They often purchased these unfinished and had them finished in Northern Italy—especially in Florence—for re-export throughout the Mediterranean and beyond. In the other direction, the Italians exported cheaper silks—Italian-made imitations of the finer Eastern product—as well as Italian-manufactured cottons and fustians. Fustian, a cotton-linen blend, was a relatively mass-market product that became quite popular with the middle and even lower classes of the urban North; it even reached the rural market, displacing homespun woolens and linens.¹²²

The low trading costs and the broad range of goods at the Fairs attracted yet more trade, making Champagne the prime destination for merchants from all over Europe. For example, the German silver-mining boom of the thirteenth century created an enormous demand in the mining regions for consumer goods of all kinds: much of this was satisfied by German merchants trading at Champagne. The large amounts of silver these

¹²¹On settlement, see Kohn (1999c); on bills of exchange, see Kohn (1999d); on transportation, see Kohn (2001d).

¹²²Mazzaoui (1981)

merchants brought with them to pay for their purchases made Champagne a major market for bullion. Much of the silver was purchased by the Italians and shipped south.¹²³ Some of the other goods traded at Champagne included tin and lead from England; weapons from Liège and Milan; honey, olive oil, almonds, and raisins from Spain; and wax, leather, fur, cumin, and dates from North Africa. Trading costs were low enough to permit a small trade in textile raw materials: from the South, this included raw cotton to be made into candlewicks, gloves, and bonnets in Flanders as well as alum; from the North, there were small shipments of fine wools from England.

A major change occurred in the pattern of inter-zone trade around the turn of the fourteenth century. A direct connection by sea was established for the first time between Northern Italy and the Low Countries. In the subsequent decades, maritime trade expanded and overland trade shrank. As this happened, the focus of North-South trade shifted from the Fairs of Champagne to the sea-port of Bruges. The Fairs fell into decline, and, by 1325, they had ceased to be an important center of commerce (although they continued to be a center of finance for some time longer). The reasons for this change in the pattern of trade are controversial. However, there seem to have been at least two distinct forces at work—one promoting trade by sea, the other depressing trade by land.

The force promoting trade by sea was the steady fall in the cost of maritime transportation. The most important factor was a significant fall in predation costs: by 1212 the *Reconquista* had cleared the whole of the eastern coast of Iberia of Moslem occupation, making passage through the Straits of Gibraltar much safer for Christian ships.¹²⁴ Other factors included improvements in ship design, improvements in navigation, and the development of marine insurance. A profound change in commercial organization that took place during the thirteenth century also contributed to lowering the cost of maritime transportation. Rather than merchants traveling with their goods, which had until then been the practice, the larger firms began to rely instead on resident representatives who remained permanently in the important commercial centers. Such

¹²³Additional silver was brought over the Alps to Venice directly by German merchants trading there, so that Venice, too, became an important bullion market. Much of the German silver that arrived in Northern Italy was re-exported to the Levant and, from there, onwards to the East. See Kohn (1999b) for more on the trade in bullion.

¹²⁴Ball (1977)

representatives, located in Flanders or England, could organize in advance return cargoes for ships arriving from Northern Italy: this decreased turnaround time and improved capacity utilization. The falling cost of maritime transportation made feasible for the first time a substantial inter-zone trade in heavy and bulky items. This trade seems to have been pioneered by the Catalans, who first sent ships to Southampton, probably from the 1260s, to purchase English wool for their textile industry.¹²⁵ The Genoese followed soon thereafter, their ships arriving in Flanders and England no later than the 1270s.¹²⁶ The Genoese merchants who pioneered the route seem to have been motivated by a desire to expand their sales of alum in the North. The first Genoese ship known to have arrived in England, in 1278, carried a cargo of alum and other textile raw materials, and was partly owned by Benedetto Zaccaria, a leader of the Genoese alum monopoly.¹²⁷

At the same time that the cost of transportation by sea was falling, the cost of transportation by land was rising. The main reason was widespread warfare. The 1290s saw the beginning of a series of conflicts involving Flanders, England, and France that was to continue for a century and a half; other wars broke out in Germany and in Northern Italy.¹²⁸ These wars increasingly interfered with, and raised the cost of, overland trade: tolls and taxes were increased to pay for the wars; pillage, brigandage, and civil unrest made the passage of merchants dangerous and expensive; governments prohibited 'trading with the enemy' (for example, at one time the French prevented Flemish merchants from attending the Fairs of Champagne). Because of the rising cost of transportation by land, goods that had previously made their way by land to Champagne were increasingly shipped by sea to Bruges. Driven by a desire to maintain its inter-zone

¹²⁵Fryde (1974); Ashtor (1983)

¹²⁶Ashtor (1983)

¹²⁷Scammell (1981) Ch. 4; Ashtor (1983). The major source of alum at this time was Phoecea in Asia Minor, which was controlled by two rival Genoese syndicates; the trade in alum was the most important Genoese trade with the Levant. More generally, the Genoese, although they had an important textile industry of their own, specialized in providing raw materials to other textile manufacturers in Northern Italy and elsewhere. Such raw materials included, in addition to alum, fibers (silk, cotton, and wool) and dyes. They acquired these materials from a wide variety of sources and re-exported them to their customers.

¹²⁸Munro (1991)

trade in spices in the face of increasing problems with the overland route, Venice sent its first state-sponsored fleet of galleys to the North in 1319.¹²⁹ The increasing importance of maritime trade between the zones transformed Bruges from a center of trade within the northern zone, where Hanseatic merchants had come to trade Baltic goods for Flemish cloth, into the main northern terminus of trade between the zones.

The development of the maritime route allowed heavy and bulky goods to play a significant role in inter-zone trade for the first time. The most important bulk items were various textile raw materials. Alum, shipped by the Genoese, arrived in considerable quantities: in 1445, for example, nine of their ships landed a total of some 2,500 metric tons of alum in Bruges intended for the woolen industry of Flanders.¹³⁰ From the late thirteenth century, Venetian ships began to deliver quantities of raw cotton sufficient to allow the establishment of a local cotton textile industry in Flanders.¹³¹ The principal return cargo for Italian ships was initially English wool—some of it shipped directly from England and some from the wool markets in the Low Countries. This trade was largely in the hands of a few large Florentine firms with branches in England. The Florentines relied mainly on Genoese ships, and some Catalan, and even operated a few of their own.¹³² The wool arrived in Genoa or Pisa and from there was carried overland to Florence and to other centers of woolen manufacture.¹³³ In the late fourteenth century, wool exports from England declined rapidly and exports of cloth increased. The reason was a steadily rising export tax on wool that made it more profitable to export wool in the form of cloth, which was relatively tax-free.¹³⁴ English woolen cloth, exported largely semi-finished, became the principal backcargo for Genoese ships returning from

¹²⁹Ashtor (1983)

¹³⁰Fryde (1974) Another 200 tons were landed at Southampton for the English woolen industry. The Genoese ships also brought dyes from the Mediterranean such as woad from Lombardy (a blue dye) and madder (a red).

¹³¹Mazzaoui (1981) Ch 2.

¹³²For a brief period in the fifteenth century, Florence operated a fleet of state-owned galleys, largely to ensure supplies for its textile industry Mallett (1967).

¹³³Fryde (1974)

¹³⁴Munro (1998)

Northwest Europe.¹³⁵ In addition to textile raw materials, the one other important new bulk cargo carried by sea from the southern zone was malmsey wine: wine could not be carried overland without spoiling.

It should be noted that these bulk goods were nonetheless still relatively valuable, high-margin items: profits of over 25% on shipments of alum and of over 35% on shipments of wool were not unusual.¹³⁶ In this respect the inter-zone trade in bulk goods differed significantly from the trade within the two zones: trading costs remained much higher in inter-zone trade.

For an extended period during the fourteenth century, the wars that had already made overland trade between the two zones via Champagne uneconomic, also succeeded in interrupting maritime trade. From the 1330s to the 1390s, the war between England and France in the North and the war between Naples and Sicily and their allies in the South, made the transportation of goods by sea too hazardous to be profitable.¹³⁷ In the face of these obstacles, Italian merchants, unwilling to forego trade altogether, sought alternative overland routes that skirted the war zone to the east.

Venice had long conducted an important transalpine trade with the mining regions of Central Europe: the route passed over the Brenner Pass and through Augsburg and Nuremberg in South Germany. In the fourteenth century, Venetian merchants extended this route northwards to Cologne and from there established contact with the Hanseatic center of Lübeck and with the Low Countries.¹³⁸ The cost of using this new overland route steadily declined: a lull in warfare from the middle of the fifteenth century lowered predation costs, and improvements in the organization and means of transportation lowered the cost of carriage.¹³⁹ Consequently, when the maritime link between North and South was reestablished towards the end of the fourteenth century, the overland route remained competitive. Indeed, by the sixteenth century, merchants preferred to send

¹³⁵ Fryde (1974)

¹³⁶ Fryde (1974)

¹³⁷ Lane (1973) Ch. 10.

¹³⁸ Lane (1973) Ch. 10; Scammell (1981) Ch. 2. The Italians also made contact with the Hanse from their Black Sea bases via Lvov.

¹³⁹ See Kohn (2001d).

overland all but the bulkiest goods: in particular, inexpensive textiles were largely transported by land.¹⁴⁰

The expansion of trade along the new overland route contributed to the economic growth of South Germany through which it passed. The local economy had been thriving since the thirteenth century and was relatively highly urbanized, with the towns producing a variety of textiles. Their linens, in particular, made from the superior local flax, were of sufficiently high quality to be exported to Italy and to the Levant. In the fourteenth century, rising costs in the industrial heartland of Northern Italy—due largely to warfare and to civil unrest—caused Italian merchants to move production to South Germany. The most important industry to migrate was the manufacture of fustians. The growth of this industry in South Germany was aided substantially by the access to northern markets that the overland route to the Low Countries provided.¹⁴¹

The growing overland trade through Germany contributed, too, to the rise of a major new commercial center in the North—the Brabantine city of Antwerp. Antwerp, originally a hub of zone trade in foodstuffs¹⁴², grew in importance when it became from the 1420s the main continental outlet for English cloth (Bruges, under pressure from the Flemish woolen industry had declined the honor).¹⁴³ It was Antwerp that became the main northern terminus of the new overland route from Italy and South Germany. Because of the growing burden of tolls on the Rhine between Cologne and Dordrecht, merchants increasingly sent their goods to the Low Countries across country by road instead. Antwerp was the most convenient destination.¹⁴⁴ Moreover, as a burgeoning emporium for cloth, both English and Brabantine, Antwerp had the added attraction of being a perfect outlet for South German fustians (as well as a source of inexpensive woolens for the South German market). When Central European mining revived from the

¹⁴⁰Braudel (1972); Munro (1997) Munro argues that there was some decline in the maritime trade as a result of competition from the overland route.

¹⁴¹Mazzaoui (1981) Ch. 7; Van der Wee (1993)

¹⁴²Van der Wee and Materné (1994) Especially hopped beer from North Germany and Holland and dairy products and herring from Holland moving towards Brabant and the Rhineland, as well as wine from the Moselle, Rhine, and Alsace going in the opposite direction.

¹⁴³Munro (1998)

¹⁴⁴Van der Wee (1993) Ch. 5; Thrupp (1972) p 302

1460s, it was only natural that South German merchants, already well established in the city, should use Antwerp as the northern outlet for their copper and silver. Antwerp eclipsed its rival Bruges by the end of the fifteenth century. A revolt of Flemish cities, including Bruges, against their Hapsburg ruler, Maximilian of Austria, caused merchants to abandon Bruges *en masse* for Antwerp. Although some returned when peace was restored in 1492, Bruges never recovered. The sixteenth century was to be the century of Antwerp.¹⁴⁵

TRADE WITH ASIA AND AFRICA

Inter-zone trade between the Mediterranean and the East has a very long history, going back at least to classical times. This trade had traditionally relied on two major routes. One was the ancient caravan route across Central Asia, which reached the Mediterranean either via the Black Sea (to Tana or Trebizond and thence to Constantinople) or via Tabriz, Baghdad and Aleppo. The other route originated on the Cambay or Malabar coasts of India. There, local products—pepper being the most important—and goods from the East Indies, Southeast Asia, and China, were loaded onto ships bound either for the Persian Gulf (Ormuz and Baghdad) or for the Red Sea (Jeddah). From Baghdad, they were carried overland to Aleppo or Bursa; from Jeddah, overland to Damascus and Beirut, or transshipped to Tor, and from there taken by caravan to Cairo and Alexandria.¹⁴⁶

The relative importance of the two main routes, and of their various sub-routes, fluctuated with changes in relative transportation costs—especially changes in the cost of predation.¹⁴⁷ The Central Asian route grew in importance after 1240 as a result of the Mongol conquests. These reduced predation costs by creating a large area of peace and order—and of modest taxes. The Central Asian route became even more important after 1291, when the final expulsion of the Crusaders from the Holy Land by the Mamelukes

¹⁴⁵Van Houtte (1977)Ch. 4; Van der Wee and Materné (1994)

¹⁴⁶Laven (1966) Ch. 3 Trade

¹⁴⁷“But, for merchandise of such high value per pound, the routes were determined less by freights than by taxes, less by the cost of transport than the costs of protection, less by physical conditions than by social conditions.” Lane (1973) p71

raised costs on the route through Egypt and Syria.¹⁴⁸ However, the balance tipped back again in the late fourteenth century, when the Mongol empire disintegrated, raising predation costs on the Central Asian route. Italian merchants were forced back to Beirut and Alexandria, and the Mamelukes made the most of it, imposing duties of over 100% on the trade in spices.¹⁴⁹ At the turn of the sixteenth century, there was a steep rise in transportation costs along both routes simultaneously. War between Venice and the Ottomans paralyzed trade through Constantinople and Syria, and internal unrest in Egypt had similar effects on trade through Alexandria. Increased predation costs and restricted supply raised the price of pepper at Venice from 42-49 ducats a quintal in 1496-7, to 70-80 in 1499, and 90-130 in 1500; it remained above 80 ducats a quintal until 1503.¹⁵⁰ Largely by chance, it was just at this time that the Portuguese succeeded in establishing a third route to Asia—a direct transoceanic link around the Cape of Good Hope.

The Portuguese had begun their explorations a hundred years earlier in search, not of the spices of Asia, but of the gold of Africa. The African gold trade was of long standing. Merchants from the Maghreb and the Sudan had for centuries been crossing the Sahara by camel caravan to trade with the kingdoms of West Africa—exchanging salt, silver, copper, textiles, and other manufactures for gold and slaves. In the late fifteenth century, with the price of gold reaching new heights in Europe, the Portuguese redoubled their efforts to reach the West African source by sea and eliminate the Moslem middlemen. The Portuguese were already prodigious traders. They had by the fourteenth century developed an extensive trade with the northern zone in fish, salt, and Mediterranean agricultural products (wine, cork, olive oil, fruit). Trade and fishing had fostered the growth of Portugal's shipping and shipbuilding industries (the latter supplying ships to Genoa, Barcelona, and Florence). And, by the early fifteenth century, the politically powerful trading and shipping interests were seeking new outlets. They succeeded in promoting expeditions to conquer and to colonize Morocco, Madeira, the Canaries (unsuccessfully), and the Azores. Improvements in ship design enabled the Portuguese to round the bulge of Africa in the 1470s and reach the Bight of Biafra. There they

¹⁴⁸Mazzaoui (1981) Ch 2.

¹⁴⁹Lopez (1987) c p375

¹⁵⁰Ball (1977)

developed a rich trade in slaves (as many as 3,500 a year), malaguette pepper, ivory, and above all gold (13-14,000 ounces a year). The Portuguese continued to work their way down the coast of Africa. In 1487, Diaz rounded the Cape, and in 1497, Vasco da Gama was dispatched to India. He returned from Calicut in 1498, his ships 'laden with spices'.¹⁵¹ The Portuguese retained a virtual monopoly of the transoceanic trade with Asia throughout the sixteenth century, facing serious competition only in the seventeenth, principally from the Dutch.

The new transoceanic route does not seem to have had much effect in lowering trading costs, and it is doubtful that the cost of carriage was much lower than it was for the traditional routes. In any event, the cost of carriage was small relative to the value of the silks and spices carried.¹⁵² For example, Pegolotti in the fourteenth century reported that the cost of carrying a cargo worth 25,000 florins along the Central Asian route was no more than 2,000 florins or 8%. Consequently, even if the transoceanic route had had a cost advantage, it would not have made much of a difference, at least for the trade in luxuries.¹⁵³ Predation costs were more of a factor. Indeed, when the Portuguese first reached India, predation costs on the traditional routes were close to prohibitive. A contemporary, the Venetian merchant banker Priuli, expected the Portuguese to undercut the Venetians significantly, because they could avoid paying the high taxes levied in Egypt. The Portuguese, however, initially followed a different policy. They kept their price high and tried to gain the advantage by blocking the Indian Ocean route to Venice by force—that is, by raising the predation costs faced by the Venetians. This policy proved so expensive to the Portuguese that they made little net profit from the trade.¹⁵⁴

However, the main reason why the transoceanic route had little impact on trading costs was that it did nothing to reduce risk. The new route was perhaps even more hazardous than the old. Losses to pirates and shipwreck were substantial: in the course of

¹⁵¹Davis (1973) Ch. 1

¹⁵²Menard (1991) Menard quotes a study by Steensgard that suggests that the cost of carriage around the Cape may have been higher rather than lower.

¹⁵³Rossabi (1990)

¹⁵⁴Lane (1966) Ch 22

the sixteenth century, on average one ship in eight sailing in each direction was lost.¹⁵⁵ Damage to the cargo by swamping or damp was so common that Portuguese spices were generally considered to be inferior to those imported through Venice.¹⁵⁶ But the most important hazard, for the new route as for the old, was market risk. Poor communications and a round-trip time of one to two years meant that cargoes were sent in complete ignorance of the market conditions they would face on arrival.¹⁵⁷ Prices varied widely as supply fluctuated, largely unpredictably, from year to year. And, of course, the long time in transit, together with the high level of risk, made financing very expensive.

There are two pieces of indirect evidence that the new transoceanic route had little impact on total trading costs. First, the range of goods traded did not expand to include bulkier, lower-margin items. On the whole, the Portuguese carried on their ships the same luxury goods that had always been the staples of the Asia trade. Second, the old routes succeeded quite well in competing with the new. The relative size of trade via Lisbon and via Venice is controversial, but the differences were not large. After 1530, when the Portuguese gave up their attempts at blocking the Indian Ocean route to the Levant and Venice, the Venetian trade recovered quite nicely. From 1,000 to 2,500 tons of spices arrived at Venice yearly, estimates vary, compared to an average of 3,000 tons a year arriving at Lisbon.¹⁵⁸

The Venetian trade with the East did not, however, survive the takeover of the transoceanic trade, after 1600, by the Dutch. This was because the Dutch did succeed in reducing trading costs—especially their most important component, risk. The Dutch did this by applying to the spice trade the methods they had developed in the grain trade—a trade similarly plagued by market risk. These methods included market stabilization through warehousing and speculation, as well as improvements in communications and information.¹⁵⁹ Because this did reduce trading costs on the transoceanic route—or, more

¹⁵⁵Subrahmanyam and Thomaz (1991)

¹⁵⁶Braudel (1972)

¹⁵⁷Musgrave (1981); Rossabi (1990)

¹⁵⁸See Subrahmanyam and Thomaz (1991) on the Portuguese tonnage. Wake (1996) argues that 75% or more of the total came through Lisbon. Others have suggested two thirds or less.

¹⁵⁹Musgrave (1981)

specifically, in the Amsterdam market—trade via the Levant and its main entrepôt, Venice, was no longer able to compete.¹⁶⁰

Although the trade with Asia expanded in subsequent centuries, in 1600 it remained as it had always been, a trade in high-margin goods of high value relative to weight or bulk. Imports from the East included luxury textiles and other luxury manufactures and precious stones and jewelry. Exports to the East included some luxury textiles—mostly Italian woolens and linens—and other luxury manufactures as well as metals, copper especially. But the two main items of trade between Europe and Asia were spices and silver.¹⁶¹

Spices found such a ready market in Europe because of the heavy reliance there during the winter months on dried or salted fish and meat: heavy spicing—for those who could afford it—helped to make these foods palatable. The most important spice, in terms of quantity, was pepper, mainly from the Malabar Coast of India. Imported in comparatively large quantities, especially in the sixteenth century, it became relatively affordable, even for the middle classes. However, the more exotic spices were far more expensive: for example, in 1563, 100 lb. of Ceylon cinnamon were worth 10 LB of gold (about 70 times the price of pepper).¹⁶² In addition to spices proper, the ‘spice’ trade also included a variety of medicines and dyes, aromatics and perfumes.¹⁶³ Asian dyes were a vital input for the European textile industry.

Before the discovery of the Americas, Europe was the principal producer of silver. Consequently, silver was much more abundant, and therefore cheaper, in Europe than it was in the East. As a result, merchants had, since ancient times, found it profitable to carry silver eastwards. While the coining of silver was widespread in Europe, silver had not generally been used as money in Asia—perhaps because it was too scarce. From the fourteenth century, however, growing problems with China’s paper money lead to the increasing use of silver as a means of settlement. This boosted the demand for silver there, raising its value yet further, not only in China, but throughout Asia: by the fifteenth

¹⁶⁰Parry (1967); Musgrave (1981)

¹⁶¹Scammell (1981) Ch. 3 Venice

¹⁶²Masefield (1967)

¹⁶³Scammell (1981) Ch. 3 Venice

century, silver was twice as valuable (relative to gold) in China as it was in Europe.¹⁶⁴ As a result of this price differential, silver made up some two thirds by value of European exports to the East during the fourteenth and fifteenth centuries. When the Portuguese opened the transoceanic route to the East, they initially shipped other goods—especially European copper and African gold. This changed from the middle of the sixteenth century when American silver began to arrive in Europe in large quantities. This further depressed the value of silver in Europe relative to its value in Asia, and the share of silver in Portuguese exports to Asia increased sharply.¹⁶⁵

Some historians have mistakenly argued that the reason silver predominated in European exports to Asia was that Asians somehow found European goods inherently undesirable (for example, the climate was ‘too hot’ for European woolens). The true explanation, however, is that the price differential between Europe and Asia made silver by far the most profitable good to ship. The demand for other European goods in Asia, manufactures in particular, was indeed limited. However, this was not because they were inherently undesirable, but because—valued in terms of silver—they were simply too expensive.¹⁶⁶

In addition to exporting goods to Asia, Europe also exported services. From the early sixteenth century, Portuguese merchants and ships conducted an extensive trade in the Indian Ocean and in the China Sea among the markets of Asia. Indeed, this within-zone ‘country trade’ was far larger in volume and in value than the inter-zone transoceanic trade with Europe—much as we would expect. While the spice trade was worth perhaps one million ducats a year, Dutch observers in 1622 put the country trade at some 50

¹⁶⁴Demand was boosted further when silver money was introduced in northern India beginning in the 1530s. See Kohn (1999b) for a more detailed discussion of the effect on Europe of the monetization of silver in Asia.

¹⁶⁵Attman (1981) This was equally true, later on for the Dutch and English: silver accounted for two thirds or more by value of the cargoes they carried to Asia.

¹⁶⁶That is, the ‘exchange rate’—the relative value of silver—was unfavorable to the export of European manufactures. Although standards of living were higher in the Asian economies at this time, Asian wages measured in silver were much lower than European wages. This made European manufactures uncompetitive in Asia, a situation that persisted into the eighteenth century (see, for example, Chaudhuri (1968))

million.¹⁶⁷ The substantial profits from the country trade helped the Portuguese pay for their Asian imports. The Portuguese initially muscled their way into intra-Asian trade through the use of military force: Asian ships were no match for European galleons armed with cannon. However, the continued and growing commercial success of the Portuguese in Asia may have owed more to superior commercial technology than to superior military technology.¹⁶⁸

The expansion of Portuguese trade first with Africa and then with Asia contributed to the continued rise of Antwerp. The Portuguese had sent their agricultural exports, from Portugal itself and from their Atlantic island colonies, both to Antwerp and to Bruges. However, when their trade with Africa and Asia developed, it was to Antwerp that they brought their African gold and malaguetta pepper, and later their Asian spices. The reason they found Antwerp more attractive was the presence there of the South Germans: it was they who provided the Portuguese with the copper and silver they needed for their outward cargoes.¹⁶⁹

TRANSATLANTIC TRADE

The inter-zone trade between Europe and the Americas was qualitatively and quantitatively different from the trade between Europe and Asia. There are two interrelated reasons for this. First, as we have seen, trading costs in the Asia trade remained high enough to limit the volume of trade and to restrict its scope to luxuries. In contrast, in the transatlantic trade, trading costs fell sufficiently to permit a significant increase in the volume of trade and an extension of the range of goods traded to include low-margin and bulky items. By the end of the sixteenth century, transatlantic trade was perhaps ten times larger in volume than the transoceanic trade with Asia and perhaps six times larger in value.¹⁷⁰ The second reason for the difference between the two

¹⁶⁷Subrahmanyam and Thomaz (1991) The profits from this trade accrued mainly to private persons, in contrast with the transoceanic trade, the profits of which largely accrued to the state.

¹⁶⁸Parry (1967).

¹⁶⁹Van der Wee (1993; Van der Wee and Materné (1994)

¹⁷⁰Portuguese trade with Asia remained at about 3,000-4,000 tons per year, in each direction, throughout the sixteenth century (Subrahmanyam and Thomaz (1991)). Spanish exports to the Americas increased from 3,000-4,000 tons per year at the beginning of the century to 25,000-30,000 tons by the 1580s (Chaunu (1974)). Portuguese imports from Brazil grew to about 10,000 tons a year by the end of the

transoceanic trades was colonization. In this period, European activity in Asia was limited entirely to trading; in the Americas it also extended to production. The Spanish and Portuguese colonies in the Americas engaged in agricultural production, mining, and manufacturing. Colonization shaped the pattern of trade between Europe and the Americas: the colonies exported bullion and commodities and imported supplies for the miners and colonists. In some ways, therefore, transatlantic trade resembled trade within the zones of Europe more than it did inter-zone trade with Asia. Indeed, one can think of the Atlantic as becoming a third zone of European trade—albeit much less important in this period than the other two.

The most spectacular export from the Americas, and by far the largest item by value, was, of course, treasure—gold, silver, and precious stones. Indeed, it was the search for treasure that had been the principal motivation for exploration and conquest. Until the 1530s, the bulk of the treasure brought back to Europe was plunder—gold and precious stones taken from the Caribbean and from the Aztec and Inca empires.¹⁷¹ From the 1540s, however, when the mines of Zacatecas in Mexico and Potosì in Peru began to produce, the treasure brought back to Europe consisted primarily of silver.

Once the fruits of plunder were exhausted, colonists in the Caribbean, Mexico, and South America turned to the exploitation of natural resources and to agriculture. In addition to the silver of Mexico and Peru, they mined copper in Cuba and Chile. Farmers on Hispaniola raised cattle and those in Mexico cattle and sheep: hides were the largest single item (by bulk) carried by the fleets returning to Europe.¹⁷² Columbus introduced sugar to the Caribbean, and plantations, relying on imported African slaves, soon spread throughout the Islands. Colonists in Brazil also established sugar plantations, first using Amerindian slaves; then, when the supply ran out, Africans: by the late sixteenth century, Brazil had become Europe's principal supplier of sugar.¹⁷³ Further north, there were furs

century (Phillips (1990) estimates sugar imports, the main item, circa 1600 at about 600,000 *arrobas*, of approx. 11.5 Kg, or 6,900 tons). Exports from Spain were worth about 2.4 million ducats c1590; non-treasure imports, about 1 million; treasure, about 5 million.

¹⁷¹There was also a little gold mined in northern South America, as well as pearls gathered off Cuba and the coast of Venezuela.

¹⁷²Scammell (1981) Ch. 5 & 6

¹⁷³Scammell (1981) Ch. 5; Parry (1967)

from the St. Lawrence estuary and cod from the Newfoundland banks. By 1580, the Portuguese had some fifty ships fishing off Newfoundland and the dried cod they brought back was popular throughout Europe.¹⁷⁴ To support their traditional Mediterranean diet, Spanish and Portuguese colonists imported from Europe—at significant cost—wheat flour and biscuit, olive oil, and wine.¹⁷⁵ They imported, too, manufactured goods such as cloth, furniture, tools, utensils, and pottery. In addition to direct trade between Europe and the Americas, triangular trades evolved in a variety of combinations. The most popular route went from Europe to the Atlantic islands and Africa (to pick up wine and African slaves); from there to the Americas; and from there back again to Europe.

The high price of imported goods in the Americas provided a strong incentive for local production. To this end, the colonists successfully introduced a wide variety of Iberian crops—wheat and barley, olives, vines, citrus (also indigo, which they exported back to Europe in considerable quantities). They also introduced cattle, horses, pigs, and sheep. In addition, the settlers eventually learned to cultivate, and to consume, local crops such as maize. As the Americas became more self-sufficient in foodstuffs, the composition of European exports shifted towards manufactures—especially cloth (much of it originating in Northern Italy or Northwest Europe). However, European manufactures too faced increasing competition from local production. By 1600, Mexico City alone boasted 25 establishments producing woolens from the local wool and 10 producing hats. Another important industry, exploiting abundant local supplies of timber, was shipbuilding. Havana constructed about one third of the ships returning to Spain; Cartagena produced men-of-war; and Huatulco (Nicaragua) and Guayaquil (Ecuador) built ships for the Pacific.¹⁷⁶

Widespread production in the Americas naturally led to regional specialization and to inter-regional trade there. Nicaragua supplied Peru with livestock; Peru shipped sugar and wine to Central America; Mexico sent to Peru woolens and other manufactures, mules, and European and Asian imports in exchange for wine and silver. A brisk, if illegal, trade

¹⁷⁴Mokyr (1990); Scammell (1981) Ch. 5

¹⁷⁵Chaunu (1974) describes the colonists' insistence on Mediterranean foods rather than on the local produce as 'veritable economic lunacy'.

¹⁷⁶Scammell (1981) Ch. 6

developed, too, between Peru and Brazil: this trade of silver for colonial goods evaded the heavy Spanish taxes on direct trade between Spain and the Americas. The Americas also conducted a considerable trade with Asia directly across the Pacific. Ships sailing from Acapulco carried silver, most of it from Peru, to Manila—the quantities at times rivaling those shipped across the Atlantic. Their return cargo was mainly silk—most of it for Peru, but some for re-export to Spain.¹⁷⁷

The transatlantic trade, like the transoceanic trade with Asia, had a significant impact on the great commercial center of Antwerp. The flood of silver that began to reach Castile from the Americas in the 1540s reduced the importance of Antwerp as a bullion market: the Portuguese increasingly turned to Seville for the silver they needed. And, having less reason to trade in Antwerp, they shifted their spice trade back to Lisbon.¹⁷⁸ At the same time, Spain's growing Atlantic trade created a strong demand for maritime supplies and grain from the Baltic as well as for manufactures, especially woolens, to send to the colonists and miners. Much of this demand was satisfied through Antwerp.

THE IMPORTANCE OF INTER-ZONE TRADE

As we have already seen, long-distance trade between zones was quantitatively far less important than trade within zones. The volume of overland trade between the two zones of Europe during the Middle Ages was quite modest. For example, total traffic through the St. Gotthard Pass, the principal route to Champagne after the middle of the thirteenth century, amounted to no more than 1,200 tons a year.¹⁷⁹ Even after the maritime route was established, quantities remained small compared to within-zone trade: in 1439, it took only two of Venice's great galleys to carry away 10% of England's cloth exports.¹⁸⁰ Before the transoceanic link was established, the volume of inter-zone trade with Asia was perhaps 1,000 tons a year in each direction. Even afterwards, it grew to perhaps 4,000 tons a year by 1600.¹⁸¹ The volume of trade across the Atlantic was larger—perhaps 40,000 tons a year in each direction by 1600—but it was still small

¹⁷⁷Scammell (1981) Ch. 6; Glamann (1972); Parry (1967).

¹⁷⁸Van Houtte (1977)Ch. 4

¹⁷⁹Samhaber (1964)

¹⁸⁰Scammell (1981) Ch. 3 Venice

¹⁸¹Subrahmanyam and Thomaz (1991)

compared to the volume of trade within the two zones of Europe. Of course, because it involved items of high value relative to weight or bulk, inter-zone trade was more significant in terms of value than it was in terms of volume. Nonetheless, as we have seen, it remained insignificant compared to trade within the zones. The value of trade between the two zones of Europe is unknown, but trade with Asia was worth perhaps one to two million ducats, transatlantic trade perhaps five or six. Compared to estimates of trade within the Mediterranean zone of 300 million ducats, and total product of 1,200 million, these are hardly imposing sums.¹⁸² Again, because inter-zone trade involved high-margin items, it was more significant in terms of profits than it was in terms of value. However, given the enormous disparity in values, it is hard to believe that inter-zone trade was especially important, relative to inter-regional trade within the zones, as a source of capital.¹⁸³

Despite these numbers, inter-zone trade was of considerable quantitative importance in two areas. First, inter-zone trade was a major source of revenue for a number of governments—particularly the those of Venice, Portugal, and Spain. These governments taxed inter-zone trade heavily and often controlled it directly—not least to ensure that taxes were collected. Second, inter-zone trade was quantitatively more important for the urbanized central regions of the two zones than its overall scale would suggest. Because inter-zone trade was focused on the two central regions, it gave rise in each to a great deal of economic activity—in commerce itself, in transportation, and in the processing of imported commodities (such as sugar and later tobacco). Inter-zone trade also provided an important outlet for the central regions’ manufactures: in particular, the inter-zone trade in textiles played an important role in the development both of Northern Italy and of the Low Countries. And, since the central regions were major markets for other regions within their zones, the expansion (or contraction) of inter-zone trade did have multiplier effects throughout the two zones.

¹⁸²Braudel (1972)

¹⁸³“But I wish to argue that commerce between core and periphery for three centuries after 1450 proceeded on a small scale, was not a uniquely profitable field of enterprise, and while it generated some externalities, they could in no way be classified as decisive for the economic growth of Western Europe.” (O’Brien (1982) p 3)

Even so, given the numbers, it is hard to see how inter-zone trade can bear the burdens placed on it by some historians. For example, the interruption of inter-zone trade between the zones of Europe in the fourteenth century could not by itself explain the general economic depression: the simultaneous interruption of trade *within* the two zones must have played a significant role. Neither is it plausible to credit the subsequent recovery of the European economy to the opening of transoceanic trade. The quantitative impact was too small, and the timing is wrong: the European economy had already been recovering for a century before the voyages of discovery took place. Similarly, it is implausible to blame the decline of Northern Italy on the loss—in fact, only partial loss—of the spice trade to Portugal: the spice trade was simply not that important.

Nonetheless, because of its significance in government finance, inter-zone trade did plausibly have an important effect on the behavior of governments. For example, the substantial tax revenue from the trade with the Americas certainly helped to finance the Hapsburg crusades of the sixteenth century.¹⁸⁴ Moreover, changes in the extent and in the pattern of inter-zone trade certainly had an impact on the prosperity of the urbanized central regions and on the relative importance of commercial centers within them—for example, Genoa versus Venice or Antwerp versus Bruges.

However, the really important effects of inter-zone trade were not quantitative but qualitative. Specifically, inter-zone trade was a major source of new ideas, mostly in the form of new goods and new technologies.¹⁸⁵ Trade with the East brought Europe into contact, via Islam, with the more advanced civilizations of Asia. Along this route, a long list of industries spread westwards, first to the Moslem world, and then to Europe. These

¹⁸⁴Cf. Epstein (1998): “Although maritime trade and the overseas discoveries have often loomed large in explanations of the late medieval recovery, their effects appear all in all to be rather marginal.”

¹⁸⁵“There can be little doubt that the main advantage which will accrue to those with whom our merchants are trading is [the availability of new commodities, which were previously not available at all.] The extension of trade does not primarily imply more goods; its main function is not to increase the quantity of goods produced, but to reshuffle them so that they are made more useful. The variety of goods available is increased, with all the widening of life that that entails. This is a gain which ‘quantitative economic history’ which works with index-numbers of real income, is ill-fitted to measure, or even to describe.” Hicks (1969) p55-6. See, too, Romer (1994).

industries included paper-making, gunpowder, printing, cotton and silk textiles, and porcelain.

The spread of a new industry to a particular city or urbanized region followed a standard script. A new good would arrive in inter-zone trade. Its high price—the result of high trading costs and of the strong latent demand that it aroused—would create powerful incentives to produce local imitations. These would be inferior to begin with, but improved with time. As quality improved, the good in question would go from being an import to being an export; importation of the good itself would be replaced by importation of the raw materials needed for its production. In Northern Italy, this was the pattern with paper, glass, ceramics, soap, porcelain, and silk and cotton textiles—all introduced from the East—as well as with fine woolens imported from the North. In the Low Countries, this was the pattern with cotton textiles, paper, and porcelain—all imported initially from Northern Italy. The acquisition of new industries and technologies in this way was crucial to the development of the two central regions.¹⁸⁶ While within-zone trade did provide some of the impetus—one example is the spread of the brewing of hopped beer from the Baltic to the Netherlands—the main driving force was inter-zone trade.

Inter-zone trade also had an important qualitative impact on agriculture in much the same way—through the introduction of new goods, in this case new crops. A number of important crops spread westwards from Asia to Europe via the Moslem world, in a way that paralleled the spread of industries. Sugar, rice and cotton were three major crops of Asian origin that Europe acquired from the Moslems. As we saw earlier, the cultivation of sugar was transplanted by Italian merchants from the Levant to Sicily and Iberia, to the Atlantic islands, and finally to the Americas. The cultivation of rice and cotton spread to Sicily and to Southern Spain, and, by the fifteenth century, locally-produced rice was rivaling grain as a dietary staple in the Po Valley and in Valencia.¹⁸⁷ Trade with the Americas, which produced no new industrial goods or techniques, was a prolific source of new crops: maize, potatoes, French beans, chili peppers, and turkeys were all being

¹⁸⁶The importance of this process was first recognized in Jacobs (1969). Kohn (2001b) and Kohn (2001c) provide a more detailed description.

¹⁸⁷Braudel (1972); Masfield (1967)

grown or raised in Europe by 1600.¹⁸⁸ Indeed, the cultivation of maize was crucial in overcoming the Mediterranean zone's chronic shortage of grain, thereby bringing to an end, after 1600, the famines that had afflicted the area in the late sixteenth century.¹⁸⁹

Inter-zone trade contributed to institutional development in much the same way that it contributed to the development of industry and agriculture—through the importation of new ideas and new technologies. Although the details are now obscure, it seems likely that the Italians learned at least some of their commercial and financial techniques from the Moslems and the Byzantines; these in turn may have acquired at least some of them from their contacts with the East ('Arabic' numerals, which originated in India, are certainly a case in point). The evidence for institutional imports from the southern zone of Europe to the northern zone is much stronger. Examples include banking, bills of exchange, marine insurance, share companies, limited liability, and double-entry bookkeeping. Inter-zone trade also contributed to institutional development through the challenges that it presented. On the whole, these were much like the challenges of within-zone trade, only more extreme. The problems of trading with strangers were greater; transportation costs were higher; and because of the long delays, risk was greater and finance even more important.

CONCLUSION

In quantitative terms, local and regional trade outweighed, probably by far, inter-regional and inter-zone trade. Indeed, a fair part of output was produced for own consumption and never traded at all. However, in terms of their impact on economic growth, inter-regional and inter-zone trade were far more important. Together, they contributed to rising productivity through improvements both in the technology of trade and in the technology of production. To overcome the difficulties of trading with strangers and of trading over great distances, merchants engaged in long-distance trade were obliged to develop a variety of commercial and financial institutions that lowered trading costs. We shall consider these in detail in Parts 2 and 3. Inter-regional trade raised the productivity of production by inducing regional specialization and by fueling the growth of the urbanized central regions. Trade in mass-market goods at the inter-regional

¹⁸⁸Masefield (1967)

¹⁸⁹Braudel (1972)

level was especially important in promoting cost-cutting technological progress. Inter-zone trade contributed, too, to the growth of the urbanized central regions. It was also a major source of new goods and new techniques. Kohn (2001) and Kohn (2001) explore the impact of trade on production—in agriculture and in industry, respectively—and show precisely how it was that trade succeeded in increasing productivity.

REFERENCES

- Ashtor, E. (1983). *Levant Trade in the Later Middle Ages*. Princeton, Princeton University Press.
- Attman, A. (1981). *The Bullion Flow Between Europe and the East 1000-1750*. Göteborg, Kungl. Vetenskaps- och Vitterhets-Samhället.
- Ball, J. N. (1977). *Merchants and Merchandise: The Expansion of Trade in Europe 1500-1630*. New York, St. Martin's Press.
- Barrett, W. (1990). World bullion flows, 1450-1800. *The Rise of Merchant Empires: Long-Distance Trade in the Early Modern World, 1350-1750*. J. D. Tracy. Cambridge, University of Cambridge Press: 224-254.
- Blanchard, I. (1986). "The Continental European Cattle Trade, 1400-1600." *Economic History Review, Second Series* 39(3): 427-60.
- Blockmans, W. (1993). The economic expansion of Holland and Zealand in the fourteenth-sixteenth centuries. *Studia historica oeconomica: liber amicorum Herman Van der Wee*. E. A. e. al.] Leuven, Belgium, Universitaire Pers Leuven.
- Braudel, F. (1972). *The Mediterranean and the Mediterranean world in the age of Philip II*. New York, Harper & Row.
- Britnell, R. H. (1996). *The Commercialisation of English Society, 1000-1500*. Manchester, Manchester University Press.
- Chaudhuri, K. N. (1968). "Treasure and trade balances: the East India Company's export trade, 1660-1720." *Economic History Review* 21.
- Chaunu, P. a. H. (1974). The Atlantic economy and the world economy. *Essays in European Economic History, 1500-1800*. P. Earle. Oxford, Clarendon Press.
- Cipolla, C. M. (1956). *Money, Prices, and Civilization in the Mediterranean World*. Princeton, Princeton University Press.
- Cipolla, C. M. (1994). *Before the Industrial Revolution: European Society and Economy, 1000-1700*. New York, W.W. Norton.

Clay, C. G. A. (1984). *Economic expansion and social change: England 1500-1700*. Cambridge, Cambridge University Press.

Davis, R. (1973). *The rise of the Atlantic economies*. Ithaca, N.Y., Cornell University Press.

de Vries, J. (1974). *The Dutch rural economy in the Golden Age, 1500-1700*. New Haven, Yale University Press.

de Vries, J. and A. van der Woude (1997). *The First Modern Economy: Success, Failure, and Persistence of the Dutch Economy, 1500-1815*. Cambridge, Cambridge University Press.

Ekelund, R. B., Jr and e. al (1996). *Sacred trust: the medieval church as an economic firm*. New York, Oxford University Press.

Epstein, S. R. (1991). *An island for itself: economic development and social change in late medieval Sicily*. Cambridge [England] ; New York, Cambridge University Press.

Epstein, S. R. (1998). "The late medieval crisis as an 'integration crisis'", London School of Economics, Department of Economic History,

Farmer, D. (1991). Marketing the produce of the countryside, 1200-1500. *The Agrarian history of England and Wales: Vol. III 1348-1500*. E. Miller. London, Cambridge U.P.

Fisher, F. J. (1935). "The development of the London food market, 1540-1640." *The economic history review* v5n2(April): 46-64.

Fryde, E. B. (1974). "Italian maritime trade with medieval England (c1270-c1530)." *Recueils de la Société Jean Bodin* 32.

Glamann, K. (1972). European trade 1500-1750. *The Sixteenth and Seventeenth Centuries*. C. M. Cipolla. Brighton, England, Harvester Press: 427-526.

Glamann, K. (1977). The changing pattern of trade. *The Economic Organization of Early Modern Europe*. E. E. Rich and C. H. Wilson. Cambridge, Cambridge University Press: 185-289.

Harvey, B. F. (1991). Introduction: the 'crisis' of the early fourteenth century. *Before the Black Death: Studies in the 'Crisis' of the Early Fourteenth Century*. B. M. S. Campbell. Manchester, Manchester University Press: 1-24.

Hicks, J. (1969). *A Theory of Economic History*. Oxford, Clarendon Press.

Hoskins, W. G. (1964). "Harvest fluctuations and English economic history, 1480-1619." *Agricultural history review* v12n1: 28-46.

Jacobs, J. (1969). *The Economy of Cities*. New York, Vintage Books.

Jones, P. J. (1997). *The Italian city-state : from commune to signoria*. Oxford ;, New York : Clarendon Press,.

Kohn, M. (1999)a. "Finance before the Industrial Revolution: An Introduction", Department of Economics, Dartmouth College, <http://www.dartmouth.edu/~mkohn/99-01.pdf>

Kohn, M. (1999)b. "Medieval and Early Modern coinage and its problems", Department of Economics, Dartmouth College, <http://www.dartmouth.edu/~mkohn/99-02.pdf>

Kohn, M. (1999)c. "Early deposit banking", Department of Economics, Dartmouth College, <http://www.dartmouth.edu/~mkohn/99-03.pdf>

Kohn, M. (1999)d. "Bills of exchange and the money market to 1600", Department of Economics, Dartmouth College, <http://www.dartmouth.edu/~mkohn/99-04.pdf>

Kohn, M. (1999)e. "The capital market before 1600", Department of Economics, Dartmouth College, <http://www.dartmouth.edu/~mkohn/99-06.pdf>

Kohn, M. (2001)a. "The Expansion of Trade and the Development of European Industry to 1600", Department of Economics, Dartmouth College, <http://www.dartmouth.edu/~mkohn/00-20.pdf>

Kohn, M. (2001)b. "The Expansion of Trade and the Transformation of Agriculture in Pre-Industrial Europe", Department of Economics, Dartmouth College, <http://www.dartmouth.edu/~mkohn/00-13.PDF>

- Kohn, M. (2001)c. "The Expansion of Trade and the Development of European Industry to 1600", Department of Economics, Dartmouth College, <http://www.dartmouth.edu/~mkohn/00-20.pdf>
- Kohn, M. (2001)d. "The costs of transportation in pre-industrial Europe", Department of Economics, Dartmouth College, <http://www.dartmouth.edu/~mkohn/>
- Kowaleski, M. (1995). *Local Markets and Regional Trade in Medieval Exeter*. Cambridge [England], Cambridge University Press.
- Lane, F. C. (1966). *Venice and history; the collected papers of Frederic C. Lane*. Baltimore, Johns Hopkins Press.
- Lane, F. C. (1973). *Venice, a maritime republic*. Baltimore, Johns Hopkins University Press.
- Laven, P. (1966). *Renaissance Italy, 1464-1534*. London, Batsford.
- Lopez, R. S. (1987). The trade of medieval Europe: the South. *Cambridge Economic History of Europe: V II, Trade and Industry in the Middle Ages*. M. M. Postan and E. Miller. Cambridge, Cambridge University Press: 379-401.
- Mallett, M. E. (1967). *The Florentine galleys in the fifteenth century*. Oxford, Clarendon P.
- Masefield, G. B. (1967). Crops and livestock. *The Economy of Expanding Europe in the Sixteenth and Seventeenth Centuries*. E. E. Rich and C. H. Wilson. Cambridge, Cambridge University Press: 276-307.
- Masschaele, J. (1997). *Peasants, merchants, and markets: inland trade in medieval England, 1150-1350*. New York, St. Martin's Press.
- Mazzaoui, M. F. (1981). *The Italian cotton industry in the later Middle Ages, 1100-1600*. Cambridge, Cambridge University Press.
- Menard, R. R. (1991). Transport costs and long-range trade, 1300-1800: Was there a European 'transport revolution' in the early modern era? *The Political Economy of Merchant Empires*. J. D. Tracy. Cambridge, Cambridge University Press: 228-275.

Michell, A. R. (1977). The European fisheries in early modern history. *The Economic Organization of Early Modern Europe*. E. E. Rich and C. H. Wilson. Cambridge, Cambridge University Press: 134-184.

Miller, E., et al (1971). The economic policies of governments. *Economic organization and policies in the middle ages*. M. M. Postan, E. E. Rich and E. Miller. Cambridge, Cambridge University Press: 281-429.

Mokyr, J. (1990). *The lever of riches : technological creativity and economic progress* /. New York :, Oxford University Press,.

Munro, J. H. (1991). Industrial transformations in the north-west European textile trades, c.1290-c.1340: economic progress or economic crisis. *Before the Black Death: Studies in the 'Crisis' of the Early Fourteenth Century*. B. M. S. Campbell. Manchester, Manchester University Press: 110-148.

Munro, J. H. (1997). The origin of the English 'new draperies': the resurrection of an old Flemish industry, 1270-1570. *The New Draperies in the Low Countries and England, 1300-1800*. N. B. Harte. Oxford, Oxford University Press: 35-128.

Munro, J. H. (1998). "English 'Backwardness' and Financial Innovations in Commerce with the Low

Countries, 14th to 16th centuries", Department of Economics, University of Toronto,

Munro, J. H. (1998). "The Symbiosis of Towns and Textiles: Urban Institutions and the Changing Fortunes of Cloth Manufacturing in the Low Countries and England, 1280 - 1570", Department of Economics, University of Toronto,

Musgrave, P. (1981). The economics of uncertainty: the structural revolution in the spice trade, 1480-1640. *Shipping, Trade and Commerce*. P. L. Cottrell and D. H. Aldcroft. Leicester, Leicester University Press.

Nef, J. U. (1964). *The conquest of the material world*. Chicago, University of Chicago Press.

Nef, J. U. (1987). Mining and metallurgy in medieval civilization. *Cambridge Economic History of Europe: II, Trade and Industry in the Middle Ages*. M. M. Postan and E. Miller. Cambridge, Cambridge University Press: 693-762.

- Nicholas, D. (1992). *Medieval Flanders*. London, Longman.
- Nielsen, R. (1997). "Storage and English government intervention in Early Modern grain markets." *Journal of economic history* v57n1: 1-33.
- O'Brien, P. (1982). "European economic development: the contribution of the periphery." *The economic history review* n.s. v35: 1-18.
- Palliser, D. M. (1983). *The Age of Elizabeth : England under the later Tudors, 1547-1603*. London ; New York :, Longman,.
- Parry, J. H. (1967). Transport and trade routes. *The Economy of Expanding Europe in the Sixteenth and Seventeenth Centuries*. E. E. Rich and C. H. Wilson. Cambridge, Cambridge University Press: 155-222.
- Phillips, C. R. (1990). The growth and composition of trade in the Iberian empires, 1450-1750. *The Rise of Merchant Empires: Long-Distance Trade in the Early Modern World, 1350-1750*. J. D. Tracy. Cambridge, University of Cambridge Press: 34-.
- Phillips, W. D. (1998). *Mediterranean. A historical guide to world slavery*. S. Drescher and S. L. Engerman. New York, Oxford University press.
- Pirenne, H. (1937). *Economic and Social History of Medieval Europe*. New York, Harcourt Brace.
- Postan, M. M. (1970). Economic relations between eastern and western Europe. *Eastern and Western Europe in the Middle Ages*. F. Graus and e. al. London, Thames and Hudson.
- Reed, C. G. (1973). "Transactions costs and differential growth in seventeenth century Western Europe." *Journal of Economic History* 33: 177-190.
- Renouard, Y. (1970). The wine trade of Gascony in the Middle Ages. *Essays in French economic history*. R. Cameron. Homewood, Ill, Published for the American Economic Association by R. D. Irwin: 64-90.
- Romer, P. M. (1994). "New goods, old theory, and the welfare costs of trade restrictions." *Journal of Development Economics* 43 (1)(February).

Rossabi, M. (1990). The 'decline' of the central Asian caravan trade. *The Rise of Merchant Empires: Long-Distance Trade in the Early Modern World, 1350-1750*. J. D. Tracy. Cambridge, University of Cambridge Press: 351-.

Samhaber, E. (1964). *Merchants make history*. New York, John Day Co.

Scammell, G. V. (1981). *The world encompassed: the first European maritime empires, c. 800-1650*. Berkeley, University of California Press.

Sella, D. (1977). European Industries 1500-1700. *The Sixteenth and Seventeenth Centuries*. C. M. Cipolla. NY, Harper & Row: 354-426.

Subrahmanyam, S. and L. F. F. R. Thomaz (1991). Evolution of empire: The Portuguese in the Indian Ocean during the sixteenth century. *The Political Economy of Merchant Empires*. J. D. Tracy. Cambridge, Cambridge University Press: 298-.

Szostak, R. (1991). *The Role of Transportation in the Industrial Revolution: A Comparison of England and France*. Montreal, McGill-Queen's University Press.

Thrupp, S. (1972). Medieval industry 1000-1500. *The Fontana Economic History of Europe: The Middle Ages*. C. M. Cipolla. London, Collins/Fontana: 221-273.

Unger, R. W. (1980). *The ship in the medieval economy, 600-1600*. London, Croom Helm.

Unger, R. W. (1983). Integration of the Baltic and Low Countries grain markets, 1400-1800. *The Interactions of Amsterdam and Antwerp with the Baltic region, 1400-1800: papers presented at the third international conference of the "Association internationale d'histoire des mers nordiques de l'Europe", Utrecht, August 30th-September 3rd 1982*. W. J. W. e. al. Leiden, M. Nijhoff.

Unger, R. W. (1989). Grain, beer and shipping in the North and Baltic seas. *Medieval Ships and the Birth of Technological Societies I: Northern Europe*. C. Villain-Gandossi, S. Busuttill and P. Adam. Malta, Foundation for International Studies: 121-135.

Unger, R. W. (1998 [1979]). Shipping in the Northern Netherlands 1490-1580. *Ships and Shipping in the North Sea and Atlantic, 1400-1800*. R. W. Unger. Aldershot, Ashgate Variorum.

- Van der Wee, H. (1963). *The Growth of the Antwerp Market and the European Economy*. The Hague, Martinus Nijhoff.
- Van der Wee, H. (1981). World production and trade in gold, silver, and copper in the low countries. *Precious Metals in the Age of Expansion*. H. Kellenbenz, Klett-Cotta: 79-84.
- Van der Wee, H. (1988). 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. *The Rise and decline of urban industries in Italy and in the Low Countries: late Middle Ages-early modern times*. H. Van der Wee. Leuven, Belgium, Leuven University Press.
- Van der Wee, H. (1993). *The Low Countries in the Early Modern World*. Aldershot, Variorum.
- Van der Wee, H. and J. Materné (1994). Antwerp as a world market in the sixteenth and seventeenth centuries. *Antwerp, Story of a Metropolis: Sixteenth-Seventeenth Century*. J. Van der Stock. Antwerp, Martial and Snoek.
- Van Houtte, J. A. (1977). *An Economic History of the Low Countries 800-1800*. New York, St. Martin's Press.
- Verlinden, C. (1970). *The beginnings of modern colonization*. Ithaca [N.Y.], Cornell University Press.
- Wake, C. H. H. (1996). The Changing Pattern of Europe's Pepper and Spice Imports,; ca 1400-1700. *Trade in the pre-modern era, 1400-1700. Volume 2*. D. A. e. Irwin: 183-225.
- Willan, T. S. (1976). *The Inland Trade: Studies in English Internal Trade in the Sixteenth and Seventeenth Centuries*. Manchester, Manchester University Press.