

**HOW AND WHY ECONOMIES DEVELOP AND GROW: LESSONS
FROM PREINDUSTRIAL EUROPE AND CHINA**

CHAPTER 2

EXPANSION OF THE MARKET

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Revised August 2008

ABSTRACT: Expansion of the market is the engine of economic progress. This chapter starts by describing the differences between market and non-market economies. It then goes on to examine the nature of trading costs and how the economics of trading costs determine the extent of the market and its geography. It then examines the causes of market expansion and concludes with an overview of the process of market expansion in preindustrial Europe.

*My thanks to Douglas Irwin, Yoav Kislev, and Yakir Plessner for helpful comments on an earlier draft.

Commerce promotes production through expansion of the market. Expansion of the market raises productivity by inducing a reorganization of production and by promoting technological progress. So long as predation is kept in check this process is self-perpetuating and cumulative: expansion of the market creates economic growth and economic growth stimulates further expansion of the market.

Our first task is to understand the process of market expansion. What determines the extent of the market? What causes it to expand? But before we can address these questions, we need to clarify what we mean by ‘extent of the market’ and, indeed, by ‘market’.

MARKET AND NON-MARKET ECONOMIES

As we saw in Chapter 1, there are three distinct ways for people to make a living—production, commerce, and predation. Different combinations of the three create different types of economy. While every economy must of course be based on production, the extent of commerce and predation can vary. If both commerce and predation are largely absent, the result is a *subsistence economy*. If there is significant predation but little commerce, the result is a *tribute economy*. If there is significant commerce but little predation, the result is a *market economy*.

In a subsistence economy, producers produce to satisfy their own needs. Subsistence, however, is not individual but communal: it is the community, not the individual, that is self-sufficient. Within the community, individuals produce mainly for their own consumption, but they do engage in some exchange to share risk and, to a limited extent, to benefit from specialization. Such exchange is almost entirely local, and there are no specialized traders. There may be some predation, perhaps even some specialized predators, but predation has little impact on the structure of the economy.

In a tribute economy, an organized predatory group supports itself by direct exaction from producers. Exaction is often in kind—a quantity of grain, a measure of cloth, or a number of days of labor. Tribute economies are often command economies, in that predators tell producers what to produce for them.¹ Producers produce what they must for

¹In socialist economies—the modern version of the tribute economy—planners also tell producers what to produce for themselves.

exaction and what they can for their own consumption. As in a subsistence economy, there is petty exchange at the local level. There may also be some exchange of tribute goods, perhaps even mediated by specialized traders. Specialized traders may also import luxury goods for the predatory class and export in return a part of the tribute. The activity of these few specialized traders does not, however, affect the overall structure of the economy.²

In a market economy, almost all exchange is mediated by specialized traders. Producers produce primarily for exchange, meeting their own needs largely with goods and services produced by others. Exchange is no longer local, but rather encompasses large numbers of producers and consumers separated from one another by considerable distances. Specialized predation may exist, but it has little impact on overall economic organization.

There are thus three differences between a market economy and a non-market economy (a subsistence or tribute economy).

The first is in the nature of exchange. Exchange *per se* is not unique to market economies: it is common to all forms of human society.³ However, in non-market economies, exchange is unmediated: producers sell directly to consumers without the intervention of specialized traders. In contrast, in a market economy exchange is predominantly mediated. Mediated exchange is often indirect: rather than trading directly with one another, producers and consumers trade with specialized intermediaries. And when they do trade directly, they mostly do so through organized markets with the assistance of specialized facilitators. 'Commence' is mediated exchange.

The second difference between market and non-market economies is in the extent of exchange. In non-market economies it is predominantly local; exchange involves only small groups of producers and is confined to a limited area. In a market economy,

²On tribute economies see, especially, Wickham (2005). As we shall see in Chapter 10, China was for much of its history a tribute economy (see, especially, Gates (1996)).

³Indeed, Haim Ofek has argued that, in biological terms, exchange is the defining feature of our species. See Ofek (2001).

relations of exchange connect large numbers of producers and consumers over a large area.

The third difference is in the orientation of production. In non-market economies, producers produce primarily for their own consumption (subsistence) or to meet the demands of exaction (tribute). In a market economy they produce primarily for exchange.

These three differences are related. It is because mediated exchange facilitates trade at a distance that the extent of exchange is greater in a market economy. It is because of the opportunities presented by a large market that producers reorient their production towards exchange.

The story of economic growth in preindustrial Europe was one of transition from subsistence and tribute to market—a story of commercialization. At the center was expansion of the market—an increase in the extent of exchange. A precondition for expansion of the market was commerce or the mediation of exchange. A consequence of expansion of the market was the deepening of the market—an increase in the share of output produced for exchange. And it was the deepening of the market that was responsible for growth. Market deepening brought a productivity-enhancing reorganization of production and promoted technological progress.

This process of commercialization was slow and uneven. From about 800 BCE a nascent market economy in the eastern Mediterranean gradually expanded to encompass the whole of the Mediterranean basin and much of western Europe. However, with the fiscal collapse and disintegration of the Roman empire, the economy of western Europe regressed to tribute and subsistence. Commercialization began again in the sixth century and accelerated during the Commercial Revolution. The long fourteenth century was a setback, but the pace of commercialization quickened once more during the long sixteenth century.

It must be emphasized that even by the end of our period in the early seventeenth century commercialization was far from complete. Well beyond this time, most Europeans still produced themselves a substantial part of what they consumed. Many still grew their own food, made their own clothing, and built their own homes. Indicative of the extent of non-market production, while grain accounted for some 40% of total output in the Mediterranean economy of the sixteenth century, only about 10% of this was

actually traded: the rest was consumed directly by producers and landowners.⁴ By the end of our period, the market economy had made great strides, but it still coexisted with large areas of subsistence and tribute.⁵

Indeed, the overall rate of growth of the preindustrial economy can be seen as a weighted average of two distinct rates of growth. The first, relatively high, was the rate of growth of an expanding and productive market economy. The second—close to zero—was the rate of growth of those parts of the European economy still characterized by tribute and subsistence. To a considerable extent, differences in rates of growth across countries and regions reflected differences in degrees of commercialization. The high-growth countries and regions were those that were highly commercialized; the low-growth countries and regions were those that were not. One reason for the acceleration of growth in recent centuries is the completion of this long process of commercialization: the fast-growing market economy has finally absorbed all of the slow-growing non-market economy.

An understanding of economic growth requires, therefore, an understanding of the process of commercialization and of the expansion of the market that is at its core. We start by examining the prerequisite for expansion of the market—mediated exchange or commerce. We then look at the process of market expansion itself, at its causes and dynamics.

COMMERCE, TRADING COSTS, AND THE EXTENT OF THE MARKET

Commerce was a prerequisite for the expansion of the market because mediated exchange made it easier to trade at a distance. To understand why, we need to understand the nature of trading costs.⁶

Trading costs

Trading costs began with *information costs*. Merchants had, first of all, to identify profitable trading opportunities. This required information on prices in different places.

⁴These are Braudel's estimates for the Mediterranean zone in the sixteenth century (Braudel (1972)).

⁵On the coexistence of 'two economies' in early modern France, see Fox (1971)

⁶There has recently been a resurgence of interest in trading costs among trade economists. For a useful survey, see Anderson and Wincoop (2004).

Such information was costly to acquire and often out of date, because slow communications separated markets by weeks and even months. Merchants also needed to be able to judge product quality. Because production was on a small scale, and because conditions and techniques varied a great deal, the quality of output was extremely heterogeneous. A merchant who could not tell good from bad would soon find himself the victim of someone who could.⁷ Acquiring the necessary expertise involved years of training.

Once a merchant had identified a potential trading opportunity, acting on it meant dealing with people. The cost of doing so constituted *transactions costs*. Obviously, merchants had to deal with buyers and sellers, but that was not all. While initially merchants traveled themselves with their goods, dealing directly with buyers and sellers, over time they came increasingly to rely instead on representatives—on partners, employees, and commission agents. Merchants had to manage their relationships with these representatives and this took time and effort: much of a merchant's time was taken up with correspondence and bookkeeping. Merchants also had to deal with rivals—with other merchants pursuing the same trading opportunities. Last, but far from least, merchants had to deal with governments. Governments, because of their command of force, were able to control access to trading opportunities. Merchants dealt with governments both to gain such access for themselves and to deny it to their rivals.

Dealing with people almost invariably involved accepting promises: sellers promised future delivery, buyers promised to pay, representatives promised performance, governments promised a variety of things. The problem with promises, of course, is that they may not be kept. Guarding against this eventuality involved merchants in considerable effort and expense—a large part of their transactions costs. It also required the gathering of yet more information—this time on the trustworthiness of those with whom they dealt.

⁷“Whenever wine was bought or sold, special precautions had to be observed, for slight variations in appearance denoting different types, good or bad, were often visible only to the eye of the expert and the amateur was often duped into buying a mixture of dregs of many good wines, or bad wines mixed with white of egg, honey and other sweetening matter.” James (1971) p161

Trading generally involved *transportation costs*. These included, of course, the cost of carriage—the cost of physically moving goods from place to place.⁸ The cost of carriage was particularly important for goods that were heavy or bulky relative to their value. But there was a second and often more important element of transportation costs—the cost of predation. Of course, predation was always a problem, but goods in transit were particularly vulnerable. Merchants faced pirates at sea, brigands on land, and tolls and taxes everywhere. The resulting expense included not only the actual losses, but also the costs incurred in trying to prevent or to avoid them—for example, the cost of arming ships, or the delay of waiting for convoys or caravans or of taking a more circuitous but safer or less heavily tolled route.

Trade had to be financed. Before merchants saw a penny of revenue, they had to lay out the purchase price of the goods, the cost of transporting them, and perhaps the cost of storing them until they could be sold. Often it was necessary to extend credit in order to sell the goods. The whole process might take many months, tying up a merchant's funds in the meantime. So to engage in trading, merchants needed a considerable amount of working capital—either out of their own resources or borrowed from others. The return foregone or paid on this working capital constituted their *financing costs*.

Trading involved not only expense but also risk, and risk was no less an obstacle to trade. Trading in preindustrial Europe was fraught with risk. We have already noted 'counterparty risk'—the risk that others would renege on their promises—and the risk of predation in transporting goods. But transportation was also subject to the risks of nature. Ships were lost to storms or ran aground; cargo was damaged by damp or rodents. Even when goods were not lost or damaged, their time of arrival was highly unpredictable: a voyage that normally took a month could easily take two or even three. Trading itself was a major source of risk. Markets were thin and fragmented and prices volatile. Because of slow communications and unpredictable transportation, goods sent to a distant market in

⁸Economists generally view the cost of carriage as part of the cost of production: a product is not 'completed' until it is physically available to the potential purchaser. This makes sense in a Ricardian context where the focus is exclusively on production. But from a Smithian perspective, it is more useful to consider the cost of carriage a part of trading costs.

expectation of a favorable price might arrive to find conditions radically altered for the worse.

The economics of trading costs

Trading costs exhibited three important properties: they increased with distance; they were characterized by indivisibilities; and they were reduced by the concentration of trading.

Of course transportation costs increased with distance—not only the cost of carriage but also the cost of predation. Longer travel time meant greater delays in communications, which increased information costs and market risk. It also meant that the funds invested in goods in transit were tied up longer, increasing financing costs. Transactions costs increased with distance as well, mainly because trading at greater distances involved dealing with strangers. In local trade, people knew one another, they traded repeatedly, and it was in their interest to keep their promises. Strangers, by definition, did not know one another, might never meet again, and the incentives for good behavior were therefore much weaker. Because trading with strangers was more problematic, it was more costly. There were other reasons why transactions costs increased with distance: trading over greater distances often required transactions in foreign currencies, and it frequently required dealing with foreign governments.⁹

The increase in trading costs with distance created a gradient in terms of the volume of trade and of the types of goods traded. At greater distances the difference between buying price and selling price—the margin—had to be greater to compensate for higher trading costs. Moreover, the increase in transportation costs particularly affected goods that were heavy and bulky. Consequently, at the shortest distances, where trading costs were lowest, the volume of trade was high and the range of goods broad. Trade encompassed lower-margin goods—bulky and heavy commodities such as foodstuffs, firewood, and building materials and inexpensive manufactures such as cheap textiles and utensils. As distance and trading costs increased, the volume of trade fell and the range of

⁹For discussions of the importance of the relationship between trading costs and distance for modern trading patterns see Venables (2006) and Leamer (2007).

goods narrowed. At the greatest distances, trade was limited to high-margin goods with a high ratio of value to weight—goods such as spices, bullion, and luxury textiles.

Many elements of trading costs—especially those related to trading at a distance—were indivisible. Whether trading one quarter of wheat or a thousand, information costs and transactions costs remained essentially the same. Even some transportation costs were indivisible: sending a ship or a wagon cost much the same whether it was fully loaded or not, and the cost of guarding against predation did not depend on the value of the shipment. Because of these indivisibilities, trading on a small scale incurred proportionally higher trading costs.

It was these two properties of trading costs—the increase with distance and the indivisibilities—that made mediated exchange essential for trade over greater distances. Individual producers generally produced on a small scale: the amounts they wished to trade were correspondingly small. Unmediated local exchange with people they knew involved relatively low trading costs and was therefore worthwhile. But unmediated exchange at greater distances involved high trading costs and was not. Not only did trading costs rise with distance, but much of the additional cost was indivisible, weighing particularly heavily on small-scale trade.

Mediation lowered the cost of trading at a distance. Merchants could aggregate the output of many small producers, enabling them to trade on a scale large enough to cover the indivisible costs. Merchants also lowered transactions costs between producers and distant consumers because they traded repeatedly with each and could therefore act as ‘trust intermediaries’. But merchants were themselves an indivisible cost that could only be justified by a sufficient volume of trade. The scale of local exchange was too small, at least initially, and it therefore remained unmediated.

It was because mediation lowered the costs of trading at a distance that commerce was necessary for expansion of the market.¹⁰

¹⁰Some long-distance trade could take place even in the absence of commerce via a chain of unmediated exchange across the boundaries of neighboring communities. This accounts for the archaeological discoveries of items hundreds or even thousands of miles from their point of origin even in prehistoric times (see Ofek (2001)). The trading costs, in total, must however have been enormous and the margins correspondingly great. Needless to say, the volume of such trade was small.

A third important property of trading costs was that they could be lowered by the concentration of trading. When large numbers of buyers and sellers came together, it was easier for each to find a trading partner. Moreover, concentration improved the quality of the market. With more traders involved, competition was more vigorous and manipulation more difficult. Buyers and sellers were therefore more likely to obtain a fair price. In addition, the increased volume of trading made for a ‘thicker’ market, so that large individual purchases or sales had less impact on prices: this made prices more stable and reduced market risk. A final advantage of concentration was that a large enough volume of trading justified the indivisible cost of setting up an organized market with its brokers, banks, and courts to facilitate transactions among strangers.¹¹

The advantages of concentrated trading gave rise to trading centers, and trading centers developed into towns and cities. Because they drew large numbers of people, market centers were an attractive location for artisans and entertainers. Market centers were also hubs of transportation and communications, providing employment for carters, shippers, and innkeepers. As we shall see, the larger market centers also became centers of finance. And market centers were centers of information—the best places to gather the latest commercial and political news.¹² All these features of market centers derived, however, from their basic *raison d’être*—the reduction in trading costs that resulted when buyers and sellers came together in one place to trade.

The tension between the benefits of concentrated trading and the increase in trading costs with distance generated a network of trading centers, balancing the advantages of a larger market against the cost of reaching it.

Each urban trading center, large or small, mediated three types of trade. First, it mediated trade within its hinterland: the trading center was where people from the hinterland came to trade with one another. Second, it mediated trade between its hinterland and itself: towns were themselves producers of goods and services. Third the

¹¹See, for example, Kowaleski (1995).

¹²“... the market was the closest institution early modern society had which offered some regularity for the exchange of public information.” Muldrew (1998) p 42. See too Ehrenberg (1928).

trading center was an *entrepôt*: it collected goods from its hinterland for export, and it distributed to its hinterland goods imported from elsewhere.¹³

The geography of trade

The economics of trading costs created a geography of trade—a hierarchy of trade organized around the hierarchy of market centers.

At the lowest level of this hierarchy was the village. Villagers traded with one another the same sorts of goods they produced for themselves—butchered meat, ale, eggs, firewood, cloth, and so on. There was also some specialized production at the village level: most villages had a mill and a smith.¹⁴ Exchange at this level was piecemeal: there was no trading center. Exchange was also unmediated and largely based on credit. Debts were often offset against one another rather than being settled in cash—a practice sometimes mistakenly described as barter.

At the next level came the market town. This typically served a hinterland defined by a single day's roundtrip on foot—a radius of no more than six to twelve miles.¹⁵ Western Europe was dotted with a dense network of such towns: England alone had some 550 by 1300.¹⁶ When villagers produced for exchange, it was primarily to the market town that they brought their output. Exchange in the market town was unmediated but structured: people met to trade in a specific place and at a specific time. Since the volume of trading was modest, the market was held only once or twice a week. In the marketplace, people traded directly with one another, without intermediaries. Most of the trading was for cash. The congregation of a relatively large number of potential customers supported a variety of specialized artisans producing, for example, processed foodstuffs, textiles, pottery, and inexpensive household items. These they sold to the country folk attending the market. Merchants took part in the trading too. Some were there to purchase local product for

¹³This approach to understanding towns and their relationships to their hinterlands and to one another is known as 'network system analysis' (see Hohenberg and Lees (1995) p 62).

¹⁴Masschaele (1997) Ch. 2

¹⁵Clay (1984)

¹⁶Masschaele (1997). Also, see Jones (1997) on Italy.

resale in larger towns and to resell locally goods they had purchased there. Others arbitrated among market towns—especially in grain.¹⁷

The region was an area encompassing a number of towns and their hinterlands, all within relatively easy distance of the regional urban center. England in 1300 had some 50 regional towns compared to its 550 market towns.¹⁸ Regional centers themselves constituted a hierarchy, with smaller ones feeding into larger ones: London was to Norwich and Exeter, for example, as the latter were to the market towns and villages in their own hinterlands. Manufacturing was a more important activity for the regional center than it was for the market town. Most of the output was sold within the region, but some might be exported further afield.

Trading volume in the regional center was large enough to support daily markets; and daily trading and larger volume led to the emergence of specialized retailers. Entrepôt trade was more important for regional centers than it was for market towns. To facilitate entrepôt trade, many regional centers held fairs—annually, semiannually, or quarterly. Trading at such a fair was wholesale, with participation largely limited to professional merchants. Exchange was highly organized: brokers mediated transactions and there were notaries and courts to record them and to adjudicate disputes. At this level, credit once again predominated; cash was used mainly to settle debts.

Trade between regions was largely confined to one of the two disjoint zones of European trade: the Mediterranean basin in the south and the North Atlantic littoral in the north. Each zone was an area within which trading costs—particularly transportation costs—were low enough to permit trade in low-margin, bulky goods. Since transportation by water was far cheaper than transportation by land—one twentieth the cost by sea and one twelfth by river—the core of each trading zone was a group of regions mutually accessible by water.¹⁹

Trade within each of the two zones, like trade at the local and regional levels, was mediated by an urban center. However, the urban center in this case was not a single

¹⁷These arbitrageurs were known as *blatiers* or *bladers*. Usher (1913); Kerridge (1988)

¹⁸Masschaele (1997)

¹⁹Cipolla (1956), Willan (1976)

town or city but an urbanized region containing a number of major cities. The urbanized central region of the Mediterranean zone was northern Italy; that of the northern zone was the Low Countries. Apart from their pivotal role in trade, both of these urbanized central regions were important centers of manufacturing. Each of the two urbanized central regions mediated not only trade within its own zone but also trade between the two zones, and trade with more distant zones in Asia, Africa, and, eventually, the Americas.

Trading volume in the major commercial cities of the urbanized central regions was large enough to support continuous trading rather than periodic fairs: Genoa and Venice in the south, and Antwerp and Amsterdam in the north were ‘perpetual fairs’. Trading volume was large enough as well to underwrite the development of considerable commercial and financial infrastructure. This included specialized financial intermediaries such as deposit banks and merchant banks, and specialized organized markets for trading financial instruments and commodities.

In the geography of trade, therefore, there were two important boundaries. The first was that between local trade and long-distance trade. It was marked by the limits of unmediated exchange. Unmediated exchange sufficed for trade at the level of the village and, aided by structured trading and the use of money, at the level of the market town. However, beyond this—at the regional, inter-regional, and inter-zone levels—trade depended on commerce.

The second boundary was marked by the sharp increase in trading costs that limited the extent of the trading zone. Within, trading costs were low enough to permit inter-regional trade in low-margin, bulky goods. Beyond, trading costs were too high for such goods, and trade was therefore limited to the relatively small volume of high-margin items that characterized inter-zone trade.

Having some understanding of trading costs, their economics, and their implications for the geography of trade, we are now ready to examine how and why the market expanded.

THE CAUSES OF MARKET EXPANSION AND OF THE EXPANSION OF TRADE

For an individual good, expansion of the market meant a growing number of producers and potential consumers connected through relations of exchange. For goods in

general, expansion of the market meant an expansion of trade—an increase at each level in the range of goods available and an increase in the volume of trade.

Trade expanded (and contracted) as a result of changes in supply and demand and as a result of changes in trading costs. It is useful to distinguish between those changes that were autonomous and those that were multiplier effects.

Autonomous changes and multiplier effects

Autonomous changes originated outside the economy. They might, for example, be the result of changes in predation (the Pax Romana) or in the conditions of nature (the Black Death). By causing an expansion or contraction of trade, autonomous changes set in motion multiplier effects. Multiplier effects were therefore a consequence of the expansion of trade itself. Multiplier effects amplified the initial impact of autonomous changes, thereby sustaining a cumulative process of expansion or contraction. There were three types of multiplier effect—those that affected respectively demand, supply, and trading costs.

The expansion of trade raised the incomes of traders, producers, and predators, increasing their demand for goods. Also, by improving economic conditions and thereby permitting earlier marriage, it contributed to the growth of population.²⁰ This too increased demand. The increase in demand stimulated a further expansion of trade—a demand multiplier.

Those wishing to acquire goods through exchange had to produce for exchange in order to obtain the necessary purchasing power. The resulting deepening of the market induced a reorganization of production and stimulated technological progress, raising productivity. Moreover, the rewards of market exchange spurred producers to greater efforts, and this ‘industrious revolution’ contributed to market deepening and to the rise in productivity.²¹ The result of these reactions to an expanding market was an increase in

²⁰Langdon and Masschaele (2006)

²¹de Vries (1993) noted this response in the early modern economy and coined the term ‘industrious revolution’. Epstein (2001) noted a similar phenomenon in the fourteenth and fifteenth centuries, after the Black Death. Bailey (1998) sees it as an important component in the expansion of the Commercial Revolution in the thirteenth century.

supply that lowered prices and increased variety. Increased supply stimulated a further expansion of trade—a supply multiplier.

The expansion of trade justified investment in transportation infrastructure such as roads and harbors and in commercial infrastructure such as organized markets, banks, and courts. It also raised the productivity of commerce, as it did with production, by inducing reorganization and technological progress. Investment in infrastructure and rising productivity in commerce lowered trading costs, and this further promoted the expansion of trade—a trading cost multiplier.

There was something of a chicken-and-egg relationship between trading costs and the volume of trade. High trading costs held back the expansion of trade. However, investments in infrastructure were largely indivisible: they made sense only when the volume of trade was large enough to amortize their cost.²² And the productivity-enhancing reorganization of commerce was itself a consequence of the expansion of trade. So the low volume of trade held back the investments in infrastructure and the reorganization of commerce that would have lowered trading costs.

Autonomous changes were particularly important in breaking this impasse. They did so by creating trading opportunities that were profitable despite the high level of trading costs. The consequent expansion of trade then lowered trading costs, opening the way for other types of trade that had previously been unprofitable.

Multiplier effects at the different levels of trade

The nature and strength of the various multiplier effects differed at the different levels of trade—local, regional, inter-regional, and inter-zone.

Purely local trade provided little in the way of multiplier effects. Local markets were too small to support much reorganization of production. Exchange was unmediated, so there was no possibility of commercial development to lower trading costs and so expand the market spontaneously. The stimulus for local trade, therefore, had to come from outside, principally from long-distance trade, in the form of an autonomous demand for local ‘exports’.

²²See Reed (1973) for a discussion of economies of scale in the production of transactions services and in transportation

Regional trade did generate some multiplier effects. Larger regional cities, such as Paris and London, drew supplies from a considerable distance, providing stimulus to local markets in their hinterlands. Since the provisioning of large cities was highly profitable, it stimulated commercial development. For example, London in 1300 was served by a number of specialized grain merchants—‘cornmongers’ or ‘bladers’—some substantial enough to buy up the crop of entire manors.²³ Cities lowered trading costs by investing in transportation infrastructure to facilitate provisioning, and this facilitated trade in other goods. Large regional cities owed their existence either to the concentration of predation income or to the development of inter-regional trade. In the former case they were a source of autonomous demand; in the latter, their growth was itself a multiplier effect of trade at the inter-regional level.

Inter-regional trade had the strongest multiplier effects. The market was large enough to permit a significant reorganization of production. Because of relatively low trading costs, inter-regional trade consisted mostly of low-margin goods—bulk commodities and inexpensive manufactures. Since such goods were typically produced in many different regions, the expansion of inter-regional trade meant increasing competition. It was above all the pressure of competition that motivated efforts to lower costs. Moreover, inter-regional trade dealt largely in mass-market goods, the demand for which was highly sensitive to price. This too provided a strong incentive to lower costs. It was therefore the expansion of inter-regional trade that had the largest supply multiplier and was primarily responsible for raising productivity.

Inter-regional trade also had the strongest trading cost multiplier. The pressure of competition and the price-sensitivity of demand motivated efforts to lower not only production costs but also trading costs. Most of the important innovations in shipping, for example, originated in the transportation of bulk commodities in inter-regional trade within the zones.²⁴ Declining trading costs in inter-regional trade led to a convergence of prices and to a further expansion of trade. So in the preindustrial era ‘globalization’ was

²³Masschaele (1997)

²⁴Unger (1980)

associated with inter-regional trade—trade within the zone and within the internal market—rather than with global or inter-zone trade.²⁵

The decline in trading costs that originated in inter-regional trade affected higher and lower levels of trade as well. As the productivity of commerce increased, mediated exchange worked its way down to lower levels of trade. By the end of the period retail shops were appearing in regional centers and market towns, and merchants were organizing domestic manufacturing by rural households. This penetration of mediated exchange further down the hierarchy of trade led to a further deepening of the market. The fall in trading costs also trickled up to inter-zone trade. For example, it was the innovations in ship design that originated in the inter-regional trade in bulk commodities that made possible the voyages of discovery.

The multiplier effects of inter-zone trade were much smaller overall than those of inter-regional trade. The volume of inter-zone trade was much smaller and so, consequently, was its demand multiplier. Inter-zone trade was rarely the source of competition: the goods traded were generally produced in one zone but not in the other. That is why price differentials were large enough to pay the high costs of inter-zone trade.

Moreover, the goods typical of inter-zone trade were luxuries. The demand for such goods was not particularly sensitive to price: quality was more important. So trade in such goods created little or no pressure to lower costs, and it therefore played little role in raising productivity.²⁶ Similarly, there was little pressure to lower trading costs. And because trading costs remained high, there was little convergence in prices between zones. Silver, for example, remained far more valuable in Asia than in Europe for centuries.

²⁵O'Rourke and Williamson (O'Rourke and Williamson (1999)) characterize globalization as increasing trade due to falling trading costs, as opposed to increasing trade as a result of increasing potential (greater supply or greater effective demand). They find that there was no globalization of transoceanic trade in this sense before the nineteenth century.

²⁶There were, of course, exceptions. As we shall see, the trade in inexpensive textiles between the two zones of Europe was more like inter-regional trade in its effects. And silver was produced in most zones: imports from the Americas eventually drove European producers out of business.

Nonetheless, inter-zone trade did have significant supply multiplier and trading cost multiplier effects—but ones quite different in nature from those of inter-regional trade. Inter-zone trade was above all a source of new goods and new technologies.²⁷ A long list of industries spread from China, first to the Muslim world, and then to Europe. These included paper-making, gunpowder, printing, cotton and silk textiles, and porcelain. In agriculture, inter-zone trade brought important new crops such as sugar, rice and cotton from Asia, and maize and potatoes from the Americas. Inter-zone trade was also a source of new commercial and financial techniques. It seems likely that the Italians learned from the Muslims and Byzantines, and it is certain that the merchants of northern Europe learned from the Italians.

Autonomous changes and multiplier effects over time

Autonomous changes and multiplier effects varied in relative importance over time. In the chronology of market expansion, autonomous changes were the cause of turning points—from contraction to expansion or vice versa. Multiplier effects provided the momentum, sustaining the change in direction initiated by an autonomous change.

Moreover, the relative importance of autonomous changes and of multiplier effects changed as the economy became more commercialized. Autonomous changes were particularly important in initiating expansion in non-market economies. Because production for exchange amounted to only a small fraction of total output in such economies, a given autonomous change that was small relative to *total* output was much more significant in relation to that part of output that entered the market. At the same time, because the level of market activity was low, multiplier effects were weak. Non-market economies therefore required the exogenous stimulus of autonomous changes to initiate economic expansion; multiplier-generated cumulative growth remained weak.

As economies became more commercialized, production for exchange made up a larger fraction of total output. Autonomous changes of a given size relative to total output were therefore less significant in relation to market activity, and multiplier effects were stronger. Consequently, as economies became more commercialized they depended less

²⁷See, Romer (1994) on the importance of trade as a source of new goods.

on autonomous changes for stimulus and exhibited a stronger tendency towards self-sustaining multiplier-generated growth.

AN OVERVIEW OF THE EXPANSION OF TRADE

An overview of the expansion of trade in preindustrial Europe will illustrate these ideas and provide a context for the discussion in later chapters.

The early medieval recovery

The early medieval recovery began with, and was sustained by, autonomous increases in demand. From the seventh century, an increasingly powerful predatory class in Francia (northern France and the Low Countries) managed to exact greater tribute from its subjects. Expansion of the Frankish empire under Charlemagne further increased their wealth with plunder and additional lands. As a result, they expressed a growing demand for the goods and services provided by the market economy—both for war supplies and for luxury goods for their own consumption and display.²⁸

The growing demand of the Frankish nobility stimulated trade among those regions of Francia mutually accessible by river and sea. This inter-regional trade included bulk commodities such as grain and wine as well as higher-margin items such as slaves and woolen cloth. The zone of inter-regional trade expanded across the North Sea to Britain and Scandinavia, with the Franks exporting wine and manufactures and importing commodities. The growing trade and increasing traffic of the Carolingian expansion spurred investment in road and river improvements. Specialized merchants, absent during the long Roman decline, began to reappear. And a hierarchy of markets emerged, including several important regional fairs.

The Carolingian conquest of northern Italy in the eighth century revived inter-zone trade between the northern zone and the, Mediterranean (then mostly Muslim). The scale of this trade, however, remained modest and its scope restricted to high-margin items: the Franks imported silks and spices and exported mainly slaves. Earlier historians, Pirenne

²⁸Predation not only increased the income of the predatory class, but also reduced that of producers. However, producers may have compensated to some extent by working harder to ensure their own subsistence. In any event, the change in their income would have had little impact on the market economy, in which they did not participate.

in particular, have argued that it was the revival of inter-zone trade that led to economic expansion in the north. However, recent research has shown that, on the contrary, it was the growth of the Frankish economy—largely based on inter-regional trade—that led to renewal of trade with the Mediterranean.²⁹

In the tenth century, the discovery of major silver deposits in Saxony, a second autonomous source of increased demand, boosted the expansion.³⁰ Such discoveries represented a windfall gain to the fortunate discoverers—and to the local lords who collected the royalties. Discoveries of new resources also represented, of course, autonomous increases in supply. Increased supply lowered the local price of the good in question, thereby creating a potential for trade with other places where the price remained high.

The Commercial Revolution

It was largely multiplier effects that sustained the long expansion of the Commercial Revolution, although further major silver discoveries in Germany and Bohemia in the twelfth and thirteenth centuries provided an additional autonomous boost. The demand of the predatory class for luxuries continued to stimulate trade—as did their taste for war and conquest. As one example of the latter, the Crusades, which began at the end of the eleventh century, proved a godsend for the economy of northern Italy. Genoa and Venice in particular profited from the provision of shipping services and supplies to the Crusaders. The growing wealth of the predatory class also financed a construction boom, with mills, stone castles, and cathedrals going up all over western Europe.

The northern zone expanded southward along the Atlantic coast to the Bay of Biscay and northern Spain, and was pushed northward into the Baltic region by the German colonization. Trade with the Baltic initially passed across the Danish peninsula by land, so it was limited to high-margin items—mostly furs in exchange for silver and for woolen cloth from the Low Countries.

²⁹See, in particular, Wickham (2005).

³⁰The discovery was autonomous, but presumably the search was at least partially motivated by the economic expansion and the consequently rising value of silver.

Trade within the Mediterranean expanded steadily. The Crusades had lowered trading costs there by establishing Christian naval dominance.³¹ Moreover, the increasing abundance of silver in Europe happened to coincide with a dearth of silver in the Muslim world. The resulting price differential stimulated trade across the Mediterranean.

The Mediterranean was also the traditional route of European inter-zone trade with Asia and Africa—via the Black Sea and Levant for the former and via the Maghreb and Egypt for the latter. Since trading costs were high, this inter-zone trade was confined to high-margin items—principally silver from Europe in exchange for spices and silks from Asia and gold from Africa.

Trade in the Mediterranean zone was increasingly dominated by the urban central region of northern Italy. It was also the entrepôt for trade between the Mediterranean, Asia, and Africa and the northern zone of Europe.

Throughout western Europe, the expansion of trade created a growing and increasingly prosperous urban middle class, which expressed a growing demand for agricultural produce and for less expensive manufactures. It also financed the construction of urban housing and city walls. Growing urban demand for supplies was felt in the rural hinterlands as an autonomous increase in the demand for their ‘exports’. The resulting rise in rural incomes increased the rural demand for simple manufactures and for food products.

The expansion of trade during the Commercial Revolution gave rise to a strong trading cost multiplier. Investment in transportation infrastructure was widespread. It included all-weather roads in Italy, bridges in England, river improvements in France, and canals in Flanders. The expansion of trade at the local level stimulated the establishment of market towns: in England, for example, their number increased five-fold between the eleventh century and 1300.³² The volume of trade through northern Italy led to rising productivity in commerce. Italian merchants developed new forms of commercial organization and new financial instruments and intermediaries. Their

³¹“Thus the one lasting and essential result of the crusades was to give the Italian towns, and in a lesser degree, those of Provence and Catalonia, the mastery of the Mediterranean.” (Pirenne (1937))

³²Dyer (1995)

commercial and, especially, financial advantage over the merchants of the North allowed them to dominate trade between the two zones. The Italians converted the regional Fairs of Champagne into a sophisticated commercial center to facilitate this trade.

Falling trading costs allowed trade between the two zones to expand to include lower-margin items—in particular, inexpensive textiles. The Italians imported less expensive light woolens from the Low Countries and from England, and exported to the northern zone Italian-made cottons and fustians.³³ 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, where it displaced homespun woolens and linens. In the late thirteenth century, the Italians established a direct maritime link between northern Italy and northwest Europe. This allowed trade in bulk commodities between the two zones, but only in relatively valuable ones such as alum, wool, and raw cotton.

The inter-zone trade in inexpensive textiles had significant multiplier effects. In the northern manufacturing regions, it generated a demand multiplier that contributed to the expansion of inter-regional trade in the northern zone. The increasingly urbanized Low Countries drew raw materials and foodstuffs from other regions in the northern zone—wool from England and Spain, grain from northern France, fish from Scandinavia, wine from Gascony and from the Rhine, beer from Hamburg. In the Mediterranean zone, competition from northern woolens was strong enough to force manufacturers there to switch to other products.

The crisis of the long fourteenth century

As we saw in Chapter 1, the long expansion of the Commercial Revolution was brought to an end by the wars of the fourteenth century, which sharply raised trading costs and disrupted commerce and production. The rise in trading costs had the greatest effect on long-distance trade.

The overland trade between the two zones declined, being limited again largely to luxuries; the Fairs of Champagne withered. Maritime trade between the two zones

³³Munro has written extensively on the woolen trade: see for example Munro (1990). Mazzaoui (1981) is the best source on the cotton trade.

continued a little longer, to the benefit of Bruges, but it too was soon choked off by war-related predation. There were significant negative multiplier effects of the decline in inter-zone trade, particularly in the Low Countries.

The rise in trading costs also caused a significant reduction of maritime trade in the southern part of the northern zone—from the Low Countries southwards. For example, the cost of shipping wine from Bordeaux to London trebled between the 1330s and the 1380s, and did not fall again until the late fifteenth century.³⁴

The northern part of the northern zone, however, from the Low Countries northward, was less affected by war and trade continued to expand there. Trading costs continued to fall and exports from the Baltic expanded to include lower-margin goods such as beer and wood products. In the mid-fourteenth century, the Dutch pioneered a maritime route through the Sound, lowering transportation costs even further. The result was a further expansion of Baltic exports to include goods with even lower margins—not only grain embodied in beer but grain itself; not only wood products but timber.

The Black Death, which reached Europe in 1347, was a major autonomous shock with complex and significant economic effects. The decline in population, by a third or more, reduced the demand for food—particularly grain, the dietary staple. The falling price of grain lowered the value of agricultural land, causing rents to fall and, with them, the income of the land-owning predatory class. At the same time, labor became relatively scarce: wages rose in the towns as employers competed for workers, and in the country landowners competed for tenants by offering them better terms. The result was a major redistribution of income away from the land-owning nobility and clergy and towards urban workers and peasants.

The redistribution of income caused by the Black Death created a significant demand for non-grain foods and simple manufactures at the same time that inter-regional trade was cut off. This provided a considerable stimulus to trade within regions, which was mediated by a large number of new regional fairs.³⁵ Regional trade consequently played an unusually important role during the crisis of the long fourteenth century.

³⁴Menard (1991)

³⁵Epstein (1991)Ch. 3

The expansion of the long sixteenth century and the crisis of the long seventeenth

When the various wars came to an end in the middle of the fifteenth century, there was a decline in trading costs and a consequent rapid recovery of long-distance trade. The resulting expansion, like that of the Commercial Revolution, was driven principally by multiplier effects. Major discoveries of silver—in Central Europe from the 1460s and in the Americas from the 1550s—once again provided additional stimulus, but this was now less important because the economy was more fully commercialized.

Inter-regional trade recovered in the Mediterranean and in the southern part of the northern zone. The latter received additional stimulus with the opening of Spanish and Portuguese transoceanic trade.

In the northern zone there was a steady expansion of the long-distance trade in grain. The Dutch continued to lower transportation costs—building more efficient ships, finding profitable back cargo, and lowering the cost of finance and risk. As a result, by the sixteenth century, Baltic grain had become competitive, not only in the Low Countries, but all along the Atlantic coast as far south as Spain and Portugal.³⁶ Other long-distance bulk trades became profitable as well—salt from France and Portugal for the Baltic, for example, and Baltic and Scandinavian timber for the Low Countries and Iberia.

Overland trade between the two zones expanded once again to include less expensive textiles and other low-margin goods. However, this trade did not regain its former significance for northwest Europe, because trade within the northern zone itself was now so much greater.

The voyages of discovery of the late fifteenth century established direct maritime links with Asia, Africa and the Americas. The maritime link with Asia lowered trading costs, although not dramatically. The result was a gradual expansion in the volume of trade. In particular, the quantity of pepper imported to Europe rose steadily and its price correspondingly fell. However, trade with Asia remained small relative to inter-regional trade within Europe. As an indication, trade with Asia around 1600 was worth between one and two million ducats a year. At the same time, the much less glamorous European

³⁶de Vries and van der Woude (1997) Ch. 9

inter-regional trade in cattle—itself only a very small part of total inter-regional trade—was worth roughly twice that amount.³⁷

The Atlantic trade had a larger impact because of the establishment overseas of European colonies. The colonists produced commodities for export back to Europe and imported in exchange a variety of supplies. Sugar was the most important colonial export, first from the Atlantic islands, then from the Caribbean and finally from Brazil. In addition, large quantities of silver began to be shipped from the mines of Zacatécas and Potosí by the 1550s. The European colonists in the Americas expressed a significant demand for European goods—basic foods such as flour, wine, and oil as well as a variety of manufactures and, increasingly, slaves from West Africa for the sugar plantations. Much of the American silver was re-exported from Europe to Asia. The abundance of silver in Europe (initially from Central Europe and later from the Americas), together with its high value in China provided a powerful stimulus to the expansion of trade between Europe and Asia. By the end of the sixteenth century, Spanish America was becoming a trading zone in its own right, with its own inter-regional trade in supplies and basic manufactures and a direct link with Asia via the Philippines.

In the urbanized central region of the northern zone, the expansion of trade and the increasing demand for its manufactures created strong multiplier effects. The size of the region expanded to encompass Brabant and Holland as well as Flanders: urbanization in all three provinces approached 50% by mid-sixteenth century. By the end of the fifteenth century, Antwerp had eclipsed Bruges as the principal trading center of the region. Bruges had been little more than an outlet for exports of Flemish cloth—especially to the Baltic—but Antwerp developed into a major entrepôt. It became the trading center not only for the northern zone but for Europe as a whole and for Europe's transoceanic trade with the rest of the world.

England experienced an export-led boom in the sixteenth century: its primary export was woolen cloth, most of it exported through London to Antwerp. The multiplier effects contributed to the development of its inland trade. England was blessed with relatively

³⁷See Blanchard (1986) on the value of the cattle trade, and Subrahmanyam and Thomaz (1991) on the value of the trade with Asia.

good transportation and lacked the frequent and heavy tolls that handicapped internal trade elsewhere in Europe. Commercial development, centered on London, further lowered trading costs, creating a large integrated domestic market.³⁸

Towards the end of the sixteenth century, as we saw in Chapter 1, the increasing incidence and severity of war caused an overall slowing of the European economy. However, with the economy now more commercialized, the impact of this autonomous change was less severe than had been that of the wars of the long fourteenth century. In particular, the highly commercialized economies of England and the Netherlands continued to flourish and to expand.

The Netherlands had prospered from its trade with Antwerp—as a provider of supplies and of shipping services. Its economy was set back by its war of independence from Spain, but it quickly recovered. Moreover, as a consequence of the war, Amsterdam replaced Antwerp as the principal commercial and financial center of Europe—its population growing from 30,000 in 1570 to 140,000 in 1647. A shortage of fuel in the growing city and in other cities stimulated the development of peat mining, which required the building of canals to bring the peat to market. The resulting improvement in internal transportation contributed to the development of an integrated domestic market.

The English and the Dutch also played an increasing role in transoceanic trade. When the Dutch took over the Asia trade from the Portuguese in the seventeenth century, they adopted the same methods they had used successfully to lower trading costs in the inter-regional grain trade.³⁹ As a result, there was a further significant increase in volume, and the range of imports expanded to include less expensive manufactured goods such as Chinese porcelain and Indian calicoes.

By the seventeenth century, trading costs had declined to the point that the two zones of European trade effectively merged into one. Widespread harvest failures and rising grain prices in the 1590s first brought English and Dutch grain ships into the

³⁸At the end of the seventeenth century, Gregory King—an early economic statistician—estimated that England's internal trade was four times its external trade: the ratio was probably much higher in the sixteenth century. (Palliser (1983))

³⁹Musgrave (1981)

Mediterranean. This paved the way for a general expansion of direct maritime trade between the two zones.

It has been suggested that economic growth in northwest Europe in the sixteenth and seventeenth centuries was a result of its being the terminus for transoceanic trade with Asia and the Americas.⁴⁰ The causality, however, ran in the opposite direction: northwest Europe became the terminus for transoceanic trade precisely because it was the most economically dynamic part of Europe. And its dynamism stemmed overwhelmingly from its inter-regional trade—maritime trade within the northern zone and inland trade within the growing internal markets of England and the Netherlands.

CONCLUSION

The extent of the market is determined by trading costs. Commerce—mediated exchange— is necessary for expansion of the market because it lowers trading costs. The agents of commerce are merchants and cities—the people of commerce and the places of commerce.

Market expansion and contraction is the result of changes in supply and demand and changes in trading costs. Such changes can be divided into those that are autonomous and those that are multiplier effects. It is the multiplier effects that are responsible for the cumulative and self-perpetuating nature of economic development and growth. We will examine the foundations of the supply multiplier in Chapters 3, 4 and 5 and those of the trading cost multiplier in Chapters 6 and 7. Autonomous changes play an important role in initiating and, often, in ending periods of economic progress. The origin of such changes often lies in predation—a subject to which we will turn in Chapter 8.

⁴⁰Acemoglu, et al. (2005)

REFERENCES

- Acemoglu, Daron, Simon Johnson, and James Robinson. "The Rise of Europe: Atlantic Trade, Institutional Change and Economic Growth." *American Economic Review* 95 (2005): 546-79.
- Anderson, James E., and Eric van Wincoop. "Trade Costs." *Journal of Economic Literature* 42, no. Sept. (2004): 691-751.
- Bailey, Mark. "Peasant Welfare in England, 1290-1348." *The Economic History Review, New Series*, Vol. 51, No. 2, no. May (1998): 223-251.
- Blanchard, Ian. "The Continental European Cattle Trade, 1400-1600." *Economic History Review, Second Series* 39, no. 3 (1986): 427-60.
- Braudel, Fernand. *The Mediterranean and the Mediterranean world in the age of Philip II*. New York: Harper & Row, 1972.
- Cipolla, Carlo M. *Money, Prices, and Civilization in the Mediterranean World*. Princeton: Princeton University Press, 1956.
- Clay, C. G. A. *Economic expansion and social change: England 1500-1700*. Cambridge: Cambridge University Press, 1984.
- de Vries, Jan. "Between purchasing power and the world of goods: understanding the household economy in early modern Europe." In *Consumption and the world of goods*, edited by John Brewer and Roy Porter. London: Routledge, 1993.
- de Vries, Jan, and Ad van der Woude. *The First Modern Economy: Success, Failure, and Persistence of the Dutch Economy, 1500-1815*. Cambridge: Cambridge University Press, 1997.
- Dyer, Christopher. "Were peasants self sufficient? English villagers and the market, 900-1350." In *Campagnes médiévales : l'homme et son espace : études offertes à Robert Fossier*, edited by Elizabeth Mornet, 736. Paris: Publications de la Sorbonne, 1995.
- Ehrenberg, Richard. *Capital and Finance in the Age of the Renaissance: A Study of the Fuggers and Their Connections*. London: Jonathan Cape, 1928.
- Epstein, S.R. "The late medieval crisis as an 'integration crisis'." In *Early Modern Capitalism: Economic and Social Change in Europe, 1400-1800*, edited by Maarten Prak. London: Routledge, 2001.
- Epstein, Stephan R. *An island for itself : economic development and social change in late medieval Sicily, Past and present publications*. Cambridge [England] ; New York: Cambridge University Press, 1991.
- Fox, Edward Whiting. *History in geographic perspective: the other France*. New York,: Norton, 1971.
- Gates, Hill. *China's motor : a thousand years of petty capitalism*. Ithaca: Cornell University Press, 1996.
- Hohenberg, Paul M., and Lynn Hollen Lees. *The making of urban Europe, 1000-1994*. Cambridge, Mass.: Harvard University Press, 1995.
- James, Margery Kirkbride. *Studies in the medieval wine trade*. Oxford: Clarendon Press, 1971.
- Jones, P. J. *The Italian city-state : from commune to signoria*. Oxford ; New York : Clarendon Press,, 1997.
- Kerridge, Eric. *Trade and banking in early modern England*. Manchester

- New York, N.Y., USA: Manchester University Press ;
 Distributed exclusively in the U.S. and Canada by St. Martin's, 1988.
- Kowaleski, Maryanne. *Local Markets and Regional Trade in Medieval Exeter*.
 Cambridge [England]: Cambridge University Press, 1995.
- Langdon, John, and James Masschaele. "Commercial Activity and Population Growth in
 Medieval England." *Past & Present* 190, no. 35-81 (2006).
- Leamer, Edward E. "A Flat World, a Level Playing Field, a Small World After All, or
 None of the Above? A Review of Thomas L. Friedman's *The World is Flat*."
Journal of Economic Literature Vol. XLV, no. March (2007): 83–126.
- Masschaele, James. *Peasants, merchants, and markets: inland trade in medieval
 England, 1150-1350*. New York: St. Martin's Press, 1997.
- Mazzaoui, Maureen Fennell. *The Italian cotton industry in the later Middle Ages, 1100-
 1600*. Cambridge: Cambridge University Press, 1981.
- Menard, Russell R. "Transport costs and long-range trade, 1300-1800: Was there a
 European 'transport revolution' in the early modern era?" In *The Political
 Economy of Merchant Empires*, edited by James D. Tracy, 228-275. Cambridge:
 Cambridge University Press, 1991.
- Muldrew, Craig. *The economy of obligation : the culture of credit and social relations in
 early modern England*. New York: St. Martin's press, 1998.
- Munro, John H. "Urban regulation and monopolistic competition in the textile industries
 of the late-medieval Low Countries." In *Textiles of the Low Countries in
 European economic history: Session B-15 Proceedings, Tenth International
 Economic History Congress, Leuven, August 1990*, edited by Erik Aerts and John
 H. Munro, 41. Leuven, Belgium: Leuven University Press, 1990.
- Musgrave, Peter. "The economics of uncertainty: the structural revolution in the spice
 trade, 1480-1640." In *Shipping, Trade and Commerce*, edited by P.L. Cottrell and
 D.H. Aldcroft. Leicester: Leicester University Press, 1981.
- O'Rourke, Kevin H., and Jeffrey G. Williamson. "The Hecksher-Ohlin model between
 1400 and 2000: when it explained factor price convergence, when it did not, and
 why." National Bureau of Economic Research, 1999.
- Ofek, Haim. *Second nature : economic origins of human evolution*. Cambridge, U.K. ;
 New York: Cambridge University Press, 2001.
- Palliser, D. M. *The Age of Elizabeth : England under the later Tudors, 1547-1603*.
 London ; New York :: Longman,, 1983.
- Pirenne, Henri. *Economic and Social History of Medieval Europe*. New York: Harcourt
 Brace, 1937.
- Reed, Clyde G. "Transactions costs and differential growth in seventeenth century
 Western Europe." *Journal of Economic History* 33 (1973): 177-190.
- Romer, Paul M. "New goods, old theory, and the welfare costs of trade restrictions."
Journal of Development Economics 43 (1), no. February (1994).
- Subrahmanyam, Sanjay, and Luis Filipe F.R. Thomaz. "Evolution of empire: The
 Portuguese in the Indian Ocean during the sixteenth century." In *The Political
 Economy of Merchant Empires*, edited by James D. Tracy, 298-. Cambridge:
 Cambridge University Press, 1991.
- Unger, Richard W. *The ship in the medieval economy, 600-1600*. London: Croom Helm,
 1980.

- Usher, Abbott Payson. *The history of the grain trade in France, 1400-1710*. Cambridge: Harvard University Press, 1913.
- Venables, Anthony J. "Economic geography." In *The Oxford handbook of political economy*, edited by Barry R. Weingast and Donald A. Wittman. Oxford ; New York: Oxford University Press, 2006.
- Wickham, Chris. *Framing the early Middle Ages : Europe and the Mediterranean, 400-800*. Oxford ; New York: Oxford University Press, 2005.
- Willan, T.S. *The Inland Trade: Studies in English Internal Trade in the Sixteenth and Seventeenth Centuries*. Manchester: Manchester University Press, 1976.