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Introduction

> *THE greatest improvement in the productive powers of labour, and the greater part of the skill, dexterity, and judgment with which it is anywhere directed, or applied, seem to have been the effects of the division of labour.*
>
> *AS it is the power of exchanging that gives occasion to the division of labour, so the extent of this division must always be limited by the extent of that power, or, in other words, by the extent of the market.*
>
> *Adam Smith, 1776*[1]

MARKET INTEGRATION AND ECONOMIC DEVELOPMENT

The idea that the reach of the market is associated through the division of labor with the level of economic development, and that the expansion of markets, that is, the process of market integration, leads to economic growth, has made Adam Smith one of the best known economists of all time. It has also become one of the most popular explanations for economic development since Smith first asserted that connection more than two hundred years ago.

In a nutshell, the logic of the argument runs as follows. When, for some reason, market areas expand and formerly separated markets become part of one single market, their integration turns them into a single operating entity. This generates a territorial expansion of the division of labor, inducing a reallocation of resources within regions or national economies, leading to an increasing division of labor. Through the specialization of

1 Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*; the first quote is from book 1, ch. 1, and the second from book 1, ch. 3.

skills, this will eventually improve the general productivity and thus induce economic growth.[2]

But through other channels than the pooling and accumulation of skills, market integration can lead to further economic gains. Among these are increased information flows that encourage technological spillovers and diffusions[3], enhanced competition, and increasing returns to scale.[4]

The concept of Smithian, or trade-led, growth, has not only thrived within academia but also in popular economics, and in policy making around the globe.[5] In the course of this it has also been very influential for views on the proper role of governments. The set of policies derived from Smith, often denoted as *laissez-faire*, focuses on the promotion of free trade. The liberal state, therefore, should intervene as little as possible in economic activities and should concentrate on establishing and maintaining law and order and on trade-promoting activities. Legitimate state activities therefore include the provision and enforcement of a legal system, in particular property right and contracts, guaranteeing a stable monetary framework, investing in trade-promoting infrastructure, and promoting and implementing policies that strengthen free trade and competition.[6]

Intuitively, this notion of Smithian growth is certainly very persuasive, so it is understandable that it is hugely popular in academia and politics alike. And if economic development is in the eyes of many so inextricably linked to the extent of the market, surely we also know exactly just how big the markets for the various production factors and the various products have extended at most times in history, and where and how this impacted on economic progress. Well, not quite. The *empirical evidence* on when and how markets became integrated, and on whether, when, and under what circumstances expanding markets promoted economic growth, is actually amazingly thin and often remains ambiguous.[7]

[2] Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*; see, for instance, Kelly, "The Dynamics of Smithian Growth," for an overview and an application to economic history.

[3] See, for instance, Keller, "Are International R&D Spillovers Trade-Related?," Coe and Helpman, "International R&D Spillovers."

[4] Krugman and Venables, "Globalisation and the Inequality of Nations," Romer, "Increasing Returns and Long-Run Growth."

[5] See, for instance, Sachs, *The End of Poverty*, chs. 2, 3, 18; Stiglitz and Charlton, *Fair Trade For All*, ch. 2.

[6] Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, book 1, ch. 2. A modern version of Smith's vision of a liberal state can, for instance, be found in Milton Freedman's *Capitalism and Freedom*.

[7] See, for instance, McMahon and Squire, *Explaining Growth*.

Does "Smithian growth," for instance, help to explain the most fundamental economic development during the observation period of the present study, incidentally the most far-reaching economic change in the recent history of mankind, namely the Industrial Revolution? Why was it Western Europe that led the economic development in the world and industrialised first? And why, within Europe, did it start in Britain, rather than say, France or Austria? And why did it start in the late eighteenth century?

Surely, processes of economic change of such a monumental scale can hardly have monocausal explanations. Indeed, standard accounts include among the prerequisites and concomitants of the Industrial Revolution commercial, institutional, social, intellectual, scientific, financial, agricultural, and political changes. While some economic historians see these factors as a "seamless web of historical change," economists seeking to explain the phenomenon might call this a prototypical endogeneity problem, where a whole array of variables are mutually influencing each other and changing simultaneously in the process.[8]

In this "web" of factors, priorities and weights are assigned very differently, with trade and commercialization, geography, colonialism, religion, institutions, human capital, and coal among the most popular contenders for being key determinants for historical change.[9] While some view markets as quite irrelevant for the process, overall, trade and increasing markets and the ensuing process of commercialization are among the factors most often credited with being important driving forces for this "rise of Europe." Yet even in these accounts, there is profound disagreement about the extent of trade and about how and indeed when it actually impacted on European economic development.[10]

The plausibility of whether Smithian growth played a crucial role for the Industrial Revolution in Europe hinges on whether Europe experienced a process of market integration prior to, or at least accompanying, its economic "takeoff" in the late eighteenth century. A number of empirical studies indeed do find evidence that this was the case, pointing to the

[8] Quote from Cameron, *A Concise Economic History of the World*, p. 167.

[9] For some classical accounts on the Industrial Revolution and the "rise of Europe," see Ashton, *The Industrial Revolution*, Landes, *The Unbound Prometheus* and *The Wealth and Poverty of Nations*, Mokyr, *The British Industrial Revolution*. For works that see some very clear key determinants, see, for instance: religion: Weber, *The Protestant Ethic and the Spirit of Capitalism*; geography: Diamond, *Guns, Germs, and Steel*; coal and colonialism: Pomeranz, *The Great Divergence*; institutions: North and Thomas, *The Rise of the Western World*; knowledge and human capital: Mokyr, "The Intellectual Origins of Modern Economic Growth." For more information on the differing explanations of the European success, see also Chapter 1.

[10] The organization of the arguments concerned with the connection of market integration and economic growth owes a lot to Bateman, *Market Integration and Growth in Europe*, ch. 1.

eighteenth century as a period of increasing market integration.[11] Consistent with these findings, it is argued that market integration was one of the key driving factors for structural change and economic growth in early modern Europe. Because technological change remained fairly limited in this period, it was the process of market expansion, facilitated by more efficient institutions and followed by an increasingly interregional and international division of labor, which was the key to increases in productivity in the period before the Industrial Revolution.[12]

Not so, argues another body of literature, simply because European markets became integrated much earlier. According to Gregory Clark, English markets were well developed by the 1500s, while Abel and Achilles date the emergence of well-developed markets to the sixteenth and early seventeenth centuries. So why did Europe not take off then but only centuries later? Surely, neither can integrated markets explain the rise of Europe in the eighteenth century, nor can the slow growth in the centuries before be blamed on poorly developed markets. We must look elsewhere for the causes of modern economic growth.[13]

Wrong again, is the view of more recent authors. Market integration can indeed not have been central for explaining the Industrial Revolution, not because well developed markets developed much earlier, but because they only emerged after 1800, when the Industrial Revolution was already well under way. Focusing on long-distance trade, both intra-European and intercontinental, they conclude that trade in early modern times was characterised by the exchange of noncompeting goods of a low bulk-to-value ratio. The surge in trade before 1800 did therefore not result in an integration of markets, hence no reallocation of resources and specialization ensued. The decisive break with the past arguably occurred in the nineteenth century, when the steamship and the railways lowered transport costs to such an extent that a very broad range of commodities, including bulky goods such as primary products, began to be traded internationally on a large scale. What followed was "Big Bang" – a rapid

[11] Persson, *Grain Markets in Europe*, Unger, "Integration of Baltic and Low Countries Grain Markets, 1400–1800," Allen and Unger, "The Depth and Breadth of the Market for Polish Grain 1500–1800."

[12] De Vries and van der Woude, *The First Modern Economy*; Persson, *Pre-Industrial Economic Growth, Social Organisation and Technological Progress in Europe*; Wrigley, *Continuity, Chance and Change*.

[13] Clark "Markets and Economic Growth"; Abel, *Agricultural Fluctuations in Europe*; Achilles, *Getreidepreise und Getreidehandelsbeziehungen europäischer Räume im 16. und 17. Jahrhundert*.

integration of markets, both within Europe as well as internationally. This first wave of globalization had a dramatic impact on the worldwide division of labor and sharply increased productivity and rates of economic growth. In these accounts, the nineteenth century is seen as the first and typical era of Smithian growth.[14]

A very different kind of rebuttal of the centrality of market integration for European industrialization has recently been provided by the comparative analyses of Carol Shuie and Wolfgang Keller. Their quantitative evidence suggests that the markets in eighteenth-century Europe actually were pretty well integrated. However, they find that the degree of market integration was actually comparable in advanced parts of China, namely the Yangtze Valley. And because in China no Industrial Revolution ensued, markets cannot be the explanation of the rise of Europe. They may be a necessary condition, but not a sufficient one for economic development.[15]

On top of the various explanations about how trade *directly* impacted on European economic development through market integration and Smith's "invisible hand," there is an array of literature about trade-led growth that worked *indirectly* through channels other than proper market integration. Most authors stressing the indirect consequence of trade accept that the extent of trade and market integration has not been big enough to enable large scale specialization and the reallocation of resources in early modern Europe. Yet they argue that the observed increases in specific trading areas and the concentration of activities and gains had nevertheless the power to induce the "rise" of Europe.

A first variant of a trade induced, but non-Smithian, growth explanation is indeed very "un-Smithian." Instead of the *invisible hand*, it is indeed a very *visible hand* that brings about an international division of labor by force. At the core of this position is the international Atlantic trade, in particular on the so-called triangular trade among Europe (largely Britain), Africa, and the New World. According to this position, it was the profits from the slave trade, which grew to major proportions in the eighteenth century with the expansion of sugar, tobacco, and cotton cultivation on slave plantations in the New World, together with the rise of a new division of labor, which spurred the Industrial Revolution. The

[14] O'Rourke and Williamson, "When Did Globalisation Begin?," "After Columbus," "From Malthus to Ohlin," Findlay and O'Rourke, "Commodity Market Integration, 1500–2000," Özmucur and Pamuk, "Did European Commodity Prices Converge before 1800?," Bateman, "The Emergence of Markets," Federico, "When Did European Markets Integrate?," Uebele, "National and International Market Integration."

[15] Shuie and Keller, "Markets in China and Europe."

outcome of that process was that the British specialized in capital-intensive and labor-saving production, while the slaves of the New World were forced into delivering the complementary labor-intensive production side. Thanks to the handsome profits of the Atlantic trade, Britain also had the necessary capital to pursue this capital-intensive specialization route, while the New World at the same time increased the British selling market and with it the demand for the new British manufactured products.[16]

Daron Acemoglu and his coauthors have recently added another explanation of how the increasing Atlantic trade induced economic growth in Europe in a non-Smithian way. Focusing on the period 1500 to 1850, they acknowledge that the rise in overseas trade after Columbus was most likely not "large enough to have been *directly* responsible for the process of growth in Europe."[17] However, they contend that the rise of the Atlantic trade played a central role in the rise of Europe through indirect channels influencing institutional development. In countries with easy access to the Atlantic and with nonabsolutist initial institutions – England and the Netherlands, basically – the surging Atlantic trade generated large and concentrated profits for merchants. This thus strengthened commercial interests and increased their political power, while it had a constraining effect on the power of monarchs. This shift of power away from the monarchy induced significant institutional reforms in favor of institutions that were conducive to growth, as they guaranteed private property and personal freedom, the rule of law, and the prevention of excessive spending by the crown. "With their newly gained property rights, English and Dutch merchants nations invested more, traded more and spurred economic growth."[18]

[16] Williams, *Capitalism and Slavery*, gave rise to this line of arguments; for a current overview of the debate surrounding the Williams thesis, see Morgan, *Slavery, Atlantic Trade and the British Economy 1660–1800*. For some very influential work focusing on colonialism and world trade: Frank, *World Accumulation, 1492 – 1789*, Wallerstein, *The Modern World-System*.

[17] Acemoglu et al., "The Rise of Europe," p. 550; emphasis added. Partly in reaction to the Williams thesis just mentioned, Engerman, "The Slave Trade and British Capital Formation," and O'Brien, "European Economic Development," showed that the profits from the slave trade only played a modest part in the capital accumulation in Europe. In *Africans and the Industrial Revolution in England* Inikori revised these estimates upward, but there is some agreement that the direct gains from the Atlantic trade were relatively rather limited. Also, it is accepted wisdom that maritime overseas trade only represented a small share of total trade in Europe, as inter-European land transport dominated trade. See, for instance, Irwin, "Comment on "Commodity Market Integration, 1500–2000."

[18] Acemoglu et al., "The Rise of Europe," p. 572. The linkage between trade and institutions for explaining the rise of Europe is by no means new, but it is an updated variant of the arguments of North and Thomas's *The Rise of the Western World* and of North and

Another recent explanation about how increased trade created the Industrial Revolution without a proper integration of markets comes from Robert Allen. In his account, England's commercial success during its imperial expansion in the seventeenth and eighteenth centuries enriched England and turned London into the trading center of the world. This created a unique structure of wages and prices that set Britain apart from the rest of the world. In particular, wages rose above the levels enjoyed in any other country, while the price of energy, thanks to Britain's natural endowment in coal, remained low at the same time. This peculiar price and wage environment created the incentive to substitute capital and energy for labor. Hence it was in England where it paid for inventors to invent machines that did exactly that, and it was in England where it paid for entrepreneurs to apply this knowledge and for investors to provide the money necessary to do so. Consequently, these machines (such as the steam engine) were invented and put into use in England, and mechanization and industrialization got under way.[19]

To conclude, there is indeed little agreement about when the process of European market integration began, about the extent of trade and market integration at various points in early modern Europe, or about the comparative levels of economic integration Europe had reached relative to the rest of the world. As scant and ambiguous quantitative evidence leaves large room for maneuver, it is hardly astonishing that there are also completely diverging views on the importance of the expansion of trade for the rise of Europe, either as a direct force through the integration of markets and the ensuing reallocation of resources or indirectly through other channels. So the assessments about the role of market integration on Europe's industrialization range from negligible to central. Clearly, there is enough room and motivation for new contributions to the study of market integration in the pre-1900 world.

Weingast's "Constitutions and Commitment." However, the causations proposed by Acemoglu now run the other way round, from trade to institutional change, while in the earlier formulation better property rights and more liberty were the prime movers and led to more trade and growth. Yet because in Acemoglu's argument the development depends on nonabsolutist "initial" institutions, the new version of the institutional argument is really only marginally different.

19 Allen, "The British Industrial Revolution in Global Perspective." This list of attempts to explain the rise of Europe or England with the commercial expansion is by no means exhaustive, but focused on some important and distinct contributions. There are many more, and the number is increasing; see, for instance, Voigtlaender and Voth, "Why England?" for a very recent contribution.

STUDYING THE PROCESS OF MARKET INTEGRATION

After this somewhat confusing tour through the coppice of the trade-growth debate for early modern and nineteenth-century Europe, it is time to get a general idea of the literature about market integration. This field of research, in which the trade-growth link discussed above is but one area of study, has become a very popular field in recent years. One reason for the popularity of the history of market integration has been the recent wave of globalization that has triggered a surge in the interest for earlier waves of market expansion and globalization. The main research questions associated with market integration can be divided into four broad categories[20]:

a) When and how did markets integrate?

Probably the most fundamental area of research aims at describing what actually happened. When did market areas start to expand? Where and when do we observe periods of integration or disintegration? How efficient were these markets at various points in time?

In this quest to determine the efficiency or degree of market integration over time, the resulting measure is regularly also interpreted more generally as a proxy for the sophistication or the stage of development of an economy.[21]

b) How do we explain the process of integration?

What factors explain the evolution of market integration? How central were developments in transport technology and infrastructure? How important was trade policy? What was the role of political integration, warfare, monetary regimes, or geographical features in the processes of integration or disintegration?[22]

[20] This categorization has been inspired by Federico and Persson, "Market integration and convergence."

[21] Some very recent contributions that fall into this category are Özmucur and Pamuk, "Did European Commodity Prices Converge before 1800?," Federico and Persson, "Market Integration and Convergence," Federico, "Market Integration and Market Efficiency," Shiue and Keller, "Markets in China and Europe," Klovland, "Commodity Market Integration," Jacks, "Intra- and International Commodity Market Integration," Dobado and Marrero, "Corn Market Integration."

[22] Recent examples here include Federico and Persson, "Market Integration and Convergence," Shiue, "Markets in China and Europe," Jacks, "What Drove Nineteenth Century Commodity Market Integration," and "Commodity Market Integration in the Long-Run."

c) What were the economic and social effects of market integration?

The debate about the most prominent potential effect of market integration has already been discussed with the example of the "growth of Europe," namely the alleged relationship between expanding markets and economic growth.[23] Other fields of investigation ask about the consequences of market integration on welfare or income distribution.[24]

d) What were the political consequences of market integration?

How did the trends in market integration feed back into the political agenda? For instance, did periods of market expansion bring forward the adoption of restrictive policies?[25]

Of these four main research areas, the first one has certainly attracted the most attention by far. This is surely understandable insofar as determining what happened forms a prerequisite for tackling all other research questions connected to market integration. The fact that in particular the last two research agendas have so far only produced a rather limited amount of quantitative studies is another indication that in many respects, mapping out the history of markets is a project that is still at an early stage. Even though this field has recently become very popular, we still only have a very incomplete picture of what has been one of the most profound economic changes ever since. While we know a lot about some aspects, others have hardly been touched upon, and there are still very divergent positions even regarding the most central topics. This has been exemplified earlier in this chapter with the debate about the role of markets in the Industrial Revolution.

It will be argued in the present work that the limitations and biases of the literature are such that some generalizations made on the basis of what is presently known may not only be incomplete, but actually misleading in some respects. Arguably, this is partly the result of some very clear biases in the literature regarding *time period* and *geographical coverage*.

Stimulated by the wave of globalization since the late 1990s, the so-called first globalization wave of the late nineteenth century has

[23] Historical examples include Keller and Shiue, "Markets in China and Europe," Acemoglu et al., "The Rise of Europe," and Clark, "Markets and Economic Growth." Papers with a more recent focus are Frankel and Romer, "Does Trade Cause Growth" and Dinoupoulos and Segerstrom, "A Theory of North-South Trade and Globalisation."

[24] See, for instance, O'Rourke and Williamson, "From Malthus to Ohlin."

[25] Rare examples of research on this issue are O'Rourke, "The European Grain Invasion" and Williamson, "The Tariff Response to World Market Integration."

experienced a big surge of interest from historians, economists, and policy makers alike.[26] Another reason why the nineteenth century has been the *time period* to attract most of the attention is the availability of data. The abundance and quality of economic data that was collected in the nineteenth century, both by the authorities as well as private businessmen, is unprecedented in history. For earlier periods, records of prices or other variables are much scarcer and have rarely been published. Consequently, good data for quantitative studies on earlier periods is not just less abundant and often of inferior quality, but normally also much more scattered and harder to gain access to. While this focus on the nineteenth century is particularly pronounced for the research areas (a) and (b), the bias for studies on the effects of market integration tends to be slightly different. Studies on the link between trade and economic growth have mostly concentrated on the post–World War II period, which is understandable, as good macroeconomic data on total or per capita production only becomes available in this period.[27]

Several clear biases are also discernible with respect to the *trade routes* or *geographical locations* of markets studied. The first dimension refers to spatial resolution. So far, relatively little quantitative research has been undertaken to study local, regional or intraregional markets and their integration over time.[28] Moreover, a synthesis combining the limited knowledge about such micro perspectives with research on long-distance trade is also lacking. Much more effort has been devoted to describing the formation of national markets, so that there are now specialized quantitative studies on market integration for quite a number of nations, among them England,[29] the Netherlands,[30]

[26] The start of this surge was arguably the work of O'Rourke, "The European Grain Invasion" and O'Rourke and Williamson, *Globalisation and History*.

[27] See, for instance, Frankel and Romer, "Does Trade Cause Growth" or Dinoupoulos and Segerstrom, "A Theory of North-South Trade and Globalisation." Acemoglu and his coauthors are a notable exception here; but they work with very few and shaky data points. Acemoglu et al., "The Colonial Origins of Comparative Development" and "The Rise of Europe."

[28] Some notable exceptions are Kopsidis, "The Creation of a Westphalian Rye Market 1820–1870," Brandenberger, *Ausbruch der Malthusianischen Falle,* Göttmann, *Getreidemarkt am Bodensee*, Vögele, *Getreidemärkte am Bodensee*.

[29] Recent contributions include Klovland, "Commodity Market Integration," Ejrnaes and Persson, "Feeding the British," Clark, "Markets and Economic Growth," Galloway, *Trade, Urban Hinterlands and Market Integration*, and Granger and Elliot, "A Fresh Look at Wheat Prices and Markets in the Eighteenth Century."

[30] Van Tielhof, *The "Mother of All Trades,"* de Vries and Van der Woude, *The First Modern Economy*.