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An Introduction to the History of Capitalism 600-1900 AD

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with an introduction by **Hywel Williams**

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Front cover shows

Departure from Lisbon for Brazil, the East Indies and America, illustration from 'Americae Tertia Pars...', 1592.

CONTENTS

Introduction	2
by Hywel Williams	
Early Islam and the Birth of Capitalism	4
by Benedikt Koehler	
A Global Transition: From the Mediterranean to the Atlantic	12
by David Abulafia	
A The Changing Axis of Economic Power in the Early Modern Period	22
by Victoria Bateman	
Making Money, Making Empires: The Case of the East India Company	32
by Huw Bowen	
Industrialisation: Why Britain Got There First	38
by Nicholas Crafts	
About the Authors	52

INTRODUCTION

by Hywel Williams



The essays in this publication are based on lectures that were delivered at the Legatum Institute during 2014 as part of a course of study entitled “History of Capitalism”. This inauguration of a three-year syllabus provided five scholars with an opportunity to outline the chief features of a movement of endeavour and thought that has transformed the human condition.

Lucid exposition, intellectual originality, and narrative skills of a high order are evident in the pages that follow, and the Institute is indebted to the five historians whose essays, here assembled, constitute a chronological introduction to capitalism’s variegated history. The *caravanserai* of early medieval Arabia and Palestine; urban civilisation and financial innovation in Spain and Italy during the central Middle Ages; north-west Europe’s sixteenth-century access of wealth, together with the emergence of an Atlanticist dimension to the “early modern” world economy; colonial exploration, maritime adventure, and plunder beyond compare in the eighteenth century, most notably in the case of the East India Company; industrialisation’s Promethean energy which, after its initial appearance in the valleys of south-east Wales, went on to claim the “developed world” as its domain: themes such as these, zestfully explored in our essayists’ prose, illustrate the range and depth of the Legatum Institute’s investigation into capitalism’s origins and evolution.

Capitalism is one of history’s most famous “isms”, but its significance cannot be grasped by those who conceive of it as an abstract and impersonal force. That determinist approach was part of a fashionable consensus in Western historiography during the mid to late twentieth century. Human agency, individual ideas, and the shifting pattern of day-to-day events were accorded a less central role in the narratives penned by historians. In their place came the social and economic forces which were now acclaimed as the historian’s true focus. These long-term tendencies and structures were supposed to be the motor of history since they determined the shape of events. However, the entrepreneurial spirit, the energy behind capitalism’s historic journey, cannot be categorised so simplistically.

Ideas that once seemed original and daring have a habit of turning into orthodoxies. And orthodoxies breed, in turn, a counter-reaction. The attempt to reduce historical experience to a series of socio-economic laws can now be dismissed as a dingy little episode in the history of ideas. Historical writing in our time has re-embraced narrative and chronology, the biographies of individual personalities, the unpredictability of events, and speculative thought that is inspired by the imagination rather than being determined by its context.

As a result of this recovered freedom, the history of capitalism has acquired a new and more generous dimension, and it can no longer be limited to the nineteenth and twentieth centuries. This particular “ism” is not an example of a general economic law, nor is it a predetermined historical phenomenon. Capitalism’s history ought to be understood rather as an aspect of the life of the mind and spirit. Those who wish to do justice to the subject’s intellectual depth need to be prepared therefore for a journey that explores political life and thought, the history of the visual arts, literary self-expression, scientific discovery, religious intuition, and philosophical insight as well as those features of material existence that are investigated by the historian of economic advance.

The wealth of evidence presented in the pages that follow show that “capitalism” is not limited to industrial societies. The term perhaps eludes a universal or essentialist definition, but it is invariably associated with ownership of private property, capital accumulation, wage labour, competitive markets, legally binding contracts in relation to services, and agreements concerning prices. Many of these attributes can be seen at work in the economic history of the central Middle Ages in Europe. The Latin word “capitale”, a derivative of “caput” (head), gained currency during the centuries that followed the late fifth century collapse of the western Roman empire. “Chattel”, an English term for moveable property, records a similar application and derivation. In the mid-thirteenth century “capitale” was being used to describe a merchant’s stock of goods and by the 1280s its meaning had extended to include the entire assets of a firm or business engaged in trade. “Capitalist”, in the sense of an individual who owns capital, had established itself in English usage by the mid-seventeenth century. A history of the word alone explains why a narrative account of capitalism needs to extend over a millennium and a half of recorded human history. Research work presented during the second year of this syllabus suggests that some features of capitalist endeavour, globalisation for example, may be witnessed in societies that are more ancient even than those of Greece and Rome.

Capitalism’s deep roots, together with its capacity for renewal, raise the possibility that this is a phenomenon whose history is coeval with that of settled, urban civilisation. Viewed within this long-term perspective, capitalist ways of living and of thinking seem natural rather than contrived, and the twentieth century planned economy by contrast, appears aberrant. The classic form of capitalism adopted in the West has been grounded in that civilisation’s custodianship of the notion of human dignity, the rule of law, and the right to privacy. Collectivism annulled these dignities.

The history of capitalism can only be really understood in an international dimension and with a multidisciplinary focus. These are the defining attributes of the work of the Legatum Institute in all its programmes of study and that thematic attention to varieties of “prosperity”—*eudaimonia* as Aristotle termed it—is the means by which a deepened appreciation of historical knowledge may shape our thoughts about the present and guide our aspirations for the future. It is therefore particularly appropriate that the study of capitalism’s history should have found its focus and inspiration at the Legatum Institute.

EARLY ISLAM AND THE BIRTH OF CAPITALISM

by Benedikt Koehler



Anyone who sells a house and makes a profit wants to know what to do with the money they make. If they live in a city with a bull market in property, often the sensible decision is to buy another property. This investment strategy is not new. It was already tried and tested in a city that had a booming property market in the early seventh century in Arabia, namely Medina. There, the leader of the community gave out the following advice to anyone who sold a property: "He who sells a house and does not buy another one instead, is not likely to see blessing in that money." This is straightforward investment advice: if you make money in property, keep it in property. There is nothing unusual about this recommendation, except where it came from. The recommendation to invest in bricks and mortar was made by the founder of Islam, Muhammad.

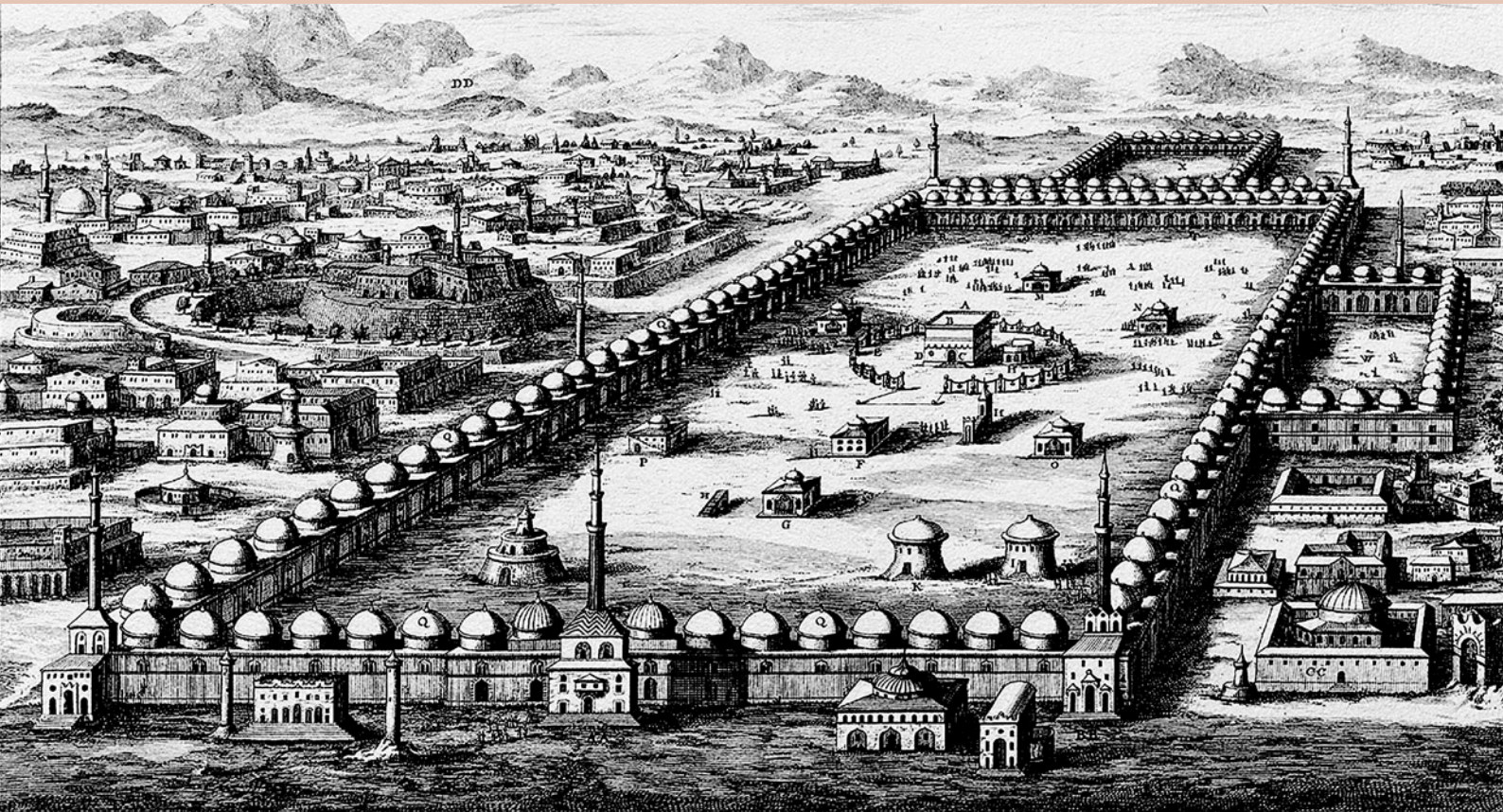
Prophets who give investment advice are in a minority. It would be difficult, for example, to imagine someone asking Jesus or Buddha what to do with their savings. But for Muhammad, giving investment advice was entirely in keeping with how he conceived his office. Islam is a religion that guides Muslims in everything they do—and that includes business.

Muhammad knew a great deal about investing money. He had been a merchant by profession—he had taken part in trade caravans, and for most of his business career he probably managed a warehouse producing leather goods. Muhammad was in his early 50s when he founded his community in Medina, and by then he had some four decades of business experience behind him.

Islam differs from other religions in many respects, but the one that is relevant here is how Islam—a religion begun by an entrepreneur—marked the advent of capitalism, first in Medina, then in Arabia and in the realm of Islam, and finally beyond Islam's borders, in Europe. But before we turn to that, let us briefly consider the term "capitalism" and what it means.

"Capitalism" is a word used so often that we might think that everyone agreed on what it meant, but that is not the case. We might expect to find a definition of the term from two economists who come to mind as those who first explained the nature of capitalism: Adam Smith and Karl Marx. But Smith never used the term at all, and in all of Marx's books there is only a handful of references to capitalism.

It was a sociologist, Max Weber, who pointed out that capitalism is more than just a way of doing business: it is a mode of organising society. There is more to capitalism than accumulating goods, or building factories or offices. A society does not need to be capitalist to manufacture products. What makes capitalism distinctive, said Max Weber, is a particular frame of mind that makes someone want to produce and trade



goods. Capitalism follows from a special set of attitudes—specifically, a willingness to invest time and effort with a view to reaping a profit in the long run.

So, ever since Max Weber, capitalism has been understood as a set of attitudes that shape society. But there is no agreement on when those attitudes first appeared, or on what brought them about. For example, ancient Greeks and Romans built great empires, but they had no notion of capitalism and they left no economic literature of note. But if the Greeks and Romans did not bring capitalism into being, who did? Max Weber suggested that Protestantism fostered capitalism and he found an example in Benjamin Franklin. When Ben Franklin said “time is money”, he explained capitalism in a nutshell. But Weber’s view has been contested, because capitalism existed earlier, in mercantile Italian republics such as Venice. As to locating the tipping point—the moment when capitalism began—the jury is out.

This brings us back to Islam and to Muhammad and his career in business. He came from a long line of prominent entrepreneurs in Mecca and had himself been a merchant in the city. He had lost most of his money when his business was boycotted, but he rebuilt his fortune. That fact is another aspect that separates

Partial view of Mecca

Johann Bernhard Fischer von Erlach
(1721)

Muhammad from Jesus and Buddha: they died poor, while Muhammad, by the time he died, was the richest Arab of his time.

So let us look at Muhammad's biography and family background. The standard recitation of his life includes the following key events: Muhammad's father had died before he was born; as a teenager, he made a living as a shepherd; at the age of 25, he married Khadija, a lady of means; after opponents of Islam forced him out of Mecca, he founded a breakaway community in Medina; and within ten years he had united most of Arabia under the banner of Islam.

However, the story of religions and trade in Mecca did not begin with Muhammad. From the very beginning, civic life in Mecca revolved around the local sanctuary, the Ka'aba. In the fifth century, management of the Ka'aba was taken over by a certain Kossai, who claimed oversight of the Ka'aba for his tribe. Two families became guardians of the Ka'aba, the Omayyads and the Hashimites. Hashim, who gave the Hashimites their name, was a merchant who became famous because he was a trade diplomat—he signed trade agreements with Bedouins and with foreign states; his accords made caravan journeys across deserts safer and more profitable. His family had a third notable figure, Abdul-Muttalib, who led negotiations to ward off an attack on Mecca.

Kossai, Hashim, and Abdul-Muttalib were key figures in the shaping of Mecca's civic identity: Kossai set rules for managing the Ka'aba; Hashim struck trade agreements; and Abdul-Muttalib defended Mecca against attack. These three also mattered to the story of Muhammad, because he was their lineal descendant. When Muhammad came forward and proclaimed the need to reform religion and society in Mecca, the Meccans were listening to someone whose family had played a leading role in the town's history for many generations, in religion, in trade, and in war. Muhammad was around the age of 40 when he found his vocation to preach Islam. Let us now turn to his business career up until that point.

Muhammad had to pay his way in life. His father had died before he was born, his mother died when he was six. While he did not inherit a large estate, he inherited an asset that helped him in his career: his family was connected to Mecca's merchant elite. When he was in his mid-30s, Mohammed's uncle introduced him to Khadija bint Khuwaylid, one of Mecca's wealthiest investors, who set him up in business and later married him. Muhammad had married into money.

Muhammad was the first to unite Arabs in a single state. However, he did not proclaim a new state when he settled in Medina. What he established there were two institutions that shaped the public sphere in every city founded by Muslims: the mosque and the market. Our present focus is on the second of these.

When Muhammad arrived in Medina, the city already had four markets. When he decided to set up a new one, Medina's local residents tried to stop him. However, he persisted and inaugurated his market by declaring to his adherents: "Let this be your market ... and no taxes will be levied on it" (Ibn Shabbah, *Tarikh al-Madinah al-Munawwarah*, 1:304–6). Muhammad wanted this market to be big: large enough that the saddle of a camel, placed at its centre, could be seen from the periphery. Moreover, he created a fiscal incentive to attract merchants away from other markets, because trade in this market was tax-free. No surprise, then, that local merchants resented this competitor.

When Muhammad set a fiscal incentive to attract business, it was in keeping with his general management approach. He often promoted his policies by establishing tax incentives and fiscal provisions. To give just one example: in war, a warrior who provided a horse was entitled to three times the salary of a warrior who came on foot. By offering soldiers in his cavalry triple the standard rate, Muhammad was soon able to

field a larger cavalry than his enemies—one of the reasons for his military success. Fiscal incentives were germane to Muhammad's military planning.

Returning to trade and commerce, next we come to Muhammad's framework for business. What was the nature of that business? Long before the advent of Islam, Arabs were long-distance traders who connected Europe and Asia. Traders travelled in caravans, and in Muhammad's day a caravan departing from Mecca could comprise as many as 2,500 camels. A caravan was a highly complex undertaking: a large number of participants had to agree on a departure date and had to make sure that their goods and supplies were ready in time for that date. Something else had to be in place for all this to happen: caravans would be gone for a long time, so someone needed to advance the money to pay for the goods they carried and hoped to sell. Somebody needed to underwrite the risk of a venture. In other words, caravan trade needed investors.

Muhammad's first venture was small, comprising only two camels. Considering a caravan could number over 2,000 camels, we can imagine how many investors and managers there must have been in Mecca. These companies were called *qirad*, and they worked much like venture-capital companies today: each partnership needed to agree on how to split profits and losses, and who should pay for expenses. Khadija, Muhammad's wife, was one such professional investor in *qirads*. Muhammad and Khadija were married for 24 years, so he had first-hand knowledge of the issues involved in investing in *qirads*.

In Medina, Muhammad not only established a market, he also set rules on how trade should be conducted. This brings us to the cornerstone of Islamic business ethics, the Koran's pronouncement: "God has permitted trading and made usury unlawful" (Koran 2:275). This is a conjoined statement and both components matter. The Koran bans activities that exploit borrowers, but endorses trade that is fair. There are countless ramifications of the Koran's ban on usury, and we cannot go through all of them. But for present purposes, what matters is that the Koran approves of investments such as those made in *qirads*.

Muhammad introduced many other important innovations in Medina. One of particular interest was derestriction of prices. Once, there was a famine in Medina, and predictably the price of food shot up. Many households came under financial pressure and turned to Muhammad for help. What they asked him to do was to set a price cap. Muhammad was a manager who never shied away from making tough decisions to achieve his aims. So his followers were surprised by their leader's reaction: he refused to intervene in prices set by the market. They asked him why and he explained his reasons: "Prices", he said, "are in the hand of God" (Ibn Hajar al-Asqalani quoting Anas ibn Malik, *Bulugh'l Maram*, 834). Muhammad pronounced that, even though he was a prophet, he had no mandate to regulate prices. By implication, if the Prophet had no mandate to do that, neither did any other government authority.

When Muhammad derestricted prices on the Medina market, he threw out the rulebook of economic management that had been in place from the beginning of Mesopotamian history. Traditionally, wherever possible, government authorities prescribed prices and customers could file complaints whenever they thought a trader was charging too much. So it was a highly significant step when Muhammad said that he did not want to set prices because doing so would be irreligious.

After Muhammad died, his successors were at pains to follow his pro-market measures. For example, Ali, Muhammad's son-in-law, once spotted a trader on Medina's market who had built a stall. Ali insisted he remove it and told him, "For the Muslims, the market is similar to the place of worship: he who arrives first can hold his seat all day until he leaves it." So every evening traders had to remove their stalls, and every morning the competitive field was open to anyone.



Genoa
Woodcut from the Nuremberg
Chronicle (1493)

To explain why these measures matter for the history of capitalism, let us turn briefly to an economist of the twentieth century who thought deeply about the nature of markets, Friedrich von Hayek. According to Hayek, the hallmark of every capitalist society is the presence of markets. Today, we often use the term “market economy” instead of the term “capitalism”. As Hayek pointed out, pro-market policies have a ripple effect on society.

When markets are free to set prices, there are consequential impacts on wider society. Markets that create wealth need legal frameworks that protect property. There are also repercussions on intellectual life: a society exposed to new products will foster a climate of academic enquiry and of individualism. The history of early Islam proceeded on a track that Hayek would have expected: prosperous citizens endowed private charities, the *waqfs*, to promote public services, and there was vigorous growth of legal scholarship taught at the schools attached to mosques (*madrasas*). Hayek stated that free markets evolve another innovation, sound money. This happened in the late seventh century in Islam, when the caliph Abd al-Malik introduced an Islamic currency based on gold and silver. The Islamic gold coins were called *dinars*, and the silver coins *dirhams*. The ancient Roman silver coin was the

denarius and the Greek silver coin the *drachma*, so these designations show that Abd al-Malik wished to be seen as a successor to ancient Greece and Rome.

Hayek pointed out that market economies do not need governments to evolve, and he asserted a corollary: strong governments can get in the way of markets. The history of Arabia illustrates his point: Arabs created markets long before they created a state.

Let us now look at economies in Europe at the time. After the collapse of the Roman Empire, the standard of living across most of Europe dropped and stagnated for centuries. Even after Charlemagne founded a new empire, economic growth did not pick up in Western Europe. Throughout the Middle Ages, the standard of living in most of Europe hardly improved. When commerce in Europe did come to life, it did not happen in the places it might have been expected. We might have predicted that trade and commerce in Europe would take off in cities that had already been wealthy in antiquity, such as Rome, Ravenna, or Milan. However, none of these famous centres of power and culture became leading trade hubs. In some cases, the cities where business clustered had not even existed in antiquity.

By way of example, consider the history of Venice. Venice is an unlikely spot to build a city, as it is ringed by marshes and lagoons. Nobody would settle there unless they had to. Founded at a time when Italy was overrun by Huns and abandoned to anarchy, Venice had a single natural advantage: it was a good place to hide. In northern Italy, anxious families fled their homes and looked for a place where invaders were unlikely to find them. Venice, the city that became Italy's richest trade hub, began life as a hideaway.

After the Huns withdrew, Venetians made the first of many shrewd diplomatic moves: they placed themselves under the protection of the Byzantine emperor in Constantinople. Both parties benefited from this accord: the emperor acquired a bridgehead in northern Italy, and the Venetians received trade privileges in Constantinople. Venice did not aim to take control of territory: what the Venetians perfected was a business model. Leaving it to the emperor in Constantinople to consider himself their overlord, they concentrated on what they did best: promoting trade over long distances. Step by step, over a period of several centuries, the Venetians negotiated improved trade privileges until at last they had the right to trade throughout the Byzantine Empire. In parallel, they struck trade agreements with authorities in the realm of Islam.

In the Middle Ages, the position of Venice in Europe was similar to that, in the twentieth century, of Hong Kong in the Far East: subject of a sovereign so far away that there was no realistic hope that the city could ever be defended against a serious attack. However, no one would ever want to attack the city, because the city's trade privileges would be worthless if it no longer belonged to an empire. To leave Venice alone suited everyone.

There are some parallels between Venice and Mecca: both cities are located in barren environments and lack a fertile hinterland, and any trader setting forth on a journey had to cross an immense distance before he found a trading partner. The difference between a caravan and a convoy was that one crossed deserts and the other sailed across the sea. The dangers were daunting: the Mediterranean Sea was outside government control and infested with bandits and pirates.

European governments, at times, would have liked trade between East and West to stop, but they never succeeded in making it happen. Trade between Christians and Muslims went on regardless of whether their political masters were at war. Thus Venice and other similar cities, such as Genoa, accumulated trade links and trade expertise, and in the process grew rich. Emperors and kings had little to contribute to promoting trade, either in Mecca or in Venice. This may sound an odd coincidence, but it fits with what Hayek would have predicted: markets do not need governments to thrive. And there is a corollary to that: markets may be held back where governments are strong. That is what happened in Europe. Mercantile republics on

Italy's coast grew rich at a much faster pace than countries with large domestic economies. In the twelfth century, the republic of Genoa raised more taxes than all of France.

Let us now turn to spin-offs from Islamic legal and commercial institutions in Europe. Those Europeans who traded with Islamic countries had immediate exposure to Islamic institutions and applied what they saw at home. Among the various innovations in Europe the following four may be highlighted:

- » the way in which firms were structured;
- » business studies;
- » the evolution of trusts;
- » monetary reform.

Let us start with the forerunner of firms and corporations. As mentioned above, caravans in Mecca consisted of a multitude of individual ventures, where each venture was governed by an agreement between investors and managers. Convoys in Venice had a similar corporate structure. The name of these agreements was *commenda*, which offered profit-share agreements between investors and managers that were analogous to the *qirads* used to underwrite caravans. We have documentation for such agreements dating back to the tenth century.

Another crossover from Islam to Christendom was the development of a skill set to manage a business. To run a business, a manager needs to be able to write and know how to count. In medieval Europe, levels of literacy and numeracy were very low. Many merchants in tenth-century Venice, for example, signed agreements by placing a cross where there ought to have been a signature. However, by the early 1200s the demand for training in arithmetical skills had grown, and a leading mathematician of the time, Leonardo Fibonacci, had made a success of a book on commercial arithmetic, which showed how to calculate fractions and rates of return. He was a professional mathematician who came from Pisa but grew up in Algeria, where his father worked in a Pisan trade colony. Like many other European mathematicians, Fibonacci learned his mathematics from an Arab teacher.

There were also crossovers into Europe from Islamic jurisprudence. As noted earlier, benefactors in early Islam endowed schools attached to mosques, called *madrasas*; the purpose of these was to train lawyers. European organisations with a presence in the crusader states, the Knights Templar and the Franciscan Friars, had direct exposure to how these institutions worked, and they played a key role in replicating them in Europe. The Knights Templar were key to establishing London's Inns of Court. One high-ranking English official of the time, with close ties to the Knights Templar, was Walter de Merton, who endowed Merton College in Oxford. The statutes of this college are an early example of a new form of legal entity in Europe—what we now call a trust.

A trust needs three parties: a donor, who hands over assets that make up the trust's endowment; a manager, who is at arm's length from the donor; and the intended beneficiaries, whose entitlements under the trust must be set forth. In common law, the trilateral structure of a trust was a novel legal concept, but it had a precedent—namely, the Islamic *waqf*. Trust law in England was established in many test cases, and the plaintiffs in these cases were often members of the Knights Templar or Franciscan Friars. Considering that Franciscans had a greater presence in Islamic countries than any other Christian order, this can hardly be coincidental.

A fourth area where Europeans followed an Islamic template is monetary reform. Until the 1200s the sole issuer of gold coins in Europe had been the Byzantine Empire. However, after issuance there stopped,

several parties tried to fill the gap. In Europe, the first three states that launched their own gold coins were Venice, Sicily, and Genoa.

So we have Islamic antecedents for a host of institutional innovations: establishing a company, advancing business studies, founding colleges and trusts, and launching a gold currency. This prompts a question. The mere fact that Europeans took longer to make certain discoveries does not prove that they depended on Islamic models to make them. How can we claim that Islamic templates provided the inspiration for these innovations?

To answer that question, let us look at who the innovators were. A pattern emerges: Leonardo Fibonacci, the Knights Templar, and the Franciscan Friars—all had exposure to Islamic approaches to managing institutions. Next, consider the centres where innovation occurred. The vanguard of commercial progress was not in political power centres—not in Rome or Paris; but in cities with the best trade relations with Islamic countries—in Venice and Genoa. The agents of change in Europe were innovators who had insight into Islamic practices. Venice and Genoa had a competitive advantage because they had close trade links with the realm of Islam.

This pattern of commercial innovation—one that is kick-started by entrepreneurs who take the risk of investing, and then spreads to promote advances in law and economics—not only replicates the pattern we saw in the early Islamic empire; it also conforms to what Hayek would lead us to expect: that social progress originates in markets, not in government actions.

A word about the loss of dynamism that overtook Islamic economies. There were several reasons for this. One was the discovery of new trade routes that bypassed the Middle East: the Portuguese sailed around Africa to reach India and trade with Asia bypassed the Middle East; the Spanish sent out a fleet that sailed to the Americas; and across the Atlantic new markets opened up that offered bigger opportunities. However, another reason was of Islam's own making: Islam reached a point where it was thought that everything that was unclear in the Koran had been settled. From that moment, the drive to discover and innovate drained away.

To conclude: Islam—to state the very obvious—is a religion, and a religion cannot be reduced to an economic system. Nevertheless, Muhammad had a seminal impact on changing economic systems in the Middle East, and there were secondary impacts on economies in Europe.

We began with Muhammad's advice on property investment, and it was pointed out that Arabia, prior to the advent of Islam, was a commonwealth that did not have a single government, and did not need one to develop markets. Many aspects of that legacy were carried over into Islam. Early Islam promoted pro-market policies and framed institutions that supported entrepreneurs. Following from these, there were advances in law and economics, and the creation of a gold currency. The same pattern emerged when Europeans copied these innovations: markets developed on the periphery of European empires, not at their centre.

When Muhammad pronounced, "Prices are in the hand of God", he expressed a notion which corresponds with Adam Smith's concept of the "invisible hand" that guides markets. The anthropologist David Graeber has noticed a "striking resemblance" between the notions of Adam Smith and Muhammad. What Adam Smith and Muhammad have in common, in my view, is that both overturned conventional wisdom on how to regulate markets: if Adam Smith, who asserted that an invisible hand guides markets, is considered the father of market economics, then, somewhere in the family tree of economists, there ought to be a place for Muhammad.

A GLOBAL TRANSITION: FROM THE MEDITERRANEAN TO THE ATLANTIC

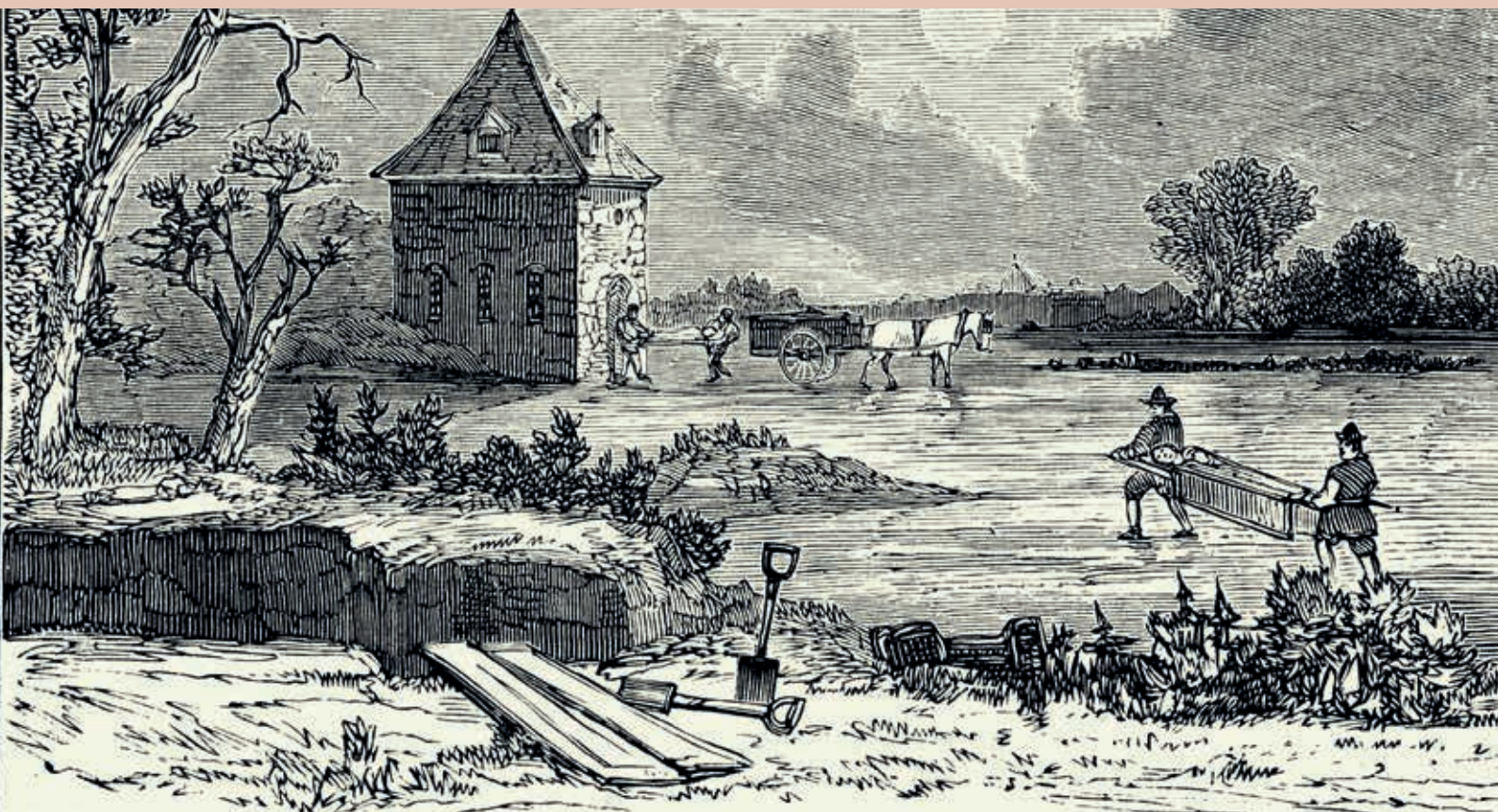
by David Abulafia



Talking about capitalism in a medieval setting immediately makes one reflect on the multiple meanings of that word. Clearly, we need to take care when we apply terminology from the industrial world to a pre-industrial society. Even the term “pre-capitalist economic formations”, which was used by Eric Hobsbawm as a title for edited extracts from Karl Marx’s early work known as the *Grundrisse*, raises questions for a bourgeois capitalist historian such as myself, who is less certain that we can define the economic relationships that existed in the pre-industrial world by way of their relationship to capitalism (however that term is to be understood), for that is surely what the term “pre-capitalist” implies. Still, the Marxist debate about the end of the Middle Ages, or—to use the terminology Marxist historians apply—the debate about “the transition from feudalism to capitalism”, is a good place to begin. The debate raises stimulating questions, nonetheless, concerned with the nature of town–country relations, with the organisation of labour, and with the effects of a plague that, in the middle of the fourteenth century, is now thought to have carried off half the population of Europe during its first onslaught (the Black Death) and smaller but still very significant numbers as it returned again and again over subsequent decades.

Post-war Marxist historians, notably Maurice Dobb, Paul Sweezy and Rodney Hilton (who was the only one with a strong medieval research interest), were keen to find out how well the performance of the western European economy matched the sequences set out by Marx, and to identify the “solvent” that transformed so-called feudal society into capitalist society. But the problem lay in defining what this capitalist society was. Changes were certainly taking place in the organisation of labour, as wage labour in some, but not all, areas of Europe encroached more and more on serfdom. In other words, landlords, who had in truth always used some wage labour, placed less reliance on labour services supplied by the peasants who held land from them; and serfdom itself was allowed to lapse or even, in some parts of Italy, was formally abolished—in the case of Bologna and some other towns, well before the Black Death arrived—and share-cropping became widespread in some areas.

Looking at these changes, Sweezy recoiled from the argument that the end of the Middle Ages brought a cash-based and in some sense capitalist economy, and preferred to think of a transitional period, intermediate between “feudalism” and “capitalism”, with its own distinctive social relationships. And Hilton tried as hard as he could to play down the impact of the Black Death, arguing that the changes that occurred were induced by new patterns of relationship between landlord and peasant, and the increasing role of the towns. The unpredictable



arrival of pestilence from far beyond Europe (for it originated in inner Asia) left uncomfortable those historians who saw the nature of social relations, and in particular the organisation of labour, as the key to their understanding of the past; in particular, it had nothing obvious to do with the class conflict that was integral to their understanding of human history. Here non-Marxist, or indeed anti-Marxist, historians, such as M. M. Postan of Cambridge, were able, it seems to me, to score significant points by showing that economic life was quite simply massively disrupted by the extreme mortality, and that what we need to do is to work out whether plague brought an “economic depression of the Renaissance”, severe recession (as Postan and others believed), or the restructuring of the economy in ways that opened up new opportunities for growth, as many historians (including myself) would now argue. An extreme example of the argument in favour of a more positive economic outcome was presented by a historian at the London School of Economics, A. R. Bridbury, who cheekily entitled his account of the late fourteenth- and fifteenth-century English economy *Economic Growth*.

Where Sweezy, even allowing for the breathtaking breadth of his generalisations, had something valuable to say was in his emphasis on the role of towns in

The pest house and Plague Pit
in Finsbury Fields

transforming the economy of late medieval Europe. But—just to take on board the results of the demographic studies of Postan and his heirs—the significance of the Black Death lies in significant measure not just in the overall mortality but in the effect that the plague had on the cities. In 1347–50 urban populations were hit especially hard. The concentration of population within the confined and unhygienic space of a walled city facilitated the spread of the most virulent form of the disease, pneumonic plague. Artisan workshops were wiped out. Skilled professionals, especially physicians who treated the sick and notaries who wrote their wills, suffered terribly. Rural villages too were deserted, as the workforce became too small to be able to till the land; and survivors gravitated towards the cities, where job opportunities beckoned and where the bonds of serfdom would no longer oblige them to work for a demanding lord: *Stadtluft macht frei*, “city air makes free”. Under the impact of this migration, urban population recovered remarkably rapidly, in places such as Hamburg and Bremen; the result was that the ratio between urban and rural population shifted significantly in favour of the towns. The switch from overpopulation (in effect) to underpopulation meant that wages, long depressed, rose significantly, in town and country. A smaller population placed much less strain on the productive capacities of the countryside, which had been pushed up to and beyond their limits in the half-century before the Black Death, a time of frequent famines, especially in northern Europe. Meanwhile, many survivors of the plague had inherited the money and property of dead relatives, and found themselves rising up the social ladder.

In these circumstances, diet improved, which increased resistance to later onslaughts of plague. Urban crafts revived as demand for good-quality products expanded. This is particularly noticeable in the major medieval industry, the cloth industry. Better materials and richer colours became more widespread: the cultivation of woad, Europe’s substitute for the indigo of the East, flourished in the area around Toulouse; madder was produced in the Netherlands; and so on. In other words, the interaction between town and country intensified: industrial crops were produced more and more widely in the vicinity of major towns, or were traded across considerable distances; the standard of living improved significantly during the period from about 1350 to 1500; much greater variety was injected into the economy, as regional specialisation took off at last on a significant scale. It can be seen, then, that the assessment of Bridbury and his allies concerning the renewal and even strengthening of the western European economy at this period has many attractions. This is not to deny that there were acute tensions within cities, where urban uprisings often involved the immigrants and their descendants, who might not have access to the guilds that attempted, often unsuccessfully, to control membership of the workforce. Yet what these uprisings in northern and southern Europe reveal is precisely that the economy was being radically restructured, and that various types of worker who would have been excluded from influence in older and simpler times were now key workers whose political voice was occasionally expressed stridently.

This overview of economic developments in the late fourteenth and fifteenth centuries seems to me essential if one is to understand the role of trade and banking in the late medieval and Renaissance economy. The transformations we shall be observing took place within a very particular context, in which a sudden catastrophe created a new set of economic relationships. But to understand the impact of trade on the economy, we also need to step a little further back in time, with an eye particularly on the Mediterranean.

As distinguished historians such as Jacques Le Goff have emphasised, the medieval attitude to money was full of ambiguities. Popes and kings in medieval Europe combined public distaste for the money business with keen involvement in it. The core issue by the twelfth century in western Europe became the charging of interest on loans, and ecclesiastical condemnation of the charging of interest was

accentuated in the thirteenth century when close reading of texts by Aristotle made public the argument that money, an inanimate thing, could not grow like a plant; to make it appear to do so was contrary to nature—indeed, immoral. This view was widely expressed in thirteenth-century Spain, where the erstwhile head of the Dominican Order, Ramon de Penyafort, discussed Aristotle's views and the possible distinction (which not everyone made) between *usura* and *interesse*. *Usura* was exploitative; the aim of the usurer was to make such a profit that he could live, often bounteously, from his moneylending, while impoverishing the borrower. In all other respects he was seen as unproductive, no allowance being made for the fact that some people, such as peasants, might actually need a loan to tide them over at critical times of the year, for instance while they were awaiting the harvest. Penyafort was, however, more thoughtful about *interesse*, literally "that which lies in between". Here he was thinking of the service charge that could reasonably be charged for going to the trouble of lending to one's neighbour. Some attempt to enact this was made in late fourteenth- and fifteenth-century Italy, with the foundation of the Franciscan pawnshops, or pawnshops established by city governments, which is how the famous Italian bank *Monte dei Paschi di Siena* originated in 1472.

Nonetheless, merchants made loans in order to carry on business, and interest was charged at rates beyond what Penyafort would have accepted. Jacques Le Goff linked this outlook to the rise of a merchant class in interesting, though controversial, ways. He noted the simultaneous rise of doctrines of salvation that offered hope to those guilty of venial sins such as usury. He argued that the previously rather vague doctrine of purgatory attracted support in the central Middle Ages because it provided a let-out clause to moneylenders and other businessmen: in the next world, there was a middle realm for the middle classes, a place where they could be purged of their sins before ascending to divine bliss; the choice was no longer between shooting upstairs into heaven or being dropped downstairs into eternal hellfire. This was not to say that Purgatory was a comfortable place, a sort of open prison for those who had sinned but not too greatly; but time amid its tortures was limited, and with the help of those still on earth it could be limited still further, by gifts to the Church, often of money, that—if given in a sincere spirit—had the power to reduce the amount of time a departed soul, maybe that of a close relative, would spend in Purgatory. Here, then, we see coming together time and money, the very features that characterise a usurious transaction; but they are put to good use, in the service of the Church.

This concern about usury was not, of course, unique to the Catholic Church. It was common to the three Abrahamic religions around the Mediterranean; Christian prohibitions were rooted in passages in the Hebrew Bible, and Muslim opposition to interest has lasted to this day. Nor was it the case that Jewish law permitted moneylending—quite the contrary; but loopholes could be found. In northern Europe, it is true, Jews who were denied access to crafts were in effect forced into moneylending, and some Christian rulers, for instance in France, found this convenient, since they were reluctant to admit that their fellow Christians were also involved in usury. In the Catholic Mediterranean, where most crafts and professions were open to Jews, Jews were by and large no more involved in moneylending than Christians; everyone with spare cash kept it on the move as a commercial economy began to take hold in the twelfth century and after.

Among Christians, mechanisms developed to avoid the accusation of charging interest. One of the most important and useful mechanisms was the fixing of exchange rates to incorporate hidden interest. One could take money in one currency but (in theory at least) repay it in another. And even when a charge had obviously been levied, this was in some opinions acceptable, because it was, once again, just a service charge. It is not really surprising that as early as the twelfth century contracts often referred to



A merchant sits in his warehouse and performs the bookkeeping.

Woodcut engraving after an original by Hans Schäufelin (German painter and engraver, c. 1480/85 – c. 1538/40), from the "Trostspiegel" (1520), published in 1881.

proficuum quod Deus dederit, "the profit that God shall give"; more striking still is the phrase "In the name of God and profit" that appears on page after page of the account books of a particularly famous Tuscan merchant from the years around 1400—Francesco di Marco Datini, the so-called Merchant of Prato. And of course the Church, which condemned usury, was not untouched by interest payments. With the rise of the great Italian banks, in Florence and elsewhere, during the late thirteenth century, popes and kings came to rely heavily on financial advances from exceptionally wealthy Christian bankers. Admittedly, rulers who were thought to be in good credit were often given interest-free loans; or, in the case of the rulers of England and Naples, there was the opportunity to acquire special privileges, free or partially free of taxes, for the export of vital commodities such as wool (in the case of England) and wheat (in the case of southern Italy). Such privileges were more valuable than interest payments, though recovering the initial loan could be troublesome.

As Dante was well aware, all this contact with Florentine and other moneylenders tarnished the reputation of big-spending popes and cardinals. But the bankers knew that their position was precarious; and this applied whether they were Jews

or “Lombards” (as the Italian bankers were generically known), or the Knights Templar, who were also active in banking in the thirteenth century, despite following a monastic rule and enjoying the direct protection of the pope. At the start of the fourteenth century, King Philip IV of France expelled the Jews and the Lombards and suppressed the Order of the Temple; and, even if his declared reason for hounding the Jews and the Templars was religious, there is no real doubt that his motives were financial.

There is always the difficulty of establishing where the working capital originated; and this is especially true in the case of Florence, which had been something of a backwater in the early thirteenth century, but had risen to great prominence as a centre both of banking and of the cloth industry by 1300. By the middle of the century Florentine businessmen, often trading under the flag of convenience of their wealthier neighbour Pisa, were present in the Holy Land, in the crusader kingdom of Jerusalem, and in its flourishing commercial capital, Acre. Around 1252 they were also present in Tunis, again as honorary Pisans, but they made quite a stir at the court of the local Muslim ruler when he saw them flashing around their gold coins, the florin which (with the genovino of Genoa) was the first gold coinage to be minted in the West (north of southern Italy and parts of Spain) since the time of Charlemagne, four-and-a-half centuries earlier. The minting of the florin, from 1252 onwards, was soon copied by other cities, and testifies to the accumulation of profits from lands rich in gold, such as the cities of North Africa and the Levant—areas that were also poor in silver and attempted to draw western silver towards themselves. The money market therefore provided an important bond between Christian Europe and the eastern Mediterranean. We are still left with the mystery why a second-rank city, Florence, was able to take a lead in this monetary revolution, but of course it did not remain a second-rank city for much longer.

The Florentine network of trade provided a platform for the expansion of banking. Here we can observe the role of great and ancient families, patricians such as the Bardi and the Peruzzi, who established the two greatest banks in the history of medieval Europe, far outstripping in the scale of their operations the Medici who have gained greater fame. In conjunction with a third bank, the Acciaiuoli, the Bardi and Peruzzi dominated the economic life of the kingdom of Naples, which, at the end of the thirteenth and during the fourteenth century, lay under the rule of a French dynasty, the house of Anjou. These banks owed their success to the alliance between Florence, the kings of Naples and the pope—the so-called Guelph alliance, whose symbol was the lily of France, which is to this day the badge of Florence. However, as we shall see, they eventually gained the confidence to make their own political decisions, which were not always particularly wise ones. The Angevin kings permitted these three companies to export prodigious amounts of wheat and other primary foodstuffs in order to feed their home city which—we are assured by a fourteenth-century memoir written by a local corn-chandler—could normally only feed itself from its own territories for five months out of twelve. As Florence became a more and more important centre of trade, industry, and finance, the city attracted a flow of migrants from the Tuscan countryside and far beyond; and all this placed great strain on the food supply. The activities of the Bardi, Peruzzi and Acciaiuoli also indicate how unwise it is to classify them merely as “banks”. Loans were an important part of their business; but they were companies, family-based, with wide interests, and they were as capable of organising grand shipments of wheat from southern Italy as they were of making loans and calculating interest. Another very important characteristic of these so-called banks is that they were short-term associations, entered into by (mainly) members of the family itself, and dissolved after a period of a few years; they could of course be renewed, and often were, but the partners might change. They operated through agents, some of them family members and others trusted employees, who were placed as their representatives in the places where they conducted most of their business: Rhodes, Naples, Palermo, Avignon, and so on.

That is to speak of the Mediterranean, but business in northern Europe provided a second prop to these companies, and their activities there were closely intertwined with their business in the Mediterranean. England was a prime source of very high-quality wool for Florentine looms, which the Bardi, Peruzzi, and other Florentine companies exported, by arrangement with the English kings, to Flanders or directly to Italy on ships bound (from 1281 onwards) through the Straits of Gibraltar—lacking a fleet of their own, the Florentines relied on ships from Genoa and Catalan Majorca. Woollen cloth from Flanders, as well as raw wool converted into cloth in Tuscany, was exported in vast quantities across the Mediterranean, so much so that economic historians have talked of the “dumping” of western textiles in the Near East, in places such as Alexandria and Damascus; they have linked this to industrial decline in the Islamic world after about 1200. This dumping eased, but did not resolve, the longstanding balance-of-payments problem between East and West, arising from the export from the East of luxury goods and costly spices, and the import of raw materials, textiles, and foodstuffs from the West. Operating in England was not always easy, and the bankers became sucked into the fraught politics of the country under Edward II; but the real difficulty arose when they overextended themselves, hoping to recover loans made to Edward III and his court following what turned out to be a disastrous military campaign in Flanders. Risk assessment was, for better or worse, not part of the vocabulary or methods of fourteenth-century bankers. The early 1340s also saw overextension in the kingdom of Naples, and the difficulties the Bardi, Peruzzi, and Acciaiuoli were facing in the two key territories of their business empire led to a banking crash that shook the economic foundations not just of Florence but of all the monarchies that had relied upon the Florentines.

The three banks were not obliterated, but their operations thereafter were more muted; and the banks of late fourteenth- and fifteenth-century Florence and the other Italian cities were much smaller operations, working with less capital and smaller staffs, though they continued to be short-term associations renewable for, say, five years. I have mentioned the Medici, who, despite this more modest manner of operating, still had agents across Europe and the Mediterranean and were noticeable above all in Bruges, the great financial and trading centre of Flanders. The post-Black Death period saw other changes in the way business was conducted, the effects of which are still with us. We find increasing use of double-entry book-keeping, allowing better control over profit and loss. We see more and more sophisticated use of inter-bank transfers in cities such as Venice, to which it was not always convenient to bring large quantities of specie; and this speaks too for networks of trust, based sometimes on family ties, but increasingly on other forms of familiarity, even in the absence of face-to-face knowledge of one’s business partner. Exact record-keeping, guaranteed by legislation, was vitally important. A very noticeable change is the spread of insurance, which had been a great rarity around 1200. By the middle of the fifteenth century, there was big business to be made from insuring shipments out of cities such as Barcelona, for this was a time and region where attacks by pirates such as the Barbary Corsairs were apparently increasing.

Whether the slowly increasing use of Arabic numerals was a help is another question. Oddly, to our way of thinking, Arabic numerals tended to be used rather as we use Roman ones, to number lists, for instance. Complex formulae and the use of the abacus made it possible to multiply and divide using Roman numerals. And yet the introduction of Arabic numerals into western Europe went back to around 1200, when Leonardo Fibonacci, a Pisan who had long experience of Bougie in Algeria and of Tunis, had written a tract on the subject. Certainly, arithmetical manuals such as that of Luca Pacioli from 1494, or an even earlier one printed at Treviso near Venice in 1478, enhanced the ability of merchants to conduct business accurately.

If one wants to identify a particular area of economic activity in the post-plague era that demonstrates how western European merchants invested in products grown far away and then transmitted them to scattered markets across Europe, one could seize on the example of sugar. This product, native to the East Indies, percolated into the Islamic world in the early Middle Ages and was cultivated in Syria and parts of southern Spain, and in Sicily too up to the early thirteenth century; after the Black Death, the Genoese operated highly successful sugar factories in the Cyprus panhandle. Demand for sugar boomed in the post-plague era, along with demand for luxury goods as a whole. The interest of sugar lies not just in the fact that it was an upmarket product that could not be produced in lands north of the Mediterranean, but in the fact that it was a labour-intensive product and that the conditions required for its manufacture were quite specific—in particular, a plentiful water supply was essential. By 1400 the Genoese were also investing in sugar plants, or *trappetti*, in Sicily, where the intensive cultivation of sugar stocks was revived after an interval of at least 150 years. Often these investors were Genoese settlers on the island, working in partnership with local businessmen; their business methods would be reproduced again and again, as we shall see, once the Atlantic also began to be opened up.

Yet the ownership of sugar mills could also lie very far from the place of production. In the late fifteenth century, a south German trading outfit, the *Große Ravensburger Handelsgesellschaft*, decided to rationalise its interest in the sugar industry by not just dealing in the product, but by also acquiring a sugar mill in Valencia, the northernmost area where sugar was grown; in the 1460s they hired Moorish labour, but the operation was not a success and only lasted a decade or two. Still, it was a very interesting experiment in investing in sugar all the way from the planting of the stocks to the marketing of the elaborate confections that they would hope to sell to the court of Burgundy or the Rhine Palatinate, or to the prosperous burghers of Nuremberg and Regensburg. Standing further back from the actual production of this commodity, the Florentines, Genoese, and Catalans also built very close commercial ties to producers in the one remaining Muslim kingdom in the Iberian peninsula, the Nasrid kingdom of Granada, where they also obtained silk, fine glazed ceramics, and dried fruits. Without the financial support of these Italian and Catalan businessmen, it is doubtful whether the Nasrid dynasty would have had the means to build their astonishing palaces on the Alhambra hill, or indeed to keep their little kingdom alive in the face of repeated onslaughts by Castilian knights.

The relevance of sugar to any account of the European economy at the end of the Middle Ages can be demonstrated in other ways. In response to Turkish advances in the eastern Mediterranean, western European merchants began to search for less dangerous markets in which to obtain not just sugar but other generically “eastern” products, such as the dried fruits they now acquired from Valencia and Granada instead of Turkey and Greece. When it came to sugar, however, the shift away from the Turkish and other Muslim lands took European merchants and producers not just to Sicily and Valencia, but through the Straits of Gibraltar to the newly discovered Atlantic islands that had fallen under the dominion of the previously rather insignificant kingdom of Portugal, and more specifically under the control of Prince Henry, known as “the Navigator”. Henry and his successors transformed Madeira, a previously uninhabited island on the edge of the horizon, into a phenomenally successful centre of sugar production, able to supply not just Portugal and Spain but Flanders and northern Europe with astonishing quantities of sugar. The island had all the advantages of good water supplies and rich virgin soil. Even more than Muslim Granada, Portugal was propped up by its sugar mountains. At the end of the fifteenth century, though, the decision to shift production to São Tomé, an island on the equator, proved

that bad mistakes could be made: the humid climate rendered the drying process ineffective, and the local insect population took up residence in the sugar blocks that were sent to unappreciative consumers in Europe. A return to high-quality production was only achieved with the establishment of sugar mills in Brazil in the mid-sixteenth century.

That gives some sense of the geographical spread of sugar, but in our discussion of capitalism there are two aspects that need to be stressed. One is the continuing presence of Genoese investors, who saw good business opportunities not just in Madeira and Cape Verde but in the Canary Islands. The conquest of these islands was achieved slowly; Tenerife, whose native Guanche population resisted stoutly despite their reliance on Stone Age weaponry, only fell to the king of Castile in 1496. It is striking that as each island fell to the Spaniards, Genoese investors moved in, within months, to set up sugar mills and to service small colonies of settlers from Spain, Portugal, and Italy. It comes as no surprise to find that a similar pattern can be detected in the Caribbean following the discovery of those islands by Christopher Columbus, who was (though some people still enjoy claiming otherwise) most definitely a Genoese, with past experience of the Madeiran sugar industry. The fascination of these endeavours is that we are looking at pioneers who mobilised European capital to create new commercial networks built upon new centres of production of a highly profitable luxury article.

The other aspect of the sugar industry that should be stressed is the organisation of labour. By and large, sugar production within Iberia did not depend on gangs of slaves. The work was back-breaking—indeed, the best way to do the worst of it was to hitch a donkey to the sugar-press and send it around in circles all day. Domestic slavery was in fact quite widespread in the Christian cities of the Mediterranean, such as Palermo and Genoa, but the large-scale use of slave labour was rare. This was also the case in the Canaries, where those among the native population who suffered enslavement were generally taken to Seville and other Spanish cities, again for domestic work such as gardening. As far as one can see, much of the physical labour in the sugar mills was, at least in the fifteenth century, performed by free Portuguese migrants, who were common on Tenerife and Grand Canary, and of course in the Portuguese-owned islands of Madeira and the Azores. The exception is São Tomé, where an act of unprecedented brutality saw the king of Portugal despatch hundreds of Jewish children to the island, where they were to be brought up as Christians as far from their parents as possible, and were set to work in the sugar plantations, apparently as slaves. Not surprisingly, it does not seem that any of them survived jungle conditions for very long. But even in the Caribbean, where Columbus and his successors treated the native Indians in effect as slaves (though legally they were free), it was only much later that sugar plantations began to succeed, by which time the native Taínos had all died out and black African labour began to be imported in ever larger numbers. The slow start reflected the reluctance of the Genoese and others to invest in a far-off land which was already torn apart by Spanish misgovernment and by internal conflict.

Genoa would, during the sixteenth century, make a fortune out of America after all, by anticipating the arrival of the silver galleons and tiding over the high-spending Spanish rulers, alongside German bankers of whom the Fuggers of Augsburg are the most famous. The success of sixteenth-century Genoa was based not on its traditional trading networks, which had fallen or were falling apart, but on the ability of the Genoese elite to keep the Spanish monarchy afloat financially. Genoa was not alone among the great commercial centres of the Middle Ages in shifting towards the provision of financial services. Bruges lost its importance as a centre of trade as its outpost silted up and as the Flemish cloth

industry faced stronger competition from England and elsewhere; but it grew in importance as a centre for the settling and transfer of bills, and benefited from the presence on its streets of consulates of the Genoese, Florentine, and Hanseatic business communities, whose houses can still be visited in the city. In Barcelona merchant families had already been switching from active trading to investment in bonds during the fifteenth century. City governments in particular were keen to issue bonds so that they could cover their ambitious building projects, whether it was amplification of the port or construction of the magnificent loggias (*llogtjas*) that proclaimed the wealth and glory of the city.

These loggias are a good place to conclude. However one chooses to define capitalism in a medieval context, it is abundantly clear that throughout western Europe the end of the Middle Ages saw a transformation in the relationship between town and country, with urban-based activities, propped up by vigorous investment, gaining a higher profile. We could say that the urban economy had become dominant as never before, at least since the fall of Rome. A platform was also created for the launch of the great Atlantic business enterprises of which sugar production was the most important, even before the rise of the evil and long-lasting transatlantic slave trade. Perhaps the best way to conclude is with the remarkable moral defence of money-making that is inscribed around the walls of the late fifteenth-century loggia in Valencia—a building whose soaring Gothic architecture also proclaimed boundless confidence in the value of trade and investment:

I am an illustrious house built in fifteen years. Fellow citizens, rejoice and see how good a thing is business, when it does not give rise to lies in speaking, when it keeps faith with one's neighbour and does not deceive him, when it does not dedicate money to usury. The merchant who acts in this way will prosper galore and eventually will enjoy eternal life.

A THE CHANGING AXIS OF ECONOMIC POWER IN THE EARLY MODERN PERIOD

by Victoria Bateman



For many who lived through it, the early modern period was an era of turmoil, in both political and religious terms. However, it was also a period of dramatically changing fortunes that shifted the economic balance in a direction that has brought us to the modern age. For the first time in history, Europe began to challenge the economic lead which the East had possessed for millennia, while within Europe the axis of economic power shifted decisively away from the Mediterranean and towards the northwest of the continent. The Dutch economy underwent a spectacular Golden Age and Britain was firmly on the road to the Industrial Revolution.

Here we will examine how and why the balance of power shifted so decisively—how the northwest of Europe came to overtake the Mediterranean and, with it, how Europe came to overtake the East. We will consider the factors that historians have traditionally emphasised, namely the rise of representative government and the development of markets, and then go on to look at some new explanations, including Joel Mokyr's Enlightenment theory and Robert C. Allen's high-wage theory. As we will see, at the root of the northwest's success in each of these regards was a feminist wave which started 500 years before we commonly think, and which not only brought dramatic changes in the lives of young women, but also provided foundations for economic growth. Feminism was not only good for women: it was good for the economy. Without it, Western economies would not have been able to gain the riches they possess today.

EUROPE'S PLACE IN THE WORLD

From the perspective of the modern day, we tend to look back at history and assume that "the West has always been best"—that, from the time of the ancient Greeks, all the major technological and intellectual achievements in history were a result of the pioneering nature of Europeans.¹ We are frequently told that the East is only catching up as a consequence of adopting Western-style markets and institutions. However, this commonly accepted story is nothing but a myth. As historians of science well know, and as was revealed by Joseph Needham in particular, for most of history the East—and not the West—has in fact been ahead. Most of the major technological achievements in history, including the development of farming, urbanisation, and the written word, occurred outside Europe. Europe was an imitator, not an innovator.

The regions of Europe that were most closely connected with the East (through Constantinople and along the Silk Road)—including, most notably, Italy—were



those parts of Europe that triumphed early on in history. The riches of cities such as Venice, seen so clearly in the paintings of Canaletto, were built on the back of monopoly trading privileges which allowed Italian merchants to source eastern goods and then sell them to European consumers at high prices. Over time, with this transfer of goods came a flow of knowledge, and by the end of the medieval period it was clear that Europe was, in many ways, catching up with the East. The result was the Renaissance—what Patricia Fara has termed an “intellectual fizz”²—which was nowhere more visible than in the arts. Unsurprisingly, given its connections with the East, this Renaissance was centred on Italy.

It was partly in response to the great riches on show in Italian cities that navigators and kings elsewhere in Europe began a search for their own route eastwards. Vasco da Gama established connections by navigating along the African coast and up into the Indian Ocean. This was soon followed by an influx of merchants of Portuguese origin, who competed with the already established connections and helped to break the back of the Italian monopoly. The extra competition in the spice trade is visible in the reduction in the real prices charged for eastern goods in Europe, which brought clear benefits for European consumers.³

The Molo from the Basin of San Marco, Venice, by Canaletto, c.1747-1750

San Diego Museum of Art/wikicommons

In contrast to the Portuguese, the Spanish attempted to find their own route to the East by navigating in a different direction, sailing westwards around the globe in the hope of finding a backdoor to China. Little did Christopher Columbus realise that another continent—the Americas—stood in the way. However, while the door to China was (at least in this direction) closed, a window opened: the discovery of silver mines. The problem which had always faced European traders was that, while Europeans had a great appetite for eastern goods, the East did not want to import much from Europe (after all, Europe was relatively underdeveloped).

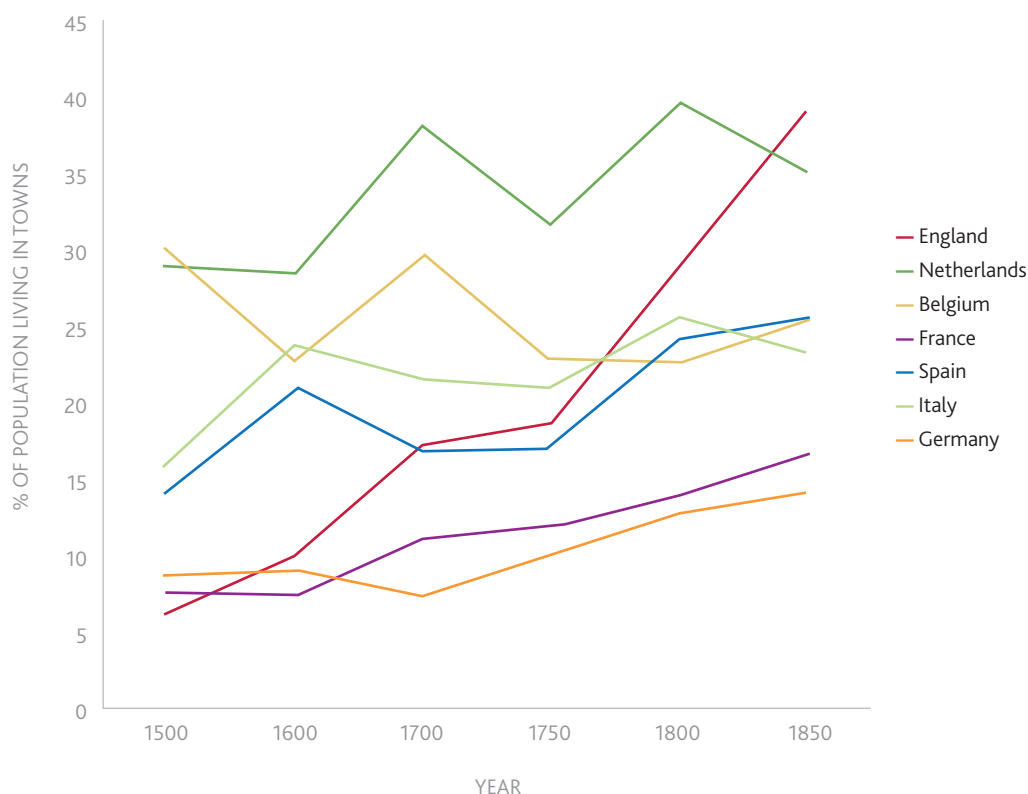
With the discovery of silver, this all changed, giving Europeans the potential to import ever-growing quantities of goods from the East. Hence it is perhaps unsurprising that in the first half of the sixteenth century trade boomed. In fact, at 2.4 percent per annum, the growth of world trade was not far from that in the twentieth century (3.44 percent).⁴ Europe's trade with the Americas and the East was, therefore, fundamentally linked. The global economy with Europe at its centre was in the process of being born. It is at this point that our story begins.

THE SOUTH DECLINES AND THE SEVENTEENTH-CENTURY CRISIS SETS IN

At the start of the early modern period, and as it had been for millennia, southern Europe was the richest part of the continent. While economic power was certainly shifting away from its traditional Italian heartland in response to the development of new global connections, this shift was very much taking place within the south—from Italy to Iberia. However, Iberian success was not sustained for long. Much of the associated colonial trade was monopolised and regulated,⁵ and poorly developed markets at home (hampered by unfavourable geography and poor institutions) limited the extent to which the benefits being experienced in the port cities could spread deep into the economy. Without an internal dynamic, the Iberian economy soon stagnated, and any nascent industry that did exist was made uncompetitive by the inflows of silver, which pushed prices upwards.⁶ The lack of internal sources of growth meant that, as other economies began to enter the race for colonies, Spain and Portugal were not in a sufficiently strong position to maintain their hold. Their economies were ultimately doomed.

Perhaps the key institution that most historians have argued was holding back the Spanish economy was absolutism: the excessive power of the monarch.⁷ Indeed, rising absolutism is argued to have beset much of Europe in the sixteenth and seventeenth centuries, and this could be argued to have ushered in a more general economic decline across the continent, known as the seventeenth-century crisis. Everywhere, states were becoming stronger. In theory, stronger states could aid market development. They could, for example, ensure a stable currency, ensure that law and order were upheld, and work to eliminate internal barriers to trade, such as tolls. However, certain states initially developed in an absolutist direction,⁸ and used their power in a way that undermined markets,⁹ such as through the increasing fiscal pressures that came from heavy state expenditure, uncertainty over property rights,¹⁰ a perversion of the course of justice (e.g. in France and Spain),¹¹ and religious intolerance.

In the fiscal domain, increasing conspicuous consumption at the court level, together with rising military expenses as the absolutists embarked upon military campaigns, placed great pressure on the nation's finances. Much of this pressure was borne in the form of heavy taxation on those with the least political privilege and power—the less well-off small-scale producers and workers. The fiscal pressures also increased uncertainty regarding property rights and eroded the system of justice. By expropriating private property and using the courts to unfairly extract wealth, absolutists found a



simple short-term solution to their fiscal problems. The longer-term consequence, however, was an environment in which economic incentives were damaged. In England, the result was a stand-off between the monarch and Parliament, which resulted in the civil wars in the middle of the seventeenth century.

By abusing property rights, disrespecting the law, and persecuting individuals on the basis of their religion, not only did the rise of absolutist states hinder market development at the national level, it also created inter-state conflict that resulted in a series of wars that disrupted not only local but also long-distance trade. Germany, for example, suffered badly in the seventeenth century as a result of the Thirty Years' War, which arguably had its origins in both religious and inter-state conflict. Poland also suffered as surrounding states sought to extend into the region, with the ensuing warfare having serious effects on trade.

The result was what historians have called a seventeenth-century crisis. However, while much of Europe was feeling the pain, two economies managed to buck the trend: the Netherlands followed by England.

Figure 1 Urbanisation rates, 1500–1850

Source: D. Acemoglu, S. Johnson, and J. A. Robinson, "The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth", *NBER Working Paper 9378* (2002)

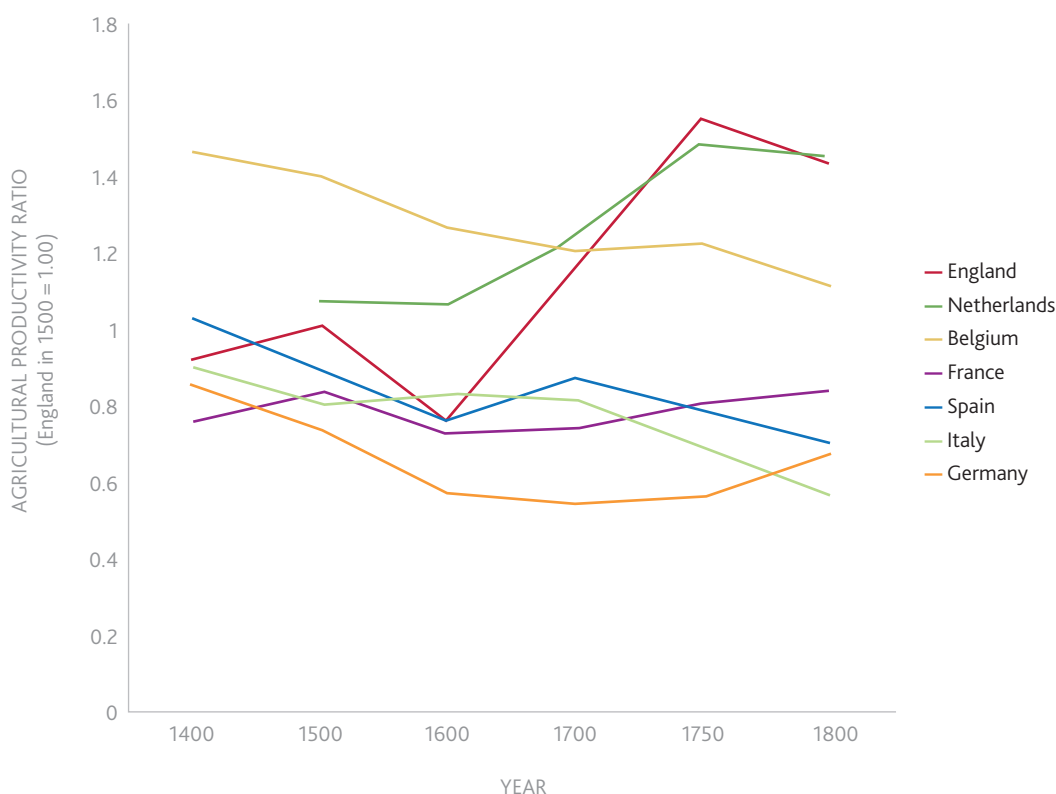


Figure 2 Agricultural productivity in Europe, 1400–1800

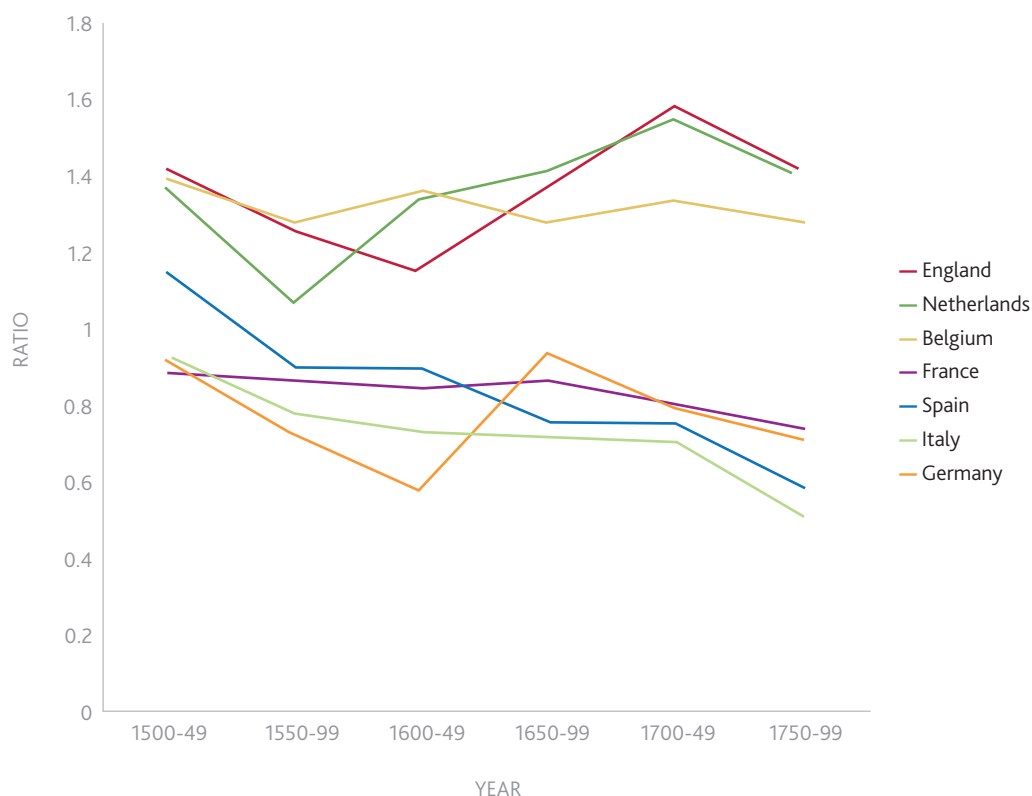
Source: R. C. Allen, "Economic Structure and Agricultural Productivity in Europe, 1300–1800", *European Review of Economic History*, 4 (2000), pages 1–25

DARK HORSES: THE DUTCH AND THE ENGLISH

The performance of northwest Europe in the early modern period looks remarkable when placed in a comparative context. While many other European economies were in decline, the Netherlands underwent a spectacular Golden Age in the seventeenth century, and England began its rise from backwater to the Industrial Revolution. The result was a full-scale reorientation of the axis of economic power away from the Mediterranean for the first time in history.

While we lack reliable data for economic growth, we do have estimates of urbanisation, agricultural productivity, and wages, which allow us to place the performance of the Dutch and English economies in the context of the rest of Europe.

Looking at urbanisation at the start of the early modern period (Figure 1), the Netherlands already had one of the highest urbanisation rates in Europe. England, however, had one of the lowest. But, in the course of the next 300 years, England's urbanisation changed faster than any other European economy.



Moving on to agricultural productivity (Figure 2), we see that, with the exception of Belgium, there was little difference at the start of the early modern period between the European economies. Subsequently, however, the Netherlands and then England underwent agricultural revolutions, leaving a big gap between the northwest of Europe and the rest by the end of the period.¹²

Figure 3 provides an indication of what was happening to the real wage or standard of living of unskilled workers in Europe, using Allen's "Welfare Ratios". Here, a value above 1 indicates that "families had extra income over and above their basic needs" when working 250 days a year.¹³ A value of less than 1 indicates that families would have had to cut back on their basic consumption of goods such as food or to work for more than 250 days per year. During the fourteenth and fifteenth centuries, real wages had risen across Europe in response to the labour scarcity that followed the Black Death. By the early sixteenth century, however, real wages were marching downwards across Europe. Population was recovering to its pre-Black Death level, and so was pushing up the prices of land-based goods (food and energy) and pulling down the standard of living. Exceptionally, however, real wages managed to maintain

Figure 3 Welfare ratios of building labourers in Europe, 1500–1799

Source: R. C. Allen, "The Great Divergence in European Wages and Prices", *Explorations in Economic History*, 38 (2001), page 428

their higher level in the northwest of Europe, leaving what Allen calls “a great divergence” within Europe by the end of the early modern period.

So, what explains the success of the northwest in this period? Traditionally, historians have emphasised factors such as representative government (including the Netherlands “booting out” the Spanish, and England’s Glorious Revolution of 1688).¹⁴ These political changes supposedly helped to further the development of markets and trade, which—economic theory teaches us—provide incentives for investment and innovation. However, recent research has suggested that markets were not sufficient for economic growth: they had existed for too long, and in too many other parts of the world, to explain Europe’s rise in the early modern period.¹⁵ As Professor Abulafia emphasised in his lecture, commercialisation was a central feature of medieval times and, as others have pointed out, merchant practices had a long history in the Middle East, India, and China. In fact, not only were goods markets already developing well before the early modern period, so were those for finance: the interest rate on private-sector loans fell from around 30 percent in the twelfth century to 5–6 percent by the fifteenth century.¹⁶ In some ways, policy was working against—not in favour of—the market in early modern England, making it difficult to argue that markets were responsible for her rise. While we might like to think of Britain as having been a free-trade nation, the English state pursued mercantilist policy from Tudor times through to the nineteenth century, as Ha-Joon Chang has shown.¹⁷

Hence, instead of purely market-based explanations of economic success, economic historians have more recently gone in search of other factors that could explain the rise of the northwest and, with it, the rise of Europe.

THE ENLIGHTENMENT

According to Mokyr, the Enlightenment has a central role to play in the rise of Europe.¹⁸ It heralded a new—more scientific—way of looking at the world and provides the “elephant in the room” that historians have been neglecting in their explanations of the rise of Europe.¹⁹ This change in mindset made continued progress possible. To understand why, it may be useful to take an example. Let us suppose that the local church roof was to collapse. Before the Enlightenment, the majority response to this might have been to blame the vicar for last Sunday’s sermon; the disaster would have been interpreted by many as the result of heavenly forces. After the Enlightenment, the majority response might instead be to question the way in which the roof had been constructed and so to try to improve engineering and construction techniques. As this and other such examples suggest, it is only when individuals hold a scientific view of the world that material progress (technological or otherwise) becomes possible. Without it, it is difficult to imagine how we could learn from our mistakes—or from events around us—in a way that would facilitate continued technological and, with it, economic improvement.

Not only did the Enlightenment make progress possible, it also made it desirable. Before the Enlightenment, the central view of life for many was that one should accept one’s position in society and behave in a way that would facilitate passage to the afterlife (this might include prayers, fasting, or, in other words, doing something other than working to acquire riches). In Mokyr’s language, the aim was to be “good” and not necessarily “happy”. After the Enlightenment, people began to strive for improvement in the present life and in a more materialistic sense. Material fulfilment was no longer seen as in opposition to other goals in life. Indeed, striving to make a better life for one’s children and grandchildren was something of which to be proud.²⁰

In an effort to achieve the progressive goal, enlightened individuals started to work together. Nothing is more indicative of this than the increasing number of societies that began to form across Europe, including geographic, meteorological, medical, scientific, and agricultural societies. Scientists shared knowledge between themselves and also began to diffuse it to the general public through the medium of publishing and public lectures. With this “public knowledge”, dots could be joined, needless repetition avoided, and connections formed between different ideas, all of which enhanced the knowledge base of the economy.²¹ The dissemination and sharing of this knowledge helped to bring together three important parties: those with (scientific) ideas, those with the craft skills required to take an idea and build a machine that could exploit it, and entrepreneurs with a keen eye for a profit (who could see the value of using a machine). Without all three sets of people coming together through communal endeavour, progress—even if it is being made—remains within the confines of the “ivory towers” and so never has the means through which to have an impact upon the economy.

In many ways, the Enlightenment brought the very opposite of a market system to science: a more cooperative and communal scientific research spirit, in which ideas were openly and freely distributed, and scientists worked not for financial reward but for recognition and to push forward the frontier of knowledge for the common good of society. The emergence of this communal and gift-based system brought a number of significant advantages. Not only did it allow ideas to spread and successfully bring minds together in a way that was more likely to lead to results, it also allowed avenues to be explored which might—in the market’s judgement—initially have seemed unprofitable but which led to unexpected advances that later brought great reward.

The Enlightenment created the supply-side conditions for technological change, giving the economy a scientific capability. However, according to Robert C. Allen, this was not enough by itself. If scientific research is to have an impact on the economy at the ground level, it is also necessary for businesses to have an incentive to use technology in their production processes. In particular, firms need to have an incentive to save on labour costs—to replace labour with machines. If wages are low, there may be little incentive to use scientific advance in a way that mechanises production: such progress will simply remain confined within the “ivory towers”, with little effect on the ground level where firms are actually producing. According to Allen, what was special about the northwest of Europe was that wages were high, which stimulated the development of labour-saving machinery and provided firms with an incentive to invest in such machinery in an effort to lower costs. Britain also possessed another advantage which pushed in the same direction: cheap coal.²² To understand where these high wages came from, we need to turn back in time to the fourteenth century.

THE ORIGINS OF HIGH WAGES: THE FIRST FEMINIST WAVE

In 1348 population across Europe witnessed a spectacular collapse: the Black Death had arrived, resulting in between one quarter and one third of the population losing their lives. As argued by Tine De Moor and Jan Luiten van Zanden, while the plague had devastating effects on many of those living at the time, it also helped to place northwestern Europe on a higher growth plane which would pay off in the centuries that followed.

The Black Death created a shortage of workers, in response to which wages rose—so long as you survived the plague, you were in the money! Higher wages meant that where job opportunities were available (whether in farming, in domestic service, or in early manufacturing), younger people could now earn enough to survive

independently of their parents. This had a particularly large effect on young women: perhaps for the first time in history, and after centuries of being seen as a financial burden (being “married off” at as young an age as possible), teenage girls now had the ability to earn enough to financially support themselves. This economic freedom dramatically changed women’s lives, and with it the structure of families.

With their new-found economic freedom, women could now choose—free from parental interference—whether, who, and when to marry. They entered the workforce and waited to marry until they found someone of their own choosing: very different to the traditional system in which they were “married off” and were expected to move into the family home of the groom, looking after his extended family under the watchful eye of the mother-in-law.

Women waited until they found the “right man”, and once they had done so, they saved with their partner until they could afford to “set up house”—their new-found freedom meant they had no intention of living with either their own or their husband’s parents. Since women were getting married later in life, they tended to have smaller families than ever before. Fewer new mouths to feed meant less pressure on food in the economy, which helped to maintain the high wage that came after the Black Death. Furthermore, with smaller families and higher wages, parents could now better afford to educate their children (in the form of apprenticeships), increasing the skill base of the economy. As people could no longer rely on being looked after by their own children in old age (like themselves, they would fly the nest to live an independent life), it was also necessary to save for retirement, which provided a greater pot of potential investment funds for the economy. All of this added up to create the conditions required to push the northwest ahead of southern Europe—and, with it, to push Europe ahead of the East—for the first time in history.

Of course, the changes to women’s power did not go without resistance. In the century or so after the Black Death, men responded by trying to restrict women’s freedom, such as by limiting their rights to borrow and spend. However, the forces pushing women forward could not be resisted forever, and by the sixteenth century it was clear that these early feminists had won the battle. Indeed, it is remarkable just how late in life women were getting married in Britain in the 1500s, 1600s, and 1700s: an age remarkably close to that in modern economies—25 years old.

CONCLUSION

The early modern period was a formative period in European history. If we want to understand how the West arrived at its current position after millennia of eastern dominance, we need to consider the centuries running up to the Industrial Revolution. Traditionally, economic historians have argued that what was special about this period was the development of markets: political revolutions resulted in a growing role for the market, which incentivised investment and invention, culminating in the Industrial Revolution. However, recent research has revealed that markets had longer historical roots and were present outside Europe. If markets had been sufficient for growth, that growth would probably have set in sooner, and in places outside Europe. Instead what stands out about this period of history is the birth of modern science, which, when combined with the first feminist wave taking place in northwestern Europe, created both the supply- and demand-side conditions required for Europe to eclipse the East. As Europe began to industrialise, the East deindustrialised. The rest, as they say, is history.

NOTES AND REFERENCES

1. The “West is Best” myth has been highlighted and critiqued by, among others, Fara, *Science: A Four Thousand Year History* (2010).
2. Ibid.
3. K. H. O’Rourke and J. G. Williamson (2009), “Did Vasco da Gama Matter for European Markets? Testing Frederick Lane’s Hypothesis Fifty Years On”, *Economic History Review*, 62 (3), pages 655–84.
4. K. H. O’Rourke and J. G. Williamson, “After Columbus: Explaining the Global Trade Boom, 1500–1800”, NBER Working Paper 8186 (2001), pages 3, 32–3 (Table 1).
5. A useful reference is D. Acemoglu, S. Johnson, and J. A. Robinson, “The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth”, *American Economic Review*, 95 (2005), pages 546–79.
6. M. Drelichman (2005), “The Curse of Moctezuma: American Silver and the Dutch Disease, 1501–1650”, *Explorations in Economic History*, 42 (3), pages 349–80.
7. In line with Epstein’s view (expressed in *Freedom and Growth*), others argue that political fragmentation was instead responsible for economic difficulties. See, for example, J. Voth, “Debt, Default and Empire: State Capacity and Economic Development in England and Spain in the Early Modern Period”, Tawney Lecture, Economic History Society Annual Conference (University of Cambridge, 2011); R. Grafe, *Distant Tyranny: Markets, Power, and Backwardness in Spain, 1650–1800* (Princeton, 2012).
8. The development of absolutist states is discussed in T. Ertman, *Birth of the Leviathan* (Cambridge University Press, 1997). Ertman discusses how the demand for a strong monarch or leader existed in areas subject to external threats and internal religious strife, and where bottom-up institutions were becoming paralysed by vested interests.
9. R. C. van Caenegem, *An Historical Introduction to Western Constitutional Law* (Cambridge University Press, 1995); J. L. van Zanden, E. Buringh, and M. Bosker, “The Rise and Decline of European Parliaments, 1188–1789”, *Economic History Review*.
10. J. B. De Long and A. Schleifer, “Princes and Merchants: European City Growth Before the Industrial Revolution”, *Journal of Law and Economics*, 36 (1993), pages 671–702; D. C. North and B. Weingast, “Constitutions and Credible Commitments: The Evolution of the Institutions of Public Choice in Seventeenth Century England”, *Journal of Economic History*, 49 (1989), pages 803–32.
11. Caenegem, op. cit.
12. R. C. Allen, “Economic Structure and Agricultural Productivity in Europe, 1300–1800”, *European Review of Economic History*, 4 (2000).
13. R. C. Allen, “The Great Divergence in European Wages and Prices”, *Explorations in Economic History*, 38 (2001), page 427. Data can be found on page 428, Table 6.
14. D. C. North and B. Weingast, “Constitutions and Credible Commitments: The Evolution of the Institutions of Public Choice in Seventeenth Century England”, *Journal of Economic History*, 49 (1989), pages 803–32. See also D. C. North and R. P. Thomas, *The Rise of the Western World: A New Economic History* (Cambridge University Press, 1973), pages 155–6.
15. See, for example, V. N. Bateman, *Markets and Growth in Early Modern Europe* (2012).
16. See, for example, S. R. Epstein, *Freedom and Growth* (2000).
17. Ha-Joon Chang, *Kicking Away the Ladder* (2002).
18. J. Mokyr, *The Enlightened Economy: Britain and the Industrial Revolution, 1700–1850* (2009).
19. Ibid.
20. Here, see also D. McCloskey, who has emphasised changing attitudes to markets and entrepreneurship (*Bourgeois Dignity: Why Economics Can’t Explain the Modern World*, 2011).
21. In addition to the work of Mokyr, see also J. L. van Zanden, *The Long Road to the Industrial Revolution* (2009), on printing and the diffusion of books.
22. R. C. Allen, *The British Industrial Revolution in Global Perspective* (2009).

MAKING MONEY, MAKING EMPIRES: THE CASE OF THE EAST INDIA COMPANY

by Huw Bowen



Taking a long view of the history of capitalism, it seems evident that three interconnected developments that occurred in England during the early decades of the seventeenth century exerted profound influence on the evolving global economy by facilitating the projection of much greater levels of European power and resource into the wider world.

First, these decades witnessed the quickening pace of European expansion in the form of very aggressive plantation settlement, and the establishment of colonies in North America in particular, as well as the emergence of much more systematic commercial activity in the Indian Ocean basin. In the century before this opening-up of the Indian Ocean to European traders there had been episodic, haphazard European attempts to trade with the Indies, but what happened from 1600 onwards was a much more concerted and organised attempt to open up regular routine seaborne commercial interaction between Europe and Asia.

Second, we find the emergence of joint-stock companies to facilitate this process of aggressive colonialism and aggressive commercialism, because now, instead of single-voyage investment when individuals would plunge their capital into the purchase and funding of a ship to sail out to Indonesia and back, or to North America and back, there was now a different form of organisation emerging which focused on the pooling of capital to enable long-distance trade to take place over several years. The whole length of a voyage to the East Indies and back could take three years or more; the voyage out, searching for commodities, the return, the sale, and so on meant that capital was locked in and tied up in a venture for longer periods of time, and it was necessary to pool resources to enable this to happen. And this type of investment was also necessary for the very expensive infrastructure that was necessary to support such a trade: the building of ships, construction of dockyards, and of course in Asia the construction of factories, settlements where trade took place. In short, there had to be a lot of start-up capital investment to enable Europeans to trade in the East.

One of the effects of this process was a separation between the ownership and management of capital for the first time. Individuals entrusted their savings, their capital, to other people to manage on their behalf, and this really represents the emergence of forms of enterprises that we are familiar with today. These joint-stock companies developed specialised bureaucratic structures to manage trade and money, which took the conduct of overseas trade beyond the single merchant or partnership and ensured that commercial activity was now conducted on a much larger scale than ever before. At the same time, this process of pooling capital resources also led to the emergence of transferable shares which could be traded on a stock market by investors seeking profitable use for their savings.



Third, linking these two together, the early seventeenth century saw the creation of exclusive trading privileges in the form of monopolies granted by monarchs or other sovereign powers. In return for payment, companies or groups of merchants could purchase commercial rights which would enable them to represent the crown in a particular sphere of overseas activity. What this did in effect was privatise national overseas activity, because companies such as the East India Company could now act with de facto national authority, which enabled them to protect themselves, use armed force in support of trade, and negotiate treaties. A formidable portfolio of powers was bound up with the chartered rights bestowed upon monopoly companies, and this served to shape the development of long-distance overseas trade.

So, three important developments occurred simultaneously at the beginning of the seventeenth century, and it was against this background that the English East India Company emerged, having been awarded a charter by Elizabeth I on the last day of 1600 when it was granted sole right to conduct English trade east of the Cape of Good Hope. English trade with the whole vast area of the Indian Ocean world was now in the hands of this company of investors, which included the great and

William Fullerton of Rosemount, who joined the East India Company's service in 1744 and was second surgeon in Calcutta in 1751.

c1760– 1764

Source: <http://collections.vam.ac.uk/item/O16731/painting-portrait-of-east-india-company/>

the good of the City of London and the elite of the southeast of England. Of course, it must be stressed that the East India Company was by no means the first such company; neither was it conspicuously successful in its first few decades—indeed, it had a very bumpy ride until the early eighteenth century. But by 1815—leaping forward 200 years—it was by far the most powerful commercial organisation in the world, and its private armed forces had conquered much of the Indian subcontinent.

Over the long run, the history of the company witnessed the emergence, transformation, and then consolidation of commercial power which was eventually translated into powerful armed force. At the same time this was happening, the company was embedding itself at the very heart of the English/British state and the City of London, where—together with the much younger and far less mature Bank of England—it formed part of the monied interest whose influence on policymaking and decision-making was all-pervasive.

Today, nothing remains of East India House, the company's headquarters in Leadenhall Street. Built on the site now is a rather different monument to capitalism: the new Lloyd's building. The site lies perhaps 400 yards from the Bank of England, a couple of hundred yards from the Royal Exchange. A passer-by in the early decades of the nineteenth century would have been left in little doubt that this was the heartbeat of something rather special—the Asiatic commercial empire of Britain—and the building itself gives architectural expression to exchanges with the East. It housed men like Charles Lamb, Thomas Love Peacock, and John Stuart Mill, who were some of the clerks or "writers" who wrote the dispatches and treatises that shaped the development of the British Empire in India.

On the face of it, the company that had grown up by 1817 was still fundamentally all about trade. A famous painting of the China fleet by Nicholas Pocock demonstrates that when contemporaries thought about the company, they often invoked images of maritime East Indian trade: it shows the famous 1,200-ton East Indiamen that carried tea, porcelain, and luxury commodities from Canton back to London. Many Britons clung to the image of the East India Company as a commercial enterprise, and indeed in 1805 the political economist David Macpherson described it as the "greatest commercial organisation in history".

But of course, in parallel, since the middle of the eighteenth century other developments had been taking place and the imperial gene that lay at the heart of the company had been defining new patterns of activity and behaviour. A painting by Francis Hayman from the 1760s depicts Clive of India taking control of Bengal, the richest province of India, following the battle of Plassey in 1757. Clive, a private company employee, is seen as operating beneath the Union flag, and the new nawab or governor of Bengal, Mir Jafar, is bending in supplication as he acknowledges the new supremacy of the British. In fact Plassey really wasn't much of a battle at all, and has been described aptly as a "business transaction" because of the amount of negotiation and double-dealing that took place. Indeed, Clive himself benefited personally to the tune of £234,000 in the form of "presents" he received from the new nawab and his associates. As a result, Clive came to be seen as one of the archetypal "nabobs" who were much reviled in British society because of their acquisition of ill-gotten gains while in company service.

The Plassey "revolution" highlighted two important developments: the beginning of the transformation of the East India Company from a commercial enterprise into an imperial agency; and secondly, the role of the individual who saw the prospect of making money pretty quickly in India. But the real success for the company came in 1765 at the signing of the Treaty of Allahabad, when Clive received from the Mughal emperor Shah Alam II the most important document in Anglo-Indian history, the *Diwani*. This

granted the East India Company the right to collect the territorial revenues of Bengal, which meant that all land rents, custom duties, and stamp duties were passed over from the sovereign power to a private trading company, which amounted to about £2 million a year. Not only did this mean that the East India Company now commanded very considerable financial resources in India, but it exerted de facto sovereign power over extensive territories and millions of Indians. This situation gave rise in Britain to a very detailed, longwinded, and ultimately inconclusive legal argument about whether a private company could actually take on sovereignty on its own behalf or whether it could only act on behalf of the crown; much hinged on whether Shah Alam had willingly granted Clive the *Diwani* as a gift or whether it had been coerced from him as a result of war. In fact British sovereignty over India was not declared formally until 1813, which meant that for an extensive period of time the East India Company was in effect governing much of India in the name of Britain and acting as a sovereign power.

Clearly, then, at one level there was a process of official expansion. A company that was empowered by the state was able to exercise direct and aggressive control over foreign territory. But what was also happening, of course, was that individuals were seizing the opportunity to make money, which gave rise to a potent combination of corporate and private enterprise acting hand in hand to create a situation which enabled the projection of British power onto Indian states. One by-product of this is that everywhere you look in Britain you will find expressions of the money-making by individuals that took place during the company's period of territorial expansion after 1750. Estates, country houses, enterprises, and institutions can be identified that were funded by East Indian investment from returned company employees or "nabobs". There are many examples to be found, not least in Wales, which was considered to be a provincial backwater in the eighteenth century, far removed from the world of the East India Company. In fact the inventory of "East Indian" investment in Wales is very considerable, and a swathe of territory from Presteigne to Tenby contains country houses once owned by "nabobs".

Individuals on the make were able to really take advantage of the money-making opportunities offered by East India Company service in India, but the relationship between the company and Britain went much deeper than that. First of all, the East India Company, as part of the monied interest described earlier, went a very long way to strengthening the British state in the eighteenth century. Critically, at a time when Britain was locked in the "Second Hundred Years' War"—a global struggle for supremacy against France—the East India Company proved to be an extraordinarily important ally to the British state; it loaned it very large sums of money on a regular basis, and its troops and ships acted as a sort of supplementary tactical reserve that could be thrown in against the French as and when necessary. So, for example, in 1796, when the British were struggling in the West Indies, it was East India Company ships that were used as transports to take thousands of British troops into the Caribbean theatre of war. In short, the East India Company really has to be seen as a very senior partner in the military complex that Britain became in the eighteenth century.

The East India Company also strengthened the British economy at a critical moment in its development. There has been heated controversy about whether, at the same time, it led to the deindustrialisation of Asia. In some quarters it was once thought that the wealth plundered at Plassey somehow sparked the British industrial revolution, and textbooks from the 1920s and 1930s routinely refer to what was known as the Plassey "Plunder". This is the loot that was returned to Britain and believed to have stimulated very significant economic activity which led to industrialisation. This notion is now considered to be hopelessly redundant because there is little evidence that wealth generated in India ever fed into the early development of British industries. But what wealth coming back into Britain from the East India

Company and from individuals did do was to stimulate a lot of more general economic activity. Money was spent on consumer goods, for example—teas, textiles, luxury goods—which significantly enhanced what Britons consumed and improved the standard of living. But the East India Company and licensed private traders also exported respectable quantities of domestically produced goods, and at times this offered stimuli to key industries at optimum moments in their development. One example is provided by the copper industry, whose main place of production by 1750 was the Lower Swansea Valley. It was East India Company orders for copper that stimulated the early growth of the industry during the 1720s, and thereafter large quantities of Swansea copper found its way into the Asian economies for use as coinage, drinking vessels, boiling pans, kettles, and so on. This did not cause Britain's industrial revolution, but the expansion in Asia critically strengthened important sectors of the British economy at key moments.

So what was the East India Company? There are several answers to this question and much depends on scholarly perspective. The company can certainly be described as being recognisably modern, and the way in which the joint-stock company was set up in 1601 looks quite logical to the modern eye: it operated with a board of directors, a supporting secretariat, very specialised staff, a strong sense of vertical integration, and very sophisticated information-processing systems. This meant that decision-making was entirely rational, based upon full information that was acquired as systematically as possible. Of course, the fundamental difference with today was the speed of communication. Getting information from India took four months, and to a large extent that explains why men like Clive could conveniently ignore whatever they were instructed to do, knowing that they were beyond the effective reach of London. Even so, modern-day business and economic historians have argued that this represents the precursor of the modern firm, with the modern multinational being traced back to the East India Company, and this has allowed them to draw elaborate parallels with General Motors and all sorts of other companies. There is certainly something in this, but the organisation was actually quite fundamentally different from the modern firm. This is because, while the company operated in pursuit of corporate goals and objectives, it also gave full rein to private enterprise, which allowed employees to trade on their own account, and this obviously caused a conflict of interest.

The directors did this because they were realists, who needed incentives to encourage men operating thousands of miles away to devote at least some of their time to corporate activity. So what happened was that the East India Company, which had been trying to prevent and stamp out private trade, began to license its employees to trade in certain goods—the commodities that did not rival those that the company was trying to procure itself. It paid its employees modest salaries—£10 a month—and thereby was incentivising men such as the commanders of East Indiamen to get their ships to Asia on time not only in the company's interests but also in their own.

Of course the licensing of private trade created problems. First, there was the inevitable competition with corporate interests which could damage profitability for stockholders and investors; and ultimately, if private traders performed too well, they could undermine the very company that employed them. Secondly, of course—as was the case with Clive—private activity could run counter to the interests of the state or the crown and thus cause problems for the company. What happened, therefore, is that the state, fuelled by the hostile public response to Clive and other nabobs, began to exert much tighter levels of control over the company from 1770 onwards. Lord North's Regulating Act of 1773 was followed by Pitt's India Act of 1784; these restricted, for example, the taking of presents by company employees and imposed considerably stricter codes of conduct.

Ironically, though, just as monopoly rights were being challenged by Adam Smith and others, it was the company's administrative skills in India, and the attributes it was displaying in terms of governing the Indian population, that saw it survive not as a commercial company but as an imperial agency. The Indian trade monopoly was lost in 1813, and the China monopoly in 1833, but the company continued to function as the British government in India until the great Uprising of 1857. So the company that had begun as a joint-stock commercial enterprise ended its days as a very different type of institution. What we have, therefore, running throughout this complicated story (selectively sketched here) is a mixture of public and private interests being embodied and embedded in the East India Company. The company provided the overarching infrastructure—the ships, the forts, the factories; it provided administrative support; and it provided the legitimization of aggressive private enterprise which was taken up with great enthusiasm by successive generations of its servants. So it may be argued that the monopoly—the much maligned East India Company monopoly—was in fact a fiction, and there wasn't a monopoly at all. There might have been a monopoly on paper, but in practice we see a rampant and very extensive range of private enterprise occurring across the company's territorial and maritime empire.

It is also possible to argue that the East India Company was a key agent in the development of Britain as the archetypal contractor state—a state in which the core functions of government are actually minimal but where its welfare is dependent upon myriad contractors, large and small, selling things to the state or governing millions of square miles of territory. In recent years there has been much emphasis on Britain as a fiscal military state in the eighteenth century—that is, a state that was capable of raising money and men to fight wars. Far less attention has been paid to how money was spent and how resources were actually deployed around the world. The British state has always been remarkably good at getting other people to do its fighting and using other people to spend its money. It did this by working closely with contractors, who acted in the national interest but were primarily motivated by generating profits for themselves and their investors.

I would argue and conclude by saying that the East India Company was the senior contractor partner for the British state through the long eighteenth century, having been charged with representing the crown and the City in the Indian Ocean world. It did so with such great and sustained success because it released private enterprise into areas that could not be reached or accessed either by itself or by traders who were operating by themselves. It created a world of trade and a territorial empire which meant that it ended its days very far distant, literally and metaphorically, from where it had begun in 1600. The 1874 East India Company was finally wound up. By then it had long been moribund, but an Act of Parliament was passed and all the remaining investors were paid up. At that point *The Times* published an article on the East India Company reflecting on its long history, and these are the final words of its lament:

Now, when it passes away with the solemnities of parliamentary departure out of the land of the living it is just, as well as we can, to record that it—the East India Company—accomplished work such as in the whole industry of the human race no other trading company ever attempted and such as none surely is likely to attempt in years to come.

INDUSTRIALISATION: WHY BRITAIN GOT THERE FIRST

by Nicholas Crafts

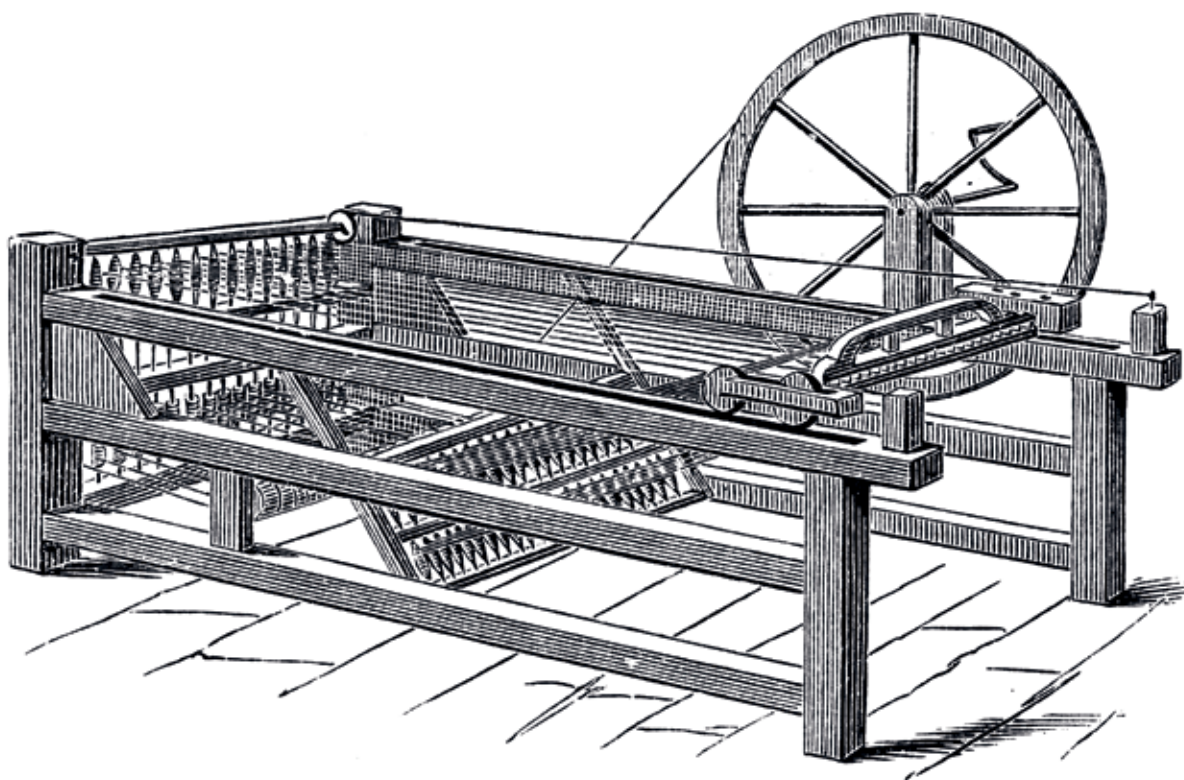


The term “Industrial Revolution” is commonly used to characterise the unprecedented experience of the British economy during the later decades of the eighteenth century and the early decades of the nineteenth. Taken literally, it is a misleading phrase, but carefully deployed it is a useful metaphor. These years saw a remarkable economic achievement by comparison with earlier times, but it must be recognised that by later standards this was in many ways a modest beginning. Moreover, the basis on which initial success was accomplished would not be sufficient to sustain leadership over the long run.

The idea of an “industrial revolution” conjures up images of spectacular technological breakthroughs, the triumph of the factory system, rapid economic growth, and the industrialisation of an economy hitherto based largely on agriculture. Indeed, these were the directions of travel for the British economy, but when they are quantified, the numbers—although impressive once put into context—do not live up to the hyperbole. For several decades, while the economy withstood formidable demographic pressure much better than could have been imagined in the seventeenth century, the growth of real income per person was painfully slow. Not much more than a third of the labour force worked in agriculture in the mid-eighteenth century. In 1851 more people were employed in domestic service and distribution than in textiles, metals, and machine-making combined. Until about 1830 water power was more important than steam power in British industry.

Nevertheless, the economy of the mid-nineteenth century was established on a different trajectory from that of 100 years earlier. In particular, sustained labour productivity growth based on steady technological progress, higher levels of investment, and industrialisation had become the basis of significant growth in real income per person notwithstanding rapid population growth. There had been a transition to “modern economic growth”. That said, growth potential was still quite limited by twentieth-century standards in an economy where education and scientific capabilities were still quite primitive, the scope to import technological advances from the rest of the world was modest, and institutions and economic policies had obvious limitations.

The aim of this paper is to establish the context for British industrialisation, to set out the quantitative details of the Industrial Revolution, to consider what factors were conducive to Britain becoming the first industrial nation and the “workshop of the world”, and to discuss the difficulties of explaining the acceleration of technological progress. As a postscript, some aspects of the legacy of Britain’s early start are highlighted.



THE CONTEXT

Three background points are important to bear in mind. First, the Industrial Revolution came after the Great Divergence. That is to say, as is reported in Table 1, well before the late eighteenth century income levels in northwest Europe had pulled well ahead of those in Asia, and Britain was a long way beyond “bare-bones subsistence”, which is often approximated as \$400 (1990GK). This relatively high income reflects several centuries of slow economic growth (with incomes growing at about 0.2 percent per year on average). This entailed a significant expansion of international commerce, a considerable development of small-scale industry, and a demographic regime which was some way removed from the worst Malthusian nightmare. Second, relatively high income levels meant that there were aspects of the economy that were favourable for subsequent economic development, including an ability to mobilise substantial funds for investment when good opportunities came along and a sizeable urban population. Moreover, Britain was a high-wage economy by the standards of the time, as is shown in Table 2. Third, even so, there were important limits to growth in the pre-Industrial Revolution

The spinning jenny, a multi-spindle spinning frame invented in 1764 by James Hargreaves in Stanhill, Lancashire.

British economy, which was constrained by the relatively slow advance of technology, which in turn made it difficult to withstand demographic pressure. A fair description of the early eighteenth-century economy is that population growth above about 0.5 percent per year put significant downward pressure on real wages and thus on living standards.

Table 1 Real GDP/person, 1086–1850 (\$1990GK)

Source: Broadberry (2013)

Year	England/Great Britain	Holland/ Netherlands	Italy	China
1086	754			1244
1348	777	876	1376	
1400	1090	1245	1601	948
1500	1114	1483	1403	909
1600	1123	2372	1244	852
1650	1100	2171	1271	
1700	1630/1563	2403	1350	843
1750	1710	2440	1403	737
1800	2080	2617/1752	1244	639
1850	2997	2397	1350	600

Table 2 Silver wages, 1650–1849 (grams/day)

Source: Allen (2001); Broadberry and Gupta (2006)

Year	Southern England	Antwerp	Strasbourg	China Yanszi	India
1650–99	5.6	7.1	3.1		1.4
1700–49	7.0	6.9	2.9		1.5
1750–99	8.3	6.9	3.3	1.7	1.2
1800–49	14.6	7.7	8.1	1.7	1.8

THE INDUSTRIAL REVOLUTION IN NUMBERS

The period of the classic Industrial Revolution marks the transition to modern economic growth which culminated in an economy capable of sustained productivity improvements underpinned by technological advance, which delivered steady increases in real GDP per person and real wages in the face of rapid population growth. This did indeed mark the end of any possibility of being caught in a “Malthusian Trap” and was a remarkable achievement unthinkable a century earlier. That said, by later

standards growth was actually quite modest, as can be seen in Table 3, with real GDP growing at less than 2 percent per year until the second quarter of the nineteenth century; even so the increase in GDP growth was enough to outstrip the rise in population growth by 1.4 percent per year. Total factor productivity (TFP) growth rose to a respectable but hardly spectacular 0.7 percent per year by this time.¹ There was no “take-off” of the kind envisaged by Walt Rostow.²

Table 3 Growth during the British industrial revolution (% per year)

Source: Crafts (2014)

Year	Real GDP	Population	Real GDP/person	TFP
1760–1800	1.2	0.8	0.4	0.4
1800–1830	1.7	1.4	0.3	0.4
1830–1860	2.3	1.4	0.9	0.7

By the mid-nineteenth century Britain was highly industrialised with 45 percent of employment in industry (Table 4). The structure of employment had been transformed compared with Elizabethan times. However, recent research has made clear that a good deal of this switch towards industry had already occurred prior to the Industrial Revolution and that employment in mid-eighteenth-century Britain was less agricultural and more industrial than previously thought, especially when female employment is properly taken into account. It is still entirely valid to see Britain as an outlier in the mid-nineteenth century compared with other countries by virtue of its very low share of agricultural employment, which was based on the disappearance of peasant agriculture and the trade of an open economy—an economy that imported a significant fraction of its food and had a strong position in manufactured exports. Nevertheless, although structural change sped up during the Industrial Revolution, it was less dramatic than used to be thought.

Table 4 Employment shares (%)

Source: Broadberry et al. (2013)

	Agriculture	Industry	Services
1759	36.8	33.9	29.3
1801	31.7	36.4	31.9
1831	26.8	41.9	31.3
1851	23.5	45.6	30.9

Precocious British industrialisation was the vanguard of a more general phenomenon that was the hallmark of nineteenth-century economic development—namely, the simultaneous industrialisation of Europe coupled with the deindustrialisation of Asia. The estimates reported in Table 5 show the share of China in world industrial production falling from 32.8 percent in 1750 to 12.5 percent in 1880, while over the same period Britain’s share rose from 1.9 percent to 22.9 percent. This reflected not only the

impact of diverging growth rates but also the long-term effects of globalisation, as falling transport costs allowed the so-called “first unbundling” in which production and consumption of industrial output could take place in far distant locations. Twenty-five percent of British industrial output was exported in 1851, and for this reason the economy has earned the (somewhat exaggerated) label the “workshop of the world”.

Table 5 Shares of world industrial production (%)

Source: Bairoch (1982)

	1750	1830	1860	1880	1913
Britain	1.9	9.5	19.9	22.9	13.6
Rest of western Europe	15.2	18.1	25.4	30.0	33.9
USA	0.1	2.5	7.2	14.7	32.0
China	32.8	29.8	19.5	12.5	3.6
India	24.5	17.6	8.6	2.7	1.4

SLOW TFP GROWTH

It may seem surprising that TFP growth was not much faster during the Industrial Revolution, which was after all the time of the inventions of Richard Arkwright, Henry Cort, Samuel Crompton, George Stephenson, and James Watt, and ushered in the age of steam, generally thought to be one of the most important general-purpose technologies ever.

Two points can be made straightaway. First, the impact of technological progress was very uneven. Most of the service sector other than transport was largely unaffected. Textiles, metals, and machine-making accounted for less than a third of industrial employment—or 13.4 percent of total employment—even in 1851, while much industrial employment was still in “traditional” sectors. Second, the process of technological advance was characterised by many incremental improvements and learning to realise the potential of the original inventions. This took time in an era where scientific and technological capabilities were still very weak by later standards.

Steam power offers an excellent example. The estimates in Table 6 show that its impact on productivity growth before 1830 was trivial. In 1830 only about 165,000 horsepower were in use. The cost-effectiveness and diffusion of steam power were held back by the high coal consumption of the original low-pressure engines, and the move to high pressure—which benefited not only factories but railways and steam-ships—was not generally accomplished until the second half of the nineteenth century. The science of the steam engine was not well understood and the price of steam power fell only slowly. The maximum impact of steam power on British productivity growth was delayed until the third quarter of the nineteenth century—nearly 100 years after James Watt’s patent.

Table 6 The contribution of steam power to British labour productivity growth, 1760–1910 (% per year)
Source: Crafts (2004)

1760–1800	0.01
1800–1830	0.02
1830–1850	0.20
1850–1870	0.41
1870–1910	0.31

Moreover, many aspects of the British economy were still unfriendly to innovative effort. The size of markets was still very small in 1820, when globalisation proper was in its infancy and real GDP in Britain was only about one-twentieth the size it would attain in the United States a century later. The costs of invention were high since the contributions that scientific knowledge and formal education could make were modest. Intellectual property rights were weak since the legal protection offered by patents was doubtful until the 1830s, and the cost of taking out a patent was very high until the reforms of 1852. Rent-seeking in the law, the bureaucracy, the church, and the military remained very attractive alternatives to entrepreneurship, as the evidence on fortunes bequeathed attests. Table 7 reports levels of investment in physical and human capital in the early nineteenth century, which are very low by later standards. This was clearly not a time of high college enrolment, and the highly educated were to be found in the old professions, not in science and engineering. Investment, especially in equipment, was a small proportion of GDP. This may partly reflect the modest capital requirements of the early industrial technologies, but it is also a symptom of the deficiencies of the capital market at a time of very restrictive company and banking legislation.

Table 7 Aspects of broad capital accumulation, 1801–31 (%)
Source: Crafts (1995), (1998)

Investment/GDP	6.7
Non-residential investment/GDP	5.0
Equipment investment/GDP	1.3
Adult literacy	54
Primary school enrolment	36
Years of schooling (number)	2.3
University students/population	0.04
Civil engineers/employed	0.01
Traditional professions/employed	0.88

WHY BRITAIN?

It is reasonably easy to explain why Britain became a highly industrialised economy relatively early. By the eighteenth century there was a well-established market economy based on private property rights, the rule of law, and a strong but constrained state with a sound tax base. Incomes were relatively high following a long period of successful commercial expansion, and agriculture had been reorganised along capitalist landlord–tenant farmer lines, which meant larger farms and fewer workers. Geography was favourable in several important respects, including the availability of coal, water power, and access to the sea. There was a substantial skill base in textile trades, in mining, and in the iron industry. If new industrial technologies came along which could benefit from this kind of environment, Britain was well placed to exploit them. Nevertheless, there were no remarkable changes in any of these factors on the eve of the Industrial Revolution.

It is much harder to explain why the first industrial revolution happened in Britain in the late eighteenth and early nineteenth centuries. The crux of the matter is to explain the acceleration in technological progress, which in the first instance revolved especially around a few pivotal breakthroughs, notably in cotton textiles, which were actually relatively simple and low-level. The problems here are three. First, it seems reasonable to suppose that the environment for invention contained favourable aspects which allowed a small probability of a key technological advance in any one year but a sizeable cumulative probability over the long run. This means that ex-ante the timing and perhaps even the location of these advances were unpredictable. Second, it might be thought that the existence of a strong demand for a new technology would stimulate a response from profit-orientated inventors, but effort does not necessarily lead to achievement, especially at a time when science was quite primitive—we had to wait till the twentieth century for the advent of effective pharmaceutical drugs. Conversely, successful invention would have little economic impact when the market for it was small—think of hot-air ballooning invented in 1783 in France by the Montgolfier brothers. So the link between an environment conducive to innovative effort and arriving at the Industrial Revolution is not straightforward. Third, we might also recognise that sometimes important advances are, in the terminology of Mokyr (1990), “macro-inventions”, which is to say that they do not occur in response to economic incentives but rather result from strokes of genius or luck. Abraham Darby’s discovery of coke-smelting in 1709 might be one such example. This introduces an element of randomness into technological progress.³

Notwithstanding these difficulties, the recent literature is rich in important hypotheses to explain Britain’s primacy in the Industrial Revolution, with notable contributions from Allen (2009) and Mokyr (2009). These offer competing but not mutually exclusive arguments—indeed, there may be important complementarities between them. Allen argues that “the Industrial Revolution ... was invented in Britain in the eighteenth century because it paid to invent it there” (page 2). This resulted from the unusual price and wage structure that prevailed; compared with that in other countries, wages were high, capital was cheap, and energy was very cheap (cf. Tables 2 and 8). It was only worth paying the high fixed costs of commercial development of good ideas where there was a potential market if the endeavour succeeded, and this would only be the case if adopting the new technology made economic sense. Allen cites the spinning jenny as an important illustration of his argument, since he estimates the rate of return on buying one in England in the 1770s was 38 percent, compared with 2.5 percent in France and –5.2 percent in India.

Table 8 The price of energy (grams of silver/million BTUs)

Source: Allen (2009)

	1650–99	1700–49	1750–99	1800–49
Western UK, coal	0.81	0.81	1.13	1.13
Western UK, charcoal	2.53	3.25	5.34	6.17
Antwerp, coal	7.12	7.95	7.20	7.37
Antwerp, charcoal	9.16	13.09	15.23	19.04
Beijing		9.33	8.99	8.08
Canton		4.15	7.15	

This is an appealing but not yet completely convincing argument, which at this stage still requires more empirical evidence. The story is certainly more complicated than Allen's deceptively simple summary allows.⁴ For example, as is shown in Table 9, it would have paid to adopt the jenny even with low French wages if the price had been as low as in England, and it surely was very profitable to adopt the jenny at Philadelphia wages and prices. In England the jenny would have been profitable at a wage rate of 3.75d—a wage rate which had already been attained in 1650, over a century before Hargreaves's invention: an observation which makes the point that the technological response to economic incentives might not be immediate!

Table 9. Internal rate of return on purchase of spinning jenny, c. 1780 (%)

Source: Crafts (2011)

Cost of Jenny	840d	1450d	1500d
Wage			
9.375d	64.0	31.0	29.5
6.25d	38.0	13.5	12.0
4.66d	24.0	2.5	1.5
3.75d	15.0	–5.0	–6.5

Notes: England: price of jenny = 840d, wage = 6.25d (Allen, 2009); France: price of jenny = 1450d, wage = 4.66d (Allen, 2009); United States (Philadelphia): price of jenny = 1500d (Jeremy, 1973), wage = 9.375d (Adams, 1970).

Mokyr (2009) offers a different explanation:

Britain became the leader of the Industrial Revolution because, more than any other European economy, it was able to take advantage of its endowment of human and physical resources thanks to the great synergy of the Enlightenment: the combination of the Baconian program in useful knowledge and the recognition that better institutions created better incentives (page 122).

What was needed to generate an industrial revolution was the right combination of useful knowledge generated by scientists, engineers, and inventors to be exploited by a supply of skilled craftsmen in an institutional environment that produced the correct incentives for entrepreneurs. The “Baconian program” comprised research based on experimentation and scientific method, directing the research agenda to focus on solving practical problems and making the results widely accessible by organisation and dissemination of knowledge. This promoted “micro-inventions”, the continuous flow of incremental improvements that made the new technologies more effective. Mokyr acknowledges that the impact of the Enlightenment on institutions is hard to quantify, but argues that the success of its ideology reduced rent-seeking and promoted competitive markets. It was manifested in terms of legislation such as the abolition of the Corn Laws, but it also strengthened informal institutions in the form of social norms that favoured gentlemanly capitalism rather than opportunistic behaviour.

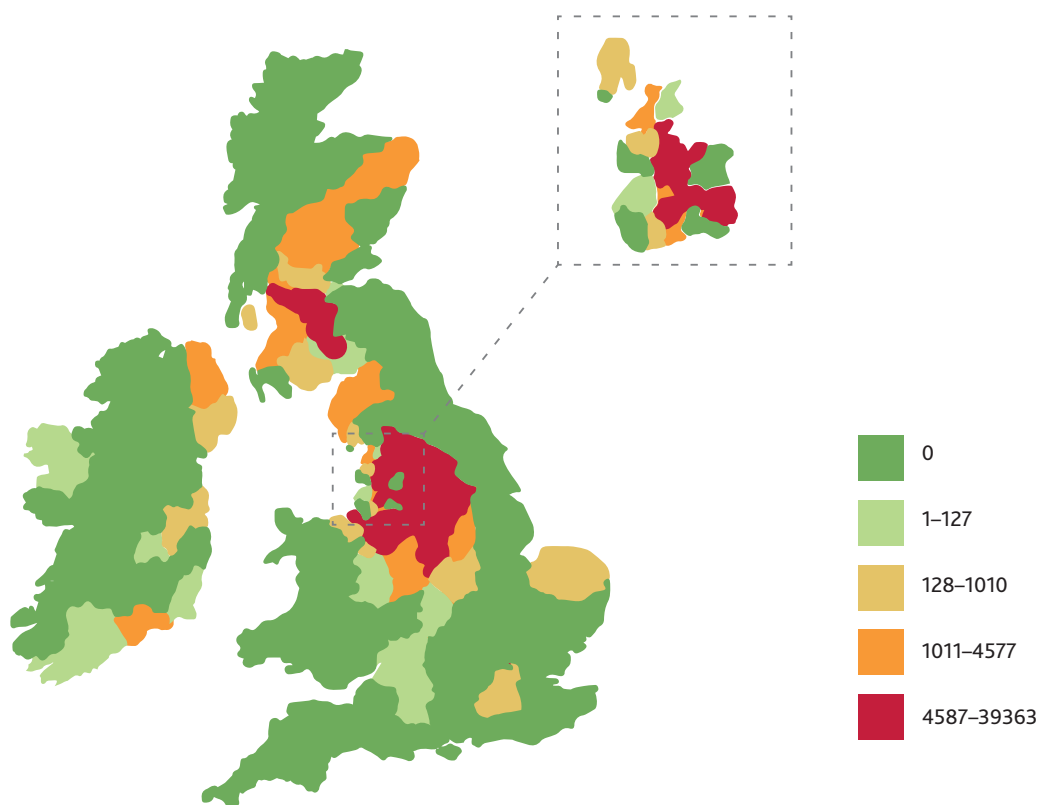
Once again, this is an attractive hypothesis in need of stronger empirical evidence. For example, if artisanal micro-invention is important, the connections of this with the Enlightenment remain somewhat elusive, and its anonymity makes quantitative investigation rather difficult. While the notion of lower access costs to knowledge as a stimulus to micro-invention during the Industrial Revolution is attractive, this also remains to be quantified and may be the result of the spread of tacit knowledge through the factory system or urbanisation rather than the availability of technical manuals or the activities of scientific societies. Similarly, Mokyr offers no quantification of the postulated improvement in formal and informal institutions, which is certainly not self-evident.

Moreover, while one can point to better economic policy in terms, for example, of the abolition of the Statute of Artificers, the Bubble Act and the Usury Laws, the reform of the patent system, and the repeal of the Corn Laws, many of these were long delayed. And it is easy to point to major failures of government policy which might well disappoint those imbued with Enlightenment views—for example, the refusal to promote state-financed primary education despite the high social (and fiscal) rate of return it could have delivered; the incompetent regulation of the railway system that involved the construction of a seriously suboptimal network at high cost; and the obvious shortcomings of company law even in the second half of the nineteenth century. These really seem to be the outcome of interest-group politics, not the evidence-based policy design that the Enlightenment would prefer.

It is widely accepted by economic historians that the explanation for a sustained acceleration of productivity growth must come from understanding the development and subsequent incremental improvement of new technologies. A combination of the propositions made by Allen and Mokyr would produce the hypothesis that this outcome resulted from the responsiveness, which was augmented by the Enlightenment, of many individuals to the wage and price configuration that underpinned the profitability of innovative effort in the eighteenth century. At least, this comprises an attractive research agenda, if not a definitive statement.

CONSOLIDATING THE LEAD

Early industrial advances could lead to cumulative processes that entrenched the initial lead. The classic example of this occurred in cotton textiles, which was the iconic growth sector of the Industrial Revolution and which epitomised the “first unbundling”. Britain maintained its leading position in this industry up until World War I, even though the technology had become universally known and British wages were much higher than those in Asia. Yet, prior to the Industrial Revolution, cotton textiles



were a British importable, and in conditions of free trade the British industry could not compete with India.

Cotton textiles were extremely spatially concentrated within the United Kingdom (see Figure 1). Lancashire was home in 1850 to 66 percent of UK spindles and in 1903 to 79 percent—in both years accounting for about 46 percent of world spindles. The reasons for Lancashire's dominance stemmed from "first nature geography", such as the availability of water power, the quality of farmland, or the local climate, augmented by "second nature geography", such as access to markets, the advantages of a large agglomeration, and infrastructure. Compared with the rest of the UK, the key advantages that Lancashire enjoyed included cheap coal and excellent market access.⁵ These "acquired advantages" had been developed on the back of "original advantages", which included the availability of water power and the relative unsuitability of the area for agriculture in a not too remote location.

What made the industry stay put was a combination of sunk costs—where steam engines were installed first to complement and later to replace water power—and the emergence of a cotton textile agglomeration. Over time, as Alfred Marshall

Figure 1 The location of employment in the cotton industry in Britain, 1838

Note: the inlay in the top-right corner shows Lancashire and its 31 Poor Law Unions.

Source: Crafts and Wolf (2014) based on Factory Inspectors' Report for 1838

famously recognised, Lancashire became an extremely successful agglomeration which delivered major productivity benefits from a dense network of suppliers, technological spillovers, a thick labour pool, and marketing expertise. In the early twentieth century, these agglomeration benefits were still fundamental to Lancashire's ability successfully to compete with the rest of Britain while paying wages that were about a third above the rest of the country, and with the rest of the world despite paying wages that were six times the Japanese level and nine times the Chinese level.

The obvious point is that successful agglomerations have productivity advantages that not only allow relatively high-wage centres to thrive but are also hard to replicate elsewhere. This suggests that an important role for policy is to facilitate, or at least not to obstruct, the growth of these agglomerations. Three aspects of British economic policy in the nineteenth century underpinned Lancashire's success. First, the growth of Lancashire cotton towns was not constrained by land-use planning regulations; for example, the population of both Blackburn and Preston increased by a factor of about ten during the nineteenth century. Second, facilitated by parliamentary legislation, the development of the Lancashire cotton industry was supported by substantial private investments in the transport system in terms of both canals and then railways. Third, later nineteenth-century investments in the provision of local public goods significantly reduced not only the health risks of working in textile towns but also the supply price of labour to the cotton mills.

THE LEGACY OF THE "EARLY START"

As the pioneer, Britain's experience of early industrialisation was idiosyncratic and left a distinctive and, in some ways, difficult legacy that has implications for its later economic development. This is not the place to explore how this played out, but it may be useful to point out some features of the mid-nineteenth-century economy relevant for understanding the relative economic decline that was to follow.

With regard to economic structure, the obvious starting point is that Britain was an unusually open economy, especially after the move to free trade was completed in the mid-1840s. In 1870 exports of goods and services amounted to 29.1 percent of GDP. Britain had a very large share of world manufactured exports: 43 percent in 1850 and still in 1875. Britain's position in the world economy at the end of the Industrial Revolution entailed exporting a lot of manufactures, some of which would lose their comparative advantage in the twentieth century, and importing a substantial amount of agricultural goods. In 1851 exports accounted for about 25 percent of industrial gross output, and imports supplied around 30 percent of domestic consumption of agricultural produce. In turn, this configuration of trade patterns was linked to an exceptionally industrialised and non-agricultural employment structure. Britain's political bias towards free trade was a consequence of the fact that on the one hand, it was a substantial exporter of manufactured goods, while on the other hand, its industrial workers were consuming imported food and the agricultural sector in its economy was comparatively small.

A striking feature of the development of industry, and especially the export staples, during the period is that there was strong spatial concentration. This was driven in considerable part by factor endowments—notably, the availability of cheap coal, which was typically found in the north of Britain rather than the south, at least during the Industrial Revolution. Coal had a significant influence on industrial location until the late nineteenth century. Mining itself was quite heavily localised, with the north and Wales representing a third of employment in 1871, rising to 40 percent by 1911, at which point it accounted

for 21 and 25 percent of employment in these regions, respectively. Shipbuilding and textiles were also highly spatially concentrated, and in the latter almost 60 percent of employment in the sector was in the northwest (cottons) and Yorkshire (woollens) in 1871, at which point 30 percent of the northwest's labour force and 27 percent of Yorkshire's was in textiles. If globalisation went into retreat and/or comparative advantage in these activities ebbed, these regions would be exposed to substantial labour-market adjustments.

It is important to recognise the importance of agglomerations not only in explaining regional patterns of employment but also in underpinning competitive advantage in international trade. As a successful agglomeration, Lancashire dominated export markets far longer than a believer in the Heckscher–Ohlin theory of comparative advantage would have predicted. The advantages of agglomeration are also central to understanding London's primacy as an international capital market and supplier of internationally traded services, which is reflected in the strong contribution already made by “invisibles” both to the balance of payments overall and in terms of significant exports of services and property income from abroad. The rise of London to become the largest capital market was driven initially by British economic and commercial success and by the blows that the Napoleonic Wars delivered to rivals. But its sustained dominance of international financial services was based on input–output linkages within London based on unique advantages in accessing information that accrued to the largest financial centre. The strength of successful agglomerations such as those in Lancashire and London implied “crowding out”; it would be harder for new industries to become successful exporters.

The institutional aspects of the Industrial Revolution economy that both mark Britain out as somewhat unusual and have implications for later growth performance relate to the trajectories on which Britain had embarked in terms of corporate governance and industrial relations, which—in the “Varieties of Capitalism” typology (Hall and Soskice, 2001)—would culminate in Britain as a Liberal Market Economy rather than a Coordinated Market Economy. Capital-market arrangements evolved under the pressure of the financing requirements of industrialisation. In 1860 Britain had a higher ratio of corporate capital to GDP (at least 64 percent) than the United States, France, or Germany, and probably greater than the last two countries had reached even in 1910. The underpinning for a relatively high level of corporatisation and shareholding was not only the legislation of the 1850s, which allowed joint-stock limited-liability companies, but also the availability of a wide menu of corporate forms. Banks were relatively unimportant as delegated monitors, and Britain was slow to develop investment banking, as might be expected in an economy that was rich by the standards of the time with low interest rates, high levels of private wealth, and fairly competitive credit markets. There is a considerable contrast with the way in which capital markets would subsequently develop in Germany, which came to rely much more on bank than equity finance and indeed on banks that exercised a significant role in control and monitoring of firms. Once the two finance systems had been established in the context of different initial conditions in terms of the supply of credit, path dependence was not surprising. The long-term implication for corporate governance was a much greater separation of ownership and control in Britain than in other countries, and there were already clear signs of this by the late nineteenth century. Britain's relatively small but productive agricultural sector based on capitalist farming reflected the long-standing importance of the market economy. Guilds were relatively weak in Britain, and by the early eighteenth century they had already lost much of their ability to extract rents, enforce apprenticeships, and impede the flexibility of production. These institutional arrangements contributed to the emergence of the relatively high incomes which underpinned the incentives to invent Industrial Revolution technology but also put Britain on an institutional trajectory leading towards the Liberal

Market Economy. The implications were a propensity towards craft unionism based on organisation of skilled workers and an absence of strong business associations linked to political parties. In turn, this meant an absence of pressure for proportional representation in the electoral system. When the franchise became more democratic, the median voter was a skilled worker. Competition for his vote was pursued by both Conservative and Liberal governments, which established through the Acts of 1875 and 1906 substantial legal privileges for trade unions whose strategies were to maximise their bargaining power with employers by controlling the supply of skills and content of jobs. The long-term result would see twentieth-century Britain with an industrial-relations system based on strong but decentralised collective bargaining.

Not only were the factors conducive to the First Industrial Revolution essentially transitory, but the manner in which it was achieved was not a basis on which long-run leadership could be maintained. Indeed, in some ways early success may have made subsequent economic advance more difficult. In the words of Joel Mokyr, "To the Victorians, Britain's leadership seemed like a natural outcome. To the economic historian, it has become increasingly clear that Britain's leadership in the Industrial Revolution was only temporary" (2009, page 478).

NOTES AND REFERENCES

1. Total factor productivity (TFP) growth is the rate of growth of output per unit of total input (in this case taking into account inputs of capital, labour, and land). The increase in TFP growth reflects the growing importance of technological progress.
2. Rostow (1960) offered a very widely read but profoundly misleading account of the Industrial Revolution as a great leap forward when in a short space of time investment surged and growth accelerated dramatically in a process dominated by leading sectors such as iron and cotton textiles.
3. When there is the promise of significant economic rewards, macro-inventions can, of course, trigger systematic attempts to build on the breakthrough which do respond to economic incentives.
4. A more detailed and technical review of Allen (2009) and Mokyr (2009) can be found in Crafts (2011).
5. The common claim that a key advantage for Lancashire was its humid climate does not seem to be correct, however; Crafts and Wolf (2014).

BIBLIOGRAPHY

- Adams, D. R. (1970), "Some Evidence on English and American Wage Rates, 1790–1830", *Journal of Economic History*, 30, 499–520
- Allen, R. C. (2001), "The Great Divergence in European Wages and Prices from the Middle Ages to the First World War", *Explorations in Economic History*, 38, 411–47
- Allen, R. C. (2009), *The British Industrial Revolution in Global Perspective*. Cambridge: Cambridge University Press.
- Bairoch, P. (1982), "International Industrialisation Levels from 1750 to 1980", *Journal of European Economic History*, 11, 269–331
- Broadberry, S. (2013), "Accounting for the Great Divergence", University of Warwick CAGE Working Paper No. 160
- Broadberry, S., Campbell, B., and van Leeuwen, B. (2013), "When Did Britain Industrialise? The Sectoral Distribution of the Labour Force and Labour Productivity in Britain, 1381–1851", *Explorations in Economic History*, 50, 16–27
- Broadberry, S. and Gupta, B. (2006), "The Early Modern Great Divergence: Wages, Prices, and Economic Development in Europe and Asia, 1500–1800", *Economic History Review*, 43, 257–79
- Crafts, N. (1995), "Exogenous or Endogenous Growth: The Industrial Revolution Reconsidered", *Journal of Economic History*, 55, 745–72
- Crafts, N. (1998), "Forging Ahead and Falling Behind: The Rise and Relative Decline of the First Industrial Nation", *Journal of Economic Perspectives*, 12 (2), 193–210
- Crafts, N. (2004), "Steam as General Purpose Technology: A Growth Accounting Perspective", *Economic Journal*, 114, 338–51
- Crafts, N. (2011), "Explaining the Industrial Revolution: Two Views", *European Review of Economic History*, 15, 153–68
- Crafts, N. (2014), "Productivity Growth During the British Industrial Revolution: Revisionism Revisited", University of Warwick CAGE Working Paper No. 204
- Crafts, N. and Wolf, N. (2014), "The Location of the UK Cotton Textiles Industry in 1838: A Quantitative Analysis", *Journal of Economic History* (2014), forthcoming
- Hall, P. A. and Soskice, D. (2001), "An Introduction to Varieties of Capitalism", in P. A. Hall and D. Soskice (eds), *Varieties of Capitalism*, 1–68. Oxford: Oxford University Press
- Jeremy, D. J. (1973), "British Textile Technology Transmission to the United States: The Philadelphia Region Experience, 1770–1820", *Business History Review*, 47, 24–52
- Mokyr, J. (1990), *The Lever of Riches*. Oxford: Oxford University Press
- Mokyr, J. (2009), *The Enlightened Economy: An Economic History of Britain, 1700–1850*. New Haven: Yale University Press
- Rostow, W. W. (1960), *The Stages of Economic Growth*. Cambridge: Cambridge University Press

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*Back cover shows: St. Paul's and Ludgate Hill, c.1887 (oil on canvas)
by William Logsdail (1859-1944)*



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