

Why Nations Fail

THE ORIGINS OF POWER,
PROSPERITY, AND POVERTY

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James A. Robinson

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KING'S COLLEGE LONDON

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7.

THE TURNING POINT

TROUBLE WITH STOCKINGS

IN 1583 WILLIAM LEE returned from his studies at the University of Cambridge to become the local priest in Calverton, England. Elizabeth I (1558–1603) had recently issued a ruling that her people should always wear a knitted cap. Lee recorded that “knitters were the only means of producing such garments but it took so long to finish the article. I began to think. I watched my mother and my sisters sitting in the evening twilight plying their needles. If garments were made by two needles and one line of thread, why not several needles to take up the thread.”

This momentous thought was the beginning of the mechanization of textile production. Lee became obsessed with making a machine that would free people from endless hand-knitting. He recalled, “My duties to Church and family I began to neglect. The idea of my machine and the creating of it ate into my heart and brain.”

Finally, in 1589, his “stocking frame” knitting machine was ready. He traveled to London with excitement to seek an interview with Elizabeth I to show her how useful the machine would be and to ask her for a patent that would stop other people from copying the design. He rented a building to set the machine up and, with the help of his local member of Parliament Richard Parkyns, met Henry Carey, Lord Hunsdon, a member of the Queen’s Privy Council. Carey arranged for Queen Elizabeth to come see the machine, but her reaction was devastating. She refused to grant Lee a patent, instead observing, “Thou aimest high, Master Lee. Consider thou what the invention could do to my poor subjects. It would assuredly bring to

them ruin by depriving them of employment, thus making them beggars.” Crushed, Lee moved to France to try his luck there; when he failed there, too, he returned to England, where he asked James I (1603–1625), Elizabeth’s successor, for a patent. James I also refused, on the same grounds as Elizabeth. Both feared that the mechanization of stocking production would be politically destabilizing. It would throw people out of work, create unemployment and political instability, and threaten royal power. The stocking frame was an innovation that promised huge productivity increases, but it also promised creative destruction.

THE REACTION TO LEE’S brilliant invention illustrates a key idea of this book. The fear of creative destruction is the main reason why there was no sustained increase in living standards between the Neolithic and Industrial revolutions. Technological innovation makes human societies prosperous, but also involves the replacement of the old with the new, and the destruction of the economic privileges and political power of certain people. For sustained economic growth we need new technologies, new ways of doing things, and more often than not they will come from newcomers such as Lee. It may make society prosperous, but the process of creative destruction that it initiates threatens the livelihood of those who work with old technologies, such as the hand-knitters who would have found themselves unemployed by Lee’s technology. More important, major innovations such as Lee’s stocking frame machine also threaten to reshape political power. Ultimately it was not concern about the fate of those who might become unemployed as a result of Lee’s machine that led Elizabeth I and James I to oppose his patent; it was their fear that they would become political losers—their concern that those displaced by the invention would create political instability and threaten their own power. As we saw with the Luddites (pages 85–86), it is often possible to bypass the resistance of workers such as hand-knitters. But the elite, especially when their political power is threatened, form a more formidable barrier to innovation. The fact that they have much to lose from creative destruction means not only that they will not be the

ones introducing new innovations but also that they will often resist and try to stop such innovations. Thus society needs newcomers to introduce the most radical innovations, and these newcomers and the creative destruction they wreak must often overcome several sources of resistance, including that from powerful rulers and elites.

Prior to seventeenth-century England, extractive institutions were the norm throughout history. They have at times been able to generate economic growth, as shown in the last two chapters, especially when they've contained inclusive elements, as in Venice and Rome. But they did not permit creative destruction. The growth they generated was not sustained, and came to an end because of the absence of new innovations, because of political infighting generated by the desire to benefit from extraction, or because the nascent inclusive elements were conclusively reversed, as in Venice.

The life expectancy of a resident of the Natufian village of Abu Hureyra was probably not that much different from that of a citizen of Ancient Rome. The life expectancy of a typical Roman was fairly similar to that of an average inhabitant of England in the seventeenth century. In terms of incomes, in 301 AD the Roman emperor Diocletian issued the Edict on Maximum Prices, which set out a schedule of wages that various types of workers would be paid. We don't know exactly how well Diocletian's wages and prices were enforced, but when the economic historian Robert Allen used his edict to calculate the living standards of a typical unskilled worker, he found them to be almost exactly the same as those of an unskilled worker in seventeenth-century Italy. Farther north, in England, wages were higher and increasing, and things were changing. How this came to be is the topic of this chapter.

EVER-PRESENT POLITICAL CONFLICT

Conflict over institutions and the distribution of resources has been pervasive throughout history. We saw, for example, how political conflict shaped the evolution of Ancient Rome and Venice, where it was ultimately resolved in favor of the elites, who were able to increase their hold on power.

English history is also full of conflict between the monarchy and its subjects, between different factions fighting for power, and between elites and citizens. The outcome, though, has not always been to strengthen the power of those who held it. In 1215 the barons, the layer of the elite beneath the king, stood up to King John and made him sign the Magna Carta ("the Great Charter") at Runnymede (see Map 9, page 112). This document enacted some basic principles that were significant challenges to the authority of the king. Most important, it established that the king had to consult with the barons in order to raise taxes. The most contentious clause was number 61, which stated that "the barons shall choose any twenty-five barons of the realm they wish, who with all their might are to observe, maintain and cause to be observed the peace and liberties which we have granted and confirmed to them by this our present charter." In essence, the barons created a council to make sure that the king implemented the charter, and if he didn't, these twenty-five barons had the right to seize castles, lands, and possessions "... until, in their judgement, amends have been made." King John didn't like the Magna Carta, and as soon as the barons dispersed, he got the pope to annul it. But both the political power of the barons and the influence of the Magna Carta remained. England had taken its first hesitant step toward pluralism.

Conflict over political institutions continued, and the power of the monarchy was further constrained by the first elected Parliament in 1265. Unlike the Plebeian Assembly in Rome or the elected legislatures of today, its members had originally been feudal nobles, and subsequently were knights and the wealthiest aristocrats of the nation. Despite consisting of elites, the English Parliament developed two distinguishing characteristics. First, it represented not only elites closely allied to the king but also a broad set of interests, including minor aristocrats involved in different walks of life, such as commerce and industry, and later the "gentry," a new class of commercial and upwardly mobile farmers. Thus the Parliament empowered a quite broad section of society—especially by the standards of the time. Second, and largely as a result of the first characteristic, many members of Parliament were consistently opposed to the monarchy's attempts

to increase its power and would become the mainstay of those fighting against the monarchy in the English Civil War and then in the Glorious Revolution.

The Magna Carta and the first elected Parliament notwithstanding, political conflict continued over the powers of the monarchy and who was to be king. This intra-elite conflict ended with the War of the Roses, a long duel between the Houses of Lancaster and York, two families with contenders to be king. The winners were the Lancastrians, whose candidate for king, Henry Tudor, became Henry VII in 1485.

Two other interrelated processes took place. The first was increasing political centralization, put into motion by the Tudors. After 1485 Henry VII disarmed the aristocracy, in effect demilitarizing them and thereby massively expanding the power of the central state. His son, Henry VIII, then implemented through his chief minister, Thomas Cromwell, a revolution in government. In the 1530s, Cromwell introduced a nascent bureaucratic state. Instead of the government being just the private household of the king, it could become a separate set of enduring institutions. This was complemented by Henry VIII's break with the Roman Catholic Church and the "Dissolution of the Monasteries," in which Henry expropriated all the Church lands. The removal of the power of the Church was part of making the state more centralized. This centralization of state institutions meant that for the first time, inclusive political institutions became possible. This process initiated by Henry VII and Henry VIII not only centralized state institutions but also increased the demand for broader-based political representation. The process of political centralization can actually lead to a form of absolutism, as the king and his associates can crush other powerful groups in society. This is indeed one of the reasons why there will be opposition against state centralization, as we saw in chapter 3. However, in opposition to this force, the centralization of state institutions can also mobilize demand for a nascent form of pluralism, as it did in Tudor England. When the barons and local elites recognize that political power will be increasingly more centralized and that this process is hard to stop, they will make demands to have a say in how this centralized power is used. In England during

the late fifteenth and sixteenth centuries, this meant greater efforts by these groups to have Parliament as a counterweight against the Crown and to partially control the way the state functioned. Thus the Tudor project not only initiated political centralization, one pillar of inclusive institutions, but also indirectly contributed to pluralism, the other pillar of inclusive institutions.

These developments in political institutions took place in the context of other major changes in the nature of society. Particularly significant was the widening of political conflict which was broadening the set of groups with the ability to make demands on the monarchy and the political elites. The Peasants' Revolt of 1381 (page 99) was pivotal, after which the English elite were rocked by a long sequence of popular insurrections. Political power was being redistributed not simply from the king to the lords, but also from the elite to the people. These changes, together with the increasing constraints on the king's power, made the emergence of a broad coalition opposed to absolutism possible and thus laid the foundations for pluralistic political institutions.

Though contested, the political and economic institutions the Tudors inherited and sustained were clearly extractive. In 1603 Elizabeth I, Henry VIII's daughter who had acceded to the throne of England in 1558, died without children, and the Tudors were replaced by the Stuart dynasty. The first Stuart king, James I, inherited not only the institutions but the conflicts over them. He desired to be an absolutist ruler. Though the state had become more centralized and social change was redistributing power in society, political institutions were not yet pluralistic. In the economy, extractive institutions manifested themselves not just in the opposition to Lee's invention, but in the form of monopolies, monopolies, and more monopolies. In 1601 a list of these was read out in Parliament, with one member ironically asking, "Is not bread there?" By 1621 there were seven hundred of them. As the English historian Christopher Hill put it, a man lived

in a house built with monopoly bricks, with windows . . . of monopoly glass; heated by monopoly coal (in Ireland monopoly timber), burning in a grate

made of monopoly iron . . . He washed himself in monopoly soap, his clothes in monopoly starch. He dressed in monopoly lace, monopoly linen, monopoly leather, monopoly gold thread . . . His clothes were held up by monopoly belts, monopoly buttons, monopoly pins. They were dyed with monopoly dyes. He ate monopoly butter, monopoly currants, monopoly red herrings, monopoly salmon, and monopoly lobsters. His food was seasoned with monopoly salt, monopoly pepper, monopoly vinegar . . . He wrote with monopoly pens, on monopoly writing paper; read (through monopoly spectacles, by the light of monopoly candles) monopoly printed books.

These monopolies, and many more, gave individuals or groups the sole right to control the production of many goods. They impeded the type of allocation of talent, which is so crucial to economic prosperity.

Both James I and his son and successor Charles I aspired to strengthen the monarchy, reduce the influence of Parliament, and establish absolutist institutions similar to those being constructed in Spain and France to further their and the elite's control of the economy, making institutions more extractive. The conflict between James I and Parliament came to a head in the 1620s. Central in this conflict was the control of trade both overseas and within the British Isles. The Crown's ability to grant monopolies was a key source of revenue for the state, and was used frequently as a way of granting exclusive rights to supporters of the king. Not surprisingly, this extractive institution blocking entry and inhibiting the functioning of the market was also highly damaging to economic activity and to the interests of many members of Parliament. In 1623 Parliament scored a notable victory by managing to pass the Statute of Monopolies, which prohibited James I from creating new domestic monopolies. He would still be able to grant monopolies on international trade, however, since the authority of Parliament did not extend to international affairs. Existing monopolies, international or otherwise, stood untouched.

Parliament did not sit regularly and had to be called into session by the king. The convention that emerged after the Magna Carta was that the king was required to convene Parliament to get assent for new taxes. Charles I came to the throne in 1625, declined to call Parliament after 1629, and intensified James I's efforts to build a more solidly absolutist regime. He induced forced loans, meaning that people had to "lend" him money, and he unilaterally changed the terms of loans and refused to repay his debts. He created and sold monopolies in the one dimension that the Statute of Monopolies had left to him: overseas trading ventures. He also undermined the independence of the judiciary and attempted to intervene to influence the outcome of legal cases. He levied many fines and charges, the most contentious of which was "ship money"—in 1634 taxing the coastal counties to pay for the support of the Royal Navy and, in 1635, extending the levy to the inland counties. Ship money was levied each year until 1640.

Charles's increasingly absolutist behavior and extractive policies created resentment and resistance throughout the country. In 1640 he faced conflict with Scotland and, without enough money to put a proper army into the field, was forced to call Parliament to ask for more taxes. The so-called Short Parliament sat for only three weeks. The parliamentarians who came to London refused to talk about taxes, but aired many grievances, until Charles dismissed them. The Scots realized that Charles did not have the support of the nation and invaded England, occupying the city of Newcastle. Charles opened negotiations, and the Scots demanded that Parliament be involved. This induced Charles to call what then became known as the Long Parliament, because it continued to sit until 1648, refusing to dissolve even when Charles demanded it do so.

In 1642 the Civil War broke out between Charles and Parliament, even though there were many in Parliament who sided with the Crown. The pattern of conflicts reflected the struggle over economic and political institutions. Parliament wanted an end to absolutist political institutions; the king wanted them strengthened. These conflicts were rooted in economics. Many supported the Crown because they had been granted lucrative monopolies. For example, the local

monopolies controlled by the rich and powerful merchants of Shrewsbury and Oswestry were protected by the Crown from competition by London merchants. These merchants sided with Charles I. On the other side, the metallurgical industry had flourished around Birmingham because monopolies were weak there and newcomers to the industry did not have to serve a seven-year apprenticeship, as they did in other parts of the country. During the Civil War, they made swords and produced volunteers for the parliamentary side. Similarly, the lack of guild regulation in the county of Lancashire allowed for the development before 1640 of the "New Draperies," a new style of lighter cloth. The area where the production of these cloths was concentrated was the only part of Lancashire to support Parliament.

Under the leadership of Oliver Cromwell, the Parliamentarians—known as the Roundheads after the style in which their hair was cropped—defeated the royalists, known as Cavaliers. Charles was tried and executed in 1649. His defeat and the abolition of the monarchy did not, however, result in inclusive institutions. Instead, monarchy was replaced by the dictatorship of Oliver Cromwell. Following Cromwell's death, the monarchy was restored in 1660 and clawed back many of the privileges that had been stripped from it in 1649. Charles's son, Charles II, then set about the same program of creating absolutism in England. These attempts were only intensified by his brother James II, who ascended to the throne after Charles's death in 1685. In 1688 James's attempt to reestablish absolutism created another crisis and another civil war. Parliament this time was more united and organized. They invited the Dutch *Stattholder*, William of Orange, and his wife, Mary, James's Protestant daughter, to replace James. William would bring an army and claim the throne, to rule not as an absolutist monarch but under a constitutional monarchy forged by Parliament. Two months after William's landing in the British Isles at Brixham in Devon (see Map 9, page 112), James's army disintegrated and he fled to France.

THE GLORIOUS REVOLUTION

After victory in the Glorious Revolution, Parliament and William negotiated a new constitution. The changes were foreshadowed by William's "Declaration," made shortly prior to his invasion. They were further enshrined in the Declaration of Rights, produced by Parliament in February 1689. The Declaration was read out to William at the same session where he was offered the crown. In many ways the Declaration, which would be called the Bill of Rights after its signing into law, was vague. Crucially, however, it did establish some central constitutional principles. It determined the succession to the throne, and did so in a way that departed significantly from the then-received hereditary principles. If Parliament could remove a monarch and replace him with one more to their liking once, then why not again? The Declaration of Rights also asserted that the monarch could not suspend or dispense with laws, and it reiterated the illegality of taxation without parliamentary consent. In addition, it stated that there could be no standing army in England without parliamentary consent. Vagueness entered into such clauses as number 8, which stated, "The election of members of Parliament ought to be free," but did not specify how "free" was to be determined. Even vaguer was clause 13, whose main point was that Parliaments ought to be held frequently. Since when and whether Parliament would be held had been such a contentious issue for the entire century, one might have expected much more specificity in this clause. Nevertheless, the reason for this vague wording is clear. Clauses have to be enforced. During the reign of Charles II, a Triennial Act had been in place that asserted that Parliaments had to be called at least once every three years. But Charles ignored it, and nothing happened, because there was no method of enforcing it. After 1688, Parliament could have tried to introduce a method for enforcing this clause, as the barons had done with their council after King John signed the Magna Carta. They did not do so because they did not need to. This was because authority and decision-making power switched to Parliament after 1688. Even without specific constitutional rules or laws, William simply gave up on

many of the practices of previous kings. He stopped interfering in legal decisions and gave up previous "rights," such as getting the customs revenues for life. Taken together, these changes in political institutions represented the triumph of Parliament over the king, and thus the end of absolutism in England and subsequently Great Britain—as England and Scotland were united by the Act of Union in 1707. From then on Parliament was firmly in control of state policy. This made a huge difference, because the interests of Parliament were very different from those of the Stuart kings. Since many of those in Parliament had important investments in trade and industry, they had a strong stake in enforcing property rights. The Stuarts had frequently infringed on property rights; now they would be upheld. Moreover, when the Stuarts controlled how the government spent money, Parliament opposed greater taxes and balked at strengthening the power of the state. Now that Parliament itself controlled spending, it was happy to raise taxes and spend the money on activities that it deemed valuable. Chief among them was the strengthening of the navy, which would protect the overseas mercantile interests of many of the members of Parliament.

Even more important than the interest of parliamentarians was the emerging pluralistic nature of political institutions. The English people now had access to Parliament, and the policy and economic institutions made in Parliament, in a way they never had when policy was driven by the king. This was partially, of course, because members of Parliament were elected. But since England was far from being a democracy in this period, this access provided only a modest amount of responsiveness. Among its many inequities was that less than 2 percent of the population could vote in the eighteenth century, and these had to be men. The cities where the Industrial Revolution took place, Birmingham, Leeds, Manchester, and Sheffield, had no independent representation in Parliament. Instead, rural areas were overrepresented. Just as bad, the right to vote in the rural areas, the "counties," was based on ownership of land, and many urban areas, the "boroughs," were controlled by a small elite who did not allow the new industrialists to vote or run for office. In the borough of Buckingham, for instance, thirteen burgesses had the exclusive right to vote. On top

of this there were the "rotten boroughs," which had historically had the right to vote but had "rotted away," either because their population had moved over time or, in the case on Dunwich on the east coast of England, had actually fallen into the ocean as a result of coastal erosion. In each of these rotten boroughs, a small number of voters elected two members of Parliament. Old Sarum had seven voters, Dunwich thirty-two, and each elected two members of Parliament.

But there were other ways to influence Parliament and thus economic institutions. The most important was via petitioning, and this was much more significant than the limited extent of democracy for the emergence of pluralism after the Glorious Revolution. Anybody could petition Parliament, and petition they did. Significantly, when people petitioned, Parliament listened. It is this more than anything that reflects the defeat of absolutism, the empowerment of a fairly broad segment of society, and the rise of pluralism in England after 1688. The frantic petitioning activity shows that it was indeed such a broad group in society, far beyond those sitting or even being represented in Parliament, that had the power to influence the way the state worked. And they used it.

The case of monopolies best illustrates this. We saw above how monopolies were at the heart of extractive economic institutions in the seventeenth century. They came under attack in 1623 with the Statute of Monopolies, and were a serious bone of contention during the English Civil War. The Long Parliament abolished all the domestic monopolies that so impinged on people's lives. Though Charles II and James II could not bring these back, they managed to maintain the ability to grant overseas monopolies. One was the Royal African Company, whose monopoly charter was issued by Charles II in 1660. This company held a monopoly on the lucrative African slave trade, and its governor and major shareholder was Charles's brother James, soon to become James II. After 1688 the Company lost not just its governor, but its main supporter. James had assiduously protected the monopoly of the company against "interlopers," the independent traders who tried to buy slaves in West Africa and sell them in the Americas. This was a very profitable trade, and the Royal African

Company faced a lot of challenges, since all other English trade in the Atlantic was free. In 1689 the Company seized the cargo of an interloper, one Nightingale. Nightingale sued the Company for illegal seizure of goods, and Chief Justice Holt ruled that the Company's seizure was unlawful because it was exercising a monopoly right created by royal prerogative. Holt reasoned that monopoly privileges could be created only by statute, and this had to be done by Parliament. So Holt pushed all future monopolies, not just of the Royal Africa Company, into the hands of Parliament. Before 1688 James II would quickly have removed any judge who made such a ruling. After 1688 things were different.

Parliament now had to decide what to do with the monopoly, and the petitions began to fly. One hundred and thirty-five came from interlopers demanding free access to trade in the Atlantic. Though the Royal African Company responded in kind, it could not hope to match the number or scope of the petitions demanding its demise. The interlopers succeeded in framing their opposition in terms not just of narrow self-interest, but of national interest, which indeed it was. As a result, only 5 of the 135 petitions were signed by the interlopers themselves, and 73 of the interlopers' petitions came from the provinces outside London, as against 8 for the Company. From the colonies, where petitioning was also allowed, the interlopers gathered 27 petitions, the Company 11. The interlopers also gathered far more signatures for their petitions, in total 8,000, as opposed to 2,500 for the Company. The struggle continued until 1698, when the Royal African Company monopoly was abolished.

Along with this new locus for the determination of economic institutions and the new responsiveness after 1688, parliamentarians started making a series of key changes in economic institutions and government policy that would ultimately pave the way for the Industrial Revolution. Property rights eroded under the Stuarts were strengthened. Parliament began a process of reform in economic institutions to promote manufacturing, rather than taxing and impeding it. The "hearth tax"—an annual tax for each fireplace or stove, which fell most heavily on manufacturers, who were bitterly opposed to it—was abolished in 1689, soon after William and Mary ascended the

throne. Instead of taxing hearths, Parliament moved to start taxing land.

Redistributing the tax burden was not the only pro-manufacturing policy that Parliament supported. A whole series of acts and legislations that would expand the market and the profitability of woolen textiles was passed. This all made political sense, since many of the parliamentarians who opposed James were heavily invested in these nascent manufacturing enterprises. Parliament also passed legislation that allowed for a complete reorganization of property rights in land, permitting the consolidation and elimination of many archaic forms of property and user rights.

Another priority of Parliament was reforming finance. Though there had been an expansion of banking and finance in the period leading up to the Glorious Revolution, this process was further cemented by the creation of the Bank of England in 1694, as a source of funds for industry. It was another direct consequence of the Glorious Revolution. The foundation of the Bank of England paved the way for a much more extensive "financial revolution," which led to a great expansion of financial markets and banking. By the early eighteenth century, loans would be available to everyone who could put up the necessary collateral. The records of a relatively small bank, C. Hoare & Co. in London, which have survived intact from the period 1702–1724, illustrate this point. Though the bank did lend money to aristocrats and lords, fully two-thirds of the biggest borrowers from Hoare's over this period were not from the privileged social classes. Instead they were merchants and businessmen, including one John Smith, a man with the name of the eponymous average Englishman, who was loaned £2,600 by the bank during the period 1715–1719.

So far we have emphasized how the Glorious Revolution transformed English political institutions, making them more pluralistic, and also started laying the foundations for inclusive economic institutions. There is one more significant change in institutions that emerged from the Glorious Revolution: Parliament continued the process of political centralization that was initiated by the Tudors. It was not just that constraints increased, or that the state regulated the economy in a different way, or that the English state spent money on different

things; but also the capability and capacity of the state increased in all directions. This again illustrates the linkages between political centralization and pluralism: Parliament had opposed making the state more effective and better resourced prior to 1688 because it could not control it. After 1688 it was a different story.

The state started expanding, with expenditures soon reaching around 10 percent of national income. This was underpinned by an expansion of the tax base, particularly with respect to the excise tax, which was levied on the production of a long list of domestically produced commodities. This was a very large state budget for the period, and is in fact larger than what we see today in many parts of the world. The state budgets in Colombia, for example, reached this relative size only in the 1980s. In many parts of sub-Saharan Africa—for example, in Sierra Leone—the state budget even today would be far smaller relative to the size of the economy without the large inflows of foreign aid.

But the expansion of the size of the state is only part of the process of political centralization. More important than this was the qualitative way the state functioned and the way those who controlled it and those who worked in it behaved. The construction of state institutions in England reached back into the Middle Ages, but as we've seen (page 186), steps toward political centralization and the development of modern administration were decisively taken by Henry VII and Henry VIII. Yet the state was still far from the modern form that would emerge after 1688. For example, many appointees were made on political grounds, not because of merit or talent, and the state still had a very limited capacity to raise taxes.

After 1688 Parliament began to improve the ability to raise revenue through taxation, a development well illustrated by the excise tax bureaucracy, which expanded rapidly from 1,211 people in 1690 to 4,800 by 1780. Excise tax inspectors were stationed throughout the country, supervised by collectors who engaged in tours of inspection to measure and check the amount of bread, beer, and other goods subject to the excise tax. The extent of this operation is illustrated by the reconstruction of the excise rounds of Supervisor George Cowperthwaite by the historian John Brewer. Between June 12 and July 5,

1710, Supervisor Cowperthwaite traveled 290 miles in the Richmond district of Yorkshire. During this period he visited 263 victualers, 71 maltsters, 20 chandlers, and one common brewer. In all, he took 81 different measurements of production and checked the work of 9 different excisemen who worked for him. Eight years later we find him working just as hard, but now in the Wakefield district, in a different part of Yorkshire. In Wakefield, he traveled more than nineteen miles a day on average and worked six days a week, normally inspecting four or five premises. On his day off, Sunday, he made up his books, so we have a complete record of his activities. Indeed, the excise tax system had very elaborate record keeping. Officers kept three different types of records, all of which were supposed to match one another, and any tampering with these records was a serious offense. This remarkable level of state supervision of society exceeds what the governments of most poor countries can achieve today, and this in 1710. Also significantly, after 1688 the state began to rely more on talent and less on political appointees, and developed a powerful infrastructure to run the country.

THE INDUSTRIAL REVOLUTION

The Industrial Revolution was manifested in every aspect of the English economy. There were major improvements in transportation, metallurgy, and steam power. But the most significant area of innovation was the mechanization of textile production and the development of factories to produce these manufactured textiles. This dynamic process was unleashed by the institutional changes that flowed from the Glorious Revolution. This was not just about the abolition of domestic monopolies, which had been achieved by 1640, or about different taxes or access to finance. It was about a fundamental reorganization of economic institutions in favor of innovators and entrepreneurs, based on the emergence of more secure and efficient property rights.

Improvements in the security and efficiency of property rights, for example, played a central role in the "transportation revolution," paving the way for the Industrial Revolution. Investment in canals and

roads, the so-called turnpikes, massively increased after 1688. These investments, by reducing the costs of transportation, helped to create an important prerequisite for the Industrial Revolution. Prior to 1688, investment in such infrastructure had been impeded by arbitrary acts by the Stuart kings. The change in the situation after 1688 is vividly illustrated by the case of the river Salwerpe, in Worcestershire, England. In 1662 Parliament passed an act to encourage investment to make the Salwerpe navigable, and the Baldwyn family invested £6,000 to this end. In return they got the right to charge people for navigation on the river. In 1693 a bill was introduced to Parliament to transfer the rights to charge for navigation to the Earl of Shrewsbury and Lord Coventry. This act was challenged by Sir Timothy Baldwyn, who immediately submitted a petition to Parliament claiming that the proposed bill was essentially expropriating his father, who had already heavily invested in the river in anticipation of the charges he could then levy. Baldwyn argued that "the new act tends to make void the said act, and to take away all the works and materials done in pursuance thereof." Reallocation of rights such as this was exactly the sort of thing done by Stuart monarchs. Baldwyn noted, "[I]t is of dangerous consequence to take away any person's right, purchased under an act of Parliament, without their consent." In the event, the new act failed, and Baldwyn's rights were upheld. Property rights were much more secure after 1688, partly because securing them was consistent with the interests of Parliament and partly because pluralistic institutions could be influenced by petitioning. We see here that after 1688 the political system became significantly more pluralistic and created a relatively level playing field within England.

Underlying the transportation revolution and, more generally, the reorganization of land that took place in the eighteenth century were parliamentary acts that changed the nature of property ownership. Until 1688 there was even the legal fiction that all the land in England was ultimately owned by the Crown, a direct legacy from the feudal organization of society. Many pieces of land were encumbered by numerous archaic forms of property rights and many cross-cutting claims. Much land was held in so-called equitable estates, which

meant that the landowner could not mortgage, lease, or sell the land. Common land could often be used only for traditional uses. There were enormous impediments to using land in ways that would be economically desirable. Parliament began to change this, allowing groups of people to petition Parliament to simplify and reorganize property rights, alterations that were subsequently embodied into hundreds of acts of Parliament.

This reorganization of economic institutions also manifested itself in the emergence of an agenda to protect domestic textile production against foreign imports. Not surprisingly, parliamentarians and their constituents were not opposed to all entry barriers and monopolies. Those that would increase their own market and profits would be welcome. However, crucially, the pluralistic political institutions—the fact that Parliament represented, empowered, and listened to a broad segment of society—meant that these entry barriers would not choke other industrialists or completely shut out newcomers, as the *Serrata* did in Venice (pages 155–156). The powerful woolen manufacturers soon made this discovery.

In 1688 some of the most significant imports into England were textiles from India, calicoes and muslins, which comprised about one-quarter of all textile imports. Also important were silks from China. Calicoes and silks were imported by the East India Company, which prior to 1688 enjoyed a government-sanctioned monopoly over the trade with Asia. But the monopoly and the political power of the East India Company was sustained through heavy bribes to James II. After 1688 the company was in a vulnerable position and soon under attack. This took the form of an intense war of petitions with traders hoping to trade in the Far East and India demanding that Parliament sanction competition for the East India Company, while the company responded with counterpetitions and offers to lend Parliament money. The company lost, and a new East India Company to compete with it was founded. But textile producers did not just want more competition in the trade to India. They wanted imports of cheap Indian textiles (calicoes) taxed or even banned. These producers faced strong competition from these cheap Indian imports. At this point the most

important domestic manufacturers produced woolen textiles, but the producers of cotton cloths were becoming both more important economically and more powerful politically.

The wool industry mounted attempts to protect itself as early as the 1660s. It promoted the "Sumptuary Laws," which, among other things, prohibited the wearing of lighter cloth. It also lobbied Parliament to pass legislation in 1666 and 1678 that would make it illegal for someone to be buried in anything other than a woolen shroud. Both measures protected the market for woolen goods and reduced the competition that English manufacturers faced from Asia. Nevertheless, in this period the East India Company was too strong to restrict imports of Asian textiles. The tide changed after 1688. Between 1696 and 1698, woolen manufacturers from East Anglia and the West Country allied with silk weavers from London, Canterbury, and the Levant Company to restrict imports. The silk importers from the Levant, even if they had recently lost their monopoly, wished to exclude Asian silks to create a niche for silks from the Ottoman Empire. This coalition started to present bills to Parliament to place restrictions on the wearing of Asian cottons and silks, and also restrictions on the dyeing and printing of Asian textiles in England. In response, in 1701, Parliament finally passed "an Act for the more effectual employing the poor, by encouraging the manufactures of this kingdom." From September 1701, it decreed: "All wrought silks, bengals and stuffs, mixed with silk or herba, of the manufacture of Persia, China, or East-India, all Calicoes painted, dyed, printed, or stained there, which are or shall be imported into this kingdom, shall not be worn."

It was now illegal to wear Asian silks and calicoes in England. But it was still possible to import them for reexport to Europe or elsewhere, in particular to the American colonies. Moreover, plain calicoes could be imported and finished in England, and muslins were exempt from the ban. After a long struggle, these loopholes, as the domestic woolen textile manufacturers viewed them, were closed by the Calico Act of 1721: "After December 25, 1722, it shall not be lawful for any person or persons whatsoever to use or wear in Great Britain, in any garment or apparel whatsoever, any printed, painted, stained or dyed Calicoe." Though this act removed competition from

Asia for English woolens, it still left an active domestic cotton and linen industry competing against the woolens: cotton and linen were mixed to produce a popular cloth called fustian. Having excluded Asian competition, the wool industry now turned to clamp down on linen. Linen was primarily made in Scotland and Ireland, which gave some scope to an English coalition to demand those countries' exclusion from English markets. However, there were limits to the power of the woolen manufacturers. Their new attempts encountered strong opposition from fustian producers in the burgeoning industrial centers of Manchester, Lancaster, and Liverpool. The pluralistic political institutions implied that all these different groups now had access to the policy process in Parliament via voting and, more important, petitioning. Though the petitions flew from the pens of both sides, amassing signatures for and against, the outcome of this conflict was a victory for the new interests against those of the wool industry. The Manchester Act of 1736 agreed that "great quantities of stuffs made from linen yarn and cotton wool have for several years past been manufactured, and have been printed and painted within this kingdom of Great Britain." It then went on to assert that "nothing in the said recited Act [of 1721] shall extend or be construed to prohibit the wearing or using in apparel, household stuff, furniture or otherwise, any sort of stuff made out of linen yarn and cotton wool, manufactured and printed or painted with any colour or colours within the kingdom of Great Britain."

The Manchester Act was a significant victory for the nascent cotton manufacturers. But its historical and economic significance was in fact much greater. First, it demonstrated the limits of entry barriers that the pluralistic political institutions of parliamentary England would permit. Second, over the next half century, technological innovations in the manufacture of cotton cloth would play a central role in the Industrial Revolution and fundamentally transform society by introducing the factory system.

After 1688, though domestically a level playing field emerged, internationally Parliament strove to tilt it. This was evident not only from the Calicoe Acts but also from the Navigation Acts, the first of which was passed in 1651, and they remained in force with alternations for

the next two hundred years. The aim of these acts was to facilitate England's monopolization of international trade—though crucially this was monopolization not by the state but by the private sector. The basic principle was that English trade should be carried in English ships. The acts made it illegal for foreign ships to transport goods from outside Europe to England or its colonies, and it was similarly illegal for third-party countries' ships to ship goods from a country elsewhere in Europe to England. This advantage for English traders and manufacturers naturally increased their profits and may have further encouraged innovation in these new and highly profitable activities.

By 1760 the combination of all these factors—improved and new property rights, improved infrastructure, a changed fiscal regime, greater access to finance, and aggressive protection of traders and manufacturers—was beginning to have an effect. After this date, there was a jump in the number of patented inventions, and the great flowering of technological change that was to be at the heart of the Industrial Revolution began to be evident. Innovations took place on many fronts, reflecting the improved institutional environment. One crucial area was power, most famously the transformations in the use of the steam engine that were a result of James Watt's ideas in the 1760s.

Watt's initial breakthrough was to introduce a separate condensing chamber for the steam so that the cylinder that housed the piston could be kept continually hot, instead of having to be warmed up and cooled down. He subsequently developed many other ideas, including much more efficient methods of converting the motion of the steam engine into useful power, notably his "sun and planets" gear system. In all these areas technological innovations built on earlier work by others. In the context of the steam engine, this included early work by English inventor Thomas Newcomen and also by Dionysius Papin, a French physicist and inventor.

The story of Papin's invention is another example of how, under extractive institutions, the threat of creative destruction impeded technological change. Papin developed a design for a "steam digester" in 1679, and in 1690 he extended this into a piston engine. In 1705 he

used this rudimentary engine to build the world's first steamboat. Papin was by this time a professor of mathematics at the University of Marburg, in the German state of Kassel. He decided to steam the boat down the river Fulda to the river Weser. Any boat making this trip was forced to stop at the city of Münden. At that time, river traffic on the Fulda and Weser was the monopoly of a guild of boatmen. Papin must have sensed that there might be trouble. His friend and mentor, the famous German physicist Gottfried Leibniz, wrote to the Elector of Kassel, the head of state, petitioning that Papin should be allowed to "... pass unmolested ..." through Kassel. Yet Leibniz's petition was rebuffed and he received the curt answer that "the Electoral Councillors have found serious obstacles in the way of granting the above petition, and, without giving their reasons, have directed me to inform you of their decision, and that in consequence the request is not granted by his Electoral Highness." Undeterred, Papin decided to make the journey anyway. When his steamer arrived at Münden, the boatmen's guild first tried to get a local judge to impound the ship, but was unsuccessful. The boatmen then set upon Papin's boat and smashed it and the steam engine to pieces. Papin died a pauper and was buried in an unmarked grave. In Tudor or Stuart England, Papin might have received similar hostile treatment, but this all changed after 1688. Indeed, Papin was intending to sail his boat to London before it was destroyed.

In metallurgy, key contributions were made in the 1780s by Henry Cort, who introduced new techniques for dealing with impurities in iron, allowing for a much better quality wrought iron to be produced. This was critical for the manufacture of machine parts, nails, and tools. The production of vast quantities of wrought iron using Cort's techniques was facilitated by the innovations of Abraham Darby and his sons, who pioneered the use of coal to smelt iron beginning in 1709. This process was enhanced in 1762 by the adaptation, by John Smeaton, of water power to operate blowing cylinders in making coke. After this, charcoal vanished from the production of iron, to be replaced by coal, which was much cheaper and more readily available.

Even though innovation is obviously cumulative, there was a

distinct acceleration in the middle of the eighteenth century. In no place was this more visible than in textile production. The most basic operation in the production of textiles is spinning, which involves taking plant or animal fibers, such as cotton or wool, and twisting them together to form yarn. This yarn is then woven to make up textiles. One of the great technological innovations of the medieval period was the spinning wheel, which replaced hand spinning. This invention appeared around 1280 in Europe, probably disseminating from the Middle East. The methods of spinning did not change until the eighteenth century. Significant innovations began in 1738, when Lewis Paul patented a new method of spinning using rollers to replace human hands to draw out the fibers being spun. The machine did not work well, however, and it was the innovations of Richard Arkwright and James Hargreaves that truly revolutionized spinning.

In 1769 Arkwright, one of the dominant figures of the Industrial Revolution, patented his "water frame," which was a huge improvement over Lewis's machine. He formed a partnership with Jedediah Strutt and Samuel Need, who were hosiery manufacturers. In 1771 they built one of the world's first factories, at Cromford. The new machines were powered by water, but Arkwright later made the crucial transition to steam power. By 1774 his firm employed six hundred workers, and he expanded aggressively, eventually setting up factories in Manchester, Matlock, Bath, and New Lanark in Scotland. Arkwright's innovations were complemented by Hargreaves's invention in 1764 of the spinning jenny, which was further developed by Samuel Crompton in 1779 into the "mule," and later by Richard Roberts into the "self-acting mule." The effects of these innovations were truly revolutionary: earlier in the century, it took 50,000 hours for hand spinners to spin one hundred pounds of cotton. Arkwright's water frame could do it in 300 hours, and the self-acting mule in 135.

Along with the mechanization of spinning came the mechanization of weaving. An important first step was the invention of the flying shuttle by John Kay in 1733. Though it initially simply increased the productivity of hand weavers, its most enduring impact would be in opening the way to mechanized weaving. Building on the flying shut-

tle, Edmund Cartwright introduced the power loom in 1785, a first step in a series of innovations that would lead to machines replacing manual skills in weaving as they were also doing in spinning.

The English textile industry not only was the driving force behind the Industrial Revolution but also revolutionized the world economy. English exports, led by cotton textiles, doubled between 1780 and 1800. It was the growth in this sector that pulled ahead the whole economy. The combination of technological and organizational innovation provides the model for economic progress that transformed the economies of the world that became rich.

New people with new ideas were crucial to this transformation. Consider innovation in transportation. In England there were several waves of such innovations: first canals, then roads, and finally railways. In each of these waves the innovators were new men. Canals started to develop in England after 1770, and by 1810 they had linked up many of the most important manufacturing areas. As the Industrial Revolution unfolded, canals played an important role in reducing transportation costs for moving around the bulky new finished industrial goods, such as cotton textiles, and the inputs that went into them, particularly raw cotton and coal for the steam engines. Early innovators in building canals were men such as James Brindley, who was employed by the Duke of Bridgewater to build the Bridgewater Canal, which ended up linking the key industrial city of Manchester to the port of Liverpool. Born in rural Derbyshire, Brindley was a millwright by profession. His reputation for finding creative solutions to engineering problems came to the attention of the duke. He had no previous experience with transportation problems, which also was true of other great canal engineers such as Thomas Telford, who started life as a stonemason, or John Smeaton, an instrument maker and engineer.

Just as the great canal engineers had no previous connection to transportation, neither did the great road and railway engineers. John McAdam, who invented tarmac around 1816, was the second son of a minor aristocrat. The first steam train was built by Richard Trevithick in 1804. Trevithick's father was involved in mining in Cornwall, and

Richard entered the same business at an early age, becoming fascinated by steam engines used for pumping out the mines. More significant were the innovations of George Stephenson, the son of illiterate parents and the inventor of the famous train "The Rocket," who began work as an engineman at a coal mine.

New men also drove the critical cotton textile industry. Some of the pioneers of this new industry were people who had previously been heavily involved in the production and trade of woolen cloths. John Foster, for example, employed seven hundred handloom weavers in the woolen industry at the time he switched to cotton and opened Black Dyke Mills in 1835. But men such as Foster were a minority. Only about one-fifth of the leading industrialists at this time had previously been involved in anything like manufacturing activities. This is not surprising. For one, the cotton industry developed in new towns in the north of England. Factories were a completely new way of organizing production. The woolen industry had been organized in a very different way, by "putting out" materials to individuals in their homes, who spun and wove on their own. Most of those in the woolen industry were therefore ill equipped to switch to cotton, as Foster did. Newcomers were needed to develop and use the new technologies. The rapid expansion of cotton decimated the wool industry—creative destruction in action.

Creative destruction redistributes not simply income and wealth, but also political power, as William Lee learned when he found the authorities so unreceptive to his invention because they feared its political consequences. As the industrial economy expanded in Manchester and Birmingham, the new factory owners and middle-class groups that emerged around them began to protest their disenfranchisement and the government policies opposed to their interests. Their prime candidate was the Corn Laws, which banned the import of "corn"—all grains and cereals, but principally wheat—if the price got too low, thus ensuring that the profits of large landowners were kept high. This policy was very good for big landowners who produced wheat, but bad for manufacturers, because they had to pay higher wages to compensate for the high price of bread.

With workers concentrated into new factories and industrial cen-

ters, it became easier to organize and riot. By the 1820s, the political exclusion of the new manufacturers and manufacturing centers was becoming untenable. On August 16, 1819, a meeting to protest the political system and the policies of the government was planned to be held in St. Peter's Fields, Manchester. The organizer was Joseph Johnson, a local brush manufacturer and one of the founders of the radical newspaper the *Manchester Observer*. Other organizers included John Knight, a cotton manufacturer and reformer, and John Thacker Saxton, editor of the *Manchester Observer*. Sixty thousand protestors gathered, many holding banners such as "No Corn Laws," "Universal Suffrage," and "Vote by Ballot" (meaning voting should take place secretly, not openly, as it did in 1819). The authorities were very nervous about the meeting, and a force of six hundred cavalry of the Fifteenth Hussars had been assembled. As the speeches began, a local magistrate decided to issue a warrant for the arrest of the speakers. As police tried to enforce the warrant, they met with the opposition of the crowd, and fighting broke out. At this point the Hussars charged the crowd. Within a few chaotic minutes, eleven people were dead and probably six hundred wounded. The *Manchester Observer* called it the Peterloo Massacre.

But given the changes that had already taken place in economic and political institutions, long-run repression was not a solution in England. The Peterloo Massacre would remain an isolated incident. Following the riot, the political institutions in England gave way to the pressure, and the destabilizing threat of much wider social unrest, particularly after the 1830 revolution in France against Charles X, who had tried to restore the absolutism destroyed by the French Revolution of 1789. In 1832 the government passed the First Reform Act. It enfranchised Birmingham, Leeds, Manchester, and Sheffield, and broadened the base of voting so that manufacturers could be represented in Parliament. The consequent shift in political power moved policy in the direction favored by these newly represented interests; in 1846 they managed to get the hated Corn Laws repealed, demonstrating again that creative destruction meant a redistribution not just of income, but also of political power. And naturally, changes in the distribution of political power in time would lead to a further redistribution of income.

It was the inclusive nature of English institutions that allowed this process to take place. Those who suffered from and feared creative destruction were no longer able to stop it.

WHY IN ENGLAND?

The Industrial Revolution started and made its biggest strides in England because of her uniquely inclusive economic institutions. These in turn were built on foundations laid by the inclusive political institutions brought about by the Glorious Revolution. It was the Glorious Revolution that strengthened and rationalized property rights, improved financial markets, undermined state-sanctioned monopolies in foreign trade, and removed the barriers to the expansion of industry. It was the Glorious Revolution that made the political system open and responsive to the economic needs and aspirations of society. These inclusive economic institutions gave men of talent and vision such as James Watt the opportunity and incentive to develop their skills and ideas and influence the system in ways that benefited them and the nation. Naturally these men, once they had become successful, had the same urges as any other person. They wanted to block others from entering their businesses and competing against them and feared the process of creative destruction that might put them out of business, as they had previously bankrupted others. But after 1688 this became harder to accomplish. In 1775 Richard Arkwright took out an encompassing patent that he hoped would give him a monopoly on the rapidly expanding cotton spinning industry in the future. He could not get the courts to enforce it.

Why did this unique process start in England and why in the seventeenth century? Why did England develop pluralistic political institutions and break away from extractive institutions? As we have seen, the political developments leading up to the Glorious Revolution were shaped by several interlinked processes. Central was the political conflict between absolutism and its opponents. The outcome of this conflict not only put a stop to the attempts to create a renewed and stronger absolutism in England, but also empowered those wish-

ing to fundamentally change the institutions of society. The opponents of absolutism did not simply attempt to build a different type of absolutism. This was not simply the House of Lancaster defeating the House of York in the War of the Roses. Instead, the Glorious Revolution involved the emergence of a new regime based on constitutional rule and pluralism.

This outcome was a consequence of the drift in English institutions and the way they interacted with critical junctures. We saw in the previous chapter how feudal institutions were created in Western Europe after the collapse of the Western Roman Empire. Feudalism spread throughout most of Europe, West and East. But as chapter 4 showed, Western and Eastern Europe began to diverge radically after the Black Death. Small differences in political and economic institutions meant that in the West the balance of power led to institutional improvement; in the East, to institutional deterioration. But this was not a path that would necessarily and inexorably lead to inclusive institutions. Many more crucial turns would have to be taken on the way. Though the Magna Carta had attempted to establish some basic institutional foundations for constitutional rule, many other parts of Europe, even Eastern Europe, saw similar struggles with similar documents. Yet, after the Black Death, Western Europe significantly drifted away from the East. Documents such as the Magna Carta started to have more bite in the West. In the East, they came to mean little. In England, even before the conflicts of the seventeenth century, the norm was established that the king could not raise new taxes without the consent of Parliament. No less important was the slow, incremental drift of power away from elites to citizens more generally, as exemplified by the political mobilization of rural communities, seen in England with such moments as the Peasants' Revolt of 1381.

This drift of institutions now interacted with another critical juncture caused by the massive expansion of trade into the Atlantic. As we saw in chapter 4, one crucial way in which this influenced future institutional dynamics depended on whether or not the Crown was able to monopolize this trade. In England the somewhat greater power of Parliament meant that the Tudor and Stuart monarchs could not do

so. This created a new class of merchants and businessmen, who aggressively opposed the plan to create absolutism in England. By 1686 in London, for example, there were 702 merchants exporting to the Caribbean and 1,283 importing. North America had 691 exporting and 626 importing merchants. They employed warehousemen, sailors, captains, dockworkers, clerks—all of whom broadly shared their interests. Other vibrant ports, such as Bristol, Liverpool, and Portsmouth, were similarly full of such merchants. These new men wanted and demanded different economic institutions, and as they got wealthier through trade, they became more powerful. The same forces were at work in France, Spain, and Portugal. But there the kings were much more able to control trade and its profits. The type of new group that was to transform England did emerge in those countries, but was considerably smaller and weaker.

When the Long Parliament sat and the Civil War broke out in 1642, these merchants primarily sided with the parliamentary cause. In the 1670s they were heavily involved in the formation of the Whig Party, to oppose Stuart absolutism, and in 1688 they would be pivotal in deposing James II. So the expanding trade opportunities presented by the Americas, the mass entry of English merchants into this trade and the economic development of the colonies, and the fortunes they made in the process, tipped the balance of power in the struggle between the monarchy and those opposed to absolutism.

Perhaps most critically, the emergence and empowerment of diverse interests—ranging from the gentry, a class of commercial farmers that had emerged in the Tudor period, to different types of manufacturers to Atlantic traders—meant that the coalition against Stuart absolutism was not only strong but also broad. This coalition was strengthened even more by the formation of the Whig Party in the 1670s, which provided an organization to further its interests. Its empowerment was what underpinned pluralism following the Glorious Revolution. If all those fighting against the Stuarts had the same interests and the same background, the overthrow of the Stuart monarchy would have been much more likely to be a replay of the House of Lancaster versus the House of York, pitting one group against an-

other narrow set of interests, and ultimately replacing and re-creating the same or a different form of extractive institutions. A broad coalition meant that there would be greater demands for the creation of pluralist political institutions. Without some sort of pluralism, there would be a danger that one of the diverse interests would usurp power at the expense of the rest. The fact that Parliament after 1688 represented such a broad coalition was a crucial factor in making members of Parliament listen to petitions, even when they came from people outside of Parliament and even from those without a vote. This was a crucial factor in preventing attempts by one group to create a monopoly at the expense of the rest, as wool interests tried to do before the Manchester Act.

The Glorious Revolution was a momentous event precisely because it was led by an emboldened broad coalition and further empowered this coalition, which managed to forge a constitutional regime with constraints on the power of both the executive and, equally crucially, any one of its members. It was, for example, these constraints that prevented the wool manufacturers from being able to crush the potential competition from the cotton and fustian manufacturers. Thus this broad coalition was essential in the lead-up to a strong Parliament after 1688, but it also meant that there were checks within Parliament against any single group becoming too powerful and abusing its power. It was the critical factor in the emergence of pluralistic political institutions. The empowerment of such a broad coalition also played an important role in the persistence and strengthening of these inclusive economic and political institutions, as we will see in chapter 11.

Still none of this made a truly pluralistic regime inevitable, and its emergence was in part a consequence of the contingent path of history. A coalition that was not too different was able to emerge victorious from the English Civil War against the Stuarts, but this only led to Oliver Cromwell's dictatorship. The strength of this coalition was also no guarantee that absolutism would be defeated. James II could have defeated William of Orange. The path of major institutional change was, as usual, no less contingent than the outcome of other political

conflicts. This was so even if the specific path of institutional drift that created the broad coalition opposed to absolutism and the critical juncture of Atlantic trading opportunities stacked the cards against the Stuarts. In this instance, therefore, contingency and a broad coalition were deciding factors underpinning the emergence of pluralism and inclusive institutions.

8.

NOT ON OUR TURF: BARRIERS TO DEVELOPMENT

NO PRINTING ALLOWED

IN 1445 IN THE GERMAN city of Mainz, Johannes Gutenberg unveiled an innovation with profound consequences for subsequent economic history: a printing press based on movable type. Until then, books either had to be hand-copied by scribes, a very slow and laborious process, or they were block-printed with specific pieces of wood cut for printing each page. Books were few and far between, and very expensive. After Gutenberg's invention, things began to change. Books were printed and became more readily available. Without this innovation, mass literacy and education would have been impossible.

In Western Europe, the importance of the printing press was quickly recognized. In 1460 there was already a printing press across the border, in Strasbourg, France. By the late 1460s the technology had spread throughout Italy, with presses in Rome and Venice, soon followed by Florence, Milan, and Turin. By 1476 William Caxton had set up a printing press in London, and two years later there was one in Oxford. During the same period, printing spread throughout the Low Countries, into Spain, and even into Eastern Europe, with a press opening in Budapest in 1473 and in Cracow a year later.

Not everyone saw printing as a desirable innovation. As early as 1485 the Ottoman sultan Bayezid II issued an edict that Muslims were expressly forbidden from printing in Arabic. This rule was further reinforced by Sultan Selim I in 1515. It was not until 1727 that the first

ment that it was the interaction between Atlantic trade and initial institutional differences that led to the divergence of English institutions and ultimately the Industrial Revolution. The notion of the iron law of oligarchy is due to Michels (1962). The notion of a critical juncture was first developed by Lipset and Rokkan (1967).

On the role of institutions in the long-run development of the Ottoman Empire, the research of Owen (1981), Owen and Pamuk (1999), and Pamuk (2006) is fundamental.

CHAPTER 5: "I'VE SEEN THE FUTURE, AND IT WORKS"

On Steffens's mission to Russia and his words to Baruch, see Steffens (1931), chap. 18, pp. 790–802. For the number of people who starved in the 1930s, we use the figures of Davies and Wheatcroft (2004). On the 1937 census numbers, see Wheatcroft and Davies (1994a, 1994b). The nature of innovation in the Soviet economy is studied in Berliner (1976). Our discussion of how Stalinism, and particularly economic planning, really worked is based on Gregory and Harrison (2005). On how writers of U.S. economics textbooks continually got Soviet economic growth wrong, see Levy and Peart (2009).

Our treatment and interpretation of the Lele and the Bushong is based on the research of Douglas (1962, 1963) and Vansina (1978).

On the concept of the Long Summer, see Fagan (2003). An accessible introduction to the Natufians and archaeological sites we mention can be found in Mithen (2006) and Barker (2006). The seminal work on Abu Hureyra is Moore, Hillman, and Legge (2000), which documents how sedentary life and institutional innovation appeared prior to farming. See Smith (1998) for a general overview of the evidence that sedentary life preceded farming, and see Bar-Yosef and Belfer-Cohen (1992) for the case of the Natufians. Our approach to the Neolithic Revolution is inspired by Sahlins (1972), which also has the anecdote about the Yir Yoront.

Our discussion of Maya history follows Martin and Grube (2000) and Webster (2002). The reconstruction of the population history of Copán comes from Webster, Freter, and Gonlin (2000). The number of dated monuments is from Sidrys and Berger (1979).

CHAPTER 6: DRIFTING APART

The discussion of the Venetian case follows Puga and Trefler (2010), and chaps. 8 and 9 of Lane (1973).

The material on Rome is contained in any standard history. Our interpretation of Roman economic institutions follows Finlay (1999) and Bang (2008). Our account of Roman decline follows Ward-Perkins (2006) and Goldsworthy (2009). On institutional changes in the late Roman Empire, see Jones (1964). The anecdotes about Tiberius and Hadrian are from Finley (1999).

The evidence from shipwrecks was first used by Hopkins (1980). See De Callatay (2005) and Jongman (2007) for an overview of this and the Greenland Ice Core Project.

The Vindolanda tablets are available online at vindolanda.csad.ox.ac.uk/. The quote we use comes from TVII Pub. no.: 343.

The discussion of the factors that led to the decline of Roman Britain follows Cleary (1989), chap. 4; Faulkner (2000), chap. 7; Dark (1994), chap. 2.

On Aksum, see Munro-Hay (1991). The seminal work on European feudalism and its origins is Bloch (1961); see Crummey (2000) on Ethiopian feudalism. Phillipson (1998) makes the comparison between the collapse of Aksum and the collapse of the Roman Empire.

CHAPTER 7: THE TURNING POINT

The story of Lee's machine and meeting with Queen Elizabeth I is available at calverton.homestead.com/willlee.html.

Allen (2009b) presents the data on real wages using Diocletian's Edict on Maximum Prices.

Our argument about the causes of the Industrial Revolution is highly influenced by the arguments made in North and Thomas (1973), North and Weingast (1989), Brenner (1993), Pincus (2009), and Pincus and Robinson (2010). These scholars in turn were inspired by earlier Marxist interpretations of British institutional change and the emergence of capitalism; see Dobb (1963) and Hill (1961, 1980). See also Tawney's (1941) thesis about how the state building project of Henry VIII changed the English social structure.

The text of the Magna Carta is available online at the Avalon Project, at avalon.law.yale.edu/medieval/magframe.asp.

Elton (1953) is the seminal work on the development of state institutions under Henry VIII, and Neale (1971) relates these to the evolution of parliament.

On the Peasants' Revolt, see Hilton (2003). The quote from Hill on monopolies is from Hill (1961), p. 25. On Charles I's period of "personal rule," we follow Sharp (1992). Our evidence on how different groups and regions sided either for or against Parliament comes from Brunton and Pennington (1954), Hill (1961), and Stone (2001). Pincus (2009) is fundamental on the Glorious Revolution and discusses many of the specific changes in policies and economic institutions; for example, the repeal of the Hearth Tax and the creation of the Bank of England. See also Pincus and Robinson (2010). Pettigrew (2007, 2009) discusses the attack on monopolies, including the Royal African Company, and our data on petitioning comes from his papers. Knights (2010) emphasizes the political importance of petitioning. Our information on Hoare's Bank comes from Temin and Voth (2008).

Our information about Supervisor Cowperthwaite and the excise tax bureaucracy comes from Brewer (1988).

Our overview of the economic history of the Industrial Revolution rests on Mantoux (1961), Daunton (1995), Allen (2009a), and Mokyr (1990, 2009), who provide details on the famous inventors and inventions we discuss. The story about the Baldwin family is from Bogart and Richardson (2009, 2011), who stress the connection between the Glorious Revolution, the reorganization of property rights, and the construction of roads and canals. On the Calicoe Acts and Manchester Acts, see O'Brien, Griffiths, and Hunt (1991), which is the source of the quotes from the legislation. On the dominance of new people in industry, see Daunton (1995), chap. 7, and Crouzet (1985).

Our account of why the major institutional changes first took place in England is based on Acemoglu, Johnson, and Robinson (2005a) and Brenner (1976). The data on the number of independent merchants and their political preferences come from Zahedieh (2010).

CHAPTER 8: NOT ON OUR TURF

On the opposition to the printing press in the Ottoman Empire, see Savage-Smith (2003) pp. 656–59. Comparative historical literacy comes from Easterlin (1981).

Our discussion of political institutions of Spain follows Thompson (1994a, 1994b). For evidence on the economic decline of Spain over this period, see Nogal and Prados de la Escosura (2007).

Our discussion of the impediments to economic development in Austria-Hungary follows Blum (1943), Freudenberger (1967), and Gross (1973). The quotation from Maria Theresa comes from Freudenberger, p. 495. All other quotations from Count Hartig and Francis I are from Blum. Francis's reply to the delegates from the Tyrol is quoted from Jászi (1929), pp. 80–81. The comment of Friedrich von Gentz to Robert Owen is also quoted from Jászi (1929), p. 80. The experience of the Rothschilds in Austria is discussed in chap. 2 of Corti (1928).

Our analysis of Russia follows Gerschenkron (1970). The quotation from Kropotkin is from p. 60 of the 2009 edition of his book. The conversation between Nicholas and Mikhail is quoted from Saunders (1992), p. 117. Kankrin's quote on railways is in Owen (1991), pp. 15–16.

The speech by Nicholas to the manufacturers is reproduced from Pintner (1967), p. 100.

The quote from A. A. Zakrevskii is from Pintner (1967), p. 235.

On Admiral Zheng, see Dreyer (2007). The economic history of early Modern China is covered by Myers and Wang (2002). The quote from T'ang Chen is quoted from Myers and Wang, pp. 564–65.

See Zewde (2002) for an overview of the relevant Ethiopian history. The data on how extractive Ethiopia has been historically come from Pankhurst (1961), as do all the quotes we reproduce here.

Our description of Somali institutions and history follows Lewis (1961, 2002). The *beer* of the Hassan Ugaas is reproduced on p. 177 of Lewis (1961); our description of a feud comes from chap. 8 of Lewis (1961), where he reports many other examples. On the Kingdom of Taqali and writing, see Ewald (1988).

CHAPTER 9: REVERSING DEVELOPMENT

Our discussion of the takeover of Ambon and Banda by the Dutch East India Company and the company's negative effect on the development of Southeast Asia follows Hanna (1978) and particularly Reid (1993), chap. 5. The quotes from Reid on Tomé Pires are from p. 271; the Dutch factor in