CONTENTS

Introduction

In 58 BCE four legions led by Julius Caesar marched into Gaul on a multiyear campaign of conquest that would ultimately reach as far north as the Rhine. During the push toward imperial expansion, Roman forces also invaded Britain, although they would not permanently occupy it, at least not yet. But in 43 CE, under the emperor Claudius, Rome's armies again crossed the English Channel, this time turning Britain into an overseas province. These events rank among the most consequential in economic history; had they not occurred, a condition for the invaded area eventually to lead the world in wealth creation would not have been met.

To appreciate the point, we must ask what the default outcome was, as suggested by the invaded zone's preconquest past. We must also ask why another imperial power could not have enacted change in the subjugated area, serving as a Roman replacement. To situate the history of the Roman Empire, and antiquity generally, in the story of the rise of the West, this book will address both questions. It will also evaluate how by the mid-second century BCE the Romans had become the main military power in the Mediterranean, a state of affairs that had long seemed improbable. In taking the direction that it does, this book will offer an alternative to theories of the rise of the West that place geographical determinants at the heart of the analysis. It will also refute the notion, recently put forward, that Rome's absence mattered more than its presence.[1]

The argument advanced here is not meant to deny all the factors conventionally thought of as supporting the rise of the West, among them: the

political fragmentation of post-Carolingian Europe; the social institutions created by the Western Church; the medieval Commercial Revolution; the invention of the printing press; the age of exploration bringing Europeans to the Americas; the scientific achievements of the early modern period; the idea of progress as it would be formulated by Enlightenment thinkers. As we will see, it is possible to assign all of these elements a place in the narrative while maintaining that Roman antiquity was indispensable for the observed result. As to why, from the Neolithic onward the West had been on an upward trajectory of cumulative material advancement that followed a predictable geographical pattern. First place had always been held by the Near East and east Mediterranean, with the surrounding regions trailing some distance behind. But the Roman era would change the pattern radically, inducing a shift in primacy from southeast to northwest. Without the Roman invasions, northwestern Europe would not have had a high enough social development baseline to be able to take first place. Without Rome, then, the modern world would not have been born where it was.

Before we get to the details, we should ask why Roman history has so rarely been seen as central to the rise of the West, or at least for the developmental shape that the West would take. A look at a map of the modern nations that emerged within the borders of the Roman Empire suggests an obvious answer (figure I.1). Even a cursory survey of these states reveals a great heterogeneity in just about every imaginable dimension, including religion, language, and political organization. Significant traces of imperial rule remain. Romance languages are still majority spoken in Portugal, Spain, France, and Romania. Nonetheless, in other respects the legacy of Rome seems to have been superseded by subsequent historical legacies, from Ottoman to European colonial to communist to others still. Most importantly for the argument of this book, a signal from the Roman past in wealth outcomes would seem to be absent from the map. The nations that once made up the empire display large differences in economic prosperity, without any easily identifiable correlation with Roman history. Table I.1 shows the 2019 per capita GDP numbers in US dollars from highest to lowest for all countries that experienced imperial governance.[2] This table is not a perfect geographical reflection of Roman rule. The United Kingdom includes Scotland and Northern Ireland, neither of which were ever part of imperial provinces. Most of what is now Germany also fell outside Roman borders and, on an even larger scale, most of Saudi Arabia did too. Still, table I.1 is adequate as a rough guide to income levels within what once was the Roman Empire.

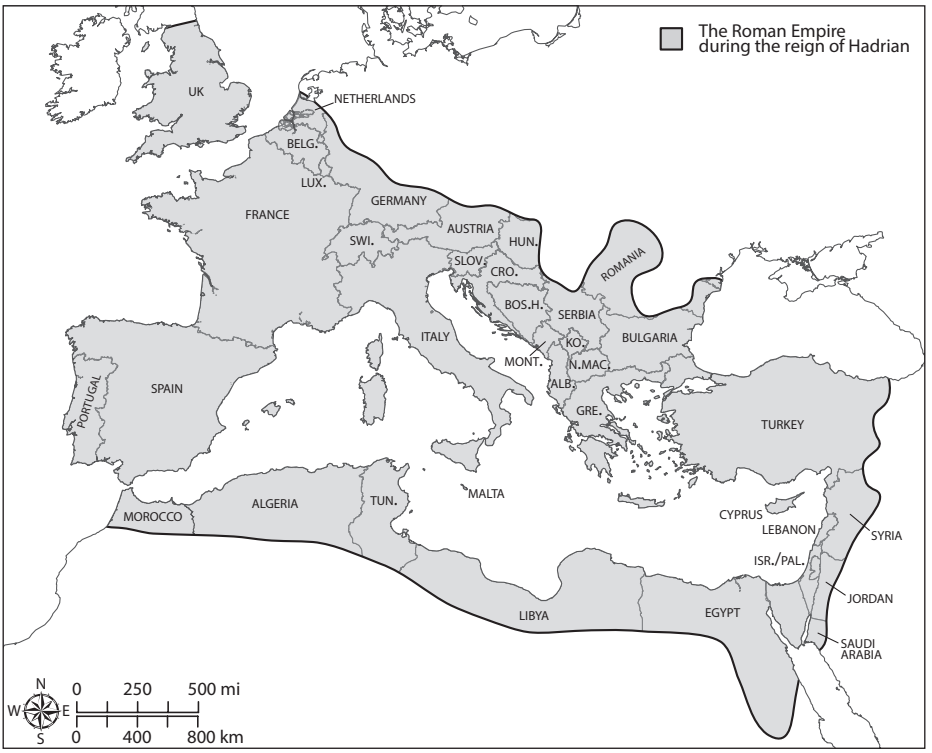

FIGURE I.1. The Roman Empire during the reign of Hadrian with modern-day country borders.

The range in per capita GDPs is evidently large. The economy of Luxembourg is unusual because of its reliance on financial services, and the same holds true for Switzerland. Disregarding those two nations, the next wealthiest down the list is the Netherlands. Its 2019 per capita GDP was eighteen times that of Egypt, the country at the bottom if we exclude Syria, the economy of which has been disrupted by years of civil war. If for purity of argument we also exclude the Netherlands, only half of which was ever ruled by Rome, we arrive in Austria, still almost seventeen times richer in per capita GDP than Egypt. The sense that the Roman Empire had a negligible impact on modern prosperity deepens if imperial longevity is considered. Differences in the duration of Roman rule, whether long or short, do not seem to correlate with modern wealth outcomes. Egypt became a Roman province in 30 BCE, remaining under imperial control until 617 CE.[3] The country is almost four and a half times poorer than Romania, which was under imperial rule as the province of Dacia for only about 165 years.

TABLE I.1. Per Capita GDPs by Country Within Roman Imperial Borders

Country	Per capita GDP in 2019 (World Bank)	Country	Per capita GDP in 2019 (World Bank)
Luxembourg	$112,697	Croatia	$15,564
Switzerland	$84,122	Romania	$12,992
Netherlands	$53,555	Bulgaria	$10,373
Austria	$49,886	Libya	$9,963
Germany	$47,624	Turkey	$9,215
Belgium	$46,717	Lebanon	$8,906
Israel	$44,251	Montenegro	$8,842
United Kingdom	$42,794	Serbia	$7,756
France	$40,408	North Macedonia	$6,719
Italy	$33,813	Bosnia Herzegovina	$6,122
Malta	$32,422	Albania	$5,460
Spain	$29,787	Algeria	$4,468
Cyprus	$29,703	Kosovo	$4,416
Saudi Arabia	$29,567	Jordan	$4,170
Slovenia	$25,814	Tunisia	$3,529
Portugal	$23,343	Morocco	$3,508
Greece	$19,335	Egypt	$2,963
Hungary	$17,013	Syria	$1,110

But Romania's prosperity relative to Egypt's does not result from a shorter Roman occupation, as we can see if we include France in the comparison. What is now France was incorporated into the empire during the second and first centuries BCE and remained under imperial domination well into the fifth century CE. Yet it is more than three times richer than Romania.

The impression of a limited to nonexistent Roman influence on modern wealth outcomes is heightened again if we consider what happened beyond imperial borders. Some of the richest nations in western Europe were never part of the Roman Empire. Table I.2 gives their per capita GDPs for 2019. Those are impressive numbers. Do they show that avoiding imperial rule altogether was economically beneficial in the long run?[4] The conclusion may seem attractive superficially but not on reflection. Finland, never Roman occupied, still ranks below Austria with its long history of imperial domination. This single instance might be dismissed as an anomaly, but there are

TABLE I.2. Per Capita GDPs by Country in Northwestern Europe Outside Roman Imperial Borders

Country	Per capita GDP in 2019 (World Bank)
Ireland	$81,810
Norway	$76,431
Iceland	$68,452
Denmark	$59,404
Sweden	$51,773
Finland	$48,358

other indications that the nations in table I.2 did not get rich because they escaped Roman rule. Norway is an outlier in monetary prosperity thanks to its oil resources. Ireland, meanwhile, is also unusual because many multinational corporations route their profits through the island for fiscal reasons. The exceptional wealth of both countries is a recent phenomenon. Moreover, if we look east, we can see that a lack of Roman domination does not universally correlate with high wealth. No part of Poland was ever controlled by Rome, yet at $15,875 its per capita GDP is less than a third of Austria's.

Still, as clear as the picture from the GDP data may seem, the impression that the Roman past is irrelevant is deceptive. Roman rule did have a determinative influence on the economic outcomes of the modern West. Understanding how requires us to dig deep into history, which is precisely what this book sets out to do.

The Purpose of This Book

The literature on the rise of the West is extensive, which is understandable given the world-historical importance of the topic. The Industrial Revolution that started in England in the eighteenth century led to the most profound economic change in human living conditions since the Neolithic. To explain this momentous shift we have to look back in time, on that point everyone agrees. But how far back in time? Picking a start date inevitably entails a degree of randomness. Douglass North and Robert Thomas acknowledged as much in the opening pages of their *The Rise of the Western World*: "We must step into history at some moment of time and in the process do violence to its essential continuity. We choose the tenth century—following the

decay of the Carolingian Empire, when feudalism and manorialism shaped the society of much of western Europe."[5] The approach of starting the narrative of the rise of the West somewhere in the Middle Ages is a common one in the economic history literature. Doing so still leaves a millennium of chronological leeway, but in practice it is narrowed by a general tendency to favor the later centuries.

To the school of thought of New Institutional Economics associated with Douglas North belongs Avner Greif's *Institutions and the Path to the Modern Economy*. It starts its story a little later than the rise of feudalism, in the mid-eleventh century CE.[6] It focuses on how medieval systems of rules and norms helped to secure property rights and create incentives for commercial development; crucial for the emergence of the modern economy were institutions allowing for impersonal exchange. A different take on the economic effect of institutions is presented by Jared Rubin's *Rulers, Religion, and Riches: Why the West Got Rich and the Middle East Did Not*.[7] It posits that Islamic rulers in the medieval Middle East relied on powerful religious leaders as their rule-legitimizing agents, more so than their counterparts in the Christian West. Their policies were therefore less receptive to useful innovations, which were perceived as threatening by the clerical establishment.

A work with a different theoretical angle is Paolo Malanima's *Pre-Modern European Economy*; yet it, too, starts in the Middle Ages, carrying its story into the modern era.[8] Although it covers institutions, it centers its analysis predominantly on the factors of production, chiefly land and labor. It argues that the period from the tenth to the nineteenth century was characterized by a cyclical continuity rather than a unilinear trend toward prosperity. By contrast, Michael Mitterauer in *Why Europe? The Medieval Origins of Its Special Path* highlights change more than continuity.[9] The story that Mitterauer tells, much like Malanima's, is mostly about the determining importance of the factors of production. He considers medieval society's labor utilization in its feudal system to be critical for the rise of the West.

Another strain in the rise-of-the-West scholarship chooses to emphasize not the medieval but the early modern period, a phase of highly visible change within Western societies. Carlo Cipolla's *Guns, Sails, and Empires* belongs in that camp.[10] It studies innovation during the early phase of European overseas expansion, 1400 to 1700 CE, emphasizing maritime and military technology, and in particular the powerful fusing of the two. Revolving around a similar timespan but selecting a different aspect of technological progress is Joel Mokyr's *A Culture of Growth: The Origins of the Modern Economy*.[11] It discusses the cultural dynamic that led natural philosophers,

ca. 1500–1700 CE, to question received wisdom, fostering the creation of useful knowledge. The argument dovetails with the one put forward by Eric Jones in *The European Miracle*. The essence of Jones's view is that political fragmentation and interstate competition in early modern northwestern Europe facilitated material progress. Like Jones, Immanuel Wallerstein in *The Modern World-System* placed the origins of European wealth in the sixteenth century and for similar, though subtly different reasons.[12] The failure of the Spanish Empire was a pivotal moment producing a capitalist "world system" consisting of a multitude of political units rather than one. Strong states in Europe formed its core. They came to dominate the periphery, which was initially European but increasingly also global.

These are valuable contributions, and the ideas contained in some of them will be used to construct the argument in the pages to follow. As anyone familiar with the debate will know, they by no means constitute all the existing works on the rise of the West or even most of them. Indeed, listing and summarizing all titles—a gargantuan task—would turn this introductory chapter into a book of its own.[13] But aiming for comprehensiveness is not necessary in the present context. The point of the paragraphs above is to illustrate that many of the relevant works have an important commonality: Their starting date falls somewhere in the period from 700 to 1500 CE, with a bias toward the later centuries.

The premise of the current study is that we need to look back further in time to understand how the rise of the West unfolded. Jones, reacting to a tendency to consider the eighteenth and nineteenth centuries, correctly noted that economic history "has been searching too much in the foreground. . . . Fruitful economic change in Europe pre-dated the industrial revolution, which, rather than being the start of growth, emerged from a long past. The continent's advantages and achievements were varied and cumulative."[14] The only problem with Jones's otherwise spot-on insight is that he did not take it far enough. Much fundamental history can be extracted from the medieval and early modern periods, but the world of 1500 CE—or for that matter 1000 CE or 700 CE—did not appear out of nowhere. By the time it took shape, several turns had been taken that would prove to be fundamental for the eventual outcome.

For the sake of completeness it needs to be said that not all works on the rise of the West draw the starting line somewhere in the medieval or early modern period. To broaden the overview of the literature, and to clarify how the current work fits into the existing scholarship, reference must be made to approaches that consider longer time frames. Only three will be

mentioned, once more not to give a full complement of existing works but to provide a sense of some influential theories and how this study relates to them. The first two titles explore avenues this book will not follow; the third takes a path similar to the one taken here.

The first is Walter Scheidel's *Escape from Rome: The Failure of Empire and the Road to Prosperity*.[15] Its main argument is that the enduring disappearance of Roman power allowed Europe to fragment into a constellation of competitive states. The view has much in common with the one set out by Jones and Mokyr, although it looks deeper into history beyond the early modern period. As will become clear in what follows, the political fragmentation argument is accepted by this book, albeit with important sidenotes. However, what it does not accept is Scheidel's conclusion that the contribution of the Romans to the rise of the West consisted of going away and staying away.

The second work that needs to be mentioned is Jared Diamond's *Guns, Germs and Steel: The Fates of Human Societies*.[16] It combines a geographical argument with an ecological one to explain Western world domination. People living on the Eurasian landmass benefited from its ecology. The area housed several species of animals that could usefully be domesticated, while its East-West axis favored the development of agriculture. The western side of the landmass benefited more than the eastern side because of its irregular shape, preventing easy domination by imperial powers. As we can see, political fragmentation once again features in this explanation. Accepting the validity of the argument, at least to a degree, this book will not revert to geography as its main explanatory mechanism.

Finally, there is Ian Morris's *Why the West Rules—For Now*, a book also turning to geography as the determining factor in world history over the long term.[17] It sets up a duality between the West and the East (China, in effect) aiming to explain why in the early modern period the first came to dominate the globe and the second did not. For geographical reasons the West had a head start of about a millennium and a half. In the long run this advantage would prove to be decisive for its dominance, even if after the collapse of the Roman Empire it fell behind China for many centuries. The study to follow owes much to Morris's work, although it sets itself a different task. To explain where it diverges, a more detailed methodological discussion is needed than is suitable here. That discussion is reserved for the last section. Before delving into the approach adopted by the current work, a clear statement of what it sets out to do is in order.

The purpose of this book is to present a history of the rise of the West in which long-term cumulative material advancement is the driving force. The emphasis will be on the Roman imperial period because it both represented and created an anomalous geographical pattern of Western development. To the extent that the Middle Ages will be made part of the narrative, the earlier phase of ca. 600–1200 CE will be favored. This approach gives often overlooked historical periods their proper place in the debate. It also solves the problem that a start date sometime in the late medieval period creates a false dichotomy between "the West" and the Middle East. The commonly adopted short-term view either leaves the Near East out of the history of the rise of the West or turns the region into a Western foil. In that setup, what needs to be explained is why the West took off economically while the Middle East did not. Rubin explicitly takes that position and, less explicitly, Jones does also. Ultimately it all comes down to the definition of "the West," which is the next topic of discussion.

The West and Western Social Development

"The West" is a convenient shorthand, though a problematic one. Its intended meaning differs so widely in the historical literature as to render it all but useless without specification. In some of the scholarship it is made to coincide with the European continent or some part thereof, usually the western half. In other studies it alludes to a wider world including not just Europe but also the United States and Canada. Definitions adopted elsewhere take an even more expansive view, making the term encompass some combination of Australia, New Zealand, and Latin America. Evidently these choices in large part depend on the period under consideration. For reasons of historical continuity that will become clear in the pages to follow, this book will adopt Morris's definition of the West: "The societies that have developed and spread through a combination of colonization and emulation from the westernmost original core of domestication in Eurasia."[18]

That complicated-sounding yet sensible definition sees the region of Mesopotamia at the end of the last Ice Age, ca. 9600 BCE, as the first identifiable West. The domestication of plants and animals gradually took off there. As the practices of farming and herding spread, what should be referred to as "the West" grew along with them. From its original location it expanded westward, by 4000 BCE to envelop the shores of the North Atlantic. For

the most part, this is the geographical area this book will be concerned with. Though it acknowledges the Neolithic as the start of the West's takeoff, it will focus chiefly on the time of the Early Bronze Age and beyond, up to the Middle Ages. For most of the history told here, "the West" thus refers to a stretch of land from modern Iraq to the British Isles, largely coinciding with the territory of the Roman Empire at its height.

The societies within this area became culturally interconnected from early on. The westward spread of sedentary agriculture is one of the first examples of the process. Later ones include the east-to-west diffusion of wheel technology, bronze making, and iron production. Later again, alphabetic writing would become dominant throughout the area, a technology that had its origins in Egyptian hieroglyphics. Yet another example of cultural interconnectedness is the adoption, as far west as the Atlantic seaboard, of Christianity. The faith was an offshoot of a monotheistic east Mediterranean religion that itself had evolved out of a Canaanite polytheism.[19]

To study this area economically a theoretical tool from Morris's work will be borrowed: the "Western core." As the West grew geographically it did not develop uniformly, having at its center a smaller "core" region where levels of material advancement were highest. The concept of a core is helpful, allowing for a more nuanced geographical discussion than would have been possible without it. Unfortunately, it is also a potential source of confusion. For one thing, the notion of a "core" implies the existence of one or more "peripheries," language usually invoked by scholarship adopting World Systems Theory. However, this book is not based on world-systems thinking. It has some affinity with the concept, which will be invoked in chapter 4 to explain Western Bronze Age and Iron Age dynamics. Still, the word "core" as used here means the area leading its neighbors in social development (the phrase will be explained shortly), not a Wallersteinian region defined by its relation to a periphery.

Another potential source of confusion derives from the way in which Morris used the concept of a "core." He was chiefly interested in tracing maximum levels of social development, and in his analysis "the West" is therefore de facto synonymous with its most advanced nucleus. By contrast, this book revolves around the question of why the Western core changed shape over time and why it eventually relocated permanently. It thus needs both "the West" and the "Western core" as separate concepts. The terms will be used in their distinct senses of, respectively, total surface area and the most materially advanced nucleus within it. Yet to highlight developmental continuity despite the locational discontinuity, it is often still preferable

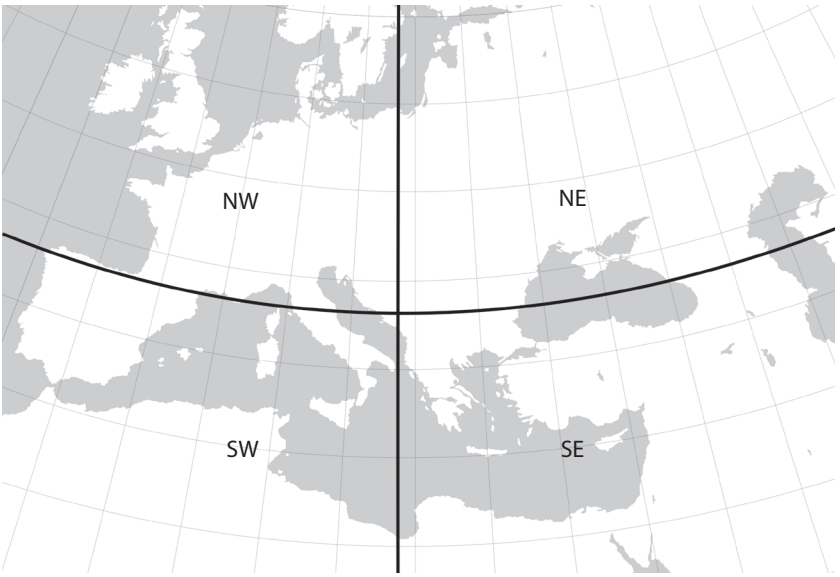

FIGURE I.2. The West divided into four quadrants.

to refer to the core as "the West." The dual use of the term is not as big of a problem as it might seem, as usually the intended meaning will be clear from the context. However, where greater specificity is needed, the term "Western core" will be used.

For analytical reasons this book will divide the West into four quadrants delineated roughly by the latitudinal line 43°N and the longitudinal line 19°E, as shown in figure I.2. This division serves purely narrative purposes and is not based on strict geographical features, geopolitical confines, or cultural boundaries. It should be seen as an illustrative support, not a rigid analytical matrix. All the same, despite its rather arbitrary nature, it works surprisingly well to represent the geographical shifts in Western social development, as we will see in the chapters to follow. The southeastern and northwestern quadrants will be the protagonists of that story, although the other two will receive due attention.

As a final remark on geographical terminology: Because "Europe" does not coincide with any of the concepts used in his book, whether the "northwestern quadrant," the "Western core," or "the West," it would be best to avoid the term. Yet in practice this is impossible because references to "Europe" are common in the economic history literature. The term will therefore be employed if the only alternative would be to give a cumbersome

description of what area comprising what countries is meant. Again, the problem is not as big as it might appear because the meaning will usually be clear from the context. Besides, much economic history scholarship is not precise in its use of the term. Often, "Europe" refers not to the whole continent but only to western Europe, which corresponds with the northwestern quadrant closely enough for current purposes.

To write a history of the rise of the West this book will base its analysis on a means of quantification from Morris's work, the Social Development Index. Before explaining the mechanics of the Index a negative choice must be justified, namely, not to use the traditional economic metrics of per capita GDPs and real wages. One reason why is that the Index is better suited to a history going back beyond the early modern period, for which time-series GDP and real-wage data are unavailable. Another reason is that the Index provides a more fine-grained picture of material well-being in premodern economies than the conventional measures. It captures significant differences that would otherwise be missed, for one the "gulf that separated the Roman world from prehistoric societies."[20] More thoughts on the distinction between the traditional metrics and the ones chosen here will be offered in chapter 1, but for clarity a preliminary overview of the Index is warranted.

As plant and animal domestication advanced, and technology improved, humans were ever more able to "get things done in the world." Phrased more formally, they acquired a growing capacity to "shape their physical, economic, social, and intellectual environments to their own ends."[21] The Index was constructed to measure that capacity for both the West and the East (China, for the premodern period) and compare the historical advancement of the two. It scores four traits: energy capture, social organization, war-making capacity, and information technology. Points are assigned to each trait on a timeline from the emergence of the Western and Eastern cores as identifiable entities to the modern era. (The data are reproduced in an appendix at the end of this book.) For the purposes of the current work the numbers for the East will be of secondary importance, although they will be cited on occasion to contextualize Western history.

Energy capture is the most comprehensive measure of social development, as this is the clearest gauge of societies' abilities to arrange their living environment to suit their needs. How well societies do, and how many points they score on the Index, depends on their capacity to extract energy from the natural environment. The unit of measurement used is the average number of kilocalories per person per day, including not only food per individual but also the energy required for fuel and raw materials. As far as

food is concerned, the numbers reflect caloric intake as well as the amount of energy needed to produce a particular diet. The latter can be a key indicator of social development, as we can see from the example of the production of meat for human consumption.

A carnivorous diet is more energy intensive than a vegetarian one, as one calorie of meat requires roughly ten calories of plant biomass.[22] The "expensive" calories of such a diet were harder for humans to obtain than "cheap" ones, yet they were worth capturing because they raised living standards. If a society managed to increase its meat consumption, it got better at extracting energy from nature, giving it the ability to produce more complex and more highly valued foodstuffs.[23] Likewise, producing higher-quality building material such as fired bricks and roof tiles required thermal energy, unlike mud brick or adobe. If a society moved from constructing in mud brick to constructing in fired brick, its control of the natural environment had grown. Most of the gains in energy capture that Western societies made over time came in the form of nonfood calories.[24]

Less space is needed to describe the other three Index traits. To start with social organization, there is a strong correlation between the level of complexity of a society and the size of the largest settlement it is able to build and maintain. Social organization is therefore proxied by maximum city size. War-making capacity includes the size of armies and their military technology, from weaponry to tactics and logistics, but also less observable elements like morale and officer quality. Finally, information technology in practice means levels of literacy, at least for the premodern period, an imperfect measure, though not without its uses.[25] Each trait is assigned 250 points on the Index, for a total of 1,000 points maximum for the year 2000 CE. All four are thus weighted equally, a choice justified by the lack of a better alternative. Some traits may have become more significant in some time periods than others, but there is no realistic way of controlling for such shifts. The distribution of points is therefore kept level and constant over time.[26] For each moment on the timeline, from the emergence of the West up to 2000 CE, calculating the social development score is a matter of tallying the points for all four measures.

The numbers for each trait are not set in stone. Some time periods are much better documented than others, and overall the Index lists reasonable estimates, not statistical facts. Yet what matters is not so much the precise numbers but the margins of error within which they could fall. Those margins are not large, as all estimates interrelate. The central measure is energy capture. Social organization, war-making capacity, and information

technology were all expressions of how the kilocalories extracted from the natural environment were invested. But although they are in essence dependent variables of the main trait, it is not the case that social organization plus war-making capacity plus information technology equals energy capture. The social development scores for the period prior to the Industrial Revolution are determined by energy capture for only about 75 to 90 percent of the total.[27] The implication is that the other variables contain elements not covered by the central trait. Examples are aspects of war-making capacity like soldier morale and officer valor that do not register in kilocalories. Conversely, humans expended energy in ways that did not appear in any of the other three measures, like artistic expression. To appreciate the Index as a tool for historical inquiry it should be realized also that the nonenergy traits interrelate in complex ways. For example, whether a system of military mobilization was land based or tax based was partly a product of the prevailing levels of literacy (more in chapters 4 and 5). Equally, war-making capacity was to a considerable degree dependent on the strength of social organization.

For the purposes of economic history, the Index has a few drawbacks. Two serious ones are that it measures neither commercial intensity nor state capacity individually. The limitations imposed by the absence of a gauge for markets are clear from a consideration of intensive growth in the Roman Empire. Roman innovation was virtually absent, but technology did advance through learning by doing and through the improvement and geographical spread of existing techniques. Simultaneously, economies of scale and specialization allowed the Romans to reap the benefits of allocative efficiencies.[28] Trade is included in energy capture because for the consumption of greater volumes of higher-end goods from farther away, more kilocalories are needed than for a simpler market. But existing labor-saving technology that spread over time, like the watermill, is also included in the numbers. The data alone therefore tell us nothing about any potential rise or decline in commercial activity. The problem can only be addressed by bringing out market conditions explicitly in the narrative wherever they are relevant for the story of Western social development.

The drawback of a missing gauge for state capacity is less problematic. The Index may not have a discrete measure for it, but the combined traits of social organization and war-making capacity serve as reliable indicators. Social organization is proxied by maximum city size. For large cities, a physical and institutional infrastructure is needed of a kind usually provided only by states. The megalopolis of Rome in the first century CE provides a prime

example. It could not have reached its size of one million inhabitants without central state support. Something similar can be said about war-making capacity. It is true that not just states but also bands, tribes, and chiefdoms possessed the capacity for organized violence. But this book will almost exclusively be concerned with state-level societies, the strength of which can to an appreciable degree be read from their military capabilities. To take the example of the Roman republic, its conquest of the Mediterranean was reflective of its state power.

The Methodology and Argument of This Book

The Social Development Index is a useful tool, despite its drawbacks. It allows for quantification in making comparative arguments, which is helpful especially for studying the *longue durée*. There may be uncertainties with its numbers, but individual data points are less important than their relative position within the chronological sequence. For each trait, the numbers were obtained using the same methodology, and insight may thus be gained from tracking change over time. There is no need to reinvent the wheel, and the pages below will use the listed data without trying to improve on them or suggest new traits. No attempt will be made either to provide data for the noncore regions within the West that the Index does not cover. The knowledge that the numbers for peripheral areas were lower than those for the core is sufficient for the historical analysis. But if this book follows the Index in broad outline, it also diverges from it in methodologically important ways.

The most significant deviation from the main idea behind the Index is that not much consideration will be given to total scores. The one place where aggregate social development scores will be invoked is in chapter 6, and even then only to clarify a question rather than provide an answer. Instead, throughout the historical discussion, the data for individual traits will be cited, allowing for a more detailed analysis than is possible with the total scores. To reduce the level of abstraction, the unconverted numbers for energy capture and social organization will be given rather than the points on the Index. For 100 CE, for instance, the discussion will refer to energy capture as having reached an estimated average of 31,000 kilocalories per person per day rather than a score of 33.78 points. Similarly, for social organization in 100 CE, the discussion will refer to Rome with a size of one million inhabitants rather than a score of 9.36 points. By contrast, war-making capacity cannot be represented by a single defining feature,

making the points on the Index the only possible way of referring to it. For information technology, the Index points are also more practical than literacy rates in percentages, which are disaggregated by gender and levels of proficiency. For these two traits, the discussion will therefore consistently list the scores: so for instance 0.12 points for war-making capacity in 100 CE and 4.29 points for literacy.[29]

Regarding the overall endeavor undertaken here, in constructing the Social Development Index, Morris may be seen as already having done what this book sets out to do. That is true insofar as *Why the West Rules—For Now* traces the social development of the West from the Neolithic to the present, quantifying long-term material progress. However, there are several shortcomings in its analytical framework that the current study will address. In addition, one of its key assumptions will be rejected, namely the presumed historical arrival of so-called hard ceilings to premodern social development.

Physical reality prescribes that there was an upper limit to the material advancement that premodern societies could achieve. Morris posits that the upper bound hovered somewhere around the 43-point mark on the Index.[30] That was the level reached by the Western core around 100 CE and then again around 1700 CE. But unlike in Roman antiquity, the second time the West reached this level it went on to create the Industrial Revolution, breaking through the supposed hard ceiling. A first objection to this portrayal of Western advancement is that it evokes the image of an ascending elevator hitting the end of the ride. That is a misleading depiction of the economics of the factors of production, which should instead be represented by a sloping curve of diminishing marginal returns. The point beyond which no further progress was possible was theoretically there, but it would not suddenly have manifested itself as an impenetrable surface. The conceptual objection aside, the suggestion that the premodern West came close to reaching a hard ceiling twice is incorrect.

For antiquity the evidence adduced in support of the notion is no more than that the Roman Empire disintegrated. That historical event tells us nothing unless we know why it occurred. The question is as old as the study of Roman history itself, and the answer may also not be as interesting as it seems. All empires collapse eventually. As for the implied idea that the empire was approaching its output limits: We might postulate that because the total population was growing up to the 160s CE, the marginal product of agricultural labor was declining. The assumption is intuitive, but the truth is that we do not know where on the production curve the Roman economy

may have been operating. Besides, a single answer would gloss over the large regional variability within the empire. There is in any case no evidence that the Roman world had run into Malthusian constraints, and there is thus no sign of any hard ceiling.[31]

Regardless of agricultural labor productivity, even if Roman food resources had been stretched to their limit, utility gains in nonfood goods would still have been possible far into the future. We are not twisting the historical record out of all recognition by imagining the Romans raising per capita energy capture by inventing and installing windmills. Going further still, we may imagine the Romans using peat as fuel—as the Dutch would do in the 1500s—or burning coal the way the Chinese would in the eleventh century.[32] More thermal energy at lower prices would have meant more higher-quality buildings in fired brick and roof tile, more iron, more heated baths, and other imaginable benefits still. We may not see all these scenarios as equally credible, but their likelihood is beside the point. They were all possible with preindustrial means, showing us that no hard ceiling in social development had been reached in the Roman era.

How much more productivity gains the West of 1700 CE could have made without the Industrial Revolution is more speculative. In the eighteenth century, there were indeed signs of resource strain and declining labor productivity in agriculture in the West's northwestern quadrant. The same held true for contemporary China. Still, even into the 1800s CE, neither area faced food shortages, and both had ways of raising agricultural output.[33] Besides, if we imagine an increasing turn toward the use of coal, we can mentally erase the steam engine and still see utility gains through a growing availability of thermal energy. Similarly to an imagined coal-burning Roman Empire, more carbon resources would have opened up possibilities for scaled-up metals production, for instance. A turn toward coal was, in fact, happening in both Britain and China. Extraction would have slowed down without steam-powered mechanization, but by 1700 CE the limits of the possible (or the profitable) had still not been reached.[34] As in the Roman era, the West in the eighteenth century had not hit a hard ceiling.

To clarify what will be argued for here, it helps to identify two other problems with *Why the West Rules—For Now*. The first is that it leaves unanswered the question of the propelling force behind social development. The second is that it does not provide a satisfactory explanation for why the Western core moved over time. This book will address both issues, advancing an argument that has a general and a Rome-specific side. The general side will explore what produced incremental material advancement over

the long run, identifying vectors that are not Western-specific but that apply equally elsewhere. As we will see, the process was driven mainly by a combination of demographic growth and unique human cognitive abilities. This combined force was in operation in the West since its inception, creating an upward trend in social development. The suggestion that there was such a trend may seem uncontroversial. Contributions going back to classical and even prehistoric times have long been recognized as significant for Western material progress. However, seldom if ever has the trend as such been given the central place it deserves in economic history. More than any short- or medium-term historical contingencies, long-term material accumulation was the determining factor behind the rise of the West.

As noted above, the literature on the topic tends not to look further back in time than the Middle Ages. The reason why is understandable; the West's northwestern quadrant became the most advanced region during the late medieval period. However, to start the historical analysis there ignores the continuity in social development that had marked the West since the Neolithic. Emphasizing continuity does not mean that the discontinuity in the geography of the core area can be ignored, though. On the contrary, the question of why it happened is fundamental. The southeastern quadrant of the east Mediterranean and Middle East was the most advanced region for millennia. The northwestern quadrant came to occupy the number-one spot only recently by comparison, mere centuries ago. Its permanent takeover of the lead position would turn out to be among the most important events in Western history. The modern world would be born in the northwest, despite the area's inauspicious beginnings. Its rise was preceded by a temporary extension of the Western core to Italy in Roman antiquity, which was a related occurrence. Both geographical shifts are counterintuitive, for reasons that will be explained in chapter 2.

These geographical anomalies bring us to the second, Rome-specific side of this book's argument. For the core to relocate from southeast to northwest, a shock to the West's developmental equilibrium was needed. The Roman Empire would supply that shock in the form of its occupation of the northwestern quadrant. The imperial intervention was only possible because Roman Italy had risen to the position of a core area, matching—and in some respects overtaking—the southeast in social development. The catch-up represented an equilibrium upset in its own right, as the core had never extended as far west as the Italian Peninsula. Still, Italy's rise and the imperial occupation of the northwest that followed were insufficient for the core's permanent shift away from the southeast. To complete that shift a third

and final step was needed: The northwestern quadrant had to build on the gains it had made in the imperial period autonomously, as indeed it would.

As central as Roman history is for the argument put forward here, it will not make an appearance until many pages in, receiving a first detailed treatment only in chapter 3. To see why, it serves to set out how the book is structured. Chapter 1 will introduce a key theoretical concept needed to appreciate the cumulative nature of social development: the "ratchet effect." The figure of speech derives from mechanical engineering. Taken literally it describes the action of a physical device that is restricted in its motion to be able to move in one direction only. A mechanical ratchet consists of a mount with a gear and a pawl, or "click," that locks the gear after a turn. Subway turnstiles and sailboat winches are both examples of ratchets. In the field of economics, the metaphor of the ratchet effect has been used predominantly to describe persistent net increases in government spending.[35]

This book will adopt the phrase but use it differently, namely, to describe the upward trend in social development witnessed in the premodern West. As we will see, despite two severe regressions in Western history, the baseline trend remained up over the long term. The trend was at heart an ongoing net increase in per capita energy capture. The growing aggregate availability of kilocalories per person per day allowed Western societies to make significant improvements with regard to the other Index traits. Chapter 1 will discuss in some detail what the traits on the Social Development Index can tell us about the levels of advancement of the evaluated societies. It will also delve into their limitations, especially for social organization and information technology.

Turning to theory, chapter 2 will then explain why we should expect the relative levels of social development of interconnected regions to stay fixed over time. Once the ratchet effect is set in motion, the societies with a first-mover advantage are likely to remain ahead. The geographical pattern change in the location of the most advanced Western societies was therefore a deviation from the expected path. The observed anomaly of the core's geographical shift to the northwestern quadrant had required an exogenous shock to the area's social development. Some counterfactual thinking will establish that the Roman Empire was the only entity positioned to supply that shock.

Chapter 3 will then embark on a chronological narrative, discussing the first step in the anomalous Western geographical pattern: the insertion of Roman Italy into the Western core. The temporary westward extension of the core's boundaries runs counter to a priori expectations, and the chapter

sets out to analyze why it happened. It will also discuss how Italy dropped out of the core again in the fourth century CE, pointing to demographic contraction to account for its departure. Chapter 4 will continue the narrative, describing the history of the southeast as the traditional Western core. It will then sketch out the pre-Roman, Roman, and post-Roman history of the northwestern quadrant, the area destined to take over from the southeast. Chapter 5 will follow up on that history and analyze how the post-Roman northwest built on the social development gains it had made during the imperial era, setting it on course to becoming the Western core.

Chapter 6 will then address a question that may not seem obvious until one formulates it: If the West had seen aggregate social development ever since the Neolithic, why did the idea of progress not emerge until the early modern period? The acceptance of the idea—among the most important in human history—happened only then and only in the northwest. The chapter will argue that to understand why the intellectual breakthrough occurred when and where it did, we need to consider a combination of two factors. First, social development had reached a high enough level in the northwest and, second, a market for ideas sustained by political fragmentation had sufficiently matured there. Finally, the conclusion will summarize the main findings and present some thoughts on what the future of social development might hold given current global demographic trends.

INDEX