Thomas Piketty, Capital in the 21st Century (Cambridge: Harvard University Press, 2013).

Introduction

"Social distinctions can be based only on common utility." —Declaration of the Rights of Man and the Citizen, article 1, 1789

The distribution of wealth is one of today's most widely discussed and controversial issues. But what do we really know about its evolution over the long term? Do the dynamics of private capital accumulation inevitably lead to the concentration of wealth in ever fewer hands, as Karl Marx believed in the nineteenth century? Or do the balancing forces of growth, competition, and technological progress lead in later stages of development to reduced inequality and greater harmony among the classes, as Simon Kuznets thought in the twentieth century? What do we really know about how wealth and income have evolved since the eighteenth century, and what lessons can we derive from that knowledge for the century now under way?

These are the questions I attempt to answer in this book. Let me say at once that the answers contained herein are imperfect and incomplete. But they are based on much more extensive historical and comparative data than were available to previous researchers, data covering three centuries and more than twenty countries, as well as on a new theoretical framework that affords a deeper understanding of the underlying mechanisms. Modern economic growth and the diffusion of knowledge have made it possible to avoid the Marxist apocalypse but have not modified the deep structures of capital and inequality—or in any case not as much as one might have imagined in the optimistic decades following World War II. When the rate of return on capital exceeds the rate of growth of output and income, as it did in the nineteenth century and seems quite likely to do again in the twenty-first, capitalism automatically generates arbitrary and unsustainable inequalities that radically undermine the meritocratic values on which democratic societies are based. There are nevertheless ways democracy can regain control over capitalism and ensure that the general interest takes precedence over private interests, while preserving economic openness and avoiding protectionist and nationalist reactions. The policy recommendations I propose later in the book tend in this direction.

They are based on lessons derived from historical experience, of which what follows is essentially a narrative.

A Debate without Data?

Intellectual and political debate about the distribution of wealth has long been based on an abundance of prejudice and a paucity of fact.

To be sure, it would be a mistake to underestimate the importance of the intuitive knowledge that everyone acquires about contemporary wealth and income levels, even in the absence of any theoretical framework or statistical analysis. Film and literature, nineteenth-century novels especially, are full of detailed information about the relative wealth and living standards of different social groups, and especially about the deep structure of inequality, the way it is justified, and its impact on individual lives. Indeed, the novels of Jane Austen and Honoré de Balzac paint striking portraits of the distribution of wealth in Britain and France between 1790 and 1830. Both novelists were intimately acquainted with the hierarchy of wealth in their respective societies. They grasped the hidden contours of wealth and its inevitable implications for the lives of men and women, including their marital strategies and personal hopes and disappointments. These and other novelists depicted the effects of inequality with a verisimilitude and evocative power that no statistical or theoretical analysis can match.

Indeed, the distribution of wealth is too important an issue to be left to economists, sociologists, historians, and philosophers. It is of interest to everyone, and that is a good thing. The concrete, physical reality of inequality is visible to the naked eye and naturally inspires sharp but contradictory political judgments. Peasant and noble, worker and factory owner, waiter and banker: each has his or her own unique vantage point and sees important aspects of how other people live and what relations of power and domination exist between social groups, and these observations shape each person's judgment of what is and is not just. Hence there will always be a fundamentally subjective and psychological dimension to inequality, which inevitably gives rise to political conflict that no purportedly scientific analysis can alleviate. Democracy will never be supplanted by a republic of experts— and that is a very good thing.

Nevertheless, the distribution question also deserves to be studied in a systematic and methodical fashion. Without precisely defined sources, methods, and concepts, it is possible to see everything and its opposite. Some people believe that inequality is always increasing and that the world is by definition always becoming more unjust. Others believe that inequality is naturally decreasing, or that harmony comes about automatically, and that in any case nothing should be done that might risk disturbing this happy equilibrium. Given this dialogue of the deaf, in which each camp justifies its own intellectual laziness by pointing to the laziness of the other, there is a role for research that is at least systematic and methodical if not fully scientific. Expert analysis will never put an end to the violent political conflict that inequality inevitably instigates. Social scientific research is and always will be tentative and imperfect . It does not claim to transform economics, sociology, and history into exact sciences. But by patiently searching for facts and patterns and calmly analyzing the economic, social, and political mechanisms that might explain them, it can inform democratic debate and focus attention on the right questions. It can help to redefine the terms of debate, unmask certain preconceived or fraudulent notions, and subject all positions to constant critical scrutiny. In my view, this is the role that intellectuals, including social scientists, should play, as citizens like any other but with the good fortune to have more time than others to devote themselves to study (and even to be paid for it— a signal privilege).

There is no escaping the fact, however, that social science research on the distribution of wealth was for a long time based on a relatively limited set of firmly established facts together with a wide variety of purely theoretical speculations. Before turning in greater detail to the sources I tried to assemble in preparation for writing this book, I want to give a quick historical overview of previous thinking about these issues.

Malthus, Young, and the French Revolution

When classical political economy was born in England and France in the late eighteenth and early nineteenth century, the issue of distribution was already one of the key questions. Everyone realized that radical transformations were under way, precipitated by sustained demographic growth— a previously unknown phenomenon— coupled with a rural exodus and the advent of the Industrial Revolution. How would these upheavals affect the distribution of wealth, the social structure , and the political equilibrium of European society?

For Thomas Malthus, who in 1798 published his Essay on the Principle of Population, there could be no doubt: the primary threat was overpopulation . 1 Although his sources were thin, he made the best he could of them. One particularly important influence was the travel diary published by Arthur Young, an English agronomist who traveled extensively in France, from Calais to the Pyrenees and from Brittany to Franche-Comté, in 1787– 1788, on the eve of the Revolution. Young wrote of the poverty of the French countryside.

His vivid essay was by no means totally inaccurate. France at that time was by far the most populous country in Europe and therefore an ideal place to observe. The kingdom could already boast of a population of 20 million in 1700, compared to only 8 million for Great Britain (and 5 million for England alone). The French population increased steadily throughout the eighteenth century, from the end of Louis XIV's reign to the demise of Louis XVI, and by 1780 was close to 30 million. There is every reason to believe that this unprecedentedly rapid population growth contributed to a stagnation of agricultural wages and an increase in land rents in the decades prior to the explosion of 1789. Although this demographic shift was not the sole cause of the French Revolution, it clearly contributed to the growing unpopularity of the aristocracy and the existing political regime.

Nevertheless, Young's account, published in 1792, also bears the traces of nationalist prejudice and misleading comparison. The great agronomist found the inns in which he stayed thoroughly disagreeable and disliked the manners of the women who waited on him. Although many of his observations were banal and anecdotal, he believed he could derive universal consequences from them. He was mainly worried that the mass poverty he witnessed would lead to political upheaval. In particular , he was convinced that only the English political system, with separate houses of Parliament for aristocrats and commoners and veto power for the nobility, could allow for harmonious and peaceful development led by responsible people. He was convinced that France was headed for ruin when it decided in 1789– 1790 to allow both aristocrats and commoners to sit in a single legislative body. It is no exaggeration to say that his whole account was overdetermined by his fear of revolution in France. Whenever one speaks about the distribution of wealth, politics is never very far behind, and it is difficult for anyone to escape contemporary class prejudices and interests.

When Reverend Malthus published his famous Essay in 1798, he reached conclusions even more radical than Young's. Like his compatriot, he was very afraid of the new political ideas emanating from France, and to reassure himself that there would be no comparable upheaval in Great Britain he argued that all welfare assistance to the poor must be halted at once and that reproduction by the poor should be severely scrutinized lest the world succumb to overpopulation leading to chaos and misery. It is impossible to understand Malthus's exaggeratedly somber predictions without recognizing the way fear gripped much of the European elite in the 1790s.

Ricardo: The Principle of Scarcity

In retrospect, it is obviously easy to make fun of these prophecies of doom. It is important to realize, however, that the economic and social transformations of the late eighteenth and early nineteenth centuries were objectively quite impressive, not to say traumatic, for those who witnessed them. Indeed, most contemporary observers— and not only Malthus and Young— shared relatively dark or even apocalyptic views of the long-run evolution of the distribution of wealth and class structure of society. This was true in particular of David Ricardo and Karl Marx, who were surely the two most influential economists of the nineteenth century and who both believed that a small social group— landowners for Ricardo, industrial capitalists for Marx— would inevitably claim a steadily increasing share of output and income. 2

For Ricardo, who published his Principles of Political Economy and Taxation in 1817, the chief concern was the long-term evolution of land prices and land rents. Like Malthus, he had virtually no genuine statistics at his disposal. He nevertheless had intimate knowledge of the capitalism of his time. Born into a family of Jewish financiers with Portuguese roots, he also seems to have had fewer political prejudices than Malthus, Young, or Smith. He was influenced by the Malthusian model but pushed the argument farther. He was above all interested in the following logical paradox. Once both population and output begin to grow steadily, land tends to become increasingly scarce relative to other goods. The law of supply and demand then implies that the price of land will rise continuously, as will the rents paid to landlords. The landlords will therefore claim a growing share of national income, as the share available to the rest of the population decreases, thus upsetting the social equilibrium. For Ricardo, the only logically and politically acceptable answer was to impose a steadily increasing tax on land rents. This somber prediction proved wrong: land rents did remain high for an extended period, but in the end the value of farm land inexorably declined relative to other forms of wealth as the share of agriculture in national income decreased. Writing in the 1810s, Ricardo had no way of anticipating the importance of technological progress or industrial growth in the years ahead. Like Malthus and Young, he could not imagine that humankind would ever be totally freed from the alimentary imperative. His insight into the price of land is nevertheless interesting: the "scarcity principle" on which he relied meant that certain prices might rise to very high levels over many decades. This could well be enough to destabilize entire societies. The price system plays a key role in coordinating the activities of millions of individuals— indeed, today, billions of individuals in the new global economy. The problem is that the price system knows neither limits nor morality.

It would be a serious mistake to neglect the importance of the scarcity principle for understanding the global distribution of wealth in the twenty-first century. To convince oneself of this, it is enough to replace the price of farmland in Ricardo's model by the price of urban real estate in major world capitals, or, alternatively, by the price of oil. In both cases, if the trend over the period 1970–2010 is extrapolated to the period 2010–2050 or 2010– 2100, the result is economic, social, and political disequilibria of considerable magnitude, not only between but within countries—disequilibria that inevitably call to mind the Ricardian apocalypse.

To be sure, there exists in principle a quite simple economic mechanism that should restore equilibrium to the process: the mechanism of supply and demand. If the supply of any good is insufficient, and its price is too high, then demand for that good should decrease, which should lead to a decline in its price. In other words, if real estate and oil prices rise, then people should move to the country or take to traveling about by bicycle (or both). Never mind that such adjustments might be unpleasant or complicated; they might also take decades, during which landlords and oil well owners might well accumulate claims on the rest of the population so extensive that they could easily come to own everything that can be owned, including rural real estate and bicycles, once and for all. 3 As always , the worst is never certain to arrive. It is much too soon to warn readers that by 2050 they may be paying rent to the emir of Qatar. I will consider the matter in due course, and my answer will be more nuanced, albeit only moderately reassuring . But it is important for now to understand that the interplay of supply and demand in no way rules out the possibility of a large and lasting divergence in the distribution of wealth linked to extreme changes in certain relative prices. This is the principal implication of Ricardo's scarcity principle. But nothing obliges us to roll the dice.

Marx: The Principle of Infinite Accumulation

By the time Marx published the first volume of Capital in 1867, exactly one-half century after the publication of Ricardo's Principles, economic and social realities had changed profoundly: the question was no longer whether farmers could feed a growing population or land prices would rise sky high but rather how to understand the dynamics of industrial capitalism, now in full blossom.

The most striking fact of the day was the misery of the industrial proletariat. Despite the growth of the economy, or perhaps in part because of it, and because, as well, of the vast rural exodus owing to both population growth and increasing agricultural productivity, workers crowded into urban slums. The working day was long, and wages were very low. A new urban misery emerged, more visible, more shocking, and in some respects even more extreme than the rural misery of the Old Regime. Germinal, Oliver Twist, and Les Misérables did not spring from the imaginations of their authors, any more than did laws limiting child labor in factories to children older than eight (in France in 1841) or ten in the mines (in Britain in 1842). Dr. Villermé's Tableau de l'état physique et moral des ouvriers employés dans les manufactures, published in France in 1840 (leading to the passage of a timid new child labor law in 1841), described the same sordid reality as The Condition of the Working Class in England, which Friedrich Engels published in 1845. 4

In fact, all the historical data at our disposal today indicate that it was not until the second half— or even the final third— of the nineteenth century that a significant rise in the purchasing power of wages occurred. From the first to the sixth decade of the nineteenth century, workers' wages stagnated at very low levels— close or even inferior to the levels of the eighteenth and previous centuries. This long phase of wage stagnation, which we observe in Britain as well as France, stands out all the more because economic growth was accelerating in this period. The capital share of national income— industrial profits, land rents, and building rents— insofar as can be estimated with the imperfect sources available today , increased considerably in both countries in the first half of the nineteenth century. 5 It would decrease slightly in the final decades of the nineteenth century, as wages partly caught up with growth. The data we have assembled nevertheless reveal no structural decrease in inequality prior to World War I. What we see in the period 1870– 1914 is at best a stabilization of inequality at an extremely high level, and in certain respects an endless inegalitarian spiral, marked in particular by increasing concentration of wealth. It is quite difficult to say where this trajectory would have led without the major economic and political shocks initiated by the war. With the aid of historical analysis and a little perspective, we can now see those shocks as the only forces since the Industrial Revolution powerful enough to reduce inequality.

In any case, capital prospered in the 1840s and industrial profits grew, while labor incomes stagnated. This was obvious to everyone, even though in those days aggregate national statistics did not yet exist. It was in this context that the first communist and socialist movements developed. The central argument was simple: What was the good of industrial development, what was the good of all the technological innovations, toil, and population movements if, after half a century of industrial growth, the condition of the masses was still just as miserable as before, and all lawmakers could do was prohibit factory labor by children under the age of eight? The bankruptcy of the existing economic and political system seemed obvious. People therefore wondered about its long-term evolution: what could one say about it?

This was the task Marx set himself. In 1848, on the eve of the “spring of nations” (that is, the revolutions that broke out across Europe that spring), he published The Communist Manifesto, a short, hard-hitting text whose first chapter began with the famous words “A specter is haunting Europe— the specter of communism.” 6 The text ended with the equally famous prediction of revolution: “The development of Modern Industry, therefore, cuts from under its feet the very foundation on which the bourgeoisie produces and appropriates products. What the bourgeoisie therefore produces, above all, are its own gravediggers. Its fall and the victory of the proletariat are equally inevitable.”

Over the next two decades, Marx labored over the voluminous treatise that would justify this conclusion and propose the first scientific analysis of capitalism and its collapse . This work would remain unfinished: the first volume of Capital was published in 1867, but Marx died in 1883 without having completed the two subsequent volumes. His friend Engels published them posthumously after piecing together a text from the sometimes obscure fragments of manuscript Marx had left behind.

Like Ricardo, Marx based his work on an analysis of the internal logical contradictions of the capitalist system. He therefore sought to distinguish himself from both bourgeois economists (who saw the market as a self -regulated system, that is, a system capable of achieving equilibrium on its own without major deviations, in accordance with Adam Smith’s image of “the invisible hand” and Jean-Baptiste Say’s “law” that production creates its own demand), and utopian socialists and Proudhonians , who in Marx’s view were content to denounce the misery of the working class without proposing a truly scientific analysis of the economic processes responsible for it. 7 In short, Marx took the Ricardian model of the price of capital and the principle of scarcity as the basis of a more thorough analysis of the dynamics of capitalism in a world where capital was primarily industrial (machinery, plants, etc.) rather than landed property, so that in principle there was no limit to the amount of capital that could be accumulated. In fact, his principal conclusion was what one might call the “principle of infinite accumulation,” that is, the inexorable tendency for capital to accumulate and become concentrated in ever fewer hands, with no natural limit to the process. This is the basis of Marx’s prediction of an apocalyptic end to capitalism: either the rate of return on capital would steadily diminish (thereby killing the engine of accumulation and leading to violent conflict among capitalists), or capital’s share of national income would increase indefinitely (which sooner or later would unite the workers in revolt). In either case, no stable socioeconomic or political equilibrium was possible.

Marx’s dark prophecy came no closer to being realized than Ricardo’s. In the last third of the nineteenth century, wages finally began to increase: the improvement in the purchasing power of workers spread everywhere, and this changed the situation radically, even if extreme inequalities persisted and in some respects continued to increase until World War I. The communist revolution did indeed take place, but in the most backward country in Europe, Russia, where the Industrial Revolution had scarcely begun, whereas the most advanced European countries explored other, social democratic avenues—fortunately for their citizens. Like his predecessors, Marx totally neglected the possibility of durable technological progress and steadily increasing productivity, which is a force that can to some extent serve as a counterweight to the process of accumulation and concentration of private capital. He no doubt lacked the statistical data needed to refine his predictions. He probably suffered as well from having decided on his conclusions in 1848, before embarking on the research needed to justify them. Marx evidently wrote in great political fervor, which at times led him to issue hasty pronouncements from which it was difficult to escape. That is why economic theory needs to be rooted in historical sources that are as complete as possible, and in this respect Marx did not exploit all the possibilities available to him. 8 What is more, he devoted little thought to the question of how a society in which private capital had been totally abolished would be organized politically and economically— a complex issue if ever there was one, as shown by the tragic totalitarian experiments undertaken in states where private capital was abolished.

Despite these limitations, Marx’s analysis remains relevant in several respects. First, he began with an important question (concerning the unprecedented concentration of wealth during the Industrial Revolution) and tried to answer it with the means at his disposal: economists today would do well to take inspiration from his example. Even more important, the principle of infinite accumulation that Marx proposed contains a key insight, as valid for the study of the twenty-first century as it was for the nineteenth and in some respects more worrisome than Ricardo’s principle of scarcity. If the rates of population and productivity growth are relatively low, then accumulated wealth naturally takes on considerable importance, especially if it grows to extreme proportions and becomes socially destabilizing . In other words, low growth cannot adequately counterbalance the Marxist principle of infinite accumulation : the resulting equilibrium is not as apocalyptic as the one predicted by Marx but is nevertheless quite disturbing. Accumulation ends at a finite level, but that level may be high enough to be destabilizing. In particular, the very high level of private wealth that has been attained since the 1980s and 1990s in the wealthy countries of Europe and in Japan, measured in years of national income, directly reflects the Marxian logic.

From Marx to Kuznets, or Apocalypse to Fairy Tale

Turning from the nineteenth -century analyses of Ricardo and Marx to the twentieth-century analyses of Simon Kuznets, we might say that economists' no doubt overly developed taste for apocalyptic predictions gave way to a similarly excessive fondness for fairy tales, or at any rate happy endings. According to Kuznets's theory, income inequality would automatically decrease in advanced phases of capitalist development, regardless of economic policy choices or other differences between countries, until eventually it stabilized at an acceptable level. Proposed in 1955, this was really a theory of the magical postwar years referred to in France as the "Trente Glorieuses," the thirty glorious years from 1945 to 1975. 9 For Kuznets, it was enough to be patient, and before long growth would benefit everyone. The philosophy of the moment was summed up in a single sentence: "Growth is a rising tide that lifts all boats." A similar optimism can also be seen in Robert Solow's 1956 analysis of from 1945 to 1975. 9 For Kuznets, it was enough to be patient, and before long growth would benefit everyone. The philosophy of the moment was summed up in a single sentence: "Growth is a rising tide that lifts all boats." A similar optimism can also be seen in Robert Solow's 1956 analysis of the conditions necessary for an economy to achieve a "balanced growth path," that is, a growth trajectory along which all variables— output, incomes, profits, wages, capital, asset prices, and so on— would progress at the same pace, so that every social group would benefit from growth to the same degree, with no major deviations from the norm. 10 Kuznets's position was thus diametrically opposed to the Ricardian and Marxist idea of an inegalitarian spiral and antithetical to the apocalyptic predictions of the nineteenth century.

In order to properly convey the considerable influence that Kuznets's theory enjoyed in the 1980s and 1990s and to a certain extent still enjoys today, it is important to emphasize that it was the first theory of this sort to rely on a formidable statistical apparatus. It was not until the middle of the twentieth century, in fact, that the first historical series of income distribution statistics became available with the publication in 1953 of Kuznets's monumental Shares of Upper Income Groups in Income and Savings. Kuznets's series dealt with only one country (the United States) over a period of thirty-five years (1913–1948). It was nevertheless a major contribution, which drew on two sources of data totally unavailable to nineteenth-century authors: US federal income tax returns (which did not exist before the creation of the income tax in 1913) and Kuznets's own estimates of US national income from a few years earlier. This was the very first attempt to measure social inequality on such an ambitious scale. 11

It is important to realize that without these two complementary and indispensable datasets, it is simply impossible to measure inequality in the income distribution or to gauge its evolution over time . To be sure, the first attempts to estimate national income in Britain and France date back to the late seventeenth and early eighteenth century, and there would be many more such attempts over the course of the nineteenth century. But these were isolated estimates. It was not until the twentieth century, in the years between the two world wars, that the first yearly series of national income data were developed by economists such as Kuznets and John W. Kendrick in the United States, Arthur Bowley and Colin Clark in Britain, and L. Dugé de Bernonville in France. This type of data allows us to measure a country's total income. In order to gauge the share of high incomes in national income, we also need statements of income. Such information became available when many countries adopted a progressive income tax around the time of World War I (1913 in the United States, 1914 in France, 1909 in Britain, 1922 in India, 1932 in Argentina). 12

It is crucial to recognize that even where there is no income tax, there are still all sorts of statistics concerning whatever tax basis exists at a given point in time (for example, the distribution of the number of doors and windows by département in nineteenth-century France, which is not without interest), but these data tell us nothing about incomes. What is more, before the requirement to declare one's income to the tax authorities was enacted in law , people were often unaware of the amount of their own income. The same is true of the corporate tax and wealth tax. Taxation is not only a way of requiring all citizens to contribute to the financing of public expenditures and projects and to distribute the tax burden as fairly as possible; it is also useful for establishing classifications and promoting knowledge as well as democratic transparency.

In any event, the data that Kuznets collected allowed him to calculate the evolution of the share of each decile, as well as of the upper centiles, of the income hierarchy in total US national income. What did he find? He noted a sharp reduction in income inequality in the United States between 1913 and 1948. More specifically, at the beginning of this period, the upper decile of the income distribution (that is, the top 10 percent of US earners) claimed 45– 50 percent of annual national income. By the late 1940s, the share of the top decile had decreased to roughly 30– 35 percent of national income. This decrease of nearly 10 percentage points was considerable: for example, it was equal to half the income of the poorest 50 percent of Americans. 13 The reduction of inequality was clear and incontrovertible. This was news of considerable importance, and it had an enormous impact on economic debate in the postwar era in both universities and international organizations.

Malthus, Ricardo, Marx, and many others had been talking about inequalities for decades without citing any sources whatsoever or any methods for comparing one era with another or deciding between competing hypotheses. Now, for the first time, objective data were available . Although the information was not perfect, it had the merit of existing. What is more, the work of compilation was extremely well documented: the weighty volume that Kuznets published in 1953 revealed his sources and methods in the most minute detail, so that every calculation could be reproduced. And besides that, Kuznets was the bearer of good news: inequality was shrinking.

The Kuznets Curve: Good News in the Midst of the Cold War

In fact, Kuznets himself was well aware that the compression of high US incomes between 1913 and 1948 was largely accidental. It stemmed in large part from multiple shocks triggered by the Great Depression and World War II and had little to do with any natural or automatic process. In his 1953 work, he analyzed his series in detail and warned readers not to make hasty generalizations. But in December 1954, at the Detroit meeting of the American Economic Association, of which he was president, he offered a far more optimistic interpretation of his results than he had given in 1953. It was this lecture, published in 1955 under the title "Economic Growth and Income Inequality," that gave rise to the theory of the "Kuznets curve." According to this theory, inequality everywhere can be expected to follow a “bell curve.” In other words, it should first increase and then decrease over the course of industrialization and economic development.

According to Kuznets, a first phase of naturally increasing inequality associated with the early stages of industrialization, which in the United States meant, broadly speaking, the nineteenth century, would be followed by a phase of sharply decreasing inequality, which in the United States allegedly began in the first half of the twentieth century.

Kuznets’s 1955 paper is enlightening . After reminding readers of all the reasons for interpreting the data cautiously and noting the obvious importance of exogenous shocks in the recent reduction of inequality in the United States, Kuznets suggests, almost innocently in passing, that the internal logic of economic development might also yield the same result, quite apart from any policy intervention or external shock. The idea was that inequalities increase in the early phases of industrialization, because only a minority is prepared to benefit from the new wealth that industrialization brings. Later, in more advanced phases of development , inequality automatically decreases as a larger and larger fraction of the population partakes of the fruits of economic growth. 14

The “advanced phase” of industrial development is supposed to have begun toward the end of the nineteenth or the beginning of the twentieth century in the industrialized countries, and the reduction of inequality observed in the United States between 1913 and 1948 could therefore be portrayed as one instance of a more general phenomenon, which should theoretically reproduce itself everywhere, including underdeveloped countries then mired in postcolonial poverty. The data Kuznets had presented in his 1953 book suddenly became a powerful political weapon. 15 He was well aware of the highly speculative nature of his theorizing. 16 Nevertheless, by presenting such an optimistic theory in the context of a “presidential address” to the main professional association of US economists, an audience that was inclined to believe and disseminate the good news delivered by their prestigious leader, he knew that he would wield considerable influence: thus the “Kuznets curve” was born. In order to make sure that everyone understood what was at stake, he took care to remind his listeners that the intent of his optimistic predictions was quite simply to maintain the underdeveloped countries “within the orbit of the free world.” 17 In large part, then, the theory of the Kuznets curve was a product of the Cold War.

To avoid any misunderstanding , let me say that Kuznets’s work in establishing the first US national accounts data and the first historical series of inequality measures was of the utmost importance, and it is clear from reading his books (as opposed to his papers) that he shared the true scientific ethic. In addition, the high growth rates observed in all the developed countries in the post– World War II period were a phenomenon of great significance, as was the still more significant fact that all social groups shared in the fruits of growth. It is quite understandable that the Trente Glorieuses fostered a certain degree of optimism and that the apocalyptic predictions of the nineteenth century concerning the distribution of wealth forfeited some of their popularity.

Nevertheless, the magical Kuznets curve theory was formulated in large part for the wrong reasons, and its empirical underpinnings were extremely fragile. The sharp reduction in income inequality that we observe in almost all the rich countries between 1914 and 1945 was due above all to the world wars and the violent economic and political shocks they entailed (especially for people with large fortunes). It had little to do with the tranquil process of intersectoral mobility described by Kuznets.

Putting the Distributional Question Back at the Heart of Economic Analysis

The question is important, and not just for historical reasons. Since the 1970s, income inequality has increased significantly in the rich countries, especially the United States, where the concentration of income in the first decade of the twenty-first century regained—indeed, slightly exceeded— the level attained in the second decade of the previous century. It is therefore crucial to understand clearly why and how inequality decreased in the interim. To be sure, the very rapid growth of poor and emerging countries, especially China, may well prove to be a potent force for reducing inequalities at the global level, just as the growth of the rich countries did during the period 1945– 1975. But this process has generated deep anxiety in the emerging countries and even deeper anxiety in the rich countries. Furthermore, the impressive disequilibria observed in recent decades in the financial, oil, and real estate markets have naturally aroused doubts as to the inevitability of the "balanced growth path " described by Solow and Kuznets, according to whom all key economic variables are supposed to move at the same pace. Will the world in 2050 or 2100 be owned by traders, top managers, and the superrich, or will it belong to the oil-producing countries or the Bank of China? Or perhaps it will be owned by the tax havens in which many of these actors will have sought refuge. It would be absurd not to raise the question of who will own what and simply to assume from the outset that growth is naturally "balanced" in the long run.

In a way, we are in the same position at the beginning of the twenty-first century as our forebears were in the early nineteenth century: we are witnessing impressive changes in economies around the world, and it is very difficult to know how extensive they will turn out to be or what the global distribution of wealth, both within and between countries, will look like several decades from now. The economists of the nineteenth century deserve immense credit for placing the distributional question at the heart of economic analysis and for seeking to study long-term trends. Their answers were not always satisfactory, but at least they were asking the right questions. There is no fundamental reason why we should believe that growth is automatically balanced. It is long since past the time when we should have put the question of inequality back at the center of economic analysis and begun asking questions first raised in the nineteenth century . For far too long, economists have neglected the distribution of wealth, partly because of Kuznets's optimistic conclusions and partly because of the profession's undue enthusiasm for simplistic mathematical models based on so-called representative agents. 18 If the question of inequality is again to become central, we must begin by gathering as extensive as possible a set of historical data for the purpose of understanding past and present trends. For it is by patiently establishing facts and patterns and then comparing different countries that we can hope to identify the mechanisms at work and gain a clearer idea of the future.

The Sources Used in This Book

This book is based on sources of two main types, which together make it possible to study the historical dynamics of wealth distribution: sources dealing with the inequality and distribution of income, and sources dealing with the distribution of wealth and the relation of wealth to income.

To begin with income: in large part, my work has simply broadened the spatial and temporal limits of Kuznets's innovative and pioneering work on the evolution of income inequality in the United States between 1913 and 1948. In this way I have been able to put Kuznets's findings (which are quite accurate) into a wider perspective and thus radically challenge his optimistic view of the relation between economic development and the distribution of wealth. Oddly, no one has ever systematically pursued Kuznets's work, no doubt in part because the historical and statistical study of tax records falls into a sort of academic no-man's -land, too historical for economists and too economistic for historians. That is a pity, because the dynamics of income inequality can only be studied in a long-run perspective, which is possible only if one makes use of tax records. [19]

I began by extending Kuznets's methods to France, and I published the results of that study in a book that appeared in 2001. [20] I then joined forces with several colleagues—Anthony Atkinson and Emmanuel Saez foremost among them— and with their help was able to expand the coverage to a much wider range of countries. Anthony Atkinson looked at Great Britain and a number of other countries, and together we edited two volumes that appeared in 2007 and 2010, in which we reported the results for some twenty countries throughout the world. [21] Together with Emmanuel Saez, I extended Kuznets's series for the United States by half a century. [22] Saez himself looked at a number of other key countries , such as Canada and Japan. Many other investigators contributed to this joint effort: in particular, Facundo Alvaredo studied Argentina, Spain, and Portugal; Fabien Dell looked at Germany and Switzerland; and Abhijit Banerjeee and I investigated the Indian case. With the help of Nancy Qian I was able to work on China. And so on. [23]

In each case, we tried to use the same types of sources, the same methods, and the same concepts . Deciles and centiles of high incomes were estimated from tax data based on stated incomes (corrected in various ways to ensure temporal and geographic homogeneity of data and concepts). National income and average income were derived from national accounts, which in some cases had to be fleshed out or extended. Broadly speaking, our data series begin in each country when an income tax was established (generally between 1910 and 1920 but in some countries, such as Japan and Germany, as early as the 1880s and in other countries somewhat later). These series are regularly updated and at this writing extend to the early 2010s.

Ultimately, the World Top Incomes Database (WTID), which is based on the joint work of some thirty researchers around the world, is the largest historical database available concerning the evolution of income inequality; it is the primary source of data for this book. [24]

The book's second most important source of data, on which I will actually draw first, concerns wealth, including both the distribution of wealth and its relation to income. Wealth also generates income and is therefore important on the income study side of things as well. Indeed, income consists of two components: income from labor (wages, salaries, bonuses, earnings from nonwage labor, and other remuneration statutorily classified as labor related) and income from capital (rent, dividends, interest, profits, capital gains, royalties, and other income derived from the mere fact of owning capital in the form of land, real estate, financial instruments, industrial equipment, etc., again regardless of its precise legal classification). The WTID contains a great deal of information about the evolution of income from capital over the course of the twentieth century. It is nevertheless essential to complete this information by looking at sources directly concerned with wealth. Here I rely on three distinct types of historical data and methodology, each of which is complementary to the others. 25

In the first place, just as income tax returns allow us to study changes in income inequality, estate tax returns enable us to study changes in the inequality of wealth. 26 This approach was introduced by Robert Lampman in 1962 to study changes in the inequality of wealth in the United States from 1922 to 1956. Later, in 1978, Anthony Atkinson and Alan Harrison studied the British case from 1923 to 1972. 27 These results were recently updated and extended to other countries such as France and Sweden. Unfortunately, data are available for fewer countries than in the case of income inequality. In a few cases, however, estate tax data extend back much further in time, often to the beginning of the nineteenth century , because estate taxes predate income taxes. In particular, I have compiled data collected by the French government at various times and, together with Gilles Postel-Vinay and Jean-Laurent Rosenthal, have put together a huge collection of individual estate tax returns, with which it has been possible to establish homogeneous series of data on the concentration of wealth in France since the Revolution. 28 This will allow us to see the shocks due to World War I in a much broader context than the series dealing with income inequality (which unfortunately date back only as far as 1910 or so). The work of Jesper Roine and Daniel Waldenström on Swedish historical sources is also instructive. 29

The data on wealth and inheritance also enable us to study changes in the relative importance of inherited wealth and savings in the constitution of fortunes and the dynamics of wealth inequality. This work is fairly complete in the case of France, where the very rich historical sources offer a unique vantage point from which to observe changing inheritance patterns over the long run. 30 To one degree or another, my colleagues and I have extended this work to other countries, especially Great Britain, Germany, Sweden , and the United States. These materials play a crucial role in this study, because the significance of inequalities of wealth differs depending on whether those inequalities derive from inherited wealth or savings. In this book, I focus not only on the level of inequality as such but to an even greater extent on the structure of inequality, that is, on the origins of disparities in income and wealth between social groups and on the various systems of economic, social, moral, and political justification that have been invoked to defend or condemn those disparities. Inequality is not necessarily bad in itself: the key question is to decide whether it is justified, whether there are reasons for it.

Last but not least , we can also use data that allow us to measure the total stock of national wealth (including land, other real estate, and industrial and financial capital) over a very long period of time. We can measure this wealth for each country in terms of the number of years of national income required to amass it. This type of global study of the capital/ income ratio has its limits. It is always preferable to analyze wealth inequality at the individual level as well, and to gauge the relative importance of inheritance and saving in capital formation . Nevertheless, the capital/ income approach can give us an overview of the importance of capital to the society as a whole. Moreover, in some cases (especially

Britain and France) it is possible to collect and compare estimates for different periods and thus push the analysis back to the early eighteenth century, which allows us to view the Industrial Revolution in relation to the history of capital. For this I will rely on historical data Gabriel Zucman and I recently collected. 31 Broadly speaking, this research is merely an extension and generalization of Raymond Goldsmith's work on national balance sheets in the 1970s. 32

Compared with previous works, one reason why this book stands out is that I have made an effort to collect as complete and consistent a set of historical sources as possible in order to study the dynamics of income and wealth distribution over the long run. To that end, I had two advantages over previous authors. First, this work benefits, naturally enough, from a longer historical perspective than its predecessors had (and some long-term changes did not emerge clearly until data for the 2000s became available, largely owing to the fact that certain shocks due to the world wars persisted for a very long time). Second, advances in computer technology have made it much easier to collect and process large amounts of historical data.

Although I have no wish to exaggerate the role of technology in the history of ideas, the purely technical issues are worth a moment's reflection. Objectively speaking, it was far more difficult to deal with large volumes of historical data in Kuznets's time than it is today. This was true to a large extent as recently as the 1980s. In the 1970s, when Alice Hanson Jones collected US estate inventories from the colonial era and Adeline Daumard worked on French estate records from the nineteenth century, 33 they worked mainly by hand, using index cards. When we reread their remarkable work today, or look at François Siminad's work on the evolution of wages in the nineteenth century or Ernest Labrousse's work on the history of prices and incomes in the eighteenth century or Jean Bouvier and François Furet's work on the variability of profits in the nineteenth century, it is clear that these scholars had to overcome major material difficulties in order to compile and process their data. 34 In many cases, the technical difficulties absorbed much of their energy, taking precedence over analysis and interpretation, especially since the technical problems imposed strict limits on their ability to make international and temporal comparisons. It is much easier to study the history of the distribution of wealth today than in the past. This book is heavily indebted to recent improvements in the technology of research. 35 The

Major Results of This Study

What are the major conclusions to which these novel historical sources have led me? The first is that one should be wary of any economic determinism in regard to inequalities of wealth and income. The history of the distribution of wealth has always been deeply political, and it cannot be reduced to purely economic mechanisms. In particular, the reduction of inequality that took place in most developed countries between 1910 and 1950 was above all a consequence of war and of policies adopted to cope with the shocks of war. Similarly, the resurgence of inequality after 1980 is due largely to the political shifts of the past several decades, especially in regard to taxation and finance. The history of inequality is shaped by the way economic, social, and political actors view what is just and what is not, as well as by the relative power of those actors and the collective choices that result. It is the joint product of all relevant actors combined.

The second conclusion, which is the heart of the book, is that the dynamics of wealth distribution reveal powerful mechanisms pushing alternately toward convergence and divergence. Furthermore, there is no natural, spontaneous process to prevent destabilizing, inegalitarian forces from prevailing permanently.

Consider first the mechanisms pushing toward convergence, that is, toward reduction and compression of inequalities. The main forces for convergence are the diffusion of knowledge and investment in training and skills. The law of supply and demand, as well as the mobility of capital and labor, which is a variant of that law, may always tend toward convergence as well, but the influence of this economic law is less powerful than the diffusion of knowledge and skill and is frequently ambiguous or contradictory in its implications. Knowledge and skill diffusion is the key to overall productivity growth as well as the reduction of inequality both within and between countries. We see this at present in the advances made by a number of previously poor countries, led by China. These emergent economies are now in the process of catching up with the advanced ones. By adopting the modes of production of the rich countries and acquiring skills comparable to those found elsewhere, the less developed countries have leapt forward in productivity and increased their national incomes. The technological convergence process may be abetted by open borders for trade, but it is fundamentally a process of the diffusion and sharing of knowledge— the public good par excellence— rather than a market mechanism.

From a strictly theoretical standpoint, other forces pushing toward greater equality might exist . One might, for example, assume that production technologies tend over time to require greater skills on the part of workers, so that labor's share of income will rise as capital's share falls: one might call this the "rising human capital hypothesis." In other words, the progress of technological rationality is supposed to lead automatically to the triumph of human capital over financial capital and real estate, capable managers over fat cat stockholders, and skill over nepotism. Inequalities would thus become more meritocratic and less static (though not necessarily smaller): economic rationality would then in some sense automatically give rise to democratic rationality.

Another optimistic belief, which is current at the moment , is the idea that "class warfare" will automatically give way, owing to the recent increase in life expectancy, to "generational warfare" (which is less divisive because everyone is first young and then old). Put differently, this inescapable biological fact is supposed to imply that the accumulation and distribution of wealth no longer presage an inevitable clash between dynasties of rentiers and dynasties owning nothing but their labor power. The governing logic is rather one of saving over the life cycle: people accumulate wealth when young in order to provide for their old age. Progress in medicine together with improved living conditions has therefore, it is argued, totally transformed the very essence of capital.

Unfortunately, these two optimistic beliefs (the human capital hypothesis and the substitution of generational conflict for class warfare) are largely illusory. Transformations of this sort are both logically possible and to some extent real, but their influence is far less consequential than one might imagine. There is little evidence that labor's share in national income has increased significantly in a very long time: "nonhuman" capital seems almost as indispensable in the twenty-first century as it was in the eighteenth or nineteenth, and there is no reason why it may not become even more so. Now as in the past, moreover, inequalities of wealth exist primarily within age cohorts, and inherited wealth comes close to being as decisive at the beginning of the twenty-first century as it was in the age of Balzac's Père Goriot. Over a long period of time, the main force in favor of greater equality has been the diffusion of knowledge and skills.

Forces of Convergence, Forces of Divergence

The crucial fact is that no matter how potent a force the diffusion of knowledge and skills may be, especially in promoting convergence between countries, it can nevertheless be thwarted and overwhelmed by powerful forces pushing in the opposite direction, toward greater inequality. It is obvious that lack of adequate investment in training can exclude entire social groups from the benefits of economic growth. Growth can harm some groups while benefiting others (witness the recent displacement of workers in the more advanced economies by workers in China). In short, the principal force for convergence— the diffusion of knowledge— is only partly natural and spontaneous. It also depends in large part on educational policies, access to training and to the acquisition of appropriate skills, and associated institutions.

I will pay particular attention in this study to certain worrisome forces of divergence—particularly worrisome in that they can exist even in a world where there is adequate investment in skills and where all the conditions of "market efficiency" (as economists understand that term) appear to be satisfied. What are these forces of divergence? First, top earners can quickly separate themselves from the rest by a wide margin (although the problem to date remains relatively localized). More important, there is a set of forces of divergence associated with the process of accumulation and concentration of wealth when growth is weak and the return on capital is high. This second process is potentially more destabilizing than the first, and it no doubt represents the principal threat to an equal distribution of wealth over the long run.

To cut straight to the heart of the matter: in Figures I. 1 and I. 2 I show two basic patterns that I will try to explain in what follows. Each graph represents the importance of one of these divergent processes. Both graphs depict "U-shaped curves," that is, a period of decreasing inequality followed by one of increasing inequality . One might assume that the realities the two graphs represent are similar. In fact they are not. The phenomena underlying the various curves are quite different and involve distinct economic, social, and political processes. Furthermore, the curve in Figure I. 1 represents income inequality in the United States, while the curves in Figure I. 2 depict the capital /income ratio in several European countries (Japan, though not shown, is similar). It is not out of the question that the two forces of divergence will ultimately come together in the twenty-first century. This has already happened to some extent and may yet become a global phenomenon, which could lead to levels of inequality never before seen, as well as to a radically new structure of inequality. Thus far, however , these striking patterns reflect two distinct underlying phenomena.

The US curve, shown in Figure I. 1 , indicates the share of the upper decile of the income hierarchy in US national income from 1910 to 2010. It is nothing more than an extension of the historical series Kuznets established for the period 1913– 1948. The top decile claimed as much as 45– 50 percent of national income in the 1910s– 1920s before dropping to 30– 35 percent by the end of the 1940s. Inequality then stabilized at that level from 1950 to 1970. We subsequently see a rapid rise in inequality in the 1980s, until by 2000 we have returned to a level on the order of 45– 50 percent of national income. The magnitude of the change is impressive. It is natural to ask how far such a trend might continue.

FIGURE I. 1. Income inequality in the United States, 1910– 2010 The top decile share in US national income dropped from 45– 50 percent in the 1910s– 1920s to less than 35 percent in the 1950s (this is the fall documented by Kuznets); it then rose from less than 35 percent in the 1970s to 45– 50 percent in the 2000s– 2010s. Sources and series: see piketty.pse.ens.fr/ capital21c .

I will show that this spectacular increase in inequality largely reflects an unprecedented explosion of very elevated incomes from labor, a veritable separation of the top managers of large firms from the rest of the population. One possible explanation of this is that the skills and productivity of these top managers rose suddenly in relation to those of other workers. Another explanation, which to me seems more plausible and turns out to be much more consistent with the evidence, is that these top managers by and large have the power to set their own remuneration, in some cases without limit and in many cases without any clear relation to their individual productivity, which in any case is very difficult to estimate in a large organization. This phenomenon is seen mainly in the United States and to a lesser degree in Britain, and it may be possible to explain it in terms of the history of social and fiscal norms in those two countries over the past century. The tendency is less marked in other wealthy countries (such as Japan, Germany, France, and other continental European states), but the trend is in the same direction. To expect that the phenomenon will attain the same proportions elsewhere as it has done in the United States would be risky until we have subjected it to a full analysis— which unfortunately is not that simple, given the limits of the available data.

The Fundamental Force for Divergence: r > g

The second pattern, represented in Figure I. 2 , reflects a divergence mechanism that is in some ways simpler and more transparent and no doubt exerts greater influence on the long-run evolution of the wealth distribution. Figure I. 2 shows the total value of private wealth (in real estate, financial assets, and professional capital, net of debt) in Britain, France and Germany, expressed in years of national income, for the period 1870– 2010. Note, first of all, the very high level of private wealth in Europe in the late nineteenth century: the total amount of private wealth hovered around six or seven years of national income, which is a lot. It then fell sharply in response to the shocks of the period 1914–1945:

the capital/ income ratio decreased to just 2 or 3. We then observe a steady rise from 1950 on, a rise so sharp that private fortunes in the early twenty-first century seem to be on the verge of returning to five or six years of national income in both Britain and France. (Private wealth in Germany, which started at a lower level, remains lower, but the upward trend is just as clear.)

This "U-shaped curve" reflects an absolutely crucial transformation, which will figure largely in this study. In particular , I will show that the return of high capital/ income ratios over the past few decades can be explained in large part by the return to a regime of relatively slow growth. In slowly growing economies, past wealth naturally takes on disproportionate importance, because it takes only a small flow of new savings to increase the stock of wealth steadily and substantially.

If, moreover, the rate of return on capital remains significantly above the growth rate for an extended period of time (which is more likely when the growth rate is low, though not automatic), then the risk of divergence in the distribution of wealth is very high.

This fundamental inequality, which I will write as r > g (where r stands for the average annual rate of return on capital, including profits, dividends, interest, rents, and other income from capital, expressed as a percentage of its total value, and g stands for the rate of growth of the economy, that is, the annual increase in income or output), will play a crucial role in this book. In a sense, it sums up the overall logic of my conclusions.

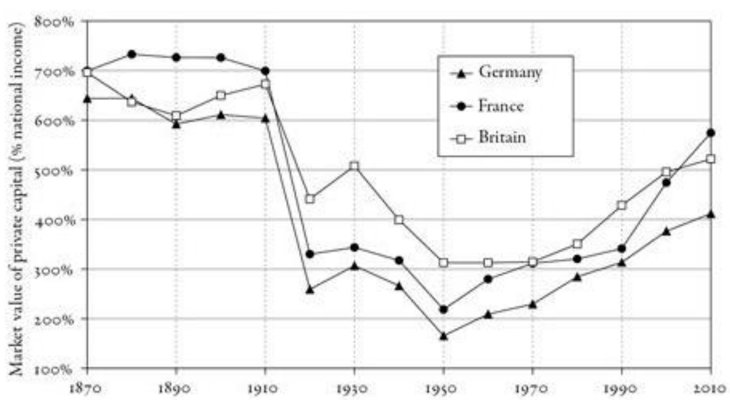

FIGURE I. 2. The capital/ income ratio in Europe, 1870– 2010 Aggregate private wealth was worth about six to seven years of national income in Europe in 1910, between two and three years in 1950, and between four and six years in 2010. Sources and series: see piketty.pse.ens.fr/ capital21c .

When the rate of return on capital significantly exceeds the growth rate of the economy (as it did through much of history until the nineteenth century and as is likely to be the case again in the twenty-first century), then it logically follows that inherited wealth grows faster than output and income. People with inherited wealth need save only a portion of their income from capital to see that capital grow more quickly than the economy as a whole. Under such conditions, it is almost inevitable that inherited wealth will dominate wealth amassed from a lifetime's labor by a wide margin, and the concentration of capital will attain extremely high levels— levels potentially incompatible with the meritocratic values and principles of social justice fundamental to modern democratic societies.

What is more, this basic force for divergence can be reinforced by other mechanisms. For instance, the savings rate may increase sharply with wealth. 36 Or, even more important, the average effective rate of return on capital may be higher when the individual's initial capital endowment is higher (as appears to be increasingly common). The fact that the return on capital is unpredictable and arbitrary, so that wealth can be enhanced in a variety of ways , also poses a challenge to the meritocratic model. Finally, all of these factors can be aggravated by the Ricardian scarcity principle: the high price of real estate or petroleum may contribute to structural divergence.

To sum up what has been said thus far: the process by which wealth is accumulated and distributed contains powerful forces pushing toward divergence, or at any rate toward an extremely high level of inequality. Forces of convergence also exist, and in certain countries at certain times, these may prevail, but the forces of divergence can at any point regain the upper hand, as seems to be happening now, at the beginning of the twenty-first century. The likely decrease in the rate of growth of both the population and the economy in coming decades makes this trend all the more worrisome.

My conclusions are less apocalyptic than those implied by Marx's principle of infinite accumulation and perpetual divergence (since Marx's theory implicitly relies on a strict assumption of zero productivity growth over the long run). In the model I propose, divergence is not perpetual and is only one of several possible future directions for the distribution of wealth. But the possibilities are not heartening. Specifically, it is important to note that the fundamental $r > g$ inequality , the main force of divergence in my theory, has nothing to do with any market imperfection. Quite the contrary: the more perfect the capital market (in the economist's sense), the more likely r is to be greater than g. It is possible to imagine public institutions and policies that would counter the effects of this implacable logic : for instance, a progressive global tax on capital. But establishing such institutions and policies would require a considerable degree of international coordination. It is unfortunately likely that actual responses to the problem— including various nationalist responses— will in practice be far more modest and less effective.

The Geographical and Historical Boundaries of This Study

What will the geographical and historical boundaries of this study be? To the extent possible, I will explore the dynamics of the distribution of wealth between and within countries around the world since the eighteenth century. However, the limitations of the available data will often make it necessary to narrow the scope of inquiry rather severely. In regard to the between-country distribution of output and income, the subject of the first part of the book, a global approach is possible from 1700 on (thanks in particular to the national accounts data compiled by Angus Maddison). When it comes to studying the capital/ income ratio and capital-labor split in Part Two, the absence of adequate historical data will force me to focus primarily on the wealthy countries and proceed by extrapolation to poor and emerging countries. The examination of the evolution of inequalities of income and wealth, the subject of Part Three, will also be narrowly constrained by the limitations of the available sources. I try to include as many poor and emergent countries as possible, using data from the WTID, which aims to cover five continents as thoroughly as possible. Nevertheless, the long-term trends are far better documented in the rich countries. To put it plainly, this book relies primarily on the historical experience of the leading developed countries: the United States, Japan, Germany, France, and Great Britain.

The British and French cases turn out to be particularly significant, because the most complete long-run historical sources pertain to these two countries. We have multiple estimates of both the magnitude and structure of national wealth for Britain and France as far back as the early eighteenth century. These two countries were also the leading colonial and financial powers in the nineteenth and early twentieth centuries. It is therefore clearly important to study them if we wish to understand the dynamics of the global distribution of wealth since the Industrial Revolution. In particular, their history is indispensable for studying what has been called the "first globalization" of finance and trade (1870– 1914), a period that is in many ways similar to the "second globalization," which has been under way since the 1970s. The period of the first globalization is as fascinating as it was prodigiously inegalitarian. It saw the invention of the electric light as well as the heyday of the ocean liner (the Titanic sailed in 1912), the advent of film and radio, and the rise of the automobile and international investment. Note, for example, that it was not until the coming of the twenty-first century that the wealthy countries regained the same level of stock-market capitalization relative to GDP that Paris and London achieved in the early 1900s. This comparison is quite instructive for understanding today's world.

Some readers will no doubt be surprised that I accord special importance to the study of the French case and may suspect me of nationalism. I should therefore justify my decision. One reason for my choice has to do with sources. The French Revolution did not create a just or ideal society , but it did make it possible to observe the structure of wealth in unprecedented detail. The system established in the 1790s for recording wealth in land, buildings, and financial assets was astonishingly modern and comprehensive for its time. The Revolution is the reason why French estate records are probably the richest in the world over the long run.

My second reason is that because France was the first country to experience the demographic transition, it is in some respects a good place to observe what awaits the rest of the planet. Although the country's population has increased over the past two centuries, the rate of increase has been relatively low. The population of the country was roughly 30 million at the time of the Revolution , and it is slightly more than 60 million today. It is the same country, with a population whose order of magnitude has not changed. By contrast, the population of the United States at the time of the Declaration of Independence was barely 3 million. By 1900 it was 100 million, and today it is above 300 million. When a country goes from a population of 3 million to a population of 300 million (to say nothing of the radical increase in territory owing to westward expansion in the nineteenth century), it is clearly no longer the same country.

The dynamics and structure of inequality look very different in a country whose population increases by a factor of 100 compared with a country whose population merely doubles. In particular, the inheritance factor is much less important in the former than in the latter. It has been the demographic growth of the New World that has ensured that inherited wealth has always played a smaller role in the United States than in Europe. This factor also explains why the structure of inequality in the United States has always been so peculiar, and the same can be said of US representations of inequality and social class. But it also suggests that the US case is in some sense not generalizable (because it is unlikely that the population of the world will increase a hundredfold over the next two centuries) and that the French case is more typical and more pertinent for understanding the future. I am convinced that detailed analysis of the French case, and more generally of the various historical trajectories observed in other developed countries in Europe, Japan, North America, and Oceania, can tell us a great deal about the future dynamics of global wealth, including such emergent economies as China, Brazil, and India, where demographic and economic growth will undoubtedly slow in the future (as they have done already).

Finally, the French case is interesting because the French Revolution— the "bourgeois" revolution par excellence— quickly established an ideal of legal equality in relation to the market. It is interesting to look at how this ideal affected the dynamics of wealth distribution. Although the English Revolution of 1688 established modern parliamentarism, it left standing a royal dynasty, primogeniture on landed estates (ended only in the 1920s), and political privileges for the hereditary nobility (reform of the House of Lords is still under discussion, a bit late in the day). Although the American Revolution established the republican principle, it allowed slavery to continue for nearly a century and legal racial discrimination for nearly two centuries. The race question still has a disproportionate influence on the social question in the United States today. In a way, the French Revolution of 1789 was more ambitious. It abolished all legal privileges and sought to create a political and social order based entirely on equality of rights and opportunities. The Civil Code guaranteed absolute equality before the laws of property as well as freedom of contract (for men, at any rate). In the late nineteenth century, conservative French economists such as Paul Leroy-Beaulieu often used this argument to explain why republican France, a nation of "small property owners" made egalitarian by the Revolution, had no need of a progressive or confiscatory income tax or estate tax, in contrast to aristocratic and monarchical Britain. The data show, however, that the concentration of wealth was as large at that time in France as in Britain, which clearly demonstrates that equality of rights in the marketplace cannot ensure equality of rights tout court. Here again, the French experience is quite relevant to today's world, where many commentators continue to believe, as Leroy-Beaulieu did a little more than a century ago, that ever more fully guaranteed property rights, ever freer markets, and ever "purer and more perfect" competition are enough to ensure a just, prosperous, and harmonious society. Unfortunately, the task is more complex.

The Theoretical and Conceptual Framework

Before proceeding, it may be useful to say a little more about the theoretical and conceptual framework of this research as well as the intellectual itinerary that led me to write this book.

I belong to a generation that turned eighteen in 1989, which was not only the bicentennial of the French Revolution but also the year when the Berlin Wall fell. I belong to a generation that came of age listening to news of the collapse of the Communist dicatorships and never felt the slightest affection or nostalgia for those regimes or for the Soviet Union. I was vaccinated for life against the conventional but lazy rhetoric of anticapitalism, some of which simply ignored the historic failure of Communism and much of which turned its back on the intellectual means necessary to push beyond it. I have no interest in denouncing inequality or capitalism per se— especially since social inequalities are not in themselves a problem as long as they are justified, that is, "founded only upon common utility," as article 1 of the

1789 Declaration of the Rights of Man and the Citizen proclaims. (Although this definition of social justice is imprecise but seductive, it is rooted in history. Let us accept it for now. I will return to this point later on.) By contrast, I am interested in contributing, however modestly, to the debate about the best way to organize society and the most appropriate institutions and policies to achieve a just social order. Furthermore, I would like to see justice achieved effectively and efficiently under the rule of law, which should apply equally to all and derive from universally understood statutes subject to democratic debate.

I should perhaps add that I experienced the American dream at the age of twenty-two, when I was hired by a university near Boston just after finishing my doctorate. This experience proved to be decisive in more ways than one. It was the first time I had set foot in the United States, and it felt good to have my work recognized so quickly. Here was a country that knew how to attract immigrants when it wanted to! Yet I also realized quite soon that I wanted to return to France and Europe, which I did when I was twenty-five. Since then, I have not left Paris, except for a few brief trips. One important reason for my choice has a direct bearing on this book: I did not find the work of US economists entirely convincing. To be sure, they were all very intelligent, and I still have many friends from that period of my life. But something strange happened: I was only too aware of the fact that I knew nothing at all about the world's economic problems. My thesis consisted of several relatively abstract mathematical theorems. Yet the profession liked my work. I quickly realized that there had been no significant effort to collect historical data on the dynamics of inequality since Kuznets, yet the profession continued to churn out purely theoretical results without even knowing what facts needed to be explained. And it expected me to do the same. When I returned to France, I set out to collect the missing data.

To put it bluntly, the discipline of economics has yet to get over its childish passion for mathematics and for purely theoretical and often highly ideological speculation, at the expense of historical research and collaboration with the other social sciences. Economists are all too often preoccupied with petty mathematical problems of interest only to themselves . This obsession with mathematics is an easy way of acquiring the appearance of scientificity without having to answer the far more complex questions posed by the world we live in. There is one great advantage to being an academic economist in France: here, economists are not highly respected in the academic and intellectual world or by political and financial elites. Hence they must set aside their contempt for other disciplines and their absurd claim to greater scientific legitimacy, despite the fact that they know almost nothing about anything. This, in any case, is the charm of the discipline and of the social sciences in general: one starts from square one, so that there is some hope of making major progress. In France, I believe, economists are slightly more interested in persuading historians and sociologists, as well as people outside the academic world, that what they are doing is interesting (although they are not always successful). My dream when I was teaching in Boston was to teach at the École des Hautes Études en Sciences Sociales, whose faculty has included such leading lights as Lucien Febvre, Fernand Braudel, Claude Lévi-Strauss, Pierre Bourdieu, Françoise Héritier, and Maurice Godelier, to name a few. Dare I admit this, at the risk of seeming chauvinistic in my view of the social sciences? I probably admire these scholars more than Robert Solow or even Simon Kuznets, even though I regret the fact that the social sciences have largely lost interest in the distribution of wealth and questions of social class since the 1970s. Before that, statistics about income, wages, prices, and wealth played an important part in historical and sociological research. In any case, I hope that both professional social scientists and amateurs of all fields will find something of interest in this book, starting with those who claim to "know nothing about economics" but who nevertheless have very strong opinions about inequality of income and wealth, as is only natural.

The truth is that economics should never have sought to divorce itself from the other social sciences and can advance only in conjunction with them. The social sciences collectively know too little to waste time on foolish disciplinary squabbles. If we are to progress in our understanding of the historical dynamics of the wealth distribution and the structure of social classes, we must obviously take a pragmatic approach and avail ourselves of the methods of historians, sociologists, and political scientists as well as economists. We must start with fundamental questions and try to answer them. Disciplinary disputes and turf wars are of little or no importance. In my mind, this book is as much a work of history as of economics.

As I explained earlier, I began this work by collecting sources and establishing historical time series pertaining to the distribution of income and wealth. As the book proceeds, I sometimes appeal to theory and to abstract models and concepts, but I try to do so sparingly, and only to the extent that theory enhances our understanding of the changes we observe. For example , income, capital, the economic growth rate, and the rate of return on capital are abstract concepts— theoretical constructs rather than mathematical certainties. Yet I will show that these concepts allow us to analyze historical reality in interesting ways, provided that we remain clear-eyed and critical about the limited precision with which we can measure these things. I will also use a few equations, such as $\alpha = r \times \beta$ (which says that the share of capital in national income is equal to the product of the return on capital and the capital/ income ratio), or $\beta = s / g$ (which says that the capital/ income ratio is equal in the long run to the savings rate divided by the growth rate). I ask readers not well versed in mathematics to be patient and not immediately close the book: these are elementary equations, which can be explained in a simple, intuitive way and can be understood without any specialized technical knowledge. Above all, I try to show that this minimal theoretical framework is sufficient to give a clear account of what everyone will recognize as important historical developments.

Outline of the Book

The remainder of the book consists of sixteen chapters divided into four parts. Part One , titled "Income and Capital," contains two chapters and introduces basic ideas that are used repeatedly in the remainder of the book. Specifically, Chapter 1 presents the concepts of national income, capital, and the capital/ income ratio and then describes in broad brushstrokes how the global distribution of income and output has evolved. Chapter 2 gives a more detailed analysis of how the growth rates of population and output have evolved since the Industrial Revolution. This first part of the book contains nothing really new, and the reader familiar with these ideas and with the history of global growth since the eighteenth century may wish to skip directly to Part Two . The purpose of Part Two , titled "The Dynamics of the Capital/ Income Ratio," which consists of four chapters, is to examine the prospects for the long-run evolution of the capital/ income ratio and the global division of national income between labor and capital in the twenty-first century. Chapter 3 looks at the metamorphoses of capital since the eighteenth century, starting with the British and French cases, about which we possess the most data over the long run . Chapter 4 introduces the German and US cases. Chapters 5 and 6 extend the geographical range of the analysis to the entire planet, insofar as the sources allow, and seek to draw the lessons from all of these historical experiences that can enable us to anticipate the possible evolution of the capital/ income ratio and the relative shares of capital and labor in the decades to come.

Part Three, titled "The Structure of Inequality," consists of six chapters. Chapter 7 familiarizes the reader with the orders of magnitude of inequality attained in practice by the distribution of income from labor on the one hand and of capital ownership and income from capital on the other. Chapter 8 then analyzes the historical dynamics of these inequalities, starting with a comparison of France and the United States. Chapters 9 and 10 extend the analysis to all the countries for which we have historical data (in the WTID), looking separately at inequalities related to labor and capital, respectively. Chapter 11 studies the changing importance of inherited wealth over the long run. Finally, Chapter 12 looks at the prospects for the global distribution of wealth over the first few decades of the twenty-first century.

The purpose of Part Four, titled "Regulating Capital in the Twenty-First Century" and consisting of four chapters, is to draw normative and policy lessons from the previous three parts, whose purpose is primarily to establish the facts and understand the reasons for the observed changes. Chapter 13 examines what a "social state" suited to present conditions might look like. Chapter 14 proposes a rethinking of the progressive income tax based on past experience and recent trends. Chapter 15 describes what a progressive tax on capital adapted to twenty-first century conditions might look like and compares this idealized tool to other types of regulation that might emerge from the political process, ranging from a wealth tax in Europe to capital controls in China, immigration reform in the United States, and revival of protectionism in many countries. Chapter 16 deals with the pressing question of public debt and the related issue of the optimal accumulation of public capital at a time when natural capital may be deteriorating. One final word. It would have been quite presumptuous in 1913 to publish a book called "Capital in the Twentieth Century ." I beg the reader's indulgence for giving the title Capital in the Twenty-First Century to this book, which appeared in French in 2013 and in English in 2014. I am only too well aware of my total inability to predict what form capital will take in 2063 or 2113. As I already noted, and as I will frequently show in what follows, the history of income and wealth is always deeply political, chaotic, and unpredictable. How this history plays out depends on how societies view inequalities and what kinds of policies and institutions they adopt to measure and transform them. No one can foresee how these things will change in the decades to come. The lessons of history are nevertheless useful, because they help us to see a little more clearly what kinds of choices we will face in the coming century and what sorts of dynamics will be at work. The sole purpose of the book, which logically speaking should have been entitled "Capital at the Dawn of the Twenty-First Century," is to draw from the past a few modest keys to the future. Since history always invents its own pathways, the actual usefulness of these lessons from the past remains to be seen. I offer them to readers without presuming to know their full import.

Notes

1. English economist Thomas Malthus (1766– 1834) is considered to be one of the most influential members of the “classical” school, along with Adam Smith (1723– 1790) and David Ricardo (1772– 1823).

2 . There is of course a more optimistic school of liberals: Adam Smith seems to belong to it, and in fact he never really considered the possibility that the distribution of wealth might grow more unequal over the long run . The same is true of Jean-Baptiste Say (1767– 1832), who also believed in natural harmony.

3 . The other possibility is to increase supply of the scarce good, for example by finding new oil deposits (or new sources of energy, if possible cleaner than oil), or by moving toward a more dense urban environment (by constructing high-rise housing, for example), which raises other difficulties. In any case, this, too, can take decades to accomplish.

4 . Friedrich Engels (1820– 1895), who had direct experience of his subject, would become the friend and collaborator of the German philosopher and economist Karl Marx (1818–1883). He settled in Manchester in 1842, where he managed a factory owned by his father.

5 . The historian Robert Allen recently proposed to call this long period of wage stagnation “Engels’ pause.” See Allen, “Engels’ Pause: A Pessimist’s Guide to the British Industrial Revolution,” Oxford University Department of Economics Working Papers 315 (2007). See also “Engels’ Pause: Technical Change, Capital Accumulation, and Inequality in the British Industrial Revolution,” in Explorations in Economic History 46, no. 4 (October 2009): 418– 35.

6 . The opening passage continues : “All the powers of old Europe have entered into a holy alliance to exorcise this specter: Pope and Tsar, Metternich and Guizot, French Radicals and German police-spies.” No doubt Marx’s literary talent partially accounts for his immense influence.

7 . In 1847 Marx published The Misery of Philosophy, in which he mocked Proudhon’s Philosophy of Misery, which was published a few years earlier.

8 . In Chapter 6 I return to the theme of Marx’s use of statistics. To summarize: he occasionally sought to make use of the best available statistics of the day (which were better than the statistics available to Malthus and Ricardo but still quite rudimentary), but he usually did so in a rather impressionistic way and without always establishing a clear connection to his theoretical argument.

9 . Simon Kuznets, “Economic Growth and Income Inequality,” American Economic Review 45, no. 1 (1955): 1– 28.

10 . Robert Solow, “A Contribution to the Theory of Economic Growth,” Quarterly Journal of Economics 70, no. 1 (February 1956): 65– 94.

11 . See Simon Kuznets, Shares of Upper Income Groups in Income and Savings (Cambridge, MA: National Bureau of Economic Research, 1953). Kuznets was an American economist, born in Ukraine in 1901, who settled in the United States in 1922 and became a professor at Harvard after studying at

Columbia University. He died in 1985. He was the first person to study the national accounts of the United States and the first to publish historical data on inequality.

12 . Because it is often the case that only a portion of the population is required to file income tax returns, we also need national accounts in order to measure total income.

13 . Put differently, the middle and working classes, defined as the poorest 90 percent of the US population, saw their share of national income increase from 50– 55 percent in the 1910s and 1920s to 65– 70 percent in the late 1940s.

14 . See Kuznets, Shares of Upper Income Groups, 12– 18. The Kuznets curve is sometimes referred to as "the inverted-U curve." Specifically, Kuznets suggests that growing numbers of workers move from the poor agricultural sector into the rich industrial sector. At first, only a minority benefits from the wealth of the industrial sector, hence inequality increases. But eventually everyone benefits, so inequality decreases. It should be obvious that this highly stylized mechanism can be generalized. For example , labor can be transferred between industrial sectors or between jobs that are more or less well paid.

15 . It is interesting to note that Kuznets had no data to demonstrate the increase of inequality in the nineteenth century, but it seemed obvious to him (as to most observers) that such an increase had occurred.

16 . As Kuznets himself put it: "This is perhaps 5 percent empirical information and 95 percent speculation, some of it possibly tainted by wishful thinking." See Kuznets, Shares of Upper Income Groups, 24– 26.

17 . "The future prospect of underdeveloped countries within the orbit of the free world" (28).

18 . In these representative-agent models, which have become ubiquitous in economic teaching and research since the 1960s, one assumes from the outset that each agent receives the same wage, is endowed with the same wealth, and enjoys the same sources of income, so that growth proportionately benefits all social groups by definition. Such a simplification of reality may be justified for the study of certain very specific problems but clearly limits the set of economic questions one can ask.

19 . Household income and budget studies by national statistical agencies rarely date back before 1970 and tend to seriously underestimate higher incomes, which is problematic because the upper income decile often owns as much as half the national wealth. Tax records, for all their limitations, tell us more about high incomes and enable us to look back a century in time.

20 . See Thomas Piketty, Les hauts revenus en France au 20e siècle: Inégalités et redistributions 1901– 1998 (Paris: Grasset, 2001). For a summary, see "Income Inequality in France, 1901– 1998," Journal of Political Economy 111, no. 5 (2003): 1004– 42.

21 . See Anthony Atkinson and Thomas Piketty, Top Incomes over the Twentieth Century: A Contrast between Continental-European and English-Speaking Countries (Oxford: Oxford University Press, 2007), and Top Incomes: A Global Perspective (Oxford: Oxford University Press, 2010).

22 . See Thomas Piketty and Emmanuel Saez, “Income Inequality in the United States, 1913– 1998,” Quarterly Journal of Economics 118, no. 1 (February 2003): 1– 39.

23 . A complete bibliography is available in the online technical appendix . For an overview, see also Anthony Atkinson, Thomas Piketty, and Emmanuel Saez, “Top Incomes in the Long-Run of History,” Journal of Economic Literature 49, no. 1 (March 2011): 3– 71.

24 . It is obviously impossible to give a detailed account of each country in this book, which offers a general overview. Interested readers can turn to the complete data series, which are available online at the WTID website (http:// topincomes.parisschoolofeconomics.eu) as well as in the more technical books and articles cited above. Many texts and documents are also available in the online technical appendix (http:// piketty.pse.ens.fr/ capital21c).

25 . The WTID is currently being transformed into the World Wealth and Income Database (WWID), which will integrate the three subtypes of complementary data. In this book I will present an overview of the information that is currently available.

26 . One can also use annual wealth tax returns in countries where such a tax is imposed in living individuals, but over the long run estate tax data are easier to come by.

27 . See the following pioneering works: R.J. Lampman, The Share of Top Wealth-Holders in National Wealth, 1922– 1956 (Princeton: Princeton University Press, 1962); Anthony Atkinson and A.J. Harrison, Distribution of Personal Wealth in Britain, 1923– 1972 (Cambridge: Cambridge University Press, 1978).

28 . See Thomas Piketty, Gilles Postel-Vinay, and Jean-Laurent Rosenthal, “Wealth Concentration in a Developing Economy: Paris and France, 1807– 1994,” American Economic Review 96 , no. 1 (March 2006): 236– 56.

29 . See Jesper Roine and Daniel Waldenström, “Wealth Concentration over the Path of Development: Sweden, 1873– 2006,” Scandinavian Journal of Economics 111, no. 1 (March 2009): 151– 87.

30 . See Thomas Piketty , “On the Long -Run Evolution of Inheritance: France 1820– 2050,” École d’économie de Paris, PSE Working Papers (2010). Summary version published in Quarterly Journal of Economics 126, no. 3 (2011): 1071– 1131.

31 . See Thomas Piketty and Gabriel Zucman, “Capital Is Back: Wealth-Income Ratios in Rich Countries, 1700– 2010” (Paris: École d’économie de Paris, 2013).

32 . See esp. Raymond Goldsmith, Comparative National Balance Sheets: A Study of Twenty Countries, 1688– 1978 (Chicago: University of Chicago Press, 1985). More complete references may be found in the online technical appendix.

33 . See A.H. Jones, American Colonial Wealth: Documents and Methods (New York: Arno Press, 1977), and Adeline Daumard, Les fortunes françaises au 19e siècle: Enquête sur la répartition et la composition

des capitaux privés à Paris, Lyon, Lille, Bordeaux et Toulouse d'après l'enregistrement des déclarations de successions, (Paris: Mouton, 1973).

34 . See in particular François Simiand, Le salaire, l'évolution sociale et la monnaie (Paris: Alcan, 1932); Ernest Labrousse, Esquisse du mouvement des prix et des revenus en France au 18e siècle (Paris: Librairie Dalloz, 1933); Jean Bouvier , François Furet, and M. Gilet, Le mouvement du profit en France au 19e siècle: Matériaux et études (Paris: Mouton, 1965).

35 . There are also intrinsically intellectual reasons for the decline of economic and social history based on the evolution of prices, incomes, and fortunes (sometimes referred to as "serial history"). In my view, this decline is unfortunate as well as reversible . I will come back to this point.

36 . This destabilizing mechanism (the richer one is, the wealthier one gets) worried Kuznets a great deal, and this worry accounts for the title of his 1953 book Shares of Upper Income Groups in Income and Savings. But he lacked the historical distance to analyze it fully. This force for divergence was also central to James Meade's classic Efficiency, Equality, and the Ownership of Property (London: Allen and Unwin, 1964), and to Atkinson and Harrison, Distribution of Personal Wealth in Britain, which in a way was the continuation of Meade's work. Our work follows in the footsteps of these authors.