Journal of Economic Literature 2014, 52(2), 1–16
http://dx.doi.org/10.1257/jel.52.2.1

The Return of "Patrimonial Capitalism": A Review of Thomas Piketty's *Capital in the Twenty-First Century*

Branko Milanovic*

Capital in the Twenty-First Century *by Thomas Piketty provides a unified theory of the functioning of the capitalist economy by linking theories of economic growth and functional and personal income distributions. It argues, based on the long-run historical data series, that the forces of economic divergence (including rising income inequality) tend to dominate in capitalism. It regards the twentieth century as an exception to this rule and proposes policies that would make capitalism sustainable in the twenty-first century.* (*JEL* D31, D33, E25, N10, N30, P16)

1. *Introduction*

I am hesitant to call Thomas Piketty's new book *Capital in the Twenty-First Century* (*Le capital au XXI^e siècle* in the French original) one of the best books on economics written in the past several decades. Not that I do not believe it is, but I am careful because of the inflation of positive book reviews and because contemporaries are often poor judges of what may ultimately prove to be influential. With these two caveats, let me state that we are in the presence of one of the watershed books in economic thinking.

Piketty is mostly known as a researcher of income inequality. His book *Les hauts revenus en France au XX^e siècle: Inégalités et redistributions, 1901–1998*, published in 2001, was the basis for several influential papers published in the leading American economic journals. In the book, Piketty documented, using fiscal sources, the rise (until the World War I), the fall (between 1918 and the late 1970s), and then again the rise in the share of the top income groups in France. Piketty revived the methodology originally used by the two pioneers of income distribution studies—Vilfredo Pareto and Simon Kuznets. It consists of the use of tax data, rather than household surveys and, as such, is especially powerful in uncovering the distribution of top incomes. This focus on the top makes both economists and the general public more aware of the rich and their

* World Bank, Research Department. I am grateful to the editor, Steven Durlauf, for many detailed and very useful comments and to Ann Harrison, Christoph Lakner, Peter Lanjouw, Niels Planel, and Leandro Prados de la Escosura, who read and commented on the first version of the text.
† Go to http://dx.doi.org/10.1257/jel.52.2.1 to visit the article page and view author disclosure statement(s).

income levels than do broader distributional studies that are more concerned with overall measures of inequality like Gini. Piketty's French study was soon followed by a similar long-term study of top incomes in the United Kingdom (Atkinson 2003), the United States (Piketty and Saez 2003), the rest of Europe and the developed world (Atkinson and Piketty 2007), and, most recently, in a number of emerging market economies (Atkinson and Piketty 2010; Alvaredo et al. 2013). The work that is principally associated with these authors includes now many long-run studies covering, in some cases, a century or even two, from more than twenty countries. An impressive interactive database "World Top Incomes Database" (http://topincomes.g-mond.parisschoolofeconomics.eu/) has been created. Currently (October 2013), it contains the data from twenty-seven countries.

The prominence of the work of Piketty and his associates has also been helped by the revived interest in inequality, which coincided with the onset of the Great Recession and the realization that, in the United States, incomes around the median have been stagnant in real terms for almost forty years, while the top 1 percent, or even more narrowly the top 0.1 percent, have dramatically increased their share of total income (reaching for the top 1 percent some 1/5 of total income). The rise in the political importance of inequality, exemplified in the United States by political activism associated with the *Occupy* movement, its *99 percent versus 1 percent* slogan, and John Edwards's political rhetoric of "two Americas," had its empirical basis in the work done by Piketty and Saez (2003). Their famous graphs of the income shares of the U.S. top decile, top 1 percent, and top 0.1 percent showing that, at the turn of the twenty-first century, the rich's income shares approached the high values of the Roaring Twenties, are now ubiquitous in the popular media. But the origin of the graphs goes back to Piketty's 2001 book on top incomes in France.

A reader who knows Piketty from this previous work would naturally expect *Capital in the Twenty-First Century* to focus on income concentration. He or she will not be disappointed. The international evidence of income concentration is described and explained probably more clearly than ever. However, this is not the only important part of the book. The key contribution is Piketty's analysis of capitalism. Issues of inequality are only one facet of that analysis. Piketty's unstated objective is nothing less than a unification of growth theory with the theories of functional and personal income distributions, and thus a comprehensive description of a capitalist economy.

The book is divided into four parts and sixteen chapters. The four parts are as follows: first, some "clearing of the decks," which consists mostly of definitions, national accounts identities, and relationships to be used later; second, focus on the capital–income ratio and functional distribution of national income; third, inequality in interpersonal distributions of wages, property incomes, and wealth; and fourth, policy recommendations. Capital, as the title suggests, is at the center of the book. It is a huge and extremely rich book. Suffice it to say that it presents two to three centuries of empirical data on capital and output, national income distributions, the rate of return on capital, inflation, inheritance flows, and more for the most important rich economies (France, the United Kingdom, the United States, and somewhat less Germany, Japan, Sweden, and Canada). The book's range is immense: from the exchange rate of the *livre tournois* on the eve of the French Revolution to the 2013 Cypriot financial crisis; from the capitalized values of slaves in the Southern United States to Chinese private foreign holdings today; from the percentage of the population with the right to vote in France under Bourbon Restoration to today's incarceration rates in the United States. In addition, this 700-pages long book is accompanied by an enormous online technical annex (http://piketty.pse.ens.fr/fr/capital21c) that contains all the underlying data used in the book, tables, graphs, references, and the summary of the essential points. So by using less than 1 percent of the total space of Piketty's book and annex, this review will attempt to provide an exposition and assessment of the book's key points and messages.

2. *Fundamental Economic Laws of Capitalism*

To understand Piketty, one must return to the classics of economics. Like David Ricardo, Thomas Robert Malthus, and Karl Marx, Piketty builds a simple "machine" that captures the key features of a capitalist economy. He then uses that machine to illuminate the discussion both of the past and the future. The machine or, in more modern parlance, the "model," consists of one definitional relationship, two fundamental economic laws of capitalism (as they are called by Piketty), and one inequality relationship.

Let's start with the definition (chapter 1) that links the stock of capital (K) to the flow of income (Y). The stock of capital includes all forms of explicit or implicit return-bearing assets: housing (which Piketty, unlike many authors, treats as an integral part of capital), land, machinery, financial capital in the form of cash, bonds and shares, intellectual property, and even human persons at the time of legalized slavery. Thus defined capital is more akin to what is often called wealth.[1] The ratio between capital and annual income is called β. From historical studies of France, the United Kingdom, and the United States (chapter 3), Piketty establishes that β has, from the time of the French Revolution to today, followed a U-shaped pattern. It was high, reaching a value of about seven in France and the United Kingdom before World War I (and around five in the contemporary United States), and then declined by more than half during the next fifty years in continental Europe and the United Kingdom (and to less than four in the United States).[2] In the past thirty years, however, the ratio has begun to rise again, reaching, or coming close to, the values from the turn of the twentieth century.

This U-shaped curve of the K/Y ratio was known to the readers of Piketty's previous work. In this book, he marshals more compelling evidence to show that this is a process that characterizes all advanced capitalist economies. But the full significance of increasing β comes out clearly only when it is combined with Piketty's first fundamental law of capitalism and one key inequality relationship. The first fundamental law states that the share of capital incomes in total national income (α) is equal to the real rate of return on capital (r) multiplied by β.[3]

[1] Piketty uses two terms ("capital" and "patrimoine" = wealth) interchangeably (see chapter 1, p. 47). Regarding land, he rejects the distinction between the "original and indestructible productive powers of the soil" and land improvements, which alone, for some, should be "capital." Similarly, he rejects the distinction between wealth used in "unproductive" and "productive" activities (where only the latter would be called capital). Any asset that enables its owner to receive a return, including the implicit return on housing, *is* capital.

[2] Pre–World War I United States is an interesting case. The North had low values of β (around three), while the South had an almost European-like capital–income ratio of six. The gap was even greater before the Civil War, when the value of slaves in the South, as estimated by Piketty, was about 150 percent of Southern national income (chapter 4). White Southerners were, on average, wealthier than the Northerners even if we exempt slaves. Per capita incomes in the South were also higher until the early-nineteenth century (see Lindert and Williamson 2012).

[3] The first fundamental "law" is in reality an identity. However, we can consider it a "law" of *capitalism* in the sense that in a private-capital economy, the returns on capital are income of capital owners. Differently, suppose that capital is state-owned and returns distributed to all citizens. Then obviously capital share in national income (whether it is close to 1 or not) has no influence on personal income distribution.

Now, if the rate of return on capital remains permanently above the rate of growth of the economy (g)—this is Piketty's key inequality relationship $r > g$—then α increases by definition. This, combined with the increasing β, drives the share of capital in national income arbitrarily close to one. The process has a positive feedback loop: as α increases, not only do capital owners become richer, but, unless they consume the entire return from their capital, more will remain for them to reinvest. The increased saving in turn makes the growth rate of capital exceed further the growth rate of national income and raises β. Thus, not only does higher β lead to higher α but higher α leads to higher β.[4]

This is, in short, how Piketty's machinery works. Take the fact that β has been rising in advanced economies, combine it with a definitional relationship, and assume that $r > g$. The process generates a changing functional distribution of income in favor of capital and, if capital incomes are more concentrated than incomes from labor (a rather uncontroversial fact), personal income distribution will also get more unequal—which, indeed, is what we have witnessed in the past thirty years.[5] So far so good.

The model, however crucially depends on the inequality relationship $r > g$. If $r = g$, then capital and national income increase at the same rate, β is stable, and the share of capital in total output remains the same. Thus, whether Piketty's approach survives or breaks down turns on whether the evidence for $r > g$ is sufficiently strong or not. We shall return to it.

The second fundamental law deals with the long-term determination of β. From basic growth theory, we know that the steady-state capital–output ratio will be equal to the savings rate divided by the rate of growth of the economy. Thus, one can determine the (long-run) equilibrium βs, which may vary between countries. This is an equilibrium condition, not an identity like the first fundamental law. However, the second law plays a rather subsidiary role in Piketty's analysis, and he resorts to it only when he considers where eventually βs may settle in some (perhaps mythical) steady state.[6] Let us now go more carefully over the historical calculations that underlie and support Piketty's model.

3. *Reinterpretation of Recent Economic History*

We have seen that β has been rising in the advanced countries from around 1700 until the First World War. Piketty explains the rise, uncontroversially, as the outcome of a continuing high return on capital acting upon a steadily accumulating capital in an environment that was institutionally favorable to capitalists, rather than to workers. France and the United Kingdom, as well as Germany and Japan (for which the time series however is not as long), display the same movements of the capital–output ratio. The United States less so because it was a "wealth-young" country, in the sense that the colonists had to start from scratch and did not inherit any wealth from the previous generations.

Using very effectively literary examples from Jane Austen and Honoré de Balzac,

[4] The mechanism is reminiscent (but just reminiscent) of Marx's. In Marx, increased "organic composition of capital" (basically higher *K/L* ratio and higher β) leads not only to higher α but through monopolies to greater concentration of income among capitalists and diminished demand for labor. Thus a permanent pool of the unemployed, the "reserve army of labor," is created which allows wages to remain low. None of the latter elements is present in Piketty.

[5] Strictly speaking, the requirement is not only that capital incomes be more concentrated, but that they be positively correlated with total income: as we move up along income distribution, the importance of capital income increases (see also Atkinson 2009).

[6] Note that if $g \rightarrow 0$ (as, we shall see, Piketty thinks), then in the long-run $\beta \rightarrow \infty$ and however small r, the share of capital in total income will be high.

Piketty shows that in a capital-rich society with high returns on capital, as was Europe in the nineteenth century, it often made no sense to work but to concentrate rather on finding a rich spouse or otherwise (by any means) inheriting property. The trade-off between a brilliant career, based on study and work, and a much more lavish lifestyle that could be afforded if one married an heiress is presented with unmatched clarity and brutality to the young Rastignac by the world-savvy Vautrin in Balzac's *Le père Goriot*. This trade-off, called the Rastignac dilemma by Piketty (does it pay to work hard when one can inherit much more by marrying well?), is very well known to the readers of English and French literatures of the nineteenth century.[7] So obvious was the answer that the Rastignac dilemma is not even posed in most cases. No reader of Austen is left in doubt that education is a pleasant activity mostly useful to enhance marriage prospects of young ladies and gentlemen (we are far from human capital here!), work is never to be undertaken (unless characters really get into serious trouble), and everybody's social position is measured by the annual rent he (mostly he) commands. Or, to give an example from Patrick Colquhoun's social table for the early nineteenth-century England: annual income of temporal peers, at £8,000, was estimated ten times that of high-level civil servants, merchants, and manufactures (Milanovic, Lindert, and Williamson 2007).[8] It is back to this, by the most current views, revolved type of society that developed capitalist economies are trending, argues Piketty. They are, he believes, moving toward the income relationships where the Rastignac dilemma will again be relevant.

But why did β, after the period of the Belle Époque,[9] decline precipitously in continental Europe, the United Kingdom, and Japan (and less so in the United States)? It is, Piketty argues, because of physical destruction of capital during the extraordinary period of two world wars and nationalizations afterwards; high taxation of inheritance and "confiscatory" income taxes (both being closely linked to the need to sustain war effort); high inflation that helped debtors versus creditors; and finally, because of the more labor-friendly political atmosphere after World War II. All of these factors were detrimental to capital accumulation, reducing β and the share of capital in national income. It was, however, capitalism's Golden Age, the years of "les trente glorieuses" (1945–75), as they are called in France, or "Wirtschaftswunder" in Germany. The European economies and Japan expanded the fastest in their histories, and the United States at the rate that matched its best performance to date. The European economies and Japan almost fully caught up with the United States in terms of workers' per-hour productivity,[10] the capital–output ratio and net return on capital were low, taxation high, the functional distribution shifted in favor of labor, and the personal income distribution became more

7 The American literature was just slightly behind (because the circumstances were different). But Henry James's *Washington Square* has exactly the same plot, as does the movie "Titanic" (both of which Piketty cites). An almost endless number of such literary examples can be given containing—and this is unique to the nineteenth-century literature—very detailed information on monetary incomes. Incidentally, Balzac was very much appreciated by Marx.

8 Peers were also supposed to have larger families, or more hangers-on, so that, on a per capita basis, the difference was less.

9 *La Belle Époque* normally designates in France a period of the third republic, from the suppression of the Commune in 1871 to the break out of World War I. It is the same period whose description appears in the famous first pages of Keynes' *Economic consequences of the peace*. One is never sure to what extent Piketty uses the term with a slightly ironic touch.

10 See the latest Penn World Table version 8.0 where U.S. per-hour productivity in 2011 is estimated (in 2005 constant PPP dollars) at $55, and French and German at $50.

equal.[11] This was, seen from today's perspective, a Golden Age indeed, whose passing is often lamented (as Piketty points out) by the now aging baby boomers born and raised at that time.

But with the Thatcher–Reagan revolutions in the early 1980s, the Golden Age receded, and capitalism reverted to the form it had in the late-nineteenth century.[12] Capital was already being rebuilt before, both to make up for the losses sustained during the war and through new investments, but from the early 1980s, with reduced taxes on profits and income (a point which Piketty extensively documents), and the quasi elimination of taxes on inheritance, the rebuilding accelerated. β began its steady climb reaching, in the early twenty-first century, values from around a century ago. The growth rate of advanced capitalist economies declined because the convergence came to an end, and both the functional and personal distributions deteriorated; the first moving against labor, the second against everybody but the top 1 percent.

Does this interpretation of economic history differ from many others and how does it relate to the $r > g$ inequality? Piketty's view of the Golden Age is that it was a very special and unrepeatable phenomenon in the history of capitalism. Thanks to the process of convergence, Europe's capitalist economies and Japan grew faster than they would have if they were at the technological frontier. The increasing population growth rate also drove g ever higher (note that g is the sum of population growth and growth of per capita income). Furthermore, institutional factors, including high taxation and the electoral power of communist and left-wing socialist parties in continental Europe, kept r low, and thus, uniquely in the history of capitalism, reversed the inequality $r > g$ (chapter 10). All positive developments during the Golden Age—and this is no exaggeration—flowed from the reversal of that inequality.

Piketty's reinterpretation of the twentieth-century economic history of capitalism sharply contrasts with interpretations of the same period in some influential recent books by top economists and economic historians. Examples include Landes' *The Wealth and Poverty of Nations* (1999), Deaton's *The Great Escape* (2013), Clark's *A Farewell to Alms* (2007), and Acemoglu and Robinson's *Why Nations Fail* (2012). For these authors, the entire period after the Industrial Revolution is seen as a final "enfranchisement" of man from the "brutish and short" Malthusian existence. A well-publicized graph by Clark, based on Maddison's data, illustrates it best: after thousands of years of stagnation, the world's output, starting from the Industrial Revolution, is following an exponential curve to which there is no apparent end. The elixir of economic growth once discovered, whether it be human capital, institutions, control of diseases, or all of them, knows no stopping. But in Piketty's reading of history, this extraordinary exponential curve, while being "ignited" by the Industrial Revolution as well as by the French and American political revolutions, was held "alive" in the twentieth century by the convergence economics, demographic growth, and, paradoxically, cataclysmic developments during the two world wars. This is now coming to an end for the rich countries, and after China (and India,

[11] If we rank countries in increasing order of their GDPs per capita in 1950, their average real GDP per capita growth rates over the next sixty years were: Japan 4.6 percent, Germany 3.3 percent, France 2.4 percent, the United Kingdom 2.0 percent, the United States 1.7 percent. Textbook case of convergence economics.

[12] The Thatcher–Reagan revolution was driven, Piketty writes (chapter 2, p. 164), by the factually correct idea that the United States's (and, to a lesser extent, the United Kingdom's) preeminence was being eroded. But this fact was wrongly interpreted as being due to the bloated welfare state rather than to the general catch-up of the war-ravaged capitalist economies of Europe. In other words, the Thatcher–Reagan revolution changed capitalism, but failed to raise the rate of growth that was its ostensible motivation in the first place.

one would expect) converge to rich countries' income levels and population growth further decelerates, this will indeed be true for the world as a whole. From a convex curve, we are likely to go back to a rather flat line implying barely rising or even stagnant per capita incomes. While other economic historians see the twentieth century as the dawn of even better days to come, Piketty sees it as "el periodo especial" of capitalism. Never to be repeated unless—and that would come in his policy recommendations—we do something very radical.

Indeed, things are different now, after "el periodo especial" of capitalism ended, broadly in the 1980s. First, economic policies, in particular regarding taxation of profits, have changed. Plus, demographic transition (low rate of population growth) now affects all European countries and, to a lesser extent, the United States. This reduces g further. The end of convergence implies that all advanced countries will grow at the rate of technological progress, which, Piketty believes, is around 1–1.5 percent per year. Add to it 1 percent population growth and g cannot exceed 2.5 percent per year. If r remains, as Piketty thinks, at its historical rate of 4–5 percent p.a., all the negative developments from the nineteenth century, encapsulated in the Rastignac dilemma, will be repeated.

Note that long-term growth is given exogenously by technological progress and population growth. The problem is that this new rate, g, is low and will likely be less than the rate of return to capital. It is the distributional effects of the latter (that is, of the $r > g$ inequality) that are deleterious for the society as a whole: they favor property owners over labor, not working over working, make a mockery of equal opportunity and meritocracy, and undermine democracy as the rich use their money to buy policies they like. Piketty does not blame low growth for the Western economies' current predicament: low growth is inevitable once countries have reached a very high level of income. It is the high K/Y ratio, the "dead hand" of the past generations (Fisher 1919), and the high returns on capital that destroy the fabric of today's advanced capitalist societies. "The past devours the future" (chapter 16, p. 571).

4. *Will* r *Always Exceed* g?

But, the reader will ask, if the capital/output ratio increases so much, would not the marginal return to capital diminish? Would not r go down? The "stickiness" of the rate of return is obviously a weak point of Piketty's machinery. He summons a lot of historical evidence to show that r has generally been stable during the last two centuries, despite massive changes in the K/Y ratio. He also argues (chapter 10) that, even if we go further back into the past, to the Roman times, r has been steady at around 5–6 percent (see also Goldsmith 1984, p. 277 and more recently Scheidel and Friesen 2009). A remarkable graph (p. 356 in the book), reproduced below, shows a huge positive gap between r and g from Antiquity to the early twentieth century, its disappearance (or rather, the inversion, $g > r$) for most of the twentieth century, and then recent reemergence. Moreover, Piketty sees, interestingly, today's processes of expanding financial sophistication and international competition for capital as helping keep r high. While many people question financial intermediation and blame it for the onset of the Great Recession, Piketty sees it as helping to uncover new and more productive uses for financial capital, particularly for those who own a lot of it, and maintaining the rate of return high and greater than g. But far from making this high r a good thing for the economy, he regards it, unless checked by higher taxation, as undesirable.

Will the reader be convinced by the argument that the elasticity of substitution between capital and labor is likely to remain

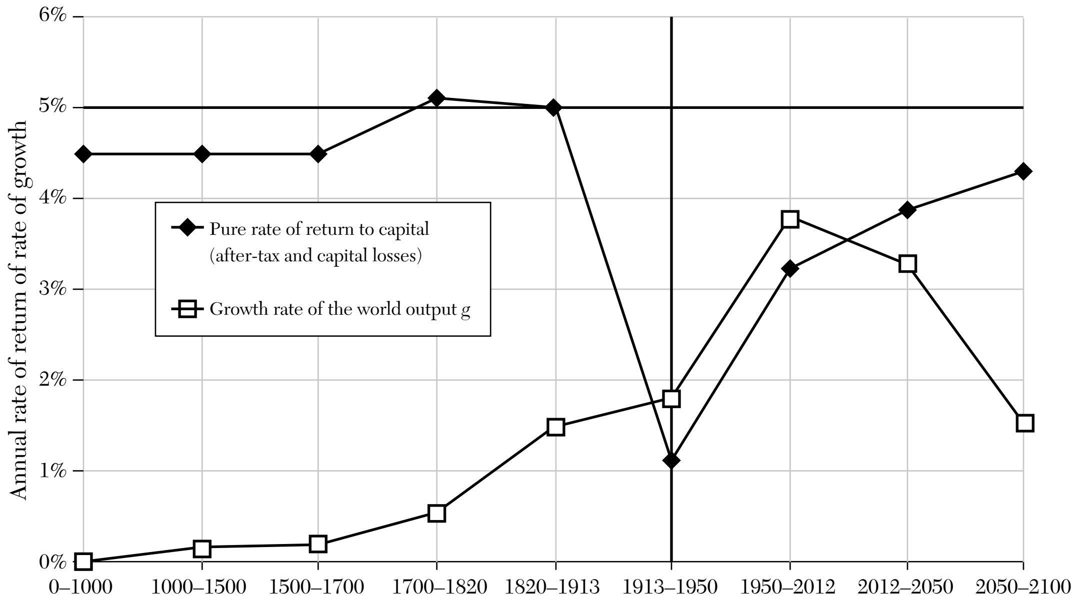

Figure 1. After-Tax Rate of Return versus Growth Rate at the World Level, from Antiquity until 2100

Notes: The rate of return to capital (after-tax and capital losses) fell below the growth rate during the twentieth century, and may again surpass it in the twenty-first century.

Source: http://piketty.pse.ens.fr/files/capital21c/pdf/G10.10.pdf. Reprinted with permission from the publisher.

high, and that an increase in volume of capital will not drive r down?[13] It is difficult to say. Piketty's arguments, particularly those drawn from economic history and the data he has put together, are strong, even persuasive (see for example his estimation of two centuries of net return on capital in France and the United Kingdom in chapter 6). But he may be running against one of the fundamental laws of economic theory: decreasing returns to an abundant factor of production.[14] Of course, it could be said that returns to capital and labor are not determined by marginal productivity, and that r can remain indefinitely high, regardless of the K/L ratio. Piketty is indeed critical of a blind belief that marginal returns always set the price for labor (interestingly, he is less so for capital),

[13] High elasticity of substitution is necessary to make r remain relatively stable in the face of an increase in the K/Y ratio. The extreme example is a society where the entire output is produced by robots. The returns will go entirely to the owners of robots and factoral income distribution would be 100 percent capital, 0 percent labor. Piketty (chapter 6, p. 217) mentions this possibility. Even when Piketty allows for a decrease in r, he tends to believe (chapter 6, p. 221) that the "volume effects" (increase in K) tend, in the long-run, to dominate the "price effects" (decrease in r), thus ensuring that capital share will go up.

[14] While reading the book and writing the review, I realized that the long-run empirical evidence on the rate of return to capital is much weaker than the evidence on the evolution of real wages.

but these arguments are not developed and come in the form of *obiter dicta*.

The validity of Piketty's model thus depends on the key proposition of relative stability of the rate of return on capital in the face of capital deepening. In addition to the empirical evidence he has amassed for this proposition, Piketty defends it on two grounds: high elasticity of substitution between capital and labor, and increasing returns to top wealth holders, made possible by financial globalization, which keep the weighted rate of return on capital high. However, because the proposition of "stickiness of *r*" may, in some cases, run counter to the economic logic and an alternative model of factor remuneration is not presented, we have to treat it as an empirical proposition whose accurateness will be confirmed or not by future developments.

5. *Patrimonial Capitalism*

How does the view of the "return of capital" or even of the "return of the rentier" square with the evidence of the rising importance of education for earning high labor incomes and of something that Piketty and Saez (2003) and Piketty here (last section of chapter 8, pp. 298–302) have documented: the increasing share of high labor incomes among the top 1 percent? Aren't we far from the rentier capitalism of the nineteenth century Europe?

Piketty agrees. High β does not mean exactly the same thing today as more than 100 years ago. We are indeed living again in a "patrimonial capitalism" (a new term coined by Piketty, the inheritance-based capitalism), but with (i) lower concentration of property at the top, (ii) property ownership that has "penetrated" much more deeply into the middle classes, and with (iii) labor incomes received by top managers and bankers that place them, alongside the "rentiers," into the top 1 percent. Thus, among the top 1 percent "cohabit" the "coupon-clipping rentiers" and the "working rich" (chapter 8).[15] Essentially, the modern "patrimonial capitalism" has succeeded in spreading modest property across the entire top half of the income distribution (as opposed to the top 5 percent in the early 1900s) and in creating high labor incomes.

But the ownership of capital, often through inherited wealth, still remains crucially important, and—in a remarkable statistic—Piketty shows that the annual flow of inheritances as a share of national income in today's France, United Kingdom, and Germany is about the same as a century ago: between 8 and 12 percent of national income.[16] Moreover, the percentage of population born in the 1970–1980s that receives inheritance equal to the capitalized lifetime earnings of a worker in the bottom half of the wage distribution is about 12 percent, again the same as a century ago. Among the coming generations it will likely reach 15 percent (chapter 11). In conclusion, Piketty agrees, yes, today's "patrimonial capitalism" is not exactly the same as a century ago: it has a broader base and the concentration of wealth at the top is less; high labor incomes are more frequent. But its key feature—ability to generate a satisfactory income without the pain of work—is still there. Rastignac's dilemma is back.

In some ways, there are three types of capitalism. One "classical" of the Belle Époque with very high correlation between ownership of capital and high incomes; the "convergence capitalism," where that correlation was weaker because of physical destruction of capital, low rates of return,

[15] This point was originally made by Wolff and Zacharias (2009).

[16] This is a useful and new statistic that, in detailed form, Piketty writes, exists only for France and the United Kingdom. It is the sum of all bequests at the time of death and of "fiscal gifts" inter vivos ("donations" in French) in a year divided by yearly national income. This topic is expanded in Piketty (2011).

and rising importance of education; and the third "globalization capitalism," which represents a return to the nineteenth-century version with an important modification—high labor incomes now play a much bigger role.

But are these high labor incomes of bankers and financiers classical labor incomes determined by marginal productivity? Piketty doubts it. He cites evidence to show that such earnings at the top depend mostly on chance events that have nothing to do with the quality of management. (Although taking advantage of luck might require some skill.) He does not think that the marginal product of bankers and top managers can be determined with any certainty: their high wages are the product of a collusive agreement between themselves and the boards (chapter 9). And in order to limit them, Piketty sees a role for high ("confiscatory") taxation. High taxes on the super rich will have minimal revenue effects. But they will dissuade bankers and managers from asking for such exorbitant salaries. As Piketty points out, when, as in the 1960s and the 1970s, the U.S. marginal tax rate on highest incomes was in the neighborhood of 90 percent, it did not make sense for managers to insist on another million if 90 percent of it would end in taxman's coffers. But with a marginal tax rate of 25 percent, the story is entirely different. So, the role of "confiscatory" marginal taxation is not to garner revenue, but to limit high incomes, which are a waste, in the sense that they are not needed to make greater output forthcoming. In addition, taxation is needed to curb political power of the rich. [17]

In a nutshell, societies where the *K/Y* ratio is high, and the rate of return on capital exceeds the rate of growth of the economy, will always tend to convert entrepreneurs into "rentiers." In such societies "the idea that unrestricted competition will put an end to inheritance and move toward a more meritocratic world is a dangerous illusion" (chapter 11, p. 424).

6. *Emerging Market Economies*

Where do China and India (to mention only these two emerging market economies) fit in this scheme? Piketty's discussion is, as it should have been apparent by now, largely dominated by the experience of Western countries. Piketty does not address the question of emerging economies explicitly, but I think that he would (not unlike Marx in the Preface to *Capital*) say that the more developed capitalist economies only show to the less developed the image of their own future. Once China's convergence ends, its growth rate will diminish. Its capital–output ratio (which Piketty does not show) may be low today, because China, like the United States in the eighteenth and nineteenth century, is a "wealth-young" country where wealth is still low compared to the annual flow of income.[18] But it will soon rise. Moreover, China is already experiencing a fast demographic transition, and thus in some fifty years may not be in a position too different from that of today's France. It is just, one could argue, that China, like in a fast-forward movie, has compressed the period of Western-like development to some fifty to seventy years, rather than a century and a half.

[17] Piketty says it clearly (chapter 9, p. 533): "the decrease in the top marginal tax rate led to an explosion of very high incomes, which then increased the political influence of the beneficiaries of the change in the tax law, who had an interest in keeping top tax rates low or even decreasing them further and who could use their windfall to finance political parties, pressure groups and think tanks" (p. 335).

[18] This is indeed the finding reported by Davies et al. (2011) in the first estimate (and its sequels) of global distribution of wealth. The average per adult wealth in China is estimated in 2011 at $21,000 while its GDP per capita is $5,600 (ratio of 3.8). By comparison, the similarly calculated ratios for Switzerland and Italy are 6.5 and 6.1 respectively (data on wealth, from a personal communication by Jim Davies based on his joint work with Rodrigo Lluberas and Anthony Shorrocks).

What about Africa and India? Piketty does not say anything, but again, we can assume that in some more distant future, the same process will befall them, too. This, however, opens a potential crack in Piketty's argument, even if it is fully logically coherent. Namely, that the period of high global growth (on account of convergence) may continue during the entire twenty-first century. And if it does, then the inequality $r > g$ may be overturned as it was during "el periodo especial" and the bleak future described in the book may be postponed by at least another one hundred years.

7. *Dismissal of the Kuznets Curve*

From the fact that in this review only now we come to the issue of interpersonal distribution of income, the reader will have concluded that we are dealing here with an immensely rich book. In some 700 pages are packed so many topics, insights, comments and observations that affect almost all spheres of economics, that no single review can do them justice. But the distribution of income between individuals, and concentration of income at the top, are so much linked with Piketty's work that they must be mentioned as indeed they play an important role.

The well-known findings of a U-shaped income concentration curve over the last one hundred years in most capitalist countries, but especially in the United Kingdom and United States, are reprised here. But they are also placed in a larger framework of a similarly U-shaped movement in the capital–output ratio and the reverse (inverted U-shaped) movement in marginal tax rates. These last two forces basically determine what happens to income concentration: if the capital–income ratio is high and taxes low, incomes will be concentrated. While in the previous work of Piketty and associates, the U-shaped historical movement of income concentration was presented as an important empirical finding, but not more than that, here it is set in an overall economic framework where we see why and how it emerged. Piketty's theory of income concentration can be called a "political theory" because the main forces that shape concentration of incomes are political: wars, high taxation, and inflation.

As in his previous work (*Les hauts revenus en France*) Piketty dismisses Kuznets's view of income inequality increasing at low-income levels, peaking at some middling income, and diminishing as the country becomes rich. He does so on several grounds. First, he does not see any spontaneous forces in capitalism that would drive inequality of incomes down: both Kuznets and Tinbergen saw them in, for example, broader education that drives the wage premium down. Second, he thinks that Kuznets misinterpreted a temporary slackening in inequality after World War II as a sign of a more benign nature of capitalism, while Piketty argues that it was due to the unique and unrepeatable circumstances. There was no "structural transformation" of capitalism (Piketty's French term, *dépassement*, is stronger). Third, he thinks that Kuznets's theory owes its success in part to the optimistic message ("fairy tale," p. 11) that it conveyed during the Cold War, namely that poorer capitalist economies were not forever condemned to high inequality. There was the light at the end of the tunnel: if you followed the Washington prescriptions long enough, not only will mean income grow, but inequality will become less. Finally, Piketty rightly points out that the data available to Kuznets (which Kuznets himself acknowledged in his famous 1954 AEA Presidential Address) were minimal, almost derisory.

Kuznets is not the only economist who is criticized for not using sufficient empirical evidence or reading too much in the very few data points available, as well as producing work that was unduly optimistic, crafted in the spirit of "el periodo especial" and the Cold War's idea of "benign capitalism."[19] Growth theory with constant income shares of capital and labor (Solow–Swann) implied that wage bargaining was meaningless (by pushing for higher wages, you would reduce employment and leave labor share unchanged); Gary Becker's idea of human capital obfuscated the classical distinction between "earned" (labor) and "unearned" (property) income; and Franco Modigliani's ("one-dimensional," p. 384) life-cycle theory with optimal zero assets at the end of one's life is manifestly wrong, as people routinely leave large inheritances. There were, Piketty intimates, also some political undertones that made these theories particularly attractive: constant factor shares led to the shelving of the issue of distribution, human capital put on the same footing of "capitalists" workers and property owners; life-cycle theory implied that we need not worry about inherited wealth. And when one thinks of these theories together, rather than separately, it does seem that they all had a very optimistic halo that may be at odds with what the Zeitgeist is today. It does not necessarily makes them wrong, but Piketty is, I think, right to underline that, from Ricardo and Corn Laws, all successful economic theories tended to reflect the prevalent issues and the spirit of the times. Indeed this may be an advantage for the acceptability of Piketty's theory today, but nobody can tell whether this would remain so in the entire century and beyond.

[19] Keynes is criticized (p. 600) for accepting Bowley constancy of factor shares as a "law" while having access to only a couple of data points from the 1920–1930 Britain. Tinbergen's race between technology and education, recently made popular as the explanation for the rising income inequality in the United States by Goldin and Katz (2010), is thought "simplistic" (p. 305).

8. *Concentration of Incomes versus Inequality or Fiscal Data versus Household Surveys*

Piketty has revolutionized the field of income distribution by the use of fiscal sources and by his focus on top income shares. It is thus striking, although not altogether surprising, to read a book that, in a significant part deals with interpersonal income distribution, but contains not a single reference to household surveys or Gini coefficient. In effect, the latter is dismissed as an "aseptic" measure of inequality because of its lack of intuitive meaning (what does a Gini of 0.45 mean to an average person?). It conveys, Piketty argues, very little information about income distribution. Piketty thinks that it is perhaps that very aseptic feature that contributed to Gini's popularity with statistical offices and politicians. On the contrary, income shares are intuitive and meaningful. Piketty's preference is to split the distribution into four parts: bottom 50 percent, the next 40 percent, top decile, and as a part of it, top 1 percent. It is indeed an appealing way to look at the distribution, even if the reader may at times get tired or confused by a plethora of numbers and shares, which at some point, not unlike the reviled Gini, begin to lose their intuitive appeal.

Piketty's use of fiscal data can also be questioned as the sole (or even the best) approach to the analysis of income distribution. Their advantages are already mentioned: long-term series (a century or more in developed countries), and ability to focus on top incomes and to capture them much better than household surveys.[20] And also to focus on what Piketty correctly calls "concentration"

[20] Partly because household surveys are always samples and rich individuals are few in numbers (although if we had data on the entire population their inclusion may have a nontrivial impact on inequality statistics), and partly because the rich refuse to participate in surveys more often than the nonrich (see e.g., Deaton 2005).

of incomes, rather than inequality. The disadvantages, however, are significant too. Let me run through some of them. Historically, income tax returns have been filed by a small percentage of the population even in today's rich countries, so the long-term series can be of dubious quality. The same is true of developing countries now. At best, we might know the top of an income distribution (the richest tax filers) but have no information about the bulk of the population. Whether the highest tax filers are really the richest people is also questionable, not only because of the obvious incentive to underreport income, or because in the past some particularly rich classes were exempt from taxation. There is also an important, even if technical, detail. Taxes are paid by fiscal units, not by individuals: so the richest fiscal units may change with the tax rules (e.g., whether it is more advantageous to file jointly or separately). Also, the income that is reported to tax authorities is fiscal income, not economists' concept of income. For example, until 1987, interest on government bonds did not appear in U.S. tax returns because it was not subject to taxation; every economist would include it in income, however.

Even if we disregard these problems, Piketty's calculations refer mostly to market income—that is, income before government transfers and taxes. It is quite possible that an increased concentration of market income (such as Piketty and Saez report for the United States) is not accompanied by increased concentration of disposable income if taxes and transfers have become more redistributive. [21] It could even happen that disposable income inequality declines. It did not happen in the case of the United States, as we know from the detailed work by Burkhauser et al. (2012), who have compared non-top-coded U.S. household surveys with Piketty's results.[22] But such a divergent movement cannot be excluded, in principle.

To conclude: the concentration of market income among fiscal units may or may not tell us much about the inequality of disposable income among individuals, which is ultimately the concept we are interested in. I listed previously the caveats that have to go with any use of fiscal data. Piketty mentions some of them (chapter 8, pp. 281–82; chapter 9, pp. 328–31), but does not dwell much on it and essentially ignores them. However, on a more positive note, the revolution that Piketty and his associates have brought to the field has certainly made everybody much more sensitive to the noncapture of top incomes by household surveys and to the need to combine (nobody yet knows how) household surveys that provide reasonably reliable income estimates for the bulk of the population with fiscal data that are undoubtedly better suited for the very top of income distributions. [23]

[21] Direct (and somewhat mindless) comparisons between household surveys that generally present the data on the distribution of postfisc income and fiscal data,which are pre-fisc, are thus biased. The differences, even among the top, are much less when we compare like with the like. Using the 2010 U.S. publicly available micro data from the Current Population Survey (CPS), the top decile's income share in market income is 37 percent versus Piketty's 45 percent. For the top 1 percent, the corresponding numbers are 10 percent and 16 percent. (My calculations are from the "lissified" version of CPS; Piketty's numbers from figures 8.7 and 8.8, p. 472.)

[22] These are internal Current Population Survey data, where highest incomes are not top-coded (that is, reduced so as not to allow the identifications of rich individuals) as they normally are in the surveys made available to the public. But even the latter data do confirm a steady increase in U.S. income inequality when measured by disposable income across persons or households (see e.g., Brandolini and Smeeding 2006, OECD 2011). Thus, in the United States, household surveys and fiscal data do agree on the trend. In some other countries, most notably in India, they do not: household surveys show much more sluggish changes than fiscal data (see Banerjee and Piketty 2005; Deaton 2005).

[23] For recent attempts, see Lakner and Milanovic (2013) and Alvaredo and Gasparini (2013).

9. *Economic Policy Recommendations and Method*

The policy recommendation that has attracted most attention is Piketty's breathtaking call for global taxation of capital. It follows directly from his concern with $r > g$ inequality. The only way to reverse it, if g is exogenously given, is to reduce r. Despite its grandiose and perhaps unrealistic nature (Piketty calls it, possibly in a nod to John Rawls, a "useful utopia"), one would be wrong to dismiss the proposal out of hand. Nobody else believes that it could be implemented right now, and neither does Piketty. But it is based on several strong points.

First, the analysis sketched so far (if one accepts it fully) shows the flaws of an inheritance-based system that favors those who do not need to work for their sustenance. This can be modified by a tax on capital. Second, taxes on capital, whether in the form of taxes on land or inheritance, have a long history—probably the longest of all taxes, precisely because some forms of capital were difficult to hide. Extending this to include all forms of capital seems logically consistent. Third, technical requirements for such a tax (which, in a rudimentary form exists in most advanced economies) are not overwhelming. Housing is already taxed; the market value of different financial instruments is easily ascertainable and the identities of owners known. [24]

The problems are, of course, political. The application of such a tax by individual countries, even the most important, like the United States, can easily lead to the outflow of capital. Thus, international collaboration is indispensable. That collaboration is unlikely to be forthcoming from the countries that currently benefit the most from the opacity of financial transactions and offer tax havens to the rich. Moreover, some emerging market economies may be unwilling to subscribe to it. But a more modest proposal built around the OECD members (or the European Union and the United States) is, Piketty argues, feasible. He takes the recently passed U.S. legislation (Foreign Account Tax Compliance Act) as one of the first steps that could lead to regional taxation of capital. I will not discuss here other pros and cons of such a system. It is a big topic for fiscal specialists, and, as is apparent, it runs into a host of political economy problems. But it is important to put it on the table and not dismiss it out of hand.

Appropriately for such a wide-ranging book, Piketty closes his book with an essay on the method to be used in economics. He regards economics as a social science (where the emphasis is on "social") that can flourish only if (i) it asks important, and not trivial, questions (so adieu *Freakonomics* and randomistas), and (ii) uses empirical and historical methods instead of sterile model-building. These issues have been debated ad nauseum by the economists, and Piketty has nothing new to add to that, except perhaps in a most important way—namely, by showing in his own work how these two desiderata should be combined to create economic works of durable importance.

10. *Closure*

Capital in the Twenty-First Century is a book of huge scope and breadth of vision. It is unabashedly classical in its approach; but its classicism is based on incomparably better and richer data than ever available. It is a very well-written book, erudite but not heavy, of limpid prose where I do not think that I encountered more than half a dozen sentences I could not understand or

[24] It may be interesting for the reader to get a sense of notional taxes proposed by Piketty: 0 percent for capital (wealth) under €1 million, 1 percent for capital between €1 million and €5 million, and 2 percent for capital above €5 million (p. 517).

had to read twice. It is directed mostly to economists, but also to the general educated reader who "does not run away as soon as he sees a number." Piketty uses irony with finesse, particularly in his footnotes where he does not spare powerful political figures or famous economists.

Thomas Piketty has provided a new and extraordinarily rich framework, allowing us to think about the recent increase in inequality not as an isolated phenomenon and to forever discuss the merits and demerits of high-skill biased technological progress versus trade openness, but to see the rising inequality as part of a changing nature of modern capitalism.

I would conclude, as I began, with a personal observation. When reading Piketty's book, it is indeed hard to go back to thinking about anything else: one gets totally absorbed in it. This is perhaps the best compliment that the author of an almost 700-page-long economics book can ever expect to get. Don't take this book on vacation: it will spoil it. Read it at home.

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