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Capital in the Twenty First Century: A Review Essay

In the title of his 1968 review of early research in Cliometrics, Lance Davis opined that "it will never be literature." One of Thomas Piketty's many achievements in Capital in the Twenty First Century is to prove Davis wrong. Piketty's book is both an exemplary work in quantitative economic history and economic literature in the finest sense, written with the Cartesian clarity we associate with the French scientific tradition. It is, moreover, quite remarkably, also *about* literature, about the novels of Jane Austen, Henry James, and Honoré de Balzac, and the nineteenth century wealth dynamics they brought to life.

From the vantage point of the 1960s or 1970s, it seemed apparent that the importance both of inheritance and of highly unequal labor incomes was diminishing and (already) greatly diminished relative to earlier epochs. Piketty demonstrates here (and in related articles with other coauthors) that inequality of labor income has roared back, driven only partly by superstars in the arts, sports, and entertainment worlds, but predominantly by an explosion of compensation for top managers in both financial and nonfinancial firms. This is particularly so in the United States. Indeed, remarks Piketty, such inequality is now "probably higher than in any other society, at any time in the past, anywhere in the world" (p. 265).

But that is only part of the story. To borrow from the title of another of Piketty's works, Capital is Back. Inherited wealth has also staged a remarkable comeback. That resurgence is most advanced in Europe – although the US is not far behind. The observable consequences are a growing share of capital in national income, and a growing inequality in the individual

distribution of income, to which the skew of income from capital and labor both contribute. This inequality is apparent in the rising shares garnered by the top 1 percent and the top one tenth of one percent. Piketty prefers these metrics to the Gini coefficient which, he suggests, reveals too little, particularly about the concentration of income at the top (in 2012, the top one percent of households in the United States garnered 22 percent of all income including capital gains; in the 1970s the comparable statistic was about 9 percent).

Using data from more than twenty countries, Piketty lays out the evidence for these trends, illuminates the critical roles of war and politics in influencing them, discusses the dynamics that will govern their evolution in the future, and proposes remedies to the threat he believes growing inequality poses to democratic governance. The geographical and temporal scope of the quantitative work done by Piketty and his associates on top incomes, on the changing concentration of wealth, and on inheritance dynamics, particularly in France, is simply stunning, and the findings are likely to continue to stand up to critical scrutiny.

The crux of Piketty's explanation of the trends is that conditions prevailing between 1950 and 1980, far from representing a new normal, reflected an anomalous period in world economic history during which the growth rate of output (g) substantially exceeded the rate of return on capital (r). This created a dynamic in which capital's share of national income (α) remained low and inheritance played a diminished role. In a high growth economy the expansion of labor income will generally outpace the growth of income from capital, leading to a diminution of the latter's share. In contrast, Piketty suggests, we are now returning to a world of relatively slower economic growth that will look more like the late nineteenth century. When r substantially exceeds g, capital's share α grows and, due to concentrated ownership, so does inequality of

individual income. Piketty's exposition is compelling, and the trends undeniable, but, as I will show, the machinery leading to his conclusion is not as simple or straightforward as he suggests.

A key variable is β, the ratio of a nation's stock of capital to its flow of national income (I postpone for a moment the important discussion of what Piketty means by capital). β stood as high as 6.5 in Europe in 1910, roughly 4.5 in the United States. Then, between 1913 and 1945, under the influence of war and legislation, it declined to as low as 2.5. That ratio has now almost returned to pre-World War I levels in Europe and the United States.

Why has this happened, and why does it matter? Piketty adduces two "fundamental laws of capitalism." First, $\alpha = \beta r$. This is simply an accounting identity, but it means that if β rises and r doesn't decline, α will rise. The second "law", an equilibrium condition, is that β is increasing in s, where s is the national saving rate net of depreciation, and moves inversely with g, which can be decomposed into the growth of labor input (in hours) and growth in output per hour (labor productivity). Piketty argues that most of the dynamics of β in the twentieth century can be understood in terms of changes in the ratio s/g. In particular, so long as s remains positive, as g declines, β will rise as the capital labor ratio (K/L) increases. And unless and until there is a substantial reduction in r, capital's (pretax) share in national income (α) will also rise. There is positive feedback: because capital ownership has "always and everywhere" been highly concentrated, and because wealthier individuals tend to have higher saving rates, rising β will lead to further increases in s.

The link between high r and high s is, however, not necessary. If capitalists consumed all they earned, then capital-labor ratios would not rise as rapidly, because increases in K/L (and therefore β) would then depend entirely on saving out of labor income. Still, Piketty makes a

persuasive empirical and historical case associating $r > g$ with periods in which α, β, and income inequality were at high and/or increasing levels.

Shouldn't we be cheering? Growth theory teaches us that high saving and capital deepening is, over the long run, one of the keys to higher overall income levels. Piketty suggests reasons why we might hold our applause. First, because of concentrated wealth ownership, rising β will assuredly generate rising shares for top income fractiles, but might not be associated with increases in reproducible assets or average income. Second, Piketty reminds us that highly unequal distributions of income can influence society in fundamental ways.

In particular, we must ask whether we really want to return to a world closer to that of Austen and Balzac, where inheritance or a "good" marriage were the reliable routes to a comfortable existence, and work in a profession or trade was for the little people. John Stuart Mill argued that parents owed their children an upbringing and an education and to provide them with more was positively harmful. A growing role for inheritance can sap initiative, discourage young adults from investing in themselves, and foster a search for shortcuts to the top for the young who do choose to work (keep in mind that in Austen's world, the wealthy rarely worked, for to do so was often an admission of failure, a recognition of how far one had fallen). The concentration of capital ownership combined with its rising share in national income can reduce the quality of elite decision making, at the same time fostering a corrosive culture celebrating forgiveness for the rich and accountability for the poor. It can also produce political responses, violent or, alternatively, mediated by democratic processes.

In developing in painstaking detail data from France, Britain, Germany, the US, and a number of other countries, Piketty casts doubt on the current empirical validity of both the Kuznets curve – the posited u-shaped relationship over time between inequality and per-capita

income – and the Modigliani life cycle saving hypothesis. With respect to the latter, Piketty uses French data to demonstrate little variation across age groups in the inequality of capital ownership. As far as Kuznets, Piketty argues that reduced inequality of income from both labor and capital appears to have been a transient condition characterizing the three decades between 1950 and 1980. In the second decade of the twenty first century, we are now, in both Europe and the United States, approaching levels of inequality evident a century ago.

As for the resurgence of labor income inequality, especially in the Anglo-Saxon countries, Piketty rejects arguments that the rise in the ratio of CEO to production worker pay can be explained by an increase in management's marginal product. He is skeptical that "the race between technology and education… explain(s)… the rise of wage inequality in the US after 1980" (p. 304). Rather, he suggests, cuts in top income tax rates during the 1980s increased incentives for CEOs to push for higher pay. Given their influence on the composition of corporate boards and compensation committees, this created a self-reinforcing process.

One of the big challenges in thinking about Piketty's arguments is that his use of the term capital is both broader and narrower than what is common among economists. By capital, Piketty means marketable wealth, including the value of residential capital as well as undeveloped land, but excluding human capital, except in the case of slave societies. Economists generally restrict attention to produced means of production. They will also often exclude residential structures on the grounds they are "nonproductive." I am completely with Piketty in including residential capital: it produces more than 10 percent of GDP and the fact that it does so largely without the cooperation of labor provides no justification for calling it unproductive.

The situation with respect to site value is more nuanced. Piketty defends its inclusion on the grounds that most of the value of real estate reflects improvements. But whether or not the value of real estate includes capitalized Ricardian rents, it is a component of marketable wealth, and for Piketty, a country's private capital stock is simply the sum of its citizens' net worth. (A country's national capital stock includes public sector capital less liabilities). What he terms capital, however, is not what economists commonly mean by it. In the United States, for example, the Bureau of Economic Analysis publishes estimates of the real value of structures and equipment going back to 1925. These series will not necessarily mirror the dramatic movements in β that Piketty has identified.

One of our challenges moving forward is to do a better job bridging the gap between Piketty's world of wealth, and capital as the BEA defines it. An important reason why movements in these two measures may differ: Individual accumulation of wealth leading to its further concentration, and a rise in α, could take place in the absence of any real change in the stock of reproducible assets. That is, changes in marketable wealth could reflect changing entitlements through ownership to what might be an unchanging output flow. Certainly that was true with the abolition of slavery in the United States, but less dramatic innovations can produce comparable results in either direction.

Some wealth accumulation can reasonably be associated with the accumulation of physical capital and improvements in our ability to produce output. But the accumulation of other fortunes may simply reflect, in part, a shifting of entitlements that is in the aggregate zero sum (or, in the case of the creation of new monopoly rights, negative sum). Piketty's use of the terms capital and marketable wealth interchangeably leads us to consider the implications of

distinguishing between them, and calls our attention to important issues that deserve further exploration.

A related area of ambiguity involves the status of the marginal productivity theory of distribution. Piketty's three page treatment of the two Cambridges controversy (pp. 230-232) is incomplete and will strike some as unfair. Cambridge, England maintained that we could not explain r using the marginal product of a "unit" of capital because, from a theoretical standpoint, combining heterogeneous capital goods into an aggregate required knowledge of prices, which in turn required prior determination of r. The argument, therefore, was circular. The UK's win on this point did not however open up additional areas to which theorists could make useful contributions. Instead it pointed towards the need for a broader political economy approach to income distribution. Piketty agrees that the return to capital is as much about law, politics, power, and institutions as it is about technology. Why then is he dismissive of the controversy, referring to its "sterility"?

The answer, in part, is that it has almost no relevance for his inquiry. Piketty is concerned with wealth, not BEA capital. He looks at a nation's "capital" the way an investment advisor looks at net worth, and measures the return to marketable wealth simply as the sum of all forms of nonwage income. This is perfectly valid and useful. The command over goods and individuals represented by high net worth is quite real. Perhaps the book might more accurately (but less appealingly) have been titled *Marketable Wealth in the Twenty First Century*.

One can't, however, let Piketty off the hook completely. Although not heavily invested in defending the marginal productivity explanation of r, he does slip easily into neoclassical discourse, for example when discussing the elasticity of substitution between capital and labor

and whether r declines with accumulation. That elasticity, he argues, has been above 1 "over a very long period" (p. 220)), implying that capital's share can increase in spite of rises in K/L.

The data are ultimately more important than what we need to assume about parameters in order to make a particular theory "work". Piketty makes the case empirically that the return to holding wealth shows no tendency now to be lower than in 1910 (he might also have considered the role of capital saving innovation during the interwar period in putting downward pressure on β). The liberalization of capital account flows and the demands of the developing world for investable capital, he suggests, are likely to maintain a high floor. This is particularly so for the truly wealthy. Using data from university endowments and other sources, he provides compelling evidence that the larger the portfolio managed, the higher the return.

Piketty proposes a two-pronged approach to addressing the tendency of concentrated ownership of capital as well as capital's share to increase: a steeply progressive tax on all income (including income from capital), and a progressive annual tax on marketable wealth. He acknowledges that the latter could work effectively only in large countries such as the United States and China or in smaller countries if adopted regionally (for example in Europe) and only if data on wealth holding are much more complete. Most countries today have land registries. Piketty envisages registries for all marketable wealth, including equities (both listed and unlisted), bonds, and other financial assets. He points to the revolutionary decree of 1790 which created something like this in France and has made France the premier statistical laboratory for studying the dynamics of wealth accumulation and inheritance. Because of cross border holdings, such information would need to be freely shared among national authorities.

Piketty acknowledges that his proposals will meet stiff political resistance. But he reminds us that the country in which one might expect them to be most unfavorably received today, the

United States, was historically a pioneer in establishing progressive estate taxes and high top marginal income tax rates. Intellectual and cultural climates can change, and Piketty surely would not have written this had he no hopes of stimulating a discussion that might affect policy.

Based on his experience as an assistant professor at MIT, Piketty observes that in the United States, theoretical contributions are prized even when basic stylized facts are not well established. He writes that our discipline "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" (p. 32). Piketty makes it clear he intends his as a work of history as much as economics (p. 33), and reiterates in his conclusion that "historical experience remains our principal source of knowledge" (p. 575).

The book reflects and delivers on that commitment. Piketty explains his methods meticulously, and acknowledges their limitations. He has made accessible the data underlying the long time series on income and wealth inequality in multiple countries. The accompanying narrative is equally impressive, and the literary references, far from a superficial badge of erudition, play a central role in illustrating the dynamics of inheritance and wealth. In his use of data and carefully developed argument to explore important issues, Piketty reminded me again and again of what originally attracted me to economic history.

I found only a few very minor errors. He misspells Peter Lindert's name (p. 343), states that Friedman and Schwartz (1963) begin their empirical analysis in 1857 (rather than 1867) (p. 548) and perhaps most remarkably, refers to Claude rather than Gerard Debreu (p. 654). And his treatment of the contemporary issue of bank regulation does not adequately distinguish between reserve and capital requirements (p. 553). On the other hand, on at least one occasion when I thought he was in error it was I who was mistaken. So my mention of these issues is not to cast

any shadow over the very high quality of scholarship reflected here, but rather to acknowledge that none of us is perfect, and as an indication that I read this book page by page, and word for word. You will as well.

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