Piketty

Notes by MG on Thomas Piketty, 2014, *Capital in the 21st Century*

A. Good elements
   1. Brought distribution of wealth and income back into the public dialogue (or at least the academic one)
      a. However, classical economics dealt with FACTOR distribution, while Piketty conflates land and capital, spiting and misquoting Ricardo.
      b. There has been a steady drumbeat in the background for years, including work by Piketty and Saez, including Gaffney's publications on concentration of farmland, including many others. It's just that leaders of "the conventional wisdom" have relegated this work to little insulated boxes far below the "commanding heights".
      c. Through some magic or mystique, Piketty has thrust distribution back into the limelight. Partly due to his strong claims, advanced with deceptively modest mien.
      d. Piketty himself says that today distribution of income and wealth is a most widely discussed issue. This has long been true in the lower tiers of the academic hierarchy, among "heterodox" and "radical" economists, but not true among popular Nobelists and journalists who are the face of the profession to the lay world.
   2. Piketty faults the "balanced growth" models of Kuznets and Solow. Piketty sees capital "accumulation" overtaking GDP and/or income, so K/Y ratio keeps rising. Overstates the novelty of this finding – should give credit to Turgot with his *denier*, generations of stock and r.e. traders with their P/e ratios, Austrians with their emphasis on capital structure, Case-Shiller with their warnings based on irrational expectations, etc., or Clyde Chambers, Ag Ecst of the 1920s, who warned of overpriced farmland, or Philip Cornick.
   3. Supports his case with mountains of data going back more than 200 years, from many nations.
      a. But many of his data are from government sources, which he himself derides as "the chaste veil of official publications"
   4. Notes drop in K/Y ratio during and brought on by two world wars.
      a. Fails to see this was a product of Gt Depression, 1929-50, and then The Cold War, and not just the two major shooting wars
      b. Fails to see this as a regular cycle, e.g. during Hoyt's cycles of 19th Century
      c. Fails to see that a big element in his "K" is land, and land prices depend on expectations, and on i.r.s, giving different values to same quanta of land and capital. The writer has shown that raising the i.r. actually DOES lower the real quantum of capital in durables, because a higher fraction of the cash flow now goes for interest, leaving less for capital recovery (or Capital Consumption Allowance, "CCA"). To a lesser extent it lowers the rentability of land, hence its "quantity" when measured in money. That kind of detailed financial analysis is missing from Piketty's work.

B. Strong and immodest claims, not always accurate

1. Claims to have a "new theoretical framework that affords a deeper understanding of the underlying mechanisms". This "new" framework is simply invoking the old specter of exponential growth over long time spans, proven by assumption. It is shallower than classical economics by failing to distinguish land from capital.
2. He claims to show "The dynamics of private capital accumulation". Not clear, though, if "accumulation" means social capital **formation** or agglomeration by individuals of both land and capital, e.g. the 1% vs. the 99%. He may use those ideas interchangeably, which would confuse readers, and probably Piketty himself.
3. Faults prevailing modern policies to promote growth because they "have not modified the deep structures of capital and inequality", as he would do. "Deep structures" evokes the rumbling of titanic tectonic forces, which is impressive, but that is only oratory. These "deep structures" want exploring and defining, lest they be only shallow misperceptions.
4. Using exponential growth as a specter goes back at least to Napier. Napier was a great mathematician, but also a major Scottish landowner and titled nobleman and militant protestant in the time of Henry VIII and the enclosures. Later Malthus used it to promote bugaboo of overpopulation, although Malthus distinguished land from capital, as did Ricardo.
5. This "exponential determinism" is not identical with technological determinism, but has a lot in common as a rhetorical device, in that it lets one ignore public policy, especially tax policy, as a determinant of factor ratios.
6. Since Piketty conflates land with K, he must have land growing along with K, exponentially, so there will be no problem of overcrowding land, no diminishing returns to K, no disproportion of factors. In this respect he is like Kuznets and Solow, whom he faults for assuming "balanced growth" in their models and forecasts.
7. Assumes that capital substitutes for labor, so more K, instead of making jobs, destroys them. Neo-liberal ecsts so dominant today assume the opposite, so one cannot simply assume this without refuting, or at least alluding to the other doctrine (for either belief is mostly a doctrine, assumed a priori). One should also refer to J.S. Mill's demonstration that this is a matter of relative prices; and add that the AFTER-TAX relative prices are the determinants.
8. A long series of Luddites, many of them more sophisticated than the original Ned Ludd, have stirred up their readers by assuming capital is primarily or always labor-saving. Karel Capek's play *RUR* dramatized the nightmare. Eli Whitney's cotton gin, Cyrus McCormick's reapers, John Deere's plowshares, Henry Ford's tractors, were all supposed to destroy small farms, but it was not until 1935 that the mean size of American farms began to creep above 160 acres. Viewing tractors superficially they seem to substitute for labor, but what they mainly displaced were draft horses. Before tractors, feed and pasture for draft animals used about 1/3 of all land in farms.
9. He claims his data, mostly from national govt sources, go back 300 years, but the U.S. is only 225 years old, and early data-keeping was sketchy and not every reliable. Germany and Italy and Greece did not exist before ca. 1850. Even Piketty's France,

ancient in song and story, is on its 5th Republic, dating from 1959. At the same time he omits many good and germane data sources, e.g. the U.S. Census of Governments under Allen Manvel's leadership, John McEwan's recent work on *Who Owns Scotland?,* the *TNEC* reports on concentrated control of U.S. industries, Professor Robert Montgomery's *The Brimstone Game* on the U.S. sulfur cartel, Hoyt's *100 Years of Land Values in Chicago, 1833-1933,* etc. Thorold Rogers dug up reams of primary data in his *Six Centuries of Work and Wages* to show that English workers' living standards declined from 1340 to 1900. Epidemiologist Dr. George Miller replicated Rogers' findings, in great medical detail, in *On Fairness and Efficiency*. Two of the best sources are direct responses to Henry George's exposes of the high concentration of landownership. One is the 1894 Report of the Illinois Bureau of Labor Statistics under Governor J.P. Altgeld and Editor Louis F. Post, publishing Lorenz data on the ownership of land in The Loop of Chicago. The other is the U.S. Census of Agriculture, with Lorenz data on the size distribution of farm real estate. From 1900-40 it even reports separate valuations for land and improvements. I call these "Lorenz" data because that is how they are generally known today, but Lorenz did not publish his curve until 1906, while Henry George expounded the basic concept much earlier in demolishing Francis Walker's views on using simple medians to measure farm concentration.

C. Probable causes of the popularity and impact of P.'s work

1. He has a model, expressable in the simplest algebraic terms. Economists love a model; many feel lost at sea without one. Other intellectuals are impressed by them without feeling a need to understand them. This model uses just 3 terms at a time; anyone can see the point Piketty is making. The terms are ill-defined and slippery, but that lets readers of different backgrounds and ideologies fit them into their familiar doctrines, carrying whatever baggage that gives them comfort, without having to think much. A frequent way to incorporate slippery terms into one's discourse is to belittle definitions as quibbling over "mere semantics", urging impatient readers to forge ahead using the writer's preferred baggage.
2. What is new about Piketty's new model? Probably it is his emphasizing the unsustainability of capital formation. Piketty does acknowledge that Marx said it first, although with frequent reservations that irritate Marxists. Piketty is certainly right to fault today's most prominent economists for promoting more and more "growth" via policies that favor property over labor, and in this sense his work is "new".

   It is too bad, though, he did not go further back to acknowledge historical pessimists like Augustus "Gloomy Gus" Spengler. Even Henry George, with all his optimism, coopted the pessimists with his chapter on "How modern civilization may decline". Volumes have been written about the decline and fall of the glory that was Greece and the grandeur that was Rome, and several other ancient civilizations and hegemons from Mongolia to Peru. The theme was so widespread that Shelley, Goldsmith, Byron, and other English poets penned verses about it, still memorized by students of English literature. One might even argue that the archaeological

wonders left to us by failed empires of the past were the **products** of "infinite accumulation", malinvested so as to drain their economies of needed working or "circulating" capital. Cynical economists today routinely mock modern white elephants as "pyramids".

3. Piketty's model is that when the rate of return on capital exceeds the rate of growth of output and income then "capitalism" "automatically generates inequalities". The word "automatically" is another invitation to accept without thinking. That compact statement is so naïve, so brimming with hidden false assumptions, it is hard to take seriously, except that the world does, at least temporarily, so to be topical we devote Section D, below, to dissecting it.
4. Piketty bolsters his model with Himalayan ranges of data from 20 nations over long time periods. Thus he speaks to historians and abstract modelers, both. That by itself is a positive and needed integration, but on the minus side, It takes patience to show that the data are flawed and/or do not fit the model, so the first reaction of an impatient reader or a journalist making a deadline is to bypass the "mere semantics" as nitpicking. "50 million Frenchmen can't be wrong", nor can one Frenchman citing several million data points, is the thinking.
5. The model involves a geometric progression (exponential growth), alleged to have no stopping point short of societal collapse. Thus it goes far back in history to forecast far ahead, giving an impression of a secular perspective in time. Doom forecasts have always boosted media sales.
6. Piketty couples #5 with allusions to unstoppable global warming, etc., although this must be muted by his conflating land with capital. For if land is capital, and accumulation means capital formation, then there are no limits to nature, the environment, natural resources, or other such land categories.
7. Piketty's doom forecast incorporates Marxist elements, although not as much as Marxists would approve. He says we are approaching the "Marxist Apocalypse". "Marx's analysis" (undefined) "remains relevant". This alludes to a "principle of infinite accumulation", which is "a key insight". Not always clear if this refers to accumulation of given wealth by the 1%, or aggregate result of oversaving fortified by unequal distribution - Piketty treats them interchangeably. Piketty avers that the high ratio of private (sic) wealth to national income confirms Marx – even though the "accumulation" cannot be infinite, as in Marx, it is still just as bad.

   Isaiah is easier to understand: "Woe be unto them that ... lay field to field, until there be no place, that they may be alone in the midst of the earth". Millenia of scientific and intellectual progress since *Isaiah* seem to have led us backwards from the obvious to the mystical.

   Many besides Marx have warned against high ratios of asset values to income. Turgot was one, but he called it *le denier*. In London it is the "Years purchase". On Wall St. it is the P/e ratio. In Case-Shiller it is "irrational expectations". So why the emphasis on Marx? I would speculate that his intellectual aura shines brighter in Piketty's Parisian circles than in the U.S.A. Some Americans have also been steeped in Marx. One of them, Michael Hudson, might even be said to have scooped Piketty with this kind of thinking, except that he also credits Marx.

8. Piketty writes that Marx's Apocalypse is more important now than "Ricardo's Principle of Scarcity". Since Ricardo wrote of land scarcity, and distinguished land from capital, Piketty's contrast is mixed and confusing, but probably welcome for those seeking reasons to dismiss Ricardo' Law of Rent, the springboard of Henry George's work.

D. Piketty's model and its faults
   1. Piketty's central model is that r>g, where "r" is the rate of return on capital, and "g" is the % growth rate (the % annual rise of output) of the economy. The gloomy forecast is that r>g, the returns on capital (K) are all retained and plowed back, so the fraction of GDP distributed to capital keeps growing. In Marx this become a forecast he projected into the infinite future. Piketty , more realistically, projects it only far enough to create unbearable class conflict and some kind of revolution.
   2. None of the terms is carefully defined or analyzed, in either mathematical or accounting terms, so supporters and critics may quibble at length about what it all means.
   3. "r" is the AVERAGE return to K, not the marginal, so where capital combines with other inputs, like land or labor, their returns are imputed to K. Piketty conflates land with capital, tempering the distortion, but calculating the rate of return to both durable capital and land entails annualizing costs and returns over periods of time, and there is no clue how Piketty does that. With land the period is infinite; with durable capital it is finite, but as variable as the life of the pyramids vary from a baker's inventory of flour and sugar.
   4. Piketty does not deduct depreciation of capital from its net yield, an accounting absurdity that overstates the income imputable to capital by a large and unknown factor.
   5. As he does not deduct depreciation it is nearly certain that he does not deduct depletion, or the costs of pollution, thus divorcing his work entirely from modern resource and environmental economics – even though those concerns go back at least to Jevons, and probably before. In the years before 1913, when the Haber-Bosch Process alleviated the fear of depleting the world's soils of nitrogen, soil conservationists led the charge against farm property taxation. With Mississippi River flooding, and then the Dust Bowl, soil losses remained a top concern, soon to be followed by depletion of oil wells, and now by global warming.
   6. He does not seem to include capital gains, which are mostly land appreciation, in either the yields of land, or in Y, his denominator.
   7. Piketty defines capital to include all forms of private property, including land. Returns to capital thus include profits, dividends, interest, rents – everything but wages, it seems; and the denominator of the rate of return, r, must include all forms of private property. This seems to open the door to all kinds of double-counting, both in numerator and denominator, leaving us with a ratio whose meaning is complex and unknowable.
   8. "g" is the annual rise of NNP, or national income, taken from official national published data derived from tax returns. Reported taxable income varies widely and

capriciously from any economists' definition of true economic income, as established by Wm. Vickrey, and Joseph Pechman during their long careers, following the pioneering work of R.M. Haig and Henry Simons. If Piketty tries to reconcile these differences in his 700 page tome, I have seen no signs of it.

9. Piketty includes slaves with capital at one point, and at another point not.
10. The share of capital in national income is rK/Y – none of the 3 terms being defined carefully or correctly.
11. Piketty ignores the likelihood of diminishing returns to K, as capital rises faster than Y. That is a by-product of conflating land with K, so as capital grows so do the whole Earth and its resources – an absurd corollary from his methods.
12. The rent of land is net of a) expenses for O&M, and b) Interest and depreciation on durable capital inputs. A low value of "r", as in Piketty 's doom scenario, would leave more of the cash flow for land rent, and since land is part of K, in Piketty's definition, that would lead to a higher value of "r" – with the net result unknown. This is just one of several unknowns that Piketty must clear up before having a coherent thesis for us.
13. Attacks on Piketty's data have just begun, and will grow. Chris Giles, economics Editor of *The Financial Times,* just fired an early shot, accusing Piketty of making up data.

E. Piketty's policy conclusions

1, Like Henry George, Piketty sees a solution to Marxian doom, and the two proposals even bear a superficial likeness. George, as is well known, proposed abating all taxes but one, a tax at a high rate based on the value of land – all forms of land. Piketty proposes a similar tax on the base of ALL forms of private wealth.

2. Piketty's proposal will not withstand the predictable attacks for at least three reasons

a. It includes all forms of wealth, mobile as well as immobile.

b. It is to be worldwide, to avoid evasion maneuvers. But there is no worldwide government nor is there at all likely to be in the foreseeable future.

c. It cannot impose a very high rate, because mobile capital will either never be formed, or will be consumed and dissipated, or find ways to emigrate

3. George's land tax is free of those problems

a. It is only on land, which cannot move between nations.

b. It is to be national or even subnational. The needed governments and collection institutions already exist.

c. It can be levied at very high rates, because land cannot move out of a taxing jurisdiction, which is DEFINED as an area of land.

d. Thus George's tax makes up by its very high rate for its less comprehensive base.

e. Untaxing capital and labor enhance the value of the land-tax base within the jurisdiction that untaxes them.

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"Capital in the Twenty-First Century" by French economist Professor Thomas Piketty (Paris School of Economics, France) is a very readable, information-rich, must-read book about the basis of capital accumulation inequality past, present and future. In short, notwithstanding the expansion of democracy and social welfare in the 20th century, the world's wealth is overwhelmingly concentrated the hands of the rich. Thus, according to Oxfam "[Its] report, Working for the Few, shows that the wealth of the world is divided in two: almost half going to the richest one per cent; the other half to the remaining 99 per cent". Professor Piketty argues in this important book that current wealth inequality endangers democracy and economic sustainability and proposes a progressive annual wealth tax to address the danger.

Reading "Capital in the Twenty-First Century" was a pleasure for me as a scientist because it generally follows the style of the scientific literature of, successively, an Introduction (setting out the problem to be investigated, namely the historical and present basis of wealth immense inequality), Methods (interspersed throughout the book and outlining the approaches and sources used in acquiring the data and their limitations), Results and Discussion (setting out the data in Figures and Tables, and describing and discussing the data, this constituting the bulk of this 685-page book), Conclusions (where are we heading, and what can be done about wealth inequality?) and References (there is a huge section of Notes and documentation). There is an extensive Index.

In summarizing and reviewing "Capital in the Twenty-First Century" I have followed the order used by Professor Piketty in this important book.

Introduction

Piketty's Introduction commences with a key quotation of Article 1 of the 1789 Declaration of the Rights of Man and the Citizen, specifically "Social distinction can be based only on common utility". This sets the tone of the underlying social humanism of the book. Wealth disparity is inevitable given human nature but when does inequality violate common utility and require correction in the interests of humanity?

In his first sentences Piketty immediately sets out the questions he is addressing in his research: "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 a few 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 under way? These are the questions I attempt to answer in this book." (p1).

Piketty reviews the work of his predecessors on inequality, stresses the importance of "putting the distributional question back in the heart of economics", and to this end getting reliable historical data on movements towards more inequality (divergence) or less equality (convergence). Thus, for example, the top decile (top 10%) share of US income was 40- 45% (1920-1940), fell sharply to 35% (1945- 1980) and then climbed steadily to 40-50% (2000-2010) (Figure 1.1, p24).

He defines a key inequality $r > g$ where r is the average annual return on capital (profits, dividends, rents, interest, and other income and expressed as a percentage of the total value of capital) and g is the rate of growth of the economy (the annual increase in income or output).

Piketty's First Law of Capitalism is $\alpha = r \times \beta$ where α is the share in national income from capital, r is the average annual return on capital and β is the capital to income ratio. Piketty's Second Law of Capitalism is $\beta = s/g$ (or rather β asymptotes to s/g in the long-term) where β is the capital to income ratio, s is the savings rate and g is the rate of growth of the economy (p33)...

Thus the capital/income ratio for Germany, France and Britain ranged from 600-700% (1870-1910), thence dipping due to war, depression and social change impacts to 200-300% (in 1950) and climbing steadily back to 400-570% by 2010 (Figure 1.2, p26).

Part 1. Income and Capital

In this section Pickety considers the historical changes in the Capital and Labor split in income that with savings (overwhelmingly by the surplus-blessed rich) lead to divergence of the capital/income ratio. Per capita GDP as a % of world average rose from 140% (1700) to 240% (1990-2012) for Europe –America as compared to 90% (1700) to 40% (1950) and thence 80% (2012) for the non-European world (notably India and China) successively bondage and thence rebounding from colonialism (Figure 1.3, p61).

The world population growth rate rose steadily from 0.2% (0-1000AD) to a peak of 1.8%-1.9% (1950-1990) followed by an observed/predicted decline to 1.4% over the period 2090-2100) (Figure 2.2, p80). Thanks to technology this growth has been associated with a 16-fold increase in per capita output since 1700 (Table 2.1, p73). This has been associated with a huge (about 10-fold) increase in purchasing power. Piketty records that the inflation rates for France, Germany, the US and UK were roughly 0% (1700-1913), variously rose to 3-16% (1913-1950), wavered about 2-10% (1950-1990) before stabilizing at 2% (1990-2012)(Figure 2.6, p108).

Part 2. The dynamics of the capital/income ratio

This section, in addition to adducing economic data from various sources, makes interesting references to the novels of Honoré de Balzac (France) and Jane Austen (Britain) in assessing grossly unequal wealth distribution in Western Europe in the 18th and 19th centuries (for discussion of these extreme, One Percenter-dominated economic realities in England see my book "Jane Austen and the Black Hole of British History").

The value of national capital as a % of national income shows a similar pattern in Britain and France over the period 1770-2020 – agricultural land declined from about 400-500% (1770) to 50% (by 1920) and thence declined further; housing dipped from 100-150% (1770) to a minimum of 50% (1920) and then rebounded to 300-400% in 2010; other domestic capital dropped from 100-150% (1770) to a minimum of about 100% (1920) and rebounded to about 200% (2010); and net foreign capital increased in the 18th - 20th centuries with colonialism to a maximum of 100-150% (1920) and thence largely disappeared due to war impacts and post-1950 decolonization in particular (Figure 3.1, p116 and Figure 3.2, p117).

Analysis of private capital as a % of national income in Britain and France in the period 1770-2010 shows similar patterns of about 700% (One Percenter-dominated 1700-1910), a sharp decline to maintain 300% (1920-1950), followed by an increase to 500-600% (One Percenter-dominated 2010). Over the same period debt-impacted public capital remained at about 0% of national income (Figures 3.5 and 3.6, p128). Similar patterns were revealed from analysis of data for Germany (Figures 4.1-4.4, pp141-145).

However a distinctly different pattern obtained with the US due to the abundance of ethnically-cleansed land and freedom of the colonizers from domestic asset destruction through war. Thus, as a % of national income, there was little net foreign capital; agricultural land declined from 160% (1770) to 50% (1930) and thence declined further;

housing rose from 100% (1770) to 200% (2010); other domestic capital rose from 150% (1770) to 250% (2010); and heavily debt-impacted net public assets grew to 50% by 1770 and have subsequently declined (Figures 4.6-4.8, pp151-154). For similar reasons Canada shows a similar pattern to that of the US (Figure 4.9, p157). However Piketty also records the importance of slavery as private capital in the US, the value of US slaves declining from 250% of national income in 1770 to 0% in 1880 (Figures 4.10 and 4.11, pp160-161).

Of key global importance is the world capital/income ratio that was about 450-500% (1870-1910), declined to 260% (1950) and is observed/projected to steadily increase to 660% (2090) (Figure 5.8, p196). This assumes greater significance when we consider that the top centile (top 1%) currently has ownership of about 50% of this wealth and, as discussed by Piketty, this divergence is likely to increase.

In a key section entitled "The Capital-Labor split in the twenty-first century", Piketty analyses the division of national income between labor and capital. Piketty concludes: "To sum up, modern growth, which is based on the growth of productivity and the diffusion of knowledge, has made it possible to avoid the apocalypse predicted by Marx and to balance the process of capital accumulation. But it has not altered the deep structures of capital – or at any rate has not truly reduced the macroeconomic importance of capital relative to labor" (p234).

Part 3. The structure of inequality

In this section of the book Piketty examines inequality and distribution at the individual level; the marked reduction in inequality in the 20th century; the sharp rise in inequality in the 1970s and 1980s; the relative importance of inherited wealth versus labor; and how the current extraordinarily unequal global distribution of wealth might evolve.

Piketty applies a useful device of considering wealth accumulation by different centiles and deciles of the population, specifically the top 10% ("upper class"), top 1% ("dominant class"), next 9% ("well-to-do"class"), middle 40% ("middle class") and bottom 50% ("lower class"). Piketty then analyses inequality of labor income, capital ownership and total income (labor and capital) of various situations in time and space. Thus in relation to capital ownership Piketty categorizes "low inequality" (a never observed ideal), "medium inequality" (Scandinavia, 1970s, 1980s), "medium-high inequality" (Europe 2010), "high inequality" (US 2010) and "very high inequality" (Europe 1910) (Tables 7.1-7.3, pp247-249).

Thus, to pull out just one example, democracy in the 20th century has seen a big shift in % capital ownership from 5% each in the "middle 40%" and "bottom 50%" in "very high inequality" Europe (1910) to 40% and 10%, respectively, in these classes in Scandinavia in the 1970s and 1980s., with this occurring at the expense of the "top 10%" (Table 7.2, p248).

However the world is heading inexorably back to greater inequality. Thus Piketty predicts that the share of total income in the US in 2030 will be 60% (top 10%), 25% (top 1%), 35% (next 9%), 25% (middle 40%) and 15% (bottom 50%) (Table 7.3, p249).

This decrease in inequality in the 20th century has come at the expense of top capital incomes. Thus in France, while the share of the top decile (top 10%) and top percentile (top 1%) in wages has remained constant between 1910 and 2010 at about 25% and 6%, respectively, their share of the total income that was 45% and 25%, respectively, in 1910, plummeted to a stable 30-35% and 8%, respectively, in 1910-2010 (Figures 8.1 and 8.2, pp272-273). By way of comparison, in the domestically peaceful US the top 10% had 40-45% of total income (1910-1940) with this plunging to a steady 33% (1942-1980) but this took off after 1980, reaching 50% by 2007 in what Piketty describes as an "explosion of US inequality after 1980" (Figure 8.5, p291). Interestingly, the share of wages of the US top 10%

rose from 25% in 1945 to 35% in 2010 (Figure 8.7, p299), this reflecting the importance of a rising "meritocracy" of top doctors, "supermanagers" and entrepreneurs in the US top 10%.

The share in total income of the top 1% in France, Germany, Sweden and Japan declined from about 20% in 1910 to about 8% in 1950 and thence remained low (Figure 9.3, p317). In contrast, in the US, Canada, the UK, Canada and Australia a similar decline occurred from about 20% in 1910 to 6-9% in 1970 but after 1980 the One Percenter share of total income variously increased to 10-18%. A similar pattern obtains with the top 10% in these countries, a phenomenon that Piketty describes as "the rise of the supermanager: an Anglo-Saxon phenomenon" (Figures 9.2-9.8, pp315-324). A similar post-1980 rising income share by the One Percenters is apparent in the emerging economies of India, China, South Africa, Argentina and Colombia (Figure 9.9, p327).

Piketty is highly critical of the One Percenter supermanagers awarding themselves $10 million annual salaries and having a disproportionate political influence ("The takeoff of the supermangers: a powerful force for divergence", pp333-335).

Another difference between Europe and the US is in wealth inequality. Thus, between 1910 and 1950 there was a big drop in the share of total wealth by the top 1% and top 10% in Europe whereas in the US the share of these groups in total wealth slowly increased over the period 1810-2010 with a much smaller downward "blip" between 1910 and 1950 (Figures 10.1-10.6, pp340-349).

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1. Apartheid or a culture- or race-based exclusion and oppression is familiar to us through the now defunct in South Africa and in Apartheid Israel today which excludes all but 14% of Indigenous Palestinians and all but 28% of Indigenous Palestinians living in Palestine from voting for the government ruling all of the former Mandated Palestine (thus other human rights abuses aside, the annual per capita income is $31,537 for Israelis and $2,431 for Occupied Palestinians) . Yet in "free" post-Apartheid democratic South Africa there remains massive wealth inequality that has huge lifestyle, health, education and avoidable mortality consequences (thus other differentials aside, the annual per capita income is $52,200 for White South Africans and $8,700 for Black South Africans [8]). Even within prosperous Western countries there is massive wealth-inequity-based educational inequity that is indeed referred to as Educational Apartheid.

2. Even in prosperous countries like the US, UK and Australia there is huge human preventable mortality that can be linked to deprivation and hence to international wealth inequality. Thus it is estimated that the number of Americans , English/Welsh and Australians who die preventably each year total 1.3 million [10, 11], 112,000 [12] and 66,000, respectively. These avoidable deaths carry an economic cost measured in terms of the risk management-based Value of a Statistical Life (VOSL) which is estimated at about $9 million per person in the US.

3. 17 million people die avoidably each year in the Developing World (minus China) from deprivation and deprivation-exacerbated disease. Indeed it is estimated that 1.3 billion people have died thus in the period 1950-2000, with 1.2 billion dying avoidably in the Third World, mostly in countries formerly ruled by European colonial masters. Yet the example of Cuba shows that with an annual per capita income of about $6,000 and peace, high female literacy, good primary health care and good governance it is possible to achieve zero avoidable mortality and very low infant mortality similar to the best in the world. The notional cost of bringing impoverished Developing countries (excluding China) up to a Cuban level of annual per capita income is estimated to be $16 trillion annually and this can be achieved through a circa 4% annual wealth tax of the kind proposed by Professor Piketty for reasons of democracy and economic sustainability.

4. While debt and inheritance of wealth were significant issues in Professor Piketty's book and the cost of climate change action was discussed (pp567-569), the issues of carbon debt and intergenerational justice were not explored. It is possible to determine the historical carbon debt for all countries in terms of tonnes CO2 pollution. This can be converted to a carbon debt in US dollars simply by multiplying by the cost of converting this CO2 to biochar (carbon) of about $100 per ton CO2. The World's carbon debt is thus estimated to be about $127 trillion. An upwardly revised estimate of world annual greenhouse gas (GHG) pollution that takes the impact of methanogenic livestock production into account is of 63.8 billion tonnes CO2 –equivalent (CO2-e) pollution annually. It has been estimated by leading climate change economist Dr. Chris Hope from 90-Nobel-Laureate Cambridge University that a Carbon Price of $150 per ton CO2-e is required for effective action on climate change. Continued climate change inaction means that the effective Carbon Price is about $0 per ton CO2-e and hence that the World's carbon-based economy is running up an annual Carbon Debt of $150 per ton CO2-e x 63.8 billion tonnes CO2-e = $9.6 trillion per year. This carbon debt that is increasing at $10 trillion per year will have to be met by future generations – an egregious example of "negative inheritance" and intergenerational injustice.

5. Professor Piketty made mention of how economists can present "soft" representations of wealth and income inequity through what he called "the chaste veil of official publications" (p269) . He also pointed out the political power of the One Percenters and Ten Percenters: "After 1980... the decrease in the top marginal income 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 laws, 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" (p335). The harsh reality is that "one man one vote" has become "one dollar one vote" and the Western democracies have become Murdochracies, Lobbyocracies and Corporatocracies in which Big Money purchases people, politicians, parties, policies, public perception of reality and political power, with the Murdoch Media Empire representing a powerful example [18]. Indeed the king-making Murdoch media have strongly rounded on Professor Piketty over his "annual global wealth tax" proposal. Melbourne philosopher Professor Brian Ellis refers to a neoliberal "Corporatocracy" effectively preventing the urgently needed advent of social humanism as an alternative to destructive neoliberalism based on wealth inequality.

Conclusions

"Capital in the Twenty-First Century" by French economist Professor Thomas Piketty is a very important book about the historical and structural basis of capital accumulation and wealth inequality. This must-read book makes a strong case that expanding wealth inequity must be controlled for economic sustainability and democracy reasons and proposes an annual global wealth tax to oppose anti-democracy, anti-social and anti-Humanity domination of the world economy by One Percenter wealth, including inherited wealth. Decent folk who want a just, humane and sustainable world will reject Corporatocracy and support an effective annual wealth tax for democracy and economic justice. The world is badly running out of time to act.

Piketty

"Capital in the Twenty-First Century" by French economist Professor Thomas Piketty (Paris School of Economics, France) is a very readable, information-rich, must-read book about the basis of capital accumulation inequality past, present and future. In short, notwithstanding the expansion of democracy and social welfare in the 20th century, the world's wealth is overwhelmingly concentrated the hands of the rich. Thus, according to Oxfam "[Its] report, Working for the Few, shows that the wealth of the world is divided in two: almost half going to the richest one per cent; the other half to the remaining 99 per cent". Professor Piketty argues in this important book that current wealth inequality endangers democracy and economic sustainability and proposes a progressive annual wealth tax to address the danger.

Reading "Capital in the Twenty-First Century" was a pleasure for me as a scientist because it generally follows the style of the scientific literature of, successively, an Introduction (setting out the problem to be investigated, namely the historical and present basis of wealth immense inequality), Methods (interspersed throughout the book and outlining the approaches and sources used in acquiring the data and their limitations), Results and Discussion (setting out the data in Figures and Tables, and describing and discussing the data, this constituting the bulk of this 685-page book), Conclusions (where are we heading, and what can be done about wealth inequality?) and References (there is a huge section of Notes and documentation). There is an extensive Index.

In summarizing and reviewing "Capital in the Twenty-First Century" I have followed the order used by Professor Piketty in this important book.

Introduction

Piketty's Introduction commences with a key quotation of Article 1 of the 1789 Declaration of the Rights of Man and the Citizen, specifically "Social distinction can be based only on common utility". This sets the tone of the underlying social humanism of the book. Wealth disparity is inevitable given human nature but when does inequality violate common utility and require correction in the interests of humanity?

In his first sentences Piketty immediately sets out the questions he is addressing in his research: "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 a few 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 under way? These are the questions I attempt to answer in this book." (p1).

Piketty reviews the work of his predecessors on inequality, stresses the importance of "putting the distributional question back in the heart of economics", and to this end getting reliable historical data on movements towards more inequality (divergence) or less equality (convergence). Thus, for example, the top decile (top 10%) share of US income was 40- 45% (1920-1940), fell sharply to 35% (1945- 1980) and then climbed steadily to 40-50% (2000-2010) (Figure 1.1, p24).

He defines a key inequality r > g where r is the average annual return on capital (profits, dividends, rents, interest, and other income and expressed as a percentage of the total value of capital) and g is the rate of growth of the economy (the annual increase in income or output).

Piketty's First Law of Capitalism is $\alpha = r \times \beta$ where α is the share in national income from capital, r is the average annual return on capital and β is the capital to income ratio. Piketty's Second Law of Capitalism is $\beta = s/g$ (or rather β asymptotes to s/g in the long-term) where β is the capital to income ratio, s is the savings rate and g is the rate of growth of the economy (p33)...

Thus the capital/income ratio for Germany, France and Britain ranged from 600-700% (1870-1910), thence dipping due to war, depression and social change impacts to 200-300% (in 1950) and climbing steadily back to 400-570% by 2010 (Figure 1.2, p26).

Part 1. Income and Capital

In this section Pickety considers the historical changes in the Capital and Labor split in income that with savings (overwhelmingly by the surplus-blessed rich) lead to divergence of the capital/income ratio. Per capita GDP as a % of world average rose from 140% (1700) to 240% (1990-2012) for Europe –America as compared to 90% (1700) to 40% (1950) and thence 80% (2012) for the non-European world (notably India and China) successively bondage and thence rebounding from colonialism (Figure 1.3, p61).

The world population growth rate rose steadily from 0.2% (0-1000AD) to a peak of 1.8%-1.9% (1950-1990) followed by an observed/predicted decline to 1.4% over the period 2090-2100) (Figure 2.2, p80). Thanks to technology this growth has been associated with a 16-fold increase in per capita output since 1700 (Table 2.1, p73). This has been associated with a huge (about 10-fold) increase in purchasing power. Piketty records that the inflation rates for France, Germany, the US and UK were roughly 0% (1700-1913), variously rose to 3-16% (1913-1950), wavered about 2-10% (1950-1990) before stabilizing at 2% (1990-2012)(Figure 2.6, p108).

Part 2. The dynamics of the capital/income ratio

This section, in addition to adducing economic data from various sources, makes interesting references to the novels of Honoré de Balzac (France) and Jane Austen (Britain) in assessing grossly unequal wealth distribution in Western Europe in the 18th and 19th centuries (for discussion of these extreme, One Percenter-dominated economic realities in England see my book "Jane Austen and the Black Hole of British History").

The value of national capital as a % of national income shows a similar pattern in Britain and France over the period 1770-2020 – agricultural land declined from about 400-500% (1770) to 50% (by 1920) and thence declined further; housing dipped from 100-150% (1770) to a minimum of 50% (1920) and then rebounded to 300-400% in 2010; other domestic capital dropped from 100-150% (1770) to a minimum of about 100% (1920) and rebounded to about 200% (2010); and net foreign capital increased in the 18th - 20th centuries with colonialism to a maximum of 100-150% (1920) and thence largely disappeared due to war impacts and post-1950 decolonization in particular (Figure 3.1, p116 and Figure 3.2, p117).

Analysis of private capital as a % of national income in Britain and France in the period 1770-2010 shows similar patterns of about 700% (One Percenter-dominated 1700-1910), a sharp decline to maintain 300% (1920-1950), followed by an increase to 500-600% (One Percenter-dominated 2010). Over the same period debt-impacted public capital remained at about 0% of national income (Figures 3.5 and 3.6, p128). Similar patterns were revealed from analysis of data for Germany (Figures 4.1-4.4, pp141-145).

However a distinctly different pattern obtained with the US due to the abundance of ethnically-cleansed land and freedom of the colonizers from domestic asset destruction through war. Thus, as a % of national income, there was little net foreign capital; agricultural land declined from 160% (1770) to 50% (1930) and thence declined further;

housing rose from 100% (1770) to 200% (2010); other domestic capital rose from 150% (1770) to 250% (2010); and heavily debt-impacted net public assets grew to 50% by 1770 and have subsequently declined (Figures 4.6-4.8, pp151-154). For similar reasons Canada shows a similar pattern to that of the US (Figure 4.9, p157). However Piketty also records the importance of slavery as private capital in the US, the value of US slaves declining from 250% of national income in 1770 to 0% in 1880 (Figures 4.10 and 4.11, pp160-161).

Of key global importance is the world capital/income ratio that was about 450-500% (1870-1910), declined to 260% (1950) and is observed/projected to steadily increase to 660% (2090) (Figure 5.8, p196). This assumes greater significance when we consider that the top centile (top 1%) currently has ownership of about 50% of this wealth and, as discussed by Piketty, this divergence is likely to increase.

In a key section entitled "The Capital-Labor split in the twenty-first century", Piketty analyses the division of national income between labor and capital. Piketty concludes: "To sum up, modern growth, which is based on the growth of productivity and the diffusion of knowledge, has made it possible to avoid the apocalypse predicted by Marx and to balance the process of capital accumulation. But it has not altered the deep structures of capital – or at any rate has not truly reduced the macroeconomic importance of capital relative to labor" (p234).

Part 3. The structure of inequality

In this section of the book Piketty examines inequality and distribution at the individual level; the marked reduction in inequality in the 20th century; the sharp rise in inequality in the 1970s and 1980s; the relative importance of inherited wealth versus labor; and how the current extraordinarily unequal global distribution of wealth might evolve.

Piketty applies a useful device of considering wealth accumulation by different centiles and deciles of the population, specifically the top 10% ("upper class"), top 1% ("dominant class"), next 9% ("well-to-do"class"), middle 40% ("middle class") and bottom 50% ("lower class"). Piketty then analyses inequality of labor income, capital ownership and total income (labor and capital) of various situations in time and space. Thus in relation to capital ownership Piketty categorizes "low inequality" (a never observed ideal), "medium inequality" (Scandinavia, 1970s, 1980s), "medium-high inequality" (Europe 2010), "high inequality" (US 2010) and "very high inequality" (Europe 1910) (Tables 7.1-7.3, pp247-249).

Thus, to pull out just one example, democracy in the 20th century has seen a big shift in % capital ownership from 5% each in the "middle 40%" and "bottom 50%" in "very high inequality" Europe (1910) to 40% and 10%, respectively, in these classes in Scandinavia in the 1970s and 1980s., with this occurring at the expense of the "top 10%" (Table 7.2, p248).

However the world is heading inexorably back to greater inequality. Thus Piketty predicts that the share of total income in the US in 2030 will be 60% (top 10%), 25% (top 1%), 35% (next 9%), 25% (middle 40%) and 15% (bottom 50%) (Table 7.3, p249).

This decrease in inequality in the 20th century has come at the expense of top capital incomes. Thus in France, while the share of the top decile (top 10%) and top percentile (top 1%) in wages has remained constant between 1910 and 2010 at about 25% and 6%, respectively, their share of the total income that was 45% and 25%, respectively, in 1910, plummeted to a stable 30-35% and 8%, respectively, in 1910-2010 (Figures 8.1 and 8.2, pp272-273). By way of comparison, in the domestically peaceful US the top 10% had 40-45% of total income (1910-1940) with this plunging to a steady 33% (1942-1980) but this took off after 1980, reaching 50% by 2007 in what Piketty describes as an "explosion of US inequality after 1980" (Figure 8.5, p291). Interestingly, the share of wages of the US top 10%

rose from 25% in 1945 to 35% in 2010 (Figure 8.7, p299), this reflecting the importance of a rising "meritocracy" of top doctors, "supermanagers" and entrepreneurs in the US top 10%.

The share in total income of the top 1% in France, Germany, Sweden and Japan declined from about 20% in 1910 to about 8% in 1950 and thence remained low (Figure 9.3, p317). In contrast, in the US, Canada, the UK, Canada and Australia a similar decline occurred from about 20% in 1910 to 6-9% in 1970 but after 1980 the One Percenter share of total income variously increased to 10-18%. A similar pattern obtains with the top 10% in these countries, a phenomenon that Piketty describes as "the rise of the supermanager: an Anglo-Saxon phenomenon" (Figures 9.2-9.8, pp315-324). A similar post-1980 rising income share by the One Percenters is apparent in the emerging economies of India, China, South Africa, Argentina and Colombia (Figure 9.9, p327).

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1. Apartheid or a culture- or race-based exclusion and oppression is familiar to us through the now defunct in South Africa and in Apartheid Israel today which excludes all but 14% of Indigenous Palestinians and all but 28% of Indigenous Palestinians living in Palestine from voting for the government ruling all of the former Mandated Palestine (thus other human rights abuses aside, the annual per capita income is $31,537 for Israelis and $2,431 for Occupied Palestinians) . Yet in "free" post-Apartheid democratic South Africa there remains massive wealth inequality that has huge lifestyle, health, education and avoidable mortality consequences (thus other differentials aside, the annual per capita income is $52,200 for White South Africans and $8,700 for Black South Africans [8]). Even within prosperous Western countries there is massive wealth-inequity-based educational inequity that is indeed referred to as Educational Apartheid.

2. Even in prosperous countries like the US, UK and Australia there is huge human preventable mortality that can be linked to deprivation and hence to international wealth inequality. Thus it is estimated that the number of Americans , English/Welsh and Australians who die preventably each year total 1.3 million [10, 11], 112,000 [12] and 66,000, respectively. These avoidable deaths carry an economic cost measured in terms of the risk management-based Value of a Statistical Life (VOSL) which is estimated at about $9 million per person in the US.

3. 17 million people die avoidably each year in the Developing World (minus China) from deprivation and deprivation-exacerbated disease. Indeed it is estimated that 1.3 billion people have died thus in the period 1950-2000, with 1.2 billion dying avoidably in the Third World, mostly in countries formerly ruled by European colonial masters. Yet the example of Cuba shows that with an annual per capita income of about $6,000 and peace, high female literacy, good primary health care and good governance it is possible to achieve zero avoidable mortality and very low infant mortality similar to the best in the world. The notional cost of bringing impoverished Developing countries (excluding China) up to a Cuban level of annual per capita income is estimated to be $16 trillion annually and this can be achieved through a circa 4% annual wealth tax of the kind proposed by Professor Piketty for reasons of democracy and economic sustainability.

4. While debt and inheritance of wealth were significant issues in Professor Piketty's book and the cost of climate change action was discussed (pp567-569), the issues of carbon debt and intergenerational justice were not explored. It is possible to determine the historical carbon debt for all countries in terms of tonnes CO2 pollution. This can be converted to a carbon debt in US dollars simply by multiplying by the cost of converting this CO2 to biochar (carbon) of about $100 per ton CO2. The World's carbon debt is thus estimated to be about $127 trillion. An upwardly revised estimate of world annual greenhouse gas (GHG) pollution that takes the impact of methanogenic livestock production into account is of 63.8 billion tonnes CO2 –equivalent (CO2-e) pollution annually. It has been estimated by leading climate change economist Dr. Chris Hope from 90-Nobel-Laureate Cambridge University that a Carbon Price of $150 per ton CO2-e is required for effective action on climate change. Continued climate change inaction means that the effective Carbon Price is about $0 per ton CO2-e and hence that the World's carbon-based economy is running up an annual Carbon Debt of $150 per ton CO2-e x 63.8 billion tonnes CO2-e = $9.6 trillion per year. This carbon debt that is increasing at $10 trillion per year will have to be met by future generations – an egregious example of "negative inheritance" and intergenerational injustice.

5. Professor Piketty made mention of how economists can present "soft" representations of wealth and income inequity through what he called "the chaste veil of official publications" (p269) . He also pointed out the political power of the One Percenters and Ten Percenters: "After 1980... the decrease in the top marginal income 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 laws, 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" (p335). The harsh reality is that "one man one vote" has become "one dollar one vote" and the Western democracies have become Murdochracies, Lobbyocracies and Corporatocracies in which Big Money purchases people, politicians, parties, policies, public perception of reality and political power, with the Murdoch Media Empire representing a powerful example [18]. Indeed the king-making Murdoch media have strongly rounded on Professor Piketty over his "annual global wealth tax" proposal. Melbourne philosopher Professor Brian Ellis refers to a neoliberal "Corporatocracy" effectively preventing the urgently needed advent of social humanism as an alternative to destructive neoliberalism based on wealth inequality.

Conclusions

"Capital in the Twenty-First Century" by French economist Professor Thomas Piketty is a very important book about the historical and structural basis of capital accumulation and wealth inequality. This must-read book makes a strong case that expanding wealth inequity must be controlled for economic sustainability and democracy reasons and proposes an annual global wealth tax to oppose anti-democracy, anti-social and anti-Humanity domination of the world economy by One Percenter wealth, including inherited wealth. Decent folk who want a just, humane and sustainable world will reject Corporatocracy and support an effective annual wealth tax for democracy and economic justice. The world is badly running out of time to act.