Inequality – Comments on Thomas Piketty,
the Decline of Manufacturing and CEO Compensation
May 29, 2014

Thomas Piketty's *Capital in the Twenty-first Century* is very much in the news.[1] Almost every day, a new review, paean or critique appears. The book is provocative and raises questions about income inequality and economic control that many find important. It is written in a literary, rather than a technical, style that makes it accessible to a wide readership. It is also long and brings in much that is tangential.

A major contribution of *Capital in the Twenty-first Century* (henceforth *Capital)* is the compilation of data on the distribution of income and wealth in a number of advanced countries over a long period of time. The most complete data set, going back over two hundred years, is for France; but Piketty is also able to show distributions of income and wealth in Britain and the United States since 1900 or earlier.

<u>Patterns of inequality over time</u>

Piketty finds rising income and wealth inequality since the early in 1980s in most countries that he examines. The inequality of income approaches and, in some cases, surpasses levels last seen in the early 20th century. Inequality of wealth is not back to former days; but in Piketty's view, that is the future.

Piketty's particular focus is the income and wealth of the top tier – the top one percent and even the top one-hundredth of one percent. He devotes the lion's share of his discussion to the rising fractions of income and wealth in the hands of this group. The figures are, indeed, impressive. Comparisons are made with the French and English landed gentry and aristocracy of the 18th and 19th centuries, who were able to live off the return on their wealth and did not engage in labor for pay.

Piketty seems to view the concentration of income and wealth in the 18th and 19th centuries as the normal state of affairs to which we are now returning. Indeed, he suggests that we may even surpass the extremes of the past. The fact that much of the 20th century saw a substantial decrease in inequality was, in Piketty 's view, the result of an unusual combination of events.

Two world wars, the Great Depression and bouts of inflation destroyed much wealth during the period 1910 to 1950. Then, after World War II, rapid economic growth boosted wages for the workforce as a whole. Wage – and income - growth was particularly rapid in the counties that had been devastated by the war and that were now catching up with the relatively unscathed and technologically advanced United States. Thus, wealth was destroyed in the first half of the twentieth century and incomes generally increased in the middle.

Wealth fell from 6-7 times national income in 1910 in England and France to 2-3 times in 1950. Since ownership of wealth and income from wealth were much more concentrated than labor income, the collapse in wealth had a profound leveling effect. The decline in wealth was not as great in the United States, but still substantial.

Since 1950, the wealth-to-income ratio has been rising. Additionally, since 1980, income inequality has been increasing, with those at the top enjoying much faster income growth than those at the bottom. The two phenomena are related. The distribution of income reflects both the distribution of labor income and the distribution of income generated by wealth, which reflects, in turn, the level and distribution of wealth. But a key theme in *Capital* is that the reduction in inequality in income and wealth that occurred in the middle of the twentieth century was an aberration.

For advanced countries generally, Piketty sees the growth in the wealth-income ratio leading to increased income inequality in the future and ever-greater wealth concentrations – absent policy actions or catastrophes such as those in the first half of the 20th century.

Somewhat oddly, however, the U.S. experience, which is example number one of the increasing income inequality since 1980 does not fit *Capital's* overarching story of the importance of increasing concentrations of wealth. Rather, as Piketty himself acknowledges, the primary culprit has been the rise to extraordinary levels of the compensation paid to "super-managers." These high salaries threaten to lead to concentrated wealth accumulation and the rise of a rentier class, but they are not the result of such a system.

Why capital's share of income will increase – and what this means for inequality

Piketty's vision of rising inequality is based on two relationships:

a) $B = s/g$

b) $A = r B$

Where B is the ratio of capital to income
s is the savings rate (assumed to equal the investment rate, net of depreciation)
g is the growth rate of income (national income)
A is capital's share of income
r is the rate of return on capital.

Thus, the ratio of capital – or wealth – to income is equal to the savings rate divided by the growth rate.

And capital's share of income equals the rate of return on capital times the ratio of capital to income.

Piketty is not very precise in his terminology. In equation (a), the capital in B is a factor of production distinct from labor, whereas in his tables on the distribution of wealth he includes financial wealth that includes claims on present and future labor income (eg. government bonds.) The savings rate (s) is equated to the investment rate, net of depreciation; and r is a real rate of return, including a risk premium. I am somewhat troubled by the rather loose use of terms, but others more expert than I seem comfortable with Piketty's characterization.

Equation (a) says that the ratio of capital to income equals the saving rate (net investment) divided by the growth rate. In other words, capital grows by the amount of net investment, while income grows at the economy's growth rate.

According to Piketty, the savings (net investment) rate tends to be around 10 percent. With a growth rate of 3 percent – a rate that many countries experienced in the 30 years after WWII - the ratio of capital to income would be stable around 3. However, with slower growth, the ratio of capital to income will rise, as the stock of capital is augmented faster than income increases. With growth of 1.5 percent per year (and net investment still at 10 percent) the equilibrium ratio of capital to income would rise to 6.7 – as it was in the 18th and 19th centuries. Piketty observes that a growth rate of 1.5 percent per year is actually quite high if you take the perspective of centuries rather than just the short period after WWII. Moreover, given the slowing in population growth that is taking place in many countries, 1.5 percent may actually be a fairly optimistic projection for future income growth.

Equation (b) says that capital's share of income equals the return on capital times the ratio of capital to income. If the capital-income ratio increases, capital's share of income will rise unless the rate of return declines by enough to offset the increase. One might think that the return to capital would diminish as the capital stock expands, as the most productive investments would be undertaken first and as each unit of capital is combined less labor. However, Piketty thinks that the return to capital will remain high and that capital's share of income will increase. He notes that returns on wealth yielded around 4-5 percent through most of the 18th and 19th centuries in England and France. And he asserts that for most of history, the huge losses in the first half of the 20th century notwithstanding, returns have exceeded the growth rate of the economy by a substantial margin.

Not only will capital's share of income increase, but Piketty also argues that ownership is likely to become more concentrated. Those at the *very* top end of the income (and wealth) distribution – those in the top 1/100 of one percent - derive most of their income from wealth. The incomes generated by just a normal return on their investments are so large that most is saved and reinvested, further augmenting wealth. Thus, the wealth owned by the wealthiest grows and because the rate of return exceeds the growth of the economy, it grows faster than income.

Furthermore, the very wealthy can hire expert managers of their estates; they have opportunities for diversification that are not available to the merely affluent; and they can wait problems out. Thus, the extremely wealthy enjoy higher returns than others – and their wealth accumulates even faster.

Thus, *Capital* envisions a world in which capital's share of income rises and ownership becomes more concentrated, with inheritances becoming increasingly important relative to work in determining one's income and position.

Rising Labor Inequality in the United States

Of the various countries Piketty examines, the United States has experienced the most striking increase in the income share going to the top one percent over the past 30 years. However, this is not primarily attributable to Piketty's theory of the role of capital and the forces described above.

Higher compensation, mainly for executives, accounts for most of the increase. Bonuses and stock options and other forms of labor income awarded to top corporate officials are responsible for the sharp rise in the incomes earned by the one percent in the United States. Executives in financial services account for a disproportionate share of high earners, but far from a majority. Piketty calls these individuals "supermanagers."

While income from wealth is not the primary culprit, extremely high labor incomes will lead to wealth accumulation by the recipients – since it is inconceivable that these sums could be consumed within a year, or two or ten. Piketty says on several occasions that the entrepreneurs will become the rentiers with the passage of time – investing the fruits of their labors during their innovative years and living on the returns to these investments in retirement.

In terms of why compensation at the top end has taken off in the United States, Piketty suggests that lower marginal tax rates have encouraged executives to bargain harder for higher salaries. He is skeptical that the higher pay reflects higher performance.

Policy Recommendations

Piketty's recommendation for dealing with the concentration of income and wealth at the top end is a progressive global tax on wealth. This would be an annual tax and it would be levied on the largest estates. Failing that, he suggests that Europe or the United States might impose such a tax; and failing that, they might impose much higher marginal tax rates on high-income people. The goal is not to raise money, although the funds involved are not trivial. He estimates that his proposed global tax on wealth would generate revenues amounting to about 2 percent of income. The more important goal is to prevent the increasing concentration of ownership of wealth. High marginal tax rates on income would discourage executives from

seeking such large salaries and prevent them from accumulating the wealth to become rentiers.

Most reviewers, even those who are sympathetic to Piketty's concerns, express doubt that these recommendations will attract political support.

Critics' concerns

A substantial number of the more negative comments about Piketty's book focus on the policy recommendations, seeing them as naïve and possibly counter-productive in terms of their impact on economic growth. Some would like to see more attention to raising incomes at the bottom.

In terms of the general thesis, that capital's share of income will rise and drive increasing inequality, the comments that strike me as most significant deal with the composition of capital and the rate of return.

Researchers in France[2], as well as Kevin Hassett, have pointed out that much of the rise in the capital (or wealth) to income ratio in the past thirty years is attributable to housing. The data showing this were made available by Piketty and his own charts show the prominence of housing in the recent growth of capital.

Home ownership has become more widespread in many countries and housing prices have risen. When housing is excluded the growth in capital to income is not impressive. Housing provides a return in terms of housing services – the value of the shelter and enjoyment from having one's own special space that ownership of a house provides. Home ownership also provides an opportunity for capital gains, but the probability of such gains seems much less a sure-thing after the 2007-2009 financial crisis.

The significance of housing in the capital mix is that the primary return to homeownership is the value of the housing services received – and this is consumption. A more costly home may be bigger; it may have more bathrooms, a weight room and multiple pools; it may have beautiful views. But the returns are consumed by the existing owners in the form of more enjoyable living. They do not automatically lead to more wealth accumulation. As noted, there is a potential for capital gains and ownership allows one to avoid rental payments and accumulate other assets – although ownership also requires maintenance, which can be a large drain. But the bottom line is that the biggest return on homes is the services provided – and this is consumption. Homeownership does not automatically lead to the accumulation of more wealth. Unlike a bond yielding 4 percent, it does not automatically grow and give you more command of productive resources. If you are vastly wealthy, you may buy multiple houses and have some of the best viewscapes in the world; but you don't acquire greater command over the productive resources of the economy.

Piketty's argument that the rate of return on capital will remain relatively steady while the capital-income ratio increases has also been challenged. A decline in the return to capital could offset the rise in capital to income. It seems puzzling that the return to capital would be unaffected by an increase in the ratio of capital to labor. As noted already, one would expect more productive investments to be undertaken first. Also, with growth very slow - because of stagnant populations and slow growth in per capita income – where are the returns coming from? Demand seems likely to be weak, and, by definition, technology is not as vibrant as lately. The reference back to the stability of returns in the 17th and 18th centuries is not persuasive. Piketty measures returns based on the returns from agricultural land and the returns from government bonds. Viewing the return on government bonds as a return to capital is questionable. It is a transfer from future generations to the present. In the 18th century, that was probably a good deal for the present. Population was growing and a technology revolution was underway boosting productivity. So future generations could pay. That is not the situation today. Future generations are not likely to be larger, and whether they will be better off is debatable.

Tyler Cowen and others also stress that the return to capital includes a risk premium. Piketty himself acknowledges that, there is a lot of volatility within short time periods. However, he sees the 19th century with its apparent returns of 4-5 percent as the norm. But then came the devastation of the first half of the 20th century, wiping out many of the wealthy. What is the return if you add in the experience of the 20th century? Piketty does not show how this would affect returns.

Also, how do we take account of the fact that the winners of today are not necessarily the wealth-owners of the past? Piketty's story suggests that the same individuals are at the top of the income and wealth distributions year in and year out. He does not actually make that claim, but that is an implication of his emphasis on an almost automatically recurring return to capital. But is that impression correct? Richard Fuld, CEO of Lehman Bros. was doing very well until his firm collapsed in fall 2008. Larry Ellison has been one of the highest paid executives repeatedly in recent years and he has become one of the wealthiest individuals in the United States; but in 1990 his firm flirted with bankruptcy. A handful of CEOs of independent energy firms have become startlingly wealthy in the past ten years by unlocking oil and gas from shale formations. Many of them had little money as young men and given their track records of risk-taking, some of them will probably have little money as oldsters. For high incomes to lead to high wealth and translate into ownership and control of the economy, as Piketty fears, requires that the high earners be able to repeat and that the wealth be allowed to accumulate. And we don't know whether that is occurring.

Decline of Manufacturing

The period in which inequality has increased was a time in which the manufacturing sector in the United States and other advanced countries came under increasing competitive pressure, first from Japan, then Korea, and more recently from China and other emerging markets. It was also a time of rapid technological change and productivity gains. Manufacturing employment in the United States has fallen both as a share of total employment and absolutely.

Has this played a role in the increase in inequality? It seems highly likely that the shrinkage in manufacturing employment whether in response to competitive pressures or because of labor saving technological change has contributed to the sluggish growth in incomes in the lower half of the distribution. As many have observed and as has been discussed elsewhere on this web site, manufacturing has provided relatively high wage jobs to workers with relatively little formal education. This is particularly true for men.

Furthermore, the diminishing role of unions is intertwined with the shrinkage in manufacturing. Because manufacturing enterprises have often invested heavily in plant and equipment, workers have considerable leverage in bargaining. This is particularly true in industries where the physical plant is highly specialized. Workers may be more productive in capital-intensive manufacturing operations; but in addition, the physical plant is in a sense captive to the workers. Strikes that disrupt operations and keep plant and equipment idle can impose large costs on the plant's owners. While owners may threaten to expand elsewhere, the existing investment in an otherwise profitable facility gives workers the power to demand compensation for their own high productivity and possibly to share in the return to capital generated by the plant and equipment.

In contrast, in activities where the primary form of capital is human capital rather than physical, workers who lack human capital have little leverage. If they demand to share in the returns earned by the doctors, lawyers, hedge fund managers, scientists and superstar managers, the elite workers whose expertise represents the bulk of the firm's capital may leave – taking this crucial factor of production with them.

Human capital is mobile, enabling those with the capital to demand full compensation for their contributions, whereas physical capital is relatively immobile in the short run giving workers an opportunity to bargain for a share of the returns. In manufacturing, physical capital is often important; so the decline in manufacturing has probably reduced workers' bargaining power.

Even within the manufacturing sector, the importance of human capital has grown. Intangible capital, such as patents and brand or name recognition, has also become more important. Here, too, workers' bargaining leverage is limited. Patent rights can be sold. And while workers could engage in actions damaging to a company's reputation, such a tactic may backfire, leaving the company permanently impaired and workers without job.

Thus, the decline of manufacturing and the changing composition of manufacturing, in particular a reduced reliance on relatively immobile physical capital, have probably contributed to the sluggish growth of wages for workers in the lower half of the income distribution.

But can the decline of manufacturing, or more generally shifts from manufacturing to service-producing activities, explain any of the sharp increase in earnings among the 1 percent? Possibly. Where workers have more bargaining power, paying CEOs very high salaries is likely to be seen as provocative, leading to higher wage demands from the general workforce.

As noted above, human capital is very mobile and those who possess high levels of human capital will tend to command high salaries. But high salaries for brilliant scientists, top salesmen and successful fund managers will create pressures for high salaries for their bosses. And these may be justified. After all, the CEO has been able to recruit these superstars. Moreover, human capital is not just about what you know. It is also about who you know – and who knows you. Do you have a reputation that attracts clients or business proposals? When you make phone calls to other business leaders or to government officials, do you get through? Perhaps CEOs' skills today are tied more to their personal attributes than to their ability to manage a specific firm effectively. Thus, a select few may be highly sought after and able to demand unusual levels of compensation.

Kevin Murphy on CEO Compensation

Kevin Murphy has a very interesting, albeit long, paper on the rise in salaries of CEOs of S&P 500 firms[3]. The period of fastest growth was in the 1990s and was attributable to large stock option grants. Murphy offers a number of reasons for this surge, but my rather simplistic interpretation of his main points is, firstly, that institutional investors and other activist shareholders became convinced that equity-based compensation packages provided desirable incentives and, secondly, that directors and executives did not think stock options were costly to the firm. A buoyant stock market in the 1990s resulted in CEOs getting very impressive compensation. However, the strong stock market was also seen as confirming the wisdom of such an incentive-oriented approach: CEOs got rich, but shareholders benefited from CEOs' focus on increasing firms' values.

High CEO compensation did provoke a response from the federal government and regulatory agencies. But ironically, Murphy suggests that government efforts to rein back executive pay may have boosted pay still higher. Ceilings imposed on cash salaries and bonuses turned into standards, as salaries for CEOs below the caps were increased. They also encouraged greater use of stock options and other performance-based compensation that was not subject to the same limitations. Required disclosures of top executives' compensation were intended to raise

shareholders' ire and to enlist shareholders in curbing CEO pay; but instead, disclosures prompted firms that did not offer certain benefits to their CEOs to add them to the compensation package.

And contrary to my argument above - that in an environment where human capital is more important than physical - workers will not be able to bargain for a share in the return to capital, during the 1990s many S&P 500 companies and many smaller high tech firms granted stock options to a broad section of employees. According to Murphy, the average S&P 500 firm gave away 25 percent of equity in stock options between 1992 and 2005. Most of this went to executives below the CEO and employees generally. A likely explanation is that firms did not view stock options as costly to the firm. Indeed, they were seen as a cheap way for firms that lacked cash to attract workers. Options became less popular after 2003 as firms began to record an expense.

Summary

Thomas Piketty has written a very thought-provoking book. He has also provided a wealth of data that will be a spur to researchers for years to come. But the data raise more questions than they answer. They are suggestive rather than definitive. Critics have raised plausible objections, but the critics also lack definitive answers.

Piketty focuses primarily on the very highest incomes and the greatest concentrations of wealth, rather than on improving conditions for those in the lower part of the income and wealth distributions. For those who want to know more about why wages have grown so rapidly at the top in the United States, Kevin Murphy has provided a fascinating history, albeit one that still leaves readers wondering – Why now? And what will be the consequences?

Reviews of Piketty's book

Given the length of Piketty's book, many interested in his findings will prefer to read the reviews. Below are some that I found especially interesting.

This is probably the one to read if you are reading only one.
Robert M. Solow, "Thomas Piketty is Right: Everything you need to know about 'Capital in the Twenty-first Century,' *"New Republic,* April 22, 2014
http://www.newrepublic.com/article/117429/capital-twenty-first-century-thomas-piketty-reviewed

Tyler Cowen, "Capital Punishment," *Foreign Affairs,* May/June 2014.
http://www.foreignaffairs.com/articles/141218/tyler-cowen/capital-punishment

James K. Galbraith, "Kapital for the Twenty-first Century?" *Dissent,* Spring 2014.
http://www.dissentmagazine.org/article/kapital-for-the-twenty-first-century

Lawrence H. Summers, "The Inequality Puzzle," *Democracy,* Spring 2014
http://www.democracyjournal.org/32/the-inequality-puzzle.php?page=all

Slides and interesting video presentation:
Kevin A. Hassett, Remarks at the Tax Policy Center, April 15, 2014
http://www.aei.org/speech/economics/remarks-on-thomas-pikettys-capital-in-the-twenty-first-century/

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[1] Thomas Piketty, *Capital in the Twenty-first Century,* translated by Arthur Goldhammer, Belknap Press, April 2014.
[2] Odran Bonnet, Pierie-Henri Bono, Guillaume Chapelle, Etienne Wasmer, "Does housing capital contribute to inequality? A comment on Thomas Piketty's *Capital in the 21st Century,"* Sciences Po, Department of Economics, Discussion paper 2014-07.
[3] Kevin J. Murphy, "Executive Compensation: Where We Are, and How We Got There," Forthcoming in *Handbook of the Economics of Finance (*edited by George Constantinides, Milton, Harris and Rene Stulz)
http://ssrn.com/abstract=2041679