

CAPITAL AND WEALTH TAXATION IN THE 21ST CENTURY

Thomas Piketty

*In this article, I present some of the findings of my book *Capital in the 21st Century*. In particular, I clarify the role played by $r > g$ in my analysis of wealth inequality. I also discuss some of the implications for optimal taxation, and the relation between capital-income ratios and capital shares.*

Keywords: capital, wealth, taxation, inequality

JEL Codes: E10, H20, H21

In my view, *Capital in the 21st Century (Capital)* is primarily a book about the history of the distribution of income and wealth. Thanks to the cumulative efforts of several dozen scholars, we have been able to collect a relatively large historical database on the structure of national income and national wealth and the evolution of income and wealth distributions, covering three centuries and over 20 countries. In effect, we have been extending to a larger scale the pioneering historical data collection work of Simon Kuznets and Tony Atkinson (Kuznets, 1953; Atkinson and Harrison, 1978). My first objective in *Capital* was to present this body of historical evidence, and to try to analyze the many economic, social, and political processes that can account for the various evolutions that we observe in the different countries since the Industrial Revolution.¹ Another important objective is to draw lessons for the future and for the optimal regulation and taxation of capital and property relations. I stress from the beginning that we have too little historical data at our disposal to be able to draw definitive judgments. On the other hand, at least we have substantially more evidence than before. Imperfect as it is, I hope this work can contribute to putting the study of distribution and of the long run back at the center of economic thinking.

In this article, I seek to discuss a number of implications of my findings, in particular regarding the optimal regulation and taxation of capital. First, I will clarify the role played by $r > g$ in my analysis of wealth inequality. Next, I will present some of the implications for optimal taxation, starting with inheritance taxation and then moving to

¹ Piketty and Saez (2014) provide a brief summary of some of the main historical facts.

annual taxation of wealth, capital income, and consumption. Finally, I will emphasize the need to develop a multi-sector approach to capital accumulation. This will lead me to stress the limits of capital taxation and the complementarity with other public policies aimed at regulating the accumulation and distribution of capital (such as land use and housing policies or intellectual property rights).

I. WHAT $r > g$ CAN AND CANNOT EXPLAIN

In my analysis, the size of the gap between r and g , where r is the rate of return on capital and g the growth rate of the economy, is one of the important forces that can account for the historical magnitude of and variations in wealth inequality. In particular, it can contribute to explain why wealth inequality was so extreme and persistent in almost every society up until World War I (as discussed in *Capital*, Ch. 10).

That said, the way in which I perceive the relationship between $r > g$ and inequality is often not well captured in the discussion that has surrounded my book. For example, I do not view $r > g$ as the only or even the primary tool for considering changes in income and wealth in the 20th century, or for forecasting the path of inequality in the 21st century. Institutional changes and political shocks — which to a large extent can be viewed as endogenous to the inequality and development process itself — played a major role in the past, and it will probably be the same in the future. In addition, I certainly do not believe that $r > g$ is a useful tool for the discussion of rising inequality of labor income; other mechanisms and policies are much more relevant here, e.g., the supply and demand of skills and education. For instance, I point out in *Capital* (particularly Ch. 8–9) that the rise of top income shares in the United States over the 1980–2010 period is due for the most part to rising inequality of labor earnings, which can itself be explained by a mixture of three groups of factors: (1) rising inequality in access to skills and to higher education over this time period in the United States, an evolution which might have been exacerbated by rising tuition fees and insufficient public investment; (2) exploding top managerial compensation, itself probably stimulated by changing incentives and norms, and by large cuts in top tax rates (Piketty, 2014; Piketty, Saez and Stantcheva, 2014); and (3) changing labor market rules and bargaining power, in particular due to declining unions and a falling minimum wage in the United States.² In any case, whatever the relative weight one chooses to attribute to each factor, it is obvious that this rise in labor income inequality in recent decades has little to do with $r - g$.

II. $r > g$ AND THE AMPLIFICATION OF WEALTH INEQUALITY

I now clarify the role played by $r > g$ in my analysis of the long-run level of wealth inequality. Specifically, a larger positive $r - g$ gap will tend to greatly amplify the steady-state inequality of a wealth distribution that arises out of a given mixture of shocks (including labor income shocks).

² See Figure 9.1 of Piketty (2014, p. 309).

Let me first say very clearly that $r > g$ is certainly not a problem in itself. Indeed, the inequality $r > g$ holds true in the steady-state equilibrium of the most common economic models, including representative-agent models where each individual owns an equal share of the capital stock. For instance, in the standard dynastic model where each individual behaves as an infinitely-lived family, the steady-state rate of return is well known to be given by the modified “golden rule” $r = \theta + \gamma \times g$ (where θ is the rate of time preference and γ is the curvature of the utility function). For example, if $\theta = 3$ percent, $\gamma = 2$, and $g = 1$ percent, then $r = 5$ percent. In this framework, the inequality $r > g$ always holds true, and does not entail any implication about wealth inequality.

In a representative-agent framework, what $r > g$ means is simply that in steady-state each family only needs to reinvest a fraction g/r of its capital income in order to ensure that its capital stock will grow at the same rate g as the size of the economy, and the family can then consume a fraction $1 - g/r$. For example, if $r = 5$ percent and $g = 1$ percent, then each family will reinvest 20 percent of its capital income and can consume 80 percent. This tells us nothing at all about inequality: this is simply saying that capital ownership allows one to reach higher consumption levels — which is really the very least one can ask from capital ownership.³

So what is the relationship between $r - g$ and wealth inequality? To answer this question, one needs to introduce extra ingredients into the basic model, so that inequality arises in the first place.⁴ In the real world, many shocks to the wealth trajectories of families can contribute to making the wealth distribution highly unequal; indeed, in every country and time period for which we have data, wealth distribution within each age group is substantially more unequal than income distribution, which is difficult to explain with standard life-cycle models of wealth accumulation. There are demographic shocks: some families have many children and have to split inheritances in many pieces, some have few; some parents die late, some die soon, and so on. There are also shocks to rates of return: some families make good investments, others go bankrupt. There are shocks to labor market outcomes: some earn high wages, others do not. There are differences in taste parameters that affect the level of saving: some families consume more than a fraction $1 - g/r$ of their capital income, and might even consume the full capital value; others might reinvest more than a fraction g/r and have a strong taste for leaving bequests and perpetuating large fortunes.

³ The inequality $r < g$ would correspond to a situation that economists often refer to as “dynamic inefficiency.” In effect, one would need to invest more than the return to capital in order to ensure that one’s capital stock keeps rising as fast as the size of the economy. This corresponds to a situation of excessive capital accumulation.

⁴ In the dynastic model with no shocks, there is no force generating inequality out of equality (or equality out of inequality), so any initial level of wealth inequality (including full equality) can be self-sustaining, as long as the modified golden rule is satisfied. Note however that the magnitude of the gap $r - g$ has an impact on the steady-state inequality of consumption and welfare: if $r - g$ is small, then high-wealth dynasties need to reinvest a large fraction of their capital income, so that they do not consume much more than low wealth dynasties.

A central property of this large class of models is that for a given structure of shocks, the long-run magnitude of wealth inequality will tend to be magnified if the gap $r - g$ is higher. In other words, wealth inequality will converge towards a finite level. The shocks will ensure that there is always some degree of downward and upward wealth mobility, so that wealth inequality remains bounded in the long run. But this finite inequality level will be a steeply rising function of the gap $r - g$. Intuitively, a higher gap between r and g works as an amplifier mechanism for wealth inequality, for a given variance of other shocks. To put it differently: a higher gap between r and g allows one to sustain a level of wealth inequality that is higher and more persistent over time (i.e., a larger gap $r - g$ leads both to higher inequality and lower mobility). Technically, one can indeed show that if shocks take a multiplicative form, then the inequality of wealth converges toward a distribution that has a Pareto shape for top wealth holders (which is approximately the form that we observe in real world distributions, and which corresponds to relatively fat upper tails and a large concentration of wealth at the very top), and that the inverted Pareto coefficient (an indicator of top end inequality) is a steeply rising function of the gap $r - g$. The logic behind this well-known theoretical result (which was established by many authors using various structures of demographic and economic shocks (e.g., Stiglitz, 1969)) and this “inequality amplification” impact of $r - g$ is presented in Chapter 10 of *Capital*.⁵

The important point is that in this class of models, relatively small changes in $r - g$ can generate large changes in steady-state wealth inequality. For example, simple simulations of the model with binomial taste shocks show that going from $r - g = 2$ percent to $r - g = 3$ percent is sufficient to move the inverted Pareto coefficient from $b = 2.28$ to $b = 3.25$. Taken literally, this corresponds to a shift from an economy with moderate wealth inequality — say, with a top 1 percent wealth share around 20–30 percent, such as present-day Europe or the United States — to an economy with very high wealth inequality with a top 1 percent wealth share around 50–60 percent, such as pre-World War I Europe.⁶

Available micro-level evidence on wealth dynamics confirm that the high gap between r and g is one of the central reasons why wealth concentration was so high during the 18th – 19th centuries and up until World War I (Piketty, 2014, Ch.10; Piketty, Postel-Vinay, and Rosenthal, 2006, 2014). During the 20th century, a very unusual combination of events transformed the relation between r and g : (1) large capital shocks during the 1914–1945 period, including destruction, nationalization, and inflation; (2) high growth during the reconstruction period and demographic transition; and (3) increased

⁵ For detailed references to this literature on dynamic wealth accumulation models with random shocks, refer to the online appendix to chapter 10 available at piketty.pse.ens.fr/capital21c. Piketty and Zucman (2015, Section 5.4) also provide information on these models.

⁶ In the special case with binomial saving taste shocks with probability p , one can easily show that the inverted Pareto coefficient is given by $b = \log(1/p)/\log(1/\omega)$, with $\omega = s e^{(r-g)H}$ (s is the average saving taste and H is generation length); see Piketty and Zucman (2015). Atkinson, Piketty, and Saez (2011) provide evidence on the long-run evolution of Pareto coefficients.

bargaining power for organized labor. In the future, several forces might push toward a higher $r - g$ gap (particularly the slowdown of population growth and rising global competition to attract capital) and higher wealth inequality. But ultimately which forces prevail is relatively uncertain. In particular, this depends on the institutions and policies that will be adopted in many different areas.

As is rightly pointed out by DeLong (2015), it should also be noted that the impact of the slowdown in growth on the gap $r - g$ is fundamentally ambiguous. In the benchmark dynastic model outlined above (which might not be particularly plausible), it all depends on the value of curvature of the utility function (smaller or larger than one). More generally, this will depend on the structure of intertemporal preferences and saving motives, as well as on the parameters of the production technology (in particular the elasticity of substitution between capital and labor). In multi-sector models of capital accumulation, which as I argue below are far more realistic, almost anything can happen, depending in particular on the specific rules, relative prices, institutions, and changing bargaining power of the various social groups in the relevant sectors.

In *Capital*, I also emphasize the fact that the measurement of capital income is biased in different ways in high-growth and low-growth societies. That is, high growth periods arguably require more entrepreneurial labor in order to constantly reallocate capital and benefit from higher returns (in other words, measured rates of return must be corrected downward in order to take into account mismeasured labor input in high-growth societies, particularly in reconstruction periods). Conversely, measured rates of returns might be closer to pure returns in low-growth societies (where it is relatively easier to be a rentier, since capital reallocation requires less attention). In my view, this is one of the main reasons why low-growth societies are likely to be characterized by a higher gap between r and g (where r is the pure rate of return to capital, i.e., after deduction for formal and informal portfolio management costs and related entrepreneurial labor).⁷ This is certainly an issue that deserves additional research in the future.

III. ON THE OPTIMAL PROGRESSIVE TAXATION OF INCOME, WEALTH, AND CONSUMPTION

I now move to the issue of optimal taxation. The theory of capital taxation that I present in *Capital* is largely based upon joint work with Emmanuel Saez (Piketty and Saez, 2013a). In this paper, we develop a model where inequality is fundamentally two-dimensional; individuals differ both in their labor earning potential and in their inherited wealth. Because of the underlying structure of demographic, productivity, and taste shocks these two dimensions are never perfectly correlated. As a consequence, the optimal tax policy is also two-dimensional; it involves a progressive tax on labor income and a progressive tax on inherited wealth. Specifically, we show that the long-run optimal tax rates on labor income and inheritance depend on the distributional parameters,

⁷ Indeed the historical estimates on pure rates of return that I present in my book are largely built upon this assumption, as discussed in Chapter 6.

the social welfare function, and the elasticities of labor earnings and capital bequests with respect to tax rates. The optimal tax rate on inheritance is always positive, except of course in the extreme case with an infinite elasticity of capital accumulation with respect to the net-of-tax rate of return (as posited implicitly in the benchmark dynastic model with an infinite horizon and no shocks). For realistic empirical values, we find that the optimal inheritance tax rate might be as high as 50–60 percent, or even higher for top bequests, in line with historical experience.⁸

In effect, what we do in this work is to extend the sufficient statistics approach to the study of capital taxation. The general idea behind this approach is to express optimal tax formulas in terms of estimable “sufficient statistics” including behavioral elasticities, distributional parameters, and social preferences for redistribution. These formulas are robust to the underlying primitives of the model and capture the key equity-efficiency trade-off in a transparent way. This approach has been fruitfully used in the analysis of optimal labor income taxation (Piketty and Saez, 2013b). We follow a similar route and show that the equity-efficiency trade-off logic also applies to the taxation of inheritance. This approach successfully brings together many of the existing scattered results from the literature.

In addition, if we introduce capital market imperfections into our basic inheritance tax model, then we find that one needs to supplement inheritance taxes with annual taxation of wealth and capital income. Intuitively, in the presence of idiosyncratic shocks to future rates of return, it is impossible to know the lifetime capitalized value of an asset at the time of inheritance, and it is optimal to split the tax burden between these different tax instruments. For instance, assume I received from my family an apartment in Paris worth 100,000 € in 1975. In order to compute the optimal inheritance tax rate, one would need to know the lifetime capitalized value of this asset. But of course, in 1975, nobody could have guessed that this asset would be worth millions of euros in 2015, or the annual income flows generated by this asset between 1975 and 2015. In such a model, one can show that it is optimal to use a combination of inheritance taxation and annual taxation of property values and capital income flows (Piketty and Saez, 2013a).

One difficulty, however, is that optimal tax formulas soon become relatively complicated and difficult to calibrate. In particular, the optimal split between annual taxes on the stock of wealth and annual taxes on capital income flows depends on the elasticity of rates of return with respect to taxation (i.e., the extent to which observed rates of return are sensitive to individual effort and portfolio decisions, as opposed to idiosyncratic, uninsurable shocks). Naturally, intertemporal substitution elasticities also play a role. Substantial additional research is necessary before we can provide a realistic, complete calibration of the optimal capital tax system (which involves a mixture of progressive taxes on inheritance, annual wealth holdings, and annual capital income flows).

In my book, I propose a simple rule-of-thumb to think about optimal annual tax rates on wealth and property. Namely, one should adapt the tax rates to the observed speed at

⁸ Note that the optimal inheritance tax rate can also be expressed as an increasing function of the gap $r - g$ as shown in Piketty and Saez (2013a, Figures 1–2).

which the different wealth groups are rising over time. For instance, if the wealth of top wealth holders is increasing at 6–7 percent per year in real terms (as compared to 1–2 percent per year for average wealth), as suggested by Forbes-type wealth rankings (as well as by recent research by Saez and Zucman, 2014), and if one aims to stabilize the level of wealth concentration, then one might need to apply top wealth tax rates as large as 5 percent per year, and possibly higher (Piketty, 2014, Ch.15 and Ch.12). Needless to say, the implications would be very different if the wealth of top wealth holders were rising at the same rate as average wealth. One of the main conclusions of my research is indeed that there is substantial uncertainty about how far income and wealth inequality might rise in the 21st century, and that we need more financial transparency and better information about income and wealth dynamics, so that we can adapt our policies and institutions to a changing environment, and experiment with different levels of wealth tax progressivity. This might require better international fiscal coordination, which is difficult, but by no means impossible (Zucman, 2014).

An alternative to progressive taxation of inheritance and wealth is the progressive consumption tax (e.g., Gates, 2014; Hubbard, 2015). This is a highly imperfect substitute, however. First, meritocratic values imply that one might want to tax inherited wealth more than self-made wealth, which is impossible to do with a consumption tax alone. Also, and most importantly, the very notion of consumption is not very well defined for top wealth holders; personal consumption in the form of food or clothes is certain to be a tiny fraction for those with large fortunes, who usually spend most of their resources to purchase influence, prestige, and power. When the Koch brothers spend money on political campaigns, should this be counted as part of their consumption? When billionaires use their corporate jets, should this be included in consumption? A progressive tax on net wealth seems in my view more desirable than a progressive consumption tax, first because net wealth is easier to define, measure, and monitor than consumption, and also because it is a better indicator of the ability of wealthy taxpayers to pay taxes and to contribute to the common good (Piketty, 2014, Ch.15).

IV. CAPITAL-INCOME RATIOS VERSUS CAPITAL SHARES: TOWARDS A MULTI-SECTOR APPROACH

One of the important findings from my research is that capital-income ratios $\beta = K/Y$ and capital shares α tend to move together in the long run, particularly in recent decades, where both have been rising. In the standard one-good model of capital accumulation with perfect competition, the only way to explain why β and α move together is to assume that the capital-labor elasticity of substitution σ is somewhat larger than one — which could be interpreted as the rise of robots and other capital-intensive technologies.⁹

⁹ With $Y = F(K, L) = [aK^{(\sigma-1)/\sigma} + (1-a)L^{(\sigma-1)/\sigma}]^{\sigma/(\sigma-1)}$, the marginal productivity of capital is given by $r = F_K = a(Y/K)^{1/\sigma} = \alpha\beta^{-1/\sigma}$, and the capital share is given by $\alpha = r\beta = a\beta^{(\sigma-1)/\sigma}$ (Piketty and Zucman, 2014, 2015).

Let me make clear, however, this is not my favored interpretation of the evidence. Maybe robots and high capital-labor substitution will be important in the future. But at this stage, the important capital-intensive sectors are more traditional sectors like real estate and energy. I believe that the right model to think about rising capital-income ratios and capital shares in recent decades is a multi-sector model of capital accumulation, with substantial movements in relative prices, and with important variations in bargaining power over time (Piketty, 2014, Chs. 3–6). Indeed, large upward or downward movements of real estate prices play an important role in the evolution of aggregate capital values during recent decades, as they did during the first half of the 20th century. This can in turn be accounted for by a complex mixture of institutional and technological forces, including rent control policies and other rules regulating relations between owners and tenants, the transformation of economic geography, and the changing speed of technical progress in the transportation and construction industries relative to other sectors (Piketty, 2014, Chs. 3–6; Piketty and Zucman, 2014). In practice, intersectoral elasticities of substitution combining supply and demand forces can often be much higher than within-sector elasticities.¹⁰

More generally, one central reason why my book is relatively long is because I try to offer a detailed, multidimensional history of capital and its metamorphosis. Capital ownership takes many different historical forms, and each of them involves different forms of property relations, and social conflict, which must be analyzed as such. For example, I provide an analysis of slave capital in 19th century United States in Chapter 4 of *Capital* and in Chapter 5 of *Capital* I discuss the stakeholder German capitalism model, with large gaps between the social and market values of corporations. This multidimensional nature of capital creates substantial additional uncertainties regarding the future evolution of inequality, as illustrated by the examples of housing and oil prices. In my view, this reinforces the need for increased democratic transparency about income and wealth dynamics.

Finally, let me conclude by making clear that the historical and political approach to inequality, property relations, and institutions that I develop in my book should be viewed as exploratory and incomplete. In particular, I suspect that new social movements and political mobilizations will give rise to institutional change in the future, but I do not pursue this analysis much further. As I look back at my discussion of future policy proposals in the book, I may have devoted too much attention to progressive capital taxation and too little attention to a number of institutional evolutions that could prove equally important. Because capital is multidimensional and markets are imperfect, capital taxation needs to be supplemented with other asset-specific policies and regulations, including, for instance, land use and housing policies and intellectual property right laws. In particular, as argued by Stiglitz (2015), monopoly power and the regulation of intellectual property rights play an important role in the dynamics of private wealth accumulation. Given the central role played by changing real estate values and rent levels in the aggregate evolution of capital-income ratios and capital

¹⁰ Karababounis and Neiman (2014) discuss the role played by the declining relative price of equipment.

shares in recent decades, it is clear that land use and housing policies potentially have a critical role to play, in particular to regulate and expand access to property. On the other hand, it is equally clear that such policies are sometimes difficult to implement (e.g., public construction policies or housing subsidies have not always been successful in the past), so they should certainly be viewed as a complement rather than as a substitute to progressive taxation.

Also, in *Capital* I do not pay sufficient attention to the development of other alternative forms of property arrangements and participatory governance. One central reason why progressive capital taxation is important is because it can also bring increased transparency about company assets and accounts. In turn, increased financial transparency can help to develop new forms of governance; for instance, it can facilitate more worker involvement in company boards. But these other institutions must also be analyzed as such.

The last chapter of my book concludes, “Without real accounting and financial transparency and sharing of information, there can be no economic democracy. Conversely, without a real right to intervene in corporate decision-making (including seats for workers on the company’s board of directors), transparency is of little use. Information must support democratic institutions; it is not an end in itself. If democracy is someday to regain control of capitalism, it must start by recognizing that the concrete institutions in which democracy and capitalism are embodied need to be reinvented again and again” (Piketty, 2015, p. 570). I do not push this line of investigation much further, which is certainly one of the major shortcomings of my work. Together with the fact that we still have too little data on historical and current patterns of income and wealth, these are some of the key reasons why my book is at best an introduction to the study of capital in the 21st century.

DISCLOSURES

The author has no financial arrangements that might give rise to a conflict of interest with respect to the research reported in this paper.

REFERENCES

Atkinson, Anthony, and Alan Harrison, 1978. *Distribution of Personal Wealth in Britain, 1923–1972*. Cambridge University Press, Cambridge, UK.

Atkinson, Anthony, Thomas Piketty, and Emmanuel Saez, 2011. “Top Incomes in the Long Run of History.” *Journal of Economic Literature* 49 (1), 3–71.

DeLong, J. Bradford, 2015. “Mr. Piketty and the ‘Neoclassics’: A Suggested Interpretation.” *National Tax Journal* 68 (2), 393–408.

Gates, Bill, 2014. “Why Inequality Matters.” Gates Notes, <http://www.gatesnotes.com/books/why-inequality-matters-capital-in-21st-century-review>.

Hubbard, Glenn, 2015. "Taking Capital's Gains: *Capital's* Ideas and Tax Policy in the Twenty-First Century." *National Tax Journal* 68 (2), 409–424.

Karabarbounis, Loukas, and Brent Neiman, 2014. "Capital Depreciation and Labor Shares Around the World: Measurement and Implications." NBER Working Paper No. 20606. National Bureau of Economic Research, Cambridge, MA.

Kuznets, Simon, 1953. *Shares of Upper Income Groups in Income and Savings, 1913–1948*. National Bureau of Economic Research, Cambridge, MA.

Piketty, Thomas, 2014. *Capital in the 21st Century*. Harvard University Press, Cambridge, MA.

Piketty, Thomas, Gilles Postel-Vinay, and Jean-Laurent Rosenthal, 2006. "Wealth Concentration in a Developing Economy: Paris and France, 1807–1994." *American Economic Review* 96 (1), 236–256.

Piketty, Thomas, Gilles Postel-Vinay, and Jean-Laurent Rosenthal, 2014. "Inherited vs. Self-Made Wealth: Theory and Evidence from a Rentier Society (1872–1927)." *Explorations in Economic History* 51 (1), 21–40.

Piketty, Thomas, and Emmanuel Saez, 2013a. "A Theory of Optimal Inheritance Taxation." *Econometrica* 81 (5), 1851–1886.

Piketty, Thomas, and Emmanuel Saez, 2013b. "Optimal Taxation of Labor Income." In Auerbach, Alan J., Raj Chetty, Martin Feldstein, and Emmanuel Saez (eds.), *Handbook of Public Economics, Volume 5*, 391–474. Elsevier, Amsterdam, The Netherlands.

Piketty, Thomas, and Emmanuel Saez, 2014. "Inequality in the Long Run." *Science* 344 (6186), 838–843.

Piketty, Thomas, Emmanuel Saez, and Stefanie Stantcheva, 2014. "Optimal Taxation of Top Labor Incomes: A Tale of Three Elasticities." *American Economic Journal Economic Policy* 6 (1), 230–271.

Piketty, Thomas, and Gabriel Zucman, 2014. "Capital is Back: Wealth-Income Ratios in Rich Countries 1700–2010." *Quarterly Journal of Economics* 129 (3), 1155–1210.

Piketty, Thomas, and Gabriel Zucman, 2015. "Wealth and Inheritance in the Long Run." In Auerbach, Alan J., and Martin Feldstein (eds.), *Handbook of Income Distribution*, 1303–1368. Elsevier, Amsterdam, The Netherlands.

Saez, Emmanuel, and Gabriel Zucman, 2014. "Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data." NBER Working Paper No. 20625. National Bureau of Economic Research, Cambridge, MA.

Stiglitz, Joseph E., 1969. "Distribution of Income and Wealth Among Individuals." *Econometrica* 37 (3), 382–397.

Stiglitz, Joseph E., 2015. "The Origins of Inequality and Policies to Contain It." *National Tax Journal* 68 (2), 425–448.

Zucman, Gabriel, 2014. "Taxing Across Borders: Tracking Personal Wealth and Corporate Profits." *Journal of Economic Perspectives* 28 (4), 121–148.