Measuring Inequality: One Size Does Not Fit All

By Ben Ho and Sita Nataraj Slavov

Statistics focusing on annual household-level income indicate that inequality has increased in the United States in recent decades. Are these measures accurate? Inequality has traditionally been calculated in the United States in terms of annual cash income alone, but other, more comprehensive points of measurement should be considered. For maximum accuracy, income should include the value of in-kind benefits and be measured over a lifetime rather than a year. But even this adjusted number is inadequate to assess fairness, which requires looking at a broader picture of overall well-being that includes income mobility, access to education, consumption, leisure, and health. Additionally, we must develop better measures of opportunity, which is a more accurate indicator of well-being than income distribution. Broadening the definition of and approach to inequality would help build more opportunity and result in more useful policy.

A number of recent studies have highlighted two facts about US income distribution. The first is that income inequality has been rising, and this increase has occurred throughout the income distribution. The second is that real income (adjusted for inflation) has stagnated for the typical household since the late 1970s. However, other studies have challenged these two facts, arguing that the most commonly used measures of income are flawed. In addition, some researchers have looked beyond income to other measures of inequality and opportunity. For example, Betsey Stevenson and Justin Wolfers have examined inequality in self-reported happiness, and we have examined trends in health inequality.

Without a conceptual framework for thinking about inequality, it is difficult to know how to interpret these findings. To understand the empirical findings on inequality, we must ask ourselves, what is our goal in measuring income or other kinds of human inequality? In this paper, we examine the facts about inequality and their relation to why inequality matters. We make the following points:

- The correct measure of inequality depends on why inequality matters to social welfare. Inequality may matter for a number of reasons, including concerns about fairness, the desire to prevent social unrest, the desire to prevent an “arms race” based on individuals’ concerns about their relative positions in the income distribution, and the desire to ensure that all individuals have access to opportunity.

- Annual cash income—the most commonly used metric used in inequality statistics—has stagnated for the median household, and inequality has increased. But adjusting this measure of inequality for household size and the value of in-kind benefits (most importantly, health care) substantially reduces the growth of inequality and indicates gains for the median household.

- However, annual household-level income—even if adjusted for size and in-kind benefits—is an
inadequate measure for assessing fairness. Ideally, we would consider a broader measure of individual lifetime well-being. Without the ability to compute such a measure, it would be best to look at income distribution as part of a broader picture that includes income mobility, access to education, consumption, leisure, and health.

- An appealing philosophical viewpoint is that if opportunities are equal, then we should not be concerned with disparate outcomes. This view is inconsistent with the focus on income distribution or, more generally, on inequality of outcomes. Developing better measures of opportunity represents a promising direction for future research, and shifting the public debate to focus on these measures would result in better policy.

**Why Inequality Matters**

**Fairness.** It is widely believed that income inequality is “unfair.” But we must be more precise about this term. What is a fair distribution of income? Are all differences in income unfair? Or are they unfair when they are based, for example, on luck rather than effort?

Many conceptual frameworks are used to evaluate fairness. For concreteness, we turn to one commonly used framework: the “veil of ignorance.” This thought experiment goes as follows. Imagine that you have not yet been born. You do not know if you will be born into a rich or poor family. You do not know if you will have parents who will teach you the value of education and hard work. You do not know how intelligent you will be or whether you will have talents that are valued in the marketplace. You do not know if you will be healthy or disabled. You do not know if you will be physically attractive or what your personality traits will be. What kind of society would you design? What kinds of government policies would you put in place?

Notice that in this thought experiment, income is only part of the picture. Plenty of other outcomes contribute to a good life, including health, education, and relationships. However, because income does influence quality of life, someone designing a society from behind the veil of ignorance would certainly want to think about the ideal distribution of income. If each person’s position in the income distribution is purely a lottery (the probability of being in the top 1 percent is 1 percent, the probability of being in the top 5 percent is 5 percent, and so forth), then a risk-averse person might want to eliminate income inequality entirely to insulate against ending up at the bottom of the distribution. Taking this logic one step further, a risk-averse person may wish for income to be negatively correlated with other measures of success—that is, for individuals who receive good draws along other dimensions (for example, health or relationships) to have lower incomes.

It is most reasonable to evaluate fairness by looking at overall well-being—related not just to income—of individuals over their lifetimes.

From this perspective, it is most reasonable to evaluate fairness by looking at overall well-being—related not just to income—of individuals over their lifetimes. This conclusion is not specific to the “veil of ignorance” framework for evaluating fairness, as most concerns about fairness boil down to concerns about the quality of life. Headline inequality statistics, however, are often based on annual household-level cash income. Four comparisons—annual versus lifetime, cash versus other forms, individual versus household, and income versus well-being—will affect how we interpret the fairness associated with measured inequality. We will return to these measures later in this paper.

Of course, one’s income is determined not just by luck of birth but also by choices. Even a risk-averse person might accept that some inequality is necessary to preserve the incentive to work hard. In addition, many individuals make deliberate choices to sacrifice income to improve their lives along other dimensions. For example, a highly talented individual who could have had a high-paying career as an investment banker may instead choose a more satisfying career at a nonprofit or as an academic. By making such a choice, the individual reveals that he or she is better off with the lower income. Given such issues, aiming to equalize opportunities to earn income—or achieve other successes in life—might be a reasonable choice.

Indeed, this philosophy has wide appeal. Surveys show lower support for income redistribution among those who believe opportunities to be largely equal. Economist John Roemer, who has written widely on this topic, argues that equal opportunity exists when people receive no advantage or disadvantage from “the
differential circumstances of individuals for which we believe they should not be held accountable.” On the other hand, people can be held accountable for their own choices; thus, differences in outcome relating to choices are permissible.

Although this definition is intuitive, determining what factors individuals can be held accountable for is tricky. For example, most people would agree that having rich parents represents luck of birth, a circumstance over which one has no control. But those who are born with a strong work ethic—or to parents who instill a strong work ethic in them—might find it easier than others to work hard and earn income later in life. In this situation, it is difficult to determine the extent to which hard work represents a choice. Nonetheless, Roemer points out that “most people would say adults should be responsible for their preferences—in particular, with regard to pursuit of economic opportunities—even if those preferences are in large part the consequence of upbringing.” In practice, researchers studying inequality of opportunity have focused on the extent to which a person’s outcomes are determined by his or her parents’ characteristics (for example, education levels) as well as unchangeable personal characteristics like ethnicity and place of birth. We discuss this approach in greater detail later in this paper.

Economic Growth. Another key reason to care about inequality is its connection to economic growth. Traditionally, this connection is captured by the Kuznets curve (proposed by Simon Kuznets), an inverted, U-shaped curve that stylistically describes the relationship between inequality and growth.

Inequality tends to increase as agricultural societies industrialize and then tends to decrease once societies become fully industrial. According to Kuznets, causality runs from growth to inequality. However, more recent research based on the political economy implications of inequality has found that too much inequality can constrain growth and development. These models tend to be based on the idea that high levels of inequality lead to social unrest. More benignly, this social unrest leads to growth-impeding levels of taxation as democracies seek to redistribute the wealth. At extreme levels, unrest can lead to political instability, which hinders investment. At the most extreme levels, unrest leads to violent and costly regime change.

Although the evidence for these relationships primarily comes from developing countries, the same logic can be applied to the developed world. However, what is crucial in these models is the connection to social unrest. Measures of inequality matter only insofar as they reflect dissatisfaction within the polity. From this perspective, perceived inequality of opportunity may be the most important issue. As discussed earlier, research suggests that people tend to be dissatisfied with unequal outcomes if they represent underlying inequality of opportunity.

Annual income inequality is likely to provide an exaggerated picture of true income inequality.

Preventing Arms Races. Thorstein Veblen and even Adam Smith famously noted that part of why we consume can be explained by the idea of conspicuous consumption. We care about our status relative to our peers, and we choose our consumption to try to stay ahead of them, potentially triggering a consumption arms race. In this model, the Smiths are better off if they replace their Toyota with a BMW, while their neighbors, the Joneses, continue to drive a Honda. On the other hand, if the Joneses try to keep up by buying a Mercedes, both families end up worse off. They are back to where they started in terms of relative status, but both have unnecessarily spent money on luxury cars.

Based on such a model, some observers worry that greater income inequality will spur lower- and middle-income individuals to spend more on status-signaling goods in an effort to keep up with their richer fellow citizens. These efforts will force them into jobs that are geared toward increasing prestige rather than satisfaction. Ultimately, however, their well-being is eroded by jealousy as the consumption arms race escalates.

Again, however, if we are concerned about inequality because of its effects on peer comparisons, simple annual income inequality is insufficient. The literature on how we make peer comparisons suggests that local comparisons matter more than national comparisons; in other words, comparisons with neighbors are more important than comparisons with individuals who live in other states. It also suggests that we should focus our comparisons on visible consumption like cars and lawns rather than less visible uses of income and wealth like savings accounts and health care. Finally, it suggests that inequality can become significant enough that people stop bothering to compare themselves with their neighbors;
thus, beyond a certain point, increased inequality might improve social welfare.

**Inequality Statistics**

For a given definition of income, inequality can be measured in many ways. For example, inequality may be captured by looking at the earnings of individuals or households at the 90th percentile of the income distribution compared to those in the 10th percentile of the income distribution. This measure indicates how close the tails of the distribution are to each other.

But we might be interested in other comparisons as well. For example, the ratio of the 90th percentile of the distribution to the 50th percentile of the distribution could be used to determine how the middle class is doing relative to the rich. Alternatively, the ratio of the 50th percentile of the distribution to the 10th percentile of the distribution can indicate how those who are worst off financially have fared relative to average. Many recent policy discussions have focused on the top 1 or 2 percent of earners relative to the rest of society. These discussions have been informed by studies of the evolution of top taxpayer incomes.

As an alternative to focusing on income at specific points in the distribution, one can calculate a summary measure of income inequality. For example, the Gini coefficient and Theil index provide summary measures of income inequality that reflect the deviation between perfect equality and the actual income distribution. A Gini coefficient of zero indicates perfect equality, and a Gini coefficient of one indicates a distribution in which the highest-income individual or family earns all of the income. The Theil index has a similar interpretation.

Available evidence suggests that inequality—measured with respect to household-level cash income—has increased throughout the income distribution. However, we find that these patterns of inequality depend on how one defines and measures income.

**Annual Household-Level Cash Income.** Most headline income inequality statistics focus on annual household-level inequality. According to Current Population Survey (CPS) data—the most commonly cited source for income statistics—average inflation-adjusted income in the top quintile of households grew by 47.5 percent between 1980 and 2012. Over the same period, average inflation-adjusted income in the bottom quintile grew by less than 1 percent and median inflation-adjusted income grew by less than 9 percent. Among industrialized countries, the US and UK have experienced increases in income inequality in recent decades, but Japan and continental European countries have not.

Data on top taxpayer incomes indicate that this increase in inequality has occurred throughout the income distribution. Between 1980 and 2012, average income for the top 5 percent of taxpayers (generally either singles or married couples filing jointly) grew by more than 100 percent. Average income grew by almost 190 percent among the top 1 percent and by more than 380 percent among the top 0.1 percent over the same period. The taxpayer data on top incomes—used in Thomas Piketty and Emmanuel Saez’s widely cited study—have received a great deal of attention recently.

Although these income statistics often make headlines, they have many shortcomings. The CPS data are based on household income and do not adjust for household size. But a 10-person household with an income of $100,000 is much poorer than a single-person household with an income of $50,000.

In addition, because roommates and members of cohabiting couples are counted as separate taxpayers rather than part of a larger household, the taxpayer data might be biased by the decrease in the proportion of traditional married-couple households in recent decades. For example, consider a hypothetical society consisting of 100 one-earner married couples in 1980, with each couple earning $20,000. A taxpayer-based measure of inequality counts each couple as one taxpayer and therefore would indicate an average income of $20,000 per taxpayer and no inequality. Today, suppose this society consists of 100 cohabiting but unmarried one-earner couples, with each couple earning $40,000. In reality, average household income has doubled, and there is still no household-level inequality. However, a taxpayer-based measure now counts each unmarried individual as a taxpayer. That measure suggests that half of all taxpayers (the earner in each household) earns $40,000, while the remaining taxpayers earn nothing, so that average taxpayer income is stagnant at $20,000, while inequality has increased.

Finally, both the CPS and the taxpayer data leave out important sources of income. While the CPS data include cash government transfer payments, they are not reduced by the amount of taxes paid. The tax return data do not include either taxes or transfers. In addition, both the CPS and tax return data exclude employee benefits, the most
notable of which is health insurance, and in-kind government transfers such as publicly provided health care. Health care expenditures account for 17.9 percent of GDP, up from 13.6 percent in 1995. We might expect health care expenditures to account for a larger share of spending for poor families than rich ones. Thus, leaving both public and employer-provided health insurance out of an income measure may tend to bias it toward greater inequality.

**Adjusting for Household Size and In-Kind Income.** A number of studies have attempted to adjust the income data for household size, as well as for difficult-to-measure components of income like in-kind transfers.

To adjust for household size, many researchers divide household income by the square root of the number of people in the household. An alternative is to assign decreasing weights to the adults (and smaller weights to children) in a household and then to divide household income by the sum of weights. The idea behind these adjustments is that a two-person household needs less than twice as much as a one-person household to attain the same material standard of living.

One objection to this adjustment is that household size and structure—whether one lives alone or with a spouse or roommates or whether one has children—is largely an individual choice. Getting married or moving in with a roommate has a similar effect on living expenses as choosing a discount brand over a luxury one; an individual who chooses to live alone has revealed that such an arrangement makes him or her better off than sharing the bills with a roommate. An alternative approach, used by Branko Milanovic in his cross-country study of income inequality, is to divide each household’s income by the number of members.

A few recent studies have attempted to adjust not only for household size, but also for taxes, in-kind benefits, and transfers. These studies tend to find that although taxes and transfers reduce income inequality in any given year, there is still an upward trend in inequality. One of these studies suggests that although expansions of the earned income tax credit increased the after-tax income going to low-income households, taxes and transfers did less to reduce inequality in 2007 than in 1979. This is because transfers increasingly shifted toward middle-income households (because of expansions of universal programs like Social Security and Medicare), federal taxes declined relative to income (thereby reducing their progressive impact), and revenue from the regressive payroll tax increased relative to revenue from the progressive income tax.

But these recent studies also suggest that fully valuing in-kind provision of health insurance and health care can greatly affect income measurement, reducing both the level and the growth of inequality. In addition, with the value of health care included, incomes in the lower and middle quintiles have grown considerably.

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**Nonmonetary-based measures of well-being present a more balanced picture of inequality.**

For example, Richard Burkhauser, Jeff Larrimore, and Kosali Simon have shown that, over the period from 1979 to 2007, pretax and pretransfer income measured at the taxpayer level (the same measure used in Piketty and Saez’s study) indicates a substantial rise in inequality, with growth of 32.7 percent in the top quintile and a decline of 33.0 percent in the bottom quintile. Measuring income at the household—rather than taxpayer—level and including cash transfers reduces the growth in inequality. By this measure, income in the bottom quintile grew by almost 10 percent, while income in the top quintile grew by 38 percent. The authors show that the differences that arise when moving from a taxpayer-based measure to a household-based measure of income are largely caused by an increase in the fraction of households that consist of multiple taxpayers (for example, an unmarried cohabiting couple, roommates, or parents and adult children living together) rather than a single taxpayer (a single person living alone or a married couple with minor children). Further adjusting for household size and including the value of in-kind transfers and benefits boosts growth in the bottom quintile to 26.4 percent, while growth in the top quintile rises to 52.6 percent. By this last measure, median income has also risen by 36.7 percent over the same period.

**Lifetime Income Inequality.** Most available measures of income inequality are based on annual income. A few examples show the limitation of this measure.

Example 1: Consider a society in which all people earn $50,000 per year when young. Each person saves part of that income and lives off the savings when old. For
simplicity, assume that savings don’t earn interest. At any point in time, therefore, some individuals earn $50,000 and others earn nothing (and live off prior savings). This snapshot suggests that there is a great deal of income inequality, when most would agree that this society does not have any true income inequality.

Example 2: Consider a society in which each person earns $50,000 every other year. But some people earn their $50,000 in even-numbered years, while others earn their income in odd-numbered years. A snapshot of income inequality at any time would suggest that there is a great deal of inequality. But again, most would agree that there is no true income inequality here.

Example 3: Consider two individuals who earn $50,000 each year from work. The first spends the entire $50,000, while the second saves half of it. If we take a snapshot of income in any given year, the spender will have an income of $50,000, while the saver will have an income of $50,000 plus the interest on previous savings. Thus, the snapshot suggests that there is income inequality in this society. However, the observed inequality comes only from personal choices about the timing of consumption.

While these examples are highly stylized, they illustrate the fact that most individuals’ income fluctuates from year to year. Over a life cycle, low-income students can become highly paid professionals. People who are highly paid professionals in their 50s can become lower-income retirees in their 60s. Even among working adults, income can vary considerably from year to year. In many cases, borrowing (for example, taking out student loans or charging credit card debt) and saving (for example, through pensions or emergency reserves) can smooth these fluctuations in income over a lifetime. Thus, annual income inequality is likely to provide an exaggerated picture of true income inequality. By focusing on lifetime rather than annual income, we can remove year-to-year fluctuations in income or shifts in income that occur at different stages of life. Arriving at such a measure is difficult, however, as most data sets do not observe individuals over a sufficiently long period.

Some studies have attempted to overcome data limitations to examine trends in lifetime income inequality. In a 2004 study, Audra J. Bowlsus and Jean-Marc Robin demonstrated that lifetime labor earnings inequality is much lower than annual labor earnings inequality. However, lifetime earnings inequality has increased to an extent similar to annual earnings inequality.

An alternative way to adjust for life-cycle fluctuations in income is to look at inequality in consumption spending rather than income. Because households use borrowing and saving to smooth out fluctuations in income, consumption provides a better measure of lifetime income. The evidence regarding consumption inequality is mixed. Some studies have shown that while consumption inequality has risen, the increase in consumption inequality has been much smaller than the increase in income inequality. However, other researchers have found that consumption and income inequality have increased to a similar extent.

Inequality of Well-Being. Economists have long acknowledged that people care about more than just money. However, most measures of well-being, including income, are denominated in dollars. This divergence between income and utility has numerous implications for the measurement of inequality. For example, most economists believe individuals receive diminishing marginal benefits from income. In other words, a dollar is worth less when one is rich than when one is poor.

A recent study by Betsey Stevenson and Justin Wolfers found that the log of income (which increases with income, but at a decreasing rate) is a much better predictor of happiness than the level of income. Another study, by Daniel Kahneman and Angus Deaton, found that, while higher (log) incomes are associated with a more positive life evaluation, incomes above $75,000 are not associated with increases in emotional well-being.

Along similar lines, Tyler Cowen has argued that many people are “threshold earners,” who choose their work effort to reach a particular target income. These individuals do not seek to increase their income beyond their target, so if their wages rise, they will reduce their labor supply. An increase in the fraction of threshold earners can increase income inequality, as those who are not threshold earners continue to make choices that increase their incomes. However, this kind of increase in inequality is not troublesome because the threshold earners are better off with less income and more leisure time. This discussion suggests that policymakers should be more concerned about income disparities between the middle and bottom of the income distribution than with disparities between the top and middle of the distribution.
In addition, standard measures of income exclude many components of utility that economists generally agree are important. Perhaps most significant are leisure and household production (such as domestic chores and child care). Female formal labor force participation has increased from 51.5 percent in 1980 to 58.6 percent in 2010, a shift most likely associated with a decline in household production and an increase in measured income. Although time-use studies can help determine how people spend their time outside of formal labor markets and studies about labor market choices can be used to estimate the value people place on leisure, reliable and universally agreed-upon methods for assessing these values for different people are not readily available.

The increase in female labor supply suggests that the growth in household income may overstate the growth in well-being because part of the income increase is due to a shift from household production to market-based work. On the other hand, Mark Aguiar and Erik Hurst found that leisure time (time not spent at work or doing household chores) has increased for both men and women since 1965 and that this increase has been concentrated among those with less education. This finding suggests that income growth understates the growth in well-being and that measured growth in income inequality overstates the growth in inequality of well-being.

**Nonmonetary-based measures of well-being present a more balanced picture of inequality.** In previous work, we have documented that health inequality—with realized length-of-life as a proxy—has declined over the past several decades. Betsey Stevenson and Justin Wolfers have documented a considerable decline in inequality in measures of self-reported happiness. This finding is consistent with the observed increase in leisure among lower-income households, the observed decline in health inequality, and the hypothesis that many middle-income individuals are threshold earners who have chosen more leisure and better working conditions over high pay.

**Inequality of Opportunity**

A crucial limitation to the preceding discussion on measurement is that we tend to measure only realized outcomes, when a more appealing philosophical approach would focus on opportunity. If Tom and Jerry were both offered identical investment-banking jobs but Jerry declined so he could pursue his passion as a surfer, then the resulting income inequality should not concern us. Jerry revealed through his choice that he is better off as a low-paid surfer than as a high-paid banker.

The preceding example suggests that even if opportunities are equal, outcomes can differ because of differences in what people value, the amount of effort they exert, or sheer luck. Equality of opportunity is sometimes defined as endowing all individuals with the same choices by compensating them for factors that are outside their control, like family background and genetics. What people choose to do with their opportunities is of less concern to policymakers.

One approach to measuring opportunity is based on income mobility. Mobility is typically measured by either comparing a child’s place in the income distribution or probability of attending college with that of her parent (intergenerational mobility) or comparing an individual’s place in the income distribution today with what it was in a previous year (mobility within a person’s lifetime). If the children of rich parents have significantly fewer opportunities than the children of poor parents, we would expect to see low intergenerational mobility. Similarly, if poor individuals or families lack the opportunity to move up the economic ladder, we would expect to see low within-lifetime mobility.

Using such measures, Katharine Bradbury has shown that within-lifetime income mobility has declined in recent decades. Miles Corak provides a good discussion of the literature on intergenerational mobility, and his review suggests that mobility is considerably lower in the US than in other developed countries. He also argues that increasing income inequality reduces equality of opportunity and mobility. A recent study by Raj Chetty and coauthors showed that intergenerational mobility has remained fairly constant. However, because income inequality has increased, the stakes involved in rising to a higher position have increased.

But there are two serious problems with using mobility as a proxy for opportunity. First, measures of mobility rely solely on income and are therefore subject to the same criticisms of income measures we discussed earlier in this paper. For example, children with the same opportunities to earn income may make different choices and therefore end up in different parts of the income distribution. (Think of Tom and Jerry in the example at the beginning of the section.) When presented with mobility measures, it is tempting to conclude that in an ideal world, there would be zero
correlation between parents’ and children’s outcomes. But Roemer has shown that equal opportunity implies perfect mobility only if we do not hold children responsible for the preferences instilled in them by their parents.\textsuperscript{43}

Second, mobility-based measures rely on relative comparisons. To see why this is a problem, suppose we observe a decline in the fraction of individuals born in the bottom quintile who make their way to the top quintile. This finding might be because those at the bottom have fewer opportunities. But it could also be that those at the top are working harder. In other words, opportunities may have increased for those at both the top and the bottom, while mobility measures account only for relative shifts. To put it another way, opportunity should be based on the ability of individuals in different circumstances to take advantage of a rising tide, not on the relative positions of their boats.

A better approach to measuring opportunity is to start with a model in which outcomes depend on circumstances (including luck of birth) and choices. Controlling for choices would leave behind a measure of unequal opportunity; in other words, inequality of opportunity would measure the effect of circumstances on outcomes.

Paolo Brunori, Francisco H.G. Ferreira, and Vito Peragine provide a good overview of this approach. Measuring opportunity begins by dividing the population into a number of “types” based on their circumstances, which might include parents’ education and occupation, ethnicity, and ability (for example, IQ score). Perfect equality of opportunity exists either when each type faces the same set of possible outcomes or when all individuals who exert the same effort (regardless of type) receive the same outcome.\textsuperscript{44}

In a 2009 study, Nicolas Pistolesi applied this approach to study the evolution of inequality in the US between 1968 and 2001.\textsuperscript{45} In his analysis, circumstances were defined as ethnicity, region of birth, age, and parents’ education and occupation. Choices were defined as educational attainment and hours worked. Using these definitions, Pistolesi estimated the income inequality that would remain if one controlled for the impact of circumstances on both choices (because circumstances may affect one’s ability to exert effort) and income. Comparing this hypothetical income distribution to the actual income distribution provides a measure of inequality of opportunity. Pistolesi found that by this measure, inequality in circumstances explains 20–43 percent of observed income inequality during his study period. But the share of income inequality that is explained by unequal opportunities has declined considerably.

This result appears to suggest that choices have played a much larger role than circumstances in the growth of observed income inequality in recent decades. As Pistolesi points out, although this could mean that effort has increased among top earners relative to bottom earners, it could also mean that effort is rewarded more today than it has been in the past. In addition, because it is difficult to measure all aspects of a person’s circumstances (for example, Pistolesi’s data set does not provide him with a measure of ability), it could mean that difficult-to-measure circumstances play a greater role in determining income today.

It would be worth exploring these possibilities further. Unfortunately, few studies take this approach to studying inequality, particularly in comparison with the voluminous literature on income inequality. Thus, refining and updating measures of opportunity represents a promising direction for future research.

**Conclusions**

In this paper, we have considered the pitfalls in existing measures of inequality and opportunity. We argue that the appropriate measure of inequality depends on first identifying why inequality matters, and then determining how to account for the limitations of data.

From the perspective of fairness, an ideal measure of inequality should be based on lifetime individual opportunities for well-being, but we often observe only annual household-level realized income. Looking to other measures of well-being like health and self-reported happiness can help make up for the biases in income-based measures. Additionally, it would be valuable to refine existing measures of inequality of opportunity and to emphasize those measures in the public debate.

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Notes

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13. For example, see Piketty and Saez, “Income Inequality in the United States 1913–1938.”


17. Piketty and Saez, “Income Inequality in the United States 1913–1938.”


19. For example, see Burkhauser, Larrimore, and Simon, “A ‘Second Opinion’ on the Economic Health of the American Middle Class.”

20. For example, see Heathcote, Perri, and Violante,

21. Branko Milanovic, The Havens and Have-Nots: A Brief and Idiosyncratic History of Global Inequality (New York: Basic Books, 2011). Another issue in performing a size adjustment is to what extent children should be included among the members of a household. For adults, having children is a choice, similar to the choice to consume any good or service. When an adult voluntarily sacrifices income to raise a child, we presume that the choice makes him or her better off. Thus, the adult’s well-being has increased despite the added child care expenses. From this perspective, the right measure of individual income (for adults) is household income divided by the number of adults. On the other hand, a child in a large household is an independent person whose well-being matters as well. From a Rawlsian veil of ignorance perspective, one might be born as a child in a large family; thus, we should divide family income by the total number of people.


27. Depending on the measure of income, withdrawals from retirement accounts may count as income. This would reduce measured inequality in this example.


33. Daniel Kahneman and Angus Deaton, High Income Improves Evaluation of Life but Not Emotional Well-Being (Princeton, NJ: Center for Health and Well-Being, Princeton University, August 4, 2010), www.pnas.org/cgi/doi/10.1073/pnas.1011492107. It is an open question whether “utility” in the economic sense is better described by life evaluation, emotional well-being, or something else entirely. It is also not clear which of these measures policymakers should care about.


37. Ho and Slavov, “An Alternative Perspective on Health Inequality.”

38. Stevenson and Wolfers, “Happiness Inequality in the United States.”

39. See, for example, Roemer, Equality of Opportunity; and John E. Roemer, “Equal Opportunity and Intergenerational Mobility.”


43. Roemer, “Equal Opportunity and Intergenerational Mobility.”