Equality and Efficiency: A Global Perspective

Jason Furman Chairman, Council of Economic Advisers

World Bank Group Macroeconomics and Fiscal Management Global Practice Annual Forum May 2, 2016

As prepared for delivery

Good morning. I want to thank the Macroeconomics and Fiscal Management Global Practice for inviting me to back to the World Bank. I am happy to get the chance to share with you some of the work that we at the Council of Economic Advisers have been doing on the theme of inclusive growth, while also discussing how it fits into a broader, global perspective on inequality. I want to state from the outset that the focus of our work is the United States, so I apologize in advance that much of this discussion is based on data from the United States and, to a lesser degree, other advanced economies. But I will also try to incorporate some evidence from developing countries, where, if anything, many of the points I am making may be even more relevant.

Introduction: How Leaky the Bucket?

In 1974, Arthur Okun, who had served as Chairman of President Lyndon Johnson's Council of Economic Advisers, delivered a series of lectures at Harvard University exploring the inherent tension within market democracies between the equal distribution of rights by political and social institutions and the unequal distribution of rewards in the economic sphere. His talks highlighted what he considered a fundamental tradeoff: between distributional equity and economic efficiency. Okun used a striking visual metaphor to illustrate his point: in transferring money from the rich to the poor,

"...the money must be carried from the rich to the poor in a leaky bucket. Some of it will simply disappear in transit, so the poor will not receive all the money that is taken from the rich."

In other words, any attempt to reduce inequality via canonical policy channels (for example, progressive taxation or income support for poor families) will come at the price of economic efficiency (Okun 1975).

From a macroeconomic perspective, Okun's point was grounded in the claim that high-income households save a larger fraction of their income than low-income households, and as a result, greater inequality would translate into more savings, more capital accumulation, and thus a higher level of output. From a microeconomic perspective, any attempts to reduce inequality would inevitably result in distortions and would blunt the incentives that inequality creates for greater education, investment, and entrepreneurship.

The year before Okun delivered his Harvard lectures—later published as *Equality and Efficiency: The Big Tradeoff*—the share of income going to the top 1 percent of U.S. tax units was 8 percent, according to data from the World Wealth and Income Database, as shown in Figure 1. This marked the lowest such share since these records began in 1913. Today, with the share of income going to the top 1 percent at 18 percent, near the highest on record, it is worth asking whether we would evaluate the efficiency-equity tradeoff any differently. And, more importantly, it is also worth re-asking the question of whether or not there is such a tradeoff to begin with.



As shown in Figure 2, large advanced economies have also seen a persistent trend of rising inequality for decades, as the very highest earners capture a larger share of aggregate income. And while data in the World Wealth and Income Database are much more limited for developing countries, both India and China have general seen rising inequality since the mid-1970s as well.



Using Branko Milanovic's (2014) database of Gini coefficients, we can also get a very rough sense of trends in inequality within a much broader set of countries. Of the subset of 84 countries for which Gini coefficients are available in Milanovic's database for both 1988 and 2008—a group that includes advanced, emerging, and low-income countries—more than half (54) saw an increase in inequality over this twenty-year period. As shown in Figure 3, many countries saw a large increase in inequality over this period—especially in countries that started with relatively low levels of inequality—while almost none saw a large decrease.



Inequality in a Global Context

It is important to put these trends in advanced-economy inequality into context as part of trends in global inequality. Thanks to the painstaking and pioneering work of Branko Milanovic and his coauthors, we now have a much better picture of both the global income distribution and its movement over the past few decades. In this regard, no fact is more striking than the rapid income growth of those in the middle of the global income distribution. Between 1988 and 2008, real income gains were the largest for people around the 50th percentile of the income distribution and lowest for people at the 80th percentile, as shown in Figure 4. Much of the expansion of this "global middle class" has occurred in Asia.



Equally if not more striking is the rapid growth in income of the top 1 percent of the global income distribution. Advanced economies like the United States generally have between 3 and 7 percent of their population in the global top 1 percent. On the other hand, less than 1 percent of the population in large emerging economies like China and India is in the global top 1 percent (Milanovic 2016). Between 1988 and 2011, the top 10 percent of the global population by income have accounted for 46 percent of the growth in total global income. The top 1 percent in particular accounts for 12 percent of income growth over this period (Hardoon, Ayele, and Fuentes-Nieva 2016).

Individuals at the 80th percentile of the global income distribution are generally the "lower middle class" of advanced economies (Milanovic 2016). Thus, when viewed in a global context, the increase in inequality among advanced economies in the last two decades is really only one half of the picture—those at the bottom of the advanced-economy distribution are among a relatively small subset of the global population who have seen little to no income growth in the last twenty years.

Inequality of Opportunity

Understanding the tradeoffs between equality and equity today depends, in part, on the reasons that inequality has increased to begin with. Traditional economic explanations of inequality are grounded in competitive markets, wherein workers receive wages commensurate with their productivity. According to this explanation, a combination of skill-biased technological change, a slowdown in the increase in educational attainment, and globalization have increased the demand for highly skilled workers at the same time that their relative supply has not kept pace—resulting in higher wages for these high-productivity workers and greater inequality.

To some extent, some of these forces—like skill-biased technological change and globalization—reflect the type of desirable economic progress that promotes productivity growth. Moreover, to the degree that inequality is the result of the functioning of efficient, competitive markets, there is also a presumption that any policy that would reduce inequality by interfering with that market would be inefficient, albeit still possibly worth the tradeoff in terms of additional equity.

But even if markets are perfectly competitive and efficient at any point in time, there is still reason to worry that excessive inequality could be harmful to growth or, at least, could partially offset some of the other benefits. When inequality has become so entrenched that it passes across generations and limits opportunity, it narrows the pool of human capital that can compete. Such throttling of opportunity is unambiguously bad for growth, preventing potential innovators from full economic participation and weighing on productivity growth. Further, if entrenched interests are able to limit future competition either by influencing the policymaking process or by abusing their market power, dynamism in labor markets or firm entry can decrease. While some level of income and wealth inequality can play a constructive role, the implications of unevenly distributed opportunity are less ambiguous—working the wrong way for both equity and efficiency.

While inequality of opportunity is an international phenomenon—particularly in many poor and middle-income countries—it is especially important in the United States, especially when compared to other advanced economies. Lawrence Mishel and coauthors (2012) assemble a set of intergenerational earnings elasticities—the percent increase in a son's earnings for every one-percent increase in his father's earnings—across large advanced economies with similar incomes to the United States. The higher the elasticity, the less mobile the society. As Figure 5 shows, the most mobile society is Denmark, where a one-percent increase in a father's earnings results in a 0.15 percent increase in his son's income. The United States is among the lower mobility countries, with an intergenerational elasticity of 0.47 percent.



It is important to understand the forms that this inequality of opportunity takes and to explore the institutional structures that entrench these patterns. Three particular examples that the Council of Economic Advisers has recently explored in a series of reports on the U.S. experience include the experience of children in low-income families (CEA 2015a), inequities in the American criminal justice system (CEA 2016b), and the systemic challenges faced by women in the U.S. economy (CEA 2016c). In each of these cases—as in many other areas where unequal opportunities limit full economic participation—the case for a tradeoff between equality and growth is far weaker.

It is also important to note that income inequality and inequality of opportunity are directly linked, insofar as in many ways inequality of opportunity is both a cause and a result of income inequality. Unequally distributed opportunities entrench an unequal income distribution, and an unequal income distribution leads to many of the inequities faced by low-income and low-wealth children.

The "Great Gatsby curve," a term introduced by Alan Krueger, is one (non-causal) illustration of the relationship between income inequality and inequality of opportunity. When plotted across both counties within the United States (Figure 6a) and across large advanced economies (Figure 6b), areas with more income inequality also tend to have less mobility for children from low-income families. The Great Gatsby curve shows that inequality is correlated with lower mobility, and one important transmission mechanism is the distribution of opportunity. When disparities in education, training, social connection, and the criminal justice system are distributed as unequally as overall wealth, poorer families have a much harder time succeeding—a situation that unambiguously creates obstacles for both equity and efficiency.





Several recent working papers have found evidence of Great Gatsby curves in Latin American countries (Neidhöfer 2016) and in China (Fan, Yi, and Zhang 2015). While data on intergenerational earnings elasticities in low-income countries are less common, Justin Sandfleur of the Center for Global Development has also plotted inequality against the correlation of parental wealth and test scores, which Sandfleur takes as his measure of intergenerational mobility (since it measures to what extent parents are able to pass on their "wealth advantage" to their children). Here, again, a Gatsby curve emerges, as shown in Figure 7. Further research to create internationally comparable intergenerational earnings elasticities for a wide panel of countries would be useful in assessing to what extent current within-country inequality presents barriers to individual opportunity the world over.



Competitive Markets and the Role of Rents

All of the considerations about inequality of opportunity I have discussed are true even if the markets that give rise to such inequality are competitive and efficient in a purely static sense. Of course, markets are not perfectly competitive, and, in particular, the competitive channel does not appear to explain the full rise in income inequality in recent decades. There is evidence that non-market forces are also at play. Many economists have recently advanced an explanation of inequality grounded in the importance of rents—the notion that investors or highly compensated workers are receiving more income than they would require to undertake their production or work. Rents could play a role in rising inequality either to the degree that they are increasing and being captured by capital or by high earners or to the degree that the division of rents is becoming increasingly unequal.

Recent work by the Council of Economic Advisers has focused on the influence of economic rents or their division in the labor market (CEA 2015b), in the housing sector (Furman 2015a), in occupational licensing (Furman 2015b), and in the broader capital markets (Furman and Orszag 2015). To the degree that market imperfections or artificial barriers to entry are at work, then there is the possibility that policy can shift towards greater equity at no cost in terms of efficiency—or potentially even while making improvements in efficiency.

Classic examples of rents include monopoly profits and the unearned benefits of preferential government regulation. Rents can result from abuses of market power and tend to encourage "rent-seeking behavior," the unproductive use of resources to capture such rewards. According to this view, the unequal distribution of these rents—rather than the conventional explanation that inequality reflects only actual differences in worker productivity or the allocation of capital—is an important cause of rising income inequality. To the degree that this interpretation is correct, it suggests that it is possible to reduce inequality without hurting efficiency by changing how the

rents are divided or even to reduce inequality while *increasing* efficiency by acting to reduce these rents. There is relatively little academic literature on this question, and data are scarce since rents cannot be directly observed, but considerable evidence appears to support the notion that rents are exacerbating inequality.

Whenever a firm hires a worker, the difference between the highest wage the firm would pay and the lowest wage the worker would accept is the surplus created by the job match—an economic rent. The division of that rent between firm and work depends on their relative bargaining power. Unionization and collective bargaining—along with policies like the minimum wage—help level the playing field, concentrating labor and encouraging the firm to share those rents with labor. This process helps bolster the wages of lower- and middle-wage workers, thereby reducing inequality. However, in many countries union membership has declined over the past several decades. In the United States it has declined consistently since the 1970s, as Figure 8 shows: approximately a quarter of all U.S. workers belonged to a union in 1955 but, by 2015, union membership had dropped to just below 10 percent of total employment, roughly the same level as the mid-1930s. In some states, just 3 percent of workers belong to unions (CEA 2015b). One study has found that declining unionization accounts for between a fifth and a third of the increase in U.S. inequality since the 1970s (Western and Rosenfeld 2011).



One important piece of evidence that rents are on the rise in the United States is the divergence of rising corporate profits and declining real interest rates. In the absence of economic rents, corporate profits should generally follow the path of interest rates, which reflect the prevailing return to capital in the economy. But over the past three decades, as Figure 9 shows, the return to productive capital has generally risen, despite the large decline in yields on government bonds. One potential explanation of the disparity between these two variables is the increased prevalence of rents, although changing risk characteristics of returns to private capital or government bonds could also be playing a role.



Other firm-side evidence points to an increased prevalence of supranormal returns over time. First, consider the distribution of the return on invested capital (ROIC) for publicly traded non-financial U.S. firms from 1965 through 2014, excluding goodwill (an intangible asset reflecting the excess of the price paid to acquire a company over the value of its net assets) using data from McKinsey and Company. As shown in Figure 10, the 90th percentile of the return on invested capital across firms has grown markedly since around the early 1990s. The 90/50 ratio—that is, the ratio of the 90th percentile of the distribution of capital returns to the median—has risen from under 3 to approximately 10. In addition, the dramatic returns on invested capital of roughly 100 percent apparent at the 90th percentile, and even 30 percent apparent at the 75th percentile, at the very least raise the question of whether they reflect economic rents.



There is also evidence for increasing market consolidation and concentration. Data from the U.S. Census Bureau's Economic Census on firm concentration, for example, show a trend of pronounced consolidation across most broad industry categories in the nonfarm business sector. In nearly all of the industries for which data are available, the 50 largest firms gained revenue share between 1997 and 2012, as shown in Table 1. While market concentration at such a highly aggregated level is neither necessary nor sufficient for monopoly power, it is suggestive and is also consistent with a variety of more detailed evidence for declining competition from studies of a number of individual industries (CEA 2016a).

Industry	Percentage-Point Change in Revenue Share Earned by 50 Largest Firms, 1997-2012
Transportation and Warehousing	11.4
Retail Trade	11.2
Finance and Insurance	9.9
Wholesale Trade	7.3
Real Estate Rental and Leasing	5.4
Utilities	4.6
Educational Services	4.2*
Professional, Scientific and Technical Services	2.8*
Arts, Entertainment and Recreation	2.5*
Administrative/ Support	1.6
Health Care and Assistance	0.8*
Accommodation and Food Services	0.1
Other Services, Non-Public Admin	-0.2*

Table 1
Change in Market Concentration by Sector, 1997-2012

Note: Concentration ratio data is displayed for all North American Industry Classification System (NAICS) sectors for which data are available from 1997 to 2012. * indicates that the percentage point change is calculated using only taxable firms in that industry, as its 1997 revenue share data are only available for the 50 largest taxable firms and the 50 largest tax-exempt firms as separate cateogories, rather than for all firms combined. Performing this same calculation using data for only tax-exempt firms results in two additional industries showing a decline in concentration (Arts, Entertainment and Recreation, and Educational Services), while one shows a slight uptick (Other Services).

Source: Census Bureau, Economic Census (1997 and 2012).

The overall point is that to the extent that industries look more like oligopolies than perfectly competitive markets, they will generate economic rents. In the absence of some countervailing public purpose, such rents reflect an erosion of the surplus that would otherwise accrue to consumers in a competitive market. These rents can become manifest in the form of higher prices for consumers, reduced quality and variety of products and services, and even a reduction in innovative activity, which translates into lower productivity growth. Finally, there is evidence that land-use regulation may also play a role in the presence of increased economic rents, decreasing housing affordability and reduce nationwide productivity and growth.

Taken together, inequality of opportunity and the potential rise and unequal distribution of economic rents imply that the underlying forces behind overall income and wealth inequality

may be more entrenched than many observers appreciate. But on the other hand, they *also* suggest that many policies aimed at reducing their malign effects would be growth-enhancing, rather than growth-reducing, presenting a "win-win." I will return to this point at the end of my remarks this morning.

Inequality of Opportunity and Rents in Global Perspective

Up to this point, I have focused mainly on the experience of the United States, and to a lesser extent other advanced economies. But in many respects inequality of opportunity and entrenched (or growing) economic rents pose even greater challenges for emerging and developing countries. Indeed, it is striking just how much of what is considered novel in the recent surge of interest in discussions of inequality in advanced economies has been part of the standard literature in development economics for decades.

First, as I noted above in the U.S. context, lack of access to education can prevent large portions of a country's population from reaching its full economic potential. However, in credit-constrained environments, even when access to education exists the poor may be prevented the poor from borrowing against their future income to finance their education. Credit constraints are all too common in developing countries, as is a lack of insurance markets through which individuals can divest themselves of the risks inherent in human capital investments such as education (Furman and Stiglitz 1998). These constraints are likely behind the substantial private underinvestment in education in developing countries, even when access to education is nominally available. Lack of risk intermediation in particular may underlie recent findings of little to no effect of microcredit on parental investment in education in a number of randomized control trials in multiple contexts (Banerjee, Karlan, and Zinman 2015).

More generally, to the extent that income and wealth inequality prevent the poor from acquiring sufficient collateral (one cannot borrow against human capital), increased inequality will constrain entrepreneurial activity and other forms of investment beyond education. The implication here is that broader ownership of assets, or at least legalization of already-extant assets can be both equity- and efficiency-enhancing (de Soto 2000). High levels of inequality also undermine the trust necessary for a decentralized market economy, raising monitoring costs.

On the side of economic rents, a long literature has documented the pervasive rent-seeking behavior that is practically endemic to large portions of developing-country economies, ranging from the misdirection of state resources to politically connected firms (e.g. Khwaja and Mian 2005) to the exploitation of weak governance structures by incumbent firms (e.g. Duflo et al. 2013). Much of the World Bank's work over its decades-long history has been in strengthening governance, fighting corruption, and ensuring transparency—all of which can help in deterring rent extraction by both states and firms. Efforts to promote competition in developing countries by curbing the influence of monopolies and oligopolies, particularly in countries without well-developed competitive markets, as well as efforts to reduce regulatory protection of incumbents, would assist in ensuring inclusive growth.

Conclusion: Towards More Growth and More Inclusive Growth

The decades-long upswing in inequality in the developed world and in many developing economies, combined with several decades of research and policy experience, suggests that we need to think hard about inequality. The fact that this increase has coincided with a slowdown in productivity growth in advanced economies and, more recently, in major emerging economies suggests a particular premium on understanding ways in which efficiency and equity are linked.

For a number of reasons—most notably the importance of opportunity and the ways in which inequality can stem from rents—Okun's "leaky bucket" should not be the dominant metaphor for understanding the relationship between equality and efficiency. Instead, the degree of tradeoff depends on the sources of the increase in inequality and the particular policy instrument used to combat it. In many cases, there exist policy tools that can help ensure that instead of leaking while in transit, the bucket *fills even further*. This may be especially the case for policies that address both inequality of opportunity and potential economic rents.

The exact contours of such "win-win" policies, of course, will widely vary and depend greatly on individual countries' circumstances. In the United States, the Obama Administration has focused on a number of policies aimed at promoting inclusive growth, including, but not limited to:

- First, strengthening aggregate demand. To the extent that an economy operates below full potential, pro-growth policies that help to close the output gap naturally combat inequality. Indeed, unemployment or sub-optimal employment is a form of inequality itself, resulting in zero or insufficient labor earnings for a subset of workers. The same macroeconomic policies usually employed to boost growth and return the economy to full employment can unambiguously reduce this cyclical form of income inequality, and as such aggressive demand management strategies implemented by the United States in response to the global crisis can, in this context, also be seen as distributional policies.
- Second, promoting equality of opportunity. Education and training are critical in this respect, as are policies that invest in low-income children and increase opportunities in neighborhoods of concentrated poverty. This starts with the President's plan to increase access to child care for working families while investing billions of dollars in quality early learning and preschool programs to help our youngest learners, especially those from low-income families, succeed. The President has also proposed ambitious new investments in higher education, job training, and apprenticeship programs. Additionally, a growing body of research has helped confirm that programs to support low-income families (such as Medicaid and the Supplemental Nutrition Assistance Program) can not only strengthen the position of the families themselves, but can also have important benefits for long-term productivity and socioeconomic mobility.
- Third, reducing the concentration of market power and rent-seeking behavior. Policies like raising the minimum wage and greater support for collective bargaining and other forms of worker voice can help level the playing field for workers in negotiations with employers. Because such policies change the division of rents, they can reduce inequality without reducing overall efficiency, something that can also be achieved by carefully

administering existing regulations that fight rent-seeking. Additionally, promoting competition through rulemaking and regulations and eliminating regulatory barriers to competition would also reduce the scope and unequal distribution of economic rents. A recent Executive Order signed by the President aims to do just that by instructing departments and agencies of the Federal Government to identify specific actions that they can take to foster greater competition in the marketplace.

As we begin to look beyond the shadow of the global crisis, it is critical that policymakers the world over focus on promoting growth that is not only robust and sustainable, but also widely shared. By focusing their attention on country-appropriate policies that can improve both equity *and* efficiency, economists can shift the policy conversation away from assumptions of "leaky-bucket" tradeoffs that prevent movement towards a future with both greater material well-being and greater distributional equality.

Notes to Figures and Tables

Figure 1 Source: World Wealth and Income Database (2016).

Figure 2 Source: World Wealth and Income Database (2016).

Figure 3 Source: Milanovic (2014).

Figure 4 Source: Milanovic (2016).

Figure 5 Source: Mishel et al. (2012); Corak (2011).

Figure 6a

Note: U.S. commuting zones were ordered by Gini coefficient and divided into 20 equally sized bins. Each blue dot represents a single bin. Upward mobility reflects the mean percentile in the 2011-2012 national income distribution for those individuals in each bin whose parents were at the 25th percentile of the national income distribution between 1996 and 2000. Source: Mishel et al. (2012); Corak (2011).

Figure 6b

Note: Intergenerational earnings elasticity is measured as the elasticity between a father's earnings and their son's adult earnings. The children studied were born during the early-to-mid-1960s and their adult income was measured in the mid-to-late 1990s. Source: Corak (2011); OECD.

Figure 7 Source: Sandfleur (2015); CEA calculations.

Figure 8

Note: Total employment from 1901 to 1947 is derived from estimates in Weir (1992). For 1948 to 2014, employment data are annual averages from the monthly Current Population Survey. Source: Bureau of Labor Statistics, Union Membership Series; Troy and Sheflin (1985); Bureau of Labor Statistics, Current Population Survey; Weir (1992); CEA calculations.

Figure 9

Note: The real U.S. Treasury rate is defined as the nominal constant-maturity rate estimated by the Federal Reserve, less realized inflation defined by the Consumer Price Index. Source: Bureau of Economic Analysis; Bureau of Labor Statistics; Federal Reserve; CEA calculations.

Figure 10

Note: The return on invested capital definition is based on Koller et al. (2015), and the data presented here are updated and augmented versions of the figures presented in Chapter 6 of that volume. The McKinsey data includes McKinsey analysis of Standard & Poor's data and exclude financial firms from the analysis because of the practical complexities of computing returns on invested capital for such firms. For further discussion of that point, see Koller et al. (2015). Source: Furman and Orszag (2015); Koller et al. (2015); McKinsey & Company.

Table 1

Note: Concentration ratio data is displayed for all North American Industry Classification System (NAICS) sectors for which data are available from 1997 to 2012. * indicates that the percentage point change is calculated using only taxable firms in that industry, as its 1997 revenue share data are only available for the 50 largest taxable firms and the 50 largest tax-exempt firms as separate categories, rather than for all firms combined. Performing this same calculation using data for only tax-exempt firms results in two additional industries showing a decline in concentration (Arts, Entertainment and Recreation, and Educational Services), while one shows a slight uptick (Other Services).

Source: Census Bureau, Economic Census (1997 and 2012).

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