



Julian Simon Reconfirmed: A Half-Century Retrospective (population, progress positively correlated)

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Many people believe that global population growth leads to greater poverty and more famines, but evidence suggests otherwise. Between 1960 and 2016, the world’s population increased by 145 percent. Over the same time period, real average annual per capita income in the world rose by 183 percent.

Instead of a rise in poverty rates, the world saw the greatest poverty reduction in human history. In 1981, the World Bank estimated, 42.2 percent of humanity lived on less than \$1.90 per person per day (adjusted for purchasing power). In 2013, that figure stood at 10.7 percent. That’s a reduction of 75 percent. According to the Bank’s more recent estimates, absolute poverty fell to less than 10 percent in 2015.

Rising incomes helped lower the infant mortality rate from 64.8 per 1,000 live births in 1990 to 30.5 in 2016. That’s a 53 percent reduction. Over the same time period, the mortality rate for children under five years of age declined from 93.4 per 1,000 to 40.8. That’s a reduction of 56 percent. The number of maternal deaths declined from 532,000 in 1990 to 303,000 in 2015 — a 43 percent decrease.

Famine has all but disappeared outside of war zones. In 1961, food supply in 54 out of 183 countries was less than 2,000 calories per person per day. That was true of only two countries in 2013. In 1960, average life expectancy in the world was 52.6 years. In 2015, it was 71.9 years — a 37 percent increase.

In 1960, American workers worked, on average, 1,930 hours per year. In 2017, they worked 1,758 hours per year — a reduction of 9 percent. The data for the world are patchy. That said, a

personal calculation based on the available data for 31 rich and middle-income countries suggests a 14 percent decline in hours worked per worker per year.

Enrollment at all education levels is up. For example, the primary school completion rate rose from 74 percent in 1970 to 90 percent in 2015 — a 20 percent increase. The lower secondary school completion rate rose from 53 percent in 1986 to 77 percent in 2015 — a 45 percent increase. Tertiary school enrollment rose from 10 percent in 1970 to 36 percent in 2015 — a 260 percent increase.

Even our air is getting cleaner. In the United States, for example, aggregate emissions of six common pollutants (i.e., carbon monoxide, lead, nitrogen dioxide, ozone, fine and coarse particulate matter, and sulfur dioxide) fell by 67 percent between 1980 and 2016.

And, in spite of a recent increase in terrorist killings and the number of civil wars, the world is still much safer than it was at the height of the Cold War. Last but not least, an ordinary person has greater access to information than ever before. All in all, we live on a safer, cleaner, and more prosperous planet than was the case in 1960.

Causality

How can one explain this unprecedented improvement in global well-being? Some of it must be attributed to technological and scientific progress. Also, specialization and trade played a vital role in improving the state of the world. Globalization ensured that an increase in the world's population translated to an increase in the world's productivity.

Of course, growth required the use of massive amounts of natural resources. How much of our natural wealth remains? Although we do not know the size of most reserves of natural resources, we can ascertain their scarcity or abundance by looking at prices. As this paper shows, after 56 years of human use and exploration, the vast majority of the commodities tracked by the World Bank are cheaper than they used to be — either absolutely or relative to income.

These findings would come as no surprise to the late Julian Simon (1932-1998), who years ago explained and predicted the happy confluence of growing population, increasing wealth, and falling commodity prices. In his 1981 book *The Ultimate Resource*, Simon noted that humans are *intelligent* animals who innovate their way out of scarcity through greater efficiency, increased supply, or development of substitutes. Human ingenuity, in other words, is “the ultimate resource” that makes other resources more plentiful.

An aluminum can, for example, weighed about 3 ounces in 1959. Today, it weighs less than half an ounce. In other cases, we have replaced scarce resources with those that are more plentiful. Instead of killing whales for lamp oil, for instance, we burn coal, oil, and gas. In fact, humanity is yet to run out of a single nonrenewable resource.

Although past performance does not guarantee future results, constant predictions of doom and gloom should be put in perspective. Humanity has solved many challenges in the past, and there is no reason to believe that we will not be able to solve problems in the future. Put differently, there is no compelling evidence to support calls for mandatory curbs on human reproduction and consumption.

Conclusion

The discussion in this paper is not meant to trivialize the challenges that humanity faces or imply that we will be able to solve all of the problems ahead. Instead, it is meant to show that the human brain, the ultimate resource, is capable of solving complex challenges. We have been doing so with disease, hunger, and extreme poverty, and we can do so with respect to the use of natural resources.

Thomas Babington Macaulay, a 19th-century British historian and politician, once asked, “On what principle is it that when we see nothing but improvement behind us, we are to expect nothing but deterioration before us?” In 1830, when Macaulay penned those words, the world was just beginning to industrialize. One hundred eighty-eight years later, humanity is not only still here, but it is flourishing like never before. Few people today would forgo the life expectancy, nutrition, health care, and education they now enjoy in exchange for those experienced by Macaulay’s contemporaries.

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