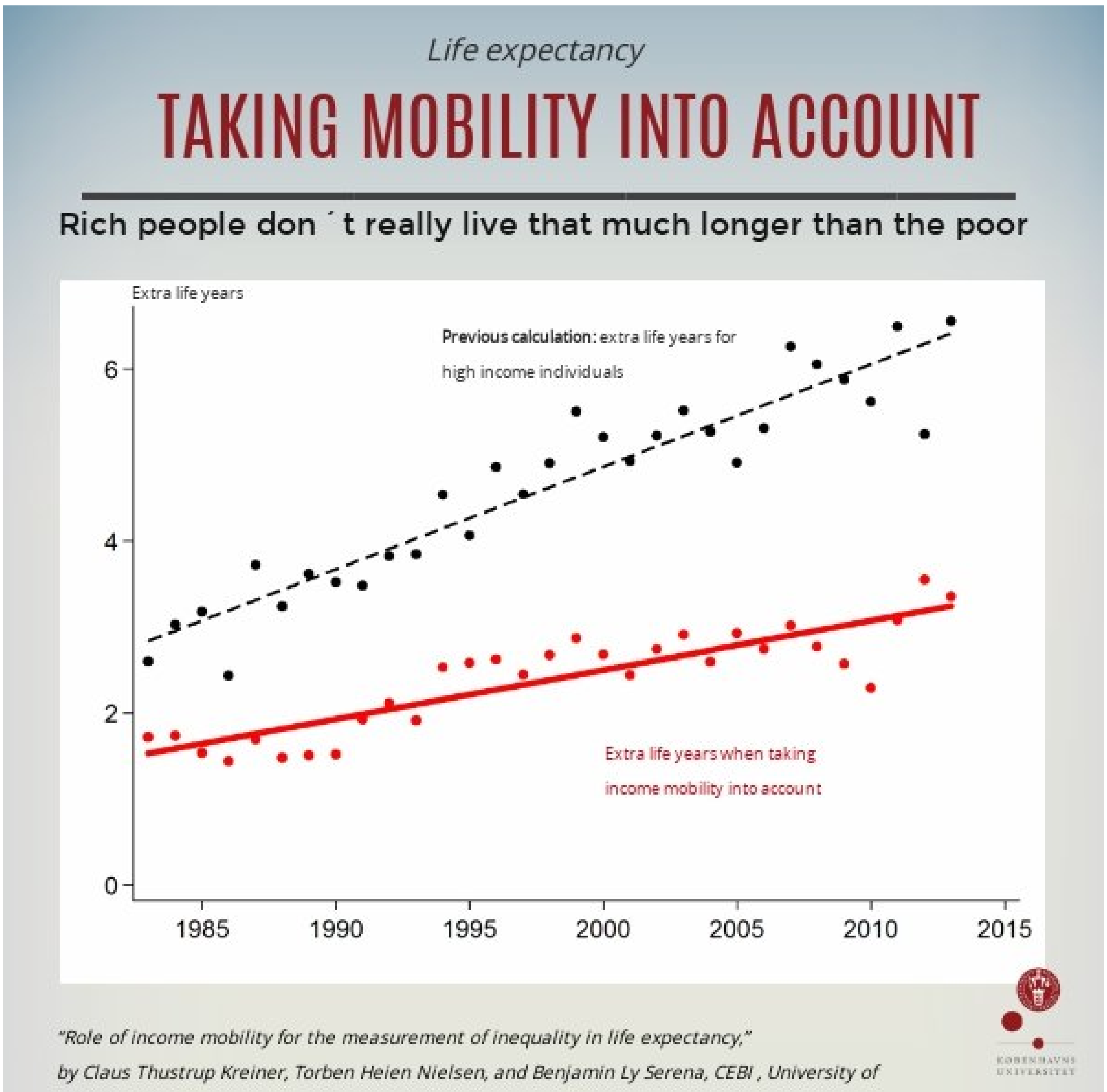
Rich people don't live that much longer than the poor: study

October 29 2018



Life expectancy of 40-year-old male. Previous research methods demonstrated that a 40-year-old man with a high annual income can expect to live six years longer than a same-age low-income man (black graph)*. A new and more precise way to predict life expectancy (red graph) developed by University of Copenhagen economists and funded by the Danish National Research Foundation is now able to take in to account, that a significant number of individuals with both high and low-incomes actually move into other income groups during their lifetime. Thus, the difference in life expectancy between rich and poor proves to be only about 3 years even though it has been steadily growing in the past 30 years. Credit: University of Copenhagen, Center for Economic Behaviour and Inequality CEBI

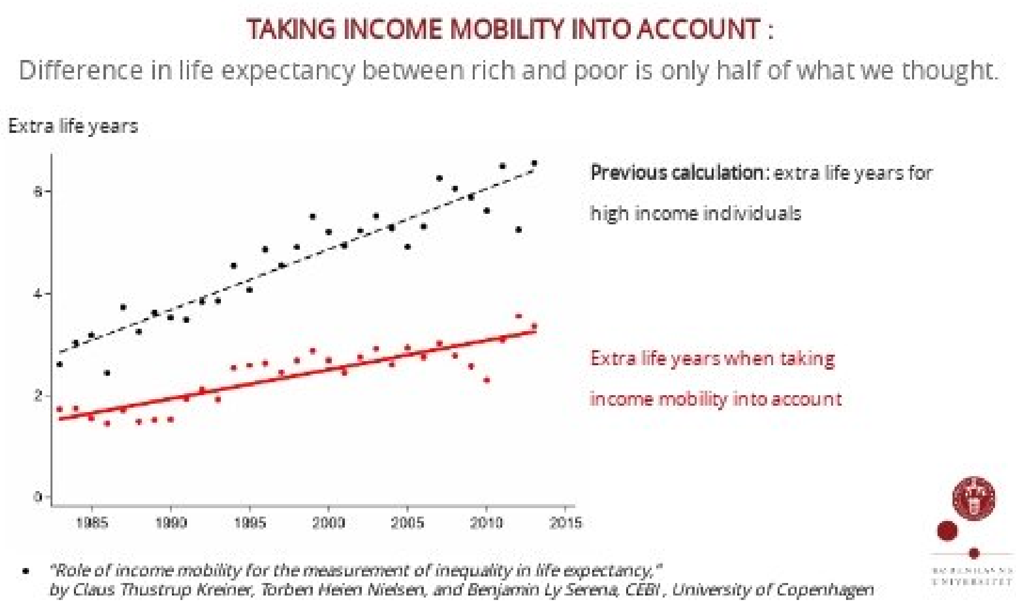
New research results, published in *Proceedings of the National Academy of Sciences* (*PNAS*), challenge previous findings of huge differences in life expectancy between the rich and those at the bottom of the income scale. In real life, people don't necessarily stay poor or stay rich, as assumed in previous research. Three economists from the University of Copenhagen have now found a way to take this mobility between income-classes into account providing a more realistic way to calculate life expectancy for people from different levels of society. Their results show that in reality the difference between the lifespan of a rich and a poor person is really not that big.

In a 2016 work published in *Journal of the American Medical Association*, a Harvard research team showed that high-income people in the U.S. can expect to live 6.5 years longer at age 40 than low-income individuals. This research gave rise to a substantial debate about inequality in health in the US.

The existing method assumes that the poor stay poor and the rich stay rich for the rest of their lives. In reality, however, over a 10-year period, half of the poorest people actually move into groups with better incomes, and likewise, half of the rich move down into lower income classes. The mortality of those who move to a different income class is significantly different from those who stay in the same class.

This mobility between income classes has until now been a challenge for the ability to calculate life expectancy across different groups in the population but Danish economists Claus Thustrup Kreiner, Torben Heien Nielsen, and Benjamin Ly Serena from Center for Economic Behavior and Inequality (CEBI) at the University of Copenhagen (UCPH) have now devised a method to account for this income mobility in the relationship between income and life expectancy by incorporating a classic model of social mobility from the literature.

The authors demonstrated their approach by calculating life expectancy at age 40 in Denmark based on official income and mortality records of the entire population of Danish women and men spanning the period 1983-2013, which approximately halved the difference in life expectancy between people in low and high-income groups:



Life expectancy of 40-year-old male. Previous research methods demonstrated that a 40-year-old man with a high annual income can expect to live six years longer than a same-age low-income man (black graph)*. A new and more precise way to predict life expectancy (red graph) developed by University of Copenhagen economists and funded by the Danish National Research Foundation is now able to take in to account, that a significant number of individuals with both high and low-incomes actually move into other income groups during their lifetime. Thus, the difference in life expectancy between rich and poor proves to be only about 3 years even though it has been steadily growing in the past 30 years. Credit: University of Copenhagen, Center for Economic Behaviour and Inequality

When accounting for income mobility, life expectancy for a 40-year-old man in the upper income groups is 77.6 years compared with 75.2 for a man in poorer groups—a difference of 2.4 years. For women the difference between high and low-income groups is 2.2 years. However, without taking the income mobility into account the life expectancy difference was twice as big—around five years—for both men and women. Using the method, the authors suggest that the difference in the U.S. is three years rather than 6.5.

"Our results reveal that inequality in life expectancy is significantly exaggerated when not accounting for mobility. This result is quintessential not only for our understanding of one of the most important measures of inequality in a society, namely, how long different groups can expect to live. But also by mis-measuring this type of inequality, we get to misleading conclusions about the cost and benefits of public health programs such as Medicare and social security policies. For instance, given the rich live longer, they will also benefit many more years from old-age-pension benefits," says professor Thustrup Kreiner.

The difference is growing

Even though inequality in life expectancy now proves to be only half as big as earlier anticipated, the new UCPH-research funded by the Danish National Research Foundation also shows that the difference in life expectancy between the rich and the poor has steadily increased over the 30 years represented in the data. This is despite Denmark being a country that is internationally renowned for its free health care and education, as well as a finely masked welfare system that, in many respects, is thought to make up for differences in income.

The reason for this steady but strikingly growing difference in life expectancy is beyond the scope of this particular project, but the UCPH-economists point out that other research has demonstrated that individuals of high income/high education groups also have proven to benefit more from new health technologies and seem to take more advantage of new types of treatment and prevention of disease.

More information: Claus Thustrup Kreiner el al., "Role of income mobility for the measurement of inequality in life expectancy," *PNAS* (2018). www.pnas.org/cgi/doi/10.1073/pnas.1811455115

Raj Chetty et al. The Association Between Income and Life Expectancy in the United States, 2001-2014, *JAMA* (2016). DOI: 10.1001/jama.2016.4226

Provided by University of Copenhagen