



Mortality Rates and the Business Cycle

Rubén Hernández-Murillo, *Senior Economist*
Christopher J. Martinek, *Senior Research Associate*

Long ago, economist Thomas Malthus (1766-1834) stressed that mortality rates tended to rise sharply in economic recessions.¹ His explanation was that reduced incomes lead to widespread malnutrition in economies where many people live at or near subsistence.² In modern developed economies, however, few people live in such circumstances. Mortality rates no longer rise sharply in economic recessions. If anything, they now tend to *fall*. In other words, an economic boom may be bad for your health.

The chart plots the unemployment and mortality rates in the United States from 1965 to 2009. Over this period, unemployment and mortality had a negative correlation of about 60 percent. According to these data, a 1-percentage-point increase in the unemployment rate relative to its historical average leads to about 12,000 fewer deaths annually.

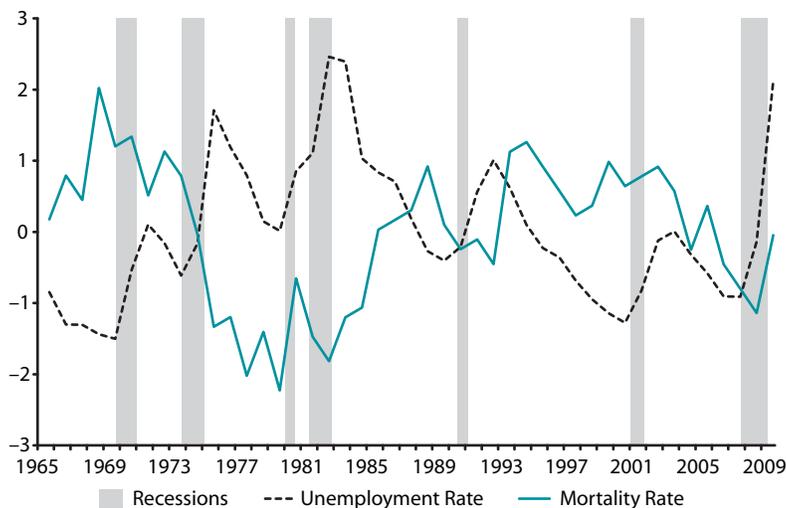
Why does mortality now fall in bad economic times? Economist Christopher J. Ruhm suggests the main reason is that, during temporary downturns, the opportunity cost of leisure time falls and individuals opt for healthier lifestyles because they have more time to prepare healthier meals at home, engage in physical activity, and visit the doctor.³ During expansions, the additional favorable opportunities in the labor market increase the opportunity cost of leisure time, so individuals have less time for healthy activities such as dieting and exercise.

Ruhm notes that lifestyle changes are not the only channel through which the business cycle affects mortality. For example, if health is an input in the production of goods and services, then during expansions, as individuals work longer hours, hazardous working conditions, exertion from employment, and job-related stress are more prevalent and may lead to more work-related accidents. Factors outside the workplace, such as motor vehicle accidents, are also more common during upturns, as improved

economic conditions lead to more highway traffic. Between 1965 and 2009, motor vehicle fatalities during recessions averaged 18.9 deaths per 100,000 individuals compared with 19.6 per 100,000 during expansions. In fact, Douglas et al. recently found that the bulk of the correlation in mortality and unemployment for adults of prime working age is explained by a positive correlation between motor vehicle accidents and the business cycle, not leisure choices or work-related factors.⁴

Mortality rates no longer rise sharply in recessions.

Relationship between Unemployment Rates and Mortality Rates



NOTE: Mortality rates (deaths per 100,000 people) for 2008 and 2009 are preliminary estimates. Unemployment and mortality rates are detrended using a linear trend and normalized to have matching scales by subtracting the mean of the detrended variable and dividing by its standard deviation.
SOURCE: Census Bureau, *Statistical Abstract of the United States*; Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics; and Bureau of Labor Statistics.

The strong negative correlation between unemployment and the mortality rate is not unique to the United States. A similar association exists in other developed countries. Ruhm notes, however, that the unfavorable effects of temporary economic expansions on mortality tend to be offset if economic growth is long lasting (an increase in *permanent income* tends to reduce mortality). The most recent recession, which was unusually severe by historical standards, indicates that the favorable effects of recessions on mortality might also be offset during prolonged economic downturns. The chart shows that rising unemployment since 2007 has been accompanied by a recent spike in mortality rates. ■

¹ Malthus, Robert T. "An Essay on the Principle of Population." Second Ed. 1803; www.gutenberg.org/files/4239/4239-h/4239-h.htm.

² This statement forms the basis of Malthusian growth theory.

³ Ruhm, Christopher J. "Are Recessions Good for Your Health?" *Quarterly Journal of Economics*, May 2000, 115(2), pp. 617-50.

⁴ Miller, Douglas L.; Page, Marianne E.; Stevens, Ann Huff and Filipowski, Mateusz. "Why Are Recessions Good for Your Health?" *American Economic Review*, May 2009, 99(2), pp. 122-27.