1. Introduction

Relationship between health and GDP growth is important and works in both directions. This is very important for development and transition because health outcomes are measured much better than national income. More important, however, health can be an important factor in economic performance. What makes analysis complicated – and interesting – is that economic performance also impacts on the health environment.¹

2. A Brief Survey

Life expectancy has risen dramatically during the 20th century (and the 19th too). This must be important for assessments of GDP and for assessing the determinants of GDP. I consider the former below with the concept of full income. The latter point is worth noting, however.

2.1. Health and Growth

The effect of economic growth on health is well known. Because the demand for health care is income elastic, rising per-capita income leads to increasing expenditures on health care and improved health status. But the reverse link – from improved health care to economic growth has recently drawn increasing attention. Understanding this link is crucial to the project, though it is difficult due to the presence of causation in both directions.

The natural mechanism that relates health status to economic performance is human capital theory. Health status is a component of an individual’s human capital. Poor health reduces both the quality and quantity of labor supply. It also results in low levels of human capital accumulation. Low growth results in poor health outcomes. We will do a comparative

¹This reverse causality makes estimating the causal effect of health on economic performance difficult, but work in the area usually identifies the effect through timing; using childhood health and nutrition inputs as a determinant of adult wages or taking population health in, say, 1960 as a factor influencing economic growth during 1960–95.
growth than the dependent youth – good for Russia if true.

• How large is the contribution of demographic change to economic miracle? They say large.
  - two channels
    * increase in hours worked per person
    * increase in savings (but very hard to control for endogeneity here)

2.2. Full Income

These considerations also imply that GDP may not be the best measure of welfare. Consider two economies with similar GDP’s but different health levels. They clearly do not produce similar levels of welfare for their inhabitants (not to mention projections of the future be the same). To adjust for this, some researchers use estimates of the value of a statistical life (VSL). The latter is derived from observed willingness to pay to reduce risk.\(^9\) Using this one can look at changes in "full income" by adding the value of changes in annual mortality rates (calculated using VSL’s) to changes in gdp per-capita. These studies tend to give a different view on inequality: full income inequality fell sooner in the developing world than income inequality itself. Some studies find strong evidence for full-income convergence, even if there is evidence of divergence in gdp per-capita.

3. Implications for Other Work

This is interesting because of the settler mortality instrument. Recall the idea is that settler mortality is correlated with institutional choice, but not with other factors that predict

\(^9\) Suppose, for example, a worker requires (and is paid) $500 a year of additional pay to accept a more risky but otherwise similar job, where the increase in the mortality rate is 1 in 10,000 a year, the value placed on reducing risk by this magnitude is simply $500. The value of a statistical life is defined as the observed amount required to accept a risk divided by the level of the risk—that is, in the example we have chosen, the VSL would be \(\frac{500}{1/10000} = 5,000,000\), a number in the range of estimates for the United States today. Willingness to pay to avoid risks rises, not surprisingly, with income. A reasonable range of values for a country’s VSL appears to be 100–200 times GDP per capita, with values estimated in richer countries more likely to occur toward the high end of the range.