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The Impact of Health on Labor Supply Near Retirement

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Despite the growing literature and the increasing availability of rich data, there is still no consensus about the importance of health for employment. The existing literature has developed many empirical approaches and applied them to different datasets collected in different contexts. This naturally led to estimates of health's effects on employment that differ significantly from study to study. Currie and Madrian (1999), O'Donnell et al. (2015), and French and Jones (2017) review the empirical evidence and advance some potential explanations for the discrepancies between estimates. Most of these relate to the measurement and modeling of health.

Ideally, one would like to have a composite index of health representing work capacity or health stock — a comprehensive description of health status that could be used in a variety of contexts and facilitate comparisons across studies. The difficulty, of course, resides in the fact that such index is not readily observable. This problem has led to a proliferation of different methods to proxy for health. For instance, some applications adopt a multidimensional description of health, with many variables affecting employment in a flexible way; other applications rely on a constructed health index that is then related to employment. The type of information used to describe health also varies across studies. Some favor objective indicators, which unambiguously describe specific health conditions such as arthritis. Others use subjective accounts of self-reported health to obtain a comprehensive measure of health status. Even within the objective and subjective categories, there is no agreement about which specific variables should be used. Moreover, various modeling strategies have also been adopted, often resulting in different health effect parameters. For instance, studies using cross-sectional data tend to focus on the overall impact of health, while longitudinal data can be used to estimate the impact of health changes.

Despite the important differences, there is still little systematic research assessing the relative merits of the various methods. In this study, we fill this gap by addressing the following questions: Is the choice of health measure important? How should these health measures be combined into a health index? Is a single health measure sufficient to capture the impact of health on employment, or is it important to allow for multiple measures? Are cross-sectional methods appropriate, or is it necessary to account for individual heterogeneity by accounting for initial conditions?

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To answer these questions, we revisit many of the approaches proposed in the literature within a unified framework. We produce a set of estimates that can be compared across specifications, and contrast the resulting estimates using formal statistical tests, relating their differences to the underlying measurement and modeling choices. Specifically, we compare estimates of health effects obtained by using either subjective measures or objective measures. We deal with various sources of measurement error, including justification bias, by combining the two sets of health variables and using the objective measures as an instrument for the subjective measures. We use principal components and factor analysis to combine multiple health measures into a parsimonious single health index. An index of the common variation across these variables is likely to be a better summary of health status than any of the original measures taken individually, and is likely to be less sensitive to measurement error. We enlarge our empirical model to include cognition, a dimension that is not typically considered in other studies, but that is closely intertwined with health and may capture a finer detail of how health impairs work.

Our empirical analysis is based on two large surveys of older people, the United States' Health and Retirement Study (HRS) and the English Longitudinal Study of Ageing (ELSA). These are high-quality longitudinal datasets that include many different measures of health, all key requisites to support the replication of the alternative measures and models of health and employment used in past studies. Moreover, their very similar structures and information support the use of harmonized measures and estimation procedures in producing comparable estimates for the two countries.

First, we find that objective and subjective health measures deliver similar estimates if a sufficiently large set of objective measures is used; controlling for only a limited number of health conditions, however, may reduce the estimated impact of health on employment up to about half. Second, we find that a single health index, while sometimes rejected from a statistical standpoint, produces estimates of the effect of health on employment that are similar to those obtained using multiple health indexes. Third, using objective measures to instrument for subjective measures also produces similar, although slightly larger estimates. Fourth, we find that properly accounting for heterogeneity in background characteristics by controlling for initial conditions is a more important modeling issue than the choice of the health measure. Fifth, although cognition is significantly related to employment, we find that it has little added explanatory power once we also control for health, suggesting that cognition is not a key driver of employment at these ages.

For direct comparison across groups, countries, and methods, we calculate the share of the decline in employment between ages 50 and 70 that can be explained by health declines. Overall we find that, depending on country, gender, and education, declines in health explain between 3 percent and 15 percent of the decline in employment. These effects are larger for high school dropouts and tend to decline with education. They are also larger in the U.S. than in England, generally by a factor of two to three. We estimate that the majority of the differences across countries is driven by the stronger effect of health on employment in the U.S., rather than by differential declines in health or employment. However, the key findings we outline above are consistent across the two countries.

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