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Title: *“Does the Shape of the Utility Function Vary with Health Status? Evidence from SHARE”.*

Abstract

Background: According to several authors (e.g. Zeckhauser 1970, Arrow 1974), the dependence of the shape of the utility function on health conditions has relevant effects on a wide set of economic behaviors. For example, if marginal utility of consumption increases or decreases as a consequence of illness, this is likely to have an impact on the demand for health insurance (Gyrd Hansen, 2016) or on the optimal level of life-cycle savings (Kools and Knoef, 2017) or on optimal setting of social security systems (Viscusi and Evans, 1990, Finkelstein 2013). According to Finkelstein (2013), we develop an empirical model to estimate how the marginal utility of consumption varies with health.

Objective: This paper investigates on how possible shocks in the health status may lead to a change in an individual's preferences and decision making approach. Specifically, this paper try to understand whether, and in what direction, the utility function varies in response to health shocks. The theoretical framework is built on Drèze and Rustichini (2000) who introduced the concept of ‘state dependent utility function’, to provide some potential explanations on how possible changes in the ‘state of the world’ (in our specific case variations in individuals health status) may lead to deviations in individuals decision making approach.

Under the theoretical framework of state dependent utility function, we developed an empirical model in which the impact of health on the marginal utility of consumption can be estimated from data on permanent income, health and utility proxies.

Methodology: The model is estimated using data from five waves of the Survey of Health Aging and Retirement in Europe (SHARE) – 1, 2, 4,5,6 - collected over the period 2004-2016 (the third wave - SHARELIFE - was not included because retrospective). SHARE is a multidisciplinary and cross-national panel database of micro data, which contains rather detailed information on demographics, socioeconomic characteristics, health status and family relationship of the over 50 in Europe. The survey information for each wave of SHARE were collected through Computer-Assisted Personal Interviews (CAPI) supplemented by a self-completion paper. The interviews were carried out in twenty-seven European countries. However, this study only uses data from nine countries present in all the available waves: Austria, Belgium, Denmark, France, Germany, Italy, Spain, Sweden and Switzerland. In this study, we also restrict the sample of analysis to retired individuals to avoid potential first order effect on income of the health shock. After deleting records with missing values, we obtained a final sample of 17,509 observations.

We use as dependent variable a proxy of utility: the CASP 12 i.e. a functional indicator of quality of life developed for early old age. The CASP-12 questionnaire represents a psychometrically validated short version of the original 19-item version (CASP-19). It is a self-reported index built on a 12 item questionnaire organized in four-point Likert ascending scales. CASP-12 captures four dimensions of quality of life: control (C), autonomy (A), self-realization (S) and pleasure (P). It provides an easily interpretable score ranging from 12 to 48, with higher scores indicating better quality of life.

According to the previous studies on subjective well being (SWB) (see for instance Boyce 2010; Kolls and Knoef, 2017) we estimate the model using different approaches: OLS, fixed effect (that takes into account the unobserved heterogeneity which characterizes and influences SWB), random effect, and random effect with Mundlak correction (which takes the group means of the time explanatory variables into account in order to remove the time invariant individual effects from the model - Mundlak, 1978).

Preliminary Results

Our preliminary findings, robust under different specifications of the model, support the existence of positive health state dependence utility i.e. the marginal utility of consumption increases, relative to the situation where health state dependence is not taken into account. Our results are in accordance with the previous empirical literature which focused on European data (see for instance Kolls and Knoef, 2017).

A potential explanation of an increasing marginal utility of consumption in response to a health shock relies on the fact that bad health may increase the cost of every day activities - also leisure activities. One may need more money to keep doing every day activities since it may be necessary to involve extra help, or these activities need to be adapted to be still performed in case of bad health. To be able to keep up with ways of living experienced before sickness, people may be willing to afford higher expenses, with a consequent increasing level of the marginal utility of consumption.

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