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Subjective health expectations☆

Kim P. Huynh[a], Juergen Jung[b,*]

[a] Bank of Canada, 234 Wellington Street, Ottawa, Ontario K1A 0G9, Canada
[b] Department of Economics, Towson University, 8000 York Road, Stephens Hall 101K, 21252 Towson, MD, USA

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Abstract

Subjective health expectations are derived using data from the U.S. Health and Retirement Study (HRS). We first use a Bayesian updating mechanism to correct for focal point responses and reporting errors of the original health expectations variable. We then test the quality of the health expectations measure and describe its correlation with various health indicators and other individual characteristics. Our results indicate that subjective health expectations do contain additional information that is not incorporated in subjective mortality expectations and that the rational expectations assumption cannot be rejected for subjective health expectations. Finally, the data suggest that individuals younger than 70 years of age seem to be more pessimistic about their health than individuals in their 70s.

JEL classification: I10; D84; C11; C23

Keywords: Focal points; Bayesian updating of expectations; Rational health expectations; Work limiting health problems

1. Introduction

Standard models of health care demand assume rational expectations as a modeling device (e.g., Arrow, 1963; Pauly, 1968). However, recently health economists have argued that cognitive

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* Corresponding author. Tel.: +1 812 345 9182; fax: +1 410 704 3424.
E-mail addresses: kim@huynh.tv (K.P. Huynh), jjung@towson.edu (J. Jung).

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errors on part of patients and providers often lead to a violation of rational expectations and have therefore introduced concepts from behavioral economics (compare Fuchs (2000) and Frank (2004)). Similarly, Manski (2004) makes the case for the more frequent use of direct measures of subjective expectations in economics and foresees the need for research on how such expectations are formed. From the empirical literature such as Khwaja, Sloan and Chung (2007), Benitez-Silva, and Ni (2008), and Hurd (2009), we know that self-reported subjective probability measures in household surveys have strong predictive power. It is especially true when individuals have considerable private information which is common when dealing with health and mortality issues. In addition, subjective mortality expectations have been used to explain savings decisions cf. Bloom, Canning, Moore, and Song (2007) or retirement cf. O'Donnell, Tappa, and Doorslaer (2008). However, results based on subjective mortality expectations data are somewhat different from results based on health outcome variables. The latter are shown to have a much stronger influence on retirement decisions than the expectations variables, cf. Siddiqui (1997) and Dwyer and Mitchell (1998). Most of the literature that connects subjective expectations with labor supply and retirement decisions, such as Hurd (1989), Hurd and McGarry (1995), Hurd and McGarry (2002), Gan, Gong, Hurd and McFadden (in press), Van Solinge and Henkens (2010), concentrates on the role of mortality expectations and ignores subjective expectations about future health issues.

In this paper, we argue that expectations about future health events are significantly different from expectations about future mortality. Auld (2002) finds that changes in health do not have the same effects as changes in life-expectancy, although both are closely linked. Fortunately the Health Retirement Study (HRS), a panel data survey that covers the elderly in the U.S. from 1992 onwards, reports measures about subjective health expectations. More specifically, these data provide information about individuals' expectations about future work limiting health problems and the actual occurrence of such health problems which allows us to systematically analyze subjective expectations about future health.

Our results can be summarized as follows. Subjective health expectations about future work limiting health problems seem to consistently predict health outcomes. The rational expectations hypothesis cannot be rejected for subjective health expectations. Since a high percentage of the answers to the health expectations question are focal points, we correct for focal points using a Bayesian algorithm. After filtering the subjective expectations from reporting errors they become even more similar to rationally formed expectations. Younger cohorts are more pessimistic about their future health than older cohorts. Finally, we are able to show that subjective expectations about future health events carry additional information that is not contained in subjective survival expectations. We therefore argue that it is important to understand how individuals form beliefs about their future health in order to improve economic models that simulate household decision making over the life-cycle.

To justify the importance of the results of the health expectations variable we first analyze the health outcome variable and connect it to results from the literature on disability. We then test how well subjective expectations about such work limiting health problems predict health outcomes and whether such expectations are formed rationally. The health variable that we use for this analysis is work limiting health problems from the HRS data. We refer to this variable as Health-Problem from now on. This binary variable indicates whether an impairment or health problem exists and limits the kind or amount of paid work the respondent is able to perform. The HRS does not define what a work limiting health problem is. We therefore quantify Health-Problem by investigating its correlation with various health indicators as well as demographic and income variables. The HRS data set is very rich in detailed questions about the health status of