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## The long-term care problem, precautionary saving, and economic growth

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## Abstract

This paper examines the interaction between decisions about financing after-retirement health shocks and precautionary saving motives, and how this interaction affects economic development. We show that at low levels of income, individuals choose not to save to finance the cost of after-retirement health shocks. However, once individuals become sufficiently rich, they do choose to save to finance the cost of these shocks. This change in individual saving behavior may give rise to multiple steady state equilibria.

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## 1. Introduction

The cost of long-term care threatens the financial health of the elderly.<sup>1</sup> For example, in the USA, even with Medicare and private health insurance, the risk of a catastrophic

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<sup>&</sup>lt;sup>1</sup> Long-term care is for chronic illness or disability rather than acute illness. Care for chronic illness lasts as long as the patient lives so that medical expenses accumulate unrelentingly.

medical expense is large. Out-of-pocket medical expenses for the elderly in 1988 were estimated to be \$ 2394 per elderly person or roughly 18% of their average per capita income. Nearly 10% of elderly households spend a fifth or more of their incomes on out-of-pocket medical expenses (Palumbo, 1999) and 2–3% incur medical expenses exceeding 40% of their adjusted gross incomes (Feenberg and Skinner, 1994). Nursing home expenses are the most significant long-term care costs for the elderly. According to Palumbo (1999), the likelihood of a typical 65-year-old person entering a nursing home during his or her lifetime is 43%. Once admitted, the average stay in a long-term care facility exceeds one year. Because nursing home costs are virtually uninsured, admission to a long-term care facility can quickly deplete one's financial wealth.

Therefore, after-retirement health uncertainty should provide young individuals with strong precautionary motives for saving. Despite this, less attention has been paid to this issue in the literature than to precautionary saving in response to lifespan and earning uncertainty. Kotlikoff (1989) points out that the lack of research on this topic may reflect the difficulty of precisely quantifying the economic risk of morbidity. However, recent analyses have begun to investigate this issue rigorously and they show that after-retirement health uncertainty has a strong impact on individual consumption–saving behavior. For example, Palumbo (1999) estimates that the uncertainty of future health expenses alone induces a typical family to spend, on average, 7% less. Furthermore, Hubbard et al. (1994, 1995) and Palumbo (1999) show that the precautionary saving motives arising from future health uncertainty play crucial roles in explaining the observed pattern of individual consumption–saving behavior over a life cycle.

Recently, Dynan et al. (2000) found that higher (lower) lifetime income households are likely to save a larger (smaller) fraction of their income. This implies that there exists a positive correlation between lifetime income and saving rate. Considering the observed differences in precautionary saving and bequest behavior by lifetime income groups, Dynan et al. (2000) explain this empirical result as follows. Concerning precautionary saving behavior, under the asset-based means-tested public subsidy programs such as Medicaid and Supplemented Security Income, households with lower lifetime income are likely to reduce their savings for future health expenses so as to qualify for the subsidy program (Hubbard et al., 1995). On the other hand, households with higher (lower) lifetime income spend more (less) for medical treatment in the case of costly illness (Newhouse, 1977).<sup>2</sup> Thus they are likely to save more (less) for future health expenses. Concerning bequest behavior, households with higher (lower) lifetime income are likely to leave larger (smaller) financial bequests to subsequent generations (Becker and Tomes, 1986 and Mulligan, 1997). Therefore, the combination of these precautionary saving and bequest behaviors may explain the observed positive correlation between lifetime income and the saving rate.

Caroll and Samwick (1998), Gourinchas and Parker (2001), and others show that wealth that is held for precautionary saving motives occupies a larger fraction of total wealth and accounts for at least 50% of total wealth. Moreover, using OECD data, Jitsuchon and Saito (1995) show that cross-country differences in saving and per-capita growth rates are closely linked with the degree of heterogenous uninsured idiosyncratic shocks. These results imply that differences in individual precautionary saving behavior according

<sup>&</sup>lt;sup>2</sup> Dynan et al. (2000) did not focus on this effect, although it was thought to be potentially significant.

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