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Innovation and risk selection in deregulated social health insurance

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Abstract

One important motive for deregulating social health insurance is to encourage product innovation. For the first time, the cost savings achieved by non-US managed care plans that are attributable to product innovation are estimated, using a novel approach. Panel data from a major Swiss health insurer permits to infer health status, which can be used to predict health care expenditure. The econometric evidence suggests that the managed care plans benefit from risk selection effects. In the case of the health maintenance organization (HMO) plan, however, the pure innovation effect may account for as much as two-thirds of the cost advantage.

JEL classification: I11; G22; D82

Keywords: Health insurance; Asymmetric information; Innovation

1. Introduction and motivation

The objective of managed competition in health care is to direct health insurers' efforts towards product innovation rather than towards cream skimming in spite of premium regulation that creates incentives in favor of enrolling low risks. In order to neutralize this incentive, risk adjustment schemes have been introduced in Germany (Schneider, 1994), The Netherlands (van de Ven and Ellis, 2000), Switzerland (Spycher, 2002) and (in a somewhat different way) in the US (Greenwald et al., 1998). However, these schemes fail to fully bar risk selection because insurers always dispose of private information that goes beyond that contained in the risk adjustment factors (such as age, sex, and even diagnostic information).

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On the other hand, they easily punish an insurer for its innovation because new products typically attract mobile (and hence often younger) individuals. This suspicion is of particular relevance in the case of Switzerland, whose risk adjustment scheme controls for age and sex only (Beck and Zweifel, 1998). Therefore, an innovating insurer will not only be suspect of cream skimming but sanctioned by an increased payment into the scheme because of the age adjustment. Quite generally, the mix between product innovation and risk selection achieved under the influence of risk adjustment constitutes an important policy issue.

The experience of a major Swiss health insurer is of particular interest in this context. In contradistinction to other countries (and most other competitors within Switzerland), this insurer not only writes policies with different annual deductibles but also offers a choice of managed care (MC) plans. Among these alternatives, the health maintenance organization (HMO) plan stands out with average treatment costs that are 62% lower than in the conventional fee-for-service setting. At the same time, HMO enrollees are some 7 years younger than enrollees of conventional plans. The objective of this contribution thus is to find out how much of the cost difference can be traced to risk selection (i.e. differences in socioeconomic characteristics and in particular latent health status) and how much of it remains attributable to innovation (i.e. differences in plan incentives, to be detailed in Section 4.1). Should it be found that most of the cost differential is due to innovation, then the MC alternatives may well constitute a Pareto improvement since the reservations formulated in the literature (see Smith and Betley, 2000) do not apply to the Swiss case. First, fees (and in particular hospital rates) cannot be individually negotiated by health insurers, which precludes cost shifting between MC and conventional service providers. Second, individuals are entirely free to choose between the alternatives considered, permitting their choices to be interpreted as an expression of revealed preference. Conversely, if risk selection effects should turn out to be dominant, then a case could be made for a mandated uniform health insurance system that is not fraught with the considerable loading for acquisition costs incurred for the marketing of differentiated insurance products.

The traditional approach to the problem of controlling for risk selection in non-experimental situations has been to take the choice of plan into account in one of two ways, either by endogenizing this choice (Cameron et al., 1988) or by considering it as a sample selection mechanism calling for sample selection bias correction (Waters, 1999). However, the present database contains repeated measurements of the same individuals. This permits a novel approach, which consists of inferring latent health status from previous health care expenditure (HCE). This new approach is compared to the second alternative, viz. the sample selection bias correction, to check whether the two yield similar results.

Section 2 is devoted to a literature review concerning the effects of MC plans on HCE and the question of whether risk selection may be the cause of the cost difference. Section 3 contains possible model specifications, which depend importantly on whether choice of insurance plan and of intensity of treatment are thought to occur simultaneously or in a sequence. In addition, the statistical determination of latent health from previous observations of HCE is described. In Section 4, the database and the variables used are defined and the estimation results presented. It turns out that accounting for plan choice through correcting for sample selection bias and using measurements of latent health result in very similar estimates. The main finding is that a major part of the cost differential in favor of MC can be traced to innovation, and Section 5 offers a discussion of the reasons for and possible criticisms of this result.