



Measuring the effects of reducing subsidies for private insurance on public expenditure for health care[☆]



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ARTICLE INFO

Article history:

Received 30 April 2012

Received in revised form

14 November 2013

Accepted 18 November 2013

Available online 27 November 2013

JEL classification:

I11

H42

C31

C15

Keywords:

Private health insurance

Subsidies

Public and private finance

Simultaneous equation models

Count data

ABSTRACT

This paper investigates the effects of reducing subsidies for private health insurance on public sector expenditure for hospital care. An econometric framework using simultaneous equation models is developed to analyse the interrelated decisions on the intensity and type of health care use and private insurance. The framework is applied to the context of the mixed public–private system in Australia. The simulation projections show that reducing premium subsidies is expected to generate net cost savings. This arises because the cost savings achieved from reducing subsidies are larger than the potential increase in public expenditure on hospital care.

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1. Introduction

In many modern economies, the public sector plays an important role in the financing of health care. Nearly all OECD countries have universal health systems, where health care is funded either through taxation, or through publicly-sponsored or subsidised

health insurance. Even in the market-oriented health system of the United States, health insurance is directly subsidised for individuals and families with low incomes and the elderly, while employment-based private health insurance is indirectly subsidised through the tax system. The extent of public involvement on health care financing in the United States is expected to rise with the implementation of the Patient Protection and Affordable Care Act which aims to ensure that all individuals have health insurance through a combination of mandates, premium regulations and subsidies.

While there are generally strong justifications for the provision of subsidies for health care and health insurance, the arguments for subsidising *duplicate* private health insurance (PHI) in countries with universal health systems are less compelling. In these countries (e.g. Australia, Spain, United Kingdom), a private health care market coexists alongside the public sector providing health services already covered under the public system. Public subsidies for private insurance, either in the form of tax incentives or monetary rebates on premiums, have been a source of policy contention (Colombo and Tapay, 2004). It is often argued that incentives for PHI can stimulate the private health care market, relieving both capacity and cost pressures off the public system, and improving access to and quality of public sector care. However,

[☆] I am grateful for the comments from Deborah Cobb-Clark, John Deebie, Guyonne Kalb, Elizabeth Savage, and participants at the 3rd Australasian Workshop on Econometrics and Health Economics, the 8th World Congress on Health Economics, and seminars at the University of Melbourne and Monash University. The suggestions and comments from two anonymous referees have improved the paper considerably. This paper uses unit record data from the in-confidence version of the Household, Income and Labour Dynamics in Australia (HILDA) survey. The HILDA project was initiated and is funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). I gratefully acknowledge financial support from the Australian Research Council Discovery Project Grant (ID: DP0880429) and through grants provided by the Faculty of Business and Economics at The University of Melbourne. The findings and views reported in this paper are mine and should not be attributed to either FaHCSIA, Melbourne Institute or the funding organisations.

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questions have been raised as to whether an expanding private sector diverts valuable resources away from the public sector. In addition, issues of equity arise as privately insured individuals, who usually have higher incomes, can bypass the public sector queues and obtain faster access to care.

An important question in evaluating the effectiveness of subsidies for duplicate PHI is whether subsidies are self-financing – if its introduction would lead to cost savings within the public health care system that exceed the cost of the subsidy program. The converse question, one that is pursued in this paper, is whether public savings achieved from reducing subsidies can more than offset the potential increase in public expenditure. Understanding the costs and benefits of subsidy programs for private insurance is important as it appraises the effectiveness of policy instruments available to governments seeking to influence the public and private composition of health expenditures. This is especially relevant as policy makers look towards sources of private finance to pay for the health care demands of their populace in the face of rapidly growing public spending.

A number of studies have examined the self-financing nature of subsidies for private insurance. Emmerson et al. (2001) and Frech and Hopkins (2004) investigate this issue through an ex-post policy evaluation for the United Kingdom and Australia respectively. The studies conclude that the cost of subsidising PHI exceeds the fiscal benefits on the public sector. López Nicolás and Vera-Hernández (2008), through an ex-ante policy simulation, arrive at a similar conclusion when simulating the effects of abolishing tax subsidies for private insurance in Spain. In addition to the significant cost involved in subsidising PHI, Colombo and Tapay (2004) highlight two other reasons why duplicate PHI is expected to have little cost-shifting effects (pp. 193 and 194). Firstly, relative to the public sector, the private health care sector usually focusses on elective treatments for patients with less complex and severe medical conditions. Secondly, privately insured individuals can continue to utilise the public sector. Following this, a question that is central to the debate is whether privately insured individuals ‘opt out’ of the public system by substituting private for public health care, or ‘top up’ and enlarge their use of health care without reducing their reliance on the public system (Fabbri and Monfardini, 2011).

This paper contributes to the literature investigating the self-financing nature of PHI subsidies. It develops a microeconomic framework to analyse the interrelated decisions on the intensity and type of health care use and PHI. The framework builds on the work by López Nicolás and Vera-Hernández (2008) who construct a discrete choice model to analyse the (binary) decisions surrounding public and private health care use and private insurance. The framework proposed here comprises of three simultaneous equation models which accommodate the count data nature of the health care utilisation measures (number of hospital admissions, length of overnight stay) and the binary nature of the measures of the type (public vs. private) of hospital care and PHI.

The econometric framework is applied to the context of the mixed public and private health system in Australia. Australia is an interesting case study for examining the self-financing hypothesis. In the late 1990s a series of policy measures was introduced in the PHI market within a short time frame to encourage the purchase of private insurance. These measures include a tax penalty on high income individuals without private health cover, a generous 30 percent rebate on premiums, and the introduction of entry-age adjusted premiums. To evaluate the self-financing nature of PHI, the estimates from the econometric models are used in an ex-ante simulation analysis in which the premium rebates are scaled back.

This study combines two themes within the literature on the economics of health care and health insurance. The first concerns the effects of tax subsidies on the demand for health insurance, for

which there have been considerable research in the United States (e.g. Gruber and Poterba, 1994; Gruber and Washington, 2005) and Canada (e.g. Stabile, 2001; Finkelstein, 2002). These studies, like most program evaluation research, focus on the ex-post evaluation of a policy or program. They exploit variation in the insurance price that arises from changes in the tax treatment on premiums and benefits affecting only a part of the population (e.g. defined by occupation types or geography), and examine how demand has changed relative to a subpopulation or ‘control group’ not affected by the policy change. While this treatment-control approach has its merits, it is not always feasible. For many important applications, it is often the case that the policy of interest affects the entire population, or that a comparable ‘control group’ is not available. In some instances, a series of policies could have been introduced either concurrently or in close succession, as in the case of the PHI market in Australia, for which isolating the effects of a particular policy is difficult. Another limitation of the ex-post analytical techniques is that they do not allow the evaluation of the impacts of policies prior to their implementation. It is often important for governments to be able to assess the expected impacts, and costs, arising from a range of hypothetical policy options, hence facilitating the optimal design of policies to achieve the outcomes desired (Todd and Wolpin, 2006).

The second theme concerns the determinants of the demand for PHI, and the relationship between private insurance and health care use in the context of a National Health Service. On the former, the literature emphasises the role of public sector waiting times and quality, household income, and education attainment as important determinants of the decision to purchase PHI (see Barros and Siciliani (2012) for a comprehensive review). There is evidence from a variety of countries that individuals with private insurance consume more public and private health care.¹ In these studies, a key methodological issue that has to be addressed is that health insurance status is potentially endogenous to health care use, which arises as a result of the interdependency in the decisions to insure, and to consume health care (Cameron et al., 1988).

The endogeneity problem is addressed using three simultaneous equation models that accommodate the mixed count-binary nature of the utilisation, type and insurance outcome variables. Traditional workhorse models for non-negative and integer-valued (count) outcomes such as the Poisson and Negative Binomial models have been extended to more advanced models with a variety of applications such as the multivariate count data models (e.g. Munkin and Trivedi, 1999; Fabbri and Monfardini, 2009; Hellström, 2006), and count data models as a system of simultaneous equations (Deb and Trivedi, 2006; Atella and Deb, 2008; Cheng and Vahid, 2011). A novel econometric model developed in this paper is a bivariate lognormal Poisson model with a common endogenous binary regressor, used to jointly analyse two hospital care utilisation measures (number of day and overnight hospital admissions) and the decision to purchase PHI. This novel model contributes to the growing literature on multivariate simultaneous equation count data models.

The econometric results show that individuals with private health insurance are more likely to seek hospital care as a private patient compared to those without private insurance. However, resource usage in terms of hospital admissions and length of overnight stay do not differ between the insured and uninsured groups. The simulation projections show that reducing premium

¹ This is the subject of substantial research in a number of countries such as Australia (Savage and Wright, 2003); Germany (Riphahn et al., 2003); Ireland (Harmon and Nolan, 2001); and Spain (Vera-Hernández, 1999). Jones et al. (2006) focusses on the use of specialist services in four European countries.

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