Journal of Econometrics 145 (2008) 43–63

Contents lists available at ScienceDirect

Journal of Econometrics

journal homepage: www.elsevier.com/locate/jeconom

Household search and health insurance coverage☆

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ARTICLE INFO

Article history:
Available online 21 June 2008

JEL classification:
J64
J3
D1

Keywords:
Search
Health insurance
Household behavior
Wage dynamics

ABSTRACT

Health insurance in the United States is typically acquired through an employer-sponsored program. Often employees offered employer-provided health insurance have the option to extend coverage to their spouse and dependents. We investigate the implications of the "publicness" of health insurance coverage for the labor market careers of spouses. The theoretical innovations in the paper are to extend the standard partial–partial equilibrium labor market search model to a multiple searcher setting with the inclusion of multi-attribute job offers, with some of the attributes treated as public goods within the household. The model is estimated using data from the Survey of Income and Program Participation (SIPP) using a Method of Simulated Moments (MSM) estimator. We demonstrate how previous estimates of the marginal willingness to pay (MWP) for health insurance based on cross-sectional linear regression estimators may be seriously biased due to the presence of dynamic selection effects and misspecification of the decision-making unit.

Published by Elsevier B.V.

Executive summary

Although health care costs consume about one-seventh of the Gross Domestic Product of the US, and even as health indicators of the US population significantly trail those of many other developed countries, the US has not moved to implement any sweeping changes in health care policy. In part, this reflects the sheer magnitude of the task, and, in part, the uncertainty regarding the costs and benefits of universal, possibly one-payer, health care coverage.

Most policy analysis has centered on the potential cost-savings aspects of revamping the system of providing health care. Less well understood is the valuation of health insurance coverage by population members. Social science research has not been terribly helpful in pinning down the nature and size of the benefits that arise from health insurance coverage. We follow the standard "revealed preference" method of imputing the valuation of health insurance coverage by households. Since most coverage is provided by employers, a natural way to proceed is to look at the differences in the wages paid to otherwise identical workers covered by health insurance and those who are not. This difference in wages is taken to reflect the marginal willingness to pay for health (MWP) insurance. The empirical literature in economics is replete with estimates of this quantity.

We provide a new method for estimating and interpreting the households' implicit valuation of health insurance coverage that utilizes a dynamic framework in which both spouses search in the labor market, job offers are differentiated by the wage rate and the presence or absence of health insurance coverage, and labor market decisions are made so as to maximize long-run household welfare. The utility that the household receives at any moment in time includes a preference weight attached to the presence of health insurance coverage. Our model estimates make clear that the usual method of imputing MWP, from cross-sectional or panel data regressions, is seriously flawed. The marginal willingness to pay for health insurance is a household-level outcome and depends on the wages and health insurance coverage status of both spouses. Our formulation of a behavioral model of the household allows us to estimate one single parameter that characterizes the utility gain the household receives from health insurance coverage, and we find it to be sizable. We believe that our results demonstrate the

☆ This research was supported in part by grants from the Economic Research Initiative on the Uninsured (ERIU) at the University of Michigan and the C.V. Starr Center for Applied Economics at New York University. James Mabli and Dan Silverman provided extremely helpful comments, as have participants in the Institute for Research on Poverty Summer Workshop (Madison, 2005), the ERIU Summer Conference (Ann Arbor, 2005), the Conference "The Use of Econometrics in Informing Public Policy Makers" held at the James Baker Institute (Rice University) in April 2006, and in seminars held at Torino, Northwestern, Iowa, the Chicago Fed, Rochester, and Paris I. We have also greatly benefited from the constructive and detailed comments of three anonymous referees. The views expressed here are ours and do not necessarily represent the views of the US Department of Labor or the Bureau of Labor Statistics. We are responsible for all errors, omissions, and interpretations.

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0304-4076/$ – see front matter Published by Elsevier B.V.
doi:10.1016/j.jeconom.2008.05.013

necessity of analyzing the valuation of health insurance coverage in a dynamic, household framework, and that our model can serve as a foundation for conducting more policy-relevant research on the subject.

1. Introduction

Health insurance in the United States is typically acquired through an employer-sponsored program. Even though health insurance can be purchased through private markets, the cost is considered prohibitive in comparison with the effective cost of purchasing health insurance though an employer. There are many possible reasons for this difference, such as tax subsidies to firms who offer such insurance to their employees, risk-pooling among a large group of relatively healthy individuals (i.e., individuals employed at a given firm), or sharing of a cost (health insurance) that improves the quality of the employment match to both sides of the contract (e.g., Dey and Flinn (2005)).

Another empirical regularity regarding health insurance purchase and coverage is that in households in which both husbands and wives work health insurance is often only purchased (through their employer) by one of the spouses. Apparently this reflects the fact that health insurance is largely a public (household) good in that most employers who offer health insurance to their employees also include the option to cover spouses and dependent children. In this research our goal is to investigate the implications of the "publicness" of health insurance coverage for the labor market careers of spouses and the cross-sectional distribution of wages and health coverage statuses of spouses. We use a relatively innovative household search framework to address this question.

A large empirical literature exists on the relationship between health insurance coverage and wage and employment outcomes, though most of it is formulated at the individual level; reasonably comprehensive surveys can be found in Gruber and Madrian (2001) and Currie and Madrian (1999). The research objective in these studies is almost invariably the estimation of a distribution of marginal willingness to pay (MWP) parameters characterizing the population, and the framework is that of compensating differentials. When a formal modeling framework is developed, it is a variant of a static labor supply model, with reference made to household rather than individual choice on rare occasions. This is a questionable choice given the great deal of concern in this literature with assessing the impact of employer-provided health care coverage on job mobility. Dey (2001) and Dey and Flinn (2005) take the position that to analyze mobility behavior requires a dynamic model with labor market frictions, which led them to employ a search framework with both unemployed and on-the-job search. Estimates from the equilibrium matching-bargaining model in Dey and Flinn (2005) led them to conclude that the productive inefficiencies resulting from the employer-provided health insurance system were not large.

The conclusions drawn from all of these empirical studies may be questioned due to their focus on individual rather than household behavior.[1] A few attempts have been made to look at the impact of the health insurance coverage of a spouse on the other's employment probability. For example, Wellington and Cobb-Clark (2000) estimate that having an employed husband with a job covered by health insurance reduces a wife's probability of employment by 20%. However, their econometric model does not allow for simultaneity in these decisions, labor market frictions, and does not condition on the husband's wage rate. To understand the distribution of health insurance and wages across spouses and households, it is necessary to formulate a more appropriate framework for the analysis.

To simplify the modeling and estimation problem, and to promote comparability with previous analyses, we adopt a very simple specification of household behavior. We assume the existence of a (instantaneous) household utility function in which consumption and health insurance coverage are additively separable. The subutility function associated with consumption is a quasi-concave function of (instantaneous) household income, and the instantaneous payoff if at least one of the spouses has employer-provided health insurance is ξ. Learning the parameter ξ, are something analogous to it, seems to be the goal of most empirical attempts to estimate the marginal willingness to pay (MWP) for health insurance coverage.

Two important contributions make clear the perils of attempting to infer tastes from cross-sectional relationships generated by dynamic choices among jobs offering different combinations of utility-yielding characteristics. Hwang et al. (1998) make the point using the equilibrium search framework of Burdett and Mortensen (1998), and Gronberg and Reed (1994) provide an empirical example by estimating a MWP parameter within a compensating differentials model using job duration data from the National Longitudinal Survey of Youth 1979. The point of both of these studies is to illustrate how the cross-sectional relationship between wages and job characteristics is determined by the primitive parameters characterizing the search equilibrium. The cross-sectional "trade-off" between wages and health insurance coverage, for example, is an extremely complicated function of ξ and the parameters characterizing the labor market environments of the spouses. In general, the only way to consistently estimate ξ is to simultaneously estimate all model parameters, a path that we follow in this paper.

The contributions of this paper with respect to those mentioned in the previous paragraph are (1) the extension to a multiple agent setting in which job attributes have a public goods aspect and (2) estimation of the behavioral model. We provide a lengthy discussion regarding the challenges of estimating a multiple agent model in continuous time given the discreteness of the data to which we have access. We use the method of simulated moments (MSM) in conjunction with data from the Survey of Income and Program Participation (SIPP) to estimate the model parameters. We find evidence that utility is a concave function of instantaneous income and that there is a positive valuation of health insurance coverage by the household. We show that this estimate is sensitive to the specification of the instantaneous utility function, as is to be expected. Our estimates of the preference parameter ξ vary widely depending on the moments included in the implementation of the MSM estimator. Under our preferred specification, which includes "cross moments", (which are functions of the labor market outcomes of both spouses and not only of one), we find a high estimated value of ξ, indicating the possibility of important welfare gains in the population if the health insurance coverage rate can be significantly increased.

In a section directed to policy makers, we discuss how our estimation results cast doubt on previous attempts to infer the MWP using linear regression approaches with cross-sectional data. Using our data and estimates, we demonstrate how the difference in mean earnings between those with and without employer-provided health insurance bears a complicated relationship to ξ and the other parameters describing the labor market environment. We also show that, even with a constant valuation of health insurance coverage in the population, cross-sectional estimates of the MWP will appear to be heterogeneous. In our framework, this phenomenon arises through the omission of relevant state variables (the labor market status of the spouse) that vary in the population in the steady state. These results point

[1] Outside of this particular application, the importance of looking at unemployment phenomena at the household rather than individual level was recognized early on by Humphrey (1939).

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