Risk Selection and Advertisement in the Medicare Advantage Market

Naoki Aizawa and You S. Kim

Department of Economics

University of Pennsylvania

March 2, 2013

Faculty Advisor

Robert Town

Health Care Management, The Wharton School

1. Goals of the Proposed Research

Health expenditure risk is one of the largest financial risks for the elderly. In the United States, a vast majority of elderly Americans obtain health insurance through Medicare, which is one of the largest government programs. There is an active debate about reforming Medicare, partly due to the concern that it accounts for a large proportion of government spending (13% in 2010). A common proposal to reform Medicare is to shift the public health insurance system towards a market-based system. Efficiently designing a private health insurance system is therefore a critical issue for both policy makers and researchers.

A potential problem in a market-based system is that insurance companies may engage in cream skimming, *targeting* healthier customers who are less costly to insure. If the problem of cream skimming is quantitatively significant, government interventions are necessary to improve allocative efficiency in the market. The main goal of this paper to quantify cream skimming behaviors by insurance companies and then examine welfare impacts of several counterfactual policy experiments. In our study, we focus on the market for Medicare Advantage (or MA henceforth) plans, which is a large private health insurance market for the Medicare population.[1]

MA was created with the goal of introducing private competition into the provision of Medicare coverage and offering more options to Medicare beneficiaries. If a Medicare beneficiary enrolls in an MA plan, then the plan receives a fixed payment from the government and is responsible for the enrollee's medical expenditures that are covered by the plan. Although the payment to MA plan is adjusted to an individual's health risk to some extent, it is not set to reflect an individual's true health risk. In fact, several studies argue and find that MA plans target selling insurance products to healthier individuals to minimize costs relative to the payment.[2] However, previous studies did not investigate how insurance companies target healthier individuals or welfare impacts of potential government policies.

This study develops and estimates an equilibrium model of the MA market where insurers can spend resources to attract low-cost individuals. We then quantify welfare costs of insurers' cream skimming behavior and investigate welfare-improving policy reforms. We hypothesize that *insurers' advertisement behavior* is a quantitatively significant channel of cream skimming. This is motivated by the fact that MA insurers spend a large amount of money in advertisement. According to the AdSpender database from Kantar Media, they spent about $29 million in advertisement in 2004. In order to attract individuals with low risks, MA plans may deliberately place their advertisements in media that are more likely to be exposed to low-risks, and may concentrate their advertising efforts in a market with a high share of low-risk consumers. First, we investigate impacts of advertisements on demand for MA plans and how the effects of advertisements differ across individuals with different health status. Then we estimate an equilibrium model of the MA market in order to investigate welfare impacts of different regulations on the MA market. First, we investigate whether the government can implement a welfare-improving policy by choosing a better risk adjustment mechanism, alleviating problems from cream skimming. Second, we investigate the impact of introducing a medical loss ratio, which will be actually introduced in 2014 due to the Affordable Care Act.[3]

---

[1] 24% of beneficiaries received insurance coverage from private MA plans in 2010.

[2] See Brown et. al (2012) for a recent evidence.

[3] A medical loss ratio measures the share of a health care premium dollar spent on medical benefits. In Affordable Care Act, it is set to be at least 85%.

2. Description of the Planned Methodology

We construct and estimate an equilibrium model of the MA market. The model has the following features: individuals decide which MA plan to purchase, and MA plans strategically choose premiums and advertising spending. An individual's purchase decision depends on her characteristics such as health and income, and characteristics of MA plans. The decision is also affected by insurance companies' advertisement and an individual's ad exposure. The model is estimated in a similar way to Berry, Levinsohn, and Pakes (1995).

Identification and estimation of the model require data from various sources. We have already obtained some of them: first, we have individual-level data on demographics and MA plan purchase decisions from the Medicare Current Beneficiary Survey 2000–2004. Second, we obtained data on aggregate market shares and characteristics of MA plans available from the Center for Medicare and Medicaid Service. Third, we purchased (out of our own pocket) the AdSpender database from Kantar Media for 2000–2004, which contains information on advertising quantities and expenditures by MA plans in different media such as TV, newspapers, radio and more.

3. Explanation of Why Funding is Being Sought

We would like to receive the fellowship because additional data sets are necessary for our estimation. First, we need to purchase data that link an individual's demographics with her ad exposure. Controlling for ad exposure is crucial in identifying effects of an advertisement on individuals with different demographics including health status. We plan to control ad exposure with an additional dataset with information on media consumption behaviors by individuals with different demographic characteristics. Second, we need an additional dataset with detailed information on TV advertisements. The data have information on what time and for which TV shows an advertisement for a MA plan appeared, and the AdSpender database we purchased lacks this information. Since different TV programs attract different types of viewers, the additional information will enable us to measure the effects of advertisements and risk selection more precisely. Third, we need to purchase a dataset providing information on additional characteristics of MA plans, which our current data do not provide. In order to control for important characteristics of MA plans like a network size, we believe that this additional dataset is necessary.

4. Budget

We plan to use the fellowship to purchase the data described above, and we unfortunately do not have any other outside funding. We have already made efforts to gain the data by ourselves: we purchased one component of advertisement data by paying $850 from our budget. However, we recognize that it is hard for us to purchase the remaining data sets and thus we would like to receive generous supports from the Russell Ackoff fellowship.

We would like to request to receive **$4,000** fellowship, as the expected amount of expense is **$5,698**. The below is the detailed plan for using the fellowship:

1. Data about individuals' media and newspaper exposures

   - The details of data: media consumption behaviors by individuals with different demographic characteristics in 2000-2004.
   - Data provider: Scarborough Research
   - Price: **$3,000.**

2. Data about detailed TV advertisement

   - The details of data: Details of TV ads by insurers who sell medicare insurance products
   - Data provider: Kantar Media
   - Price: **$1,800**

3. Data about characteristics of insurance companies

   - The details of data: insurer's characteristics such as network size, administrative expenses, medical expenditures per enrollee in 2000-2004.
   - Data provider: Weiss Rating Guide to HMOs and Health Insurers
   - Price: **$898**

References

[1] Berry, S., J. Levinsohn, and A. Pakes. (1995). "Automobile Prices in Equilibrium." *Econometrica*, 63(4), 841-890.

[2] Brown, J., Duggan, M., Kuziemko, I., and Woolston W. (2012). "How Does Risk Selection Repond to Risk Adjustment? Evidence From the Medicare Advantage Program." Working Paper.