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Risk selection and heterogeneous preferences in health insurance markets with a public option

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ABSTRACT

Conventional wisdom suggests that if private health insurance plans compete alongside a public option, they may endanger the latter's financial stability by cream-skimming good risks. This paper argues that two factors may contribute to the extent of cream-skimming: (i) degree of horizontal differentiation between public and private options when preferences are heterogeneous; (ii) whether contract design encourages choice of private insurance before information about risk is revealed. I explore the role of these factors empirically within the unique institutional setting of the German health insurance system. Using a fuzzy regression discontinuity design to disentangle adverse selection and moral hazard, I find no compelling support for extensive cream-skimming of public option by private insurers despite their ability to fully underwrite risk. A model of demand for private insurance supports the idea that heterogeneity in non-pecuniary preferences and long-term structure of private insurance contracts may be muting cream-skimming in this setting.

1. Introduction

A ubiquitous feature of health insurance markets is that insurers' costs depend on who their enrollees are and how they behave. This feature has traditionally raised concerns about the feasibility of efficiency-improving competition, and has served as a common rational for the extensive role of government in health insurance. Increasingly, however, public policies in health insurance attempt to find a balance between selection concerns and potential efficiency gains from competition by reorganizing purely public or purely private health insurance systems into mixtures of the two. A central question in such arrangements, where a private health insurance system may exist in parallel to a public one, is whether private insurers may harm the public option by disproportionately enrolling good risks. The debate about how best to design mixed public–private insurance environments is not settled, and it has recently gained new momentum in the academic and policy discussion in light of the health insurance landscape reforms in the United States under the 2010 Affordable Care Act.[1]

This paper offers empirical insights into the workings of an insurance system in which private insurers compete alongside a public option and are allowed to fully underwrite risk. The empirical setting is the institutional environment of German health insurance. Taking advantage of several unique features of this environment, the paper attempts to quantify the extent of selection between the public option and the private insurers and explore which factors may affect the degree of selection. I first use a fuzzy regression discontinuity design to decompose selection and moral hazard. Finding surprisingly limited evidence for better risks being enrolled in private insurance, I consider two potential forces that may be countervailing cream-skimming in this setting. First, heterogeneous preferences for convenience in healthcare consumption, and second, the long-term structure of private contracts that incentivizes enrollment before information about risk type is revealed.

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[1] See, for example, Halpin and Harbage (2010) and Washington Post for the discussion of the public option as part of ACA Health Insurance Exchanges.

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Utilizing the German empirical setting offers several advantages. First, a discontinuity in the rule that determines access to private insurance allows for an effective way of separating adverse selection and moral hazard, which has been a well known challenge in documenting selection between private and public insurances. Second, the types of differences that exist between public and private insurances in Germany allow the evaluation of the role of non-pecuniary preferences in the choice of health insurance and the exploration of the incentives offered by long-term annuity-style contracts.

Several key institutional features characterize the German market. First, private and public insurers follow different pricing regimes.[2] In the so-called statutory system, there is guaranteed issue, and premiums are equal to a percentage of pre-tax income set by the regulator to ensure the solvency of the system.[3] Private insurers, on the other hand, can reject enrollment, and are allowed to carry out extensive underwriting of individual risk (including that of family members) at the time of enrollment. Private insurers use long-term contracts that are rare in health insurance – the contracts are life-long and premium underwriting principles are similar to annuities. Second, public insurers offer very low levels of consumer cost-sharing. Private insurers, however, typically offer contracts with higher cost-sharing levels.[4] At the same time, private insurers typically cover more comfortable hospital facilities, allow extra fees that may be charged by "star" physicians, and provide shorter appointment wait times (Lungen et al., 2008). Finally, the market is strongly influenced by a policy that mandates enrollment in the statutory system for all employees with an income below an annually set threshold of about 50,000 USD.

The enrollment mandate creates a discontinuity in the probability of individuals enrolling with private insurers, which I use to disentangle adverse selection and moral hazard. The idea is that OLS estimates that relate measures of healthcare utilization to the type of insurance that individuals have, contain both selection and treatment (or "moral hazard") effects. Using the income-based mandate as an instrument for enrollment into the private system, I estimate the degree of moral hazard and then calculate the selection effect as the residual between these estimates and the OLS results. The estimates suggest that private insurers enroll individuals that are likely to incur more outpatient visits, while having private insurance leads individuals to significantly reduce the number of visits. My estimates cannot reject a reverse effect on inpatient admissions. Overall, the estimates cast doubt on the prior that private insurers extensively cherry-pick low healthcare utilizers that would have likely been "good" risks in the public system.

These findings appear surprising given that private insurers are allowed to fully underwrite risks and reject enrollment. I discuss two possible (albeit certainly non-exhaustive) explanations for this result. The first possible explanation is the presence of heterogeneous preferences for private insurance that are uncorrelated with health risk. Private insurance allows for higher cost-sharing and may thus be attractive to less risk-averse or less liquidity-constrained individuals. Moreover, anecdotally, private insurance is viewed as a "luxury" good that provides better service, although does not necessarily lead to better medical outcomes, so it may attract individuals with stronger preferences for convenience, irrespective of their health status. Using a simple model of demand for private health insurance, I find empirical support for this hypothesis.

Preferences for convenience in healthcare consumption are rarely considered in the literature on insurance contracts, which are typically viewed as purely financial instruments. The presence of convenience preferences, however, may imply that plan features such as wait times and location of in-network physicians and hospitals may be key drivers of individual choices of insurance. The presence of such non-pecuniary taste heterogeneity also introduces opportunities for horizontal differentiation across insurance plans that may help insurers soften price competition. The policy implication of these results, which is applicable beyond the specifics of the German institutional setting, is that allowing private plans that exist in parallel to a public option to provide products that are sufficiently horizontally differentiated from the public option, may soften selection concerns at the extensive margin between the two systems.

The second hypothesis concerns the design of private contracts. I argue that muted cream-skimming across the two systems may be the outcome of incentives created by dynamic contracts of private insurers. The annuity structure of these contracts creates a strong incentive for an individual to enroll into the private system as early as possible in his or her lifetime to "freeze" the health risk at a point in time at which both the individual and the insurer have only very noisy information about individual-specific expected risks. Thus, in many cases, private insurers are likely to have relatively limited scope for underwriting and cream-skimming. Indeed, this hypothesis is strongly supported by the existence of a market for options on private insurance contracts. Individuals that are not yet eligible to enroll because their income is too low, but expect to have higher income and be able to enroll in the future, can buy an option contract that freezes their health underwriting at the time of option purchase rather than at the time when they actually buy private coverage.

This paper is related to several strands of literature. First, it is related to the broad literature that tests for the presence of adverse selection in insurance markets. Einav et al. (2010) provide a recent survey. One strand of this literature has specifically focused on the question of selection between public and private health insurance. For example, Fang et al. (2008) documented evidence consistent with the presence of advantageous selection into private Medicare add-on insurance, while Duggan (2004) studied the efficiency implication of having Medicaid provided by private insurers. More recently, Brown et al. (2014), Cabral et al. (2014), and Newhouse et al. (2015) explored the selection of risks between the Medicare fee-for-service and the Medicare Advantage program. The present paper contributes to this literature in two ways. First, it illustrates how a combination of OLS and treatment effect estimates can be used to quantify the degree of adverse selection. Second, the paper provides an empirical example of tests for adverse selection in a public–private insurance environment that is not distorted by risk-adjusted subsidies to private insurers, which is typically the case in Medicare markets.

Second, the paper is related to the literature on the role of heterogeneous preference in health insurance markets. Cutler et al. (2008) discuss the role of heterogeneous preferences in determining the degree and direction of selection in health insurance. There has been relatively little work exploring the sources of heterogeneous preferences in health insurance empirically. Finkelstein and McGarry (2006) have proposed the presence of heterogeneous preferences in long-term care insurance. More recently, Geruso (2013) found that older individuals enroll in more comprehensive plans than younger individuals with the same healthcare expenditure risk. Ericson and Starc (2015) studied the implications of age-related heterogeneity in the context of the Massachusetts Health Insurance Exchange, while Shepard (2015) considered the role of preferences for "star" hospitals. The current paper suggests that in addition,

[2] "Public" insurance here refers to the system of "sickness funds" that are heavily regulated and can be considered as a unity for the purposes of analyzing selection on the extensive margin.

[3] Adult family members not in the labor force and children are covered at no extra charge.

[4] In addition to familiar cost-sharing methods such as deductibles and co-insurance, private insurers in Germany use a different way of combating moral hazard. Typically, individuals that pay for smaller expenses out of pocket and do not file claims are refunded a substantial fraction of annual premiums.