



# Do health plans risk-select? An audit study on Germany's Social Health Insurance <sup>☆</sup>

Sebastian Bauhoff

RAND Corporation, 1200 South Hayes Street, Arlington, VA 22202, United States

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## ABSTRACT

This paper evaluates whether health plans in Germany's Social Health Insurance select on an easily observable predictor of risk: geography. To identify plan behavior separately from concurrent demand-side adverse selection, I implement a double-blind audit study in which plans are contacted by fictitious applicants from different locations. I find that plans are less likely to respond and follow-up with applicants from higher-cost regions, such as West Germany. The results suggest that supply-side selection may emerge even in heavily regulated insurance markets. The prospect of risk selection by firms has implications for studies of demand-side selection and regulatory policy in these settings.

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## 1. Introduction

In competitive markets with regulated premiums, health plans have economic incentives to exploit predictable, unpriced heterogeneity in risk by selecting individuals who are low-cost within a premium group. This “cream-skimming” is inequitable and inefficient, and limits payers' ability to leverage high-powered payment systems to encourage efficiency in production (Newhouse, 1996; van de Ven and Ellis, 2000). In addition to the policy concern, the possibility of supply-side selection also has implications for research on consumer behavior in competitive insurance markets, as unobserved concurrent activities by insurers can confound empirical tests of demand-side adverse selection (e.g., Fang et al., 2008; Finkelstein and Poterba, 2006). This paper uses an audit approach to examine whether health plans select on geography, an easily observable predictor of unpriced risk.

Regulatory approaches to contain risk selection aim at limiting plans' access to information about risk types, restricting mechanisms for selection and reducing the potential gains from selection by adjusting payments to more closely reflect individuals' expected costs. However, selection may yet emerge in markets with strict supervision and risk

adjustment. In practice, even sophisticated adjustment methods are unable to eliminate all variations in risk, leaving substantial residual incentives for selection (Shen and Ellis, 2002b) which may even increase in the comprehensiveness of the adjustment formula (Brown et al., 2011). Moreover, while risk adjustment may mitigate gains from selection it can decrease incentives for efficiency by moving the payment system closer to cost-based reimbursement (van de Ven and Ellis, 2000). An optimal payment structure may maintain some uncompensated heterogeneity to balance this trade-off.

Managing the selection-efficiency trade-off from risk adjustment is particularly challenging in the case of geography. The location of enrollees is readily observable by plans and correlated with expenditure risk, two conditions that facilitate cream-skimming. However, managing geography is not straightforward. On the one hand, geography has practical appeal as a simple composite index of costs, and accounting for spatial variations can contain potentially large selection incentives. On the other hand, geography is merely correlated with a multitude of cost drivers that regulators may prefer to address separately. In particular, risk adjustment should compensate only for legitimate differences in health care needs or resource costs, e.g. costs due to morbidity or input prices. Plans should be at risk for factors that they can potentially manage, such as practice styles or moral hazard.<sup>1</sup> In actuality, geographic variations are due to both legitimate and objectionable factors (e.g., Fisher

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E-mail address: [sbauhoff@rand.org](mailto:sbauhoff@rand.org).

<sup>1</sup> See also van de Ven and Ellis (2000) who distinguish factors for which solidarity is desired and which should be cross-subsidized (such as morbidity) and others for which solidarity is not desired (such as negotiating power, ability to selectively contract, and regional characteristics such as provider infrastructure).

et al., 2003). The resulting policy trade-off can lead to residual incentives for selection on geography.

Geographic variations are pervasive in many settings, and regulating this specific selection–efficiency trade-off is a recurring concern. In the US, geographic variations in health care spending have been well established and recognized by regulators (Dartmouth Atlas Working Group, 2011). In the Medicare Advantage (MA) program, private health plans receive a risk-adjusted capitation payment to assume the costs associated with providing benefits covered by the traditional fee-for-service (FFS) Medicare. The capitation payment varies according to the enrollee's risk (based on a range of disease conditions) as well as the county-specific base rate, which is a function of historical spending in the FFS program. The differences in the county rates are substantial. As illustration, in 2011 the unweighted MA rates per “aged” beneficiary ranged from \$729 in Des Moines county, IA, to \$1505 in Saint-Bernard, LA (KFF, 2011). Geography also features in insurance programs for the non-elderly population. The Patient Protection and Affordable Care Act (PPACA) of 2010 requires the use of risk adjustment for the individual and small-group markets both inside and outside the state health insurance exchanges. The law does not stipulate whether a geographic adjuster should be included but explicitly suggests Medicare Advantage's methodology as a model for adjustment in the exchanges. Similar to the Massachusetts health insurance exchange, PPACA also requires adjusted community-rating, allowing limited premium variation based on a number of factors, including rating areas. The risk adjustment and rating areas therefore require definitions and policy decisions on geography. In the context of MA and the exchanges, geography is mostly discussed as policy instrument to encourage plan entry (McGuire et al., 2011). However, plans may also exploit any within-area differences and mismatches between rating and actual market areas. The threat of geographic risk selection is particularly serious since additional rules, including the remaining allowed rating factors, could artificially generate heterogeneous premium groups within rating areas and induce selection even in presence of complementary regulation (Pauly, 1984).

Establishing geographic cream-skimming is ultimately an empirical question. The German Social Health Insurance (SHI) provides a useful context to identify selection on geography in a heavily supervised environment. Health plans in the SHI are not allowed to collect medical histories as part of the enrollment process, and they cannot refuse any applicant or vary premiums, benefits or provider networks. As in MA and the insurance exchanges, payments to plans are adjusted for the morbidity of enrollees. However, geographic variations remain a source of heterogeneity and a motive for cream-skimming. The risk adjustment system accounted for East/West differences until 2007, but a 2009 reform explicitly excluded geography from the payment formula. In an opinion on the reform, the German Constitutional Court recognized the existence of spatial variations in costs and their financial implications for plans (BVerfG, 2005). However, it argued that legitimate variations due to morbidity are sufficiently compensated by the new formula and that plans should face incentives to actively manage variations due to regional inefficiencies or patient preferences. As consequence of this policy, health plans have incentives to exploit geography to improve their risk structure and financial standing.

The aim of this paper is to assess empirically whether plans act on the prevailing financial incentives to select on geography by focusing their recruitment efforts on applicants from low-cost areas such as East Germany. To separately identify cream-skimming from potentially concurrent demand-side adverse selection, I implement a double-blind audit study in which health plans are presented with fictitious applicants who have different addresses but are otherwise identical. I measure response rates for letters, emails, and phone calls, as well as the weight and stamp value of letters as proxies for insurers' resource expenses. The findings indicate that plans are more likely to respond to applicants from East Germany, a result consistent with cream-skimming even in this tightly regulated setting. The paper also highlights the value of the audit approach for examining firm behavior and

is, to my knowledge, the first audit study of selection behavior by health insurers.

## 2. The German context

### 2.1. The Social Health Insurance

The SHI is Germany's main insurance system, covering about 90% of the population. The remainder, mainly high-income earners and civil servants, can substitute private coverage for social health insurance. Health plans in the SHI, so-called sickness funds, provide a largely regulated benefits package, and are subject to uniform, SHI-wide funding and contracting modalities. Historically, fund membership was limited by occupation groups, guilds or companies; large general regional funds (*Allgemeine Ortskrankenkassen*) provided insurance for individuals not falling within these categories. Since the introduction of competition for enrollees in 1996, the number of funds has decreased dramatically as result of mergers (McGuire and Bauhoff, 2007). At that time, funds could choose to accept members from outside their historical base, or remain closed, an option exercised mostly by company-based funds. They could also choose to operate only in certain regions or nationwide. Once opened, funds must accept all eligible applicants within their geographic market.

In January 2008, 221 sickness funds operated in the SHI, 61 of which were open and available nationwide.<sup>2</sup> Funds must contract with all accredited providers and have little opportunity for selective contracting. They may not decline coverage or risk-rate premiums. In this restricted market, funds mostly compete on customer service quality and on minor variations in additional benefits that are allowed, e.g. coverage of homeopathic therapy. Since April 2007 plans may also offer new models of care, including bonus and high-deductible plans, and must offer integrated care programs and gatekeeper models.

The SHI is financed by contributions from members and, to a smaller extent, by general revenues. Since January 2009, premiums consist of an income-related contribution and a supplemental fee. All members contribute a uniform rate of 15.5% on monthly wage earnings up to 3675 Euro, or a maximum premium of 570 Euro.<sup>3</sup> Dependents are covered without additional costs to individual members, and SHI members can switch sickness funds every 18 months or when a fund raises its premium. A central collection agency, the health fund (*Gesundheitsfond*), pools the contributions and pays a risk-adjusted capitation to the funds. Funds are constrained to make annual losses or profits within a narrow band, and must raise community-rated, supplemental fees from their members if their expenses exceed payments from the health fund. In the event of excess profits they may provide refunds to their members.

### 2.2. Risk adjustment and residual geographic variation in costs

The SHI has employed a prospective risk adjustment system since 1994 and augmented the adjustment formula in January 2009. It now accounts for 80 diseases, age, gender, and indicators of whether the person receives a disability pension and is enrolled in specific disease-management programs.<sup>4</sup> Medicare follows a similarly comprehensive approach to risk adjustment in the Medicare Advantage program since

<sup>2</sup> 48 of these 61 are historically company-based funds. The Social Health Insurance had about 70 million insured of which 51 million were members and 19 million dependents. General regional funds (AOK) covered about 24 million people, company-based funds (BKK) 14 million, guild-based funds (IKK) 6 million and substitute funds (EK) 23.6 million (BMG, 2009).

<sup>3</sup> About half of the contribution is paid by employers. Retirees pay contributions based on their pension income (paid in equal share by the retirees and the pension fund). Unemployed and welfare recipients receive full or partial assistance from the relevant government agencies.

<sup>4</sup> The diseases may be further distinguished by severity, leading to 106 morbidity indicators and 152 risk groups overall (BVA, 2008). A high-risk pool providing risk-sharing for extremely expensive patients was eliminated by the reform.

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