Adverse Selection in Micro-Health Insurance Markets Evidence from an Randomized Control Trial in Pakistan

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Extended Abstract

Amongst financial hazards, health events are one of the most important type of unexpected events. In absence of universal social insurance system, an overwhelming share of heath expenses is financed through out of pocket expenditure. In order to cope with these shocks, that often amount to a multiple of the available monthly income, households rely on a combination of strategies such as precautionary savings, selling productive assets, credit and other informal risk sharing. However, these informal risk management arrangements are often imperfect, expensive and leave the household vulnerable to poverty (Dercon, 2002).

Formal insurance contracts targeted to the poor, so-called microinsurance, has the potential of mitigating the adverse effects of existential expenditure shocks, thereby among others influencing risk coping behavior, labor market outcomes and psychological well-being. This potential is captured by recent increases in the number of insured persons to about 500 million in 2013 (ILO, 2013). At the same time, microinsurance providers face a special environment, which leaves offered policies vulnerable to information asymmetries from a theoretical point of view. On the one hand, this arises due to the need of maintaining low administrative costs, thus limiting the potential for ex-ante risk screening measures. On the other hand, the target group is often exposed to formal insurance for the first time and therefore requires simple insurance policy designs that often cannot contain conventional preventive measures.

For this reason, investigating both the presence and magnitude of information asymmetries as well as exploring the optimal design of alternative microinsurance policies are important areas of research. To date, the empirical evidence on the presence of adverse selection in health microinsurance markets is limited and controversial. While some studies find evidence for adverse

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selection (Clement, 2009; Lammers et al., 2010; Yao et al., 2014; Zhang and Wang, 2008), other studies conclude that adverse selection might not be present (Dror et al., 2005; Jütting, 2004; Nguyen and Knowles, 2010; Banerjee et al., 2014)

In this paper, we contribute to the literature by providing causal evidence on the presence of adverse selection in the health microinsurance sector in Pakistan. Moreover, we experimentally test different insurance designs to provide alternative mechanisms through which adverse selection effects can be mitigated. Specifically, our identification strategy employs a two-stage cluster randomized control trial (RCT) in which one out of four different insurance innovations is made available on a voluntary basis in more than 500 villages. The offered products vary in their eligibility to insure household members (individual eligibility vs. household insurance) as well as their coverage limit of expenditures. In a second step, premium discounts are randomized on the level of the household, resulting in exogenous price variation for the insurance products.

Our sample contains an average of 15 households per village, resulting in a sample size of more than 6500. Using baseline characteristics on health measures as a proxy for people's riskiness to conduct a positive correlation test (Chiappori and Salanie, 2000), we rule out that the results can be explained with moral hazard effects. In a first step, we find that insured individuals exhibit significantly more risk than uninsured individuals do. Since demand decisions can be driven by unobservable characteristics, we exploit random price variation to investigate the relationship between riskiness and insurance price for the pool of insured persons. We find that the average riskiness of this pool increases in price, generating a pattern that is in line with adverse selection. In contrast, these patterns between riskiness and insurance price are absent for policies that require household enrolment. This suggests that alternative policy designs are able to mitigate the presence of adverse selection.

Collecting follow-up and claim data in December 2015 and January 2016, we will be able to assess whether adverse selection threatens the financial sustainability of the offered insurance products. Following Einav and Finkelstein (2011), we will be able to estimate the insurer's marginal costs curves for the offered policies, establishing the presence of adverse selection using ex-post measures of riskiness. Furthermore, the follow-up data will allow us to investigate the impact of the social insurance innovations on risk coping behavior such as female and child labor supply, saving patterns as well as health expenditures and health outcomes.

1 Bibliography

Banerjee, A., Duflo, E., and Hornbeck, R. (2014). Bundling health insurance and microfinance in india: There cannot be adverse selection if there is no demand. *American Economic Review*, 104(5):291–97.

Chiappori, P.-A. and Salanie, B. (2000). Testing for asymmetric information in insurance markets. *Journal of political Economy*, 108(1):56–78.

Clement, O. N. (2009). Asymmetry information problem of moral hazard and adverse selection in a national health insurance: the case of ghana national health insurance. *Management Science and Engineering*, 3(3):101–106.

Dercon, S. (2002). Income risk, coping strategies, and safety nets. *The World Bank Research Observer*, 17(2):141–166.

Dror, D. M., Soriano, E. S., Lorenzo, M. E., Sarol Jr, J. N., Azcuna, R. S., and Koren, R. (2005). Field based evidence of enhanced healthcare utilization among persons insured by micro health insurance units in philippines. *Health Policy*, 73(3):263–271.

Einav, L. and Finkelstein, A. (2011). Selection in insurance markets: Theory and empirics in pictures. *Journal of Economic Perspectives*, 25(1):115–38.

ILO (2013). Annual report 2013 of the microinsurance innovation facility.

Jütting, J. P. (2004). Do community-based health insurance schemes improve poor people's access to health care? evidence from rural senegal. *World development*, 32(2):273–288.

Lammers, J., Warmerdam, S., and Ecorys, R. (2010). Adverse selection in voluntary micro health insurance in nigeria. *University of Amsterdam, Amsterdam Institute for International Development, AIID Research Series*, pages 10–06.

Nguyen, H. and Knowles, J. (2010). Demand for voluntary health insurance in developing countries: the case of vietnamâ€™s school-age children and adolescent student health insurance program. *Social science & medicine*, 71(12):2074–2082.

Yao, Y., Schmit, J. T., and Sydnor, J. R. (2014). Adverse selection in emerging health insurance markets: Evidence from microinsurance in pakistan. *Available at SSRN 2425130*.

Zhang, L. and Wang, H. (2008). Dynamic process of adverse selection: Evidence from a subsidized community-based health insurance in rural China. *Social Science & Medicine*, 67(7):1173–1182.