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**Impact of community based health insurance on household assets in Burkina Faso: A panel data analysis**

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If the single biggest global health challenge of the last generation was to build awareness around the need for strengthening health systems in low and middle income countries, arguably the biggest challenge for this generation is to establish adequate, equitable, far-reaching and sustainable health financing schemes. In many of these countries, health systems and its financing continues to be riddled by issues of extreme poverty, resource crunch, lack of transparency, inadequacy and disproportional concentration in urban areas catering to the richer section of society. Against this backdrop community based health insurance (CBHI) schemes have become popular. In many ways CBHI schemes are the silver lining of health financing in low and middle income countries but at the same time research shows there are still significant challenges in making CBHI more attractive (increase enrolment) and financially sustainable. It is paramount that a healthy research and fact based debate on the strengths and weaknesses of CBHI schemes continue to support these schemes to achieve the vision of universal health.

Since the inception of CBHI schemes (from the 1970s) and especially in the last decade, a significant amount of research has been done on the effects of such schemes. These studies have shed light on many aspects like awareness, health care utilization and health expenditure to name

a few. Majority of these studies focus on short term effects of CBHI and prove association or correlation as opposed to causality.

In this dissertation, I targeted three research gaps in understanding the effect of CBHI. First there is hardly any evidence (neither causal nor correlation based) on the effect of CBHI on household assets. It is important to understand the effect of CBHI on household assets and in the context of low and middle income countries; household asset is a relevant indicator of the socio-economic status of the household. Second, adverse selection in CBHI has a significant impact on the long term sustainability of the scheme. While there is evidence of adverse selection in CBHI schemes, there are hardly any studies that assess the change in adverse selection over time. More importantly, although targeted premium subsides are commonly implemented to increase enrolment and equity, to the best of my knowledge there is no study that has looked at the impact of the subsidies on adverse selection. And last but not least, is the issue of equity in CBHI. While there is evidence of correlation between CBHI and economic status the evidence for other dimensions (gender, age and distance) are at best sketchy.

The three core sets of research questions addressed by this dissertation were:

*I. Household assets*

a. What is the long term impact of CBHI on household ownership of assets?

*II. Adverse Selection*

a. What is the change in adverse selection over time?
b. What is the effect of premium subsidy on adverse selection?

*III. Equity*

a. What are the differences in CBHI enrolment across economic groups, gender, age and distance?
b. What are the differences in health care utilization for CBHI members and non-members across economic groups, gender, age and distance?

The research was based in the Nouna Health District of Burkina Faso. Burkina Faso is one of the poorest countries in the world with almost 40% of its population below the poverty line. The population in the district is estimated to be about 230,000 inhabitants of whom 10% live in Nouna town, the district capital. Nearly 90% of the population is engaged in subsistence agriculture. Data was collected by a household panel survey covering 41 villages and Nouna town, during period 2004 to 2007.

I applied different strategies (OLS with covariates, fixed effects and instrumental variables) to capture the causal impact of CBHI on household assets. A key element of these strategies was to control for the endogeneity. To investigate adverse selection in CBHI I applied fixed effects models with interaction terms and to study equity, I used random effects models and concentration curves.

Main findings of my research were:

1. For household assets
    a. All three models (OLS with covariates, fixed effects and instrumental variables) that looked at the impact of CBHI on household assets found that CBHI protected household assets.
    b. Specifically the models found that CBHI also caused an increase in household assets.

2. For adverse selection
    a. There was evidence of adverse selection in enrolment throughout (2004-07).
    b. The adverse selection was compounded by the introduction of premium subsides in 2007.
3. For equity
    a. Enrolment among poor significantly increased after subsidy, but the poor were still less likely to enrol than the rich. However, the poor with CBHI had a higher probability to utilize healthcare compared to the uninsured poor.

b. Gender was not found to be a key determinant for enrolment. However, women with CBHI had higher utilization levels than uninsured women.
c. Even with reduced premiums children were less likely to enrol compared to adults. However, children with CBHI had higher utilization than uninsured children.
d. Distance was not found to be a key determinant for enrolment and found to be a barrier for utilization. Even with CBHI, individuals staying far from health facilities were less likely to utilize healthcare.

This research is significant as this is perhaps the only investigation into the causal relation between CBHI and household assets. The research also investigates two more key aspects of the CBHI scheme. First, from the point of view of the management of the scheme, as the schemes are voluntary it has a high chance of facing adverse selection. If this problem is not acknowledged, it can threaten the sustainability of these schemes. Second from the public health point of view, as the beneficial effects of CBHI are available to only those who enrol it is essential to understand if the most vulnerable sections of society are enrolling and utilizing health care.