Health insurance and consumption: Evidence from China's New Cooperative Medical Scheme

CrossMark

Chong-En Bai, Binzhen Wu *

School of Economics and Management, Tsinghua University, PR China

A R T I C L E   I N F O

A B S T R A C T

Bai, Chong-En, and Wu, Binzhen—Health insurance and consumption: Evidence from China's New Cooperative Medical Scheme

We exploit a quasi-natural experiment arising from the introduction of a health insurance program in rural China to examine how the insurance coverage affects household consumption. Results show that, on average, the health insurance coverage increases nonmedical-related consumption by more than 5%. This insurance effect is observed even in households with no out-of-pocket medical spending. In addition, the insurance effect is stronger in households with worse self-reported health status. These results are consistent with the precautionary savings argument. The insurance effect also varies by household experience with the program. In particular, the effect is significant only in villages where some households have actually obtained reimbursement from the insurance program. The program within these villages stimulates less consumption among new participants than among households that have participated in the program for more than a year. *Journal of Comparative Economics* **42** (2) (2014) 450–469. School of Economics and Management, Tsinghua University, PR China.
© 2013 Association for Comparative Economic Studies Published by Elsevier Inc. All rights reserved.

1. Introduction

The high and continually rising Chinese saving rate has attracted considerable international attention. The household saving rate rose by about 10 percentage points between 1995 and 2008 and reached 28% in 2008 (Prasad, 2009). One popular explanation for China's rising saving rate argues that the dissolution of the traditional social safety net has prompted higher precautionary savings (Chamon and Prasad, 2010). Accordingly, the Chinese government has exerted extensive efforts to improve the country's social safety net. For social insurance programs, the government disbursed 1.2 trillion yuan in 2009, with an annual growth rate of 19.4% since 2000; out of this allotment, 0.28 trillion was disbursed for health insurance programs in 2009, with an annual growth rate of 47% since 2000 (Chinese Statistical Yearbook, 2010).

For the reform of public health insurance, a milestone is the introduction of the New Cooperative Medical Scheme (NCMS) for rural residents, for whom household participation is voluntary. The government implemented the pilot program in 2003 and then sequentially expanded to the entire nation soon after. In 2011, the NCMS covered 832 million or 97.5% of rural residents. An important target of the program is to stimulate consumption by reducing uncertainty about future medical expenditures and therefore minimize the precautionary savings of households.

---

* Corresponding author.
  E-mail address: wubzh@sem.tsinghua.edu.cn (B. Wu).

This study evaluates the effect of the NCMS on consumption—an issue that has not been systematically investigated.[1] Many empirical studies examine the importance of precautionary savings and deliver mixed evidence (Guiso et al., 1992; Dynan, 1993; Hubbard et al., 1995; Starr-McCluer, 1996; Carroll and Samwick, 1998; Banks et al., 2001; Guariglia and Rossi, 2004; Fuchs-Schündeln and Schündeln, 2005; etc.). In the Chinese context, Meng (2003) and Zang et al. (2012) find evidence in favor of strong precautionary saving motives in urban areas, but Kraay (2000) finds little evidence for precautionary savings in both the rural and urban regions. Jalan and Ravallion (2001) reveal a minimal but statistically significant effect of income uncertainty on wealth, but no clear signs of precautionary responses to health risk in rural areas. Most of these studies relate savings or consumption to some income measures or health risks that households encounter. This approach induces the potential bias caused by the likely correlation between risks and underlying preferences for savings.

Recent studies have exploited the variations in insurance coverage caused by policy changes. Such research includes Engen and Gruber (2001), Gruber and Yelowitz (1999), and Kantor and Fishback (1996) for the US; Atella et al., (2005) for Italy; Chou et al., (2003) for Taiwan; Wagstaff and Pradhan, (2005) for Vietnam; and Zang et al. (2012) for urban China. Most of these studies reveal the economically significant effects of social insurance programs on consumption or savings. For example, Zang et al. (2012) find that the introduction of basic medical insurance for urban residents increases household nonmedical consumption by 13%. Following this trend in the literature, we exploit the changes in health insurance coverage caused by the NCMS to gauge the magnitude of precautionary savings in rural China.

To estimate the insurance effect that excludes the influence of contemporary policy changes, we focus on the difference-in-difference (DD) comparison of the insured and the nonparticipants in the NCMS villages where the program has been launched. Although we do not have a natural experiment that randomly assigns the insurance to households, our 2003–2006 panel data enable us to control for household fixed effects and thus time-invariant selection biases. We further reduce selection bias on observables by allowing temporal changes in consumption to vary with observable characteristics, such as income and initial health status.

We find that the NCMS increases household nonmedical consumption by about 5.6% or 586 yuan (US$73 at the exchange rate in June 2006). The magnitude of increase is considerably larger than the average premium of the insurance, which was typically 120 yuan before 2006 and 200 yuan in 2006 for a representative four-member household. The program stimulates consumption more effectively than do government cash transfers because the average propensity of rural households to consume is only about 0.44. The estimate is robust to different ways of controlling for selection biases, such as using the matching difference-in-difference (DID) method or regression with matching methods. The results of the counterfactual tests also increase our confidence in the baseline estimations. However, we cannot observe all characteristics that affect both participation decision and consumption decision. As a result, we cannot completely rule out the possibility of omitted variable bias.

The effect of the NCMS on consumption includes both the income effect from the subsidy value of the insurance and the precautionary savings effect due to the reduction in uncertainty of medical expenditures. The income effect is unlikely to dominate, because the increase in consumption resulting from the income effect is about 131 yuan even if all the medical expenditures of a household are spent on inpatient services for one person. The insurance effect on consumption remains significant for households that do not spend on health care in a given year, suggesting that the effect cannot be explained by the "crowd-in" story. Moreover, the insurance effect is considerably stronger for households with worse self-reported health status and poorer households. The insurance effect also increases as the insurance provides more generous benefits for services rendered at county-level hospitals. These results are all consistent with the precautionary savings explanation.

The insurance effect on consumption varies by household experience with the program. In particular, the level of trust accorded to the program can be crucial to consumption stimulation. The insurance effect is significant only in villages where some households have obtained reimbursement from the program; reimbursements are channels through which trust in the program is established. In such villages, the increase in consumption is substantially larger among experienced members who have participated in the program for more than a year than among new members. By contrast, in villages where no household has received reimbursement, neither the average insurance effect nor the difference between experienced and new participants is significant. These findings emphasize that the roles of trust and experience warrant more attention in research and policymaking. This requirement is particularly important for public insurance programs in developing countries, where transparency and trust are often lacking.

The rest of the paper is organized as follows. Section 2 provides the background of the NCMS. Section 3 discusses a simple model that illustrates the effect of health insurance on nonmedical consumption. Section 4 introduces the data and provides the descriptive statistics. Section 5 discusses our econometric specifications. Section 6 presents the results for the baseline model, and Section 7 shows the robustness tests. Section 8 concludes.

2. Background of the New Cooperative Medical Scheme

Since the dissolution of the rural Cooperative Medical System (CMS) in the early 1980s, illness has emerged as a leading cause of poverty in rural China, and the high cost of health care has deterred households from obtaining necessary health treatment (You and Kobayashi, 2009). About 80% of the total rural population was not covered by health insurance of any kind (Wagstaff et al., 2009a). To address this problem, the Chinese government initiated the NCMS program. The pilot

---

[1] There is one closely related paper written in Chinese: Ma et al. (2010). However, they consider only food consumption.