Heterogeneity of the effects of health insurance on household savings: evidence from rural China

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Abstract

This paper estimates the impact of the New Cooperative Medical Scheme (NCMS) on household savings across income quartiles in rural China. We use data from the China Health and Nutrition Survey for the 2006 wave and run an ordinary least squares regression. We control for the endogeneity of NCMS participation by using an instrumental variable strategy. We find evidence that NCMS has a negative impact on savings of middle-income participants, while it does not affect the poorest households. The negative effect of NCMS on savings of middle-income participants holds when we use propensity score matching estimations as a robustness check.

Keywords: Health Insurance, Household savings, Propensity Score Matching, Asia, Rural China

In the nineties, China experienced an average growth of GDP of 10%. The poverty headcount ratio[i] dropped from 84% of the population in 1990 to 64% in 1999. Life expectancy at birth increased from 69,4 years in 1990 to 71 years in 1999 (World Bank). During this decade, the Chinese government expanded health insurance coverage and launched the Urban Employee Basic Medical Insurance. However, access to health care remained difficult for rural and poorer households. In 2003, 22% of rural residents declared not seeking health care because they could not afford it compared to 15% of urban residents (Liu, Rao, Wu and Gakidou, 2008). Liu *et al.* (2008) pointed out that low-income households had a lower level of coverage compared to richer households and tended to avoid seeking medical care. The rising inequality in access to health care between urban and rural residents as well as between income groups led Chinese policy makers to examine this issue. Indeed access to health care is a key issue for economic development. Promoting health may decrease the poverty impact of medical expenses and create a virtuous circle by improving the population's health and enabling the poorest households to lift themselves out of poverty (Liu, Rao and Hsiao, 2003). Therefore, from 1997 on, Chinese policy makers started various pilot programs to improve the health care system. The year 2003 marked a turning point in health care reforms with the launch of the New Cooperative Medical Scheme (NCMS), which intended to cover rural residents. The first goal of the scheme was to facilitate the access to health care by relieving rural households of the burden of health expenditures. By this means, the government also intended to incentivize Chinese consumption and reduce high household precautionary savings that can be attributed to lower social safety nets according to Kraay (2000).

In a first paper, we investigate whether health insurance participation decreases the household saving rate and encourages consumption in rural China. We find that on average NCMS reduces the saving rate of rural households. The negative effect of health insurance on savings may, however, vary across income groups. A series of studies on Medicaid[ii] demonstrates that this health insurance has a negative effect on the savings of eligible households (Hubbard,

Skinner and Zeldes, 1995; Gruber and Yelowitz, 1999). Maynard and Qiu (2009) explore deeper the relation between Medicaid and savings and analyze it by income groups. They bring out that Medicaid reduces the saving rate of middle-income recipients but does not affect the saving rate of participants from other income groups. We investigate, similarly, whether NCMS negatively affects the savings of participants from all income groups or from particular groups only.

This article extends the scope of research on NCMS beyond health outcomes and contributes to the research on the effect of health insurance on precautionary savings in China. Former studies focus on macroeconomic aggregates due to a lack of data combining information on NCMS participation and household savings at a microeconomic level. We exploit the extensive data of the China Health and Nutrition Survey and construct household consumption expenses and savings.

In this paper, we study the heterogeneity of the impact of NCMS on household savings across income groups in rural China. We run an ordinary least squares regression (OLS) to control for a set of socioeconomic, demographic and geographical determinants of savings. As NCMS participation is voluntary, we further control for potential adverse selection with an instrumental variable regression (IV). We find evidence of a negative impact of NCMS on household savings for the middle-income group in OLS and IV regressions. These results are robust to propensity score matching estimations (PSM).

The paper is organized as follows: section 1 gives a brief presentation of the introduction of NCMS; section 2 describes the data; section 3 covers the empirical strategy and presents the results; section 4 tests the robustness of our results using propensity score matching methods; and section 5 discusses the results and concludes.

1. INTRODUCTION OF THE NEW COOPERATIVE MEDICAL SCHEME

The dismantling of the People's Communes associated with China's move towards a socialist market economy led to the collapse of the traditional health care system (Liu, 2004). The central government encouraged the autonomy of public hospitals and allowed the number of private practitioners and private clinics to grow in order to address the lack of medical institutions and professionals. Medical expenses of rural citizens skyrocketed. From 1980 to 1988, the share of health expenses paid by Chinese households increased from 16% to 38%, up to 61% in 2001 (Zhang and Kanbur, 2003). The increase in health expenditures had two major consequences. First, Chinese households tended to save more in order to cover themselves from potential catastrophic health expenditures (Chamon and Prasad, 2008). Second, the number of rural households living below the poverty line rose by 44.3% between 1993 and 1998 (Liu, Rao and Hsiao, 2003). Providing health insurance is essential to fight poverty. As a consequence, the government decided to launch a new health insurance program to improve access to health care in rural areas but also to lower household precautionary savings.

The NCMS was inaugurated in 2003 and was designed to cover the whole country by 2010. The central government decided to assist local governments in poor regions, namely the central and western regions. They did not participate in the funding of the richer eastern regions. The NCMS was initiated in 162 out of more than 2400 counties in the first year, and expanded to 333 counties by 2004. The NCMS is a voluntary scheme and primarily aims at covering catastrophic expenditures. In 2003, the central and local governments both contributed 10 yuan per person annually, while households paid 10 yuan to participate. In 2008, these amounts increased to 40 yuan and 20 yuan respectively[iii] (Dong, 2009). These contributions fund an individual account as well as a pooling account meant to partially cover the cost of hospitalization and outpatient expenses for severe diseases. The scheme is organized at the county level: each county is free to implement the scheme at its discretion. Local governments decide reimbursement ratios, deductible ceilings and provider payment methods. As a result, the organization of the program,

its impact on health expenditures, and vulnerability to health shocks vary across counties. However, we have to keep in mind that the main goal of NCMS is to cover households from catastrophic expenditures and to relieve their financial burden of health care consumption, whatever the features of the program. Despite this heterogeneity, we evaluate the overall effect of NCMS on household savings across income quartile.

2. DATA AND DESCRIPTIVE STATISTICS

(a) Variables

We use data from the China Health and Nutrition Survey (CHNS). The CHNS is jointly conducted by the Carolina Population Centre at the University of North Carolina at Chapel Hill and the National Institute of Nutrition and Food Safety at the Chinese Centre for Disease Control and Prevention in Beijing. This survey was designed using a multistage random cluster process and covers nine provinces from 1989 to 2009. The CHNS provides information on socioeconomic and demographic characteristics at the community, household and individual levels. Focusing on health and nutrition outcomes as well as individual and household expenses, the overall survey collects information on approximately 4,400 rural and urban households (or some 19,900 individuals) for 8 waves.

In this paper, we use one round of the CHNS: the 2006[iv] wave, i.e. three years after the implementation of the NCMS. The sample includes only counties where NCMS was introduced. We focus on households living in rural China, who answered questions on both expenses and health sections, which reduces our sample to 1313 households. In 2006, 71% of these households (933) decided to join NCMS (see Table 1).

The key dependent variable is the total amount of household savings. It is constructed as the difference between household total net income and total consumption expenses on durables and non-durables. Household total net income is the sum of wages, net revenues from production and

entrepreneurship, net subsidies, cash received as gifts as well as income from rent and non-household members. This last source of income includes remittances. The CHNS provides a detailed section on household consumption, which gathers spending on high tech items, electrical appliances, health care, wedding, dowry, as well as gifts or cash offered to non-household family members. Nevertheless, we do not have any information on food consumption expenses. One contribution of the paper lies in the construction of this missing information. We build food consumption expenditures based on the quantities of products consumed and their germane prices that are given by the CHNS. We add this category of expenditures to the other disaggregated ones available in the survey to obtain total consumption expenses. The construction and measurement of all consumption expenses are detailed in Appendix A.

Another key variable is the household enrollment in NCMS. We use several health, demographic, and socioeconomic variables in order to control for household characteristics. Health variables include: a dummy variable referring to the presence of at least one ill member in the household in the last four weeks preceding the interview, the maximum average waiting time in health care institutions of the community, as well as the enrolment in the former health insurance system, the Cooperative Medical Insurance, in 2000. Demographic and socioeconomic variables consist of: age, square of age, gender of the head of household, whether this latter completed at least upper-middle school, household income, whether the size of the household is greater than the average household size of the sample whether one of the household members is a farmer, whether the head of household works. We also control for the geographical residence of the household at the provincial level.

(b) Baseline descriptive statistics of the sample

In 2006, 64% of the households of our sample were exposed to NCMS. 73% (331 households) of poorest household decided to join NCMS. The participation rates were 72% for the second income quartile, 73% for the third quartile and 66% for the fourth quartile (see Table 1).

(Table 1 here)

Tables A, B, C and D in Appendix B report descriptive statistics of the dependent and independent variables. On average, participating and non-participating households are of the same size. As the scheme is meant to target farmers, not surprisingly, households with at least one farmer or enrolled in the Cooperative Medical Scheme in 2000, are more inclined to enroll. Non-enrolled households tend to have an older and non-working head. On average, households whose head is a woman also tend to participate less in the scheme, except for the second income quartile. Globally, participants live in richer provinces and have heads who completed at least upper-middle school, except for the richest households. Participants also have easier access to medical infrastructures, as the maximum average waiting time in the health care institutions of the community is on average lower. It is worth to point out that poorer households –from the first and second quartiles- tend to participate in the scheme when they do not have ill members in the family, while richer households –from the third and fourth quartiles- enroll regardless.

Descriptive statistics show that participants of the second, third and fourth quartiles save less than non-participants, while participants from the first quartile dissave less. In 2006, households from the first and second quartiles overspent on average, while households from the third and fourth quartiles did not. On average, participants of the first quartile spent the same amount as non-participants, but their net income was 15% higher. As a consequence, they had a smaller depletion in savings, -4361 and -4992, respectively. Lower-middle-income participants spent on average 25% more than non-participants from the same quartile, 15380 yuan versus 11610 yuan. They earned less on average and thus saved less than non-participants, -3986 yuan and -59 yuan. The same observation holds for upper-middle income households: participants from this income quartile saved less. At last, among the richest households, we observe that non-participants earned

more on average (+7%), spent much more (+23%), and saved less (-4.5%) compared to participants from the same income group.

3. EMPIRICAL STRATEGY AND RESULTS

(a) Empirical model

We use the following standard linear regression to estimate the impact of NCMS on household savings by income quartile:

$$Y_{h,i} = \alpha_{1,i} + \beta_{1,i}.NCMS_{h,i} + \beta_{2,i}.X_{h,i} + \varepsilon_{h,i} \qquad (1)$$

$Y_{h,i}$ is the total amount of savings of household h from quartile i (i takes values from 1 to 4). $X_{h,i}$ is a set of control variables at the household and community levels for quartile i, $\alpha_{1,i}$, the constant, and $\varepsilon_{h,i}$, the error term which controls for unobservables affecting the outcome of interest. $NCMS_{h,i}$ denotes the participation of the observed household in the scheme[v].

$X_{h,i}$ refers to demographic and socioeconomic variables for a specific quartile: household income, gender, age and square of age of the head of household, whether the household size is greater than the average household size of the sample, whether the latter has completed at least upper-middle school, whether the head of household works, and also whether one member of the household is a farmer. We also add provincial dummies in the regression and omit the richest province of our sample as the baseline group.

One major concern with eq. (1) is the endogenous participation in NCMS. As enrollment in NCMS is voluntary, participating households may have specific characteristics that could bias the estimates. As shown by Wagstaff *et al.* in 2007, enrolment is higher among households with chronically sick members. These households may have specific saving behaviors as well. If we do

not control for a potential adverse selection problem, it could bias the estimates and subsequently distort the magnitude of the impact of NCMS on savings and consumption expenditures.

In order to control for endogeneity of participation in the scheme, we adopt an instrumental variable strategy using the same set of control variables as in eq. (1). We first predict NCMS participation, $\widehat{NCMS}_{h,\iota}$, according to the instrument, and then include it in eq. (1). We instrument the enrolment to NCMS with the percentage of enrolled households in the community, excluding the observed household. We assume that, the higher the coverage in the community, the more credible and attractive the insurance is to households. This community-level variable is correlated with household participation in NCMS but does not affect household consumption and savings. The instrument is a good predictor of NCMS participation: the correlation between enrolment in NCMS and the instrument is positive with a first-stage t-statistic on the instrument equal to 6.59 for the first quartile, 12.42 for the second quartile, 13.08 for the third quartile, and 12.11 for the last quartile.

We check the validity of the instrument using two tests. The endogeneity test checks whether the variable is endogenous (the null hypothesis is in this case rejected) and allows us to conclude what estimation, OLS or IV, is the most appropriate. The second test is a test of weak identification. This tests checks whether the instrument is weakly correlated with the endogenous variable: NCMS participation. As we control for heteroskedasticity of the error term, we use the Kleibergen-Paap Wald F-test. We report the values of both tests in the tables.

(b) Results

The results for OLS and IV regressions are reported in Tables 1 and 2. OLS regressions show that lower-middle-income participants deplete their savings significantly and symmetrically increase their consumption expenses compared to non-participants households. The IV regressions confirm this result with a magnitude of impact coefficient that is five percent higher than the OLS coefficient and lower than the average income of this quartile. According to OLS estimations,

NCMS participants tend to decrease their savings by 8,872 yuan, while the IV estimations show a reduction of their savings of 10,107 yuan.

(Table 2 here)

When we instrument household participation in NCMS, we observe that upper-middle-income participants reduce their savings compared to non-participant households from the same quartile. The magnitude of IV coefficient is high for the third quartile. The coefficient is thirty three percent greater than the average of household income from this quartile. This difference suggests a decrease in savings fuelled by a reduction of household patrimony.

(Table 3 here)

In a nutshell, the OLS results confirm the trend observed in the descriptive statistics: lower-middle-income participants save less than non-participants. This result holds with IV estimations. Moreover, IV estimations show that upper-middle-income participants decrease their savings as suggested in the descriptive statistics. We do not, however, find any negative impact of NCMS on household savings for the fourth quartile as it was suggested in the descriptive statistics.

We provide detailed tables of OLS and IV regressions in Appendix B (see Tables E-L). We observe that results are robust when we progressively control for demographic and socio-economic variables (Regressions 2 and 3) and then for provincial dummies (Regression 4).

(c) Robustness checks

(i) Endogeneity of health expenditures

As health expenditures are included in our definition of total consumption expenses, we may have an endogeneity issue since health insurance may increase healthcare spending. Wagstaff *et al*.

(2009) bring out that NCMS participation leads to an increase in out-of-pocket payment per inpatient visit or for ambulatory care. As a result, including health expenses in the computation of savings would mechanically lower household savings. In order to control for this endogeneity issue, we look at the effect of NCMS participation on a new variable of savings that excludes health expenses.

We estimate the impact of NCMS on household savings with an ordinary least squares regression:

$$Y_{h,i}^H = \alpha_{2,i} + \beta_{1,i}^H . NCMS_{h,i} + \beta_{2,i}^H . X_{h,i} + \varepsilon_{h,i}^H \qquad (2)$$

where $Y_{h,i}^H$ is the total amount of savings of household h from quartile i (i takes values from 1 to 4) that does not takes into account health expenditures; $X_{h,i}$ is the same set of control variables used in equation (1); $\alpha_{2,i}$ is the constant; and $\varepsilon_{h,i}^H$ is the error term which controls for the non observables characteristics of the household in equation (2). $NCMS_{h,i}$ denotes the participation of the observed household in the scheme[vi].

(Table 4 here)

Table 4 reports the impact coefficients of NCMS participation on the variable of savings that excludes health expenses. Results show that NCMS enrollment has a negative impact on savings of lower-middle-income households but does not affect savings of households from other income quartiles. These results also confirm that the decrease of savings is not mechanically channeled by an impact of NCMS on health expenses but rather by a reduction in the uncertainty households face.

We also control for potential endogeneity of NCMS participation with the same instrument used before. NCMS participation negatively impacts savings of middle-income households and has no impact on savings of the richest households. These results confirm the initial impact estimates. However, we also find a negative impact of NCMS take-up on savings of poorest households. The

magnitude of the coefficient for the first quartile is lower than the magnitude of impacts estimates of the second and third quartiles.

(Table 5 here)

(ii) New definitions of quartiles

As household income is reported for one year, it might not reflect the true wealth status of the household. For instance, some households considered as poor in 2006 may have suffered from a transitory decrease of their income during this year. The same logic applies for the richest households. Some households from the fourth quartile may have got temporarily richer in 2006.

To avoid any bias due to the definition of income quartiles, we check the reliability of the NCMS impact by changing our definition of the poorest and richest households and control for the education level of the head of the household. The new definition of the poorest households excludes from the first quartile all households with a head who completed at least upper-middle school. The new definition of the richest households removes from the fourth quartile all households with a head without education or which did not go further than the lower-middle school.

We run OLS and IV regressions for these new categories of households. We use the same set of independent variables and add education dummies. For the new category of the poorest, we control for three education variables: households with a head that completed lower middle school, households with a head that completed primary school, and households with a head that has no education. For the new category of the richest, we control for three dummies: households with a head that has a university or college diploma, households with a head that has technical degree and household with a head that completed upper-middle school.

As shown in Tables 6 and 7, for both new categories, the results remain consistent with the

previous impacts as NCMS participants from the first and fourth quartiles do not significantly change their saving behaviors.

(Table 6 here)

(Table 7 here)

(iii) Dissociation of the effect of NCMS from the effect of other public health care programs

In order to ensure that our results can be attributed to NCMS and not to other cross public programs, we run OLS and IV regressions on a sample excluding the households who benefit from other types of health care insurances or programs such as: the Free Medical Insurance, Health Insurance for Women and Children, and the Immunization Program for Children. These insurances provide either free health care or benefits that may affect household consumption and savings. Tables 8 and 9 report the estimated coefficients. The signs and significance remain unchanged. The magnitude of the OLS and IV significant coefficients are slightly higher in terms of absolute values but very close to the initial results. These findings are consistent as households benefiting from other health care insurances in addition to NCMS have a better financial protection and reduce less their savings once they enroll NCMS.

(Table 8 here)

(Table 9 here)

Results remain similar in terms of sign, magnitude and significance when we control for the endogeneity of health expenditures and also when we use the new definition of income quartile on this sample (robustness check (i) and (ii), respectively, see Tables M to P in Appendix B).

4. USING ANOTHER ESTIMATION FRAMEWORK: PROPENSITY SCORE MATCHING

(a) Propensity Score Matching

In order to check whether our findings with OLS and IV are robust, we control for the endogenous take-up of NCMS using propensity score matching (PSM).

PSM enables empirical ex-post policy evaluation by creating a counterfactual and addressing the household adverse selection problem. Treated individuals covered by NCMS and non-treated individuals might have personal characteristics that both affect the decision to participate in NCMS and the outcome of interest in our project: household savings. PSM balances the observable characteristics of individuals of both groups and matches them according to their probability to enroll. We thus assume that there is no difference between both groups in terms of unobservables (Rosenbaum and Rubin, 1983). To compare levels of consumption and saving between participants and non-participants, we first predict the probability of participation in the scheme using a probit regression:

$$NCMS_{h,i} = \alpha_{2,i} + \delta_i . Z_{h,i} + \varphi_{h,i} \qquad (2)$$

$NCMS_{h,i}$ is the household participation in NCMS for each quartile of income i, i takes the values 1, 2, 3 and 4; $Z_{h,i}$ is a set of controls[vii], $\alpha_{2,i}$, the constant, and $\varphi_{h,i}$ is the error term.

The set of controls includes the same demographic, socioeconomic, and geographic variables as in OLS and IV estimations. Nevertheless, as we are predicting the probability of participation in NCMS, we also add controls for health characteristics of households and health care supply in the community such as: the maximum average waiting time in health care institutions of the community, the presence of at least one ill member in the household during the past four weeks, and the enrollment in the old Cooperative Medical Scheme Insurance in 2000.

Using the propensity score function obtained from the probit regression (2), we estimate the average treatment effect of the treated (ATT) for the 2006 wave:

$$ATT = E\left[Y_{2006}^{participants}(Z)\right] - E\left[Y_{2006}^{non-participants}(Z)\right] \qquad (3)$$

$Y_{2006}^{participants}$ and $Y_{2006}^{non-participants}$ refer to the amount of savings in 2006 for participants and non-participants, respectively. "Z" refers to observable variables controlled in the probit. The *Stata* command "psmatch2" developed by Leuven and Sianesi (2010) is used to pair off households according to the set of causal variables, "Z". We use three matching methods: *one-to-one*, *k-nearest neighbors* and *kernel matching* with bootstrap replications to get adjusted standard errors. We only match participant and non-participant households who belong to the common support.

(b) Results

Results of the probit regression for each quartile are reported in Table 10. We observe a great disparity in the determinants of NCMS take-up across the different income groups.

(Table 10 here)

Only one independent variable seems to influence the participation in the scheme for almost all income quartiles: households with at least one farmer are more likely to enroll.

Regarding health variables, having at least one sick member in the household has a positive significant impact on the participation decision of the richest households, but not of the poorest. A longer average waiting time at the nearest institution has a disincentive effect on the participation of the richest households.

Finally, regarding demographic data, the age of the head of household is a determinant for NCMS take-up for the fourth quartile: the older the head of household, the less likely he is to enroll his

family. For the second quartile, a woman is more likely to enroll her family when she is the head of household. Lower-middle-income households whose head completed at least upper-middle school are more likely to participate in NCMS. Richer households with a non-working head tend to participate less.

(Table 11 here)

Table 11 reports estimates of average treatment effect of the treated (ATT) at the household level, using the following three matching methods: *one-to-one* with narrowing caliper equal to 0.05, 0.01 and 0.005, *k-nearest neighbor* with 7, 5 and 2 neighbors and *kernel* without caliper and narrowing caliper equal to 0.05 and 0.01. The use of different methods and narrowing calipers allows us to confirm the robustness of our results.

We find a statistically significant impact of NCMS take-up on household savings for the lower-middle-income group, which confirms our findings with the OLS and IV estimations. Participating households deplete their savings by 7050 yuan on average [viii] compared to non-participant households. PSM estimates, like the IV estimates, suggest that there might be a negative impact of NCMS on the savings of upper-middle income household as well. We find a significant negative impact for half of the estimates, the other half remain non-significant. We do not find any significant impact of NCMS for the poorest and the richest households.

(c) Robustness checks

(i) Trimming of the non-treated households used frequently as a control for the matching

PSM assigns to each control observation a weight that indicates the frequency of matching. We want to check that our results are not biased by the frequent use of one non-participant household as a matched control. We follow the first two steps of correction suggested by Huber, Lechner and Wunsh (2013): we "set all weights to zero if the share of the sum of all weights is larger than $t\%$"

and normalize the remaining weights. We use a threshold of 4% which is the lowest threshold proposed by Huber *et al.* (2013). As all the controls are selected for the matching process -and not only the closest controls- in the *kernel* matching method, we implement this rule for the first two matching methods only, *one-to-one* and *k-nearest* neighbors. When we remove all observations satisfying the rule and normalize the remaining weights, the significance of the impacts is still consistent with the previous results (see Table 12). We observe a significant and negative impact of NCMS participation on savings of lower-middle-income households but we do not observe any impact on savings of households from other income quartiles.

(Table 12 here)

Similarly to OLS and IV estimations, we also control for potential endogeneity of health expenses, check the robustness of our results with the new definition of income quartiles, and exclude households benefiting from cross public programs from the sample.

(ii) Endogeneity of health expenditures

We first test our PSM results with the new definition of household savings that does not include health expenditures. We see in Table 13 that the results remain unchanged: there is a negative impact of NCMS participation on household savings for lower-middle-income households only; the effect is significantly negative for upper-middle-income households for four out of nine matching methods, and non significant for the poorest and the richest households. The absence of significant impact of NCMS on savings of poorest households is consistent with OLS conclusions. This result suggests despite IV findings that NCMS enrollment does not affect savings of poorest households.

The coefficients are slightly higher when we exclude households benefiting from other insurances, but the signs and the significances are alike (see Table Q in Appendix B).

(iii) New definitions of quartiles

We replicate our PSM estimation with the second definition of the poorest and richest households. As we did for OLS and IV regressions, we exclude from the first quartile all households with a head who completed at least upper-middle school. We remove from the fourth quartile all households with a head with no educational degree or which did not go further than the lower-middle school. The impact of NCMS on savings remains insignificant for these two groups of households (see Table 14).

(iv) Dissociation of the effect of NCMS from the effect of other public programs

Finally, we exclude households benefiting from other cross public programs and find that the results are unchanged (see Table 15).

5. DISCUSSION

This paper estimates the impact of the New Cooperative Medical Scheme on household savings by income quartile in rural China. We use the China Health and Nutrition Survey for the 2006 wave and use a three-step methodology. First, we run ordinary least squares regression to control for a set of socioeconomic, demographic and geographical variables. Second, we use an instrumental variable strategy to deal with the endogeneity of NCMS participation. Finally, we check the robustness of the former results with a propensity score matching using enrolled households as the treatment group and non-enrolled households as the control group. The three estimation strategies show that lower-middle-income participants save less than non-participants, while the poorest and the richest households are not affected by the scheme. The effect of NCMS

on savings is ambiguous for upper-middle-income participants: we observe a significant and negative impact with IV estimations, which is partly confirmed by PSM.

Lower-middle-income households are significantly affected by the scheme. After enrolling NCMS, households from the second quartile are less likely to save. This result is confirmed by the three types of estimations, OLS, IV, and PSM, with coefficients varying from -7000 yuan to -9800 yuan a year. PSM and IV estimates also suggest that NCMS participation may have a negative impact on the savings of upper-middle-income households. We also check for a possible endogeneity of health expenditures on the computation of savings. We estimate the impact of NCMS enrollment on a measure of savings that excludes health expenses. We find that NCMS participation still negatively affects middle-income households. This result shows that the reduction of savings of middle-income households is not the mechanical consequence of an increase in health expenditures. The decrease in savings appears to be caused by a reduction in the uncertainty households face.

This finding is encouraging as it shows that NCMS decreases the income risk of middle-income participants and allows them to lower their precautionary savings and stimulate their consumption. The poorest households, however, do not significantly change their consumption and saving behaviors. The richest enrolled households are not affected by the scheme. This result could be explained by the fact that these households can afford health care even without participating in NCMS. Some of these richest households have alternative health insurances: 35% of these households have another insurance, which indicates that they are already covered against health risk. These insurances allow households to consume health care even if they do not participate in NCMS, reducing the impact of NCMS on participants' savings.

To conclude, NCMS does have an impact on middle-income participants. The health care scheme reduces their income risk and enables them to access more consumer goods. The health insurance, however, does not have any impact on the saving behaviors of the poorest. NCMS does

not appear to provide a relevant financial protection for the most vulnerable households. Low reimbursement rates of catastrophic expenditures may be a possible explanation. Yi, Zhang, Singer *et al.* (2009) bring out that NCMS real reimbursement rates fall, as the severity of illness increases. Reimbursement rates may be too low to provide financial protection to the poorest. The findings of this paper demonstrate the relevance of the implementation of specific schemes, which target the needs of the poorest households, such as the Medical Financial Assistance[ix]. Wagstaff and Yu (2007) explore the impacts of Medical Financial Assistance by studying the Health VIII project, which targets the five-percent poorest population in Gansu province. They show that this project decreases medical catastrophic expenses and the incidence of impoverishment due to out-of-pocket spending. Expanding the coverage of Medical Financial Assistance will improve financial protection and therefore benefit the most vulnerable households.

Despite the multiple robustness checks that validate our results, we are vigilant about the generalization of the impact of NCMS on household savings for three reasons. First, we assess the impact of NCMS on household savings by comparing voluntary participants to non-participants. We exclude counties where NCMS was not introduced because of the possible endogeneity of NCMS implementation. We are concerned that NCMS might have been first introduced in richer counties with better health infrastructures. Second, we evaluate a short-term impact as our study takes place three years after the introduction of NCMS. Third, we are cautious about the inference of the magnitude of the impact of NCMS on household saving behaviors. The magnitude of the impact might vary with different designs of the scheme. We control for this heterogeneity by using geographical variables, though some uncontrolled variation might remain.

One extension of the paper would be to focus on the credibility of NCMS. In a previous paper, we show that the impact of NCMS on household savings is not immediate: it takes two years to modify the saving behaviors of the households and the magnitude of the impact changes over time. Unfortunately, we do not have enough observations to replicate this work by income quartile.

STATISTICAL TABLES

TABLE 1. Distribution and shares of participation in NCMS by income quartiles

1.1. Distribution of participation in NCMS by income groups

	NCMS counties		
	All 2006	Participants 2006	Non-participants 2006
Quartile 1	331	242	89
Quartile 2	297	215	82
Quartile 3	323	236	87
Quartile 4	361	240	121
Total	1312	933	379

Source: CHNS, Authors' calculations

1.2. Share of participation in NCMS by income groups (in %)

	NCMS counties		
	All 2006	Participants 2006	Non-participants 2006
Quartile 1	25	73	27
Quartile 2	23	72	28
Quartile 3	25	73	27
Quartile 4	28	66	34
Total	100	71	29

Source: CHNS, Authors' calculations

TABLE 2. Impact of NCMS on savings by income quartile, OLS regressions.

VARIABLES	Quartile 1 Savings	Quartile 2 Savings	Quartile 3 Savings	Quartile 4 Savings
NCMS participation	-597.1	-8,991**	-7,037	1,587
	(2,802)	(3,521)	(4,378)	(3,471)
Control Variables	Yes	Yes	Yes	Yes
Constant	15,250	29,220	-3,156	4,900
	(11,497)	(25,857)	(42,809)	(26,507)
Observations	265	263	293	340
R-squared	0.196	0.142	0.084	0.548

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE 3. Impact of NCMS on savings by income quartile, IV regressions.

VARIABLES	Quartile 1 Savings	Quartile 2 Savings	Quartile 3 Savings	Quartile 4 Savings
NCMS participation	-7,832	-9,452*	-27,794***	308.8
	(4,866)	(5,644)	(10,458)	(8,634)
Control Variables	Yes	Yes	Yes	Yes
Constant	23,706*	29,477	25,265	6,282
	(13,241)	(23,694)	(44,777)	(26,236)
Observations	265	263	293	340
R-squared	0.139	0.142	-0.000	0.547
Kleibergen-Paap Wald F statistic	43.49	154.4	171.1	146.6
C statistic- Chi sq p-value	0.07	0.94	0.01	0.84

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 4. Impact of NCMS on household savings by income quartile, definition of savings without health expenditures, OLS regressions.

VARIABLES	Quartile 1 Savings	Quartile 2 Savings	Quartile 3 Savings	Quartile 4 Savings
NCMS participation	-582.7	-8,936**	-6,871	1,504
	(2,794)	(3,522)	(4,311)	(3,443)
Control Variables	Yes	Yes	Yes	Yes
Constant	13,301	28,894	-6,247	9,180
	(11,408)	(25,880)	(42,308)	(25,301)
Observations	265	263	293	340
R-squared	0.194	0.142	0.085	0.552

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 5. Impact of NCMS on household savings by income quartile, definition of savings without health expenditures, IV regressions.

VARIABLES	Quartile 1 Savings	Quartile 2 Savings	Quartile 3 Savings	Quartile 4 Savings
NCMS participation	-8,707*	-9,509*	-26,912***	16.45
	(4,732)	(5,644)	(10,232)	(8,543)
Control Variables	Yes	Yes	Yes	Yes
Constant	22,797*	-29,214	21,193	10,788
	(13,238)	(23,728)	(44,001)	(24,906)
Observations	265	263	293	340
R-squared	0.120	0.142	0.003	0.552
Kleibergen-Paap Wald F statistic	43.49	154.4	171.1	146.6
C statistic- Chi sq p-value	0,04	0,94	0.01	0,82

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 6. Impact of NCMS on household savings by income quartile, new definitions of quartiles, OLS regressions.

VARIABLES	Quartile 1 Savings	Quartile 4 Savings
NCMS participation	-367,04	1185
	(2,822)	(9.063)
Control variables	Yes	Yes
Constant	-10,819*	-6.264
	(5,447)	(37.443)
Observations	246	87
R-squared	0.194	0.613

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 7. Impact of NCMS on household savings by income quartile, new definitions of quartiles, IV regressions.

VARIABLES	Quartile 1 Savings	Quartile 4 Savings
NCMS participation	-6.504	6.717
	(5.029)	(17.119)
Control variables	Yes	Yes
Constant	4.603	-12.774
	(6.686)	(40.759)
Observations	246	87
R-squared	0.154	0.609
Kleibergen-Paap Wald F statistic	40.36	42.62
C statistic- Chi sq p-value	0.14	0.64

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 8. Impact of NCMS on household savings by income quartile, excluding households with other insurances, OLS regressions.

VARIABLES	Quartile 1 Savings	Quartile 2 Savings	Quartile 3 Savings	Quartile 4 Savings
NCMS participation	-488.1	-9,158**	-7,062	156.1
	(2,866)	(3,596)	(4,402)	(3,789)
Control Variables	Yes	Yes	Yes	Yes
Constant	14,629	29,731	31.49	7,585
	(11,566)	(26,883)	(43,998)	(26,889)
Observations	263	257	282	311
R-squared	0.197	0.143	0.086	0.548

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE 9. Impact of NCMS on household savings by income quartile, excluding households with other insurances, IV regressions.

VARIABLES	Quartile 1 Savings	Quartile 2 Savings	Quartile 3 Savings	Quartile 4 Savings
NCMS participation	-7,607	-9,494*	-28,194***	-1,571
	(4,891)	(5,660)	(10,711)	(9,207)
Control Variables	Yes	Yes	Yes	Yes
Constant	22,865*	29,951	30,082	9,569
	(13,279)	(24,511)	(45,947)	(26,330)
Observations	263	257	282	311
R-squared	0.142	0.143	-0.002	0.547
Kleibergen-Paap Wald F statistic	44.3	149.1	168.7	175.3
C statistic- Chi sq p-value	0.08	0.90	0.01	0.79

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 10. Determinants of enrollment in NCMS for each income quartile (average marginal effects)

VARIABLES	Quartile1 Enrollment	Quartile 2 Enrollment	Quartile3 Enrollment	Quartile 4 Enrollment
Age of head of household	-0.0186	-0.0212	-0.0218	-0.0320*
	(0.0183)	(0.0219)	(0.0228)	(0.0184)
Age squared of head of household	0.000129	0.000222	0.000259	0.000320*
	(0.000153)	(0.000202)	(0.000207)	(0.000175)
Gender of head of household	-0.0520	0.332***	-0.109	-0.0569
	(0.0701)	(0.129)	(0.0845)	(0.0838)
Household size greater than the average household size of the sample	-0.00816	0.00693	0.00698	0.0582
	(0.0625)	(0.0581)	(0.0593)	(0.0492)
Head of household completed at least upper-middle school	0.0846	0.259***	0.127	-0.0279
	(0.126)	(0.0975)	(0.0790)	(0.0566)
At least one farmer in the household	0.152*	0.199***	0.0958	0.177***
	(0.0856)	(0.0739)	(0.0650)	(0.0547)
Head of household does not work	0.0855	-0.0437	-0.241***	-0.130*
	(0.0920)	(0.0872)	(0.0836)	(0.0710)
Household net income	1.61e-05	-1.15e-05	-1.30e-05*	9.42e-08
	(1.21e-05)	(1.24e-05)	(7.88e-06)	(7.15e-07)
Cooperative Medical Scheme insurance in 2000	-	0.0961	0.131	0.0785
	-	(0.112)	(0.112)	(0.0711)
At least one member in the household is ill	-0.0598	-0.0433	0.136**	0.193***
	(0.0584)	(0.0598)	(0.0611)	(0.0595)
Maximum average waiting time (in minutes)	-0.00228	-0.00229	-0.00205	-0.00555***
	(0.00242)	(0.00176)	(0.00176)	(0.00139)
Provincial dummies	Yes	Yes	Yes	Yes
R-squared	0.2413	0.1775	0.1916	0.2420
Observations	227	244	250	321

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 11. Average treatment effect of NCMS participation on savings (in yuan), for *one-to-one*, *k-nearest neighbor*, and *kernel* matching methods (bootstrapped standard errors).

| | | One to One | | | | | | K-nearest neighbor | | | | | | Kernel | | | | | |
| | | caliper 0.5 | | caliper 0.01 | | caliper 0.005 | | neighbor=7 | | neighbor=5 | | neighbor=2 | | no bandwidth | | bandwidth=0,05 | | bandwidth=0,01 | |
	N	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*
Quartile1	**227**	1,282.291	0.867	3890.917	0.569	7720.233	0.379	4933.711	0.489	5012.909	0.493	5960.588	0.437	5258.983	0.482	5110.989	0.495	3795.918	0.581
Quartile2	**244**	**-6,825.705**	**0.023**	**-8,496.345**	**0.023**	-7,856.087	0.134	**-6,609.095**	**0.025**	**-6,061.423**	**0.047**	**-6,710.468**	**0.030**	**-6535.441**	**0.025**	**-6512.928**	**0.027**	**-8651.851**	**0.017**
Quartile3	**250**	-3329.045	0.382	-5,290.192	0.290	-5,558.937	0.411	**-5614.18**	**0.061**	**-5812.305**	**0.060**	-4879.666	0.178	**-5717.571**	**0.062**	**-5595.753**	**0.071**	-6500.385	0.166
Quartile4	**321**	-128.7166	0.981	-68.91463	0.992	-1,596.104	0.828	-736.7742	0.889	-207.4178	0.969	430.4706	0.938	-834.0071	0.868	-1065.233	0.832	592.397	0.926

TABLE 12. Average treatment effect of NCMS participation on savings (in yuan), for *one-to-one*, *k-nearest neighbor* excluding control observation with a weight larger than 4%.

	One to One									K-nearest neighbor								
	caliper 0.05			caliper 0.01			caliper 0.005			neighbor=7			neighbor=5			neighbor=2		
	ATT	*p-val*	*N*	ATT	*p-val*	*N*	ATT	*p-val*	*N*	ATT	*p-val*	*N*	ATT	*p-val*	*N*	ATT	*p-val*	*N*
Quartile1	**20491.47**	**0.084**	**220**	-1015.156	0.734	219	-292.4878	0.937	223	-2386.177	0.293	219	-2187.51	0.334	219	-2502.825	0.288	220
Quartile2	**-10109.16**	**0.001**	**237**	**-10525.29**	**0.005**	240	**-14027.69**	**0.052**	236	**-8531.699**	**0.020**	240	**-7849.647**	**0.015**	**240**	**-8731.19**	**0.021**	**239**
Quartile3	-1561.854	0.530	243	-3252.689	0.535	243	-5040.6	0.538	246	-8245.913	0.172	241	-7457.836	0.155	242	-7266.181	0.191	242
Quartile4	-173.2147	0.978	316	-1327.843	0.835	316	-235.8627	0.974	316	905.532	0.872	*315*	3615.028	0.596	314	2870.093	0.656	315

TABLE 13. Average treatment effect of NCMS participation on savings without health expenses (in yuan), for *one-to-one*, *k-nearest neighbor*, and *kernel* matching methods (bootstrapped standard errors).

| | | One to One | | | | | | K-nearest neighbor | | | | | | Kernel | | | | |
| | | caliper 0.5 | | caliper 0.01 | | caliper 0.005 | | neighbor=7 | | neighbor=5 | | neighbor=2 | | no bandwidth | | bandwidth=0,05 | | bandwidth=0,01 | |
	N	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*
Quartile1	227	1485.304	0.846	3952.958	0.562	7786.433	0.375	5139.363	0.472	5218.624	0.476	6170.291	0.422	5461.942	0.466	5313.614	0.479	3858.188	0.574
Quartile2	244	**-6806.372**	**0.023**	**-8481.273**	**0.023**	-7838.641	0.134	**-6588.305**	**0.025**	**-6040.479**	**0.048**	**-6692.304**	**0.031**	**-6510.824**	**0.026**	**-6486.602**	**0.028**	**-8629.431**	**0.017**
Quartile3	250	-3305.338	0.384	-5308.56	0.286	-5583.242	0.405	**-5553.735**	**0.061**	**-5772.443**	**0.060**	-4869.659	0.175	**-5659.598**	**0.062**	**-5541.602**	**0.071**	-6514.361	0.162
Quartile4	321	-13.94652	0.998	35.16463	0.996	-1458.659	0.842	-660.742	0.900	-134.972	0.980	545.754	0.922	-763.2907	0.879	-989.617	0.843	695.6628	0.913

TABLE 14. Average treatment effect of NCMS participation on savings (in yuan) with the second definition of the poorest and richest individuals (excluding all households with a head who completed an upper-middle school, vocational or college degree from the first quartile and removing all households with a head without education or which did not go further than the lower-middle school from the fourth quartile)

		N	One to One caliper 0.5		caliper 0.01		caliper 0.005		K-nearest neighbor neighbor=7		neighbor=5		neighbor=2		no bandwidth		Kernel bandwidth=0,05		bandwidth=0,01	
			ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*
Poorest	**(a)**	224	-1942.646	0.680	-4221.784	0.152	-3922.262	0.274	1706.404	0.724	1913.377	0.695	-150.7385	0.976	796.0152	0.867	276.7354	0.952	-3196.824	0.274
	(b)	222	-1663.241	0.752	-2058.596	0.445	-206.4754	0.934	2694.398	0.667	2354.71	0.702	-365.8985	0.948	1345.264	0.816	683.5891	0.902	-1979.066	0.445
Richest	**(a)**	68	-18675.68	0.354	-34271.6	0.271	-42520.33	0.347	-17319.58	0.355	-17319.58	0.351	-17067.3	0.368	-17061.94	0.324	-16585.93	0.376	-34470.54	0.269
	(b)	60	13479.64	0.530	-7256.333	0.751	-4102.2	0.812	14741.11	0.426	14741.11	0.425	14386.71	0.481	20964.31	0.272	17850.73	0.384	-2929.548	0.902

(a) whole sample

(b) excluding households with other insurances

TABLE 15. Average treatment effect of NCMS participation on savings (in yuan) excluding households with other insurances, for *one-to-one*, *k-nearest neighbor*, and *kernel* matching methods (bootstrapped standard errors)

		One to One						K-nearest neighbor						Kernel					
		caliper 0.5		caliper 0.01		caliper 0.005		neighbor=7		neighbor=5		neighbor=2		no bandwidth		bandwidth=0,05		bandwidth=0,01	
	N	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*
Quartile1	**225**	1,294.642	0.829	2,741.371	0.640	2,976.356	0.568	5,953.482	0.330	6022.682	0.338	6,421.432	0.294	5887.737	0.335	5734.442	0.339	2792.838	0.627
Quartile2	**238**	**-7,563.441**	**0.006**	**-10,177.79**	**0.005**	**-7,198.423**	**0.046**	**-6,759.38**	**0.012**	**-7,242.595**	**0.007**	**-8,284.224**	**0.002**	**-7047.54**	**0.009**	**-7054.684**	**0.009**	**-10132.52**	**0.004**
Quartile3	**245**	-5,894.922	0.117	-6,828.784	0.192	-3,273.261	0.526	**-5,871.143**	**0.070**	**-5,983.918**	**0.071**	**-6179.003**	**0.100**	**-6213.68**	**0.047**	**-6128.111**	**0.051**	-6830.033	0.143
Quartile4	**292**	2,460.744	0.724	1,928.947	0.785	625.6452	0.939	-1,436.71	0.814	-2,372.491	0.695	-4,160.951	0.544	-2268.042	0.708	-2254.036	0.712	1196.714	0.854

APPENDICES

APPENDIX A. MEASUREMENT OF CONSUMPTION EXPENSES

We obtain total consumption expenditures by summing spending on food consumption, electrical appliances, high tech items, healthcare, wedding, dowry and gifts or cash offered to non-household family members.

We compute food consumption expenditures by combining data from the Nutrition and the Community Surveys. The Nutrition Survey lists the food items and quantities consumed by each individual or each household during three days. Consumed quantities of food are declared both by the individual and the surveyor. This latter carries out an inventory of all food items to be found in the household; s/he weights them every morning and every evening. Quantities of food consumed away, however, are declared by the individual only. The Community Survey gives prices of an exhaustive list of food items per community for each wave. The food items are gathered in ten categories: food grains, cooking oil, vegetables and fruits, meat and poultry, fresh milk, preserved milk, fish, bean curd, fuel (which we do not include), and a last category entitled "other products" which includes cigarettes, alcohol and drinks. These prices are declared by the head of the community or by the germane storekeeper. We have free market and supermarket prices and we also know where the residents of a community go most often to buy a product (free market or supermarket). We cross the price and quantity of each food item consumed to get food consumption expenditures for three days. We work out the daily average food consumption expenditures that we multiply by 365 to obtain food consumption expenditures for the year.

The "high tech items" category includes fives goods: computer, phone, mobile phone, DVD/VCD player and satellite dish. The expenses for each of these products are calculated with the following information: number of owned items, estimated value of all these items,

number of items purchased in the last 12 months. We generate the price of one unit of item by dividing the estimated value of the stock by the number of owned items. We allocate this price to the items purchased in the year.

Health expenditures are obtained by adding up all the expenses declared by the individual in the four weeks preceding the interview. These expenses gather all the costs related to a treatment for a disease or an injury that occurred in the last 4 weeks, no matter the medical procedure (consultation, hospitalization), nor the type of institution visited (health clinic, hospital, family planning). All the charges are included in the computation of healthcare expenditures and reimbursements of health insurance are already deduced from these charges.

All other expenditures are declared by the individual for the year.

All prices are preliminary inflated to the 2006 prices to take into account inflation.

APPENDIX B. TABLES

TABLE A. Sample characteristics in 2006, first quartile of income

| | NCMS counties | | | | | |
| | All | | Participant | | Non-participant | |
	mean	sd	mean	sd	mean	sd
Dependent variables						
Household net income	4,666.45	2,192.00	4,838.65	2,113.97	4,198.20	2,340.15
Household consumption expenses	9,197.67	10,888.44	9,200.29	9,691.87	9,190.56	13,687.45
Household level of saving	-4,531.22	10,865.40	-4,361.63	9,845.01	-4,992.36	13,303.36
Explanatory variables						
Socioeconomic and demographic						
Age of head of household	56.87	12.24	56.22	12.07	58.64	12.60
Age squared of household	3,383.89	1,420.07	3,305.66	1,376.25	3,595.72	1,520.39
Gender of head of household	0.15	0.36	0.13	0.33	0.22	0.41
Household size greater than average household size of the sample	0.39	0.49	0.38	0.49	0.42	0.50
Head of household completed at least upper-middle school	0.07	0.26	0.08	0.28	0.04	0.20
At least one farmer in household	0.70	0.46	0.73	0.45	0.62	0.49
Head of Household does not work	0.45	0.50	0.43	0.50	0.51	0.50
CMS insurance in 2000	0.08	0.26	0.10	0.30	0.01	0.11
Health						
At least one member of household is ill	0.27	0.44	0.24	0.43	0.33	0.47
Maximum average waiting time	8.27	11.59	7.51	10.81	10.31	13.34
Geographic						
Liaoning	0.12	0.32	0.13	0.34	0.08	0.27
Heilongjiang	0.12	0.32	0.14	0.35	0.06	0.23
Jiangsu	0.16	0.37	0.19	0.39	0.08	0.27
Shandong	0.11	0.31	0.14	0.35	0.01	0.11
Henan	0.03	0.17	0.04	0.20	0.00	0.00
Hubei	0.13	0.34	0.12	0.33	0.16	0.37
Hunan	0.03	0.18	0.03	0.18	0.03	0.18
Guangxi	0.14	0.35	0.07	0.26	0.34	0.48
Guizhou	0.16	0.36	0.12	0.33	0.25	0.43
Sample size	331		242		89	

TABLE B. Sample characteristics in 2006, second quartile of income

	NCMS counties					
	All		Participant		Non-participant	
	mean	sd	mean	sd	mean	sd
Dependent variables						
Household net income	11,436.79	2,166.87	11,393.28	2,195.26	11,550.85	2,099.49
Household consumption expenses	14,338.14	21,156.94	15,378.85	23,201.84	11,609.44	14,250.53
Household level of saving	-2,901.35	21,212.80	-3,985.57	23,262.05	-58.59	14,263.51
Explanatory variables						
Socioeconomic and demographic						
Age of head of household	54.21	10.89	54.27	10.87	54.02	11.01
Age squared of household	3,056.38	1,218.71	3,063.27	1,218.99	3,038.32	1,225.28
Gender of head of household	0.11	0.31	0.13	0.34	0.05	0.23
Household size greater than average household size of the sample	0.49	0.50	0.49	0.50	0.49	0.50
Head of household completed at least upper-middle school	0.13	0.34	0.15	0.36	0.08	0.28
At least one farmer in household	0.71	0.45	0.75	0.43	0.61	0.49
Head of Household does not work	0.32	0.47	0.30	0.46	0.35	0.48
CMS insurance in 2000	0.09	0.29	0.12	0.32	0.04	0.19
Health						
At least one member of household is ill	0.26	0.44	0.24	0.43	0.30	0.46
Maximum average waiting time	8.86	14.26	7.60	12.32	12.53	18.40
Geographic						
Liaoning	0.11	0.32	0.11	0.31	0.13	0.34
Heilongjiang	0.09	0.29	0.10	0.30	0.07	0.26
Jiangsu	0.18	0.38	0.18	0.38	0.18	0.39
Shandong	0.10	0.30	0.13	0.34	0.02	0.16
Henan	0.02	0.14	0.03	0.17	0.00	0.00
Hubei	0.15	0.36	0.19	0.39	0.07	0.26
Hunan	0.02	0.15	0.02	0.14	0.04	0.19
Guangxi	0.18	0.38	0.12	0.32	0.34	0.48
Guizhou	0.14	0.35	0.14	0.35	0.13	0.34
Sample size	297		215		82	

TABLE C. Sample characteristics in 2006, third quartile of income

| | NCMS counties | | | | | |
| | All | | Participant | | Non-participant | |
	mean	sd	mean	sd	mean	sd
Dependent variables						
Household net income	20,770.73	3,545.86	20,562.50	3,539.61	21,335.60	3,521.17
Household consumption expenses	17,842.77	26,928.27	18,449.76	29,589.44	16,196.23	17,855.64
Household level of saving	2,927.96	27,147.85	2,112.74	29,736.75	5,139.37	18,340.80
Explanatory variables						
Socioeconomic and demographic						
Age of head of household	52.10	10.14	51.70	10.15	53.20	10.09
Age squared of household	2,817.09	1,096.20	2,775.32	1,095.64	2,930.41	1,095.99
Gender of head of household	0.13	0.33	0.09	0.28	0.24	0.43
Household size greater than average household size of the sample	0.58	0.49	0.56	0.50	0.63	0.49
Head of household completed at least upper-middle school	0.18	0.39	0.20	0.40	0.13	0.34
At least one farmer in household	0.66	0.48	0.68	0.47	0.60	0.49
Head of Household does not work	0.27	0.44	0.21	0.41	0.44	0.50
CMS insurance in 2000	0.11	0.31	0.13	0.34	0.05	0.21
Health						
At least one member of household is ill	0.31	0.46	0.32	0.47	0.30	0.46
Maximum average waiting time	8.99	13.99	7.78	12.35	12.34	17.40
Geographic						
Liaoning	0.15	0.36	0.13	0.34	0.21	0.41
Heilongjiang	0.09	0.29	0.11	0.31	0.05	0.21
Jiangsu	0.19	0.39	0.18	0.39	0.21	0.41
Shandong	0.10	0.30	0.14	0.34	0.00	0.00
Henan	0.05	0.22	0.06	0.24	0.02	0.15
Hubei	0.11	0.31	0.11	0.32	0.08	0.27
Hunan	0.03	0.18	0.04	0.20	0.01	0.11
Guangxi	0.17	0.37	0.11	0.31	0.33	0.47
Guizhou	0.11	0.32	0.12	0.32	0.09	0.29
Sample size	323		236		87	

TABLE D. Sample characteristics in 2006, fourth quartile of income

| | NCMS counties | | | | | |
| | All | | Participant | | Non-participant | |
	mean	sd	mean	sd	mean	sd
Dependent variables						
Household net income	52,308.44	31,037.11	51,100.24	30,191.54	54,704.86	32,645.59
Household consumption expenses	23,352.08	26,502.56	21,706.69	26,527.33	26,615.65	26,257.74
Household level of saving	28,956.36	36,583.42	29,393.55	37,709.00	28,089.21	34,377.51
Explanatory variables						
Socioeconomic and demographic						
Age of head of household	51.84	10.31	51.11	10.28	53.30	10.25
Age squared of household	2,793.88	1,117.74	2,717.76	1,125.98	2,944.87	1,090.11
Gender of head of household	0.09	0.28	0.07	0.26	0.12	0.32
Household size greater than average household size of the sample	0.59	0.49	0.61	0.49	0.55	0.50
Head of household completed at least upper-middle school	0.26	0.44	0.22	0.41	0.33	0.47
At least one farmer in household	0.43	0.50	0.52	0.50	0.25	0.43
Head of Household does not work	0.25	0.44	0.23	0.42	0.31	0.47
CMS insurance in 2000	0.16	0.37	0.18	0.38	0.12	0.33
Health						
At least one member of household is ill	0.25	0.43	0.26	0.44	0.22	0.42
Maximum average waiting time	14.23	20.94	9.37	12.31	23.91	29.58
Geographic						
Liaoning	0.12	0.33	0.14	0.35	0.09	0.29
Heilongjiang	0.06	0.24	0.08	0.28	0.02	0.16
Jiangsu	0.31	0.46	0.31	0.46	0.31	0.46
Shandong	0.10	0.30	0.11	0.32	0.07	0.25
Henan	0.04	0.20	0.06	0.23	0.01	0.09
Hubei	0.12	0.32	0.12	0.33	0.11	0.31
Hunan	0.11	0.31	0.05	0.23	0.21	0.41
Guangxi	0.05	0.22	0.02	0.13	0.12	0.32
Guizhou	0.09	0.28	0.10	0.30	0.07	0.25
Sample size	361		240		121	

TABLE E. Impact of NCMS on savings, OLS detailed regressions, quartile1.

QUARTILE 1	(1)	(2)	(3)	(4)
VARIABLES	Savings	Savings	Savings	Savings
Enrollment in NCMS	630.7	349.8	573.1	-597.1
	(1,543)	(1,663)	(1,913)	(2,802)
Household income		0.439	0.651**	0.683**
		(0.272)	(0.301)	(0.278)
Head of household does not work			-3,000	-2,538
			(2,855)	(2,866)
Head of household is a farmer			-3,329	-3,722*
			(2,197)	(2,237)
Head of household completed at			1,188	1,745
least upper-middle school			(1,830)	(1,852)
Age of the head of household			-915.9**	-823.3**
			(384.0)	(359.0)
Age squared of the head of			8.255***	7.841***
household			(3.139)	(2.957)
Gender of the head of household			1,783	925.1
			(1,915)	(2,121)
Household size greater than average			-6,329***	-5,716***
household size of the sample			(1,950)	(2,108)
Liaoning				2,072
				(3,647)
Heilongjiang				4,622
				(3,015)
Shandong				30.70
				(3,413)
Henan				9,295**
				(3,583)
Hubei				4,988
				(3,674)
Hunan				-3,054
				(4,517)
Guangxi				-4,172
				(5,407)
Guizhou				5,538
				(3,829)
Constant	-4,992***	-6,834***	21,269*	16,175
	(1,406)	(1,221)	(12,418)	(11,331)
Observations	331	331	265	265
R-squared	0.001	0.008	0.105	0.196

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE F. Impact of NCMS on savings, OLS detailed regressions, quartile 2.

QUARTILE 2	(1)	(2)	(3)	(4)
VARIABLES	Savings	Savings	Savings	Savings
Enrollment in NCMS	-3,927*	-3,813*	-5,562**	-8,991**
	(2,234)	(2,218)	(2,760)	(3,521)
Household income		0.726*	0.893**	1.127**
		(0.417)	(0.448)	(0.463)
Head of household does not work			5,195	3,464
			(3,578)	(3,545)
Head of household is a farmer			8,125**	6,376*
			(3,253)	(3,292)
Head of household completed at			6,525**	6,503***
least upper-middle school			(2,549)	(2,492)
Age of the head of household			-1,602**	-1,681*
			(799.4)	(915.2)
Age squared of the head of			14.17**	16.00**
household			(6.966)	(8.113)
Gender of the head of household			118.3	-893.5
			(3,348)	(3,700)
Household size greater than average			-8,113***	-6,211**
household size of the sample			(3,025)	(2,861)
Liaoning				3,075
				(3,882)
Heilongjiang				5,995*
				(3,149)
Shandong				7,466***
				(2,845)
Henan				-3,184
				(13,295)
Hubei				5,361
				(3,316)
Hunan				-7,062
				(11,670)
Guangxi				-10,387
				(6,836)
Guizhou				5,813**
				(2,529)
Constant	-58.59	-8,449*	30,253	28,327
	(1,571)	(4,825)	(22,643)	(26,756)
Observations	297	297	263	263
R-squared	0.007	0.012	0.071	0.142

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE G. Impact of NCMS on savings, OLS detailed regressions, quartile 3.

QUARTILE 3	(1)	(2)	(3)	(4)
VARIABLES	Savings	Savings	Savings	Savings
Enrollment in NCMS	-3,027	-2,297	-4,048	-7,037
	(2,757)	(2,766)	(4,136)	(4,378)
Household income		0.944***	0.883***	0.871**
		(0.290)	(0.314)	(0.341)
Head of household does not work			-9,764	-9,870
			(10,123)	(-9,880)
Head of household is a farmer			3,436	4,576
			(2,843)	(3,349)
Head of household completed at			2,201	2,191
least upper-middle school			(3,581)	(3,536)
Age of the head of household			-788.3	-580.2
			(1,713)	(1,730)
Age squared of the head of			6.737	5.591
household			(17.91)	(17.74)
Gender of the head of household			4,793	4,618
			(6,368)	(6,464)
Household size greater than average			-6,123**	-3,999
household size of the sample			(3,082)	(2,557)
Liaoning				5,941
				(4,786)
Heilongjiang				8,125*
				(4,736)
Shandong				8,445*
				(4,703)
Henan				-6,931
				(19,806)
Hubei				6,310
				(4,258)
Hunan				6,196
				(6,203)
Guangxi				-4,483
				(6,025)
Guizhou				7,719*
				(3,928)
Constant	5,139***	-15,008**	11,646	1,461
	(1,961)	(6,924)	(38,269)	(40,871)
Observations	323	323	293	293
R-squared	0.002	0.018	0.053	0.084

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE H. Impact of NCMS on savings, OLS detailed regressions, quartile 4.

| QUARTILE 4 | (1) | (2) | (3) | (4) |
VARIABLES	Savings	Savings	Savings	Savings
Enrollment in NCMS	1,304	4,310	3,202	1,587
	(3,959)	(2,854)	(3,018)	(3,471)
Household income		0.834***	0.839***	0.853***
		(0.0553)	(0.0546)	(0.0519)
Head of household does not work			7,667*	7,786**
			(3,906)	(3,734)
Head of household is a farmer			4,999	2,786
			(3,955)	(3,762)
Head of household completed at			-3,380	-3,064
least upper-middle school			(3,447)	(3,612)
Age of the head of household			-797.0	-955.9
			(1,044)	(1,026)
Age squared of the head of			5.271	8.069
household			(9.983)	(9.803)
Gender of the head of household			-3,507	-2,913
			(4,443)	(4,595)
Household size greater than average			-5,331*	-4,996
household size of the sample			(3,045)	(3,060)
Liaoning				17,450***
				(4,310)
Heilongjiang				18,488***
				(4,029)
Shandong				7,277
				(5,704)
Henan				16,019***
				(6,147)
Hubei				17,458***
				(4,920)
Hunan				6,763
				(5,292)
Guangxi				4,356
				(10,302)
Guizhou				16,702***
				(3,747)
Constant	28,089***	-17,518***	9,935	1,987
	(3,121)	(3,467)	(26,907)	(25,808)
Observations	361	361	340	340
R-squared	0.000	0.499	0.510	0.548

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE I. Impact of NCMS on savings, IV detailed regressions, quartile 1.

| QUARTILE 1 | (1) | (2) | (3) | (4) |
VARIABLES	Savings	Savings	Savings	Savings
Enrollment in NCMS	525.2	148.0	-1,300	-7,832
	(1,946)	(1,994)	(2,600)	(4,866)
Household income		0.444*	0.702**	0.813***
		(0.259)	(0.283)	(0.300)
Head of household does not work			-2,940	-1,965
			(2,871)	(2,995)
Head of household is a farmer			-3,105	-2,572
			(2,235)	(2,469)
Head of household completed at least upper-middle			1,373	2,304
school			(1,832)	(1,843)
Age of the head of household			-938.4**	-914.1**
			(392.3)	(385.9)
Age squared of the head of household			8.377***	8.492***
			(3.166)	(3.172)
Gender of the head of household			1,642	477.4
			(1,842)	(2,073)
Household size greater than average household size of the			-6,576***	-5,718***
sample			(2,092)	(2,136)
Liaoning				1,104
				(3,695)
Heilongjiang				4,156
				(3,080)
Shandong				567.6
				(3,582)
Henan				9,580**
				(3,792)
Hubei				3,133
				(3,719)
Hunan				-3,942
				(4,579)
Guangxi				-8,172
				(5,787)
Guizhou				3,454
				(3,751)
Constant	-4,915***	-6,711***	23,196*	24,184*
	(1,452)	(1,474)	(13,420)	(13,158)
Observations	331	331	265	265
R-squared	0.001	0.008	0.100	0.139
Kleibergen-Paap Wald F statistic	183.25	176.99	139.58	43.49
C statistic- Chi sq p-value	0.95	0.92	0.48	0.07

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE J. Impact of NCMS on savings, IV detailed regressions, quartile 2.

QUARTILE 2 VARIABLES	(1) Savings	(2) Savings	(3) Savings	(4) Savings
Enrollment in NCMS	2,552	3,017	417.7	-9,452*
	(4,902)	(4,897)	(6,284)	(5,644)
Household income		0.772*	1.010**	1.121**
		(0.426)	(0.479)	(0.466)
Head of household does not work			5,252	3,422
			(3,600)	(3,439)
Head of household is a farmer			6,806*	6,453*
			(3,716)	(3,536)
Head of household completed at least upper-middle school			5,275**	6,589***
			(2,495)	(2,272)
Age of the head of household			-1,651**	-1,683*
			(812.5)	(873.2)
Age squared of the head of household			14.61**	16.03**
			(7.108)	(7.677)
Gender of the head of household			-1,289	-792.1
			(3,233)	(3,367)
Household size greater than average household size of the sample			-7,943***	-6,202**
			(2,897)	(2,816)
Liaoning				3,084
				(3,743)
Heilongjiang				5,991**
				(3,049)
Shandong				7,544**
				(3,047)
Henan				-3,068
				(12,643)
Hubei				5,404*
				(3,203)
Hunan				-7,070
				(11,246)
Guangxi				-10,515*
				(6,044)
Guizhou				5,775**
				(2,560)
Constant	-4,749	-13,919**	27,100	28,685
	(4,186)	(6,884)	(20,500)	(23,992)
Observations	297	297	263	263
R-squared	-0.012	-0.008	0.058	0.142
Kleibergen-Paap Wald F statistic	381.4	375.9	234.5	154.4
C statistic- Chi sq p-value	0.20	0.18	0.35	0.94

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE K. Impact of NCMS on savings, IV detailed regressions, quartile 3.

QUARTILE 3	(1)	(2)	(3)	(4)
VARIABLES	Savings	Savings	Savings	Savings
Enrollment in NCMS	-10,107*	-9,817*	-15,792*	-27,794***
	(5,249)	(5,215)	(8,450)	(10,458)
Household income		0.853***	0.797**	0.709*
		(0.286)	(0.323)	(0.377)
Head of household does not work			-12,619	-14,715
			(10,648)	(10,436)
Head of household is a farmer			3,773	6,042
			(2,950)	(3,718)
Head of household completed at least upper-middle			2,968	3,201
school			(3,718)	(3,749)
Age of the head of household			-1,037	-990.3
			(1,690)	(1,649)
Age squared of the head of household			9.489	10.80
			(17.67)	(16.88)
Gender of the head of household			2,432	684.3
			(6,724)	(6,896)
Household size greater than average household size of			-6,569**	-3,634
the sample			(3,242)	(2,764)
Liaoning				5,184
				(5,136)
Heilongjiang				10,944**
				(4,991)
Shandong				15,033***
				(5,391)
Henan				-3,454
				(18,163)
Hubei				8,925*
				(4,711)
Hunan				12,657*
				(6,998)
Guangxi				-9,402
				(7,073)
Guizhou				9,990**
				(4,422)
Constant	10,313***	-7,618	28,105	25,949
	(3,122)	(6,925)	(39,675)	(42,197)
Observations	323	323	293	293
R-squared	-0.011	0.003	0.021	-0.000
Kleibergen-Paap Wald F statistic	537.6	523.7	318.3	171.1
C statistic- Chi sq p-value	0.08	0.07	0.05	0.01

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE L. Impact of NCMS on savings, IV detailed regressions, quartile 4.

QUARTILE 4 VARIABLES	(1) Savings	(2) Savings	(3) Savings	(4) Savings
Enrollment in NCMS	-8,854	5,130	4,495	308.8
	(6,383)	(4,755)	(5,278)	(8,634)
Household income		0.834***	0.839***	0.853***
		(0.0550)	(0.0535)	(0.0509)
Head of household does not work			7,790**	7,682**
			(3,966)	(3,839)
Head of household is a farmer			4,747	3,102
			(3,726)	(3,794)
Head of household completed at least upper-middle school			-3,256	-3,103
			(3,375)	(3,493)
Age of the head of household			-776.9	-982.0
			(1,025)	(993.8)
Age squared of the head of household			5.113	8.329
			(9.787)	(9.453)
Gender of the head of household			-3,369	-2,929
			(4,251)	(4,466)
Household size greater than average household size of the sample			-5,366*	-4,962*
			(3,028)	(3,005)
Liaoning				17,574***
				(4,169)
Heilongjiang				18,728***
				(4,116)
Shandong				7,547
				(5,728)
Henan				16,319***
				(6,172)
Hubei				17,389***
				(4,846)
Hunan				6,477
				(5,767)
Guangxi				3,653
				(12,392)
Guizhou				16,726***
				(3,639)
Constant	34,843***	-18,100***	8,512	3,353
	(4,881)	(4,437)	(26,846)	(26,037)
Observations	361	361	340	340
R-squared	-0.017	0.499	0.510	0.547
Kleibergen-Paap Wald F statistic	484.9	483.4	351.4	146.6
C statistic- Chi sq p-value	0.02	0.79	0.73	0.84

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE M. Impact of NCMS on household savings by income quartile excluding households with other insurances, definition of savings without health expenditures, OLS regressions

VARIABLES	Quartile 1 Savings	Quartile 2 Savings	Quartile 3 Savings	Quartile 4 Savings
NCMS participation	-479.2	-9,101**	-6,905	42.29
	(2,858)	(3,597)	(4,333)	(3,759)
Control variables	Yes	Yes	Yes	Yes
Constant	12,717	29,375	-3,319	11,936
	(11,483)	(26,908)	(43,477)	(25,614)
Observations	263	257	282	311
R-squared	0.195	0.143	0.086	0.553

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE N. Impact of NCMS on household savings by income quartile excluding households with other insurances, definition of savings without health expenditures, IV regressions

VARIABLES	Quartile 1 Savings	Quartile 2 Savings	Quartile 3 Savings	Quartile 4 Savings
NCMS participation	-8,508*	-9,553*	-27,187***	-1.816
	(4,750)	(5,660)	(10,474)	(9,126)
Control variables	Yes	Yes	Yes	Yes
Constant	22,006*	29,670	25,523	14,070
	(13,276)	(24,547)	(45,116)	(24,290)
Observations	263	257	282	311
R-squared	0.124	0.143	0.002	0.553
Kleibergen-Paap Wald F statistic	44.33	149.08	168.72	175.29
C statistic- Chi sq p-value	0,04	0,94	0.01	0,78

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE O. Impact of NCMS on household savings by income quartile excluding households with other insurances, new definitions of quartiles, OLS regressions.

VARIABLES	Quartile 1 Savings	Quartile 4 Savings
NCMS participation	-265.6	4,679
	(2,891)	(9,837)
Control variables	Yes	Yes
Constant	-11,407*	3,778
	(5,893)	(40,909)
Observations	244	78
R-squared	0.195	0.667

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE P. Impact of NCMS on household savings by income quartile excluding households with other insurances, new definitions of quartiles, IV regressions

VARIABLES	Quartile 1 Savings	Quartile 4 Savings
NCMS participation	-6,156	16,827
	(5,050)	(17,277)
Control variables	Yes	Yes
Constant	-6,076	-9,380
	(6,885)	(41,723)
Observations	244	78
R-squared	0.159	0.651
Kleibergen-Paap Wald F statistic	41.20	49.89
C statistic- Chi sq p-value	0.15	0.00

Robust standard errors in parentheses
***p<0.01,**p<0.05,*p<0.1

TABLE Q. Average treatment effect of NCMS participation on savings without health expenses (in yuan) excluding households with other insurances, for *one-to-one*, *k-nearest neighbor*, and *kernel* matching methods (bootstrapped standard errors).

| | | One to One | | | | | | K-nearest neighbor | | | | | | Kernel | | | | | |
| | | caliper 0.5 | | caliper 0.01 | | caliper 0.005 | | neighbor=7 | | neighbor=5 | | neighbor=2 | | no bandwidth | | bandwidth=0,05 | | bandwidth=0,01 | |
	N	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*	ATT	*p-val*
Quartile1	**225**	1,294.642	0.829	2,741.371	0.640	2,976.356	0.568	5,953.482	0.330	6022.682	0.338	6,421.432	0.294	5887.737	0.335	5734.442	0.339	2792.838	0.627
Quartile2	**238**	**-7,563.441**	**0.006**	**-10,177.79**	**0.005**	**-7,198.423**	**0.046**	**-6,759.38**	**0.012**	**-7,242.595**	**0.007**	**-8,284.224**	**0.002**	**-7047.54**	**0.009**	**-7054.684**	**0.009**	**-10132.52**	**0.004**
Quartile3	**245**	-5,894.922	0.117	-6,828.784	0.192	-3,273.261	0.526	**-5,871.143**	**0.070**	**-5,983.918**	**0.071**	**-6179.003**	**0.100**	**-6213.68**	**0.047**	**-6128.111**	**0.051**	-6830.033	0.143
Quartile4	**292**	2,460.744	0.724	1,928.947	0.785	625.6452	0.939	-1,436.71	0.814	-2,372.491	0.695	-4,160.951	0.544	-2268.042	0.708	-2254.036	0.712	1196.714	0.854

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[i] The poverty headcount ratio refers to the percentage of the population living on less than $2 a day at 2005 international prices.

[ii] Medicaid is a health insurance, which covers poor and vulnerable households in the US.

[iii] See Dong (2009) for further details on premiums or reimbursement ratios.

[iv] The 2006 wave was the latest wave available when we started this study.

[v] All our variables are expressed for the year 2006, which is three years after the introduction of NCMS.

[vi] All our variables are expressed for the year 2006, which is three years after the introduction of NCMS.

[vii] All the variables are expressed at the household level or at the community level. All variables (except the number of households in the community and the geographical location of households) were constructed from individual variables provided by the CHNS.

[viii] We compute the average of all significant estimates.

[ix] The Medical Financial Assistance is a health care scheme targeting poor households in urban and rural areas. It was implemented in 2005 as a pilot program in rural areas It finances household contribution of NCMS for poor and other eligible households and provides complementary coverage of health expenses as well as medical assistance.