Health Insurance and the Health Expenditures Risks in China

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Abstract. This paper concentrates the effect of medical coverage on individual out-of-pocket wellbeing expenses in China. Utilizing CHNS data, we apply Gamma Distribution and General model to address issues brought about by edited information and determination on unobservable. We find that, in spite of the fact that the likelihood of getting to human services increments with the accessibility of health protection, the level of out-of-pocket wellbeing consumption diminishes. Our outcomes from a choice model with instrumental factors recommend that having medical coverage decreases the normal out-of-pocket wellbeing consumption of a person by 29.42 genuinely. In the interim, contingent on being subjected to positive wellbeing consumption, medical coverage lessens out-of-pocket spending by 44.38. This gainful impact of medical coverage debilitates after some time, which might be inferable from increments in the coinsurance rates of medical coverage in China. Unemployment has an insignificant impact on the yield of protection and budgetary administrations. GNI could be enhanced all the more so that the yield of the nation can be expanded more since it is a nation with the high populace. China has a maturing populace and the legislature must take measures in accordance with this. Training and R&D of China is performing admirably conveying great enhancements to the nation.

Introduction

The utilization of health care and the insurance services in that sector are really close because of moral hazard and self-selection. Individuals demand for health care usually depends on their health insurance coverage. However, the insurance decision itself depends upon the expected future use of health services. The facilities of medical care by using health insurance also may encourage more expenses or “overutilization” by health insured individuals. Also, aware of this ability to use subsidized health insurance for fewer expenses, people may participate in this program. This phenomenon is known as simultaneous equation bias or endogeneity bias. Additionally, we note a dummy variable which denotes the likelihood of having insurance or not.

The motivation behind this proposition paper is to give knowledge into the connection between the diverse charges on social insurance and the impact out-of-pocket uses in China. Through the examination of the information gathered, we will have the capacity to see the thoughts introduced and achieved.

There is the need to increase understanding of the factors that drive medical expenses into a higher probability compared to different out-of-pocket payments. In view of the above, the main problem of this study is: How can the uses of different variables for health care affect the healthcare insurance. Which Variables would it be a good idea for us to concentrate on for to destroy much healthcare consumptions? What are arrangements that should be possible to enhance the insurance area? It is profitable to likewise in the long haul as this industry is a noteworthy section of the worldwide business.

In this paper, we will focus on giving the best view of health care spending and try to find solutions for to reduce individual’s expenses by an easier sharing coverage for all type of people. We will figure
out whether there is a need for health insurance or not for to cover these expenses. Additionally, for to solve the problems of highest spending, we need to know the different sources or variables that impact health insurance expenses. Once we know them, we will be able to suggest some solutions for less spending.

**Literature References**

The market economy implied higher difficulties for health insurance system like the increase of health care expenses and out of pockets. The inequality on access of health became huger and confusing process in these reforms made the population in doubt about their rights about these reforms. In addition to that, the new system didn’t have enough regulation against corruption. In China particularly, we will analyze the impact of health insurance on health expenditures risks for socioeconomic structure and sustainable economic growth.

Zhang et al. [1] recommend that health care coverage builds the likelihood of calamitous out-of-pocket medicinal spending, in view of information from the China Health and Nutrition Survey. As per their examines, Expenses are characterized calamitous contrasted with their rate on the capital. Zhou et al. [2] additionally understood that the human services protection didn't diminish their money-related dangers also, the protected provincial utilized more medicinal administrations and accumulate more out-of-pocket costs by utilizing health awareness protection. The concentrate of both reviews is on whether the protected display a more noteworthy probability of high social insurance spending. However, we will estimate Gamma distribution models (Xie et al. [3,4,5]) using data from the China Health and Nutrition Survey between 1991 and 1989, to analyze health insurance effects on out-of-pocket health expenditures. Different models estimated shows that having health insurance increase the likelihood to access to health care in China (Akazili et al., [6]). Insured Individuals have more chance to obtain medical assistance than their uninsured counterparts (Ali et al., [7]). It equally shows that the insured has their medical expenses reduced with the utilization of health insurance. See Yip et al., [8] for a selection model with Instrumental variables.

**Theoretical Framework**

**Dependent Variables**

We will concentrate our reviews on two mains dependant's factors which clarify the healthcare spending and protection impacts. The Health mind costs will be viewed as like a dummy variable which clarifies the distinctive charges happening in restorative health care. The OOP spending will consider the rate of health spending contrasted with the family capital incomes.

The Health think costs reflect about the Medical consumptions of people like the expenses of all medications offices, the cost of preventive care, the cost of vaccinations and all costs that can affect on wellbeing medicines for sicknesses, maladies or wounds. The Variable OOP consumption parallels Medical use net of any repayments from medical coverage.

**Explanatory Variables**

The usage of medical insurance framework has impacts on various divisions. These areas or informative factors can compress as Health status, salary, demographics, geography, income, age, gender, wave, marital status, education, and work. We will mostly focus on some chosen variables like the education, the health status, the geography, the health insurance, the income and employment, the demographic variables, the age, the gender. The Education reflects the level of schooling weather individuals never went to school or if they did and at which level did they stop (Primary school, middle school, High school, University). The health Insurance defines the type of insurance and whether we use or not. The Health status reflects the four weeks period diseases. Different illnesses have been grouped for to make a variable. The first group is about The probability of getting fever, sore, throat or a cough within four weeks. The second group is about Diarrhea and stomachache. The
following group is about a headache and dizziness and the last one about the likelihood of getting Rash or Dermatitis. The income and Employment help to define the Out-of-Pocket of people and comparing to different types of insurances; it helps to know which best form of insurance is for example for government workers or self-enterprises workers. The demographic variable is the repartition of the population into urban and citizens but also into sub-urban, towns and villages.

**Empirical Analysis**

**Model Fitting**

Using Exponential function, we can evaluate the expenses utilization for each variable. For example, on the variable Age, we notice that individuals use more health expenses during the adult age between 30 and 40 years and during retiree’s age or older householders for more than 50 years ages. People use fewer expenses during their young age, less than 30 years old and the smallest utilization is on 40 to 50 years old ages with a smaller exponential amount. We can explain that by the fact that when people are getting older, their health become poor and they may need to use much more medical expenses to take care of themselves due to their higher age. Also, the higher amount is used between 30 and 40 ages where individuals become adults and stay in a middle stage between young age and the older age. At this period, some people may start having poor health because of the age and different aspects of responsibilities in their life on that period. So this intermediary period defines whether the individuals will live longer or less and people use more health care during that period because of many health statuses which is changing exactly on that period of life. Between, 40 to 50 years old, the expenses are the less in the individual lifetime. Healthy people will survive on that age and will not really need that much health care due to their good health condition. Finally, when people are young or less than 30 years, they will certainly use health care but less than for older individuals.

The Variable Gender reflects two results about the health care expenses which are for Male and Female individuals. We could easily predict that the higher amount will be for female Gender for which maternity and others factors will enter on charge and make woman use more expenses.

**Estimation**

According to the Scaled Deviance and Scaled Pearson X2 test, the underlying distribution is really close to a Gamma distribution. After examining a valid model, we will see the impact of the covariates. Our results show that only some variables are significant like the Age, the gender, the Wave, the Geography (provinces) and the last four weeks diseases attempted (fever, sore throat, cough).

We also want to look at the significance level for all the covariate values listed in Analysis of Parameter Estimates. We observe that all values are significant with a significance level of 0.05. The different values AGE, GENDER, WAVE, the Geography (provinces) and the last four weeks diseases attempted (fever, sore throat, and cough) are significant at 0.05 level. The geography of Urban, sub-rural, towns and villages with 9 like reference value, and so on for the rest of the variables. To reveal differences relative to other values, one should rerun the procedure with a different reference level.

**Result**

We observe the combined group of Individuals with all the ages, the combined group of Individuals Gender no matter male or female. The combined group of Waves for different periods of time all associated. The combined group of the different provinces. There, we also have two significant variables wave and the last four weeks diseases attempted. All variables are now significantly different from each other and the model for expenses is established. When we have a significant difference in all covariate variable values we need to calculate the average expenses frequency and average expenditures size for each of the values. Since this is a log-transformed model we need to calculate the exponential of all the estimates.

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Summary

This paper exhibits that having medical coverage in China expands the likelihood of getting to therapeutic care administrations; in any case, among people who get to human services also, in this manner report positive therapeutic spending, having medical coverage diminishes the out-of-pocket healthcare spending levels. As it were, medical coverage in China makes a difference decrease patients’ money related weight despite the fact that medical coverage is less liberal than in the created world. We have in this way given a refinement of before results in the writing which exhibited that medical coverage builds the likelihood of catastrophic wellbeing spending. These reviews don't recognize the "restricting" impacts of protection on the likelihood of getting to mind and on the level of out-of-pocket costs. Keeping in mind the end goal to recognize these two channels, we appraise General model with Gamma distribution while additionally controlling for potential endogeneity issues. The coefficient appraisals of other control factors are like discoveries for the U.S. what's more, other created nations. People who work, live in rustic ranges, or have a bigger family have a tendency to spend less out-of-pocket on social insurance. People who are better instructed, more seasoned or female have a tendency to spend more. Ultimately, health status is appeared to be a great indicator of out-of-pocket medicinal services spending. People with the most exceedingly terrible health status spend more than 600 percent more out-of-pocket than the most beneficial people in the test. At long last, we additionally record a pattern of developing coinsurance rates that debilitate the negative impact of medical coverage on out-of-pocket spending.

China is a nation that is growing quickly and has a high populace. Its work compels yield can be enhanced more. Unemployment has an insignificant impact on the yield of protection and budgetary administrations since the nation is genuinely adjusted to the execution of its populace. GNI could be enhanced all the more so that the yield of the nation can be expanded more since it is a nation with the high populace. A few parts of arranging, later on, must be handled on and also China has a maturing populace and the legislature must take measures in confirming the nation in accordance with this. Training and R&D of China is performing admirably conveying great enhancements to the nation. Our analyses of this paper will give other understanding and more profound investigation through the examination done and taking in found from different inquiries about done on the related subject.

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Table 1. Parameter Estimation.

| Parameter                        | Level       | Estimate | Standard Error | Wald 95% Confidence Limits | Wald Chi-Square | Pr > ChiSq |
|----------------------------------|-------------|----------|----------------|-----------------------------|----------------|------------|
| **Intercept**                    |             | 3.2079   | 3.3041         | -3.2679                     | 9.6838         | 0.04       |
| **Age**                          | 30-40       | 0.393    | 0.4759         | -0.5398                     | 1.3259         | 0.06       |
|                                  | 40-50       | -0.4249  | 0.3782         | -1.1663                     | 0.3164         | 1.26       |
|                                  | <30         | -0.0854  | 0.5503         | -1.1639                     | 0.9931         | 0.02       |
| **GENDER**                       | 1           | 0.4287   | 0.3004         | -0.1602                     | 1.0175         | 2.04       |
| **Year**                         | 1989        | -4.0892  | 0.5026         | -5.0743                     | -3.1041        | 66.19      |
|                                  | 1991        | -1.7803  | 0.5526         | -2.8634                     | -0.6971        | 10.38      |
|                                  | 1993        | -2.3852  | 0.5192         | -3.4029                     | -1.3675        | 21.1       |
| **Province**                     | 21          | -0.2978  | 0.7419         | -1.7518                     | 1.1562         | 0.16       |
|                                  | 23          | 1.6025   | 1.183          | -0.7161                     | 3.921          | 1.84       |
|                                  | 32          | -0.2843  | 0.6012         | -1.4626                     | 0.8941         | 0.22       |
|                                  | 37          | 1.4202   | 0.6569         | 0.1327                      | 2.7077         | 4.67       |
|                                  | 41          | 0.4096   | 0.5449         | -0.6585                     | 1.4776         | 0.56       |
|                                  | 42          | -0.0355  | 0.7308         | -1.4679                     | 1.3969         | 0.0        |
|                                  | 43          | -0.2258  | 0.5912         | -1.3846                     | 0.933          | 0.15       |
|                                  | 45          | -0.3653  | 0.5027         | -1.3506                     | 0.62           | 0.53       |
| **Rur,sub/rural,**               | 1           | -1.1686  | 1.5805         | -4.2663                     | 1.929          | 0.55       |
| **Towns.City**                   | 2           | -1.166   | 1.5665         | -4.2362                     | 1.9042         | 0.55       |
|                                  | 3           | -1.2861  | 1.5472         | -4.3186                     | 1.7464         | 0.69       |
|                                  | 4           | -1.4152  | 1.5432         | -4.4399                     | 1.6095         | 0.84       |
|                                  | 5           | -4.1294  | 2.2229         | -8.4863                     | 0.2274         | 3.45       |
| **Marital Status**               | 1           | 1.0352   | 0.911          | -0.7503                     | 2.8206         | 1.29       |
|                                  | 2           | -0.5615  | 0.5663         | -1.6715                     | 0.5484         | 0.98       |
|                                  | 3           | -2.3341  | 1.152          | -4.5919                     | -0.0763        | 4.11       |
| **WORK**                         | 0           | 0.249    | 0.9066         | -1.5278                     | 2.0258         | 0.08       |
|                                  | 1           | -0.8268  | 0.873          | -2.5378                     | 0.8843         | 0.9        |
|                                  | 2           | -0.086   | 0.8765         | -1.8039                     | 1.6319         | 0.01       |
|                                  | 3           | -0.7478  | 0.9251         | -2.561                      | 1.0654         | 0.65       |
|                                  | 4           | -2.6957  | 1.0121         | -4.6794                     | -0.712         | 7.09       |
| **Work Position**                | 1           | -0.243   | 0.4553         | -1.1354                     | 0.6494         | 0.28       |
| **Work Type**                    | 1           | 4.6892   | 2.6465         | -0.4979                     | 9.8762         | 3.14       |
|                                  | 2           | 2.7255   | 2.2627         | -1.7093                     | 7.1603         | 1.45       |
|                                  | 3           | 5.381    | 2.2376         | 0.9954                      | 9.7666         | 5.78       |
|                                  | 4           | 3.9061   | 2.323          | -0.6469                     | 8.4591         | 2.83       |
|                                  | 5           | 2.6559   | 1.5747         | -0.4305                     | 5.7423         | 2.84       |
|                                  | 7           | -0.4166  | 2.692          | -5.6927                     | 4.8596         | 0.02       |
| **Work Position**                | 1           | -0.6864  | 1.5311         | -3.6873                     | 2.3144         | 0.2        |
|                                  | 2           | 2.5104   | 1.4245         | -5.3023                     | 0.2816         | 3.11       |
|                                  | 3           | -2.6126  | 1.551          | -5.6524                     | 0.4272         | 2.84       |
|                                  | 4           | -0.3514  | 1.2739         | -2.8482                     | 2.1453         | 0.08       |
|                                  | 5           | -0.257   | 1.3221         | -2.8483                     | 2.3343         | 0.04       |
|                                  | 6           | 0.1091   | 1.64           | -3.1053                     | 3.3234         | 0          |
|                                  | 7           | 0.5877   | 2.3491         | -4.0163                     | 5.1918         | 0.06       |
| **Fever, Cough**                 | 0           | 1.6157   | 0.3238         | 0.981                       | 2.2503         | 24.9       |
| **Diarhrre,Stomachache**         | 0           | -0.3056  | 0.3628         | -1.0168                     | 0.4055         | 0.71       |
| **Headache, Dizziness**          | 0           | 0.6042   | 0.348          | -0.0779                     | 1.2864         | 3.01       |
| **Joint, Muscle pain**           | 0           | 0.1193   | 0.4207         | -0.7053                     | 0.9439         | 0.08       |
| **Rash, Dermatitis**             | 0           | 2.2443   | 0.6634         | 0.9441                      | 3.5444         | 11.45      |
| **Scale**                        | 0           | 0.4882   | 0.0382         | 0.4188                      | 0.569          | 0.0        |