The deductible in health insurance : do the insured make a choice intended by the policy maker?

Hans von Ophem
Peter Berkhout

Discussion :

Renaud Legal
research division
french ministery of Health

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Main hypothesis tested by the paper

All the paper is based on the following considerations :

1. The health care consumption is growing a lot (in fact, too much!).

2. In reality, a part of this consumption is *overconsumption* :

When the shock occures on health capital, a few people are taking advantage about the asymetry of information with the insurer and consum medical care which are not essential.

à This leads to over consumption : That's economists used to call : *ex post moral hazard* phenomenon (see the RAND experience for empirical evidences)

3. In these conditions, every thing else being equal (particulary, at a given level of risk index and a given level of risk aversion), people with a high propensity to moral hazard behaviour will be more inclined to accept a deductible :

à to be tested!

Link with national regulation of health care systems

- Two ways (not exclusive) for controling health care expenditures growth :
  - actions on the supply side
  - actions on the demand side
- Often, actions on the demand side consist in increasing insured participation to the financing of health care, through introduction of deductible (or copayment).
- Two good reasons for introducing a deductible :
  - It's always diminishing insurer's reimbursements
  - It could be a good way to reduce moral hazard phenomenal (to be tested !)

Stake of the paper :

- Often, governments (for example, the dutch one) are justifying the introduction of a deductible essentialy with the second reason (moral hazard) : more easy to tell!

- However, this would be relevant only if people who choose a deductible are effectively able to reduce their health care consumption

- **Goal of the paper :** to test if an index of propensity to reduce health care consumption is positively correlated with the choice of a deductible.

- If it’s not the case, the objective of the government will be missed and the justification will not held !

Research field the paper is belonging to

- Clearly, the paper has to be linked with moral hazard and antisection in health insurance litterature.

- However, traditionnaly this litterature aim in separating these two effects, specialy isolating moral hazard phenomenon.

- Usual way to do this :

Health care demand = X'.B + a.I + u

Insurance demand (I*) = Z'.C + v

Rho = Corr(u,v) -> linked with selection effects

a (coefficient of insurance variable in health care demand equation) -> measure of moral hazard intensity

Originality of the paper

- To overturn the usual way to study informations asymetry in health insurance by :

- Considering a kind of propensity score for moral hazard :

$$E(y|X,d=1)-E(y|X,d=0)$$

- Puting this score in an equation of health insurance demand :

$$I^* = X'.B + a.\,[E(y|X,d=1)-E(y|X,d=0)] + u$$

- Taking all the econometrical circumspections (switching regression models) to control for selection effects

$$I^* = X'.B + a.\,[E(y|X,d=1)-E(y|X,d=0)] + u$$

$$E(y|X,\, d=1\,,v)=\exp(X'.C + v)$$

$$E(y|X,\, d=0,\, w)=\exp(X'.D + w)$$

(u and v being correlated, the same for u and w).

Personal feeling about the paper

Compliments :

- **On the form :** The paper is nice to read (well written, good length…)

- **On the methodology :** The paper is very solid (powerfull models are estimated, different models are tested to test the robustness of the results).

Personal feeling about the paper

A few criticisms :

The idea to put a moral hazard index in the insurance demand equation is both :

- very interesting:

In a paper on the demand for LTC insurance which i refered, I suggested to the authors to put the difference of probability of getting help under both regimes (with and without insurance) to test if intergenerational moral hazard do influence insurance decision.

- very unusual :

à so, according to me, a theoritical justification of the empirical approach would have been appreciated

Which theoritical justification?

- The usual theoritical way to model health insurance and heath care demand in the same time is the following :

- Let consider two periods :
  - **First :** the individual makes a tradeoff between insurance purchase and classical goods consumption on the base of anticipated health care expenditures
  - **Second :** shock on health capital occures. The individual makes a tradeoff between health care consumption and classical goods consumption

Which theoritical justification?

The program solved by the individual is the following :

$$\max_{\{k_1, E_1, x_1, x_2, y_2\}} \mathrm{E}_{\Delta\tilde{\mathrm{H}}}[u(x_1, x_2, H_2(\Delta\tilde{\mathrm{H}}, \mathrm{y}_2))]$$

$$SC : \begin{cases} (1) : \ \pi_{1j} + p_x x_1 + E_1 = R_1 \\ (2) : \ p_x x_2 + p_y y = R_2 + (1+r)E_1 \end{cases}$$

The resolution is done by backward induction :

- First, we determine the optimum for a given shock on H :

$$x_1^*(k, \mathrm{D}H), x_2^*(k, \mathrm{D}H), E_1^*(k, \mathrm{D}H), y_2^*(k, \mathrm{D}H)$$

- Second, the individual choose the optimal coverage k* in choosing the one wich maximises his indirect utility function V (taking in expected value)

$$V(\mathrm{D}\tilde{H}, k) = u(x_1^*(k), x_2^*(k, \mathrm{D}\tilde{H}), y_2^*(k, \mathrm{D}\tilde{H}))$$

Reconciliation with the paper

- Let consider two insurance contracts :
  - D=1 : a contract with deductible D
  - D=0 : a contract without deductible

- According to the former conceptual framework, individual will choose D=1 rather than D=0 if and only if :

$$E[\, u(x^*,y^* \mid D=1)] > E[\, u(x^*,y^* \mid D=0)]$$

- Let remind econometrical specification :

$$D^* = X'.B + a.(E(y^* \mid D=1) - E(y^* \mid D=0) + e$$

$$D^* \iff E[V \mid D=1] - E[V \mid D=0]$$

→ Under specifical assumptions on the form of the preferences (wich?), it could possible to get a theoritical justification.

Last point !

- We could have the natural intuition that :
  - even if the ex post moral hazard index seems to be not significative in the insurance equation demand…
  - that does not necessarely imply that, when he will be insured with a deductible coverage, will not reduce his health care consumption.

I think that the econometrical approach avoid this.

So maybe the paper could just give more explanations on that, to justify why this reasonning doesn't held.