DRAFT DO NOT QUOTE WITHOUT PERMISION.

Is there no demand for long-term health care insurance* ?

Joan Costa Font
Joan Rovira Forns
Eduard Berenguer Comas

Health Economics and Social Policy Research Group
Departament de Teoria Econòmica
Universitat de Barcelona

Discussion Paper for the Health Economics Study Group Meeting 14th – 16th July 1999 (English not revised yet)

Abstract

This is a preliminary paper aiming to investigate the decision to purchase a supplemental private health insurance covering long-term care (LTC) benefits. We offer a possible explanation for purchasing a long term care (LTC) insurance based on the access to supplemental LTC care such as quality of care interaction. We suggest that the underprovision of LTC insurance could be linked with a possible insurance market failure inducing to future access problems of the elderly. Since our objective is to investigate the demand for LTC private insurance we study this issue as linked with the determinants of purchasing a private insurance policy . Accordingly, we develop a en empirical analysis explaining the determinants of holding a private health insurance in Catalunya using a general representative survey (Catalan Health Survey,1994) . Moreover, we report a first outcome of a small scale focus group experiment in order to set up some of the reasons for purchasing a supplemental health insurance (in Catalunya) such as a valuation experiment asking the willingness to pay to different age groups (> or < than 60 year old) over a set of LTC and out of coverage benefits hypothetically obtained from a supplemental private health insurance. Since its a paper in process, comments will be welcome.

Correspondence :

Joan Costa Font, Departament de Teoria Econòmica, Universitat de Barcelona.
Adress : Diagonal 690,08034 Barcelona
Tel/Fax :934024333, 934031037
E-Mail: jcosta@eco.ub.es

* The authors acknowledge the financial support received for the private foundation Salut, Empresa i Economia (1998), and the information and data obtained from the Catalan Health Service (Servei Català de la Salut).

1. Introduction

The process of ageing population poses large problems concerning the public coverage of some specific coverage for the elderly (such as nursing home, elderly residences, etc) making the long-term care (LTC) insurance more likely to be expanded in the next future. However, there is still very little protection against the large costs associated with the LTC, in a great number of the OCDE countries neither the elderly and near elderly population are covered by long term health insurance. That is, there are a set of specific benefits usually associated with long term care that remain uncovered neither by the public health sector nor the private health insurance, despite middle and low class elderly are to face a large risk of morbidity and impoverishment associated with chronic illness. The basic reference for this paper is Pauly (1990) where explores for the US Medicaid program a couple of reasons for not purchasing LTC.

A first possible explanation of the LTC undercoverage going beyond income and wealth constraints is the existence of bequests (Pualy, 1990; Zwieifel and Strüwe,1996), since family interactions can limit the expansion of the LTC insurance[1]. However, despite its a relevant issue to take into account, the purpose of this paper is not to study the intrafamily interactions but the individual decision to purchase a LTC insurance. Therefore, the appearance of a family dependency is to be viewed as something that an individual tries to prevent. A second group of reasons that individually seem more realistic are the presence of mistaken feelings about what is covered by the social health insurance such as a general underestimation the consequences of this events, since LTC is something that is most likely to occur in the long run. However, we disagree with Pauly (1990) when suggests that LTC can be viewed as a low probability event despite as depending on survival is costly event. We understand that a person would demand LTC if an individual needs personal and health care since its unable to take care itself, and this is something most likely to occur after surviving a determined age according to its own health state. A possible limitation emerges on defining who would be eligible for LTC however if the explanation come from adverse selection then we should attribute the undercoverage to an insurance supply failure rather than a to the demand for LTC insurance. This paper tries to set up some in order to assert that there is an incomplete insurance market for a demand event under certain conditions, limiting the access for LTC benefits.

In Spain the provision of LTC constitutes nowadays a major health policy problem, becoming more serious in the long run , probably after 2005. Currently about 1500.000 elderly face personal limitations[2], however despite they should receive LTC there is an observable undercoverage[3]. The LTC its financed by an implicit public subsidy and large out-of – pocket expenses - though social insurance health coverage seem be continue limited in the short run. Therefore, the development of a supplemental private health coverage could be a feasible instrument to prevent the future possible consequences. The

[1] Currently a large part of the LTC is provided within the family environment what is generally called informal support.

[2] Where we should add 1,250,000. disabled individuals under 65 years old.

[3] In Spain the LTC coverage is situated below the European average and is insufficient to attend the current needs. The major problem concerning the public provision of LTC is the lack of transparency for its provision such as the misunderstanding of individuals about the degree of public coverage.

duration of LTC varies according to the age, sex and the cause originating the dependency. However, recent estimations suggest an oscillating period between 4 and 20 years coinciding with its average life expectancy.

Since this paper deals with the demand for LTC by means of a supplemental private health insurance, a relevant question to analyse is the determinants of private health insurance purchase in Catalunya. Despite the majority of the Catalan population have access to the social health insurance (98,1%), its feasible to assert that future financial constraints are to limit the expansion of supplemental benefits, therefore an alternative market insurance appears to be a relevant mechanism to cover an increasing demand for health benefits specially those providing a larger quality of life at an advanced age. Departing from the access motive as to explain the purchase of private health insurance we show some empirical evidence of those variables that influence the purchase of a private voluntary health insurance policy.

The theoretical foundation of this paper relies on a simple model of health care demand under uncertainty (Selden ,1993) and the Pauly model (1990) for LTC insurance.Our study differs from the traditional approach in different ways. We are interested on explaining why private health insurance purchase differs from each age groups such as the role of expected insurance benefits as to determine the purchase of an private health insurance. From the point of view of the insurer, the use of health care services covered by the health insurance increase with age, since the higher prevalence of chronic conditions , implies for such individuals a disadvantage for obtaining private coverage. This issue relates to the connection between choice of insurance and the demand for health services. That is , individuals are to purchase a health insurance in order to increase their future health consumption, and therefore health insurance is explained not only to overcome risk aversion but to obtain LTC benefits.

The instrument purposed to obtain some evidence of the possible demand for LTC insurance is the willingness to pay (WTP). Accordingly, we implement a small scale focus group experiment in order to obtain a previous evidence of expressed preferences for LTC insurance. This experiment tries to analyse how two different age groups allocate their resources different health care benefits some of them referring to LTC .There are studies analysing connected issues such as *Johannesson and Johansson (1997)* measuring the value of increased survival as to allocate health care resources between different age groups[4]. Furthermore, the use of the WTP in the context of health insurance has been advocated by Gafni (1991) and more recently by Johanesson (1996) as an appropriate way for eliciting values for health benefits[5].

The paper is structured as follows. In section 2 we present an theoretical framework discussing the provision of LTC insurance. Section 3 describes and reports the results of an empirical analysis of private health insurance in Catalunya. Section 4 describes a small

[4] In these sense, health insurance is to present great similarities with life insurance since people pay when they are young the expenses that the will generate in the future.

[5] Despite there is some evidence that people would like to allocate more health care resources to young rather than to old population, within a perfect insurance market, people could allocate their resources over the life span ,purchasing an insurance covering a set of expected LTC care needs in the future

scale experiment and discusses its results. The paper ends with some preliminary results and introduces some questions to discuss.

2. The demand for Long-Term Care Insurance

Consider an individual ex ante problem to purchase a private supplemental insurance prior to the revelation of its future health state. The individual is assumed to be risk averse and its utility function $U(C_t, H_t)$ is determined by two different parameters , consumption (C_t) and the individual health state $(H_t = H(\varepsilon, \theta))$ depending on the consumption of medical care and the existence of a health shock. In this simple versions we assume that there are no family interactions and no charity to provide LTC care.

Individuals are subject to two types of shocks (ε): a chronic shock that disables for current activities (ε_1) – that usually appear at an advanced age- and other accute shocks (ε_2). The difference between the two shocks however, is not limited to the period of appearance – that is usually they appear during any period of the lifetime - but basically differs in the effectiveness of medical treatments, since accute shocks are completely offset by medical care whereas chronic shocks are partially neutralised, therefore we just concentrate out attention on chronic shocks. The distribution of chronic shocks is represented according to the following known probabilities (η_1). Medical care does not yield itself utility, and individuals maximise a standard expected life time utility function $E_t[U(C_t, H_t)]$. The role of medical care –in this case nursing, particular treatments for chronic diseases etc - (θ) is to partially neutralise chronic health shocks (θ_1) over the health depreciation $\delta H_o + \theta\varepsilon$ where $1<\theta_1<0$ and H_o refers to the initial stock of health, leading to a stationary health stock H_t^c, and as set before to eliminate the effects over the health state of severe illness (θ_2).

Let us assume that medical care is provided under two different alternatives: (i) a social insurance defined as captive since its payment is mandatory (p^s) and only covering the expenses associated with severe shocks (p^s, θ_2) and a (ii) private health insurance covering the two types of health shocks $(p^{lr}, \theta_1, \theta^*_2)$ and therefore including the long term care as . For simplicity let us assume the existence of two alternative options : purchasing or not a supplemental LTC insurance being the alternative the captive health insurance.

The purchase of a LTC insurance implies a reduction of net consumption in dollars over the life cycle per year. Setting the probability of a chronic shock to η_1, the fair insurance may be represented as $M\eta_1$ where M refers to the annual cost of long term care $(= p^{rl}\theta_1)$. Since the probability of chronic health shocks is sufficiently small, despite $W \leq M$ an insurance policy would be provided.

The consumer decision is self determines its decision without taking into account any family interactions, and is fully informed about medical services. Therefore, the decision to purchase a LTC insurance can be explained according to the maximisation of its expected utility subject to the lifetime wealth from the initial planning period. This approach was issued by Pauly (1990) assuming that the marginal utility of an additional dollar in the lifetime chronic illness was defined as zero. However, we do consider the existence of consumption . The expected lifetime utility function if the consumer does not purchase a LTC insurance is :

$$EU(no\ insurance) = \sum_{t=1}^{T}\left[(1-\eta_1)U(C_t - p^s, H_t) + \eta_1 U(C_t - M_t - p^s, H_t^c)\right] \quad (1)$$

where T is the maximum length of time, and $U(C_t, H_t) > U(C_t - M_t, H_t^c)$. Differently from Pauly(1990) under the chronic health state we do not assume that all desired consumption is devoted to M, since its a strong assumption. However if the consumer purchases a LTC insurance , then the expected lifetime utility can be written as follows :

$$EU(\ insurance) = \sum_{t=1}^{T}\left[(1-\eta_1)U(C_t - p^s - p^{rl}, H_t) + \eta_1 U(C_t - \mu_1 M_t - p^s, H_t^c)\right] \quad (2)$$

therefore since the purchase of LTC insurance is determined by the EU gain, the welfare gain from LHC insurance is a weighted average of the long term expected gain if chronic shock occurs and the premium costs if does not occur, since severe shocks are completely covered by the social health insurance.

Accordingly, there are some relevant variables that affect in an opposite way the probability of insuring LTC. In particular, since long term care consumption during the survival period can be large enough to exhaust the consumer wealth $\sum_{H}^{T-H} M_t > W_t$ where H is the healthy period (the period without chronic health state), if there are no family interactions and social coverage is not to guarantee the medical expenses, the unexistence of LTC insurance would induce to accept the existence of a market failure, and therefore a LTC insurance should be purchased. Therefore, the magnitude of LTC and the survival period after the chronic shock become specially relevant variables to explain the rationality of purchasing LTC insurance. An alternative explanation relies on the relevance of the probability of suffering a chronic shock. More concretely, if the probability of a chronic shock is small enough to assign a larger weigh to the welfare loss for insuring, then insuring LHC could rationally rejected . This is consistent with the extended idea than individual tend to underestimate small probability high-cost events as was pointed out Kunreuther (1978). Although this is a credible and founded explanation, should take into account the role of information as limiting the capacity of individuals to estimate the

correct probability of chronic shocks appearance. Finally , and additional variable to be introduced is the role of quality, since the private health insurance demanded can be largely explained by a higher value for quality of services (θ_2^*) as was also discussed in Pauly (1990).

This simple model is consistent also with most of the assumptions of the Pauly (1990) model, however this model was considerably based on the Medicare system whereas in Spain the coverage restrictions for increasing the LTC subsidisation induce to set out an alternative mechanism that in ultimate term induces to increase the access for specific LTC.

3. An overview of the individual demand for private health insurance in Catalunya

The traditional approach for explaining health insurance focuses on the avoidance of health financial risks (Arrow,1963) such as the moral hazard loss (Pauly,1968). However, since empirical evidence suggests that moral hazard loss is to overcome risks avoidance gain there is an additional explanation rather than the former, the access to a determined services that otherwise could not be affordable (Nyman,1999). The access motive as to determine the purchase of health insurance especially emerges when there are a certain number of disease which its particular consequences are not sufficiently covered without the private insurance coverage. Despite social insurance is to cover nearly the overall population in Spain, providing rather compressive coverage for its beneficiaries, it may face certain problems explaining the demand or private health insurance . More specifically, we are referring to large waiting lists, inadequate attention and quality etc that usually discourage the use of social health insurance service and therefore induce to purchase a private health insurance in order to assure health care benefits. Thereby, private health insurance develops a relevant function covering an unrealised demand that otherwise would not be covered

The Spanish health system is defined by the coexistence of a compulsory social insurance financed by taxes and other voluntary private health insurance providers that usually supplement the public coverage by additional health care services . Under this situation the individual faces two alternatives :

(a) Purchase a private voluntary health insurance policy, that is a supplemental health insurance, or
(b) remain exclusively subjected to the social health insurance or compulsory private insurance[6].

Therefore, the decision to insure is contemplated as a discrete choice[7] by means of the following model.

[6] In Spain only the 1,1% of the population have public health insurance coverage.

[7] The unique exception is the one of public servants that their display an additional choice, that is they can choose to be covered by the social health insurance of by a compulsory private health insurance.

a) A simple empirical model

Let us assume a individual maximising its utility function subject to its budget constraint. This results in an expected indirect utility function modelled as deriving from net income (y) after paying taxes and health care benefits (X) that we assume dependent on a set of relevant variables and the set of insurance alternatives as follows:

$$EV_i(y - p_i, X, \varepsilon)$$

We assume for simplicity that there are two alternatives : to purchase (i) or not a private health insurance policy (j). Then the probability of purchasing a health insurance policy would be determined by (assuming a random component) :

$$pr_i = pr(EV_i > EV_j) = pr(\varepsilon_i - \varepsilon_j > EV_i - EV_j)$$

defining a dichotomous variable involving the direct decision of purchasing or not a health insurance policy (Gonzalez,1995). Assuming a normal, distribution for the random error, with 0 mean and variance 1, this model can be estimated from a probit estimation as follows :

$$pr(Y = 1) = F(X, \alpha) = \Phi(X, \alpha)$$

b) Supplemental health insurance determinants

Examining the demand of private health insurance in Catalunya, there are some features that appear to be relevant. Age is a relevant demand determinant of private health insurance since the use of health service is to present a positive relationship with the lifecycle Since private insurance is a supplemental coverage from the one obtained by the social health insurance the satisfaction level with public services plays a major role. The decision usually is a choice of insuring or not. Own health perceptions are to differ between insured and non insured, as informs about the future use of health services. Other alternative variables to be considered are the type of services, since the extent of hospitalisation services and general practitioners access provided by the private health insurance is usually higher. The existence of special diseases such as personal limitations in current activities can influence the probability of insurance

b) Empirical Evidence

In many European countries the purchase of private insurance implies a supplemental coverage from compulsory social health insurance[8]. In Spain, however, there is the exception of the collective of public servants as they can choose between the social and

[8] Since social insurance implies a higher opportunity cost of time, a reduced election capacity and a higher bureaucratisation than social insurance.

compulsory private insurance .However, compulsory insurance represents in Catalunya only a 2,7% of individuals more than 60 years old, while for other ages represents about the 4,1% for individuals from 40-60 years old and a 5.1% for people from 20-40 (Enquesta de Salut de Catalunya, 1994)[9]. The elderly are heavy publicly insured in Catalunya, over a 97% of men and 98% of women are insured by the Catalan Health Institute which provides health insurance and service at a greatly subsidized rates. Additionally, the utilization of health services is higher compared with other age groups.

Table 1. Alternative Health Coverage Systems in Catalonia.

	Catalan Health System	Private Insurance	Voluntary Insurance	Compulsory Insurance	Other*
Elderly					
Male	96,7%	21,5%	4,1%		14,1%
Female	98,4%	19,7%	3,4%		12,6%
Non Elderly					
Male	97,9%	21,5%	4,4%		9%
Female	97,67%	21,2%	3,83%		10,6%

*Refers to some services annually out-of-pocket payments and beneficence .
Source : Enquesta de Salut de Catalunya,1994.

Moreover, from those insured in Catalunya, there are clear differences in terms of age groups (Table 1) shows than there is an age group largely insured (15 to 44 years old) while among and below this age groups the percentage of insurance is more than a half less than the former.

There are specific data limitations to analyze the intertemporal choice of health insurance in Spain and Catalunya since there is no extended survey aimed exclusively on the health insurance aspect. However, we have analyzed empirically the determinants of the acquisition of a private health insurance by means of a the Catalan Health Survey (CHS)o 1994. The data used in the present analysis are from the cross-sectional Catalan Healt Survey (1994), where there is information about health insurance covering a sample o 15000 individuals. Approximately the 47% of individuals were female and the 53% wer male. The 18,9 % of individuals held a private health insurance and only a 4,1 % compulsory health insurance. The ageing population represents the 22,7% of the overa population according to the Catalan Health service, and approximately the 19% individuals within this age were covered by some voluntary insurance, what is slightly le than for other ages 19,8%, however younger individuals are less covered than oth collectives by private insurance (18,3%) . Since we were interested on ageing population relevant variable is health state. For the overall population, the 7% display sor restrictions related to daily activities and 24,2% were not in a "good health" corresponding in the majority of cased to advanced age individuals.

[9] In Catalunya, the 13,4% of the total insured do not hold two insurance policies, as that are public servant they can choose between social insurance and private insurance.

To control many additional factors that are likely to influence the holding of private insurance we estimate a probit model for the probability of having private insurance. The variables included in table 4 refers to age that has been divided in three different categories (20-40.40-60, and >60). Income has been introduced as a 5-dummy variable, DISCAPACITY refers to mobility constraints as a proxy of observed health status, and PERHEA relates to perceived health state. Satisfaction has been captured by means of WLSAT and SATSS referring to waiting lists satisfaction and satisfaction with social insurance services. SERVICE refers to the use of private health service. Other relevant variables are GENER, HOSPIT and SPECIAL refer to the number of times every person considered has had access to the general practitioner, the hospital or the specialist. Furthermore other variables related to social strata and health status were considered.

Table 2
Probit estimates . Probability of purchasing a private health insurance

	Coeff.	Standard Error	t value.
SPECIAL	.01025*	.00061	16.91309
STUDIES	.02811*	.00722	3.89221
WLSAT	-.00685	.01131	-.60588
SEX	-.09191*	.02702	-3.40201
DISCAPAC	.07990*	.01996	4.00194
Age1	.14691*	.05378	2.73163
Age2	.06178	.04995	1.23666
Age3	-.16580*	.04933	-3.36080
ARTHRISI	.00737	.02467	.29872
GENER	.01754*	.00052	33.81581
HOSPIT	-.02261*	.00378	-5.97707
MARRIE	-.02012	.01061	-1.89700
PERHEA	-.00432*	.01389	-.31078
SATFSS	-.02343	.01536	-1.52558
SERIVICE	.05466*	.02193	2.49231
Y1	-.02733	.04752	-.57506
Y2	-.06128	.04726	-1.29675
Y3	.17473*	. 04323	4.04139
Y4	.15886*	.04681	3.39391
Y5	.30828*	.05872	5.25046
Intercept	-1.20459*	.11156	-10.79775
Pearson Goodness-of-Fit Chi Square =		6901.541	P = .000

Results for table 4, denote that age is sensibly significant as to explain the probability of private health insurance, seems to show a positive non-linear association. Both income and education are associated with the probability of purchasing a supplemental health insurance. Sex and education seems to work in an opposite way, that is a large education and being a man is associated with the probability of holding a private health insurance. Other relevant variables despite are not significant are own health perceptions and public health care service satisfaction. Probably form table 4 its clear than one of the most

important associations with health insurance are the type of service considered, such as hospitalization, and the frequency of attendance to the general practitioners and specialists, what could be capturing the quality gain associated with private health insurance and therefore the access to a determined level of health care service.

4. A contingent valuation: the willingness to pay for Long-Term Care expected benefits

a) Conceptual background

Contingent valuation and state preferences studies usually elicit preferences under hypothetical conditions. This methods usually display a large flexibility in defining money /risk trade-offs because are not constrained by the available market data. Examples of this approach analyzing health and safety are large in health economics. The basis of the CV approach is to describe in detail a policy scenario and ask how much respondents are willing to pay (by means of a dichotomous choice , referendum or open ended format etc).

The willingness to pay has been considered by the literature as the appropriate way for eliciting preferences and values, is an extendedly used tool in public and also in private decision making. One of the purposed schemes that seems for adequate to use the willingness to pay is the insurance context, as is the most used payment mechanism, specially when supplementary services are to be provided[10]. In this context usually emerge the two prime uncertainties: the one related to health and access and the other concerning financial uncertainty , that is the welfare loss derived from affording the health service expenses. Therefore, under this approach the willingness to pay should be asked within an expected utility context. However, as our main interest relies on the valuing expected LTC benefits when an individual becomes older, an additional constraint limiting our approach is s the survival probability , influencing the expected valuation. We asked the same question to individuals of two different ages, those older than 60 and those younger than 60, capturing therefore the expected and current benefits of the elderly. According to Gafni (1991) :

"The willingness to pay should be asked in the context of hypothetical insurance purchasing. A respondent should be asked about the maximum amount the he or she is willing to pay as an insurance premium such as a given service will be available if never is needed" (*Med Care, 29, Page 1248*).

According to Johanesson and Johansson evidence (1995) the WTP increases as age increase. Therefore, WTP varies with time preference and in our case the expected results is that individuals when they are to become older they start valuing some insurance benefits that before were not relevant al all. Actually, what we purpose to value in this study is the is the expected increases in the quality of life when people becomes elderly, therefore the willingness to pay when quality of life reduces (we should expect a increase in the willingness to pay for future increases). According to Johanesson (1995) results from

[10] Its seems reasonable that the people should display some kind of experience with the payment system used.

questions asking the expected quality of life when she is more than 60, tend to be pessimistic, that is, people expect to display a reduced life expectancy at an advances age. Therefore, the WTP for the insurance of some specific health services should be clearly valued.

In order to estimate the potential demand for health insurance benefits its relevant to consider the perspective of the contingent valuation studies. Contingent valuation tries to measure health care benefits by eliciting the willingness to trade money for avoiding the consequences of health related risks . Johanesson (1996) argues in relation to health care programmes that there are two different views , the first view is to asses the willingness to pay for current users (of health insurance) and to adjust the willingness to pay by the probability of purchasing a health insurance, and a second is to value the ex-ante willingness to pay among potential patients. In this paper we assume a scenario concerning situations where risk is involved (future event) where individuals are to elicit their willingness to pay for future random events. We consider the whole population and not just insurers, since if we select just insured individuals we are to capture only those risk averse individuals (those that have purchased an insurance).The departure situation is defined as if health services are to be covered by the public health insurance completely financed by taxes. Assume that individuals are expected utility maximises and face the following expected utility function (Cardinal any positive affine transformations)-.

$$EU = U(C,H)$$

where C refers to consumption and H to health. Individuals are constraint by $Y=PC$, where Y is the net income after paying a tax that is to cover health expenditures. Therefore the indirect utility function is :

$$EV = V(Y,P,C)$$

Therefore, the willingness to pay can be defined as in the certainty case as the amount that if paid leaves the initial expected utility level unchanged, and guarantees that if individuals suffer a chronic disease $(H\text{-}\varepsilon)$ the expenses will be covered by the private insurer. That is :

$$\sum_{t=t_0}^{T-t_o} V(Y-WTP,P,H) = \sum_{t=t_0}^{T-t_o} (\pi V(Y-L,P,H-\varepsilon)+(1-\pi)V(Y,P,H))$$

where L is the health service cost, WTP the willingness to pay and πrefers to the probability of having determined need condition to surviving.

People face two options : (i) rely on social health insurance or (ii) purchase supplementary coverage from private insurance covering also LTC. The most a person is willing to pay (reservation price) is to be captured with this questions. An important issue that we still have no data is if the willingness to pay is above or not of the actuarially fair premium, if risk levels are given to the individuals.

The question framed was the following :

Q.Suppose that you can purchase an insurance to cover LTC. Which is the most you would be willing to pay (per year) for an insurance policy covering .....? .

The WTP question values (absolutely or relatively) the maximum price that could de attained when introducing some new set of LTC insurance . People are supposed to compute the present value of this benefits and decide which would be the monetary expressed benefits. Despite there is market for insurance, the use of the WTP in this case seem to be an appropriate since refers to benefits that are still not provided in Spain by health insurance where apart from giving coverage for these services the provision of LTC seems to be explained by an access

b) The Experimental design

The experimental design is based on a small scale focus group experiment - based on a small groups discussing a specific issue guided by a leader that guide the discussion scheme – followed by a small scale survey aiming to value the WTP for a set out of coverage and long terms benefits. The sample selection was of two age groups. A first group of individuals between 30-60 years n=10 old and a second group of more than 60 years old n=10. Participants where paid about 4000 pesetas (1&=250pts aprox) and interviewed during two hours about the limitations of the private and public coverage, they express their personal experiences and finally they fill up a questionnaire after a discussion of about 1 hour. The main type of questions framed where open questions about the limitations they encounter with the public and private health insurance, such as other relevant questions about their personal opinion about the role of private health insurance, their service and the main coverage used. The median results from the individual profile is outlined in table 5. The differences obtained seem quite consistent with an ex -ante expected age profile . Older display a higher risk aversion are less insured, some of them suffer chronic diseases such and their services use is higher than other individuals. Moreover, those insured pay a higher insurance premium and show reduced skills.

Table 5 Individuals profile

Variable	*>60*	*<60*
Median Age	64	43
Median Risk Attitude	Risk Averse	Risk Conscious
Service Coverage	Public Coverage	Public Coverage
Insurance holder	Not Insured (56%)	Insured (71%)
Chronic Diseases	14%	0%
General Practitioner Visits in last 6 months	2,5	1,75
Income	3<income<1	3<income<6
Information for Insurers	Enough	Enough
Insurance Premium (pts)	13500	11500
Skills	Baccalaureate and similar	Median University Studies

c) Results

The qualitative results from the focus group discussion have been summarised in table 6. The major benefits for purchasing a health insurance concern on improving the access to a determined quality of health services, that is reducing waiting lists, increasing the range of alternative assistance, increasing the quality of hospitalisation and reducing waiting time. The major reasons reported by the two different groups were not considerably different. In terms of missing benefits, there was a reduced consensus form the different groups however they coincide in assert that public health services have improved recently.

Table 6 Focus Group Results

Population	*>60 years old*	*<60 years old*
Benefits from supplemental he insurance	Reducing waiting lists, hig quality in hospitalisation. Immediate access : specia laboratory tests	Improving health care serv quality. Wider choice of doctors Personal attention and higl quality of non health services
Missing benefits respect to the health insurance	*Missing Benefits* : Odontol elderly services Is too expensive according The coverage obtained fro insurance is increasing , and it especially relevant in : urgent complex interventions	*Missing Benefits* : Odontol Pharmaceutical coverage Specialists quality Social insurance quality ha improved recently providing a safety in serious illness and interventions

The quantitative instrument used to value a set of uncovered benefits was an open ended WTP question **Q** asked for a set of different LTC benefits and current out of coverage benefits. Since our intention was to value not the benefits of LTC insurance, we select two different services, the nursing home as Pauly (1990) and the Elderly residence. Moreover, we introduce two additional services in order to capture the preferences and values for additional not provided health care by the standard private health insurance policies : odontology and podiatry services (table7).

Table 7
Health care services

Type of Benefits	
Out of coverage	Odonthology Podiatry
LTC	Nursing home Elderly Residence

Since individuals were informed about the coverage and premiums of private health insurance they face no significant problems when assessing the willingness to pay, however the response time was quite large , 10 minutes so they could reason about what they could be willing to pay. However, the use of an open ended format increased significantly the range of the individual responses. About a 20% and a 30% for each group where no willing to pay for some benefits. This can explain the wide range of responses within each group. The WTP was computed using several central tendency statistics, the geometric mean, the arithmetic mean and the median.

Results suggest (table 8) in general terms the elderly are willing to pay more for uncovered services than other age groups, this can be explained by a higher risk aversion such as the higher probability of the need of LTC services. The majority of responses show a large variation respect to the median, than indicates the presence of outliners.

Table 8. Willingness to pay for health insurance services

Benefit	*Gmean*	*Mean*	*Max*	*Median*	*Min*
Willingness to pay for health insurance services (>60)					
Odonthology	2493	3757	10000	3000	500
Podiatry	704	733	1000	700	500
Nursing home	2659	3250	5000	3500	1000
Elderly Residence	4391	7100	15000	10000	700
Willingness to pay for health insurance services (<60)					
Odonthology	1261	1560	4000	1000	800
Podiatry	584	733	1000	1000	200
Nursing home	1259	1333	2000	1000	1000
Elderly Residence	3080	4375	10000	3250	1000

Note: 1&=250 pts (aprox)

Another relevant hypotesis to test is if there are observable differences between insured and non insured. From the basic statistics a relevant feature is that LTC is most valued by insured whereas current health care is highly valued by uninsured, this can suggest a difference in terms of time preference time preferences between the two groups.

Table 9. Willingness to pay for insured and non insured

	Not Insured		*Insured*	
Benefit	*Mean*	*Median*	*Mean*	*Median*
Odonthology	4450	3500	2037	1000
Podiatry	850	850	675	750
Nursing home	3500	3500	4000	3000
Elderly Residence	5925	6500	6215	4500

Note: 1&=250 pts (aprox)

5. Some provisional concluding/debating remarks

Private health insurance develops a role to permit the access to some health services that without them seems to show difficulties for being covered. We have found evidence of some relevant determinants of the demand for private health care insurance and especially age, income and the health care utilisation. Results from the small scale experiment suggest some of the main benefits and missing benefits of private health insurance denoting some differences in terms of age groups. The WTP results seem consistent with the expected results , that is elderly are willing to pay more for a set of services rather than non elderly, and insured are willing to pay more that not insured for LTC.

There is a social problem in the use and access of LTC insurance. Despite there could appear problems of moral hazard and adverse selection, its seems to appear a market failure since there is an "unrealised demand". Therefore an interesting debating questions is : *is there a lack of demand due to a "lack of awareness" or a rational decision or alternatively as we argue there is just a problem concerning the provision of this services?*

.

References

Bashshur, R et al (1994). *Beyond the uninsured : problems in access to care.* Medical Care, vol 32 N05 pp 409-419.

Hahn, B (1994). *Health care utilisation : the effect of extending insurance to adults on Medicaid or uninsured.* Medical Car
e, 32, N03 pp 227-239.

Hurd, M and McGarrey, K (1997). *Medical Insurance and the use of health care services by the elderly.* Journal of Health Economics, 16,129-154.

Gafni, A (1991). *Willingness to pay as a measure of benefits.* Medical Care, vol 29, No12.

Gertler, P Sturm R and Davidson, B (1994). *Information and the demand for supplemental Medicare insurance.* NBER Working Papers, 4700.

Gonzalez, Y (1995). *La demanda de seguros sanitarios.* Revista de Economia Aplicada, pp 111-142.

Gonzalez, Y (1996) *La demanda de seguro sanitario privado. Una elección bajo incertidumbre.* Publicaciones de la Universidad de Valladolid.

Johansesson, M (1996). *A note on the relationship between ex ante and expected willigness to pay for health care.* Soc. Sci. Med. Vol 42, No 3 pp 305-311.

Johansesson, M and Johansson, P-O (1997). *Quality of Life and the WTP for an increased life expectancy at an advanced age.* Journal of Public Economics, 65, pp 219-229.

Pauly, M (1990). *The Rational Nonpurchase of Long Term-Care Insurance.* Journal of Political Economy,vol98 pp 153-168.

Propper, C (1993). *Constrained choice sets in the UK demand for private medical insu*rance. Journal of Public Economics 51, 287-307.

Selden, Th (1993). *Uncertainty and health care spending by the poor : the health capital model revisited.* Journal of Health Economics, 12, pp 109-115.

Sloan, F and Canover, Ch (1998). *Life transitions and life insurance coverage of the near elderly.* Medical Care, vol 36 N02 pp 110-125.

Zwiefel, P and Strüwe, W (1996). *Long.-Term Care Insurance and Bequests as Instruments for Shaping Intergenrational Relationships.* Journal of Risk and Uncertainty, 12 pp 65-76.