Solving the Premium Risk Problem, Insurer Switches, and Transfers of Aging Provisions

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Dealing with the premium risk problem is one of the main issues in private health insurance contracts in a long-term perspective. The premium risk problem is closely associated with the process of aging. Expected health care costs increase with age for two reasons. First, even low risks will experience a continuous deterioration of their health status. Second, the share of individuals in a birth cohort who have turned chronically ill and, thus, represent high risks, rises. If health insurance contracts are made on a short-term individual basis, a substantial and permanent deterioration of the state of health translates into a sharp increase of premiums. This uncertainty with respect to premiums is called the premium risk. Clearly, having no protection against the premium risk is associated with substantial welfare losses. Around the world, the premium-risk problem is tackled in quite distinct ways. Some of these methods give rise to the problem that leaving an insurance provider becomes quite costly or even impossible for middle-aged and old individuals. Thus, the question arises as to how an institutional framework would look that at the same time solves the premium-risk problem and makes it easy to terminate a dissatisfying relationship with an insurer. Surveys on private health insurance systems (OECD 2001, Mossialos and Thomson 2002) indicate that the approaches to solve the premium-risk problem vary with the role of the private sector in health insurance.

Three approaches

One attempt to deal with premium risk, which basically defines the problem away, is to rely on a comprehensive public health sector. In particular, mandatory public health insurance as in France or a National Health Service system as in the UK, Italy, or Spain can be established in which everybody is already covered by the public system. Under these circumstances, private health insurance plays only a minor role. If the premium risk problem arises, the maximum loss consists in losing private coverage. This does not create a serious problem if everybody has access to the public program at any point in time.

The second main approach can be found in two of the largest markets for private health insurance in the world, namely the United States and the Netherlands. In the US, a general public health insurance does not exist, while in the Netherlands everybody exceeding a certain income threshold is forced to leave the public system. The solution to the premium risk problem looks quite similar in these two countries. The working age population heavily relies on employer-sponsored group insurance policies, which is the predominant form in the United States, and has a market share of about 60 percent in the Netherlands. In these group insurance contracts, individuals are protected against the premium risk until they retire. It is acknowledged that this type of institutional structure offers only limited protection against the premium risk and therefore constitutes only a partial solution. The issue of treating the retired remains unresolved. In the US, the retirees have access to Medicare, a publicly subsidized health insurance program for the elderly. In the Netherlands, the general private contracts usually elapse at age 65. Afterwards, the elderly enter the WTZ scheme, that is, they purchase a private standard contract that is tightly regulated and subsidized by the young. For individual policies the insurer is neither allowed to terminate the contract before age 65 nor to change the premium according to experience rating at the individual level. The widespread practice of cross-subsidization in order to reduce the premiums of the middle-aged often yields a situation in which the middle-aged face substantial problems when trying to find a new insurer.

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The third option of overcoming the premium risk can be found in Germany and Austria. While the market share of private health insurance in Germany lies at about 10 percent of the population, it is substantially lower in Austria at only 1 percent. German private health insurance basically covers civil servants, employees with a high income and self-employed persons, while only the latter group can opt out of the public system in Austria. The typical construction of the contract is an individual policy on a lifetime basis. During the contract, a capital stock is built up as a so-called aging provision, which is not only used to cope with the premium risk but also smoothes the age-specific premium profile. In such lifetime health insurance contracts, insurers are not allowed to terminate the contract, and premiums must not be based on experience during the contract period. Hence, the premium risk problem is solved. The disadvantage of the construction lies in the fact that the insured is practically tied to the insurer. The current legal ruling in Germany states that an insured individual who would like to switch insurers is not entitled to take any share of the accumulated aging provisions to his new insurer. Consequently, switching insurers is quite costly for an insured who has paid premiums for a sufficiently long period of time.

Transfer of aging provisions in the German setting

In the last few years, there has been a debate about how the transfer of provisions can be organized so as to simplify switches between insurers without harming those who remain with their original insurer. It is a well-known fact that transferring the individual's accumulated aging provision including interest payments involves substantial welfare losses. Under such a rule, it pays for healthy individuals to leave the insurer in order to save premiums at any point in time. Those who stay, representing relatively high risks, will have to pay higher premiums. Thus, the main function of the long-term contract – insurance against the premium risk – is lost.

Transferring the individual's aging provision without harming those left behind in the original contract requires a centralized risk equalization scheme and the use of standardized contracts. Insurers who take a disproportionately high share of bad risks will receive transfers that are financed by insurers with a sound risk structure in their communities. Since the transfer scheme can be applied in a meaningful fashion only if the benefit packages are comparable, standard contracts are the usual outcome. While these contracts may be topped up by some supplementary contract, such a standardization is presumably associated with a loss in product variety. But the main problem of this approach lies in designing an equalization scheme that can easily be administered, does not allow for profitable risk selection policies, and maintains incentives for cost containment. In principle, risk equalization payments should be contingent on the health status. If the design of the transfer system is not appropriate, it becomes profitable either to attract healthy individuals or specific groups for whom transfer payments can be regarded as too high. Again, the premium risk would occur. It cannot even be excluded that insurers who do not engage in an unproductive risk selection policy will end up with premiums above the average. Alternatively, a much simpler scheme would be to equalize benefit payments per person across insurers. However, in this event a single insurer would not bear any consequences of granting benefits that are not undoubtedly within the package of the standard contract. Since incentives for cost containment are destroyed, a substantial premium increase for everybody is to be expected.

The ideal solution

From a theoretical point of view, the ideal solution lies in differentiating the provision transfer according to the current health status. This idea is related to the concept of the time-consistent health insurance proposed by Cochrane (1995), who has modeled an explicit premium insurance in a framework with a series of short-term health insurance contracts. Those who have turned chronically ill can afford the stark increase of the premium due to the high transfer that is paid to them upon losing the good health status. For the lifetime contracts with an accumulation of aging provisions, the concept can be translated into individualized aging provision transfers if somebody decides to leave his insurer. The individualized transfers represent the difference between the individual's expected future health care costs and the individual's future premium payments, both calculated in present value terms. Individuals who have turned into high risks will receive higher provision transfers than those still being healthy. Ideally, such a scheme solves the premium risk problems through the risk-specific transfer scheme, while everybody will, in

principle, be able to leave his insurer without incurring financial losses. However, the implementation of such a rule will induce conflicts if the risk status cannot be verified in court at a low cost. With differentiated provision transfers, it lies in the interest of the new insurer to classify the insured as a high risk. In contrast, the old insurer can save money if the insured is assessed to represent a low risk.

Guaranteed renewability of contracts ...

Another approach to solve the premium risk problem is to apply the concept of guaranteed renewable contracts, as described by Pauly, Kunreuther and Hirth (1995). Every insurer has to guarantee that the health insurance contract can be continued at some predetermined premium profile, which is independent of the current state of health. The premium consists of the short-term expected cost of a healthy individual plus some supplementary premium that covers the present value of additional health care costs due to becoming a high risk within the current period. As a consequence, healthy individuals have the opportunity to leave the insurer without incurring financial losses. Those who are already chronically ill will not be able to find a new insurer at a reasonable premium. Hence, these individuals are again tied to their insurer. However, they are protected against premium increases due to the capital stock that has been built up through the supplementary premiums. This construction allows for a solution of the premium risk problem while healthy individuals face no difficulty when trying to switch insurers.

... plus annuity insurance

If an annuity insurance is added to the scheme of guaranteed renewable contracts, the German-style lifetime contracts with an accumulation of aging provisions is reconstructed. In principle, it is then possible to assign fractions of the aging provision to the functions of premium insurance and annuity insurance. Clearly, the annuity insurance does not contribute anything to protect against the premium risk. Hence, it can be transferred if somebody chooses to switch to a new insurer. In contrast, the premium insurance part serves to finance the additional health care costs of those who no longer pay a premium which is in accordance with their current health status. Further, it can be expected that exclusively healthy people will depart, causing a deterioration of the risk profile at the original insurer's community. Thus, the premium insurance part of the capital stock is forfeited if somebody decides to leave his insurer.

If lifetime health insurance contracts with an accumulation of aging provisions are employed, it is not clear in advance that the share of the annuity insurance is positive. This basically requires that the age profile of premiums in guaranteed renewable contracts is upward sloping. From a theoretical point of view, this cannot be taken for granted. The stylized facts suggest that the short-run risk premium for healthy individuals increases with age. This property does not hold true for premium insurance everywhere since the remaining lifetime of high risks for whom a capital stock has to be built up decreases with age. As argued by Frick (1998) and Meier (2003), it is easy to construct an example with a decreasing premium profile. The lifetime health insurance contract would then be characterized by a reverse annuity insurance. Such a situation would call for exit fees if somebody wanted to leave his insurer.

Empirical study for Germany

According to a recent study by Meier, Baumann and Werding (2003) in which German statistics on mortality and age-specific health care costs are taken into account, the theoretical curiosity of a negative capital stock in the annuity insurance can be ruled out. For any plausible structure of parameters, the annuity insurance in the lifetime health insurance contract begins with positive savings, and the capital stock of the annuity insurance never becomes negative. The transferable shares of the aging provision exhibit an interesting structure. In all variants of the simulations, the share of provisions that can be assigned to the annuity insurance decreases with age. This is a consequence of the rising fraction of insured who receive benefits from the premium insurance. In a baseline scenario designed for a male cohort entering the contract at age 30 and dying out at age 90, the transferable share of aging provisions falls from 93 percent after the first year of the contract almost linearly by about 1.2 percentage points per year and ends at about 25 percent after 59 years. Since the age profile of average health care costs for women is less steep than for men, aging provisions tend to be

smaller for women, and the annuity insurance has less weight. Therefore, the share of transferable aging provisions is lower for women. Similarly, the fraction of transferable provisions is smaller for individuals at a given age who have entered the contract later in their lives. Variations in the interest rate or in mortality affect the accumulation of aging provisions but have only small effects on the share of transferable provisions.

Determining the transferable shares of aging provisions depends crucially on the transition scenario. In particular, the probabilities with which healthy individuals turn into bad risks matter. The premium insurance will display a higher capital stock if these probabilities increase, or if the financial consequences of losing the good health status become more severe. In either case, the shares of transferable aging provisions will be smaller. If losing the good health status also implies a smaller remaining life expectancy, the bad risks in health insurance constitute the good risks in the annuity insurance. In this event the amount of transferable aging provisions exceeds the per capita stock of aging provisions in the annuity insurance. Given that the aspect of a reduction in lifetime expectancy upon experiencing a health status shock is empirically relevant, ignoring this aspect in the transfer formula will not harm the high risks who have to stay with the initial insurer.

Dealing with cost shocks

Cost shocks arising from time to time present a challenge for any aging provision transfer scheme. They generally hit high risks more than low risks in terms of absolute health care costs. If these cost shocks are not foreseen, the planned aging provisions are too low. In particular, this applies to the premium insurance part, which has to be filled up immediately after a cost shock. Clearly, the regular occurrence of such cost shocks reduces the share of transferable aging provisions. On the other hand, since the year 2000 German private health insurers have been required to charge a supplementary premium that is used to decrease premiums in old age. The study by Meier, Baumann and Werding (2003) indicates that the share of transferable aging provisions, including the capital stock accumulated by supplementary premiums in a scenario with cost shocks and the supplementary premium, is quite similar to a scenario in which both elements are absent. Thus, the problem of dealing with cost increases when designing a transfer formula for aging provisions upon insurer switches can be overcome.

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