Competition in Private Health Insurance in Germany: Models for Transferable Ageing Provisions

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Background

Premiums paid by the insured have various functions and components in health insurance (Cochrane, 1995). They should cover short-term health costs, but also the risk of worsening health conditions. And they should be embedded in a system which allows switching of insurers to allow for competition. In this short article we focus on the last issue with regard to the private health insurance system in Germany.

Compared to other European health insurance systems, the German dual system is unique: while basic health insurance is compulsory, it is implemented via two different systems based on distinct 'construction principles' and predominantly addressing different parts of the population. The statutory health insurance system is financed mainly by income-related contributions using the pay-as-you-go financing mechanism; the health funds have an obligation to contract, and risks are balanced by a morbidity-based risk adjustment scheme. Private health insurance, on the other hand, is financed by risk-related premiums mainly without an obligation to contract and uses a front-loaded financing system, which saves part of the premium in younger ages for building an ageing provision in order to keep premiums constant in old age. While the statutory health insurance system is compulsory for employed inhabitants below certain income limits, employees receiving higher wages may choose their insurance system, and the self-employed and civil servants are mainly privately insured.

The existence of the dual system has led to various discussions about the conditions of competition between and within the two insurance systems and their effects and to propositions including more or less fundamental changes concerning their financing (e.g. Buchner and Wasem, 2006; Sehlen *et al.*, 2006; Kifmann and Nell, 2014).

This article focuses on the conditions of competition within the private health insurance system and their potential adjustment. Here, the front-loaded insurance plans aim at steady lifelong premiums independent of changes in health risks after contracting using ageing provisions calculated on average risk. Up to 2009, in case of change of health insurance provider by an insuree, there was no transfer of any ageing provision, which lead to very strong incentives to stay with the initial insurance company. For new contracts concluded from 2009, ageing provisions for a limited insurance package are transferred within the private health insurance system in case of change of insurer. But these transferable ageing provisions are also calculated on community-based risk, not according to the individual actual risk of the insuree at the time of changing insurer. So, change of private health insurer is mainly attractive for healthy insurees with small insurance packages. As a systematic effect, the deficiencies in the transferability of ageing provisions lead to a very limited competition on already privately insured persons.

Is it possible to implement an economically consistent system of transferability of ageing provisions to enhance competition within the private health insurance system, and how can this be done? This is the question we focus on in this article.
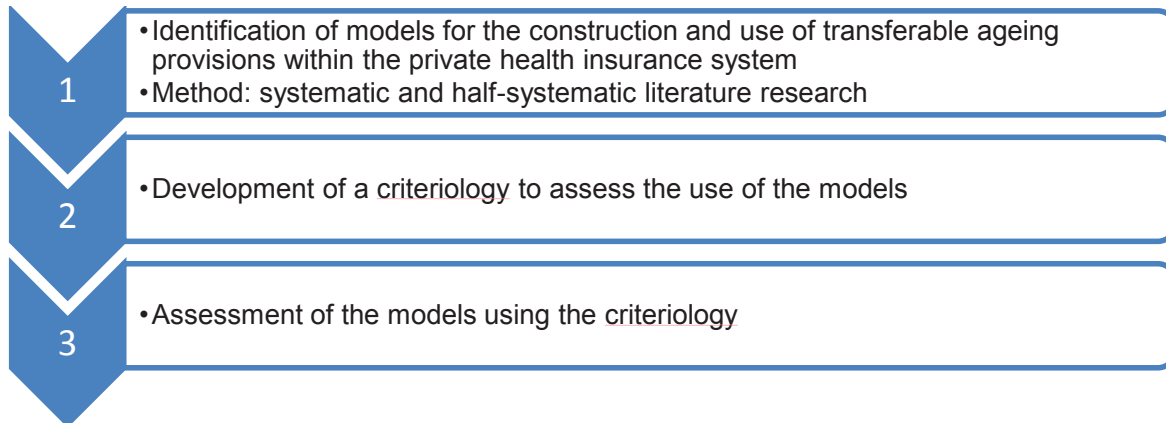

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Methods

Figure 1 shows the structure of the approach used to answer this question: the authors identified models of transferability of ageing provisions and assessed their implementation according to a criteriology using relevant economic and societal criteria. This article will focus on economic criteria and feasibility questions.

Figure 1: Methods: identification and assessment of models for the transferability of ageing provisions

1	• Identification of models for the construction and use of transferable ageing provisions within the private health insurance system • Method: systematic and half-systematic literature research
2	• Development of a criteriology to assess the use of the models
3	• Assessment of the models using the criteriology

Criteriology

Table 1: Criteriology

- **Sustainability of health insurance system**
  - Especially: no decline in the collective premium risk for the releasing or including insuree populations and avoidance of possible chain reactions
  - Effects on financial markets

- **Allocative aspects (welfare)**
  - Orientation towards consumer preferences
  - Choice between different service levels

- **Consistent economic incentives**
  - Efficiency
  - Avoidance of risk selection concerning the changing insurees
  - Prevention

- **Practicability**
  - Time horizon of realisation
  - Cost of realisation
  - Changes in transaction cost

- **Transparency from consumers perspective, verifiability**

The catalogue of criteria mainly focuses on long and short-term economic criteria like the sustainability of the system, welfare aspects and the consistency of economic incentives resulting from the models. Assessing sustainability, the authors stress the possibility of chain reactions because of adverse selection following changes in collective premium risks[1] in insurance schemes and on potential effects on financial markets. Allocative criteria mainly focus on consumer preferences and choice. Economic incentives concern short- and long-term efficiency and the avoidance of risk selection as a main optimisation method from the insurer's perspective. This also includes considerations about effects on insurers' incentives for prevention. Practicability of model implementation in terms of time and costs is judged as well. Additionally the authors assess transparency and verifiability aspects.

Model types

Models were clustered into three types (Figure 2). The first type of model concentrates on the risk-related calculation of ageing provisions for individuals at the time of insurer change. The second type proposes the calculation and transfer of ageing provision in rates over time incorporating future individual development of risk status. And the third type avoids the necessity of the transfer of individual risk-related ageing provisions by proposing a morbidity-based risk adjustment scheme.

Figure 2: Types of models proposing transferable ageing provisions for all insurees

1. **Singular transfer of ageing provisions calculated on an individual base at the time of insurer change**

2. **Calculation and transfer of ageing provisions in rates over time**

3. **Singular transfer of ageing provisions calculated on average risk profiles combined with a morbidity-based risk adjustment scheme**

Model-type 1: Singular transfer of an individually calculated ageing provision at the time of insurer change

The main idea of the first model type is that transferable ageing provisions should mirror the health risk of the insuree (or his expected future health costs) at the time of the change of insurer. So the new insurer can use the transferred amount of money as an ageing provision for calculating the premium of the new insurance contract. As a result, in case of similar calculation data and a comparable level of service in both contracts, the new premiums of the switcher will correspond to age and risk status at the time of concluding the old contract.

This kind of model was first published by Meyer in different versions beginning with 1992 (Meyer, 1994) using insurer-specific as well as overall calculation schemes. A clearing centre and an arbitration body are recommended. Zähle and Zähle (2013) operationalised these models mathematically using a Markov model to calculate appropriate ageing provisions, first on a fixed, then on a variable calculation base. Nell and Rosenbrock (2009) focus on the problem of potential financial disadvantages for the collective of insured staying with the old insurer due to the fact that a switcher leaving the group gets too high an ageing provision. In order to avoid those effects, the authors introduce the so-called 'sum-rule'. In a simplified form, it says that differences between individually calculated ageing provisions and ageing provisions based on average profiles have to sum up to zero for all insurees in an given health plan. Eekhoff and Arentz (2013) propose a negotiation solution to determine the individual amounts of ageing provisions, while Meier and Werding (2007) focus on the correct determination of ageing provisions for good risks, meaning those insurees with better-than-average health status.

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1   As a collective premium risk we understand the risk of an insuree collective to face future premium adaptations (see Nell and Rosenbrock, 2009).

Assessment of model-type 1

All models presented are able to account for insuree preferences as they allow to choose between different service levels and broaden the options to choose different insurers. Nevertheless, their introduction would not be Pareto-optimal because, in comparison to the current situation, there is a disadvantage for all insurees staying with their first insurer over time: at present, ageing provisions of switchers are neither transferred nor added to the profit of the insurer, but are added to the ageing provisions of non-switching insurees of the insurer the switcher is leaving. This lowers premiums because the probability of transfer of ageing provisions of switchers is included in the premium calculation as 'revers'. All models except Eekhoff´s are largely able to protect the insurees staying with their original insurance scheme against a worsening collective premium risk induced by insurer changes. Accordingly, the risk of adverse selection effects is kept relatively small. In a scenario of transferable ageing provisions within the private health insurance system only, effects on the financial markets seem controllable, so the sustainability of the private health insurance system is not at stake. An open question is whether insurers are sufficiently incentivised to calculate realistic individual ageing provisions—depending on the answer, more or less institutional regulation is needed.

For the implementation of the models it is necessary to collect considerable amounts of data by the insurers and in central institutions; appropriate estimation models and classification systems have to be designed and agreed on. This would lead to time lags in realisation. The models using central institutions and consented estimation models and classification systems are more transparent. On the other hand, they cause a higher degree of regulation in the health insurance market and lead to higher transaction cost.

Model-type 2: Calculation and transfer of ageing provisions in rates over time

A model of type 2 was presented by Buchner and Wasem (2006). Sehlen *et al.* (2006) combine a similar model with a morbidity-based risk adjustment scheme for statutory and private health insurance. The main idea of this model is drafted in Figure 3.

A switching insuree pays her premium to the new insurer B based on the calculation of her former insurance scheme with her former insurer A. This premium, therefore, is based on the age and risk status of the insuree at the time of concluding the contract with former insurer A. Insurer A, on the other hand, pays the actual average cost generated by a comparison group of insurees in his portfolio to the new insurer B. This comparison group is representative of the age and risk of the switcher at the time of switching.

Figure 3: Calculation and transfer of ageing provisions in model-type 2
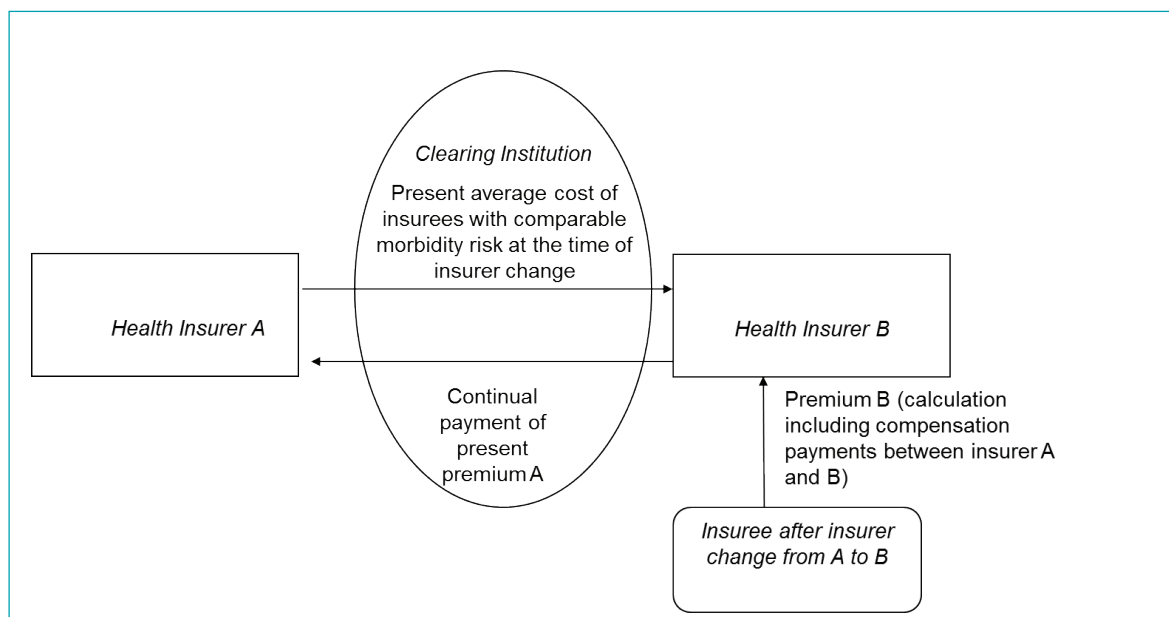
Assessment of the model-type 2

Like models of type 1, the type 2 model is largely able to protect staying insurees against a worsening collective premium risk induced by switchers. There are no effects on financial markets at all, as ageing provisions are liquidated as planned. The main advantage of this model is that there is no need to predict future morbidity-specific cost developments. On the other hand, an insuree has to be included in an insurer's calculation for the rest of his life, even in case of a very short insurance period: this leads to high complexity in case of multiple switchers. Additionally, new insurers of changing insurees depend on internal developments and strategies of all former insurers which leads to the necessity to build appropriate know-how.

Model-type 3: Singular transfer of ageing provisions calculated on average risk profiles combined with a morbidity-based risk adjustment scheme

The model of Buchner and Wasem proposing a morbidity based risk adjustment scheme was originally developed for a unified private health insurance system replacing the German dual system, characterised by a front-loaded financing system using ageing provisions (Wasem and Buchner, 2001). The model includes an obligation to contract for a compulsory basic level of services. Within age and gender groups, the obligatory morbidity-based risk adjustment scheme compensates for different risk structures of insurers. This allows the transfer of ageing provisions calculated on average risk profiles without causing disadvantages in choosing options for insurees with poor health status—if the risk adjustment mechanism works appropriately. The model is outlined in a simplified form in Figure 4.

Assessment of model-type 3

In this model the positive welfare effects through better possibilities of insurer change are limited: the risk adjustment scheme refers to a defined/fixed level of services. A part of the collective premium risk, the morbidity structure, is balanced by the risk adjustment scheme. The effects on the financial markets, comparable to those in the models of type 1, seem controllable. Incentives for prevention are reduced because of the morbidity-based risk adjustment scheme. As in the model type 2, there is no need to predict future morbidity-specific cost developments. The insurer data for the age- and sex-specific risk adjustment schemes have to be collected causing a time lag for implementation, whereas the verifiability is relatively high because of the centralised procedure of risk adjustment.

Figure 4: Transfer of ageing provisions and risk adjustment scheme in model-type 3
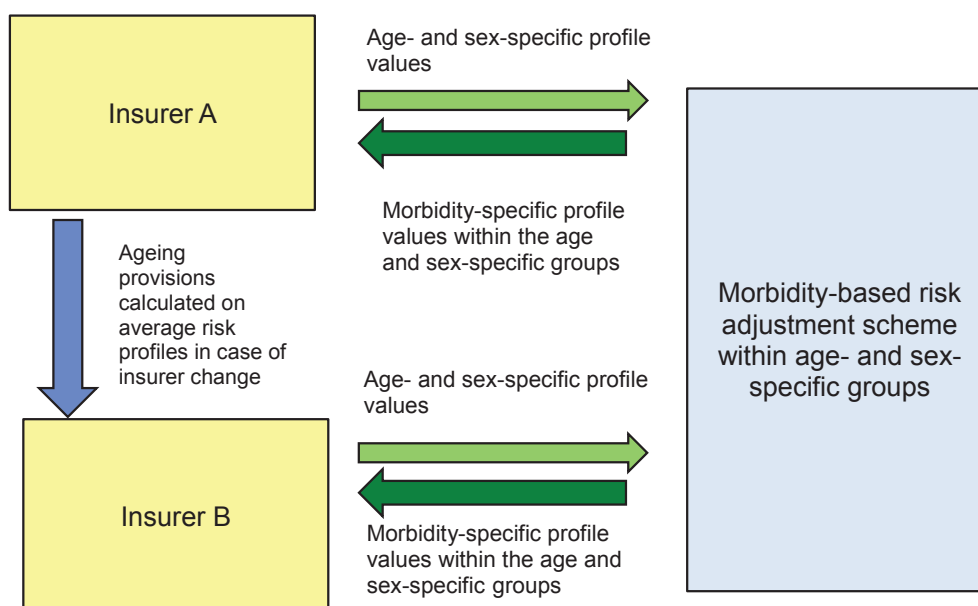
Conclusion

There is no model—including the status quo—with a superior assessment according to all criteria, so a possible political decision can only be taken by weighing possible aims. The status quo shows strengths, especially in practicability and transparency, and partly concerning the sustainability of the health insurance system, but has visible flaws in terms of allocative aspects and economic incentives. In case of a political decision to improve the transferability of ageing provisions, the strengths and weaknesses of the different models also have to be weighed, which finally cannot be done on a scientific basis.

References

Buchner, F. and Wasem, J. (2006) 'Wettbewerb der Krankenversicherungen aus gesundheitsökonomischer Hamburger Zentrum für Versicherungswissenschaft Sicht', Hamburg: Hamburger Zentrum für Versicherungswissenschaft.

Cochrane, J. (1995) 'Time-consistent health insurance.', *Journal of Political Economy* 103(3): 445–473.

Eekhoff, J. and Arentz, C. (2013) 'Zur Zukunft der PKV: Probleme und Perspektiven', *Gesundheitsökonomie & Qualitätsmanagement* 2013(18): 106–110.

Kifmann, M. and Nell, M. (2014) 'Fairer Systemwettbewerb zwischen gesetzlicher und privater Krankenversicherung', *Perspektiven der Wirtschaftspolitik* 15(1): 75–87.

Meier, V. and Werding, M. (2007) *Übertragbarkeit risikoabhängiger Alterungsrückstellungen in der Privaten Krankenversicherung*, ifo Forschungsberichte, Munich: I. f. Wirtschaftsforschung.

Meyer, U. (1994) 'Gesetzliche Regelungen zu den Rechnungsgrundlagen der privaten Krankenversicherung', in H.-P. Schwintowski (ed.) *Deregulierung, Private Krankenversicherung*, Kfz-Haftpflichtversicherung, Baden-Baden: Nomos.

Nell, M. and S. Rosenbrock (2009) 'Ein Risikoausgleichsmodell für den Wettbewerb um Bestandskunden in der PKV', *Zeitschrift für die gesamte Versicherungswissenschaft* 2009(98): 391–409.

Sehlen, S., Hofmann, J. and Reschke, P. (2006) 'Privat Krankenversicherte und Risikostrukturausgleich–zur Wahlfreiheit zwischen GKV und PKV', *Gesundheits- und Sozialpolitik* 2006(1–2): 54–64.

Wasem, J. and Buchner F. (2001) *Funktion und Ausgestaltung eines Risikostrukturausgleichs in einem wettbewerblichen Krankenversicherungssystem mit Kapitaldeckung und Kontrahierungszwang*. Greifswald.

Zähle, H. and Zähle, K. (2013) 'Prämienanpassungen im Risikoklassenmodell der Privaten Krankenversicherung', *Zeitschrift für die gesamte Versicherungswissenschaft* 2013(102): 111–140.