

"Modeling Expenditures for Private Health Insurance in Croatia"

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Summary

In 1993, the new Health Insurance Act and the Health Care Act were adopted in Croatia which have permitted the introduction of supplementary and private health insurance schemes.

Private health insurance is a voluntary health insurance, which provides for complete health insurance for the person insured. By taking out private health insurance an insured person loses the right to receive benefits under the compulsory public health insurance. The level of health care and service provided by private health insurance must be at least equal to that of the compulsory health insurance.

Level of future health service expenditures is one of the most important issues in planning and calculating premiums in private health insurance. Therefore it is useful to build a stochastic model for projecting future health care expenditures and risk cost per insured person. Based on the data in the national health service reports (since private health insurance schemes still do not have valid statistics) for the past periods and assumptions about future trends, it is possible to project future health service performances and adapt them for private health insurance.

Besides the effect of inflation, health claim sizes are often subject to other systematic changes since new drugs, treatments and equipment are invented, and new diseases appear, which all make healthcare insurance data and statistics subject to variations that make forecasting extremely difficult. Therefore the dynamic financial model, which is constructed, has to be robust enough to withstand these variations in all reasonable circumstances.

KEYWORDS

private health insurance, health care, health expenditures, stochastic modelling, Monte Carlo method

"ENTWURF EINES MODELLS ALS GRUNDLAGE ZUKUENFTIGER KOSTENPLANUNG IN PRIVATEN GESUNDHEITSVERSICHERUNGEN IN KROATIEN"

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Zusammenfassung

1993. wurde in Kroatien ein neues Gesetz ueber Versicherungen im Gesundheitswesen wie auch ein neues Gesetz ueber das Gesundheitswesen selbst verabschiedet. Mit diesen Gesetzen wurde die Einfuehrung von zusaetzlichen und privaten Versicherungen zugelassen.

Die private Gesundheitsversicherung geschieht auf freiwilliger Basis und ermoeoglicht eine komplette Gesundheitsversicherung fuer den Versicherten. Privatpersonen, die eine Privatversicherung abgeschlossen haben, verlieren das Recht auf Leistungen aus der staatlichen Pflichtversicherung. Die Ebene des Gesundheitsschutzes und der Dienstleistungen einer privaten Gesundheitsversicherung muessen der gesundheitlichen Pflichtversicherung zumindest ebenbuertig sein.

Die Ebene der zukuenftigen Kosten des Gesundheitswesens ist eins der wichtigsten Probleme bei der Planung und Berechnung in privaten Gesundheitsversicherungen. Deshalb ist es nuetzlich, ein stochastisches Model fuer die Projizierung zukuenftiger Kosten im Gesundheitswesen wie auch der Risikokosten per Versicherten auszuarbeiten.

Gruendend auf Angaben ueber vergangene Zeitraeume, die aus Berichten des nationalen Gesundheitswesens (da private Gesundheitsversicherungen immer noch ueber keine stichhaltigen statistischen Daten verfuegen) stammen, wie auch auf Annahmen ueber zukuenftige Trends, ist es moeglich, zukuenftige Leistungen im Gesundheitswesen zu projizieren und sie den privaten Gesundheitsversicherungen anzupassen.

Ausser dem Effekt der Inflation, wirken sich auf die Ausmasse der Gesundheitsschaeden haeufig auch andere Systemveraenderungen aus, besonders da dauernd neue Medikamente, Behandlungsmethoden und Ausstattung erfunden werden und neue Krankheiten aufkommen, wegen welchen die Daten und Statistiken der Versicherungen im Gesundheitswesen dermassen variieren, dass sie Prognosen ausserst schwierig machen. Aus diesem Grunde muss das dynamische Finanzierungsmodell, das konstruiert wurde, robust genug sein, um diesen Variationen unter allen vernuenftigen Umstaenden widerstehen zu koenne.

1. INTRODUCTION

In 1993, the new Health Insurance Act and the Health Care Act were adopted which have permitted the introduction of supplementary and private health insurance schemes coupled with the current public health insurance scheme. Both supplementary and private health insurance are a voluntary insurance.

Supplementary health insurance provides for services that are supplementary to the compulsory public health insurance. It may be provided by an insurance company or directly by a health institution or private medical worker on the basis of a written agreement. Only a person with the status of an insured person with the compulsory health insurance is entitled to supplementary health insurance.

Private health insurance is a voluntary health insurance, which provides for complete health insurance for the person insured. It may be provided only by an insurance company. By taking out private health insurance, an insured person loses the right to receive benefits under the compulsory health insurance. The level of health care and service provided by private health insurance must be at least equal to that of the compulsory health insurance.

Till now the voluntary health insurance in Croatia has not developed as extensively as it was expected when the 1993 health legislation was introduced. Only 2 insurance companies are offering supplementary health insurance and only one of them is offering private health insurance. In some periods there were no private health schemes at all.

5.657 policies of supplementary health insurance were concluded in the year 2000 with written premium of 7.437.000 kn or 990.000 EUR. In percentage terms it is 0,16% of all Croatian non-life insurance contracts and 8,46% of all health insurances (beside supplementary and private health insurance, this branch also includes voluntary health travel insurance and compulsory employer's insurance against health costs for on-the-job accidents and professional diseases). In written premiums it is 0,20% of non-life premium and 2,61% of health insurance premium. A number of private family doctors are offering some kind of supplementary insurance, but it is not based on any actuarial or statistical calculations and there are no statistics about the volume of those insurances.

For private health insurance only 1 policy was concluded in 1999, and 27 policies, with 45 persons insured, were concluded in 2000, with written premium of 821.000 kn or 110.000 EUR. The development of voluntary health insurance can be seen in **Table 1**.

Table 1

DEVELOPMENT OF VOLUNTARY HEALTH INSURANCE IN CROATIA						
YEAR	NUMBER OF CONTRACTS			WRITTEN PREMIUM		
	NUMBER	% IN HEALTH	% IN NON-LIFE	AMOUNT 000 kn	% IN HEALTH	% IN NON-LIFE
Supplementary						
1998	3.333	6,09%	0,11%	3.097	1,13%	0,09%
1999	4.894	8,14%	0,15%	6.655	2,30%	0,18%
2000	5.657	8,46%	0,16%	7.437	2,61%	0,20%
Private						
1998	0	0,00%	0,00%	0	0,00%	0,00%
1999	1	0,00%	0,00%	22	0,01%	0,00%
2000	27	0,04%	0,00%	821	0,29%	0,02%

The 1993 legislation introduced also the possibility of opening private practices and founding private health institutions. This new approach to providers of health care established a base for subsequent private health care development. In 1999, there were 5610 private offices in Croatia (doctors' offices, private pharmacy offices, laboratories etc.) compared to 1531 offices in 1994. In 1999, 2390 medical practitioners, or 30% of all medical practitioners employed, worked in private medical offices. In 1994, the share of private medical practitioners was only 5%.

The new health insurance law is in preparation and it will have further great impact on development of private health care and private health insurance. Due to further reduction of health insurance benefits in the compulsory public health insurance scheme and to the provision of financial incentives for people to seek supplementary or alternative private insurance coverage, it could be expected that voluntary health insurance will sustain a considerable increase in the years to come.

2. PRIVATE HEALTH INSURANCE IN CROATIA

Private health insurance is a voluntary insurance that provides for complete health insurance for the person insured. Since by taking out private health insurance an insured person loses the right to receive benefits under the compulsory health insurance, it is necessary that the level of health care and service provided by private health insurance are at least equal to that of the compulsory health insurance.

Health care included in the private health insurance is:

1. primary health care including dental health care (e.g. general medicine, dental care, primary health care of women and children),
2. prescriptions drugs,
3. polyclinical - consultative specialist health care (specialised outpatient diagnostics and treatments provided by specialised medical workers in outpatient clinics and hospitals),
4. inpatient health care (health care in general and specialised hospitals and health resorts),
5. orthopaedic devices and prostheses.

Compensations and allowances include at the moment:

1. sick leave compensation including maternity leave compensation,
2. coverage of travelling expenses, travelling allowances and transportation expenses in connection with health care,
3. layette assistance,
4. funeral expenses reimbursement.

In the new Health Insurance Bill, the last two compensations are not a part of the compulsory health insurance any more and therefore they would not be a part of the private health insurance if the Bill should be accepted.

In the private health insurance it is possible to choose the level of health care similar to or better than the one provided by the compulsory health scheme, depending on the type of policy chosen and the premium a person is willing to pay.

Someone may join private health insurance only if his/her annual gross income in the previous year was more than the limit prescribed by the Minister of Health. The actual limit is

30.000 EUR or a monthly salary of approximately 1.250 EUR net. Since the limit is quite high for the current economic situation, only 1,5% of population can choose private instead of the compulsory public health scheme, meaning that only 65.000 potential private health insurance clients exist on the market. Family members included, this numbers rise to 5% of population or 215.000 potential clients. If the limit was to be halved to 15.000 EUR 15% of population including family members or 650.000 persons would qualify for private health schemes. An improvement in overall economic situation in Croatia would raise the number of qualifying persons.

If family members are not insured on some other basis, private health insurance covers also family members of the insured person. In private health plans offered on the market additional premium has to be paid for family members while in the compulsory insurance they are covered without additional charges.

It is defined by the law that the insured has to pay premium to the insurer and premium has to be calculated by taking into account costs of health services, drugs, orthopaedic devices and prostheses, dental materials and other relevant costs.

Private health insurance may be provided only by an insurance company. The insured person concludes a health insurance contract with the insurer based on the offer given by the insurer. At least following information have to be included in the contract: name of the insured person, premium and way of payment, duration of insurance, all conditions, volume and rights from private health insurance including list of health institutions and medical workers where the insured can exercise his rights guaranteed by the private health insurance. Based on the contract, the insured gets the private health insurance card. The content and the outlook of the card are prescribed by law.

In existing regulation the transfer from private health insurance back to the compulsory health scheme is not regulated and new legislation should deal with this issue.

To conduct private health insurance business, the insurer needs the approval of the Ministry of Health together with regular licence for conducting insurance business issued by the Croatian Insurance Supervisory Authority. An insurer dealing with private health insurance has to conclude contracts with health institutions and medical workers for providing health care to persons with private health insurance. Health institutions and medical workers must provide health care to privately insured persons as defined in the contract with the insurer. Contracts between the insurer and health institutions and medical workers must be submitted to the Ministry of Health.

The new health insurance law, which is in preparation, will introduce a reform of health care and health insurance system since the state run health insurance scheme has to cope with steadily worsening financial burdens. It will define basic package of health care provided to all persons entitled for the compulsory health insurance. Additional health care or health care surpassing the defined level can be provided through voluntary supplementary insurance. This will change the today's structure of financing health insurance mostly through contributions and taxes, where only 1% is financed by individual participation, to a mixed model of financing with increased percentage (expectations are 25%) financed by individuals.

Because of inadequate precision of existing regulations the majority of population still believe that the compulsory public scheme should provide for complete health care without or with minimum additional charges. Unprecise regulations also caused difficulties and dilemmas in implementation and management of existing voluntary insurance. New legislation with more precise definitions of health care volume provided by the compulsory

public scheme should improve the situation. Furthermore, restrictions in the level of rights provided by the compulsory public scheme, which are planned, will introduce the second pillar in the health insurance through which the insured person can but does not have to buy a higher degree of rights through supplementary voluntary insurance. That insurance will be provided by insurance companies and the Croatian Health Insurance Institute. Medical institutions and private medical practitioners would not be able to provide supplementary insurance directly any more. Therefore it could be expected that the new legislation could have a great impact on further development of voluntary health insurance.

Another incentive for development of voluntary health insurance is a new tax treatment of its premiums applied from 1 July 2001. Premiums for voluntary supplementary health insurance are considered as expenses deductible from personal income while defining taxable income. Deductible amount of premiums can not be higher than 1.000 kn or 133 EUR per month which includes also premiums for life insurance and voluntary pension insurance. Premiums for voluntary private health insurance and voluntary supplementary health insurance, if a person is not insured in the compulsory health insurance scheme, are considered as personal deductibles in amount not higher than prescribed contributions for the compulsory public health insurance paid by the employer and the employee.

3. BASIC HEALTH INSURANCE MODEL

Health claim sizes are, besides the effect of inflation, often subject to other systematic changes since new drugs, treatments and equipment are invented, and new diseases appear, which all make health care insurance data and statistics subject to variations that make forecasting extremely difficult. Therefore the dynamic financial model, which is constructed, has to be robust enough to withstand these variations in all reasonable circumstances.

The stochastic model used for projecting future health care expenditures and risk cost per insured person is described in details in the paper *The actuarial uses of health service indicators and projections of health service expenditures in Croatia*, Tatjana Račić - Žlibar, 2000 (15). Therefore, only the basic description of the model will be given.

According to the Health Insurance Act, the compulsory health insurance provides health care as well as compensation and allowances in connection with health care. Since private health insurance has to have at least the same coverage as the compulsory public insurance and in order to follow this structure, the model is built with nine submodels:

1. primary health care,
2. polyclinical - consultative specialist health care,
3. inpatient health care,
4. prescription drugs,
5. orthopaedic devices and prostheses,
6. other health care expenditures,
7. travelling expenses,
8. sick and maternity leave compensation,
9. other compensation (allowances).

Other expenditures, such as system operating expenditures or special projects, have not been included in the model and have to be provided for in the expense loading to the premium.

The time period in the model is one year and a unit of population is 1 insured person.

In all submodels the risk cost is the expenditure for that submodel per unit of population measured over a time period. It has been calculated as the product of claim frequency and claim severity, except for the *other health care expenditure* submodel where it has been calculated directly. The total health insurance risk cost is obtained by summing up the risk costs of all the submodels.

Claim frequency is the number of claims arising in a time period divided by the exposure for that period. It is the average measure of utilisation of health care. The definition of claim frequency for *primary health care* submodel is: the number of patient visits per unit of population measured over a time period. Definitions for other submodels are made in the similar manner.

Claim severity is the mean claim size. It is the average expenditure per utilisation of health care. The claim severity for *primary health care* submodel is defined as: the average expenditure per patient visit measured over a time period. Definitions for other submodels are made in the similar manner, except for the *inpatient health care* submodel where it is observed through two factors:

severity = $\frac{\text{average length of treatment} \times \text{average expenditure per day of treatment}}{\text{number of hospitalizations}}$
where

$$\text{average length of treatment} = \frac{\text{number of bed days}}{\text{number of hospitalizations}}$$

and

$$\text{average expenditure per day of treatment} = \frac{\text{total expenditure}}{\text{number of bed days}}.$$

The two factors are observed separately, since their performance can differ, especially with the introduction of new treatment techniques or drugs. Even if the cost of treatment is the same, the average length of treatment can be shortened but the average expenditure can rise. These two factors are also important for analysing the performance of inpatient health care departments which could be important in managing private health insurance scheme.

In the *other health care expenditures* submodel claim frequency and claim severity are not defined since adequate data for the utilisation of health care service are not available. For this submodel the risk cost is calculated directly from the expenditures as

$$\text{risk cost} = \frac{\text{other health care expenditures}}{\text{population number}}.$$

Most of the analysed data demonstrate mainly rising trends. In modelling, the percentage change from year to year was observed and an adequate distribution fitted rather than observing the distribution of actual numbers occurring.

In the model no assumptions are made about claim frequency and claim severity distributions. Past data are analysed and distribution assumptions are made for percentage change of population, inflation, medical inflation and utilisation of health care services, compensation and allowances. Based on those assumptions, population numbers, utilisation of health insurance services and health expenditures are modelled for each submodel. Claim frequency, claim severity and claim risk are calculated for each submodel according to the previously given definitions.

Projections for population numbers, utilisation of health insurance services and health expenditures are given by the formulae:

1. population

$$P(t) = P(t-1) * (1 + PP(t))$$

2. utilisation of health insurance

$$U_i(t) = U_i(t-1) * (1 + PU_i(t)) * (1 + PP(t))$$

3. expenditures

$$E_i(t) = E_i(t-1) * (1 + MI_i(t)) * (1 + PU_i(t)) * (1 + PP(t)) * (1 + I(t))$$

where

t - observed year,

i - submodel index,

P(t) - projected population number (number of insured persons) in year t,

PP(t) - projected annual percentage change of population in year t,

U_i(t) - projected extent of utilisation of health insurance services in year t for submodel i,

PU_i(t) - projected annual percentage change of utilisation of health insurance services per capita in year t for submodel i,

E_i(t) - projected expenditures in year t for submodel i,

MI_i(t) - projected annual percentage change in medical care price in year t for submodel i,

I(t) - projected annual percentage change in retail price index in year t.

Depending on the submodel, the extent of utilisation is measured by patient visits, number of hospitalisations, number of drugs or similar measures, which comprise morbidity, as well as prevention, control and other use of health services.

In the *other health care expenditures* submodel projections of expenditure are given by the formula:

$$E(t) = E(t-1) * (1 + PE(t))$$

where

E(t) - projected expenditures in year t for the submodel *other health care expenditures*,

PE(t) - projected annual percentage change of expenditures in year t for the submodel *other health care expenditures*.

The model is based on two data sources:

1. The Croatian Health Service Yearbooks for the period 1975 - 1999,
2. The Croatian Statistical Yearbooks for the period 1975 - 1999.

since Croatian private health insurance schemes still do not have valid statistics.

The population projections used in the model are deterministic ones based on the “de jure” principle and given in the Projections of Croatian Population for years 1981-2011, which

were issued in 1989. In the population projections changes in the mortality rates and migration due to the war have not been taken into account, since this is far beyond the scope of this paper.

Inflation is modelled by the Wilkie model for the retail price index with unit normal random variables for the noise term, without allowing for random shock inflation and with parameters based on the UK data for period 1919-1982

$$\bar{i}=0,05; \alpha=0,6; \sigma_i=0,05.$$

Assumptions made on the Croatian experience would not be adequate since in the period 1987-1993 Croatian market suffered from hyperinflation (120% - 1500% per annum) and in the period 1975 - 1994, excluding hyperinflation years, average annual inflation was 38%. The annual inflation rate only fell under 5% p.a. after 1995 and, as a result of the process of reorganisation towards a market economy, lower inflation rates are to be expected in the future.

Model is very sensitive to the general inflation assumptions and sensitive to medical inflation and utilisation of health resources assumptions. Health care expenditures and utilisation of health care are also sensitive on population projections.

4. PRIVATE HEALTH INSURANCE MODEL

Model for private health insurance is based on the model for projecting health care expenditures in the compulsory public scheme described in the previous section, taking into account differences to be expected in the private health insurance. Main reason for this approach is insufficiently detailed published statistical health data and lack of data and experience in private health schemes coupled with an insignificant number of the insured expected in the next few years. With development of private health insurance, a more sophisticated model could be built based on the private health insurance statistics.

To allow comparison with the compulsory public health insurance, the observed private health insurance gives the same coverage as the public one with fixed monthly sick leave compensation. No additional or supplementary coverage is included.

Health care providers argue that prices paid by the Croatian Health Insurance Institute are lower than real costs. Therefore in the model it is assumed that charges from health providers are higher than prescribed by the Croatian Health Insurance Institute. Assumptions on rise in expenditures are made for all submodels. It is also assumed that the extent of utilisation will change for each submodel. For inpatient health care submodel it is assumed that the extent of utilisation will be higher than in the public scheme but the number of bed days will be lower due to more efficient utilisation of resources, better management of patients, prompt and efficient treatments.

Sick leave compensation in the public health scheme is defined as 80% of monthly salary but maximum 560 EUR net per month. In the model it is assumed that monthly sick leave compensation is a fixed amount of 600 EUR. The model allows for different assumptions on sick leave compensation level to be implemented.

In the model it is assumed that additional premium for family members has to be paid in full extent following the idea of risk oriented premium calculation. In the practice this can be a drawback since the advantage of lower premium for private health insurance compared to the

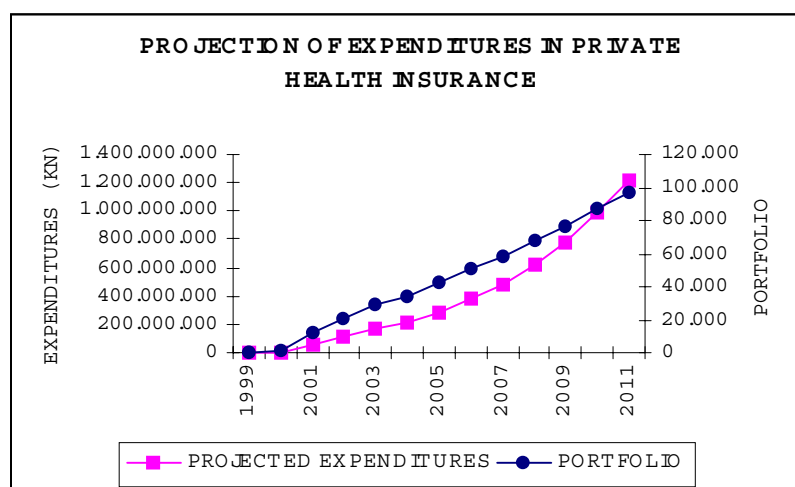
contributions to the public health scheme can be absorbed by additional payments for family members.

The number of insured persons is an important issue in analysing private health insurance in Croatia. As it was discussed earlier the number of persons qualifying for private health insurance is not significant. It is assumed that 1% of qualifying persons in the first year up to 50% in the twelfth year will switch from the compulsory public to private health scheme. Reasoning was that advantages of private health insurance, such as the possibility of choosing doctors and hospitals on the list of medical institutions the insurer has contract with, individual coverage adjustment to policyholder needs through possibility of choosing from different products, better organisation, no waiting lists, “top up products” - drugs or special treatments not covered by the public scheme, lower premiums can be offset by disadvantages like worse accessibility to medical and hospital resources, especially outside of major county centres, level premium to be paid also when income becomes smaller or on retirement, restrictions on switching back to the compulsory public scheme or additional premium for family members to be paid. Subjective reasons like habit, “state guaranties more security” reasoning, lack of information or contributions fully covered by employer so there is no financial incentive for the individual, can also have impact on the decision to switch from the compulsory public to private health scheme.

All private health insurance assumptions can be easily changed in the model if new information is available or product is designed differently. In calculating risk premiums great care should be taken in designing the policy and contractual obligations to the health care institutions and medical workers.

Expenditures for private health insurance, projected with given model and based on the assumptions stated above, increase steeply as can be seen in the **Figure 1**. Most of the growth, on average 82% of the total annual growth, can be attributed to the change in number of insured persons due to significant growth of the portfolio in the first years. After stabilisation of the portfolio, total annual increase becomes much lower and change in the projected expenses can mostly be attributed to the general inflation and medical inflation as it is discussed in Račić-Zlibar (15).

Figure 1



For calculating risk premium principle of equivalence was used globally, for a whole group, meaning that the sum of the premiums paid by the insured equals the sum of the expenditures paid by the insurer. Safety loading is added to the risk premium by standard deviation method. In distinction from the compulsory public scheme in private health insurance scheme the number of beneficiaries (the insured) equals the number of contributors (the insured).

Projected risk costs are different for each year so insurance premiums are annually based without guaranties. It is assumed that premium adjustments are regulated by an adjustment clause so there are no premium adjustments for the individual due to ageing but due to the rise of health expenditures because of inflation, medical inflation, lower mortality or higher morbidity. There is no capital accumulation for future periods.

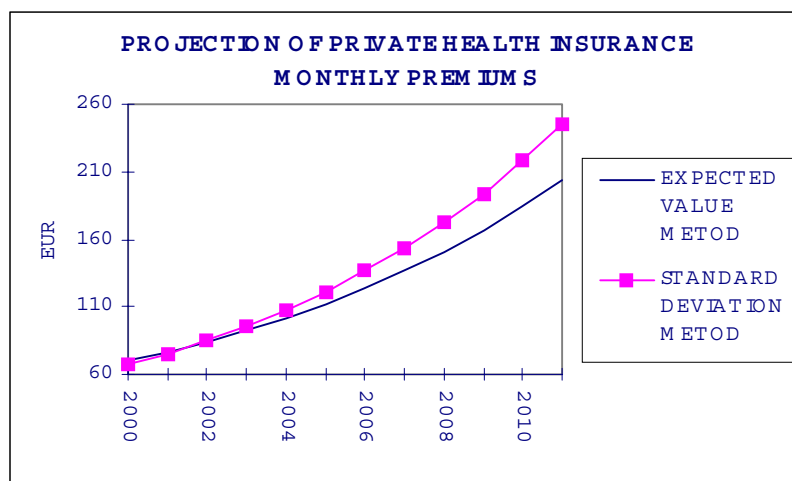
In the model, level premium is assumed disregarding gender, age, occupation or health status of the insured person. The insurance company can decide to charge premiums according to the risk classes since principles of calculating private health insurance premiums are not defined by law. Based on the basic model, system of discounts and additions to the basic premium can be developed to charge adequate premium depending on the risk class a person belongs to. To perform such classification health insurance data according to risk groups will be needed.

In conducting business, expenses other than claim expenses occur, like running costs, commissions, employees expenses, product and organisation developing expenses. Therefore, special expense loading was added to the risk premium with safety loading. Adequate loading heavily depends on the insurer due to provider's organisation, selling channels and negotiated commissions, degree of informatisation of business, investment strategy and competition on the market. In the model expense loading of 35% of gross premium is assumed. Since the expected number of the insured is small in first years while substantial costs arise at the beginning of operations due to organisational, equipment and development expenses, in practical use of the model this should be taken into account.

Another issue regarding the expected number of the insured in the next few years is dispersion of risk. It can be expected that the number of the insured will not be significant while possibility of large claims is not negligible. Therefore dispersion of risk through reinsurance would be needed.

Model's projected private health insurance premiums for year 2002 is 85 EUR monthly and average annual rise is 10%. Development of projected private health insurance premiums is given in **Figure 2**.

Figure 2



For people earning more than 30.000 EUR annually, premiums for private health insurance are much smaller than contributions for the compulsory public health insurance. Contributions are defined in percentage of income at current rate of 16% of gross wage, without limits, paid by employers and employees. Premium for private insurance depends on chosen level of health care. For basic coverage in private health insurance, which is the same as the coverage provided by the compulsory public health insurance, breakeven point is a monthly salary of 350 EUR. This situation can be attributed to the existence of more beneficiaries than contributors in the public scheme, small contributions from low-income persons and lower efficiency of the system. The comparison of contributions and premiums is given in **Table 2**.

Table 2

COMPARISON OF CONTRIBUTIONS FOR COMPULSORY AND PREMIUMS FOR PRIVATE HEALTH INSURANCE (EUR)				
	MONTHLY INCOME			
	625	1.250	2.500	3.500
CONTRIBUTIONS FOR COMPULSORY PUBLIC HEALTH SCHEME	200	400	800	1.120
MODEL PRIVATE HEALTH PREMIUM	85	85	85	85
PUBLIC CONTRIBUTIONS / MODEL PRIVATE HEALTH PREMIUM	235%	471%	941%	1318%
CHEAPEST PRIVATE HEALTH PREMIUM ON THE MARKET	102	102	102	102
PUBLIC CONTRIBUTIONS / CHEAPEST PRIVATE HEALTH PREMIUM ON THE MARKET	196%	392%	784%	1098%
MOST EXPENSIVE PRIVATE HEALTH PREMIUM ON THE MARKET	198	198	198	198
PUBLIC CONTRIBUTIONS / MOST EXPENSIVE PRIVATE HEALTH PREMIUM ON THE MARKET	101%	203%	405%	567%

5. CONCLUSION

The presented model is theoretical. For the practical implementation a more detailed analysis should be made with special attention paid to expense loading and product design of private health insurance.

If the model is used in practice it should be monitored periodically by examining the assumptions used in constructing the model and confirming their validity. Special care should be taken with the assumptions for which the model proved to be sensitive like inflation, medical inflation and utilisation of health resources. Periodic evaluations of the model would enable early recognising of possible problems and taking adequate actions in time.

Unexpected changes in mortality or morbidity, macroeconomic shocks, reforms in health insurance laws or health care delivery, or financing and technological changes will all have impact on the results of the model.

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