ORIGINAL PAPER

Choice determinants of the mobility in the Dutch health insurance market

Ilaria Mosca · Anoushka Schut-Welkzijn

Abstract We estimate a Logit model for the choice determinants of the mobility in the Dutch market for health insurance in 2006. The results highlight that socio-economic, geographical, and health-related factors matter in the decision to switch health care insurer. Moreover, previous contact with the insurer and the former type of health policy are also of influence.

Introduction

As of 1 January 2006, the new Health Insurance Act (HIA) has been put into effect in the Netherlands. The new act unifies the old sickness fund scheme and private health insurance into one mandatory scheme for all residents. This single health insurance scheme covers essential care. There is a basic package, which is mandatory and defined by law. Moreover, there is additional insurance covering all health services not included in the basic package that can be

purchased on a free basis. Insurers are legally obliged to accept everybody applying for the mandatory package, regardless of age, gender, or health status. A refined risk adjustment system is in place to compensate insurance companies for cost differences induced by socio-economic factors such as age, gender, income, location, and prior healthcare consumption. Such a system levels the playing field for health insurers by enabling price competition on the premium rate [7]. The HIA aims to guarantee universal access to the healthcare system.

Consumers could decide to switch to a new healthcare insurer, alternatively, to stay with the current health insurer, until 1 March 2006. During this period a questionnaire was issued by Center Data (Tilburg)[1] examining the switching behaviour of the Dutch population. The dataset used contains 2,172 observations; 26% ($n = 568$) switched insurer. Through a Logit estimation we describe the choice determinants of the mobility in the Dutch market for health insurance for the year 2006.

The new Dutch health insurance system

As of January 2006, a new insurance system for curative healthcare came into force in the Netherlands. Under the new HIA all residents of the Netherlands are obliged to take out health insurance. The HIA consists of a basic and mandatory package of services defined by law, and of an additional insurance that is taken out on a free basis (93% of the population purchased it [3]). Competition between health insurance firms is a central pillar of this recent

I. Mosca (✉)
TILEC, Tilburg Law and Economics Centre, Tilburg University,
P.O. Box 90153, 5000 LE Tilburg, The Netherlands
e-mail: i.mosca@uvt.nl

A. Schut-Welkzijn
Dutch Healthcare Authority, Utrecht, The Netherlands

---

[1] The questionnaire was assigned by the Institute of Health Policy and Management (iBMG), The Netherlands Competition Authority (NMA) and the Supervisory Board for Healthcare Insurance (CTZ).

market-based reform. The use of the selective contracting clause, which enables insurers to enter into participation agreements only with certain care providers, stimulates more competition between them. The other main goals of this reform are to guarantee an equitable and cost-efficient healthcare system in the long run, preserve individuals' freedom of choice, and enhance room for contracting between providers and insurers.

The new system is a private health insurance with social conditions. It is operated by private health insurance companies (both for profit and not for profit); the insurers are obliged to accept every resident in their area of activity and must guarantee that their enrolees will get the necessary medical treatments within a certain time and geographic area; in other words, they should contract sufficient care to cover the demand of their enrolees; a system of risk equalisation that contains parameters correcting for health status differences related to age, gender, and other objectively measurable client health characteristics enables the acceptance obligation and thus prevents direct or indirect risk selection. Universal access to the healthcare system is hence guaranteed.
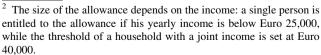
The premium for the new insurance consists of two components: a community-rated nominal premium of around Euro 1,000 paid by insured as from the age of 18. The size of this premium varies among insurers and is unrelated to age, gender, income, or health status. However, everyone with the same policy will pay the same insurance premium. The second premium component is an income-related contribution that equals 6.5% of the income and will be payable up to the income ceiling of Euro 30,015 [6]. The income-related premiums are collected through payroll and income taxes and are redistributed through the risk-adjustment system.
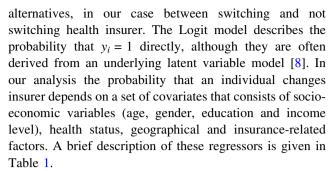
A healthcare allowance has been introduced in order to keep insurance premiums affordable. This allowance is paid via the tax authorities and has been designed to make the system financially accessible to all income groups, so that a tax credit is given to people before they have to pay the insurance premium [6].[2]

Data and switching model

In order to understand the main determinants contributing to the decision to switch health insurer, we use a Logit specification. The Logit model (or binary choice model) allows to design the choice between two discrete alternatives, in our case between switching and not switching health insurer. The Logit model describes the probability that $y_i = 1$ directly, although they are often derived from an underlying latent variable model [8]. In our analysis the probability that an individual changes insurer depends on a set of covariates that consists of socio-economic variables (age, gender, education and income level), health status, geographical and insurance-related factors. A brief description of these regressors is given in Table 1.

Regression results are shown in Table 2. Almost all variables are significant and hold the expected sign. Moreover our results are in line with the ones of [2] and of [3]. In the report of [2] there is an analysis of the switching behaviour of the Dutch population and the determining factors. The authors estimate a multivariate model and conclude that the main causes of changing insurer are age (old people change less), the knowledge of the new healthcare system organisation (more knowledge, more switching), the length of the contract with the insurer (the longer an individual has a contract the lower the switching rate), families with teenagers (they switch more), and the level of satisfaction of insured (the more satisfied the less the switch). The study of [3] confirms that the most important factors influencing the choice of switching insurer are: age (old people change less), education level (highly educated people switch more often), health status (a better health favours switching), living in a urban area (it influences switching positively), and being part of a family with children (they change insurer more often).

Our results lend support to the following: the probability of switching from one insurer to another decreases with age. Young individuals are therefore expected to switch more often, while the elderly might avoid switching because they are afraid of being rejected by the health insurer. The probability of changing insurer augments if the education level is high. Highly educated people were likely more informed about the changes taking place in the healthcare system.

Those households with a monthly gross income higher than Euro 4,552 have a greater probability of switching.[3] Individuals with a partner and more than one child (below 18 years) also switched more, probably due to the fact that children below 18 years must pay no nominal premium.

The regression results also depict that healthy people have a higher probability of switching. This result is quite intuitive; these individuals do not face any risk of being cream-skimmed by the insurer. Moreover, the fact of living in the three major cities (Amsterdam, Rotterdam, The

---

[2] The size of the allowance depends on the income: a single person is entitled to the allowance if his yearly income is below Euro 25,000, while the threshold of a household with a joint income is set at Euro 40,000.

[3] This amount is set by the Ministry of Social Affairs each year and it refers to two times the gross monthly maximum income on which health insurance premiums are being paid by employers.

Table 1 Description of the regressors

Variable	Description
Age	The dataset ranges from the minimum age of 18 to the maximum age of 91
Gender	Female/male
Middle education	An individual is middle educated if (s)he has a secondary education diploma
High education	An individual is highly educated if (s)he has at least a university degree
Good health	The individual reported that her/his health status was good
Excellent health	The individual reported that her/his health status was very good or excellent
Three cities	The individual lives in one of the three major cities in the Netherlands (Amsterdam, Rotterdam, or The Hague)
South	The individual lives in the Southern provinces of the Netherlands
Couple	The individual has one partner and at least one child
Income	The gross household income is equal to, or higher than € 4,552. This amount is set yearly by the Ministry of Social Affairs and refers to two times the gross monthly maximum income on which health insurance premiums are being paid by employers
Contact insurer	The individual did not have any phone or written contact with the health insurer in the last 12 months
Insurance	The individual was privately insured in 2005

Table 2 Regression results

Variable	Logit coefficient estimates
Age	−0.017*
	(0.004)
Gender	−0.048
	(0.104)
Middle education	0.200
	(0.134)
High education	0.372*
	(0.134)
Good health	0.395**
	(0.166)
Excellent health	0.750*
	(0.180)
Three cities	0.301**
	(0.137)
South	−0.258**
	(0.127)
Couple	0.238**
	(0.114)
Income	0.288**
	(0.122)
Contact insurer	−0.446*
	(0.104)
Insurance	0.323*
	(0.109)
Constant	−0.946*
	(0.316)

Standard errors in parenthesis

*, ** Significantly different from zero at the 99 and 95% confidence interval

Hague) increases the chance to switch, being the presence of different health insurers that compete for the same local market much higher than in other parts of the country (e.g. the South).

Finally, those people who did not have any contact in the previous 12 months with the health insurer switched less. The individuals with a private health insurance in 2005 had a higher probability of switching.[4]

We subsequently test the goodness-of-fit of the estimated model. Both the Pearson chi-square [1] and the Hosmer–Lemeshow chi-square test [5] do not reject the hypothesis that the outcome probabilities estimated by the model agree with the empirical outcome probabilities.

In Table 3 we report the marginal effects [4]: The probabilities of switching increase by 0.15 for people with an excellent health status, and decrease by 0.09 for those

individuals who did not have any contact in the previous 12 months with the health insurer. Furthermore, the probability of switching for the elderly decreases by 0.003.

Discussion

Our econometric analysis shows that the most important factors determining the mobility in the Dutch health insurance market in the first year of the reform (2006) are age, education level and health status, income, geographic area of residence, and having a partner and at least one child. It turns out that young and well-educated people are more likely to switch insurer. As some insurance companies are based in specific regions, one might expect that—given that young and highly educated people may change jobs more frequently—they also move more often than other people to other regions in the country. This reasoning

---

[4] In the Netherlands it is also possible to take out a group health insurance, for example via the employer. Group health insurances normally offer a discount on the monthly premium.

Table 3 Marginal effects

Variable	Marginal effects estimates
Age	–0.003*
	(0.001)
Gender	–0.009
	(0.019)
Middle education	0.038
	(0.026)
High education	0.071*
	(0.026)
Good health	0.072**
	(0.030)
Excellent health	0.150*
	(0.038)
Three cities	0.059**
	(0.028)
South	–0.046**
	(0.022)
Couple	0.045**
	(0.022)
Income	0.055**
	(0.024)
Contact insurer	–0.085*
	(0.020)
Insurance	0.059*
	(0.019)

Standard errors in parenthesis

*, ** Significantly different from zero at the 99 and 95% confidence interval

can partly explain the higher rate of switching of young individuals, in addition to other factors such as good health status.

It is also likely that the impact of higher income is partly related to the above-mentioned mechanism. If young and educated people effectively change jobs more often, and therefore their area of residence, then they can affect switching positively.

Young and educated people live in big cities, especially when starting up their careers, and this might also influence the probability of switching insurer.

Conclusions

The recent change in the Dutch healthcare insurance system has caused a massive switch between insurance companies. About 18% of the whole Dutch population changed insurer in the first months of 2006 [3]. It thus seems that people were spurred to shop around and look for better insurance policies. In this paper we investigate the main choice determinants of the mobility. Based on data collected through a questionnaire we can affirm that health status, socio-economic, geographical, and previous insurance-related factors have influenced the decision to switch.

References

1. Andrews, D.W.K.: Chi-square diagnostic tests for econometric models: theory. Econometrica **56**, 1419–1453 (1988)
2. Diepeveen, C.J., Mosselman, M.: Het overstapgedrag van de Nederlandse bevolking binnen het nieuwe zorgstelsel en de achterliggende factoren die hierop van invloed zijn. Amsterdam: Vrije Universiteit Amsterdam (2006)
3. Dutch Healthcare Authority: De tussenstand op de zorgverzeke Ringsmarkt, Monitor June 2006. Utrecht: Dutch Healthcare Authority (2006)
4. Greene, W.H. (ed.): Econometric Analysis. Upper Saddle River: Prentice Hall (2003)
5. Hosmer, D.W., Lemeshow, S.: Applied Logistic Regression. New York: Wiley (1989)
6. de Jong, P.R., Mosca, I.: Changes and Challenges of the New Healthcare Reform in The Netherlands: What Should the Dutch Be Aware Of? SSRN Working Paper No. 943429 (2006)
7. Schut, F.T., van de Ven, W.P.M.M.: Rationing and competition in the Dutch Health Care System. Health Econ. **14**, 59–74 (2005)
8. Verbeek, M.: A Guide To Modern Econometrics. New York: Wiley (2004)