

Choice, Price Competition and Complexity in Markets for Health Insurance*

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Abstract

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The United States and other nations rely on consumer choice and price competition among competing health plans to allocate resources in the health sector. A great deal of research has examined the efficiency consequences of adverse selection in health insurance markets, less attention has been devoted to other aspects of consumer choice. The nation of Switzerland offers a unique opportunity to study price competition in health insurance markets. Switzerland regulates health insurance markets with the aim of minimizing adverse selection and encouraging strong price competition. We examine consumer responses to price differences in local markets and the degree of price variation in local markets. Using both survey data and observations on local markets we obtain evidence suggesting that as the number of choices offered to individuals grow their willingness to switch plans given a set of price dispersion differences declines allowing large price differences for relatively homogeneous products to persist. We consider explanations for this phenomenon from the field of behavioral economics.

I. Introduction

The U.S. and other nations rely on consumer choice and price competition among competing health insurance plans to allocate resources in the health sector. There is an efficiency impulse to offer larger numbers of choices and greater variety of health insurance products. Expanded choices also carry efficiency problems in the form of adverse selection even if choices in health plans also result in price competition (Cutler and Reber, 1998). The nation of Switzerland offers a unique opportunity to study price competition in health insurance markets. Switzerland requires all residents to have health insurance. The government also regulates the terms of competition so as to encourage price competition and minimize adverse selection. This is accomplished by defining a standardized benefit for the mandated individual coverage, prohibiting insurers from turning away potential enrollees, providing extensive public information on prices, and risk adjusting payments to insurers. Households face the full price of coverage and may also purchase supplementary coverage and many do. Swiss residents all face opportunities to purchase coverage from at least 35 different sellers. In principle such a set of market arrangements might be expected to lead to active price competition. Yet Swiss health insurance markets are characterized by large and persistent price differences in local markets and little consumer switching between plans offering different prices. This has been the case even during a period of expanding choice in local health insurance markets.

These market outcomes contrast sharply from what might be expected based on standard models of consumer behavior and competitive markets. We therefore explore several explanations for the observed behavior based on limitations on consumers' ability to make efficient choices in highly competitive health insurance

markets (Samuelson and Zeckhauser, 1988; and Iyengar and Lepper, 2000). Specifically, we focus on the response of consumers to an expanding health insurance choice set. We make use of panel data based on Swiss health insurance markets and a survey of insured individuals to explore switching behavior and consumer satisfaction with health insurance.

The paper is organized into six sections. Following the introduction, the second section describes the market for health insurance in Switzerland and reports some basic facts about the performance of the market with respect to the amount of choice, consumer mobility and price patterns. The third section offers some explanations for the apparent disconnect between what the standard competitive model would lead one to expect and the observed outcomes. The fourth section describes the empirical analysis aimed at producing evidence to assess the proposed explanations. Results are reported in the fifth section. Concluding remarks and a discussion of implications are included in the final section of the paper.

II. Background

A. Swiss Health Insurance Markets: Regulatory Framework

Switzerland, a country of 7.4 million inhabitants, is divided into 26 Cantons. The organization of the health care system is the responsibility of individual Cantons, the health care system is regulated by the Federal Law on Social Health Insurance (LAMal). The LAMal has been in force since 1996 after it was ratified in a popular referendum in 1994.

The key features of Swiss health insurance markets are as follows. 1) An individual mandate requires all residents to have health insurance coverage. (Note that each family member must contract on an individual basis). 2) A standardized

basic benefit package is specified. This uniform basic insurance package is very comprehensive and covers not only outpatient and inpatient care, but also a limited number of alternative therapies as well as nursing home care. The level of cost sharing (deductible, coinsurance of 10% up to an annual ceiling) is defined by the law and is invariant across insurers. 3) Premiums are community-rated. That is, premiums can differ between health plans but, an insurer must offer uniform premium for people in the same age groups (0-18, 19-25, and >25), in the same place of residence (78 regions are defined, ie 3 per Canton), with the same type of coverage. Four types of basic health insurance are available. In 2003 the most frequent choice was for ordinary deductible health insurance (49.7%) followed by insurance plans with higher deductibles (42.0%). Insurance with limited choice of providers (HMO-contracts) which account for 8.2% of enrollees have not gained much market share. Individual-premiums are not income-adjusted but federal and Canton subsidies are available to low-income residents. It is worth mentioning that in some Cantons means-tested subsidies are granted to over 40% of the population. 4) Health insurers must accept every applicant for basic insurance. There is an open enrollment opportunity every six months (June and December) in which individuals can switch insurance providers, but only within the Canton where they reside or work. 5) Premiums paid to health plans are risk adjusted. Risk adjustment is based on location, gender and age.

Finally, there is also a clear-cut regulatory separation between basic statutory coverage and optional supplementary insurance. One can get basic and supplementary insurance from two different providers or from the same health insurance. Supplementary insurance is not regulated by LAMal. Insurance Contract

Law (LCA) regulates it. In the supplementary insurance market, insurers may refuse bad risks and offer risk-rated premiums.

Together, these features suggest that changing insurers for basic insurance coverage involves very low switching costs in the Swiss system. Indeed, as explained, the basic insurance coverage is virtually identical from one health insurer to the other, and the enrollee may remain with the same physician or hospital, unless he/she voluntarily opts for an HMO contract, which is rare. Furthermore, the actual switching procedure is not costly: it only requires the individual to write a letter (for which prototypes are downloadable from a well known website) to one's health insurer. Search costs are low. All premiums are officially published every year by the Federal Office for Public Health (OFSP) and distributed to the households which request them. Furthermore, the most competitive premiums can be easily found on the Internet and in newspapers.

In a health insurance market with community-rated premiums for each health plan, homogenous benefits, open enrollment and low switching costs, individuals would be expected to migrate toward the insurance plans offering the lowest premiums. Premium differences across insurance plans would be expected to be very small. The observed facts depart from these expectations.

B. Stylized Facts on Market Performance

i. Market Structure

In the aggregate the number of health insurers (all non profit) that offer mandatory health care insurance has decreased over the past decade. In 1994 there were 178 authorized health insurers operating in the health insurance market; by

2004, only 92 insurers were operating (Statistics in Health Insurance, 2004, Table 8.01).

At the Canton level where the competition takes place, the individual choice set has increased over the same period (Table 1). In 1998 the mean number of health plans per Canton was 39 (range: 36 – 49); Consumers could choose among more than 40 health plans in only 2 Cantons. The mean number of health plans per Canton rose to 52 in 2003 (range: 41 – 70); in 8 Cantons, more than 55 insurers were providing individuals with basic insurance.

A look at the 6 largest health plans reveals that the group as a whole was stable from 1998 to 2004. About 61% of enrollees were enrolled with these 6 companies in 1998. After a slight decline between 1998 and 2004, the 6 largest firms regained market share in 2005.

ii. Price Variability Over Time

Price variability was high in 2004 (Figure 1). Figure 1 shows monthly price variability by Canton, the maximal difference in basic premiums for adults over 26 (for full coverage and in a single geographical cell) was 2952 Swiss francs per year or about 80% of the average. In 2004, the average gain of switching for an enrollee insured with the biggest company CSS amounted to 621 Swiss Francs over the year (which constitutes an average 20% discount).

We measure price variation by examining the mean differences across cantons of the average premium minus the minimum and the maximum minus the minimum premium. These are reported on Table 2 for the years 1997-2004. Table 2 shows that there is little evidence of price convergence over time as competition at

the Canton level has intensified. These observations are consistent with analyses by Dormont et al (2005).

iii. Switching Behavior

Annual switching percentages are relatively low given the price differentials for identical benefit packages. Health insurance switching rates were 4.8% in 1997, 5.4% in 1998, 2.7% in 1999 and 2.1% in 2000 according to household survey data (OFAS, 2001). Yearly switching rates have recently stabilized at around 3% (Le Temps, 2005).

In sum Swiss health insurance markets appear not to have realized the type of price competition that might have been expected from their particular brand of regulated competition.

III. Explanations

A. The Expected Utility Model

In considering the stylized facts about Swiss health insurance markets we begin by considering how standard models of health insurance address such facts. The key behaviors are relatively low rates of health plan switching in the presence of substantial opportunities to realize lower premiums for what appears to be a homogeneous set of health plans. This type of behavior is consistent with market equilibriums with substantial price variation. Models of health insurance choice typically are based on the assumption that consumers choose a health plan based on its premium (r) and quality attributes (q) so as to maximize expected utility, $EU(r, q)$. Thus an individual consumer i will choose a health plan from among j choices if $EU_{ij} > EU_{ik}$. In Switzerland price information is widely available and most dimensions of

quality are regulated. Once a plan is chosen a consumer may experience a change in health state or other personal circumstances (e.g. reduced income) or may face a new set of premium choices due to health plan entry into the local market. These altered circumstances may result in the individual reassessing the expected utility of their health plan relative to available alternatives possibly resulting in a switch of health plan.

Switching behavior would be expected in environments where there is change in the basic features (price and quality) of the products being offered (either own product or alternatives), or changes in consumer circumstances. In Switzerland during the period observed (1997-2000) the size of the choice set in local markets grew, the population aged and dissemination of information on price and quality improved. All of these changes might be expected to result in switching between health plans. The observation that switching rates are low and large price differences between comparable health plans persist would be explained in the expected utility framework by appealing to switching costs (e.g. time costs of search) and unobserved quality differences. During a period of expanding choice, as we observed in Switzerland, the likelihood that there is a preferable alternative to an individual's existing health plan increases as do potential search costs. In the Swiss context search costs may be less important than elsewhere because insurance product characteristics are closely regulated and because price information is so widely available. In fact one recent study of consumer mobility in Europe found that switch costs are rather low in Switzerland (Laske-Alderschof et al, 2004). Thus if there is an increase in the choice set alongside substantial price variation and relatively low search costs it is somewhat surprising to see low and declining switching rates.

In Switzerland the choice of health plan is by and large unconnected to the choice of health care provider (physician or hospital) (8%), which is a major source of switching costs in American health insurance markets. These types of switching costs have been viewed as important in explaining low rates of health plan switching in the U.S. (Niepp and Zeckhauser, 1985).

The Swiss regulatory structure and the fee for service-indemnity structure serve to reduce many aspects of service quality variation. Some quality variation no doubt remains. One variable dimension of quality may relate to the reliability of the health plans. Health plans have entered and left the market in recent years. Research on choice of health plans in American health insurance markets shows quite limited effects on choice or switching of measured (but unregulated) quality differences between health plans. That literature also shows evidence of inertia and substantial differences in response to price by age and health status. (Beaulieu, 2002; Dafny and Dranove, 2005; Abraham et al, 2006, Strombom, Buchmueller and Feldstein, 2002). Another potentially variable aspect of quality may involve administrative processes like how quickly and accurately enrollee questions are addressed.

The implications of the expected utility model for empirical analysis of switching behavior is that right hand side variables would include measures of relative premiums, enrollee health status and personal circumstances, and potentially some measures of plan characteristics, their administrative effort and financial stability.

B. Decision Overload

The behavioral economics literature has reported on experiments and offered explanations grounded in the psychology of choice that provide explanations for why expanded choice may encourage persistence in key choices and less rather than more competition. One set of ideas focus on the concept of cognitive or information overload (Eppler and Mengis, 2003). The information or cognitive overload theory argues that as the choice set grows there are increasing costs to an individual of processing information. This happens if individuals continue to consider all alternatives as the choice set expands. Even if short cuts are used (elimination of the worst alternative) information processing costs grow with the choice set. This leads to the hypothesis that consumers can be overwhelmed by “too much” choice (Huffman and Kahn 1998. Iyengar and Lepper, 2000.) The result is an expected relationship between the size of a choice set and the quality of decision-making that is an inverted U.

One set of experimental results by Iyengar and Lepper (2000) show that as the number of choices expands people will be less likely to take action and, say, make a purchase. This result is consistent with other research showing that a type of “analysis paralysis” takes hold when information and choices becomes very complex (Bawden, 2001, Cowan, 2001). One set of studies that is particularly relevant to the Swiss Health insurance context come from studies of 401(k) plans. Iyengar, Jiang and Huberman (2004) show that participation in 401(k) plans increases significantly when the number of funds offered decreases from 60 to less than thirty and again when fund offerings fall below 10. The implication is that more choice and greater complexity of choice after a point will inhibit action and reduce the quality of decisions that are made.

C. Status Quo Bias

Thaler (1980) identified a general tendency of people to exaggerate the value of an item they possess (selling price) relative to what they would value the same item if they did not own it (buying price). This has been termed the *endowment effect* and it stems from loss aversion identified by Tversky and Kahneman (1991). Loss aversion has also been associated with an attachment to the status quo. In an environment of uncertainty and decision complexity it is hypothesized that there is a tendency to exaggerate the disadvantages of departing from current arrangements and to understate potential gains. Samuelson and Zeckhauser (1988) have explored this phenomenon in the context of health insurance markets and report support for what they term status quo bias in decision making. They studied health plan choices as new health insurance products were introduced into the Harvard University employee benefit plan. They argued that traditional consumer choice theory suggests that, *ceteris paribus*, newer faculty (holding constant age) and those with longer tenures should display a similar pattern of choices. Yet the data showed that established faculty members were more likely to enroll in health plans that had existed prior to the new offerings than faculty with shorter periods of attachment to any health insurance plan. They interpreted this as support for the existence of a status quo bias. More recently Strombom, Buchmueller and Feldstein (2002) showed that the health plan switching in response to price changes was lower for incumbent enrollees of health plans other factors constant. They also interpreted this finding as evidence in support of a status quo bias. The implication is that the level of attachment to a health plan will inhibit the desire to act and will become more important as the complexity of choice grows.

D. Distinguishing Between Explanations

If search costs are low then the number of choices available to consumers in the market would typically not explain much about switching behavior in the expected utility model. In the expected utility model with low search costs the number of choices works primarily through premium and quality. A model based on ideas about decision overload would include a measure of the number of choice available to consumers. The decision overload hypothesis suggests a negative relation between switching and the number of choices above a certain number of choices (the inverted U). The experiences in the 401(k) market suggest that as choices grow beyond 10 and also beyond 30-60 there are reductions in consumer responses. In practice, since service quality is likely to be incompletely measured, a negative relationship between switching rates and number of choices could occur because the number of choices may serve as a proxy for the ability of consumers to find better preference-quality-price matches. If prices are well measured and most variation in quality is either eliminated by regulation or measured by indicators of plan administrative effort or financial reserves then one would expect the number of choices to add little explanatory power to a model of switching behavior based on expected utility.

As noted above the expected utility model allows for some learning about how health plans serve consumers, which might result in switching behavior. These learning effects might be expected to occur within a year or two of enrollment. Beyond that the expected utility framework would not include expect tenure of enrollment in a health plan to explain switching behavior. Thus, if evaluated at longer durations than a year or two health plan enrollment tenure would be expected to add little explanatory power to a model of switching. The status quo bias model implies

that longer tenures of enrollment should continuously reduced the likelihood of switching other things equal.

IV- Empirical Implementation

We empirically examine the roles of price, information overload and status quo bias in explaining the switching rates between insurance plans operating in individual Swiss insurance markets.

A. Overview of Analysis Strategy

Information overload could occur due to the large number of competing health plans. As already noted, Swiss people faced choices of 35 or more health plans during the period of observation. Even if health plans can be assessed easily and quickly because of publicly available information on prices and health plan rankings, the large number of alternatives is likely to make the choice process more burdensome. In our context, status quo bias is present when enrollees prefer their current plans to lower cost alternatives of comparable quality even when tangible switching costs are low.

To examine these issues, we conduct the following specific analyses. We examine: (i) factors associated with switching of health plans/ and the intention to switch plans (ii) plan distributions of old/ new enrollees and (iii) stated reasons for being enrolled with current health plans

In our empirical analysis of plan switching, we focus on five main factors that may influence plan switching. First, we examine the monetary gains from plan switching or the influence of price differentials. Second, we assess the impact of the number of competing health plans on health plan switching. The variability in the

number of choices across Cantons allows us to test whether more choice increases or decreases the likelihood that individuals will switch health plans. A finding that suggests that individuals facing larger numbers of alternative health plans are less likely to switch plans, other factors equal, would be most consistent with information overload. That is, the number of plans is unlikely to be correlated with unmeasured quality differentials. Third, the influence of the complexity of choice is also tested as part of the decision overload hypothesis. In particular, those who have purchased a supplementary insurance policy in addition to the basic package face greater complexity of choice to the extent that the number of providers of supplementary insurance multiplies their spectrum of choices.¹ Again a negative relationship between the presence of supplementary coverage and the switching probability would be consistent with information overload. A fourth source of evidence would be to examine plan switching among people who express dissatisfaction with their plans and whether they are affected by the number of choices available. Under the decision overload hypothesis, dissatisfied individuals with relatively more choice in plans may be less likely to switch. Fifth, we study the relationship between the duration of enrollment and switching behaviors in order to assess whether individuals stick with their current health plans though presumably superior alternatives (with respect to price) are available. Under the status quo bias hypothesis, the longer one has been enrolled with a fund, the less likely one is to switch, all other things equal.

The health plan choices of new enrollees (switchers) will be compared to plan choices of those who have maintained their previous plans (non switchers).

Switchers should be relatively unencumbered by status quo bias. If the pattern of plan choices for these two groups differ significantly this would be consistent with the

¹ There may also be a perception that it is advantageous to hold basic and supplemental coverage from the same insurer. We have not found any tangible evidence of such gains.

presence of status quo bias (Samuelson and Zeckhauser, 1988, Strombom, Buchmueller and Feldstein, 2002).

Studying the stated reasons of enrollment in health plans at a point in time in surveys of health plan enrollees offers another window into factors that influence observed patterns of enrollment. Samuelson and Zeckhauser (1988) have emphasized that “anchoring” or “psychological commitment” underlying status quo bias are likely to result from tradition, habit, sufficient satisfaction (as opposed to optimal choice), uncertainty toward alternatives, misperceptions or false beliefs concerning health plan characteristics. Sample surveys of Swiss health plan enrollees ask some questions related to the importance of such factors as reasons for health plan enrollment.

B. Data

We make use of two sources of data, a survey of individuals focusing on health plan choices in Switzerland and publicly reported information related to health insurance plans including premiums, number of enrollees and financial indicators (the level of reserves, and administrative costs).

The OFAS Survey

The survey that we use was conducted by the Federal Office for Social Insurance (OFAS) as part of the general assessment of the Law on Sickness Insurance (Art. 32 OAMal). The corresponding dataset was obtained from the Swiss Information and Data Archive Service (SIDOS). It includes observations from a sample of 2152 households representative of the Swiss population. One adult was interviewed by telephone in each household during the summer of 2000.

This survey provides extensive information on health plan choice at the individual level. Respondents were requested to name their current health insurance plans for the basic and supplementary health insurance separately and to define their criteria for choosing plans. The options they chose (e.g. higher deductibles, HMO) for basic insurance and the composition of the supplementary benefit package were also reported. People were asked whether they had changed any of their health insurance contracts during the four previous years (1997 - 2000) and when they made changes. Consequently, switching behaviors were retrospectively reported over a four-year period. In addition, information on the intent to switch in the future as well as general satisfaction with their health insurance plans was collected. Knowledge, beliefs, attitudes and perceptions towards LAMal and health plans were also investigated. Socio-demographic characteristics as well as subjective health status were obtained in the survey. A detailed descriptive analysis of these data is available in the OFAS report (2001) and is also provided by Colombo (2002).

The original dataset was reshaped to create a panel dataset of switching behaviors including one observation per enrollee per year, over a four-year period.

The insurer database

We also constructed a dataset that describes markets for health plans during the period 1997-2000. In this database, information on the number of enrollees (denoted n_{ict}) and monthly adult premiums (P_{ict}) are reported at three levels: insurers (i), Cantons (c) and year (t). Financial characteristics of the health plans such as the amount of reserves (r_{it}) or the level of administrative costs (a_{it}) are known at the insurer level for a given year.

A problem arises because the number of enrollees per health plan is reported at the Canton level even though there are Cantons that consist of two or three different premium regions. To address this issue we use the (unweighted) average premium per health insurer and Canton. A second problem is that the number of enrollees per health plan is not provided by type of contract while there are several rebates for high deductibles and HMO contracts that differ from one health insurer to another. The premium for full coverage (ordinary deductible) is used as a proxy variable for the adult premium.

The number of insured people in each plan was directly provided by the Federal Office for Public Health (OFSP) upon request; yearly premiums are available on the OFSP website (<http://www.bag.admin.ch/kv/statistik/f/index.ht>). Financial characteristics of funds are published each year in the report entitled “Statistics in Health Insurance”. Our database consists of 4685 observations (one observation per insurance company, per Canton, per year) over 4 years.

For our purposes, this insurer dataset is used to compute the number of health plans in each canton for a given year, the number of enrollees, the average premium as well as some indicators of premium variability (standard deviation, minimum and maximum premium). We make the connection between the OFAS survey and this database by matching each individual health plan reported in the survey with the corresponding market information (premium, number of enrollees, reserves, administrative costs, market share) referring to the relevant year and canton and by adding the data that we computed at the Canton level (number of operating funds, number of enrollees, premium variability). This will help us study the relationship between choice behaviors and the characteristics of the market for health insurance.

C. Estimation

Estimation of a switching model

We estimate a health plan-switching model. We denote y_{nt} the binary variable defined by $y_{nt} = 1$ if the individual n has switched during year t and $y_{nt} = 0$ when he/she has not switched. The following basic model is estimated on the latent variable y_{nt}^* :

$$y_{nt}^* = x_{nt}'\beta + (dp)_{nt}\eta + O_{nt}\gamma + S_{nt}\lambda + c_n\rho + \varepsilon_{nt}$$

The decision to switch is given by:

$$y_{nt} = 1 \text{ if } y_{nt}^* \geq 0.$$

x_{nt}' is a vector of both time-varying and time-invariant individual characteristics (age, gender, household size, education level, urban location, health status).

O_{nt} denotes the choice set of the individual during year t , i.e. the number of operating funds in the place where she/he lives. Three main specifications were estimated. We used the continuous variable representing the number of choices available to individuals. We also used a vector of dummies representing plan choice ranges (eg. 35-49 plans, 50-55, 56-60, 61-71) to allow for a flexible functional form. Furthermore, we estimated a specification with a single dummy variable with takes on a value of one for markets with 55 or more choices. The idea of choice overload is consistent with a monotonically decreasing likelihood of switching as the number of options increases. As we discussed above an enrollee may deal with large choice sets by creating subsets of options. This is a form of cognitive short cut that might be used to reduce information processing costs (Cowan 2001). An enrollee may not be considering all options. As local markets are quite concentrated, a large number of insurers are likely to be fringe players that may not figure into the decisions of many consumers. In order to have a better understanding of the decision process of

individuals, we estimated an alternative specification in which two plan count variables O_{nt}^1 and O_{nt}^2 were used instead of O_{nt} . O_{nt}^1 denotes the count of plans that have more than a 10% market share and O_{nt}^2 the number of plans with less than 10% market share (See Table 1b). In an alternative specification we replaced the number of funds by the inverse of the Herfindahl index which indicates the “size equivalent” number of firms in the market (Table 1c). The idea of choice overload is consistent with the inverse of the Herfindahl index being negatively associated with the probability of switching.

We also consider the possibility that the number of choices might be endogenous, to the extent that some unobserved factors might explain that some areas might attract more plans to enter as well as having lower switching rates. Canton dummies c_n which capture cultural and structural differences across Cantons allow us control for this unobserved heterogeneity that is time invariant. We also estimated an instrumental variables model of switching for the case of the continuous measure of plan choice (35-75). Instruments included the population of the canton, the average income of the canton and the average premium in the canton during the prior year.

$(dp)_{nt}$ represents the potential gains from switching health plans. We measure $(dp)_{nt}$ as the (weighted) standard deviation in health plan premiums within a Canton. This represents the expected difference in price one would experience if the typical person switched to the mean plan in a Canton. This is one measure of potential financial gains from plan switching (Table 2).² We also estimate a model specification that includes interaction terms between the choice environment indicators, and the measure of price dispersion $(dp)_n$. This enables us to examine

² We are grateful to Tom McGuire for discussion of this approach to specifying the “price” measure.

differential price response in the five choice environments. We also estimate models that include a measure of the number of new plans available to consumers during each period to allow both levels and changes in plan choice to affect switching behavior.

S_{nt} takes on the value 1 when the individual has contracted a supplementary health insurance contract, a more complex choice situation. Furthermore, it is important to control for this variable because it might also capture the risk-selection practices that are still reported despite the existing regulation. In particular, it was highlighted that underwriting practices for supplemental policies might create an impediment to switch funds (Paolucci et al., 2006). In order to get rid of this effect, we run additional models excluding people with supplemental insurance.

As the impact of vector O_{nt} on switching behaviors might depend upon whether the individual has purchased supplementary insurance, the interaction between both variables will also be tested in additional models. The standard errors and significance associated with the interaction terms in non-linear models will be computed according to the approach of Ai and Norton (2003). However, note that the idea that those with supplemental insurance face a more complicated decision assumes that the decision to purchase supplemental insurance is independent of the decision of which basic and supplemental plan to purchase. In an additional specification, we test whether this assumption makes sense through a bivariate probit model estimating jointly the decisions to switch basic funds and to subscribe to a supplementary contract.

As far as the estimation of the status quo bias is concerned, one issue is that the duration of enrollment is only known for the current fund and is not reported for the previous fund of switchers. Consequently, we estimate models, where we use the

declared intention to switch in the future as a dependent variable. As the intention to switch in the future refers to the individual attitude at the time of the survey, the corresponding regressions were run a subsample of the dataset where $t = 2000$. In that case the vector x_n' also includes the duration of enrolment with current fund.

ε_{nt} is a random disturbance that is assumed to follow a normal distribution.

Probit estimations are run on the cross section of 8608 observations. We also run random effects probit models (Greene, 2005), thus taking into account the panel structure of the data (each individual being present during four periods). In this latter specification, the residual is split into two components $\varepsilon_{nt} = u_n + v_{nt}$, with both components normally distributed with zero means and independently of one another,

V- Results

The main descriptive features of the survey are summarized in Table 3. 2152 individuals (only one individual per household) took part in the survey. Of this sample, 73.8% of the respondents lived in areas with more than 50 competing health plans in 2000. During the period 1997-2000, 15.2% switched from one health plan to another for the basic package. Except for six individuals, switchers switched only once during the period of analysis. In the year 2000, 9.9% reported an intent to switch in the future.

Switching rates proved to be significantly higher in areas with fewer plans than in the higher choice areas over the 4-year period. A similar pattern was observed for the intent to switch outcome. The logit estimates for the plan switching models are reported on Table 4. The first five columns of Table 4 report a series of specifications

using five different approaches to measuring the number of plans in a consumer's choice set. Column one reports estimates for the switching model where the total number of basic health plans are measured as a continuous variable. That estimate indicates that cantons with more choices have significantly lower switching rates *ceteris paribus*. Column two measures choice set size with a dummy variable for cantons offering 55 or more health plan choices. The coefficient estimate is negative and significantly different from zero at conventional levels ($p < 0.05$). The magnitude of the estimate implies that people in cantons with more than 55 choices have relative odds of 0.65 of switching compared to those with fewer choices. Column three specifies a set of dummy variables measuring different choice set sizes. Those results show a monotonically declining likelihood of switching with more choices. Column four reports estimates from a model that allows consumers to view firms with a relatively large presence in the market differently from smaller fringe firms. In this model both measures are continuous. Note that both coefficient estimates are negative but only the coefficient estimate for the number of fringe firms is significantly different from zero. Finally, we include the inverse Herfindahl index as our choice set size measure in column five. The estimate coefficient for that variable is negative and significant at conventional levels.

Two other sets of coefficient estimates in columns 1-5 are important to note. The coefficient for the variable measuring relative price (dp) is consistently positive and significant suggesting that the larger the price differential between one's own plan and other options the more likely a consumer is to switch their health plan. The coefficient estimates while quite stable across specification are not very precisely estimated in a number of models.

Columns 6-11 of Table 4 report a series of models that take account of potential threats to the basic specifications in columns 1-5. Column six reports the results of a re-estimation of the model in column 1 when people with supplementary coverage are dropped from the analysis file. The estimated coefficient for the number of plans remains negative and significant. The magnitude of the coefficient increased from -0.02 to -0.03. Column 7 treat the choice set measures from columns 1 as endogenous. The first stage regressions showed that the instruments are not weak.³ The results in columns 7 show that both coefficients for the choice set size measures continue to be negative and significantly different from zero. Columns 8 - 12 offer additional sensitivity analyses. The resulting coefficient estimates for the size of choice set variable remain quite stable showing a negative and significant effect of a larger choice set on the likelihood of switching health plans. Column 9 indicates that when an individual holds supplemental insurance, more choice reduces the probability of switching health plans. Furthermore the bivariate probit model (joint estimation of the propensities to switch and to hold a supplementary contract) estimated in column 11 suggests that we cannot reject the assumption that the correlation between the disturbances of both equations is zero. Consequently, it is relevant to assume that the supplementary coverage is exogenous in the switching equation. However, note that the supplementary variable is not significant at conventional levels in all specifications. Column 12 shows that the number of new plans decreases the likelihood of switching.

³ In order to assess the strength of the instruments that we use in type IV probit model, we estimated the corresponding IV linear probability model through 2SLS, thus being able to refer to the results that were developed for linear models (Staiger and Stock, 1997) (such results have not been worked out for IV probit yet). Staiger and Stock (1997) suggest that the F statistics from the first stage regression should be computed. An F statistics of 10 is the threshold for the strength of instruments. In our case, $F=210$, suggesting that our instruments meet the criteria for strong instruments of Staiger and Stock (1997).

Note that in all random effects probit specifications of the switching model, the likelihood ratio test of $\rho = 0$ suggests that individual unobserved heterogeneity is not significant. Consequently the panel data set is run as a cross section on a four-year period in the regressions reported in Table 4.

We investigate the impact of choice a bit further by examining the reported intent to switch among consumers expressing dissatisfaction with their health plan. Consumers facing large numbers of health plan choices were less likely to express an intention to switch health plans even when they expressed dissatisfaction with their current health plan. Indeed, out of those who were very dissatisfied (answers 1-5 on a 1-10 scale) 33.7% intended to switch plans in areas with less than 50 choices versus 21.9% in areas with more than 50 choices ($p < 0.01$, Chi^2). Finally, the average price differences in markets were positively associated with the likelihood of switching ($p < 0.01$).

Table 5 reports results of several specifications of the logit model on a individual's intent to switch health plans. The estimated coefficients for the vector of dummy variables measuring the size of the choice set in each Canton showed a similar pattern of results to those found on Table 4. In these models the coefficient estimates were more precise. In general larger choice sets (above 50 choices) were associated with a significantly reduced likelihood of expressing intent to switch health plans. The estimated coefficient on the duration of enrollment in one's current funds was negative and significant in all specifications. This suggests that the longer one has been enrolled with one fund, the less likely one is to report an intent to switch health plans after controlling for age, education level, location (urban versus rural), health status, and potential price gains from switching. The results on price

differences (dp) were similar magnitude and in some cases a bit less precisely estimated than in the switching regressions of Table 4.

Finally we probed whether indicators of health plan “quality” affected the results on intent to switch. We included measures of administrative costs, and the size of the plan reserves. Neither of these variables had coefficient estimates that were significantly different from zero. Nor did we find any evidence that the estimated coefficients for the number of choices were affected by including these variables⁴.

We do, however, find some descriptive evidence from an analysis of switchers that is suggestive of some quality differences affecting choice behavior. Health plans with high reserves may seem more secure. Thus, it is not surprising to find that 29% of switchers have opted for funds having reserves below the required level versus 12% of non switchers ($p < 0.001$).

The analysis of the patterns of health plan choices among more recent choosers and the overall populations show that the distributions of plan choices differ significantly between switchers and non switchers. Table 6 reports the distributions over the 12 biggest sickness funds operating in Switzerland in 2000. 59% of non-switchers compared to 23.7% of switchers were enrolled with one of the five major national plans (helsana, css, visana, konkordia, swica). Distributions of health plan choices by age groups were also examined because switchers are usually younger and preferences for a given fund may differ by age group. In the subgroups of respondents older than 35 (Table 7), similar patterns are observed: the percentages of respondents enrolled with one of the 5 biggest companies are respectively 61.2% for non-switchers versus 21.1% for switchers. In the subgroup of respondents

⁴ Results are available from the authors

younger than 35, the percentages are respectively 50.3% versus 26.5%. It is important to stress that switchers refer to people exercising choice and not those who change health plans due to market exits.⁵

What are the reasons reported by enrollees for the observed patterns of enrollment? Table 9 reveals that 40% of people choose a health plan following their parents' and friends' choices, and what they see as tradition. Furthermore, as many as 25% individuals declare that they do not strive to pick the health insurance plan with the lowest premium. A substantial number of people explicitly report staying with their health plan based on habit (13.5%) or because they feel satisfied with their arrangement (79%) as is suggested by such stated reasons such as "satisfied with current premium", "good performance", "convenient premiums" (Table 8). Many of these people have available opportunities to economize on premium outlays with an identical benefit package that is widely publicized in the local media. As a test of whether people are possibly not searching for the lowest price we compare the prices obtained by those using an "agent" versus all others. We find that those using agents pay on average 9% less for coverage ($p < 0.05$) than all other enrollees.

There appears to be considerable misunderstanding about what the basic rules of the health insurance markets are for consumers. For instance, 29% of individuals think that health plans charge different premiums to different age groups among adults for the basic package; 10% of individuals believe that sickness funds can cream skim; 15% of individuals believe that they must purchase supplementary and basic insurance from the same carrier; and 10% think that they are allowed to change health plans only when the premium rises.

⁵ Specifically, our results are not the result of the fact that Visana stopped operations in 8 Cantons in 1998

VI. Concluding Observations

The Swiss market for health insurance might be one where one would find high levels of price competition and active movement among health plans by consumers interested in securing the lowest prices for a standardized basic benefit package. Yet one observes low rates of switching persistently with high variation in premiums. These facts present a challenge to simple market models of health insurance. In this paper we raise the possibility that factors such as decision overload and status quo biases in decision makers contribute to the departure of observed from expected behavior.

We make use of publicly reported data on health insurance markets in Switzerland in combination with a sample survey of insured households to explore the potential of decision overload and status quo bias to offer useful explanations for the performance of Swiss health insurance markets. The evidence from our empirical analysis offers a mixed picture of the impact of expanded choice on price competition in Swiss health insurance markets. We explored a variety of ways of characterizing the size of the choice set. Results from the various model specifications point to a consistent finding that more choice serves to inhibit switching of health plans. In one specification we allowed consumers to respond to fringe firms differently from those that were more significant actors in the local market. There we found evidence that larger choice sets in both market segments dampen switching. This result is largely driven by the number of “fringe” firms in the market. These results are quite consistent with the literature on 401(k) plans that show substantial effects on participation as the choice set grows to over 30 funds.

Our results also show that as health insurance choices become more complicated (i.e. involve supplemental coverage) more choice serves to further inhibit

plan switching. More entry by new health plans also inhibits switching. We also find that expanded choice is generally associated with more price dispersion in health insurance premiums.

Our econometric results indicate that people with longer periods of attachment to a particular health plans were less likely to express an intention to switch plans. Moreover, people making new health plan choices (switchers and those new to the market) chose to enroll in different health plans than those who had not switched in some time . Moreover, people who switch generally pay less in premiums for the standardized basic benefit package.

The results for price response show strong consumer responses to price dispersion. That is, where price dispersion is larger and the gains for switching health plans are greatest consumers are most likely to switch. These results are consistent with standard market models.

Together these results show that there are important elements of expected consumer behavior with respect to prices. There are clearly segments of the population that respond strongly to price. At the same time there appears to be friction in the market associated with the amount and complexity of choice and general consumer inertia that serve to inhibit the exercise of consumer choice and price adjustments in the market.

One implication of these results is that expanding choice will reduce the effectiveness of consumer decision-making which in turn may result in larger mark-ups by health insurers. This is because expanded choice will weaken the relationship between enrollment in an individual health plan and the price concessions offered to consumers (Perloff and Salop 1985). This is consistent with our finding on the link between number of choices and variation in prices.

At a moment in history where elderly Americans are facing large numbers of choices in health plans that will insure prescription drug risks these results may offer some cautions regarding the needs for decision supports and mechanisms that simplify such choices if the desired price and quality outcomes are to be encouraged.

References

- Abraham JM, et al. (2006) "the Effect of Quality Information on Consumer Health Plan Switching Evidence from Buyers Health Action Group" *Journal of Health Economics* 25(4):762-781.
- Ai, C.R. and E.C. Norton (2003). "Interaction terms in logit and probit models". *Economics Letters* 80(1):123—129.
- Bawden, D. (2001). Information and digital literacies: A review of concepts. *Journal of Documentation* 57 (2): 218-259.
- Beaulieu, N. (2002). "Quality Information and Consumer Health Plan Choices," *Journal of Health Economics* 21(2): 43-54.
- Colombo, F. (2001). "Toward more choice in social protection ? Individual choice of insurer in basic mandatory health insurance in Switzerland". Occasional papers N°53, *Labour Market and Social Policy, Organisation for Economic Co-operation and Development* (OECD).
- Cowan, N. (2001). "The magical number 4 in short-term memory. A reconsideration of mental storage capacity". *Behavioral and Brain Sciences* 24, 1: 87-114.
- Cutler, D.M. and R. Zeckhauser (2000). "The anatomy of Health Insurance" in A. Culyer and J.P. Newhouse (eds) *The Handbook of Health Economics*, Amsterdam: North Holland.
- Cutler, D. and Reber, S. (1998). "Paying for Health Insurance: The Tradeoff Between Competition and Adverse Selection," *Quarterly Journal of Economics* 113(2): 433-466.
- Dafny, L. and Dranove, D. (2005). "Do Report Cards Tell Consumers Anything They Don't Already Know? The Case of Medicare HMOs", NBER Working Papers 11420, National Bureau of Economic Research, Inc.
- Dormont, B., Geoffard, P.Y., Lamiraud, K. (2005). "The influence of supplementary health insurance on switching behavior: evidence on Swiss data". Mimeo, Institute of Health Economics and Management (IEMS), Lausanne
- Eppler, M.J., Mengis, J. (2003). "A Framework for Information Overload Research in Organizations. Insights from Organization Science, Accounting, Marketing, MIS". Paper#1/2003 Università della Svizzera italiana.
- Greene, W. (2005). *Econometric Analysis* 5th edition. Prentice Hall International.
- Huffman, C., Kahn, B.E. (1998). "Variety for Sale: Mass customization or Mass Confusion?", *Journal of Retailing* 74(4):491-513(23).

Iyengar SS, Huberman G, Jiang W. (2004) "How Much choice is Too Much? Contributions to 401(k) Retirement Plans" in OS Mitchell and S Utkus (eds) Pension Design and Structure: Lessons form Behavioral Finance Oxford University Press. 83-95.

Iyengar SS, Lepper MR. (2000). "When Choice is Demotivating: Can One Desire Too Much of a Good Thing?" *Journal of Personality and Social Psychology* 79: 995-1006.

Laske-Alderschof, Schut E, Beck K, et al. (2004) "Consumer Mobility in Social Health Insurance Markets: A Five Country Comparison" Working Paper Erasmus University Institute of Health Policy (December)

Le Temps (2005). "Berne semonce les caisses: il est illégal de repousser les assurés qui coûtent cher, October 18 2005.

Liang, K.Y., Zeger, S.L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika* 73 :13-22.

Neipp, J., and Zeckhauser, R (1985). "Persistence in the Choice of Health Plans". In R. Scheffler and L. Rossiter, eds. *Biased Selection in Health Care Markets*. Greenwich, CT: JAI Press.

OFAS (2001). "Auswirkungen des Krankenversicherungsgesetzes auf die Versicherten", Forschungsbericht Nr.3/01, OFAS.

OFSP (2005). "Statistics in Health Insurance".
http://www.bag.admin.ch/kv/statistik/f/2005/KV_2003_FR_v100105.pdf

Perloff JM., and Salop SC. (1985) "Equilibrium with product differentiation" *Review of Economic Studies* 52:107-120

Samuelson W. and R. Zeckhauser (1988). "Status Quo Bias in Decision Making", *Journal of Risk and Uncertainty*, 1(1): 7 – 59.

Schneider, B. (1987). "The people make the place." *Personnel Psychology*, 40:437-453.

Strombom BA, Buchmueller TC, and Feldstein PJ. (2002) "Switching Costs and Health Plan Choice" *Journal of Health Economics* 21(1):89-116.

Staiger, D., Stock, J.H. (1997). "Instrumental Variables Regression with Weak Instruments" *Econometrica* 65: 557-586.

Swiss Information and Data Archive Service (SIDOS). www.sidos.ch.
Datensatz 2001 AG : Die Leistungen von Krankenkassen aus Sicht der Versicherten – 2000.

Thaler, R. (1980), "Toward a Positive Theory of Consumer Choice" *J. Economic Behavior and Organization* 1(1):39-60.

Tversky A., and Kahneman (1991), "Loss Aversion in Riskless Choice: A Reference Dependent Model" *Quarterly Journal of Economics* 106:1039-1061.

Zeger SL Liang KY Albert PS (1988). Models for longitudinal data: a generalized estimating equation approach. *Biometrics* 44 :1049-1060.

Graph 1: Box plots of monthly premium by canton (2004)

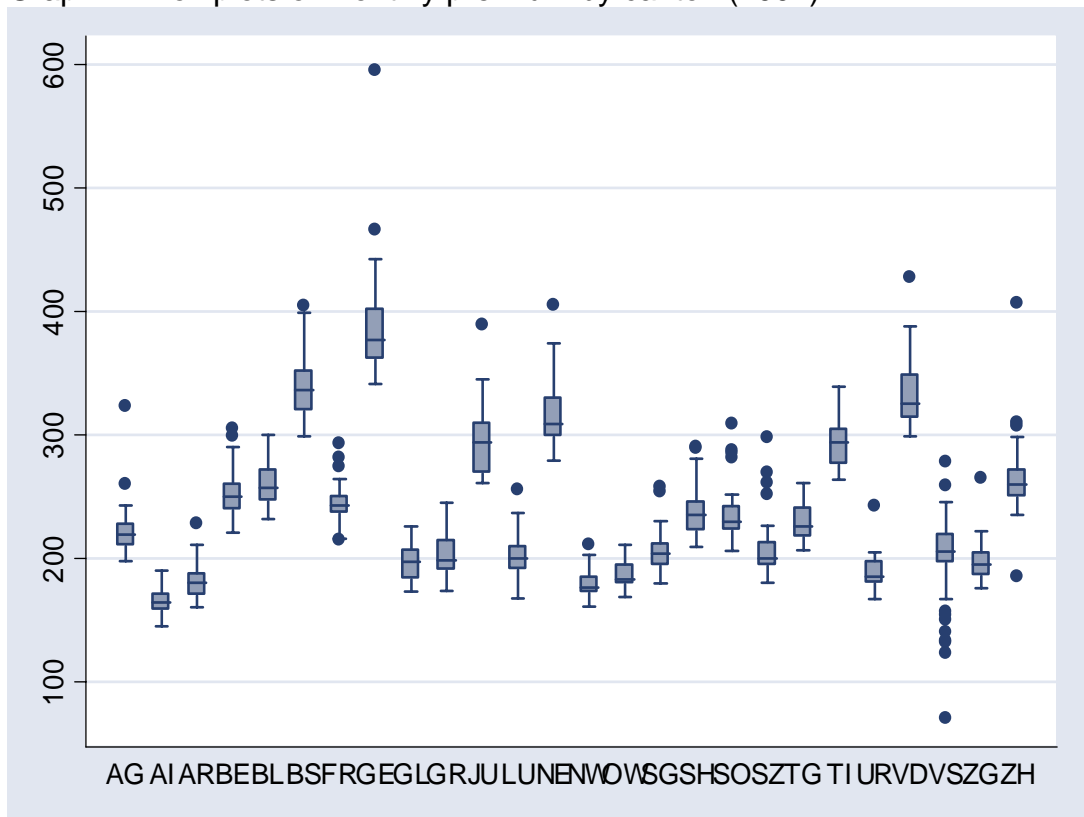


Table 1a: Number of health plans per canton over 1997- 2004

canton	1997	1998	1999	2000	2001	2002	2003	2004	% enrollees (2004)
AG (Aargau)	39	39	52	59	55	58	59	60	7.7%
AI	34	36	35	37	34	40	41	55	0.2%
AR	38	39	42	46	44	45	45	54	0.7%
BE (Bern)	38	39	54	59	57	59	59	57	13.0%
BL	38	39	49	51	50	51	54	56	3.6%
BS	39	39	49	52	51	51	54	56	2.4%
FR	39	39	51	55	54	53	53	54	3.4%
GE	38	39	49	50	48	48	49	50	5.4%
GL	38	39	45	46	45	48	51	57	0.5%
GR	71	49	59	56	54	53	56	61	2.6%
JU	37	38	42	44	45	45	43	49	0.9%
LU	38	39	51	54	56	56	58	58	4.8%
NE	38	39	45	49	46	47	48	49	2.3%
NW	38	37	42	41	42	42	44	56	0.5%
OW	38	39	44	45	44	45	47	55	0.5%
SG (St Gallen)	39	39	53	54	52	56	56	58	6.3%
SH	39	39	44	46	43	47	49	55	1.0%
SO	39	39	51	55	54	54	56	58	3.4%
SZ	39	39	49	51	50	53	54	59	1.8%
TG	39	39	48	50	46	47	51	54	3.1%
TI	38	38	46	50	50	53	53	51	4.3%
UR	37	36	39	42	42	42	44	57	0.5%
VD (Vaud)	39	38	51	52	51	51	51	50	8.7%
VS	74	49	73	75	73	70	70	70	4.0%
ZG	38	39	47	50	50	51	55	56	1.4%
ZH (Zurich)	39	39	61	61	63	63	64	62	17.0%
MIN	34	36	35	37	34	40	41	49	
MAX	74	49	73	75	73	70	70	70	
MEAN	40	39	49	51	50	51	52	56	
MEDIAN	38	39	49	50.5	50	51	53	56	

Table 1b: Number of large firms and of fringe firms per canton over 1997 - 2000

canton	1997		1998		1999		2000	
	n _{large}	n _{fringe}	n _{large}	n _{fringe}	n _{large}	n _{fringe}	n _{large}	n _{fringe}
AG (Aargau)	3	36	3	36	3	49	3	56
AI	3	31	3	33	3	32	3	34
AR	3	35	3	36	3	39	3	43
BE (Bern)	2	36	2	37	2	52	2	57
BL	5	33	4	35	4	45	3	48
BS	3	36	2	37	1	48	1	51
FR	2	37	1	38	1	50	1	54
GE	2	36	2	37	2	47	4	46
GL	3	35	3	36	3	42	3	43
GR	2	69	2	47	3	56	3	53
JU	3	34	3	35	2	40	2	42
LU	3	35	3	36	3	48	3	51
NE	3	35	3	36	2	43	2	47
NW	3	35	3	34	3	39	3	38
OW	3	35	3	36	3	41	3	42
SG (St Gallen)	3	36	3	36	3	50	3	51
SH	4	35	5	34	5	39	5	41
SO	3	36	4	35	4	47	3	52
SZ	3	36	3	36	3	46	3	48
TG	3	36	3	36	3	45	3	47
TI	4	34	3	35	3	43	3	47
UR	3	34	3	33	3	36	3	39
VD (Vaud)	3	36	4	34	4	47	5	47
VS	3	71	2	47	2	71	2	73
ZG	3	35	3	36	3	44	3	47
ZH (Zurich)	4	35	2	37	2	59	2	59
MIN	2	31	1	33	1	32	1	34
MAX	5	71	5	47	5	71	5	73
MEAN	3	38	3	36	3	46	3	48
MEDIAN	3	35	3	36	3	45.5	3	47

Table 1c: Inverse of Herfindahl index over 1997- 2000

canton	1997	1998	1999	2000
AG	8.58	8.51	8.57	8.80
AI	5.47	5.51	5.41	5.45
AR	6.15	6.43	6.14	6.33
BE	5.27	5.62	7.16	7.99
BL	10.53	10.94	11.10	11.48
BS	4.45	4.45	4.55	4.69
FR	7.67	7.52	6.86	7.04
GE	14.98	14.70	13.87	13.72
GL	6.64	6.63	6.54	6.78
GR	11.98	7.28	6.23	5.04
JU	5.38	5.30	4.17	4.19
LU	5.59	5.47	5.26	5.27
NE	8.32	9.33	12.40	12.46
NW	6.68	6.46	6.10	6.06
OW	5.72	5.61	5.40	5.50
SG	7.08	7.04	6.81	6.93
SH	8.67	9.26	9.98	10.07
SO	8.90	9.65	9.74	9.65
SZ	6.04	5.79	5.55	5.53
TG	8.39	8.60	7.50	8.29
TI	7.95	8.25	8.47	8.77
UR	4.95	4.80	4.63	4.66
VD	11.72	11.36	11.64	11.84
VS	9.60	9.42	9.29	9.44
ZG	7.43	7.32	7.16	7.24
ZH	9.48	9.86	10.34	10.88

Table 2: Monthly premium differences by year

Year	Mean premium - minimum		Maximum - minimum premium	
	Swiss francs	Euros	Swiss francs	Euros
1997	51.19	32.18	103.97	65.36
1998	47.66	29.96	88.84	55.85
1999	44.71	28.11	95.01	59.73
2000	41.67	26.20	90.00	56.58
2001	45.14	28.38	97.14	61.07
2002	51.77	32.55	110.97	69.76
2003	49.39	31.05	128.34	80.68
2004	47.29	29.73	140.00	88.01

Table 3: Descriptive statistics of the OFAS survey (2000)

	% (n=2152)
Age: [18,26]	3.81
Age: [27,35]	17.38
Age: [36,50]	35.73
Age: [51,65]	25.14
Age: >65	17.94
Gender: male	46.89
Education level: primary school	11.24
Education level: secondary school	52.05
Education level: apprenticeship	11.28
Education level: professional tertiary education	14.10
Education level: university completed	11.28
Urban setting	78.73
Very good subjective health status	35.59
Bad subjective health	16.40
Has opted for a high deductible (either 1200 or 1500 Swiss francs)	14.64
Has a supplementary health insurance	71.98
Has a supplementary health insurance (except for "division commune Suisse entière")	62.96
Has subscribed to 2 or more health insurance contracts	35.04
Has subscribed to 3 or more health insurance contracts	12.04
Has basic and supplementary coverage from 2 different providers	7.00
Has switched between 1996 and 2000	15.2
Intents to switch in the future	9.9
Lives in overwhelming choice (>55) areas in 2000	38.06

Table 4: Logit Switching Model Estimates (Switch = 1)

	Column 1		Column 2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8		Column 9		Column 10		Column 11		Column 12	
	Coef	z	Coef	z	Coef	z	Coef	z	Coef	z	Coef	z	Coef	z	Coef	z	Coef	z	Coef	z	Coef	z	Coef	z
number of plans (choices)	-0.02	-4.4									-0.03	-4.5	-0.03	-3.9	-0.02	-4.4					-0.02	-4.8	-0.01	-3.8
number of plans > 55			-0.43	-3.8																				
choice: [30 - 49]					0.11	2.1											0.24	2.0	0.20	1.9				
choice: [50 - 55]					ref	ref											ref	ref	ref	ref				
choice: [56 - 60]					-0.22	-1.2											-0.12	-1.4	-0.60	-1.8				
choice: [61 - 70]					-0.40	-2.3											-0.56	2.1	-0.64	-2.8				
number of large firms							-0.01	-0.2																
number of fringe firms							-0.02	-4.3																
inverse of herfindahl index									-0.07	-2.0														
age [18-26]	0.19	1.4	0.19	1.4	0.19	1.4	0.19	1.4	0.19	1.4	0.28	1.4	0.19	1.4	0.20	1.5	0.20	1.5	0.19	1.4	0.26	1.3	0.19	1.4
age [27-35]	0.24	3.3	0.24	3.3	0.24	3.3	0.24	3.3	0.24	3.3	0.23	1.9	0.24	3.3	0.25	3.4	0.24	3.3	0.24	3.3	0.29	2.4	0.24	3.3
age [36-50]	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
age [51-64]	-0.12	-1.5	-0.11	-1.5	-0.12	-1.5	-0.12	-1.5	-0.12	-1.5	0.03	0.2	-0.12	-1.5	-0.12	-1.5	-0.11	-1.5	-0.12	-1.5	-0.12	-1.5	-0.12	-1.5
age 65 +	-0.30	-3.1	-0.31	-3.1	-0.31	-3.1	-0.30	-3.1	-0.30	-3.1	-0.26	-1.7	-0.30	-3.1	-0.29	-2.9	-0.31	-3.1	-0.31	-3.1	-0.25	-1.7	-0.29	-3.1
male	<0.01	0.0	<0.01	0.0	<0.01	0.0	<0.01	<0.01	<0.01	0.1	0.11	1.2	<0.01	<0.01	<0.01	0.0	<0.01	0.0	0.00	0.0	0.00	0.1	<0.01	0.0
completed university	-0.01	-0.2	-0.01	-0.2	-0.01	-0.1	-0.01	-0.2	-0.02	-0.2	0.09	0.6	-0.01	-0.1	-0.01	-0.1	-0.02	-0.2	-0.01	-0.1	-0.04	-0.4	-0.01	-0.2
urban	-0.13	-1.9	-0.14	-1.9	-0.13	-1.9	-0.13	-1.9	-0.13	-1.8	-0.15	-1.3	-0.13	-1.9	-0.13	-1.8	-0.13	-1.9	-0.13	-1.9	-0.12	-1.8	-0.13	-1.9
poor health	-0.08	-0.9	-0.08	-1.0	-0.08	-0.9	-0.08	-1.0	-0.08	-1.0	-0.03	-0.2	-0.08	-0.9	-0.08	-0.9	-0.08	-0.9	-0.08	-0.9	-0.06	-0.6	-0.08	-0.9
high deductible	0.15	2.1	0.15	2.0	0.15	2.0	0.15	2.1	0.15	2.1	0.24	1.9	0.15	2.0	0.15	2.0	0.16	2.1	0.15	2.0	0.14	1.7	0.16	2.1
dp ¹	0.02	1.9	0.04	3.6	0.03	2.9	0.02	1.8	0.03	3.1	0.01	1.4	0.02	1.9	0.02	2.0	0.03	2.9	0.03	1.6	0.02	4.1	0.02	1.9
has supplementary insurance ²	-0.09	-1.6	-0.09	-1.6	-0.09	-1.6	-0.09	-1.6	-0.09	-1.6			-0.09	-1.6	-0.09	-1.6	-0.18	-1.4	-0.09	-1.6	-0.08	-1.4	-0.09	-1.6
household size														0.03	0.8									
supp * [30 - 49]																	0.09	1.9						
supp * [50 - 55]																	0.05	1.3						
supp * [56 - 60]																	0.04	1.3						
supp * [61 - 70]																	ref	ref						
dp * [30 - 49]																			<0.01	0.3				
dp * [50 - 55]																			ref	ref				
dp * [56 - 60]																			0.08	1.9				
dp * [61 - 70]																			0.09	3.1				
Number of new funds																							-0.01	-2.5
Constant	-1.66	-5.0	-2.66	-11.1	-2.68	-11.0	-1.68	-4.5	-2.02	-4.5	-0.72	-1.4	-0.96	-1.9	-1.73	-5.0	-2.78	-10.9	-2.61	-7.3	-1.45	-2.4	-1.82	-3.5

canton dummies are included but are not reported in this table

¹dp = the standard deviation in health plan premium within a canton

²except for "division commune suisse entière"

Column 1: the number of choice is represented by a continuous variable

Column 2: the number of choice is represented by one dummy variable (> 55 plans)

Column 3: the number of choices is represented by dummies (Choice: [30 - 49],[50 - 55], [56 - 60], [61 - 70])

Column 4: distinguishes the number of big firms and fringe firms

Column 5: uses the inverse of the Herfindahl index

Column 6: is run on the subsample of those who have not subscribed to a supplementary health insurance contract

Column 7: Instrumenting the continuous number of fund variable by the population of the canton, the average income of the canton and the average premium

Column 8: the household size is incorporated as a covariate

Column 9: interaction terms between the choice set and holding a supplementary contract

Column 10: interaction terms between the choice set and dp

Column 11: Bivariate probit model (the second equation explains the probability of subscribing a supplementary insurance contract)

Column 12: incorporates the number of new funds

Table 5: Logit Intent to Switch Estimates(Intent to Switch =1)

	1	2	3			
Choice: [35 - 45]	1,49	1,45	1,53	1,48	1,35	1,35
Choice: [46 - 50]	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>
Choice: [51 - 55]	-0,30	-1,87	-0,31	-1,81	-0,23	-1,57
Choice: [56 - 60]	-0,36	-2,11	-0,35	-2,11	-0,32	-1,96
Choice: [61 - 70]	-0,23	-2,14	-0,23	-2,12	-0,22	-1,84
age 18-26	0,75	2,43	0,96	3,02	0,77	2,49
age 27-35	0,25	1,32	0,35	1,81	0,28	1,45
age 36-50	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>
age 50-65	-0,45	-2,12	-0,29	-1,31	-0,46	-2,15
Age 65+	-1,87	-4,27	-1,61	-3,60	-1,87	-4,28
male	0,23	1,48	0,26	1,65	0,24	1,55
completed university	0,45	2,12	0,43	2,06	0,44	2,10
urban	0,27	1,28	0,35	1,63	0,22	1,04
Subjective very good health	-0,24	-1,50	-0,26	-1,64	-0,24	-1,50
dp	0,02	2,22	0,03	2,12	0,02	2,32
Has a supplementary insurance	-0,09	-0,61	-0,09	-0,56	-0,09	-0,58
Duration in plan	-0,02	-3,24	-0,02	-3,04	-0,02	-3,16
Household size			0,17	2,78		
Number of new plans 1997 - 2000					-0,05	-1,60
constant	-1,49	-3,49	-2,19	-4,37	-0,79	-1,29

Table 6: Distribution of health plan choices (over the 12 major companies in 2000)

	Survey 2000		CH 2000	p*
	Old enrollees (non switchers) (n = 1743)	New enrollees (switchers) (n = 312)		
helsana zürich	18.93	3.85	15.55%	<0,001
css luzern	15.03	9.29	14.99%	
visana bern	9.98	3.21	7.67%	
konkordia luzern	8.09	3.53	7.51%	
swica winterthur	7.17	3.85	6.52%	
kpt bern	4.76	4.81	5.33%	
sanitas zürich	4.76	7.69	5.29%	
intras carouge	3.96	13.14	4.20%	
supra lausanne	3.9	2.24	2.93%	
wincare winterthur	3.73	0.64	3.93%	
Ökk-versicherungen	3.04	4.49	1.75%	
assura pully	2.64	9.94	3.48%	
Cum	85.99	66.68	79.14%	

* non switchers vs switchers

Table 7: Distribution of health plan choices by age groups

	Survey 2000			
	Age <35		Age > 35	
	Old enrollees (n = 326)	New enrollees (n = 113)	Old enrollees (n = 1417)	New enrollees (n = 199)
helsana zürich	14.11	3.54	20.04	4.02
css luzern	13.8	7.08	15.31	10.55
visana bern	5.21	4.42	11.08	2.51
konkordia luzern	8.9	6.19	7.9	2.01
swica winterthur	8.28	5.31	6.92	3.02
kpt bern	3.68	3.54	5.01	5.53
sanitas zürich	9.2	9.73	3.74	6.53
intras carouge	3.99	12.39	3.95	13.57
supra lausanne	2.76	1.77	4.16	2.51
wincare winterthur	2.15	0.88	4.09	0.5
Ökk-versicherungen	3.37	1.77	2.96	6.03
assura pully	3.99	6.19	2.33	12.06

Table 8: Stated reasons for maintain the current insurer

Stated reasons for not switching	%
Habit, tradition	13.45%
Personal knowledge of the fund manager/representative	0.44%
Remain because of previous use, for solidarity	0.40%
Proximity	0.22%
Comfort	10.06%
It would be the same elsewhere	3.79%
Average sickness fund	1.46%
Satisfied with current solution	35.16%
Good performance	11.51%
Good ratio cost/benefits	8.82%
Good customer service	3.66%
Convenient premiums	2.87%
Slight increase in premiums	1.41%
The current fund provides a different offer	0.31%
Cannot switch	1.76%
Cannot switch due to health problems	1.28%
Other	3.40%

Table 9: Reasons for being insured at the current insurer

Reasons for being insured at the current Lamal Insurer	%
Parents have always been there	29.04%
Relationships/ friends advice	11.58%
Agent advice	5.31%
Convenient premium	16.84%
Employer advice	14.69%
Information obtained from the media	1.24%
Other	21.29%