NBER WORKING PAPER SERIES

CHOICE, PRICE COMPETITION AND COMPLEXITY IN MARKETS FOR HEALTH
INSURANCE

Richard Frank
Karine Lamiraud

Choice, Price Competition and Complexity in Markets for Health Insurance
Richard Frank and Karine Lamiraud
NBER Working Paper No. 13817
February 2008
JEL No. I11

ABSTRACT

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 economics and psychology.

Richard Frank
Department of Health Care Policy
Harvard Medical School
180 Longwood Avenue
Boston, MA 02115
and NBER
frank@hcp.med.harvard.edu

Karine Lamiraud
University of Lausanne
Faculty of Business and Economics
Institute of Health Economics and Management
Extranef - Dorigny, 1015 Lausanne
Switzerland
karine.lamiraud@unil.ch

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 regulates the terms of competition so as to encourage price competition and minimize adverse selection. This is accomplished by defining a standard 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 simple models of consumer behavior and competitive markets. We therefore explore several explanations of consumers' health plan switching behavior. 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 market with respect to the amount of choice, consumer mobility and price patterns. The third section explores 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 are made 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 main regulatory features of Swiss health insurance markets are as follows. 1) An individual mandate requires all residents to have health insurance coverage.[1]. 2) A standardized basic benefit package that is very comprehensive covering outpatient and inpatient care, and services such 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-

---

[1] Note that each family member must contract on an individual basis.

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 geographic area (78 regions, 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) accounts for 8.2% of enrollees. Federal and Canton subsidies are available to low-income residents. 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. 5) Premiums paid to health plans are risk adjusted. Risk adjustment is based on location, gender and age.

There is 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.

These features suggest that changing health insurers for basic coverage involves very low switching costs. Indeed, the basic insurance coverage is virtually identical from one health insurer to the other, and the enrollee generally can remain with the same physician or hospital. Furthermore, the actual switching procedure is simple: it requires the individual to write a letter (prototypes are downloadable from a well known website) to their health insurer. Search costs are low. All premiums are

officially published every year by the Federal Office for Public Health (OFSP) and

distributed to households that 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 decreased over the past decade. In 1994 there

were 178 authorized health insurers operating; by 2004, there were only 92 insurers

(Statistics in Health Insurance, OFSP, 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.[2]

---

[2] 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 little evidence of price convergence over time as competition at the Canton level has intensified.

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).

III. Explanations

A. The Expected Utility Model

In assessing the low rates of switching in the presence of substantial opportunities to realize lower premiums for what appear to be homogeneous health plans, we begin by considering how standard market models address such facts. The standard economic model of consumer choice under uncertainty assumes that consumers maximize their expected utility. Given a set of N choices an individual

will choose a health plan if its expected utility is greater than that of each of the alternatives. To reach normative conclusions the theory additionally requires that consumers can secure reliable information about the quality of each of the alternatives.

Once a plan is chosen a consumer may experience a change in health state or other personal circumstances (e.g. reduced income) or face a new set of premium choices due to health plan entry. These altered circumstances may result in the individual reassessing the expected utility of their health plan relative to available alternatives. Standard theory recognizes that consumer search is costly. Rational consumers search individually until the costs of additional searching outweigh its expected benefits. Deciding to switch therefore requires the beneficiary to learn about the alternatives, and if plans look potentially more attractive, the beneficiary must anticipate needing to learn about each plan's policies and procedures.

Switching costs can produce a relationship between increased competition in the form of an increased number of sellers and price dispersion if an increase in the number of sellers causes an increase in consumer search costs and results in fewer searches. This would happen within an industry that sells differentiated products. Janssen and Moraga-Gonzales (2004) show that the impact of an increase in the number of sellers depends on the consumers' search intensity. When consumers search with low intensity, an increase in the number of firms reduces search, does not affect expected price and leads to greater price dispersion. Alternatively when consumers search with high intensity, increased numbers of competitors results in more searching and lower prices if the number of competitors in the market is low to begin with. However, if the number of firms is initially large increased numbers of firms causes less search and higher prices.

Price variability may also increase with the number of sellers in settings where there is heterogeneity among consumers (informed versus uniformed, price sensitive versus less price sensitive consumers). Varian (1980) examines a setting in which the demand is driven by two classes of buyers: informed and uninformed consumers. The Varian model predicts that the range of prices is greater when the number of sellers is higher. However, this model does not necessarily imply less switching.

Finally, there is another line of literature that generates price dispersion based on models of price discrimination (Borenstein and Rose, 1994). The institutional context in Swiss health insurance markets limits the applicability of the price discrimination approach.

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. During a period of expanding choice, 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 price information is widely available. In addition one source of switching cost common in the U.S. the link between one's health plan and one's physician is essentially non-existent in Switzerland where only 8% of people are in health plans that restrict provider choice (Niepp and Zeckhauser, 1985). 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.

The Swiss regulatory structure and the fee for service-indemnity insurance serve to reduce many aspects of service quality variation. Some quality variation no doubt remains. One variable dimension of quality may be 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

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 standard model faces the most challenges when applied to complex, high-stakes choices such as those involving health care and investment decisions. .Research in economics and psychology questions whether more choice is always in consumers' interests. Too much choice can inhibit consumers from making *any* choice. Particularly when choice involves health and money – and both are obviously part of choice of health insurance – consumers facing many choices may revert to the *status quo* even if superior options are available (Kunreuther et al, 2002).

Two underlying forces have been suggested as explanation for increased choice inhibiting consumer switching. These are related to the limited ability of

individuals to process information and to regret or the fear of making errors in what are seen as high stakes decisions. The information or cognitive overload theory argues that as the choice set grows there are increasing costs to an individual of processing information (Eppler and Mengis, 2003). 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. The second psychological force concerns the fear of making an incorrect choice or regret. In situations where decisions are complex, consequential and uncertain there is often fear of making the wrong decision and later suffering regrets. One set of responses to such decision-making circumstances that have been observed in both experimental and observational studies is a tendency towards decision avoidance by either opting for the status quo or walking away from the decision entirely (Samuelson and Zeckhauser 1988; Schwartz, 2005; Shafir, Simonson and Tversky, 1993)

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, Huberman and Jiang (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. In the health insurance context a study by Elbel and Schlesinger (2006) studied insurance choice in the U.S. Medicare program. In that program there are increasing numbers of choices and the choices are highly heterogeneous. Using survey data from Medicare beneficiaries, Elbel and Schlesinger studied the impact of the number of plans on the likelihood that individuals would leave the traditional Medicare program in favor of private health plans (paid for by the government). They found that switching is more likely as the number of choices rises up to four and then it begins to decline. They also showed that, after four choices, beneficiaries put no further effort into considering health plan options. 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 the idea of loss aversion (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 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. [3]

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 and regret 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. The evidence from Medicare suggests a lower threshold albeit

with heterogeneous products. 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. In an expected

utility model, if prices are well measured and most variation in quality is either

eliminated by regulation or measured by indicators of plan administrative effort or

---

[3] 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.

financial reserves then the number of choices to add little explanatory power to a model of switching behavior.

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 tenure of enrollment to explain health plan 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 may stem from the large number of competing health plans. Even if health plans can be assessed easily and quickly due to publicly available information on prices 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 intent 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 three main explanatory factors. 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 over time 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 notions of

information overload. That is, the number of plans is unlikely to be correlated with

unmeasured quality differentials. We also control for the complexity of choice by

controlling for the purchase of a supplementary insurance policy in addition to the

basic package.[4] Third, 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.

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

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

---

[4] 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.

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

16

reported over a four-year period. Note also that reporting of consumer choices started one year after the new health insurance policy was put into effect. 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 in Colombo (2001). The data are structured as a panel dataset of switching behaviors including one observation per enrollee per year, over a four-year period. All variables except respondent gender, location, and educational attainment vary over time.

The insurer database

Our empirical models make use of information that describes health insurance markets over the period 1997-2000. This includes information on the number of enrollees (denoted n_{ict}) and monthly adult premiums (P_{ict}) that are reported at three levels: insurer (i), Canton (c) and year (t). Financial characteristics of the health plans such as the amount of reserves (r_{it}) and the level of administrative spending (a_{it}) are measured for each insurer by year.

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 for a Canton. In addition, the number of enrollees per health plan is not provided by type of contract even though there are discount for high deductible plans 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 obtained from the Federal Office for Public Health (OFSP); yearly premiums are available on the OFSP website (http://www.bag.admin.ch/kv/statistik/f/index.ht). Financial characteristics of health plan are published yearly. We have a total of 4685 observations on insurers (one observation per insurance company, per Canton, per year).

For our purposes, this insurer information is used to compute the number of health plans by Canton-year, the number of enrollees, the average premium as well as indicators of premium variability. We make the connection between the OFAS survey and this insurer information 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).

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}^* :

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

The decision to switch is given by:
$y_{nt} = 1 \ if \ y_{nt}^* \geq 0.$

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

vector *year$_t$* represents a set of time fixed effects to account for expanded entry over time across Cantons among other trends.

O_{nt} denotes the choice set facing an individual in year *t* (number of health plans in a Canton). Three main specifications were used: 1) A continuous variable representing the number of choices; 2) A vector of dummy variable measuring ranges in number of plans (eg. 35-49 plans, 50-55, 56-60, 61-71) which represents a more flexible functional form; 3) A single dummy variable with takes on a value of one for markets with 55 or more choices. 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. We allow for this form of segmentation through an alternative specification that includes two plan count variables O_{nt}^1 and O_{nt}^2. O_{nt}^1, denotes the plans that have more than a 10% market share and O_{nt}^2 the number of plans with less than 10% (Table 1b). We also replaced the number of plans by the inverse of the Herfindahl index that indicates the "size equivalent" number of firms in the market (Table 1c). Choice overload is consistent with the inverse of the Herfindahl index being negatively associated with the probability of switching.

We also treat the number of choices to be endogenous. If health plan are able to observe factors affecting switching not observable to the researcher and make entry choices accordingly then entry is endogenous. Canton fixed effects are included to capture unobserved time invariant heterogeneity. We also estimated an instrumental variables model of switching for the case of the continuous measure of

19

plan choice. 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).[5] 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 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., 2007). 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 behavior 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

---

[5] We are grateful to Tom McGuire for discussion of this approach to specifying the "price" measure.

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 this assumption using a bivariate probit model that jointly estimates the factors affecting the decision to switch basic health plans and to subscribe to a supplementary contract.

The structure of the data complicates the estimation of any status quo bias because the duration of enrollment is only known for the current health plan and not for any prior health plans. As a result we estimate models, where we use the declared intention to switch in the future as a dependent variable. Because attitudinal questions, such as intent to switch were only asked as prospective questions, 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 enrollment in each respondent's current health plan.

ε_{nt} is a random disturbance that is assumed to follow a logistic distribution. Logit estimations are run on the cross section of 8608 observations. We also run random effects logit models (Greene, 2001), thus taking into account the panel structure of the data (each individual being present during four periods).

V- Results

The main descriptive features of the survey are summarized in Table 3. 2152 individuals 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 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 health plans is 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. The estimated coefficient for the dummy for 30-49 choice is positive and significantly different from zero compared to the reference group (50-55 choices). The coefficient dummy for 61 or more choices relative to the reference group was negative and significantly different from zero.

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.[6]

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 specifications 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. Columns 7 treat the choice set measures from columns 1 and 2 as endogenous. Using the F test proposed by Staiger and Stock (1997) we show that the instruments used in our IV models are not weak.[7] The results in columns 7 show that both coefficients for the choice set size measures

---

[6] Since there was some instability in entry involving insurers with very low levels of enrollment (see Tables 1a and 1b) in two Cantons (GR and VS) the use of the Herfindahl index allows us to test the sensitivity of our findings taking to account enrollment size. We also re-estimated the models dropping the two Cantons and the results did not change materially (estimates available upon request).

[7] 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).

continue to be negative and significantly different from zero. Columns 8 - 12 offer

additional sensitivity analyses. The resulting coefficient estimates for the size of the

choice set remain quite stable showing a negative and significant effect of more

choices on the likelihood of switching health plans. Column 8 incorporated the

household size as a covariate. 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) reported in column 11 suggests that we

cannot reject exogeneity of supplemental coverage in the switching equation. The

coefficient for supplemental coverage is never significant at conventional levels.

Column 12 shows that the number of new plans decreases the likelihood of

switching (holding constant the general time trend).[8]

We tested whether people that switched plans paid lower premiums than

those that stayed in the same plan. Our estimates show that the adjusted monthly

premium for switchers was 181 SF compared to 214.18 SF for those staying with the

same plan. The difference of 33.18 or 15.9% was significant at conventional levels

(t=6.05). This suggests that by not switching, consumers "left money on the table".

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

---

[8] Note that in all random effects logit 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.

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 in a plan holding constant age and health status etc, the less likely one is to report an intent to switch health plans.. 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.

We consider 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 variables[9].

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).

We investigate the impact of choice further by modeling the 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).

---

[9] Results are available from the authors

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 in 2000. and shows 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 show (Table 7), similar patterns with 61.2% of older non-switchers versus 21.1% of older switchers enrolling in large plans. For respondents younger than 35, the percentages are respectively 50.3% versus 26.5%. Switchers refer to people exercising choice and not those changing health plans exits.[10]

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 are satisfied with their arrangement (79%)(Table 8).. 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

---

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

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.

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 making contributes to the observed behavior.

We make use of data on consumer choice in Swiss health insurance markets to explore decision overload and status quo bias as explanations for behavior in those health insurance markets. Our findings offer 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 our results suggest that switching rates are 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 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. Finally, when people are asked about why they have chosen their current plan –reasons related to habit, family tradition, and adequate performance by the health plan were noted. All of these reasons are consistent with inertia associated with status quo bias.

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

We uncover some evidence suggesting that consumers are making errors. First, we show that consumers that switch health plan pay 15% to 16% less in health insurance premiums per month holding ceteris paribus. Second, we show that among consumers expressing dissatisfaction with their health plans those in markets with fewer choices are more likely to express intent to switch. Finally, consumers that used an agent to help them purchase insurance consistently paid significantly lower premiums. This set of results suggests that "mistakes may have been made".

One implication of these results is that expanding choice to very large numbers is likely to 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 when elderly Americans are facing large numbers of choices in private health plans and prescription drug plans our findings may offer some cautions regarding the need for decision support and mechanisms that simplify such health insurance choices.

References

Ai, C.R., Norton, E.C., 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.

Borenstein, S., Rose, N., 1994. Competition and Price Dispersion in the U.S. Airline Industry. The Journal of Political Economy 102 (4), 653 - 683.

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., Reber, S., 1998. Paying for Health Insurance: The Tradeoff Between Competition and Adverse Selection. Quarterly Journal of Economics 113(2), 433-466.

Elbel, B., Schlesinger, M., 2006. How Much Choice? Nonlinear Relationships Between the Number of Plan Options and the Behavior of Medicare Beneficiaries. Working Paper, Yale University.

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., 2001. Fixed and Random Effects in Nonlinear Models. New York University, Leonard N. Stern School Finance Department Working Paper Series 01-01, New York University, Leonard N. Stern School of Business-.

Huffman, C., Kahn, B.E., 1998. Variety for Sale: Mass customization or Mass Confusion? Journal of Retailing 74(4), 491-513(23).

Iyengar, S.S., 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, S.S., Lepper, M.R., 2000. When Choice is Demotivating: Can One Desire Too Much of a Good Thing? Journal of Personality and Social Psychology 79, 995-1006.

Griffiths, W., Judge, G., 1992. Testing and estimating location vectors when the error covariance matrix is unknown. Journal of Econometrics 54, 121-138

Janssen, M., Moraga-Gonzales, J.L., 2004. Strategic pricing, consumer search and the number of firms. Review of Economic Studies 71, 1089 – 1118.

Kunreuther, H., Meyer, R., Zeckhauser, R.P., et al., 2002. High Stakes Decision-Making: Normative, Descriptive and Prescriptive Considerations. Marketing Letters, 13(3), 259-268.

Laske-Aldershof, T., Schut, E., Beck, K., Gress, S., Shmueli, A., Van de Voorde, C., 2004. Consumer mobility in health insurance markets: a five-country comparison. Applied Health Economics and Health Policy 3(4), 229 – 241.

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

Neipp, J., 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 Krankenversicherungsgestzes auf die Versicherten, Forschungsbericht Nr.3/01, OFAS.

OFSP, 2004. Statistics in Health Insurance.
http://www.bag.admin.ch/kv/statistik/

Paolucci, F., Schut, E., Beck, K., Gress, S., Van de Voorde, C., Zmora, 2007. Supplementary health insurance as a tool for risk-selection in mandatory basic health insurance markets. Health Economics, Policy and Law 2 (2), 173-192.

Perloff, J.M., Salop, S.C., 1985. Equilibrium with product differentiation. Review of Economic Studies 52, 107-120.

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

Schwartz, B., 2005. The paradox of Choice: Why More is Less, New York: Harper-Collins.

Shafir, E., Simonson, I., Tversky, A., 1993. Reason-Based Choice. Cognition 49(1-2), 11-19.

Strombom, B.A, Buchmueller, T.C., Feldstein, P.J., 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., Kahneman, 1991. Loss Aversion in Riskless Choice: A Reference Dependent Model. Quarterly Journal of Economics 106,1039-1061.

Varian, H., 1980. A Model of Sales," American Economic Review 70, 651-659.

Graph 1: Box plots of monthly premium by canton (2004)
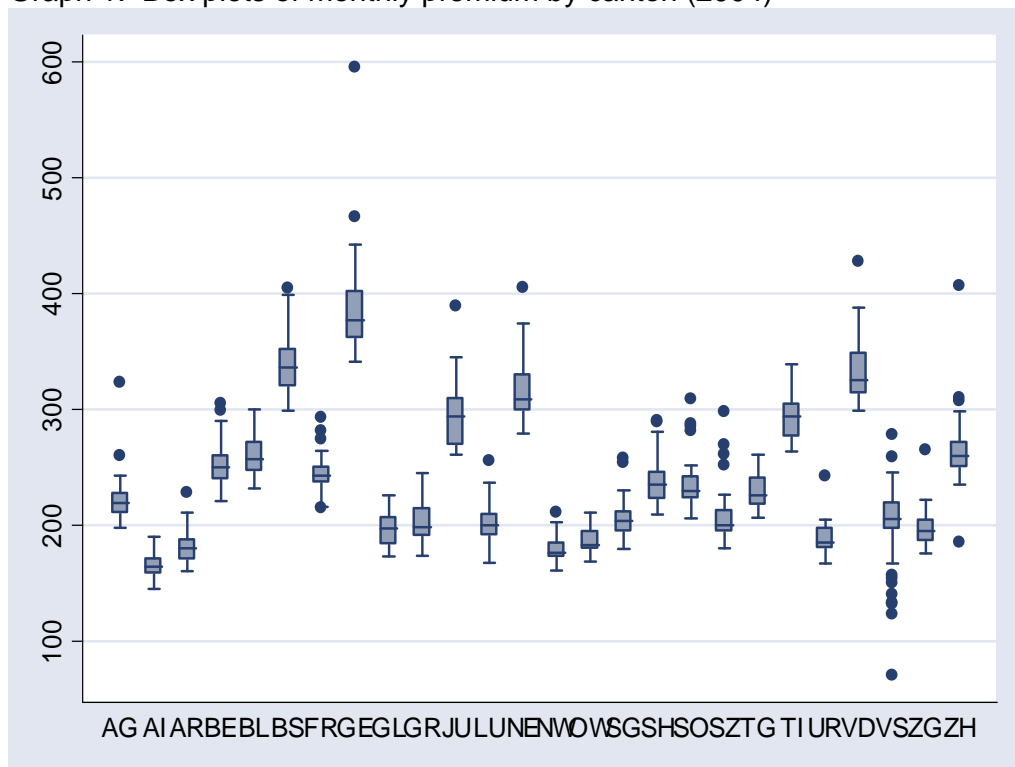
Table 1a: Number of health plans per canton over 1997- 2004

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: professionnal 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]					-0.37	-2.2											-0.51	2.2	-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
Year 1997	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Year 1998	0.08	1.0	0.10	1.4	0.09	1.2	0.09	1.1	0.08	1.1	0.21	1.7	0.10	1.5	0.07	1.0	0.09	1.2	0.08	1.1	0.10	1.5	0-09	1.2
Year 1999	-0.36	-1.9	-0.16	-1.5	-0.35	-2.3	-0.35	-1.9	-0.22	-2.3	-0.32	-1.3	-0.04	-0.3	-0.36	-1.9	-0.35	-2.3	-0.38	-2.5	-0.09	-0.9	-0.21	-2.3
Year 2000	-0.53	-2.4	-0.26	-2.0	-0.58	-2.8	-0.53	-2.4	-0.36	-3.2	-0.89	-2.5	-0.14	-1.1	-0.53	-2.4	-0.58	-2.8	-0.62	-2.9	-0.20	-1.7	-0.35	-3.3
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	-1.86	-4.5	-1.68	-4.5	-2.24	-4.8	-1.41	-2.3	-1.52	-5.5	-2.46	-5.9	-1.96	-4.7	-1.62	-3.1	-1.82	-3.2	-2.31	-5.2

canton dummies are included but are not reported in this table

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

[2] except 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 dummie 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]	ref	ref	ref	ref	ref	ref
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	ref	ref	ref	ref	ref	ref
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%