

Strategic pricing behaviors in the presence of consumer inertia: the case of health insurance

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Abstract

Our paper deals with pricing strategies in Swiss health insurance markets and focusses on the relationship between basic and supplementary insurance. We analyzed how firms' pricing strategies (i.e., pricing of basic and supplementary products) can reinforce consumer inertia. In particular, we investigated whether firms use bundling strategies or supplementary products as low-price products in order to retain consumers. We used supply market and survey data.

We find no evidence of bundling in the Swiss setting. We do however show that firms use low-price supplementary products to lock-in consumers. A majority of firms priced at least one of their products at a low price. None offered low-price products in both basic and supplementary markets. Low-price insurance products differed across companies. When buying a low-price supplementary product, consumers always bought their basic contract from the same firm. Furthermore, those who opted for low-price supplementary products were less likely to declare an intention to switch basic insurance companies in the near future. The latter result was true for each level of risk category.

Keywords: Managed Competition, Swiss Health Care Systems, Pricing, Inertia, Switching Costs, Supplementary Insurance, low-price supplementary product

1. Introduction

Competition in health insurance markets exists in some countries worldwide. The logic behind implementing competition is that it puts insurance providers under consumer pressure, and forces them to increase quality and/or decrease premiums, all to the advantage of the consumer. However, as for any market, competition only works if enough consumers switch to more efficient insurers.

Inertia and low switching rates have been highlighted in the literature investigating consumer behavior in basic health insurance markets. In Switzerland, annual switching percentages are low despite price differentials for identical benefit packages. Yearly health plan switching rates averaged approximately 3% between 1997 and 2007, ranging from 2% to 5%. Large premium variation and consumer inertia have also been highlighted in the Netherlands, which implemented a system sharing many features of the Swiss model in 2006. Switching rates in the Netherlands were reported to be high (29%) in 2006 but have been low since then (Lako et al, 2011). In the US, the average switching rate is approximately 5% per year (Samuelson and Zeckhauser, 1998). Cunningham and Kohn (2000) argue that only a quarter of health plan switching is voluntary, the rest being due to changing jobs, or to a change in the plan offered by the employer. Consumer inertia is also a well-documented feature of Medicare Part D (Ho et al., 2015; Polyakova, 2015).

How can we account for consumer inertia? Most research to date has taken the consumer's point of view into consideration. In particular, the following barriers to switching in basic health insurance have been identified: attachment to status quo (Samuelson and Zeckhauser, 1988 ; Strombom, Buchmueller et Feldstein, 2002 ; Frank and Lamiraud, 2009), choice overload (Frank and Lamiraud, 2009), reluctance to switch health care providers (Abraham, 2006), fear of risk selection practices in supplementary markets (Dormont et al., 2009, Roos and Schut, 2012), lack of information (McCarthy and Tchernis, 2010). We approach the problem from a different angle. Firms are aware of consumer inertia and should therefore take optimal advantage of it. Very few prior studies have considered firms' behavior in the presence of switching costs. Ericson (2014a) and Ericson (2014b) analyzed Medicare Part D markets and argued that consumer switching costs push firms to enter markets with low prices and then to raise prices rapidly (as in Klemperer, 1987). The "invest then harvest" pricing dynamic induced by consumer switching costs has also been documented by Wu (2016). We examine firms' pricing strategies in settings where competitive health insurance companies offer both basic and supplementary products as a way of reinforcing consumer inertia. Offering several products may enable these companies to link the conditions of

these various insurance products together. In particular, we investigate whether firms use bundling strategies or supplementary products as low-price products in order to retain consumers and reinforce inertia in basic insurance.

Our analysis focuses on the Swiss setting. Given its perfect form of competition and the fact that the system has been in place for several years now, Switzerland offers one of the best settings to study competition in basic health insurance markets. In Switzerland, the same insurance companies offer insurance products in the basic (compulsory) and supplementary competitive markets. Offering several products may allow them to implement bundling or low-price strategies by tying the conditions if these various insurance products are bought together.

We find no evidence of bundling in the Swiss setting. We do however show that firms use low-price supplementary products to lock-in consumers.

In the rest of this section, we briefly discuss some of the literature related to multi-product pricing. In Section 2, we present Swiss health insurance markets. Section 3 looks at the data and methods. We report results in Section 4 and our concluding remarks are in Section 5.

Related literature

The strategies for pricing different products can take very different forms. Two strategies highlighted in industrial economics literature are bundling (tying) and low-pricing of a product, both aimed at attracting and retaining customers.

Bundling is the sale of two or more products in a package (Stremersch and Tellis, 2002). It can be more profitable than even monopoly pricing (Adams and Yellen 1976, Whinston 2009). However, for the consumer to be willing to buy the bundle, it must come at a discount with respect to the goods sold separately (Matutes and Regibeau 1992). Consequently, it is unclear which of the products is generating profits for the firm.

Another strategy consists in establishing a low price for a product in order to attract customers who are likely to buy other products at regular prices/high prices. Different forms of this strategy have been analyzed in the literature, for example, add-on pricing and loss-leader pricing. A firm engages in add-on pricing when it advertises a base price for a product and tries to sell additional “add-ons” at higher prices at the point of sale (Ellison and Ellison, 2009; Ellison, 2005). For example, the

quoted price for a hotel room typically does not include phone calls, in-room movies, mini-bar items, dry cleaning, or meals in the hotel restaurant. This strategy permits price discrimination between consumers ready to pay a high price for the additional utility of the add-on and those who are not interested in add-ons, and thereby increases profits (Armstrong and Vickers, 2001; Ellison 2005). Other firms engage in loss-leader pricing, whereby products are sold at a low price (most often at or below the retailer's marginal cost). They are heavily marketed (Holton, 1957; Simbanegavi, 2008). They provide incentives for customers to shop in a particular store (Salop and Stiglitz 1977, Varian 1980). Once at the store, consumers buy other goods in addition to the loss leaders (Hosken and Reiffen 2007, Beard and Stern 2008). Hence, loss leaders increase profits through the sale of other products (Lal and Matutes 1994).

Some empirical literature exists concerning these two strategies. For example, Stahl et al. (2004) test the bundling of information goods by newspapers websites. They show that bundling (under the form of dossiers typically) is more profitable than selling single articles. Evans and Salinger (2004) analyse the joint sale of over-the-counter pain relievers and cold medicines as bundling of several drugs and find a substantial bundle discount. The empirical literature on the second strategy (offering a low-price product) is quite scarce. Loss-leading activities are usually tested indirectly, and not directly from observed prices. One approach consists in computing profit associated with product sales. Wang (2009) finds that large supermarket chains offering gasoline at a discount on their site typically have a loss-leader pricing strategy on this product. Chevalier et al. (2003) show that supermarkets have a tendency to price goods which consumers are more interested in at a lower margin, particularly in periods of large demand. De Graba (2006), based on the results of his model, suggests how profit can be measured. When choosing a loss-leader good, it should be purchased by more profitable consumers. He also suggests examining the size of the basket of goods bought very closely. If there is a loss-leader in the basket, the number of bought goods should be considerably larger than a basket not containing a loss-leader.

To our knowledge, these strategies have not yet been analyzed in the context of insurance/ health insurance.

2. Swiss health insurance markets

2.1 The regulatory framework

Basic health insurance in Switzerland is regulated by the Federal Law on Social Health Insurance

(LAMal) which implemented managed competition in 1996.

The main regulatory features of Swiss basic health insurance markets are described below.

(1) An individual mandate requires all residents (including children and the elderly) to have health insurance coverage. Individuals must take up insurance within their canton of residence. Each family member must contract on an individual basis. Health insurance cannot be provided by an employer as a fringe benefit and so the premium is paid in full by the insurance enrollee, a situation which should make the latter very reactive to differences in premium.

(2) The law defines a standardized benefit package in order to avoid competition on content of coverage. Hence all insurance companies must reimburse the same basket of goods. While small variations may exist in the quality of services provided (e.g. different reimbursement timeframes), these are minimal in nature and the characteristics of the same product are not different between the various providers. The level of cost sharing is also defined by law and is invariable across insurers. All contracts include a deductible on yearly expenditures¹. Once the deductible level has been reached, enrollees pay a 10%² co-insurance rate up to a maximum of 700 CHF. Hence, if the enrollee chooses a 300 CHF deductible, then the maximum out-of-pocket amount that they may have to pay is 1000 CHF.

(3) The law authorizes full freedom in terms of choosing one's primary physician as well as unlimited access to specialists. Physicians are paid on a fee-for-service basis. However enrollees can voluntarily opt for contracts with limited choice of physicians (see point 4 below) and those physicians who provide services within such contracts are paid on a per-capita basis

(4) Premiums charged by companies to consumers are community-rated. This means that while they can differ between health plans an insurer must offer uniform premiums to people who meet all three of the following criteria: same age group (0–18, 19–25 and >25³), same geographic area, and same type of coverage. With regard to geographic areas, there are 78 pricing areas, i.e. 3 per canton. Nevertheless, for any given company, the prices it sets for a given insurance contract are very similar between the three price areas within the same canton.. Hence we can consider that there are effectively 26 areas of price competition. With regard to the type of coverage, three types of basic health insurance coverage are available: all companies must offer a contract with a low deductible which guarantees access to any physician; they can also offer contracts with higher deductibles and/or contracts with a limited choice of physicians. In 2008 the most frequent choice by enrollees was a 300 CHF deductible health insurance policy (38.7 percent), followed by plans with higher deductibles (31.2 percent). Insurance covering a limited choice of providers (Health Maintenance

¹ The law defines 6 possible deductible levels (300, 500, 1000, 1500, 2000, 2500 CHF).

² The co-insurance rate is 20% for medicines if an equivalent lower-cost (by a certain margin) medicine exists.

³ There is no specific system for the elderly

Organizations -HMO- contracts or general practitioner model⁴) accounted for 30.0 percent of enrollees. The latter figure reflects the recent increase in HMOs' market share, given that only 8.2% of enrollees held HMO-contracts in 2003⁵.

Note that premiums paid by enrollees are neither risk- nor income-related. Clients on low-incomes receive subsidies from their canton of residence. In 2008, the mean yearly subsidy was 1511 CHF per subsidized enrollee.

(5) A risk equalization mechanism is enforced at the canton level so that funds with a higher percentage of bad risks are compensated more than those with a higher percentage of good risks, thereby preventing risk selection practices by health insurers. Three risk-adjusters are used: age, gender and whether the enrollee had an inpatient stay (of at least 3 days) during the previous year (this last adjuster has been used since January 2012)

(6) Health insurers must accept every application for basic insurance.

(7) Enrollees can switch companies twice a year, in June and December⁶.

Finally, there is clear regulatory separation between basic and optional supplementary coverage which mostly covers services not included in the basic benefit package. Basic and supplementary insurance can be purchased from two different insurers or from the same insurer⁷.

The features listed above suggest that freedom of choice in terms of choosing one's insurer for basic insurance is very much encouraged by the regulatory framework and in particular that changing health insurance companies for basic coverage involves very low quality-related or transaction-type switching costs. Indeed, basic insurance coverage is virtually identical from one health insurer to the next, and generally the enrollee can remain with the same physician or hospital regardless of insurer. Furthermore, the switching procedure is simple: the individual must write a letter to their health insurer, the templates for which are freely available on well-known

⁴ In the general practitioner model, patients undertake to always to consult their GP first; he or she will then decide whether a patient need treatment from a specialist. In HMO models, patients give up the right to freely choose doctors and receive treatment at a HMO centre (e.g. a group practice)

⁵ Another type of contract (namely bonus insurance) exists. The enrollee's premium is reduced gradually for every year that he/she does not submit any invoices to the health insurance fund for reimbursement. The starting premium is 10 percent higher than the standard premium. It can then fall to 50 percent of the starting premium within 5 years. This type of contract will not be considered here because very few enrollees opt for it.

⁶ If you have a basic insurance policy with the standard deductible of CHF 300, you can cancel this policy with three months' notice at the end of June or with 1 month's notice at the end of December in any year. This means that your notice of cancellation must reach your health insurance fund by 31 March or 30 November in order to be effective. If you have a health insurance policy with a higher deductible or with a restricted choice of doctors/hospitals, you can only cancel it at the end of the year, usually with three months' notice, i.e. your notice of cancellation must reach the health insurance fund by 30 September to be effective.

⁷ Separate contracts are made for each insurance type. Even if the enrolled has taken his/her basic insurance package and supplementary product with the same company, she/he will get a specific premium bill for each contract and specific conditions (e.g. cancellation periods) for each. In general the cancellation period for the top-up insurances differ from the cancellation period for the basic HI. An insurer cannot terminate a supplementary insurance contract if the insuree chooses to leave the insurer to find basic insurance cover elsewhere.

websites. Moreover, consumer search costs for basic products are low. All premiums are published officially every year by the Federal Office for Public Health and distributed to households that request them. Furthermore, the most competitive premiums can easily be found on the Internet and in newspapers.

If we look at the market structure, we can see that enrollees have a great deal of choice. Although the number of health insurers offering mandatory health care insurance in Switzerland decreased between 1996 and 2007 (145 and 87 authorized health insurers respectively), the choice set faced by each consumer has increased since the LAMal was implemented in 1996. In 1996 the mean number of health plans per canton was 39. Consumers could choose from more than 40 health plans in only two cantons. The mean number of health plans per canton rose to 57 in 2006, varying between 50 and 69 choices.

Health insurance companies in Switzerland are private firms. While they are not allowed to make a profit from basic insurance, they can from supplementary plans. Supplementary insurance is regulated by the Insurance Contract Law, which allows risk selection, and risk-rated pricing (based on age and gender). It does not impose any constraint on the extent of coverage supplied⁸. Examples of contracts for supplementary coverage include dental care, private or semi-private hospital rooms, cross-border care and alternative medicine. Deductibles and co-insurance costs in basic insurance are not reimbursable by taking out supplementary coverage

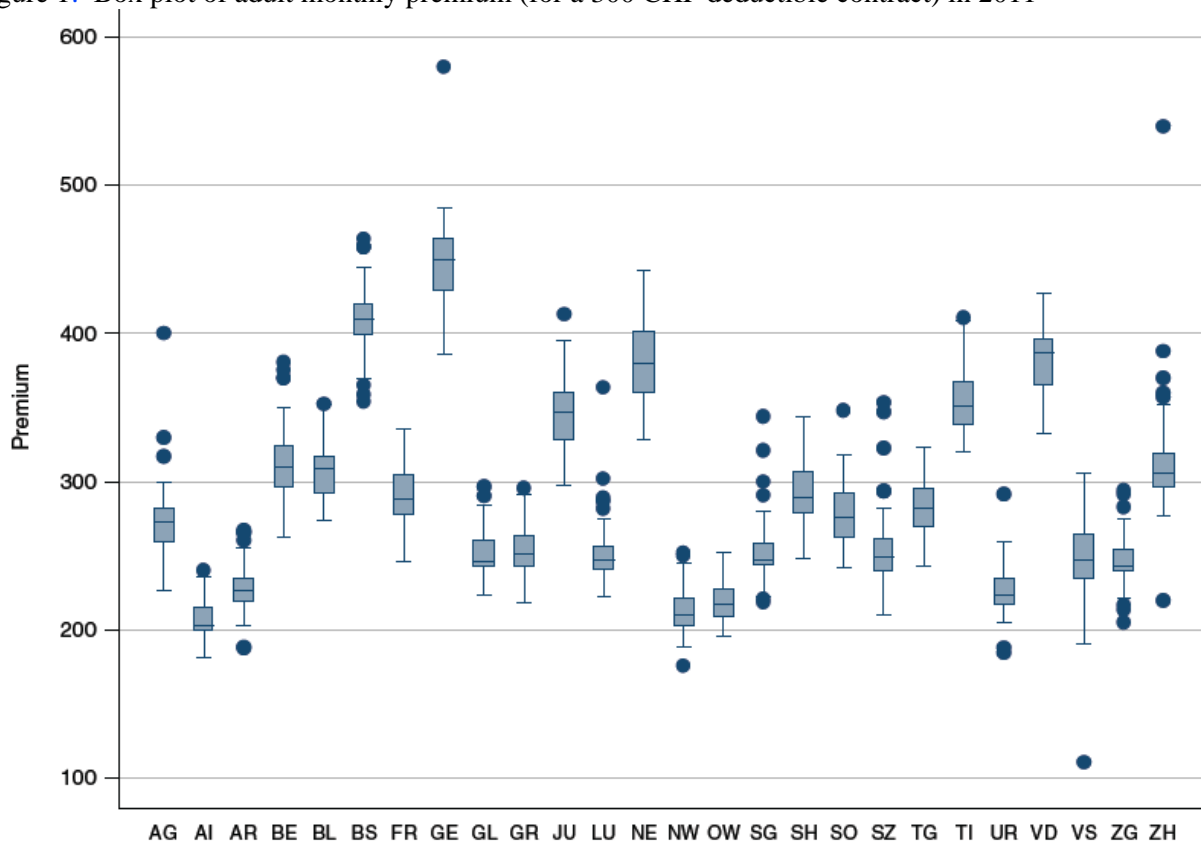
2.2 Stylized facts: the ineffectiveness of competition to date

In a health insurance market like the Swiss one, with its community-rated premiums for each health plan, homogenous benefits, open enrollment and a large and increasing choice of insurers, one would expect strong price competition within each area of competition, resulting in small premium differences across plans.

However the observed facts are very different. There is a great deal of variability across firms in premiums within a given canton, as suggested by the box plots of monthly premiums displayed in Figure 1. For example, in 2011 in the Geneva canton, the difference between the least and most expensive yearly premiums equaled 1665 Swiss Francs, a difference of 39%, for an adult contract with the lowest deductible. This is very large when considering that this reflects only one family member.

⁸ In theory, insurers are allowed to end a contract or change its conditions when the enrollee's health status has deteriorated. However, to our knowledge, no insurance company has ever done so when the decline in health status is not clearly linked to the enrollee's behavior.

Figure 1: Box plot of adult monthly premium (for a 300 CHF deductible contract) in 2011



To give an idea of the variation in posted premiums within cantons, we computed, in each canton, the coefficient of variation in premiums for the adult contract with the lowest deductible. The coefficients of variation ranged from 0.05 to 0.13 in 2007. The coefficient of variation reported here are comparable with those noted in other studies of price dispersion in health insurance markets for homogenous goods, such as the coefficients of variation reported for the Medigap market (Maestas et al., 2009).

Moreover, the within-canton variance has remained quite stable since 1996 (Dormont et al., 2009). Hence, premiums have not converged.

The lack of premium convergence may be related to the ineffectiveness of competition, and one important factor for this is low switching rates in Switzerland, despite existing price differentials for identical benefit packages. Health plan switching rates only averaged approximately 3% between 1997 and 2007, ranging from 2 to 5%.

2.3 Possible barriers to switching behaviors

How can low switching rates be explained in Swiss basic health insurance markets?

As already mentioned, the most obvious type of switching costs, i.e. transaction-type and quality-related switching costs, can be ruled out in the Swiss context.

Previous research has emphasized the role of such psychological factors as attachment to status quo and choice overload (Frank and Lamiraud, 2009). Three results highlighted by Frank and Lamiraud (2009) provide evidence for the existence of a status quo bias in Swiss health insurance markets. First, people with longer periods of attachment to a particular health plan were less likely to express their intention to switch plans. Second, people making new health plan choices (switchers and those new to the market) chose to enroll in a different set of health plans from those who had not switched for some time. Third, survey respondents explicitly reported that their decision not to change their health plan was out of habit or because they were satisfied with their policy. Other findings highlighted by Frank and Lamiraud (2009) are consistent with the inertia in decision making associated with choice overload. In particular, cantons with more choices had significantly lower switching rates *ceteris paribus* and consumers considered all health insurance companies, including fringe players (i.e., companies with small market shares), when deciding about insurance cover.

Another possible barrier to switching behavior in basic health insurance markets is the relationship between basic and supplementary insurance. Although a clear regulatory separation exists between basic and supplementary insurance in Switzerland, in reality both types of insurance coverage are strongly linked: companies are allowed to operate both in basic and supplementary markets and most individuals subscribe to the same provider for both. Of the 88% of enrollees who took out supplementary coverage in 2007, only 9% subscribed to different companies for their basic and supplementary contracts (Dormont et al., 2012). To analyze the interaction between basic and supplementary insurance, two characteristics of the Swiss health insurance markets have to be considered. First, there are additional costs when a client's basic and supplementary contracts are with different companies (e.g. separately mailed bills). Second, risk selection is authorized for supplementary insurance.

Switching costs generated by the relationship between basic and supplementary insurance may originate either from the consumer (*i*) or the firm (*ii*) side: The first situation case, (*i*) was analyzed by Dormont et al. (2009) who showed that holding a supplementary contract reduces the probability of switching in basic insurance for those in poor self-assessed health but has no effect on the switching behavior of enrollees in good/very good health. These empirical findings suggest that the main mechanism at work relies on customer beliefs about the existence of selection practices by insurers in supplementary health insurance markets: if the customer thinks he/she is a bad risk and believes that insurers reject applications for supplementary contracts from individuals considered as such, he/she might refrain from switching basic insurance provider.

In this paper, we examine the relationship between basic and supplementary health insurance from a different angle (ii). We analyze firms' pricing strategies (i.e. pricing of basic and supplementary products) as a way of reinforcing consumer inertia. In particular we investigate whether firms use supplementary products as low price products in order to attract and retain consumers or whether they use bundling strategies (i.e. sale of basic insurance and supplementary contracts as joint products which come at a discount with respect to buying those products from different insurers).

3. Data and empirical methods

We used two sources of data: supply data and consumer data. All information was collected in 2007.

3.1 Data

Supply data

We constructed a supply database including price information about basic and supplementary insurance markets. We restricted our analysis to the adult market.

There are 78 pricing areas, i.e. 3 per canton in the Swiss basic health insurance market. Nevertheless, for any given company, the prices it sets for a given insurance contract are very similar between the three price areas within the same canton. Accordingly, for each insurance company i within each canton c , the supply database recorded the mean monthly premium for each given basic insurance contract b (P_{ic}^b)⁹. Basic insurance contracts in Switzerland are of two types: unlimited choice of providers (with a deductible level of 300, 500, 1000, 1500, 2000 or 2500 CHF) and limited choice of providers (either HMO-type or general practitioner-type contracts and the same choice of deductible levels), i.e. in total 18 possible contracts. Our source of information was the Federal Office for Public Health (OFSP). We also incorporated information about the number of adult enrollees in all health plans in each canton in the form of market share.

In supplementary insurance markets, the law does not impose any constraint on the coverage supplied and premiums are risk-rated. We considered four types of supplementary coverage: private room hospitalization (with a 2000 CHF deductible), semi-private room hospitalization (with a 2000 CHF deductible), alternative medicines and dental care. These products were chosen because they are part of the most popular supplementary products and are quite homogenous across companies

⁹ We considered premiums including accident insurance cover

(Choppard, 2010)¹⁰. Hence it is unlikely that differences in prices in these products reflect differences in quality (i.e., basket of goods reimbursed). We considered 6 risk categories defined by age (born in 1948, 1962, 1977) and gender.

The supply database contained information about monthly premiums offered by each insurance plan (i), per canton (c), per risk category (r), per supplementary insurance product (s) (P_{icr}^s). Information concerning supplementary insurance was collected, from each company, via advertised prices, together with phone and website data collection by the authors. This information was collected by the authors for the years 2006 and 2007 and was based on the assumption that the effective premium was related to the advertised premium in the same way for each company in a given market and that risk-rating was mostly based on age and gender (as in on-line simulations).

In 2007, 87 companies were active in the basic insurance market in Switzerland. Of these 50 also offered supplementary insurance. Companies which are only active in the basic insurance market are typically very small and often offer insurance products for historical reasons (e.g. professional funds active before the implementation of the LAMal).

The consumer dataset

We used a survey of 3,016 insured individuals conducted by the Institute of Health Economics and Management (IEMS) at the University of Lausanne in 2007 (Dormont et al., 2012). Surveyed enrollees were a representative sample of Swiss residents older than 26. The survey focused on health insurance choices. In particular, participants were asked about their choices for *basic* health insurance (i.e. the name of the company they subscribed to, the level of deductible, whether or not they opted for a contract with a restricted choice of physicians, and the reasons why they were insured with the current Lamal insurer) and were asked what monthly premium they paid for basic insurance. Participants were also asked about their choices for *supplementary* insurance (the type of supplementary coverage they opted for, the name of the company for each supplementary contract, and the premium they paid for each supplementary contract). Respondents were asked whether or not they had moved from one insurance fund to another during the previous five years (2003¹¹-2007) for basic insurance and whether they intended to switch in the near future. They were also asked about any changes that they might have made in their supplementary insurance contracts during the previous five years (i.e., whether they subscribed to new supplementary insurance products, whether they stopped any of their supplementary contracts, or whether they switched

¹⁰ Cross-border care, which is also part of the most popular supplementary products, was excluded from our analysis because this product exhibits too much heterogeneity between companies

¹¹ i.e. end of 2002

companies for any of their supplementary products) and the reasons associated with such changes. Socio-economic and demographic information was also collected.

Our data are unique because they incorporate information on both basic and supplementary markets. Moreover, the information we collected about prices charged in supplementary insurance markets is not collected by the regulator, and is not available on a single website. Information is available however from each company. In addition to supply data, we collected enrollee information representative of the Swiss population's choice of contracts over all insurance providers. Studying insurance choices in Swiss health insurance markets is only possible with survey data. In Switzerland, individual-level data are owned by each private insurance company and even data from a single insurance company would not make it possible to study choices in basic and supplementary markets and switching between companies.

3.2 Empirical method

We aimed to identify pricing strategies from insurance companies in Switzerland. First, we investigated the presence of discount strategies in order to attract and retain consumers. The first step was to identify potential low-price products by firms. The second was to analyze consumers' behaviors in the presence of those products. Second, we investigated whether insurers employed bundling strategies.

Identification of low-price products

We identified low-price products by looking at the distribution of premiums across all companies in a given market (based on our supply dataset). A market was defined as a given insurance product (i.e. basic insurance¹², private room hospitalization, semi-private room hospitalization, alternative medicines, dental care), for a given risk category (as defined by age group and gender), in a given geographical area (i.e. canton). In each market we defined low-price products as those products for which companies asked for a premium lower than the 15th percentile of the premium distribution. The choice of this exogenous threshold was based on the particular structure of the premium distribution (see results section). Sensibility analyses were also performed.

In order to characterize firms' pricing strategies, we computed the proportion of the markets in

¹² For basic insurance, we built the ranking according to the most frequently chosen contract (a contract with unlimited choice of providers and lowest deductible, i.e. 300 CHF). The ranking of the premiums in other contracts was comparable.

which each firm offered a low-price product (for each firm, the denominator was the number of markets in which the firm operated). This proportion was computed for each of the five insurance products listed above (in this case the denominator was the number of risk categories served by that firm summed over all cantons).

Consumers' reactions

The strategy of pricing some products at a low level in order to attract and retain consumers is investigated indirectly *via* consumers' behaviors. Low price products are supposed to provide incentives for customers to buy other insurance products from the same company (*i*) and to induce consumer inertia (i.e. low levels of switching) (*ii*). We first considered the possibility of pricing one supplementary product at a low level.

Concerning (*i*), we investigated two main questions. Are consumers who opt for a low price *supplementary* product more likely to take out basic insurance with the same company? Are consumers who opt for a low price supplementary product more likely to subscribe to other supplementary products from the same company? In order to answer the first question, we used Khi-2 statistics to compare, for each supplementary product, the percentage of enrollees who had basic and supplementary coverage with the same company among those opting for and those not opting for low-price supplementary products. To answer the second question, we computed the mean number of supplementary contracts subscribed to by those opting for and those not opting for low-price supplementary products.

With respect to (*ii*), we tested whether consumers buying a low price supplementary product were less likely to move to another company for basic insurance. We estimated an intention to switch model in basic insurance as follows:

$$y_j^* = LL_{js}'\beta + S_{js}'\eta + g_j\gamma + X_j'\alpha + u_j$$

In this model, j denotes the individual, s denotes the type of supplementary insurance product ($s = 1,2,3,4$). The latent variable is based on the observed variable y_j which can take two values: $y_j = 1$ if the individual j intends to switch in the near future and $y_j = 0$ if she/he does not.

S_{js} is a vector of supplementary insurance products. $S_{js} = 1$ if the individual j has a contract for product s .

LL_{js} is a vector of low-price supplementary insurance products. $LL_{js} = 1$ if individual j has opted for one of the low-price products for supplementary insurance s .

g_j represents the potential gains from switching health plans. It is measured as the (weighted)

standard deviation in health plan premiums within a canton, as in Frank and Lamiraud (2009). This represents the expected difference in price one would experience if the typical person switched to the mean plan in a canton.

X_j is a vector of individual characteristics. u_j represents the disturbance which is supposed to follow a normal distribution. We also controlled for canton-level fixed effects. Having β negative and significant would suggest that buying the low-price supplementary product s limits switching behavior in basic health insurance.

The possibility of pricing the basic insurance product at a low level was also considered.

Bundling test

Bundles are defined as products which are cheaper when bought together from the same producer than when bought separately. Hence, for an insurer j implementing a bundling strategy, we would have:

$$P_{js} + P_{jb} < P_{js} + P_{kb}, k \neq j$$

P being the premium, s a given supplementary product and b the basic insurance product (for a given deductible and specific HMO options).

We implemented a simple test for bundling. For each individual having basic and supplementary insurance contracts with the same provider, we computed the theoretical total health insurance premium (in other words, the total sum of basic and supplementary contracts, for each type of supplementary contract) he/she would pay by choosing the cheapest basic product on the market (keeping his/her deductible and HMO choices constant) and staying with his/her current arrangements for supplementary contracts. We compared the mean of the previous variable with the mean real total premium that the insured individual paid for his/her combination of basic and supplementary contract with the same provider. Note that this test ensured that the basket of products was unchanged for each individual.

4. Results

4.1 Insurance prices

Table 1 displays the mean monthly premium in Swiss Francs in 2007 (at the individual level) for basic insurance (300 CHF deductible level) and for each of the studied supplementary insurance products according to risk categories (for supplementary coverage), computed from the supply

database.

Basic insurance offers a comprehensive package, but is quite expensive with a mean premium equal to 287 Swiss Francs per month for contracts with a 300 Swiss Francs deductible. The mean presented here includes large variations, which are partly due to inter-canton variations (Dormont et al., 2009). However our method for defining low-price products, based on the distribution of premium within each canton, ruled out any potential difficulties with this problem in analysis.

Not surprisingly, private room hospitalization was the most expensive supplementary product. The mean monthly premium amounted to 141 Swiss Francs, with large variations between risk groups. The average premium was approximately 219 CHF for 60-year-old female enrollees and 122 CHF for 30-year-old female enrollees. The variance was very large for all six risk categories and again partly reflected inter-canton variations. Semi-private room hospitalization coverage was the second most expensive supplementary insurance product with a mean premium equal to 90 CHF. Dental care and homeopathy supplementary coverage were less expensive products and price variation for these was much lower. The average premiums were similar for females and males, except for hospital supplementary products for enrollees born in 1977, where premiums were higher for females, thus possibly reflecting higher expected costs linked to childbirth.

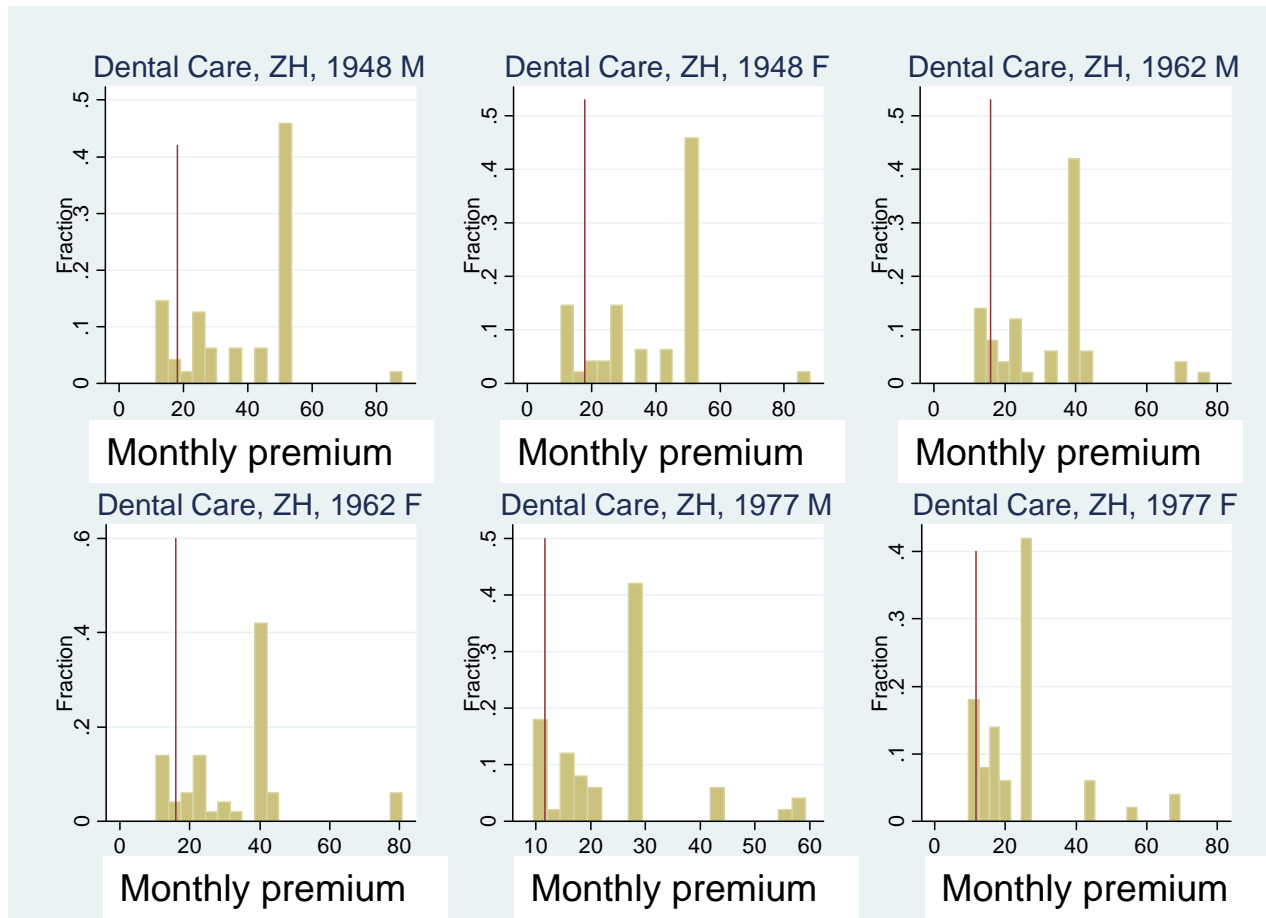
Table 1: Mean and standard deviations of monthly insurance premiums in basic and supplementary insurance for adults (split by risk categories for supplementary insurance) in Swiss Francs

| Type of health insurance | Mean (std) | Females | | | Males | | |
|--------------------------------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | Born in 1948 | Born in 1962 | Born in 1977 | Born in 1948 | Born in 1962 | Born in 1977 |
| | | Mean (std) | Mean (std) | Mean (std) | Mean (std) | Mean (std) | Mean (std) |
| Basic insurance (300 CHF deductible) | 287 (65) | | | | | | |
| Private room hospitalization | 141 (78) | 219 (54) | 125 (54) | 122 (36) | 213 (51) | 102 (79) | 68 (44) |
| Semi-private room hospitalization | 90 (47) | 139 (30) | 78 (28) | 81 (27) | 135 (30) | 61 (32) | 43 (27) |
| Dental care | 30 (16) | 36 (17) | 31 (16) | 23 (12) | 36 (17) | 30 (15) | 22 (12) |
| Homeopathy/alternative medicine | 20 (12) | 27 (14) | 20 (14) | 17 (9) | 25 (15) | 18 (11) | 15 (10) |

As already explained, a market was defined as a given insurance product, for a given risk category (age, gender) in a given canton (hence there are $4(\text{supplementary products}) \times 3(\text{age categories}) \times 2(\text{gender}) \times 26(\text{cantons})$ markets, i.e 624 supplementary markets). The distribution of premiums showed, in the vast majority of the markets, two clear groups: firms pricing at a low level, and other firms which usually priced at the same higher level. However, for some markets, we observed a more continuous distribution of premiums in the second group. We defined the first group of firms as those offering low-price products. A threshold of 15% was chosen to define

them¹³. We used the same threshold for every market. To illustrate this approach, Figure 2 shows the premium distribution for dental care insurance, for all risk classes, in the canton of Zurich.

Figure 2: Premium distribution for dental care supplementary insurance, for the six risk categories, in the canton of Zurich (2007)



The vertical black line in each graph represents the 15th percentile of the premium distribution

By definition, every market exhibited some low-price products. For example, for private room hospitalization, the number of low-price products per market varied between 1 and 7.

When investigating firms' pricing strategies, four interesting observations can be derived from the proportions of the markets in which each firm offered a low-price product.

First, none of the firms had market proportions close to 100% (out of the markets represented by the 5 products that we considered for this analysis), which means that none of the firms was more efficient overall (i.e. offering less expensive contracts for every type of coverage). Market proportions were between 0% and 49%.

Second, a majority of firms priced one of their products at a low price. 76% of the firms that

¹³ We performed some sensitivity analysis and varied the threshold between 10% and 20%. This did not qualitatively change our overall results.

operated both in the supplementary and basic markets sold at least one low-price product out of the five products considered here. 48% sold at least one low-price supplementary product. These firms represented a high proportion of enrollees (60% in basic insurance). Accordingly, the strategy of discounting one product constitutes a large proportion of market activities. We cannot exclude the possibility that firms with no low-price products among the products we considered implemented a different strategy. However, it is likely that they had a low-price product in other types of supplementary coverage (which were not studied in this analysis). For example, one of the largest insurance firms in Switzerland (with a market share close to 13% in basic insurance in 2007) had no low-price products among the products we analyzed. However, for a different product (specifically, coverage of care outside the Swiss borders), they offered one of the cheapest products on the market¹⁴.

Third, most firms discounted one single product (Table 2). Only four firms (representing altogether 7% of market share in basic insurance) could be considered cheap for both the basic and supplementary contracts. Most firms who had low-price supplementary products discounted one single supplementary product (out of the 4 products considered). 79% of firms with low-price supplementary products discounted one single product. The others discounted two products, namely private and semi-private hospitalization. The most common situation was the following: the company discounted the chosen product for the 6 risk classes, defined by age and gender. This was true for all the cantons in which the firm operated. In a few cases, the firm discounted one supplementary product only for one single risk category. This may be because the firm believed it was likely to attract all family members after attracting one. Consequently, we considered that the company sold one insurance product as a low-price product when this specific product was a low-price product in more than 90% of markets in which the firm sold this product, or when the firm sold this product at a low price for one single risk category over all cantons.

Fourth, the low-price product differed across companies with 58% choosing a private room in hospital, 29% a semi-private room, 13% alternative medicine and 21% dental care. Effectively, these firms engaged in market segmentation where each discounted a product that was most appealing to a particular segment of the population. In this way, each firm chooses a niche product for a subgroup of the population, and discounts it.

¹⁴ We did not analyze this product, due to possible issues of heterogeneity across products. We need homogenous products to compare premiums.

Table 2: Pricing patterns of the companies whose percentage of supplementary products sold at a low price is higher than zero

| Firms | % of supplementary markets*** | Choice of low-price supplementary products | | | |
|-------|-------------------------------|--|-------------------------------------|------------------------|---------------|
| | | Private room hospitalization ** | Semi-private room hospitalization** | Alternative medicine** | Dental care** |
| 1 | 0,23 | * | 0 | 0 | 1 |
| 2 | 0,21 | * | 1 | 0 | 0 |
| 3 | 0,19 | * | 1 | 0 | 0 |
| 4 | 0,27 | * | 1 | 0 | 0 |
| 5 | 0,26 | | 1 | 0 | 0 |
| 6 | 0,31 | | 0 | 0 | 1 |
| 7 | 0,32 | | 0 | 0 | 1 |
| 8 | 0,23 | | 0 | 1 | 0 |
| 9 | 0,51 | | 1 | 0 | 0 |
| 10 | 0,34 | | 0 | 0 | 1 |
| 11 | 0,34 | | 0 | 0 | 1 |
| 12 | 0,48 | | 1 | 0 | 0 |
| 13 | 0,29 | | 0 | 0 | 0 |
| 14 | 0,47 | | 1 | 0 | 0 |
| 15 | 0,28 | | 0 | 0 | 1 |
| 16 | 0,17 | | 0 | 1 | 0 |
| 17 | 0,43 | | 1 | 0 | 0 |
| 18 | 0,51 | | 1 | 0 | 0 |
| 19 | 0,22 | | 0 | 0 | 0 |
| 20 | 0,19 | | 1 | 0 | 0 |
| 21 | 0,26 | | 0 | 0 | 0 |
| 22 | 0,28 | | 0 | 0 | 0 |
| 23 | 0,24 | | 0 | 0 | 0 |
| 24 | 0,21 | | 1 | 0 | 0 |
| | | 0,58 | 0,29 | 0,13 | 0,21 |

* these companies sell basic insurance at a low price

** 1 means that the product is sold at a low price, 0 means that the product is not sold at a low price

*** in which the company has a low price supplementary product

We also looked at pricing patterns for the year 2006. Low-price products were the same as in 2007, which suggests some stability in pricing strategies over the short term.

Because our analysis is based on advertised premiums (based on age and gender), it can be argued that the actual premiums paid by consumers may be different from advertised premiums, for example if insurers take health status into account when setting premiums for enrollees. Our survey data made it possible for us to compare advertised premiums and actual premiums for the six age categories we defined. The coefficient of correlation between advertised premiums and actual premiums was equal to 0.98, thus confirming that the advertised premium was a good proxy for actual premiums.

4.2 Consumers' behaviors

Basic features of the data collected by the survey are given in Table 3.

Table 3: Descriptive statistics of the survey (2007) (n = 3016)

| | % |
|---|------|
| Age: [27,35] | 12,7 |
| Age: [35,50] | 35,0 |
| Age: [51,65] | 29,3 |
| Age: >65 | 23,0 |
| Household Income: < 5000 Swiss Francs per month | 34,4 |
| Household Income: 5000 - 8000 Swiss Francs per month | 30,8 |
| Household Income: > 8000 Swiss Francs per month | 34,8 |
| Subsidy for the Premium (yes=1) in Basic Insurance | 16,8 |
| Gender: male | 46,4 |
| Education level: first cycle regular track (compulsory school) | 10,7 |
| Education level: second cycle regular track | 8,2 |
| Education level: short professional track | 4,9 |
| Education level: long professional track | 14,5 |
| Education level: university completed | 15,8 |
| Urban setting | 69,1 |
| Swiss citizen | 86,3 |
| Poor subjective health | 16,6 |
| Good subjective health | 44,8 |
| Very good subjective health status | 38,4 |
| Had a hospital stay (excluding childbirth) in 2006 | 11,1 |
| Number of physician visits in 2006: 0 or 1 | 38,1 |
| Number of physician visits in 2006: 2 or 3 | 27,2 |
| Number of physician visits in 2006: 4 or more | 34,7 |
| Opted for a low deductible (300 CHF) in basic insurance | 37,2 |
| Had a supplementary insurance contract | 87,6 |
| Subscribed to different companies for basic and supplementary contracts | 9,0 |
| Intended to switch in the near future | 11,6 |
| Intended to switch in 2008 | 5,2 |
| Source: IEMS survey (2007) | |

In 2007, 11.6% of the enrollees intended to switch basic insurance health plans in the near future. 5.2% intended to switch as early as 2008. Almost 17% of the respondents benefitted from a subsidy

for their basic insurance premium. At the time of the survey, subsidies were provided by the canton authority independently of the insurance fund chosen. Hence, switching costs were not higher for those who benefitted from subsidies.

A large majority (87.6%) of individuals held at least one supplementary insurance product. The average number of such products for each individual was 2.3 (± 1.5). Table 4 details individual choices for supplementary insurance contracts. Homeopathy/alternative medicines insurance was very popular, chosen by 45.6% of the enrollees. One third of the sample chose supplementary coverage for hospitalization: 11.7% and 21.4%, respectively, opted for private and semi-private room coverage. Dental care was chosen by 11.2% of the enrollees.

Table 4: Individual choices for supplementary insurance

| | % with supp. coverage | % having supp.coverage with the same company as for basic insurance | % with low price products |
|-----------------------------------|--------------------------|---|------------------------------|
| Private room in hospital | 11,7 | 83 | 20.4 |
| Semi-private room in hospital | 21,4 | 88 | 25,0 |
| Dental care | 11,3 | 92 | 9,8 |
| Homeopathy/ alternative medicines | 45,8 | 89 | 31,5 |

Source: IEMS survey (2007)

Most people took out basic and supplementary products with the same insurance company. These values ranged between 83% and 92% of enrollees depending on the type of supplementary coverage. Few people chose the lowest-price products available despite the fact that they had exactly the same characteristics as the most expensive products. This was true irrespective of the product. For example, 9.8% of those who took out dental care insurance and 31.5% of those who took out alternative medicine insurance opted for a low-price product.

Table 5 displays the percentages of enrollees having basic and supplementary coverage with the same company, depending on whether enrollees opted for a low-price supplementary coverage product or not. Those who did opt for this product were significantly more likely to buy basic insurance with the same company. The results are striking indeed: 100% of those with a low-price supplementary product had basic coverage with the same insurance provider versus only between 79% and 88% (depending on the supplementary product type) for those who did not have a low-price product. It is important to highlight that this result (100% of those with a low-price supplementary product had basic coverage with the same provider) was true for each level of risk

category.

It is interesting to note that, with respect to health risk, individuals choosing low-price supplementary products were not different from those who did not. In particular, self-assessed health status and health-care utilization (as measured by the number of doctor visits per year and by the probability of having a hospital stay during the previous year) did not significantly differ between those with and those without low-price supplementary products (Table 6). Looking at other characteristics in Table 6, those opting for low-price products had a higher income level than those who did not. This difference was significant for semi-private room hospitalization and alternative medicine products. The percentage of enrollees with a university degree was also higher among those who chose low price products but this was only significant for alternative medicine.

Table 5: Percentage of enrollees having basic and supplementary coverage with the same company, depending on whether enrollees opted for low-price supplementary coverage products or not

| | % having basic coverage with the same company | | p* |
|--------------------------------------|--|---|---------|
| | without low price product for supp.coverage | with low price product for supp.coverage | |
| Private room in hospital | 79 | 100 | < 0.001 |
| Semi-private room in hospital | 84 | 100 | < 0.001 |
| Dental care | 88 | 100 | < 0.001 |
| Homeopathy and alternative medicines | 87 | 100 | < 0.001 |

*Khi2 test

Source: IEMS survey (2007)

Table 6: Characteristics of individuals with and without low-price products

| | Very good subjective health status (%) | Number of contacts with a physician in 2006 (mean) | Had a hospital stay in 2006 (%) | Male (%) | Completed University (%) | Income** (mean) |
|--|--|--|---------------------------------------|-------------|--------------------------------|--------------------|
| with low-price product for private room in hospital | 40,85 | 3,81 | 13,89 | 54,17 | 33,33 | 7,46 |
| without low-price product for private room in hospital | 47,62 | 4,04 | 13,50 | 45,26 | 31,39 | 7,17 |
| p* | 0,38 | 0,75 | 0,93 | 0,18 | 0,75 | 0,53 |
| with low-price product for semi-private room in hospital | 40,37 | 3,95 | 14,91 | 41,61 | 21,38 | 6,84 |
| without low-price product for semi-private room in hospital | 36,90 | 4,54 | 14,88 | 43,40 | 18,01 | 6,03 |
| p* | 0,43 | 0,30 | 1,00 | 0,69 | 0,36 | 0,01 |
| with low-price product for dental care | 40,19 | 3,90 | 9,35 | 53,27 | 12,54 | 6,15 |
| without low-price product for dental care | 41,48 | 3,78 | 13,97 | 53,28 | 12,15 | 5,76 |
| p* | 0,82 | 0,82 | 0,23 | 1,00 | 0,10 | 0,27 |
| with low-price product for homeopathy/ alternative medicines | 36,76 | 4,30 | 10,29 | 45,59 | 22,79 | 6,24 |
| without low-price product for homeopathy/ alternative medicines | 40,36 | 4,19 | 10,80 | 37,95 | 14,83 | 5,70 |
| p* | 0,42 | 0,84 | 0,86 | 0,08 | 0,02 | 0,05 |

*comparison of characteristics between the group with low price products and the group without low price products

(khi 2 test and student test for mean comparisons, respectively for dichotomous and continuous variables)

** The survey records household income as a categorical variable with 11 categories (1 is the lowest income category, 11 is the highest income category)

Source: IEMS survey (2007)

Furthermore, the basket of goods bought from a given insurer was larger when a low-price product was chosen. Participants with a low-price product (out of the 4 products considered) bought on average 3.2 supplementary products from a given insurer, while those who did not have any low-price products bought on average 2.1 supplementary products from a given insurer. The difference is significant ($p < 0,001$).

The results of the intention-to-switch model are displayed in Table 7. The coefficients on the variables indicating a low-price product choice are all negative. Most are significant, except for private room hospitalization coverage (significant at the 10% level). Having a low-price supplementary insurance product reduces the probability of an individual announcing his/her intention to switch basic insurance coverage to another company. Variables indicating that the individual holds supplementary insurance contracts for specific products are not significant, which confirms that having a low-price product is what matters. Coefficients for individual characteristics are in line with previous findings. The estimated coefficients for the variable measuring relative price (g) is positive and significant, suggesting that the larger the price differential between the consumer's plan and other options, the more likely the consumer is willing to switch. Older individuals are not as likely to announce an intention to switch, while education, gender, health status and Swiss citizenship have no significant effects.

Table 7: Logit intention-to-switch estimates (intent to switch = 1)

| | Coef | t |
|--|-------|-------|
| Low-price product for private room in hospital | -0,11 | -1,62 |
| Private room in hospital | -0,20 | -0,98 |
| Low-price product for semi-private room in hospital | -0,61 | -2,17 |
| Semi-private room in hospital | -0,03 | -0,18 |
| Low-price product for dental care | -0,28 | -2,24 |
| Dental care | -0,16 | -0,89 |
| Low-price product for homeopathy/alternative medicines | -0,63 | -1,98 |
| Homeopathy/alternative medicines | -0,09 | -0,95 |
| g^* | 0,02 | 2,29 |
| Male | 0,12 | 1,28 |
| Poor subjective health | ref | ref |
| Good subjective health | -0,09 | -0,65 |
| Very good subjective health status | -0,21 | -1,37 |
| Age: [27,35] | ref | ref |
| Age: [35,50] | -0,45 | -4,00 |
| Age: [51,65] | -0,74 | -5,58 |
| Age: >65 | -1,92 | -5,65 |
| Education level: compulsory school | ref | ref |
| Education level: short professional track | -0,03 | -0,16 |
| Education level: second cycle regular track | 0,20 | 0,90 |
| Education level: long professional track | 0,19 | 0,93 |
| Education level: university completed | 0,08 | 0,39 |
| Swiss citizen | -0,01 | -0,06 |

*(weighted) standard deviation in health plan premiums within a Canton

Canton fixed effects are included

Source: IEMS survey (2007)

We considered the possibility that low-price product variables might be endogenous in the intention-to-switch equation, to the extent that those who chose a low-price supplementary product might have also chosen a low-price basic insurance product with the same company. Two mechanisms could take place here. First, this might be simply because they wanted to optimize their consumption basket. Another possibility is that a firm was more efficient at providing insurance products and was cheap in both the basic and supplementary insurance markets. Irrespective of the mechanism at play, this situation is unlikely to happen, as very few firms offered low-price products for both the basic and supplementary markets. This was confirmed by the following test. For each type of supplementary contract, we computed the mean premium in basic insurance for those with and those without a low-price supplementary product. The results reported in Table 8 suggest that the average premium in basic insurance is significantly higher for those who have a low-price supplementary product. As an additional test, we also ran the intention-to-switch equation excluding the individuals having a supplementary contract with one of the four companies identified above as being cheap for both the basic and supplementary contracts. The results were not qualitatively different from those shown in Table 7.

Table 8: Mean premium in basic insurance for those with a low-price supplementary product and those without a low-price supplementary product

| | Mean premium in basic insurance | | |
|--------------------------------------|--|---|--------|
| | without low-price product for supp.coverage | with low-price product for supp.coverage | p |
| Private room in hospital | 266 | 285 | < 0.01 |
| Semi-private room in hospital | 265 | 287 | < 0.01 |
| Dental care | 260 | 298 | < 0.01 |
| Homeopathy and alternative medicines | 239 | 264 | < 0.01 |

Source: IEMS survey (2007)

Table 9: Percentage of enrollees having basic and supplementary coverage with the same company, depending on whether enrollees opted for low-price basic product or not

| | % with supplementary coverage from the same company | | |
|--------------------------------------|---|---|--------|
| | without low-price product for basic insurance | with low-price product for basic insurance | p |
| Private room in hospital | 87,88 | 58,18 | <0.001 |
| Semi-private room in hospital | 90,74 | 71,91 | <0.001 |
| Dental care | 92,77 | 69,83 | <0.001 |
| Homeopathy and alternative medicines | 94,6 | 83,05 | <0.001 |

Source: IEMS survey (2007)

These results suggest that a low-price product strategy based on supplementary products seems to succeed in retaining consumers to insurance plans. Enrollees in our sample who bought a low-price supplementary insurance product, always bought their basic insurance product from the same firm. Furthermore, once consumers chose a low-price supplementary product, their willingness to switch providers in basic insurance decreased. The basket of goods bought from a given insurer was larger when a low-price supplementary product was chosen. This result, together with the fact that individuals buying a low-price product never bought their products from different providers, indicates that a low-price strategy may be profitable, as the individual buying a low-price product also buys other goods from the same provider.

However, the picture is different if we look at the possibility of using basic insurance as a low-price product to attract consumers. 19% of enrollees had a low-price basic insurance product in our sample. An insured individual buying a low-price product in the basic health insurance market was significantly less likely to buy supplementary products from the same company as we can see in Table 9. The basic insurance product did not therefore attract consumers to supplementary products, while the reverse situation - attracting consumers to the basic coverage through supplementary products – was observed.

Individuals who chose low-price basic insurance products were typically in better health and younger than those choosing more expensive basic insurance products (Table 10). There was no evidence of differences in socio-economic status between those who opted for cheap basic insurance and those who chose more expensive basic insurance products. The pattern that we observed for basic insurance could be the result of risk selection strategies in supplementary markets, to the extent that enrollees in good health can easily shop for supplementary products from other providers, while this might not be the case for those with poorer health conditions. It might also be the case that those who look for the cheapest basic insurance products are more rational consumers who make informed decisions for each insurance product they buy. Hence they tend to (optimally) take out basic and supplementary products from two different providers. Note that those who opted for low-price basic insurance products were significantly less likely to take out supplementary insurance (Table 10), which also suggests that the strategy of pricing basic insurance at a low price in order to attract consumers to supplementary products may not be effective. In conclusion we do not find any evidence of low pricing strategies for basic insurance products.

Table 10: Characteristics of individuals choosing low-price basic products

| | without low price product for basic insurance | with low price product for basic insurance | p |
|--|--|---|---------|
| Very good subjective health status (%) | 37,35 | 43,55 | 0,007 |
| Number of contacts with a physician in 2006 (mean) | 4,24 | 3,09 | < 0,001 |
| Had a hospital stay in 2006 (%) | 12,74 | 8,42 | 0,005 |
| First cycle regular track (compulsory school) (%) | 11,24 | 8,59 | 0,067 |
| Age (mean) | 54,22 | 49,13 | <0,001 |
| Income (mean) (1 - 11 scale) | 5,34 | 5,32 | 0,897 |
| Had a supplementary insurance contract (%) | 88,84 | 83,54 | 0,001 |

Source: IEMS survey (2007)

Interpreting the results

Our results raise the question of how consumers search for basic and supplementary health insurance products. More precisely, as most people have supplementary coverage and take out their basic and supplementary contracts from the same insurer, one might wonder how they select this insurer from all the rest. A strategy based on attracting consumers through a low-price supplementary product assumes that a sufficient number of consumers are interested in a given supplementary insurance product and that they base their search on this specific product (comparing prices across companies or responding to advertisements for this specific product). Once this initial choice is made, it would appear that they buy other insurance products from the same place.

It is important to note that at the time of the study, no single website provided a comparison of premiums across insurance companies in supplementary markets. This is still the case today. Some well-known websites do however provide the possibility for consumers to compare basic insurance product prices. Let us therefore assume that a consumer, at the time of the study, was interested in a contract for private room hospitalization and a contract for alternative medicine. There was no easy way to compare offers between companies for these two contracts. Accordingly, we had to obtain information from each insurance company which provided price estimations on their own websites for each insurance contract based on age and gender. This reflects the fact that consumers too would have had to search for each supplementary health insurance product separately. Given the complexity of this search, it may be the case that enrollees focused on one single specific product when they shopped for health insurance products.

In order to investigate how enrollees make choices in the Swiss health insurance markets, we looked at the reasons reported by enrollees for their choices of basic insurance (Table 11). Approximately 29.3% chose a basic insurance health plan identical to those of their parents, partners and friends. Approximately 12% reported that they selected a plan with low/moderate

premiums. Interestingly, some people selected a basic insurance plan because it offered good supplementary products. This was true for a majority of individuals (between 73.5% and 81.5% depending on the specific product) with a low-price supplementary product versus a minority (around 10%) in the group without a low-price product. This finding suggests that some individuals actually subscribed to an insurance company for basic insurance because it offered cheap supplementary products. This is consistent with the idea that enrollees may be attracted to basic insurance products through low-price supplementary products. However, it could be argued that current low-price products were not low-price products when they were bought by individuals. In order to control for this potential bias, we investigated the reasons reported for the choice of company in basic insurance on the subsample of those who changed insurers for at least one supplementary contract or who subscribed to a new supplementary insurance contract in the previous two years (2006 and 2007¹⁵). The results are reported in Table 11 and confirm that low-price supplementary products serve to attract consumers to basic insurance products.

Table 11: Reasons for being insured with the current Lamal insurance provider

| | Reasons for being insured with the current Lamal insurer | | | | | | Changed insurers for at least one supp. or contracted a new supp. in 2006 or 2007 (n = 204) |
|---|--|--------------------------|--------------|----------------|--------------------|--------------------------------|---|
| | All sample (n = 3016) | | | | | | |
| | Parents have always been there | Low/moderate premiums | Agent advice | Friends advice | Employer advice | Offered good supp. products | |
| | % | % | % | % | % | % | Offered good supp. Products |
| | | | | | | | % |
| with low-price product for private room in hospital | 12,6 | 12,2 | 3,1 | 7,1 | 12,4 | 79,1 | 92,8 |
| without low-price product for private room in hospital | 13,9 | 25,2 | 3,2 | 7,2 | 11,0 | 12,0 | 10,1 |
| with low-price product for semi-private room in hospital | 12,1 | 14,5 | 2,9 | 7,2 | 11,5 | 81,5 | 94,4 |
| without low-price product for semi-private room in hospital | 11,6 | 24,2 | 2,9 | 7,3 | 11,8 | 9,8 | 9,7 |
| with low-price product for dental care | 11,5 | 12,8 | 2,8 | 7,5 | 10,5 | 73,5 | 90,5 |
| without low-price product for dental care | 14,2 | 27,8 | 3,2 | 7,8 | 9,8 | 14,2 | 13,2 |
| with low-price product for homeopathy/ alternative medicines | 12,2 | 13,6 | 2,9 | 7,5 | 11,2 | 77,5 | 92,5 |
| without low-price product for homeopathy/ alternative medicines | 11,0 | 26,3 | 3,1 | 7,2 | 10,5 | 11,4 | 12,9 |
| Source: IEMS survey (2007) | | | | | | | |

Source: IEMS survey (2007)

4.3 Implementing a bundling test

The results of the bundling test are displayed in Table 12. The total mean monthly premium paid for basic coverage and a private room hospitalization contract with the same insurer amounted to 543 Swiss Francs. If these individuals had switched their basic insurance to the least expensive basic product, the mean premium would have been reduced to 479 Swiss Francs. This difference was statistically significant. Furthermore, we saw the same pattern for the other supplementary products. Separating the products by buying them from different firms would have been cheaper for the insured individual. We interpret this as evidence against bundling strategies.

¹⁵ Years for which we collected exhaustive supply data concerning prices in supplementary markets

Table 12: Sum of premiums for basic and supplementary contracts, by type of supplementary contract

| | Mean current premium* when buying supp. and basic coverage from the same company | Mean theoretical premium* when buying basic coverage from the cheapest company | p |
|----------------------------------|---|---|--------|
| Private room in hospital | 543 | 479 | < 0.01 |
| Semi-private room in hospital | 458 | 398 | < 0.01 |
| Dental care | 376 | 316 | < 0.01 |
| Homeopathy/alternative medicines | 359 | 306 | < 0.01 |

*Sum of premiums for basic and supplementary contracts

Source: IEMS survey (2007)

5. Concluding remarks

Using a definition of low-price products based on the distribution of premiums, we identified firms offering low-price products in every market considered. A majority of firms offered at least one low-price product (most of them offering only one). Only four firms offered cheap products in both basic and supplementary markets. Low-price insurance products differed across companies. Low-price supplementary insurance products seemed to succeed in attracting and retaining consumers to insurance plans. Consumers, when buying a low-price supplementary product: (i) always bought their basic contract from the same firm (ii) bought more insurance products from the same firm (iii) had less intention to switch basic insurance companies.

In Switzerland, it is commonly believed that basic and various supplementary insurance contracts are offered in a bundle. We do not find any evidence of this.

Our paper contributes to the industrial organization literature studying multiple- product pricing as, to our knowledge, it is the first work to investigate low-price product strategies (in order to retain consumers) in the context of health insurance. It also contributes to the literature studying consumer inertia in health insurance markets which has already discussed consumer inertia in the Swiss health insurance market from the consumer's perspective (Frank and Lamiraud, 2009; Dormont et al, 2009). In this paper we take the supplier's perspective and identify a pricing strategy that serves to create switching costs and reinforce consumer inertia. In particular, we observe low pricing of supplementary products. As in a loss-leader pricing strategy, a good priced at a low level is expected to be bought with other products, the latter providing most of the profit.

Our identification of low price products relies on the fact that the products we studied were

homogenous. Product differentiation would be another strategy for firms to avoid price competition, and attract consumers. Basic insurance products in Switzerland are, by law, homogenous. We are confident that the supplementary products which our analysis relies on are quite homogenous, despite their price differences. The latter fact is, according to this analysis, best explained by consumer inertia, and low-price product strategies.

It must be admitted that our analysis of prices is a short term analysis (over a two year period, 2006-2007). The group of low-price products remained fully stable over this two-year period. However, it would be worth investigating pricing patterns over a longer period of time. It could be the case that some companies start with a low price when they enter the market and then increase it.

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