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Supplementary health insurance as a tool for risk-selection in mandatory basic health insurance markets

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Abstract: As the share of supplementary health insurance (SI) in health care finance is likely to grow, SI may become an increasingly attractive tool for risk-selection in basic health insurance (BI). In this paper, we develop a conceptual framework to assess the probability that insurers will use SI for favourable risk-selection in BI. We apply our framework to five countries in which risk-selection via SI is feasible: Belgium, Germany, Israel, the Netherlands, and Switzerland. For each country, we review the available evidence of SI being used as selection device. We find that the probability that SI is and will be used for risk-selection substantially varies across countries. Finally, we discuss several strategies for policy makers to reduce the chance that SI will be used for risk-selection in BI markets.

Introduction

In most OECD countries, policy-makers consider supplementary health insurance (SI) as one of the primary instruments to limit the statutory financing of health care. A greater reliance on SI may reduce access to health care, since SI premiums may be risk-rated and health insurers may not be willing to accept all applicants. In addition, the expansion of SI may also reduce access to basic health services, since it may increase the opportunities for risk-selection in basic

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health insurance (BI) markets (van de Ven *et al.*, 2003). For unfavourable risk groups, risk-selection may imply less choice because of limited switching opportunities and higher premiums due to lower cross-subsidies from favourable risk groups.

In this article, we examine the conditions where SI is likely to be used as a tool for risk-selection in BI markets. In particular, we develop a conceptual framework that identifies the preconditions for the use of SI as a tool for risk-selection in BI markets, and the determinants of the probability that SI will be used for this purpose. Then, we investigate to what extent risk-selection via SI is likely to occur in five countries where the preconditions are met: Belgium, Germany, Israel, the Netherlands, and Switzerland. For each of these countries, we review the available evidence on the use of SI as a risk-selection device and we assess whether SI is likely to be used as a tool for risk-selection. Finally, we discuss the main policy implications of our findings.

Definitions

In the literature, a great variety of definitions is used to describe health insurance arrangements in different countries (Colombo and Tapay, 2004). Here, we refer to a classification of different health insurance arrangements based on two essential dimensions: (1) whether the services covered are basic or supplementary; and (2) whether the coverage is mandatory or voluntary (Paolucci *et al.*, 2006). We use the term basic health insurance (BI) for schemes that provide mandatory (MBI) or voluntary (VBI) coverage for health care services for which the government enforces cross-subsidies between different risk or income groups in order to guarantee universal financial access. By contrast, we use the term supplementary health insurance (SI) to refer to schemes that provide mandatory (MSI) or voluntary (VSI) coverage for services that are not classified as basic. Since voluntary basic health insurance (VBI) is not the subject of our analysis, we use the abbreviation BI to denote MBI. In countries without MSI we simply use SI to denote VSI (Figure 1).

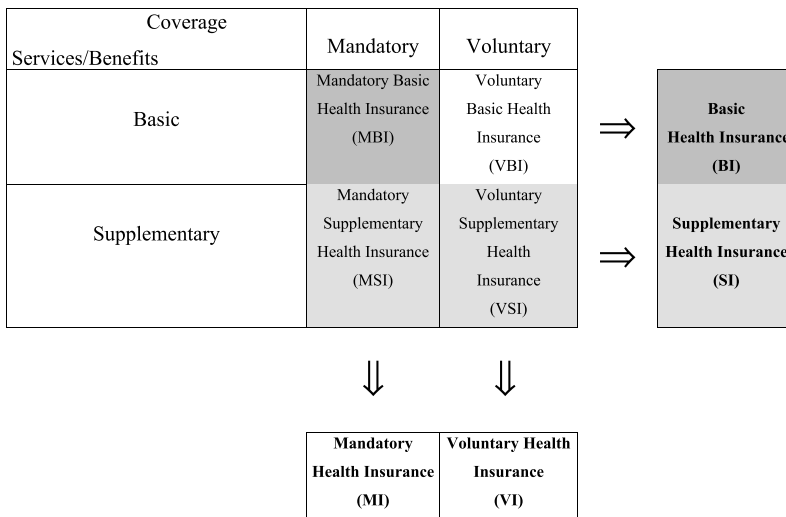
Conceptual framework

In this section, we develop a conceptual framework to assess the probability that SI is or will be used for risk-selection in BI. First, we identify two necessary preconditions and then the crucial determinants for the use of SI as a selection device in BI.

Preconditions for risk-selection via SI

The first precondition is that insurers have to have *incentives* to perform risk-selection in BI. This implies that health insurers must bear financial risk for

Figure 1. Defining health insurance schemes



the provision of BI, and some risk types must be more attractive than others. Traditionally, BI was provided by non-competing administrative carriers that were fully compensated for the medical costs of their enrollees (Cutler, 2002). However, during the 1990s these BI carriers in several countries were exposed to competition and financial risk. In order to preserve universal financial access, these changes were typically accompanied by premium rate restrictions, open enrolment, and risk-adjusted compensation payments. As far as the risk-adjusted compensation payments are not sufficient to compensate for predictable losses on high-risk individuals, health insurers in these countries face incentives to select risks (van de Ven *et al.*, 2003). The second precondition for the use of SI as a selection device in BI is the presence of a *link* between the purchasing decisions for the two types of insurance. This link must exist in order for health insurers to be able to use SI to influence the consumers' decision to buy BI. For instance, if consumers are legally obliged – or have a strong preference – to obtain SI from the same carrier that provides BI, selective underwriting by insurers of applicants for SI may undermine open enrolment requirements in BI.

Determinants of risk-selection via SI

If both preconditions are present, the probability that SI will be used for risk-selection in BI critically depends on the *strength* of the *incentives* for risk-selection in BI and the *strength* of the *links* between SI and BI. We distinguish the following determinants of the strength of the incentives for risk-selection in BI. The first crucial determinant is the quality of the risk-equalization scheme. The more accurately insurers are compensated for each risk type, the weaker the incentives for

risk-selection are. A second determinant is the level of financial risk for the health insurer. The more the insurer is at risk for the financial results of selling BI, the stronger the incentives for risk-selection. A third determining factor for the incentives faced by insurers is the level of price competition. Strong price competition will force insurers to exploit the available opportunities for risk-selection. By contrast, weak competition leaves room for cross-subsidization, which may reduce incentives for risk-selection, particularly if BI is carried out by non-profit insurers pursuing social goals (Douven and Schut, 2006).

Next, we discern the following determinants of the strength of the links between SI and BI. First, the strength depends on the type of link. In practice, three types can be observed: (1) regulatory or formal links, (2) insurer-established links or tying provisions, and (3) consumer-preferred links.

The strongest link is constituted by a legal requirement that SI and BI have to be sold as a joint product by the same health insurer. Next, insurers may be able to enforce joint purchase by means of tie-in sale provisions in SI policies. For instance, SI contracts may include provisions that the contract will be terminated or a surcharge will be required if the subscriber switches to another BI carrier. Since these tie-in provisions are not legally required, they are likely to constitute a weaker link than a formally enforced one. If the government forbids tie-in provisions or even requires that BI and SI must be sold by different legal entities, insurers may still be able to establish a link between the two. For instance, insurers could establish such a link by joining the same holding company and using the same brand name for SI and BI products. Finally, even in the absence of any formally or insurer-established link, consumers may have strong preferences for a joint purchase of SI and BI. One-stop shopping may be attractive because it lowers search and transaction costs and because it may facilitate the coordination of basic and supplementary benefits.

A second determinant of the strength of the link between SI and BI is the extent to which health insurers are free to set the terms of the contract, the enrolment rules, and the types of benefits covered by SI. Health insurers can effectively use SI for risk-selection in BI by means of selective underwriting, by premium discounts and by benefits design targeted at favourable risk groups (with respect to BI). Selective underwriting can be based on health history questionnaires to SI applicants. By including questions that are particularly relevant to assess the applicant's risk for BI, insurers can subsequently decide to deny SI coverage or calculate a high surcharge to compensate for the expected loss on BI. If allowed, insurers may also decide not to renew the SI contract of enrollees who are unfavourable risks in BI (selective disenrolment).

The design of specific SI-packages is another strategy that insurers may adopt to differentiate between low risks and high risks (e.g. early cancer diagnosis is more likely to be demanded by healthy individuals, whereas cancer therapy by sick people). In the same way, insurers may advertise SI to certain (profitable) risk categories, e.g. by using specific distribution channels (internet, fitness clubs

etc.), offering high rebates for deductibles, informing unprofitable enrollees about their right to change insurer and providing bonuses to agents who are successful in getting rid of the most expensive cases by shunting them off to competitors.

Insurers may also attract favourable risks by offering SI premiums below actuarially fair levels. By using health history questionnaires, insurers can determine which applicants are likely to be profitable in BI and they may use these expected profits to offer these applicants a premium discount. Cross-subsidizing SI contracts by profits on BI contracts may be more attractive than lowering the community-rated BI premium. This is particularly the case for new entrants who may be able to use SI for attracting *only* favourable risks and therefore do not have to recover any losses in the BI market (Kifman, 2005).

Finally, the strength of the link between SI and BI is also determined by the importance of SI for consumers. If SI comprises only a small fraction of individuals' health care expenses or if only a small proportion of the population purchases SI, then the link between both types of insurance is likely to be weak. Hence, both the share of SI in health care financing and the share of the population covered by SI are likely to be positively related to the probability that SI will be used for risk-selection in BI.

Supplementary health insurance as a tool for risk-selection in mandatory basic health insurance markets in five countries

In this section, we investigate to what extent SI is likely to be used as a tool for risk-selection in the BI market in five countries: Belgium, Germany, Israel, the Netherlands, and Switzerland. These countries were selected because each country fulfils the preconditions for risk-selection via SI: insurers face incentives for risk-selection in BI and there are links between the decisions to purchase BI and SI. For each of the five countries we assess whether SI is likely to be used as a tool for risk-selection in BI by examining to what extent the determinants of the conceptual framework are relevant in these countries. In addition, we review the available evidence of the actual use of SI as a risk-selection device. Table 1 summarizes the main features of SI in each of the five countries.

Belgium

Main features of SI

In Belgium, three types of SI can be distinguished, two of which can be used as a tool for risk-selection in the BI market. First, almost all local BI providers offer mandatory supplementary coverage (MSI). It is stipulated in the statutes of these local insurers that SI is mandatory for all their members. Moreover, according to the law all insured are legally obliged to enroll with the same local insurer for both BI and MSI. Second, BI providers offer voluntary supplementary coverage

Table 1. Main features of SI in the 5 countries*

	Belgium		Germany		Israel (VSI)	The Netherlands (VSI)	Switzerland (VSI)
	MSI	VSI	MSI	VSI			
Expenditure Ratio SI/BI (in %)		2%	<5%	2%	5%	6%	23%
Share of BI insured buying SI (in %)	95%	n.a.	9.5%	11%	66%	92%	71%
Market share of largest 4 SI insurers at national level (in %)	19%	-	-	45%	91%	52%	40%
Regulation of premium, coverage and enrollment	No exclusion by age/health status	No exclusion by age/health status	Coverage restrictions, open enrollment	None	Open enrolment, age-related premiums	None	None
Share of group contracts	No group-contacts	No group-contacts	Negligible	Negligible	No group-contacts	11.3%	Negligible
Premium setting	Risk-rated	Risk-rated	Income-related	Risk-rated	Age-related group-contacts to be approved by the government	Community-rated (some insurers use few age classes)	Risk-rated
Premium variation	Small	Small	Substantial	Substantial	Small	Substantial	Substantial
Product differentiation	Moderate	Moderate	Large	Large	Small	Large	Large

Note: *Most figures relate to 2002 or 2003.

Sources: Beck *et al.* (2003), Beck (2004, 2006), Berghman and Meerbergen (2005), Brammli-Greenberg and Gross (2003), Bruijn *et al.* (2005); Bruijn and Schut (2006), Buchner and Wasem (2003), Christian Mutualities (2003), Colombo (2001), Controletoedienst (2004), Douven and Schut (2006), Laske-Aldershof *et al.* (2004), Nuscheler and Knaus (2005), Nza i.o. (2006), Prinsze *et al.* (2005), Schokkaert and Van de Voorde (2003), Schut *et al.* (2004), Shmueli *et al.* (2003), Tamm *et al.* (2006), Wasem *et al.* (2004).

(VSI) on top of BI and MSI (primarily extra hospital services). Again, insured who want to buy VSI are obliged to enroll with the same BI/MSI provider.

From 1994 until 2002, SI expenditures as a share of BI expenditures remained constant at 2% (Table 1), indicating that SI and BI expenditures grew at the same rate. Currently, MSI covers costs related mainly to hospitalization, health care abroad, transportation of the sick, logopaedics, orthodontics, alternative medicine, and home care. VSI expands the coverage of hospital costs. The benefits package is regulated by the law, which obliges every BI provider to offer at least one item in the MSI. In reality, all insurers offer dozens of additional benefits ranging from health promotion to all kinds of advantages such as family allowances in case of childbirth, cheap holidays for children and pre-marriage savings.

The level of concentration of the SI market is low, the market share of the four largest insurers being only about 19.4%. Premium rate restrictions (e.g. community-rated premiums) are absent in both SI markets. In case of financial problems, the Control Office can oblige insurers to take some measures. There is no formal open enrolment in the MSI market. Nevertheless, insurers do not deny access in practice. SI providers are not allowed to exclude new enrollees because of their age or health status. SI contracts can be terminated yearly, subject to three months' notice by the insured.

Incentives for risk-selection

The risk-equalization scheme in Belgium is based on demographic and socio-economic information. There are also some morbidity-related risk-adjusters, but they are not based on diagnostic information, meaning that BI providers can easily identify highly profitable risk groups (Schokkaert and Van de Voorde, 2003). Despite the rather poor risk-equalization scheme, incentives for risk-selection are substantially mitigated by the limited financial risk for BI providers (7.5% of gains and losses). In addition, the out-of-pocket BI premium is almost negligible, so price competition is hardly feasible. Finally, in absence of competition, BI carriers have no strong drive to select risks, since they are non-profit entities pursuing social goals. Due to the limited financial risk and the absence of price competition, BI providers have relatively weak incentives for risk-selection.

Usefulness of SI as selection device

The law stipulates that the insured must obtain BI and MSI from different entities of the same insurer. These entities must be financially independent and cannot cross-subsidize each other. In practice, however, it is difficult to attribute marketing and administrative costs to the different entities, since the same insurer offers SI and BI. Typically, BI and SI are marketed as joint products. For insurers, the strong formal links make SI a potentially important tool to attract customers.

For Belgian insurers the most straightforward strategies to select favourable risks in SI markets are product and premium differentiation. Premiums are differentiated according to risk categories, mainly age, family composition,

and employee/self-employed status. The benefits package is regulated but the freedom to differentiate is sufficiently large to attract specific risk groups. Under the Belgian law, comparative or misleading advertising is forbidden. In addition, the law forbids that benefits are granted with the purpose of inciting switching. In practice, these regulatory restrictions on selective marketing and benefits design are not very effective (see below).

Finally, selective underwriting, particularly in the forms of waiting times and exclusion of pre-existing medical conditions, is allowed and used in the VSI market. Despite the fact that SI offers insurers a potentially effective tool for risk-selection, the usefulness of SI for this purpose is restricted due to the limited importance of SI in health care financing. This together with the weak incentives for risk-selection makes it unlikely that SI is a frequently used tool for risk-selection in BI.

Evidence of risk-selection via SI

Nevertheless, there are indications that SI is increasingly used for favourable risk-selection. Although evidence is largely anecdotal, selective advertising has increased during recent years. Certain insurers selectively promote new insurance products related to sports (such as a reduction of registration fee for the sports club or discounts for children participating in a sports camp). In the leading Belgian newspaper *De Standaard* (Tegenbos, 2005), CEOs of three major insurers' associations (with a combined market share of 77%) accused two other insurers' associations (with a combined market share of 21%) of attracting young and healthy enrollees by offering them advantageous SI contracts. Since 2000, the number of items included in the SI has steadily increased, with substantial differences between the different funds. According to the three CEOs, this risk-selection undermines access, and they appealed to the government to make these selection activities impossible by imposing a uniform standardized benefits package and by prohibiting any marketing activities involving a comparison of SI contracts. Evidence from a survey among VSI members of the Christian insurers showed that specific benefits are particularly attractive to specific risk groups (Christian Mutualities, 2003). Not only enrolment in VSI substantially differed between various age and socio-economic groups, but an analysis of the survey data also revealed a positive relation between characteristics such as education, income, and marital status and the probability of having hospital insurance.

Germany

Main features of SI

Two types of supplementary insurance can be distinguished in Germany: MSI and VSI.

MSI is exclusively offered by (most) BI providers. On top of the standardized mandatory basic benefits package (MBI), German insurers are allowed to offer extra benefits, up to a maximum of 5% of BI expenditures (Buchner and Wasem, 2003). MSI benefits include services such as spa treatments and hospice treatment. Supplementary benefits are determined in the by-laws of the individual insurer and are mandatory for all subscribers of that insurer (no opting-out). Open enrolment for BI also applies to MSI. Moreover, insurers must charge a single contribution rate for both basic and supplementary benefits. However, in contrast to BI, expenses for MSI are not included in the risk-equalization scheme.

German citizens can also buy supplementary insurance from competing for-profit carriers on a voluntary basis (Wasem *et al.*, 2004). VSI mainly covers costs regarding upgraded hospital accommodation, dental care, alternative medicine, glasses, and co-payments. The VSI market is unregulated: no premium rate restrictions (e.g. community-rated premiums), no open enrolment requirements, and no standardized benefits. VSI providers are allowed to calculate risk-rated premiums and to exclude pre-existing conditions from coverage. Usually, applicants 55 years or older receive no contract at all. BI carriers are not allowed to offer VSI. VSI comprises only 2% of BI expenditures and 11% of the German population. The market share of the four largest VSI insurers is about 45% (Table 1).

Incentives for risk-selection

The risk-equalization scheme in Germany does not effectively neutralize incentives for risk-selection (Buchner and Wasem, 2003). This and the high level of financial risk for health insurers, accountable for 97% of gains and losses, create strong incentives for risk-selection. In addition, the high level of competition due to the presence of about 250 BI carriers, and the absence of entry barriers further reinforce the incentives for risk-selection. For instance, new BI carriers (e.g. Betriebskrankenkassen, BKKs) grew rapidly after entering the market because they were successful in attracting favourable risks by offering low contribution rates (Tamm *et al.*, 2006).

Usefulness of SI as a selection device

BI and MSI are tightly linked, since they are offered and marketed as joint products by a single provider at a single price. If subscribers want to opt out, they can only switch to another BI provider that offers a different package of supplementary benefits. The strong link between MSI and BI makes MSI a potentially useful tool to attract favourable risks. Despite this, the usefulness of MSI for risk-selection in BI is restricted by the open enrolment requirement, the absence of a separate premium, and the limited scope of the supplementary benefits that can be included. In fact, the only way that MSI can be used for risk-selection is by the design of the benefits package.

Until 2004, VSI and BI were completely separated by law. Then, the government decided to allow BI providers to act as agents for VSI providers. Most BI providers now cooperate with one VSI provider and offer premium discounts to their subscribers. Moreover, as part of this cooperation, some VSI providers waive their right to reject applicants. However, none of them has waived its right to calculate risk-related premiums. If subscribers switch to another BI provider, in most cases they lose their VSI discount. Opportunities for BI providers to use this link as a tool for risk-selection are rather limited, since BI and VSI providers are also not allowed to cross-subsidize each other and must be financially independent from each other.

Evidence of risk-selection via SI

Nevertheless, there is some evidence that BI carriers use the composition of MSI benefits to attract low risks. A comparison of supplementary benefits for the three main types of BI providers shows substantial differences (Nuscheler and Knaus, 2005). Whereas most of the traditional regional BI carriers (AOKs) offer benefits that are attractive to the high risks – such as chiro therapy (91%), cancer therapy (64%), homeopathic medicine (70%) – only a small minority of the fast growing and lower-priced BKK funds offer these benefits (14% offers cancer therapy, 26% homeopathic medicine, and 33% chiro therapy). By contrast, BKKs more often than AOKs offer benefits that are attractive to favourable risk groups, such as health checkups (25% vs. 9%) and cancer screening (25% vs. 0%). Given the weak and only recently established link between BI and VSI providers, risk-selection via VSI does not seem to be an issue yet. However, many of VSI contracts offer rebates that may be lost if enrollees switch BI carrier. Andersen and Grabka (2006) conclude that attractive SI packages had an impact on switching. However, the risk profiles of switchers are unknown. MSI and VSI may become a more important tool for risk-selection in the near future, if the basic benefit package is further reduced. However, in contrast to the trend of a gradual expansion of the role of SI in health care financing, the 2006 German health care reform plan includes a transfer of a number MSI benefits (palliative care and some spa treatments) and some VSI benefits (acupuncture) to the basic health insurance package.

Israel

Main features of SI

In Israel, SI can be bought voluntarily and on an individual basis from the same insurer providing BI, a commercial insurer, or both. During the period 1995–2002, the share in the population buying SI from a BI provider rapidly increased from 35% to 66%, while the share buying SI from a commercial insurer increased from 16% to 24% (the share buying both types of SI grew

from 5% to 20%). Since only SI provided by BI carriers can be used as a tool for risk-selection in BI, we focus our analysis on this type of SI. Currently, SI covers costs of some surgical interventions in Israel and abroad, dental care, preventive screening, alternative medicine, co-payments in BI (especially for drugs), and IVF. In the period 1999–2002, SI expenditures as a share of BI expenditures grew from 3.3% to 5.3% (Table 1). In Israel, the four largest BI/SI providers together hold 91% of the SI market share. There is an open enrolment requirement and insurers may charge age-related premiums for SI coverage after government approval. Law does not determine the composition of benefits package and the contractual conditions. Nevertheless, the extent of product differentiation is still moderate (Brammli-Greenberg and Gross, 2003).

Incentives for risk-selection

The quality of the risk-equalization scheme in Israel is quite poor (only age-related subsidies), therefore BI providers can easily identify risk groups that are highly unprofitable, such as chronically ill people (Shmueli *et al.*, 2003). Since BI suppliers are fully at risk and are not allowed to charge a premium for BI in addition to the risk-adjusted capitation payments they receive from the government, the incentives for risk-selection are strong. These incentives are mitigated, however, by the weakly competitive structure of the BI market. Traditionally the BI market is dominated by a few non-profit insurers, while legal entry barriers effectively prohibit any potential competition. Switching rates are low (about 1% per year) (Laske-Aldershof *et al.*, 2004).

Usefulness of SI as a selection device

BI providers are allowed to offer SI only to their own enrollees. Alternatively, BI insured may choose to buy SI coverage from commercial insurers, but they cannot obtain SI from another BI provider. BI providers exercise the double function of SI and BI suppliers in a regulated context. The law requires that BI/SI providers keep a separate financial administration for SI and BI. Cross-subsidization between BI and SI is forbidden and providers are not allowed to sell other types of insurance. Despite the strong link between BI and SI, the usefulness of SI as a selection device is restricted by open enrolment and by the limited freedom for insurers to differentiate premiums. The limited role of SI in health care financing and the low switching rates also reduce the usefulness of SI as a selection device.

Evidence of risk-selection via SI

Currently, there is no evidence of insurers using SI for risk-selection in BI. Although the share of SI expenditures on BI expenditures is still small (5%), it steadily increased during the last decade. If this trend continues, SI is likely to become a more useful tool for risk-selection, particularly if the risk-equalization scheme is not improved.

The Netherlands

Main features of SI

In the Netherlands, SI is exclusively voluntary. More than 90% of BI insured buy SI. SI can be bought on an individual basis or via group contracts. Currently, SI covers almost all dental care for adults, alternative medicine, maternal home care, physical therapy, psychotherapy, anticonceptives, and IVF. In the last decade, the number of services excluded from the basic benefits package and covered by SI has steadily increased. The same applies to SI expenditures as a share of BI spending, which grew from 2% in 1994 to 6.5% in 2003 (Table 1). The Dutch SI market is not regulated by the government. There is no open enrolment requirement and there are no restrictions on premium rate setting and the benefits package. Although risk-rating is allowed, insurers still charge predominantly community-rated premiums (Schut *et al.*, 2004). The most likely explanation for this is that SI is traditionally offered as a by-product of BI. Since almost all insured buy SI and BI from the same insurer and switching rates were low until 2006, there was hardly any competitive pressure to differentiate SI premiums (Laske-Aldershof *et al.*, 2004; Douven and Schut, 2006).

Incentives for risk-selection

The risk-equalization scheme in the Netherlands is the most sophisticated among the five countries. Nevertheless, BI providers can still easily identify risk groups that are highly unprofitable relative to the community-rated premium that BI providers have to charge (Prinsze *et al.*, 2005). Since BI carriers are accountable for about 50% of gains and losses, insurers can substantially benefit from risk-selection. Prior to 2006, incentives for risk-selection were mitigated by the weak competition among non-profit BI providers due to the limited propensity of consumers to switch to another insurer (Laske-Aldershof *et al.*, 2004; Douven and Schut, 2006). Since 1 January 2006, the Dutch health insurance system has been profoundly reformed by the introduction of a new MBI scheme. The former distinction between social health insurance (MBI) for low/middle income groups and private health insurance (VBI) for high-income groups has been abolished. Under the new BI scheme, all enrollees can switch plans at annual open enrolment periods (two months). BI premiums have to be community-rated and a risk-equalization scheme applies as before. Dutch citizens had to choose a new contract for BI and SI. Anticipating that many customers would consider switching, insurers engaged in a price war (Douven and Schut, 2006). Indeed, the switching rate increased dramatically, from about 3% to 18% (NZa i.o., 2006). Although switching rates in 2006 are likely to be high because of the radical change in choice setting, price competition is expected to remain strong in the future. Strong price competition substantially increases the incentives for risk-selection in the new BI scheme.

Usefulness of SI as a selection device

In the Netherlands, there is no regulation that requires insurers to link SI with BI coverage. On the contrary, both types of insurance have to be offered by different juridical entities. Cross-subsidization between BI and SI providers is forbidden and the providers must be financially independent. Despite the separation of providers, SI and BI have always been sold as a joint product under the same brand name (Schut *et al.*, 2004). SI and BI providers typically belong to the same holding company, making marketing and administrative costs difficult to ascribe to the different entities. Prior to 2006, most SI contracts had a clause that the contract would be automatically terminated once the insured would switch to another BI provider. Although termination clauses are forbidden under the new BI scheme, this prohibition does not effectively preclude tie-in sales. For instance, several insurers made it clear that they would charge higher SI premiums to enrollees choosing other BI providers and some insurers offer SI only to applicants that obtain BI from the same company. In practice, almost all consumers still buy SI and BI from the same company (NZa i.o., 2006).

Since SI providers are free to set premiums, determine the benefits package, and apply medical underwriting, SI can be effectively used for risk-selection in BI. If consumer mobility remains high after 2006, this would make SI a particularly powerful tool to discriminate between different risk groups.

Other straightforward strategies would be to use health questionnaires to identify favourable and unfavourable risk groups that apply for SI. Such strategies, however, are effective only if a substantial proportion of the insured is willing to switch (Schut and Hassink, 2002).

Given the links between BI and SI and the absence of legal restrictions on underwriting, product differentiation, and premium setting, SI is a moderately useful tool for risk-selection.

Evidence of risk-selection via SI

Before 2006, both the incentives for risk-selection and the usefulness of SI as a selection device were limited. Survey results indicate that less than 1% of the applicants were refused, despite the fact that insurers used health questionnaires for SI applicants (Bruijn *et al.*, 2005; Laske-Aldershof and Schut, 2005). Since 2006, price competition and consumer mobility increased, which made SI a powerful selection device. However, to accommodate the transfer to the new BI scheme, all insurers promised to accept all applicants for SI without medical underwriting. Recent investigations show that in 2006 only a few insurers used health questionnaires for SI applicants and, except for extensive dental coverage, no applicants were refused (Bruijn and Schut, 2006; NZa i.o., 2006). Since the promise to accept all SI applicants only holds for 2006, the probability that SI will be used as selection device is likely to increase in the future. A possible counteracting factor may be the damaging effect of such behaviour on an insurer's

reputation. For several years already, the National Patient Federation (NPCF), the Ministry of Health, and the Dutch Health Authority (NZA) have monitored the underwriting practices of SI providers and they publish the results of their investigations (Laske-Aldershof and Schut, 2005; Bruijn *et al.*, 2005; NZa i.o., 2006).

Switzerland

Main features of SI

In Switzerland, SI is exclusively voluntary and covers dental care, sick-leave payments, alternative medicine, upgraded hospital accommodation, access to all physicians and hospitals all over the country, cross-border care, and transportation costs for accidents in the mountains. Prior to the health care reform of 1996, SI accounted for almost 30% of BI expenditures. Due to the introduction of a comprehensive BI scheme, however, the share of SI on BI expenditures decreased to about 20% (Table 1). Nevertheless, the popularity of SI has grown, with the share of BI insured holding SI coverage increasing from 62% in 1997 to 71% in 2003. Government intervention in the SI market is limited. There are no open enrolment requirements, standardized benefits, and premium rate restrictions. Three types of SI carriers can be distinguished: independent SI providers, daughter companies of BI carriers, and integrated BI/SI providers. Consumers are free to choose among these three SI carriers. The regulatory regimes that apply to daughter companies and integrated providers are quite different. Integrated insurers are restricted to the exclusive provision of health coverage by law, while daughter companies may offer all kinds of insurance coverage besides health insurance. Combined with the more liberal supervisory regime, this explains the growing popularity of daughter companies at the expense of integrated ones.

Incentives for risk-selection

The risk-equalization scheme in Switzerland is based only on age, gender, and region, implying that BI providers can easily identify risk groups that are highly (un)profitable. Moreover, BI carriers are fully at risk and there is no reinsurance or state aid in case of losses. Therefore, insurers have to charge sufficiently high premiums to survive. Since insurers face substantial competition, the incentives for risk-selection are strong.

Usefulness of SI as a selection device

Formally, basic and supplementary benefits are strictly separated. It is legally forbidden to link rebates in SI to BI, i.e. SI carriers are not allowed to cover the medical expenses that fall under voluntary deductibles in BI. In terms of accounting requirements, SI providers are obliged to keep their financial administration

separated from BI providers. Cross-subsidization between BI and SI providers and tie-in sale provisions in SI contracts are also forbidden.

Despite the legal separation between BI and SI carriers, most SI carriers are daughter companies of or integrated with BI carriers, which makes it difficult to establish whether marketing and administration costs refer to BI or SI carriers. Moreover, despite the fact that tying-in is forbidden, when people switch BI provider they usually terminate their contract with the related SI carrier. This likely reflects a consumer preference for a joint purchase of BI and SI. Since BI and SI benefits overlap to some extent, consumers may not want to figure out which plan is responsible to cover the costs of care once they fall ill. Moreover, insurers try to prevent consumers from a separate purchase of BI and SI 'by all kind of tricks, for instance by taking away the premium discount for families or by surcharges on the premium for extra administrative expenses' (*Beobachter Kompakt*, 2006). Beck (2004) also found that having SI significantly reduces the probability to switch. Hence, despite the separation between BI and SI, most consumers purchase both products from the same company. Given the important role of SI in health care financing and the possibility of selective underwriting, selective advertising, and product and premium differentiation, the joint purchase of SI and BI makes SI a potentially useful tool for risk-selection in the BI market.

Evidence of risk-selection via SI

Beck (2006) shows that the impact of risk-selection on premiums increased from 1997 to 2006 by a factor of 12 and can explain a substantial part of the variation in premiums. Although empirical research is hampered by the fact that risk-selection is a hidden activity by insurers, there is substantial evidence suggesting that risk-selection via SI in the BI market is becoming increasingly important (Colombo, 2001; Beck, 2004). Each year several insurers launch new SI products that are particularly attractive to healthy customers. In addition, SI premiums are increasingly risk-rated and new SI products for upgraded hospital accommodation are targeted at specific age groups (e.g. SI policies were launched under the label "Hospital 20" and "Hospital 30"). These new SI products are attractive for young people as long as they pass the mandatory health check.

Conclusions of the five-country comparison

We have developed a conceptual framework to assess the probability that insurers use supplementary insurance as a tool for risk-selection in basic insurance markets. We have identified two preconditions for using SI as a selection device: (1) the presence of incentives for risk-selection in BI, and (2) the presence of links between SI and BI. Next, we identified which factors determine the strength of the incentives for risk-selection in BI and the extent to which SI can

Table 2. Strength of incentives for risk-selection in BI

	Belgium	Germany	Israel	The Netherlands	Switzerland
Quality of the risk-equalisation scheme	Moderate	Moderate	Low	High	Low
Financial risk for insurers	Low 7.5%	High 97%	High >90%	Moderate 54%	High 100%
Competition among insurers	Weak	Strong	Weak	Weak (until 2006) Strong (since 2006)	Strong
Incentives for risk-selection	Weak	Strong	Moderate	Moderate	Strong

Table 3. Usefulness of SI for risk-selection in BI

	Belgium	Germany		Israel	The Netherlands	Switzerland
		MSI	VSI			
Type of link	Strong (formal)	Strong (formal)	Weak	Strong (formal)	Moderate	Moderate
Freedom to use SI as tool for risk-selection	High	Low	High	Low	High	High
Importance of SI	Moderate	Low	Low	Moderate	Moderate	High
Usefulness of SI for risk-selection in BI	Moderate/High	Low	Very low	Moderate	Moderate/High	High

actually be used as a tool for risk-selection. The usefulness of SI crucially depends on the links between BI and SI, on the freedom to set the terms of the SI contract and to select applicants, and on the relative importance of SI for BI enrollees. We applied our framework to five countries in which the preconditions are met, and conclude that the probability that SI is or will be used for risk-selection substantially varies across countries.

The main findings of our five-country comparison are summarized in Tables 2, 3, and 4.

Table 2 concludes that incentives for risk-selection in BI markets are particularly strong in Switzerland and Germany, moderate in Israel and the Netherlands (since 2006), and relatively weak in Belgium.

Table 3 concludes that SI is a highly useful tool for risk-selection in Switzerland, followed by the Netherlands, Belgium, and Israel. In contrast, SI is not a particularly useful selection device in Germany.

Table 4 combines the findings of Tables 2 and 3 to assess the probability that SI is or will be used for risk-selection in each of the five countries. In Switzerland, SI is most likely to be used for risk-selection in BI. Although

Table 4 Probability and evidence of risk-selection in BI via SI

	Belgium	Germany		Israel	The Netherlands	Switzerland
		MSI	VSI			
Incentives for risk-selection	Weak	Strong	Strong	Moderate	Moderate	Strong
Usefulness of SI for risk-selection in BI	Moderate/High	Low	Very low	Moderate	Moderate/High	High
Probability of risk-selection in BI via SI	Low	Moderate	Low	Moderate	Moderate/High	High
Evidence of different strategies adopted to use SI as a tool for risk-selection	Yes	Yes	No	No	Limited	Yes

insurers typically try to hide risk-selection activities, there is substantial evidence that SI is increasingly used for risk-selection in the Swiss BI market. In the Netherlands, the probability that SI will be used for risk-selection in BI has been substantially increased since the introduction of the new BI scheme in 2006. During the first year of the reform, health insurers agreed to accept all applicants for SI without selection. For subsequent years, this agreement will no longer hold, however, and the intensified competition may prompt insurers to use SI as an effective strategy for risk-selection. Despite the strong incentives for risk-selection in Germany, SI is not a very useful tool for risk-selection. Nevertheless, there is some evidence of BI carriers using SI benefits as a way to attract favourable risk groups or to deter unfavourable ones. As compared to Germany, Belgium presents the opposite case, where SI could be effectively used for risk-selection in BI but the incentives to do so are weak. Despite these limited incentives, SI also appears to be increasingly used in Belgium to attract favourable risk groups. In Israel, insurers are faced with moderate incentives for risk-selection. Although SI and BI are closely linked, the room to use SI for risk-selection is limited by regulation. At present, there is no evidence that SI is used in Israel for risk-selection in BI.

Policy implications

For policymakers, expanding supplementary health insurance may be an attractive policy option to alleviate the mounting pressure to contain public spending. For insurers, however, the expansion of SI may offer opportunities for risk-selection in BI markets. Policymakers may want to avoid this spillover effect, since risk-selection is likely to reduce both access (due to lower cross-subsidies) and choice (due to lower switching opportunities) for specific risk groups.

Policymakers can pursue two main strategies to reduce the probability that SI is or will be used for risk-selection in BI markets. The first strategy is to reduce the incentives for risk-selection in BI. The most effective way to accomplish this is by improving the risk-equalization scheme. Particularly in Germany, Israel, and Switzerland, where the quality of the current risk-equalization scheme is quite poor, the risk-equalization formula needs to be improved to neutralize the strong incentives for selection. Alternative ways to reduce the incentives for risk-selection are to limit insurers' financial risk (as in Belgium), and to restrict competition among insurers (as in Israel). Both alternatives have the important drawback, however, that they also reduce the incentives for efficiency.

The second strategy is to reduce the usefulness of SI as a selection device. The most effective way to do this would be to enforce a strict separation of SI and BI providers (as was the case in the VSI market in Germany prior to 2004). However, a strict separation would raise consumers' search costs and inhibit an effective coordination of services covered by BI and SI. A less radical measure would be to forbid tie-in sales provisions in SI contracts, although the Swiss experience shows that such a measure can be easily circumvented. The usefulness of SI as a selection device can also be limited by imposing regulatory restrictions to SI providers such as open enrolment, standardized benefits, and premium rate restrictions (as in Israel). A disadvantage of these regulations may be that they hamper an efficient functioning of the SI market. For instance, premium rate restrictions and standardized benefits may result in adverse selection and could expose insurers to a premium death spiral (Cutler and Reber, 1998). Moreover, for EU countries like Belgium, Germany, and the Netherlands, regulating SI may not be a feasible option, since it is likely to be in conflict with the prevailing EU regulation (Paolucci *et al.*, 2006). An alternative strategy to counteract the use of SI as a tool for risk-selection is to make this hidden strategy transparent. In the Netherlands, for instance, the national patient federation (NPCF) and the Dutch Health Authority (NZa) periodically monitor insurers' behaviour. By investigating and exposing the use of health questionnaires for applicants of SI, the use of tying-in strategies and the underwriting practices, the fear of a loss of reputation may prevent insurers from using SI for risk-selection purposes. Hence, bringing the 'reputation mechanism' into play might be an effective complement to the first-best strategy of improving the quality of the risk-equalization scheme. Finally, a straightforward way to reduce the usefulness of SI as a tool for risk-selection is to limit the role of SI in health care financing. However, this strategy is in direct conflict with the policymakers' aim to reduce the share of public health care expenditures.

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References

- Andersen, H.H. and M.M. Grabka (2006), 'Kassenwechsel in der GKV 1997–2004: Profile – Trends – Perspektiven', in D. Göppfarth, S. Greß, K. Jacobs, and J. Wasem (eds), *Jahrbuch Risikostrukturausgleich 2006 – Zehn Jahre Kassenwahlfreiheit*, St. Augustin: Asgard Verlag, pp. 145–189.
- Beobachter Kompakt (2006), *Krankenkassen, Der Schweizerische Beobachter*, 80(21), special issue, www.beobachter.ch/kompakt.
- Beck K., S. Spycher, A. Holly, and L. Gardiol (2003), 'Risk adjustment in Switzerland', *Health Policy*, 65(1): 63–74.
- Beck, K. (2004), 'Risiko Krankenversicherung – Risikomanagement in einem regulierten Krankenversicherungsmarkt', Haupt, Bern.
- Beck, K. (2006), 'Risk-adjustment and its impact on selection and efficiency: social health insurer's strategic decision making', presented at the European Conference on Health Economics, Budapest.
- Berghman, J. and E. Meerbergen (2005), 'Aanvullende sociale voorzieningen in de tweede en derde pijler', research project AG/01/084, CESO, Leuven.
- Brammli-Greenberg S. and R. Gross (2003), 'The private health insurance market in Israel', JDC-Brookdale Institute.
- Bruijn, D. de, F.J. Prinsze, F.T. Schut, and W.P.M.M. van de Ven (2005), 'Monitor Risicos-electie', report for the NPCF, Erasmus University Rotterdam.
- Bruijn, D. de and F.T. Schut (2006), 'Evaluatie aanvullende verzekeringen 2006', report for the NPCF, Erasmus University Rotterdam.
- Buchner, F. and J. Wasem (2003), 'Needs for further improvement: risk adjustment in the German health insurance system', *Health Policy*, 65(1): 21–35.
- Christian Mutualities (2003), 'Resultaten CM-enquête', CM-informatie (June), 18–26.
- Colombo, F. (2001), 'Towards more choice in social protection? Individual choice of insurer in basis mandatory health insurance in Switzerland', *Occasional papers No 53*, Paris: OECD.
- Colombo, F. and N. Tapay (2004), 'Private health insurance in OECD countries', *The OECD Health Project*, Paris: OECD.
- Controledienst (2004), 'Jaarverslag 2004, Controledienst voor de ziekenfondsen en de land-sbonden van ziekenfondsen', Brussel.
- Cutler, D.M. and S.J. Reber (1998), 'Paying for health insurance: the trade-off between competition and adverse selection', *Quarterly Journal of Economics*, 113(2): 433–466.
- Cutler, D.M. (2002), 'Equality, efficiency and market fundamentals: the dynamics of international medical-care reform', *Journal of Economic Literature*, 40: 881–906.
- Douven, R. and F.T. Schut (2006), 'Health plan pricing behaviour and managed competition', Discussion Paper 61, CPB, The Hague.
- Kifman, M. (2005), 'Risk-selection and complementary health insurance: the Swiss approach', Diskussionsbeitrag Serie I – Nr. 328, Universität Konstanz.

- Laske-Aldershof, T., F.T. Schut, K. Beck, S. Greß, A. Shmueli, and C. Van de Voorde (2004), 'Consumer mobility in social health insurance markets: a five-country comparison', *Applied Health Economics and Health Policy*, 3(4): 229–241.
- Laske-Aldershof, T. and F.T. Schut (2005), 'Monitor verzekerdemobiliteit', report for the Ministry of Health, Erasmus University Rotterdam.
- Nuscheler, R. and T. Knaus (2005), 'Risk-selection in the German public health insurance system', *Health Economics*, 14(12): 1253–1271.
- NZa i.o. (2006), 'De tussenstand op de zorgverzekeringsmarkt', Utrecht.
- Paolucci, F., A. den Exter, and W.P.M.M. van de Ven (2006), 'Solidarity in competitive health insurance markets: analysing the relevant EC legal framework', *Health Economics, Policy and Law*, 1(2): 107–126.
- Paolucci, F., F.T. Schut, and W.P.M.M. van de Ven (2006), 'Economic rationales for the design of health care financing schemes', working paper 2006: 3. www.med.uio.no/heled/publikasjoner/HORN/HORN_2006_3.pdf
- Prinsze, F.J., W.P.M.M. van de Ven, D. de Bruijn, and F.T. Schut (2005), 'Verbetering risicoverevening in de zorgverzekering', report for the NPCF, Erasmus University Rotterdam.
- Schokkaert, E. and C. Van de Voorde (2003), 'Belgium: risk adjustment and financial responsibility in a centralized system', *Health Policy*, 65(1): 5–19.
- Schut, F.T. and W.H.J. Hassink (2002), 'Managed competition and consumer price sensitivity in social health insurance', *Journal of Health Economics*, 802: 1–21.
- Schut, F.T., T. Laske-Aldershof, and D. de Bruijn (2004), 'Effecten van de aanvullende ziekenfondsverzekering op de hoofdverzekering', report for the Ministry of Health, Erasmus University Rotterdam.
- Shmueli, A., D. Chernivkovsky, and I. Zmora (2003), 'Risk Adjustment and risk sharing: the Israeli experience', *Health Policy*, 65(1): 37–48.
- Tamm, M., H. Tauchmann, J. Wasem, and S. Greß (2006), 'Elasticities of market shares and social health insurance choice in Germany – a dynamic panel data approach', *Health Economics*, forthcoming, DOI: 10.1002/hec.167.
- Tegenbos, G. (2005) 'Oorlog onder ziekenfondsen' (War amongst sickness funds), *De Standaard*, 28 September.
- Van de Ven, W.P.M.M., *et al.* (2003), 'Risk adjustment and risk-selection on the sickness fund insurance market in five European countries', *Health Policy*, 65(1): 75–98.
- Wasem, J., S. Greß, and K.G.H. Okma (2004), 'The role of private health insurance in social health insurance countries', in R. Saltman, R. Busse and J. Figueras (eds), *Social Health Insurance in Western Europe*, London: Open University Press, pp. 227–247.