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**Health Insurance Competition in Germany –  
The Role of Advertising**

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# Health Insurance Competition in Germany

## – the Role of Advertising<sup>#</sup>

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### Abstract

In the 1990s, competition among health insurance funds ('sickness funds') was introduced in Germany. As one means of competition, free choice of initial health funds and subsequent switching between them was made available to all insured. Since then, the number of funds has decreased substantially, and funds have had to engage in competitive strategies to remain in the market. In this paper, we want to analyse the funds' advertising activities in the face of the changed competitive environment. This has not been possible to date due to a lack of data. We use two new datasets to get a first insight into the potential effects of competition on funds' advertising strategies; one of the volume and cost of advertisements and one of their contents.

Our results suggest that competition has been associated with an increase in the amount of advertising. As to the adverts themselves, we find that there was a decrease in the share of advertisements of a 'general' content in favour of advertisements of a more 'fund-specific' content. The data therefore indicate that once the market was open to switching of funds by the insured, funds' advertising efforts changed to differentiating their own perceived strengths from those of competitor funds. These observations allow us to draw some tentative conclusions about the relevance of (attempts of) risk selection by health funds via advertisements and about the general success of the pro-competitive legislation.

*JEL Classification:* I11; I18; G22; M37

*Keywords:* Regulated competition; health insurance market; risk selection; advertising; Germany

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## 1. Introduction

The demographic evolution, in particular rising life-expectancies, as well as the technological progress in the health sector are largely seen as the main causes of the increase in health expenditures during the last decades. As a reaction to these developments, a number of pro-competition reforms were introduced in the German health sector in the 1990s to increase cost-efficiency and thus alleviate the financial pressure on the health system.<sup>1</sup> For the public health insurance funds ('sickness funds'), major changes followed from the Health Care Structure Act (*Gesundheitsstrukturgesetz*) passed in 1992, which extended free choice of health fund to everyone from 1996 onwards, while free choice had previously been restricted to only a small group of insured. Since the passing of this law, the number of health funds has decreased substantially, and funds have had to engage in competitive strategies to remain in the market. One such strategy is advertising.<sup>2</sup>

In a regulated competitive market such as the German health sector, advertising may also be used by the funds as one means of indirect risk selection: Instead of reducing costs through increasing efficiency, funds may opt to reduce costs through selective enrolment or 'cream-skimming' of low-risk individuals. As Van de Ven and Van Vliet (1992, 42) point out, "solving the problem of cream-skimming is a necessary condition for a successful implementation of a wide range of market oriented strategies in health care, which are being discussed these days in so many countries". While direct risk selection in Germany is prohibited by law, there is anecdotal evidence that health insurance funds engage in indirect risk selection. Advertising in the German health insurance market may therefore have two faces: First, to simply remain in the market, and second, to increase the share of low-risk members.

In this paper, we analyse the funds' advertising activities in the changed competitive environment. This has not been possible to date due to a lack of data. We use two new datasets to get a first insight into the potential effects of these changes, one of the volume and cost of all advertisements placed by the main German health funds in all German newspapers and magazines, and one of the contents of the advertisements placed in the most advertising-intensive magazine *Stern*.

Our results suggest that competition has been associated with an increase in the amount of advertising by German health insurance funds. In addition, we find that the introduction of

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<sup>1</sup> For a discussion of the different reforms, see, e.g., Busse and Riesberg (2004).

<sup>2</sup> Advertising strategies have been analysed in other contexts, e.g. financial markets (e.g. Cronqvist, 2005; Jain and Wu, 2000; Mullainathan and Shleifer, 2005) and the pharmaceutical industry (e.g. Avery et al., 2008, for a

competition has been associated with a decrease in the share of advertisements of a ‘general’ content in favour of advertisements of a more ‘fund-specific’ content. The data therefore indicate that once the market was open to switching of funds by the insured, funds’ advertising efforts changed to differentiating their own perceived strengths from those of competitor funds.

In this paper, we analyse this not yet studied but relevant topic by way of using the new datasets to examine the associations in the data from which we elicit and discuss the research questions that we subject to econometric scrutiny in our current research (Becker and Uebelmesser, 2010, and Becker, Hole and Uebelmesser, 2010). The paper is structured as follows. Section 2 provides some background information about the German health funds sector. Section 3 presents the quantitative and qualitative data and examines the associations between the introduction of the competitive measures and the advertising activities. Section 4 evaluates the potential of risk selection by health funds in Germany and relates this to the observed advertising activities. Section 5 concludes.

## **2. Institutional background**

Regulation of health insurance in Germany dates back to 1883 when the first Health Insurance Act was implemented. In 2007, about 88% of the German population were insured with a so-called ‘public’ health insurance fund with contribution rates related to wage income but not to individual risk. These insured include mostly employees, students, pensioners, unemployed and those not insured on their own but as a family member, for example children.<sup>3,4</sup>

Initially, not everyone was eligible to join all health insurance funds. By the end of the 1980s, only about 60% of the insured had some choice (Buchner and Wasem, 2003). In general, everyone had access to the regional, or basic, funds (*Allgemeine Ortskrankenkasse* AOK). However, employees whose employing company or guild had founded a fund were confined to joining this company fund (*Betriebskrankenkasse* BKK) or guild fund (*Innungskrankenkasse* IKK). The so-called substitute funds were available for blue-collar

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study on direct-to-consumer advertising, and more generally Scherer, 2000; Schweitzer, 2007), but not yet in the context of health insurance markets.

<sup>3</sup> Of those who are not insured with a ‘public’ health insurance fund, 80% are insured with a private insurance. These are mostly the self-employed, civil servants, and employees with an income above a threshold level (€ 48.600 in 2009). In contrast to public funds, the private funds’ premia are related to individual risks but not to wage income. In this paper, we consider public health insurance funds only.

<sup>4</sup> In legal terms, there is a distinction between contributing members and so-called family members, i.e. those not insured in their own right but through an insured member of the family. In addition, contributing members can be obligatory or voluntary members depending on whether their wage income falls short or exceeds the threshold level which allows them to choose a private fund (cf. Footnote 3). We refer here to the different groups together as insured or members.

workers (*Ersatzkasse für Arbeiter* EAR) as well as for white-collar workers (*Ersatzkasse für Angestellte* EAN), where ‘substitute’ refers to the fact that membership of these funds was a substitute for membership of the AOK, BKK and IKK.

The regional insurance funds faced higher average risk portfolios compared with the BKK, IKK and the substitute funds as the share of low-income insured, for example social aid recipients, unemployed and pensioners, was relatively high.<sup>5</sup> As the higher cost, which followed, required the regional funds to charge higher contribution rates, the risk structure as well as the contribution rates differed widely across funds. Furthermore, many of their insured had little or no possibility to switch to a fund with a lower contribution rate.

This inequality was considered ‘unfair’, and as a consequence, the German health sector saw a number of pro-competition reform measures in the 1990s. Beside increasing (cost-) efficiency, the reforms were intended to remedy the unequal eligibility of different groups of insured to switch their health funds. The Health Care Structure Act passed in December 1992 marked a major step in that direction. From 1996 onwards, every insured was to have free choice between all open health insurance funds on a yearly basis. Up to 2001, switching funds was possible on an annual basis at the end of each calendar year, while since 2002 switching has been facilitated by allowing for changes on a monthly basis subject to a two-months notice period. However, once a fund is changed, further changes within the following 18 months are permitted only if the insurance fund increases the contribution rate.

In order to promote ‘fair’ competition, the Health Care Structure Act subjected funds to ‘open enrolment’ (*Kontrahierungszwang*), which requires them to insure every applicant, and to ‘community rating’ (*Diskriminierungsverbot*), which prevents them from charging different premia for different risk types. In addition, 95% of the benefits packages are equalised between health insurance funds, as determined by the Social-Code-Book V (Buchner and Wasem, 2003).<sup>6</sup>

In order to prevent the selection of low risks, or ‘cream-skimming’, which is prohibited by law, the ‘Risk Equalisation Scheme’ (*Risikostrukturausgleich*) was implemented in 1994 as part of the Health Care Structure Act. It was meant to compensate health funds for a relatively adverse risk portfolio by re-allocating monetary funds between them according to their relative risk structure. The re-allocation is based on the so-called risk adjusters age, gender, disability and sickness allowances entitlement. Income is also taken into account as far as this

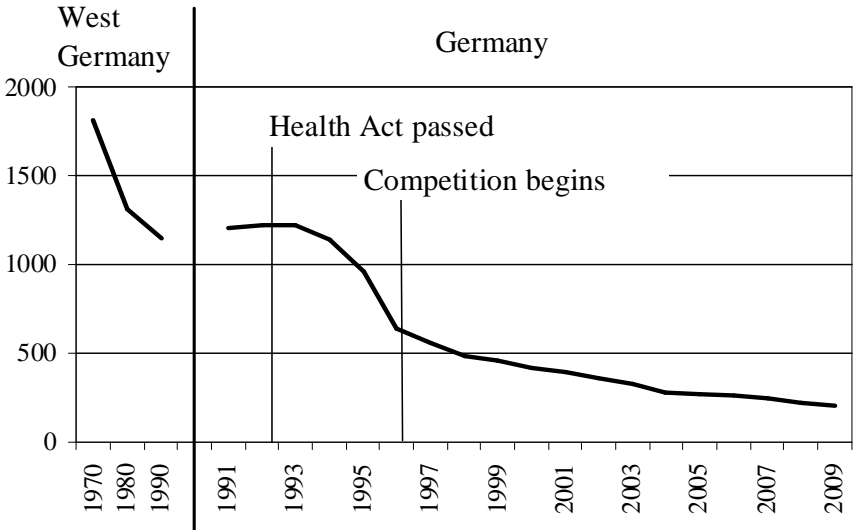
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<sup>5</sup> It is a well-documented empirical observation that income and health are positively related (e.g., Ettner, 1996).

<sup>6</sup> Only since 2004 has it been possible for health funds to offer bonus programmes to their insured. Limiting our analysis to the period 1990 to 2003 enables us to analyse the effect of increased competition on advertising within an otherwise rather stable environment.

affects the revenues rather than the costs of the health insurance funds. It is, however, only equalised to 92% across funds. The idea here was that different contribution rates should then reflect only differences in cost efficiency for a standardised risk structure of the insured (Buchner and Wasem, 2003). The Risk Equalisation Scheme was reformed when the enrolment in disease management programmes was introduced as a further risk adjuster and when a risk pool was established in order to better share the financial risks related to high-risk individuals.<sup>7</sup> From 2009 onwards, the Risk Equalisation Scheme has also included morbidity as laid down in the Health Insurance Competition Strengthening Act (*GKV-Wettbewerbsstärkungsgesetz*) of 2007.

Figure 1: Number of health insurance funds in Germany

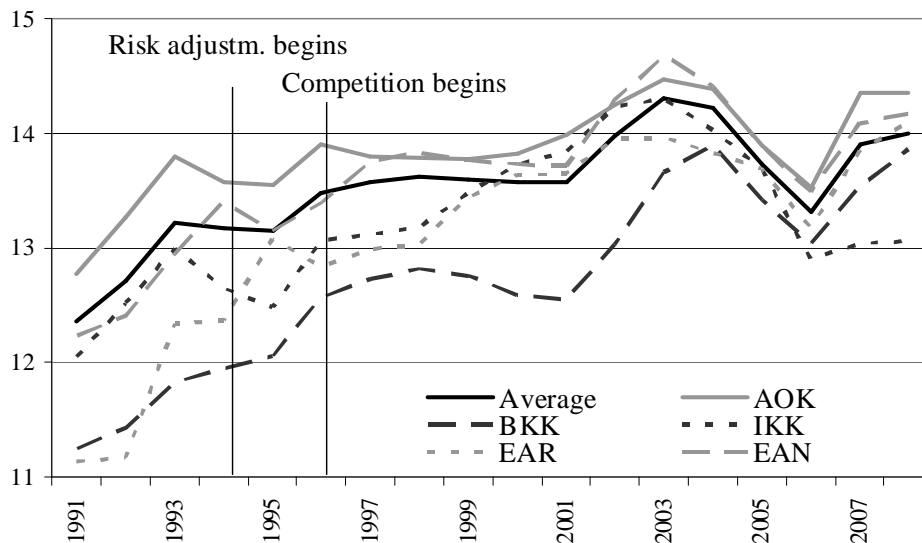


Source: Bundesministerium für Gesundheit (2001, 2009), BKK Bundesverband (2007)

As the new legislation was implemented, the German health insurance market experienced some major changes. The number of health insurance funds decreased by more than 80% between 1991 and 2009, from 1209 to 202 (Figure 1). This concentration process was accompanied by a tendency towards convergence of the major German health funds' contribution rates, albeit upward rather than downward (Figure 2).

<sup>7</sup> 'Low-risk' and 'high-risk' here refer to the expected expenditures for each type of individuals under the Risk Equalisation Scheme. It is possible that an old person with serious health problems is still more attractive for an insurer than a young person with only minor health problems if the costs assumed in the risk scheme are even higher for the former, while they are lower for the latter.

Figure 2: Convergence of contribution rates



Source: Bundesministerium für Gesundheit (2009)

Note: From July 2005 onwards, the 'general contribution rate' was reduced by 0.9% and a 'supplement rate' of 0.9% on employees only was re-introduced.

Moreover, in the wake of the improved switching possibilities, some of the main funds saw the number of their insured change substantially. Between 1996 and 2008 the AOK and EAN lost 20% and 10% of their insured, respectively (the bulk of that, 16% and 15 %, respectively, between 1996 and 2004) (Bundesministerium für Gesundheit, 2009). This reduced their market shares from 43.0% to 34.4% (AOK) and from 35.1% to 31.7% (EAN). While the EAR saw a slight increase in its market share from 1.9% to 2.3%, the IKK and the BKK experienced the largest increase with respect to both the number of their insured and their market share: The IKK gained 47% in terms of numbers of insured and 45% in terms of market share (from 6.9% to 8.7%) and the BKK was able to boost the number of insured by 86% and its market share by 85% (from 10.3% to 19.1%).

Based on data from the German Socio-Economic Panel (GSOEP), Nuscheler and Knaus (2005) conclude that among the 25 to 54 year old obligatory and voluntary members, the percentage of switchers increased from 6.5% to 10.1% between 1995 and 1999.<sup>8</sup> We find that in the subsequent five-year period 2000 to 2004, the switching rate for obligatory members remained relatively stable, fluctuating between 9.0% and 11.1%. The rate in Germany exceeded that in countries with a comparable institutional setting, such as Switzerland,

<sup>8</sup> Andersen and Schwarze (1998) and Schwarze and Andersen (2001) come to similar conclusions as the increase of switching is concerned, although they find lower switching rates in the range of 4% in 1997 and 5% in 2000. These differences might be due to different definitions of the switching variable and different sub-samples used.

Belgium, Israel and the Netherlands (Laske-Aldershof et al., 2004). In addition, of course, the effect of the threat of switching should not be underestimated.<sup>9</sup>

### **3. Advertising by German health insurance funds**

In order to gain a first insight into the impact of the changes in the competitive market structure on the advertising activities of the health insurance funds, we analyse a new dataset of advertisements placed by the main German funds over the period 1990 to 2003, provided by Nielsen Media Research (2005), and complement this with data on advertising contents we collected from the most advertising-intensive magazine *Stern* for the period 1992 to 2003.

#### **a) Data on the number and costs of advertisements**

We have obtained the data on the number of advertisements placed in newspapers and magazines by the main German health insurance funds, i.e. the federal associations of the AOK and BKK as well as the large individual funds Barmer, TK, and DAK (all belonging to the group of substitute funds), along with the data on the costs of these adverts, from Nielsen Media Research (2005), a company specialised in the collection of data on advertising.

Figure 3 shows the number and costs of these advertisements (for some summary statistics, please see Appendix I). In total, the five funds placed more than 54,000 advertisements for € 225mn in all German newspapers and magazines between 1990 and 2003. There was some advertising in the early 1990s when some limited competition already existed (cf. Section 2). The health funds had probably also known about the forthcoming 1992 law and may have begun to increase their advertising efforts before the law was passed formally. The data then show a further substantial increase in the total number of advertisements since around the time of the passing of the Health Care Structure Act until just before the introduction of free choice in 1996. This development suggests that health funds used the period 1992 to 1995 for increased advertising as a strategy to defend their market position once insurance-switching would be allowed from 1996. The subsequent short decline in advertising up to 1997 may indicate a period of ‘wait-and-see’ which the funds used to observe whether their advertising efforts would show any success. The change from annual open enrolment to monthly open enrolment in 2002 was associated with another increase in advertising after a somewhat reduced activity level since 1996.

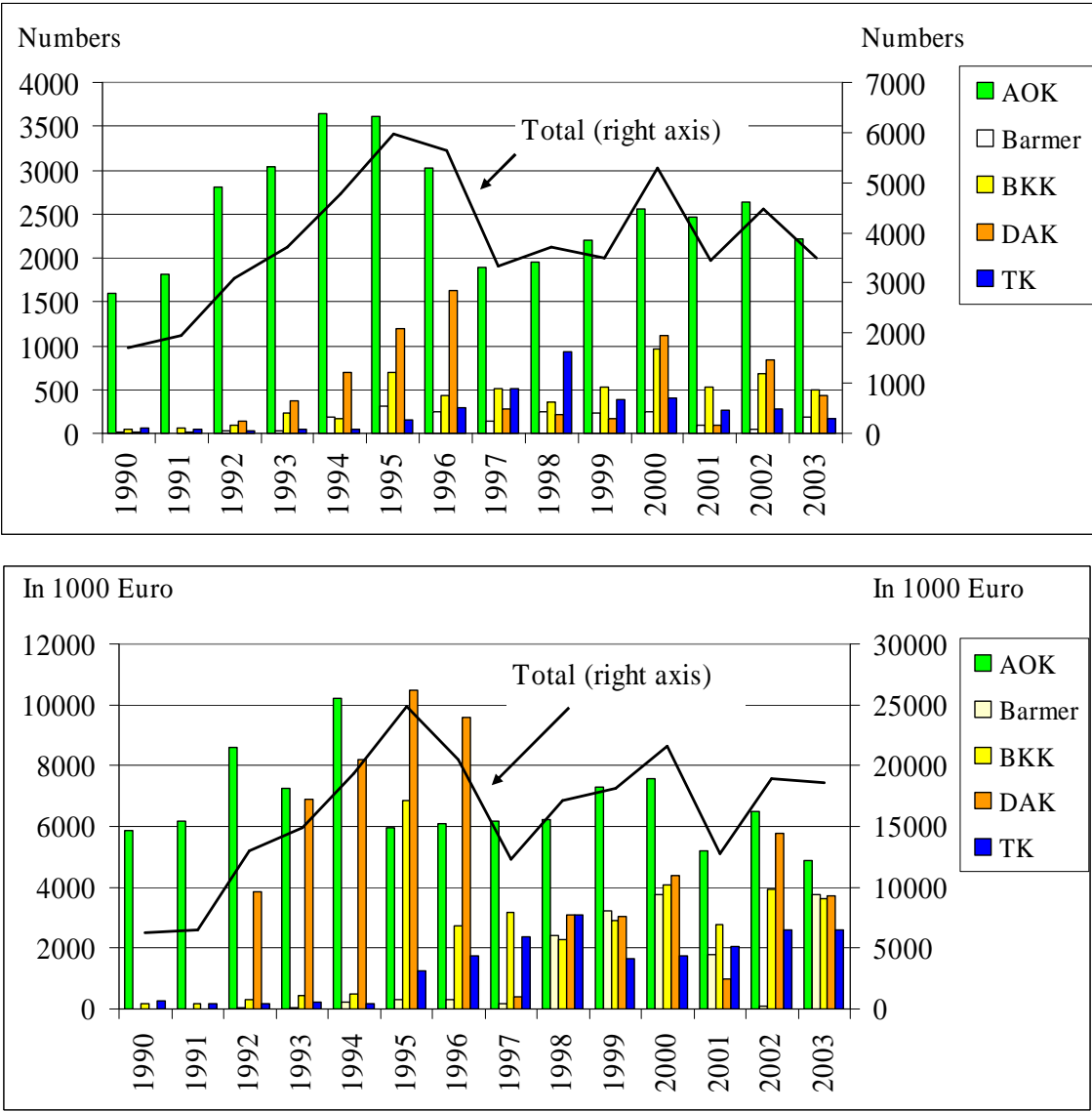
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<sup>9</sup> A number of recent studies has analysed switching among German health insurance funds (see, e.g., Andersen and Grabka, 2006, Andersen et al., 2007, Tamm et al., 2007 as well as Nuscheler and Knaus, 2005). As our main focus here is, however, on advertising activities of health funds without explicitly considering the switching response, we abstract from a more detailed discussion of these studies.



The breakdown by health insurance funds conveys further interesting insights. From 1990 to 1994, the AOK and DAK were by far the most advertising-active health insurance funds. With free choice becoming available to all, the BKK funds also began to advertise much more actively, and since then BKK advertisements made up an important part of total advertisements over the sample period. The DAK also continued its high advertising activities whereas the AOK reduced the number of advertisements somewhat. The TK and Barmer advertised considerably more since 1995 and 1998, respectively, than before.

Figure 3: Volume of advertisements in newspapers and magazines (1990 to 2003):  
Main German health insurance funds

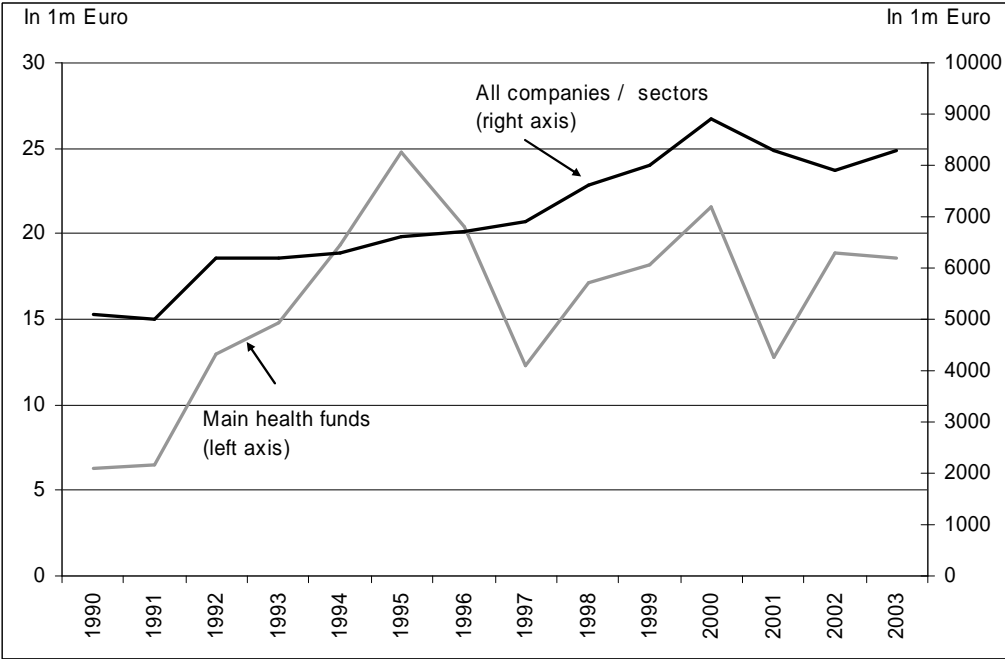


Source: Nielsen Media Research (2005) (see Appendix I.1 and I.2)

How does the development of the health insurance funds' advertising compare with the advertising of companies in other sectors of the economy? If the latter were to display the same profile across time, then it would be less likely that the developments in the health sector were distinct from the rest of the economy and attributable to the pro-competition reforms introduced into this sector. Figure 4 shows the volume of advertisements in newspapers and magazines of all companies in all sectors in Germany compared with the volume of the main health insurance funds only. This comparison clearly suggests that the development of the health funds' advertisement volumes was, at least in part, driven by factors other than those that were behind the development for the total of all sectors.<sup>10</sup>

Overall we conclude that the introduction of pro-competition reforms into the German health insurance market was associated with an increase in advertising of the main health insurance funds. In the following, we analyse whether there have been changes also to the contents of the advertisements.

Figure 4: Volume of advertisements in newspapers and magazines (1990 to 2003):  
Main German health insurance funds only versus all companies / sectors in Germany



Source: Nielsen Media Research (2005) for main public health funds;  
Nielsen Media Research (2009) for all companies / sectors

<sup>10</sup> It also suggests that the profile of the number of advertisements was not due to specific characteristics of newspapers and magazines.

## **b) Data on the contents of advertisements**

We briefly discuss some data from the German Socio-Economic Panel (GSOEP) and findings from a recent survey (Braun et al., 2006), which allow us to draw some conclusions about which factors are most relevant for individuals' decisions of whether or not to switch health funds. We will then examine to which extent these factors are reflected in the contents of *Stern's* advertisements.

### **b1) Survey information about switching intentions**

Participants in the GSOEP from 1997 were asked about the motives which guided their switching decisions, i.e. whether they had switched to a different health insurance fund in the past year and whether they intended to switch in the future. Even though these detailed questions were only included in the survey of 1997, they are still interesting for our purposes as they provide some suggestive evidence of the very early impact of the reforms.

For the individuals who changed their health insurance fund in 1996, the contribution rate was the most important motive, featuring in 42% of the responses, followed by the benefits and services offered (21% and 16%, respectively). The image of the fund affected the choice of 15% of respondents. The criteria that would be most relevant for a further switch were again the contribution rate (69%), followed by benefits (54%) and services (31%). The image of the fund would be important for only 7%.

For advertising purposes, the reasons why individuals do not intend to switch also are of interest, not least because non-switchers present by far the majority of the insured. 77% of respondents were generally satisfied with their present fund. More relevant in the context of our analysis, 15% of respondents found that the differences between the various funds were not explicit enough to warrant switching.

A more recent survey helps to gain further insights into possible barriers to switching which are relevant almost ten years after the introduction of free choice of fund (Braun et al., 2006). Once again, it turns out that most insured were satisfied with their health fund. In addition, the insured very often underestimated the saving potential of switching to a cheaper fund and wrongly assumed important legal drawbacks as a consequence of switching. 23% of the respondents did not see any difference between the various health insurance funds. For 64%, however, funds appeared to differ with respect to the general 'goodwill', while 45% perceived differences in the contribution rates and 36% in the benefits and services offered.

Hence the contribution rate as well as the benefits and services offered seem to be an important criterion for switchers and non-switchers alike. This could be seen as suggesting

that advertisements which tend to focus on fund-specific information are likely to receive relatively more attention by potential switchers. The observation that about every fifth person does not see any significant difference between the health funds could encourage funds (even further) to stress specific characteristics, as perceived differences and the intention to switch health funds are positively correlated (Braun et al., 2006). Another way of achieving such a differentiation, not strictly related to fact-based information, could be to create a fund-specific image. Even though the image does not seem to be very essential for individuals who are considering a future switch, 15% of those who did change their fund in 1996 retrospectively admitted that the image had played a role in their decision. A careful analysis of the contents is thus required to evaluate whether funds seem to choose strategies as suggested by the observations here.

## **b2) Contents of the advertisements in *Stern***

In our analysis of the contents of health funds' advertisements, we focus on the advertisements placed in the weekly magazine *Stern*. As Table 1 shows, *Stern* attracted most advertisements by health funds over the sample period, leading by a substantial margin when compared with the weekly magazines *Spiegel* and *Focus*, which like *Stern* focus on political and economic events, and when compared with the weekly tabloid *Bild am Sonntag* (*Bams*).

Table 1: Top 5 popular magazines by number of advertisements by health funds  
(1990 to 2003)

	Magazine	Numbers
1	<i>Stern</i>	380
2	<i>Bams</i>	297
3	<i>Spiegel</i>	279
4	<i>Focus</i>	250
5	<i>Super Illu</i>	162

Source: Nielsen Media Research (2005)

There are a number of possible reasons why *Stern* should be an attractive advertising outlet for health insurance funds. *Stern* is among the most commonly read magazines in Germany with an average 1,225,000 copies in the fourth quarter of 2009 (IVW, 2010). Even more important may be the profile of its readers: Of all readers with an upper secondary or university degree as the highest degree obtained, the magazine reaches 11.6% or 17.1%,

respectively, as Table 2 shows. The readers comprise more than 40% of those with a monthly net income of above €1500 and a smaller but still relevant share of those with a net income of €1250 to 1500. Furthermore, the share of readers between 30 and 59 years of age amounts to between 17.9% and 21.8% and is slightly higher than for the younger or older age groups.

While the readership is thus not representative for the insured population, it can be argued that it is most interesting for health insurance funds. Among the three groups of characteristics provided in Table 2, education, income and age, the relatively high educational level of *Stern* readers makes this magazine particular attractive: Education is likely to be positively correlated with health status and in contrast to age and income it is not part of the Risk Equalisation Scheme (see Section 2).

Table 2: Structure of readers

	Stern
Upper secondary degree (no university degree)	11.6% (3)
University degree	17.1% (4)
Indiv. net income between €1250 and €1500	14.0% (5)
Indiv. net income $\geq$ € 1500	41.8% (3)
Age group 20 to 29	13.2% (6)
Age group 30 to 39	17.9% (6)
Age group 40 to 49	21.8% (4)
Age group 50 to 59	17.2% (5)
Age group 60 to 69	14.1% (6)

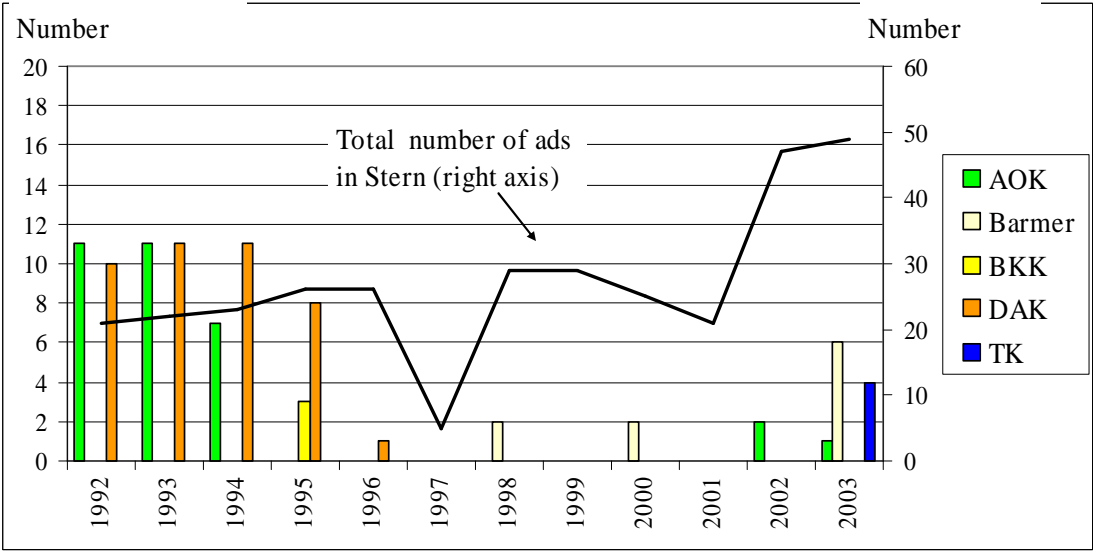
Source: Burda Advertising Center – Presse I (2008)  
(In parenthesis: ranking for the respective characteristics among all 176 German magazines)

Out of the 347 advertisements by the main German health insurance funds placed in *Stern*, which are in the dataset from Nielsen Media Research, we have identified 323 (93%), so that our sample appears to be fairly representative of the population of all *Stern* advertisements (see Appendix II.5 for more details).<sup>11</sup> These manually collected advertisements provide a unique opportunity to analyse any potential change of advertising strategies in response to the changed institutional environment, which cannot be captured by a mere look at the quantitative data.

<sup>11</sup> We can only speculate why we did not manage to find the remaining 24 advertisements. One reason might be that they are of rather small size.

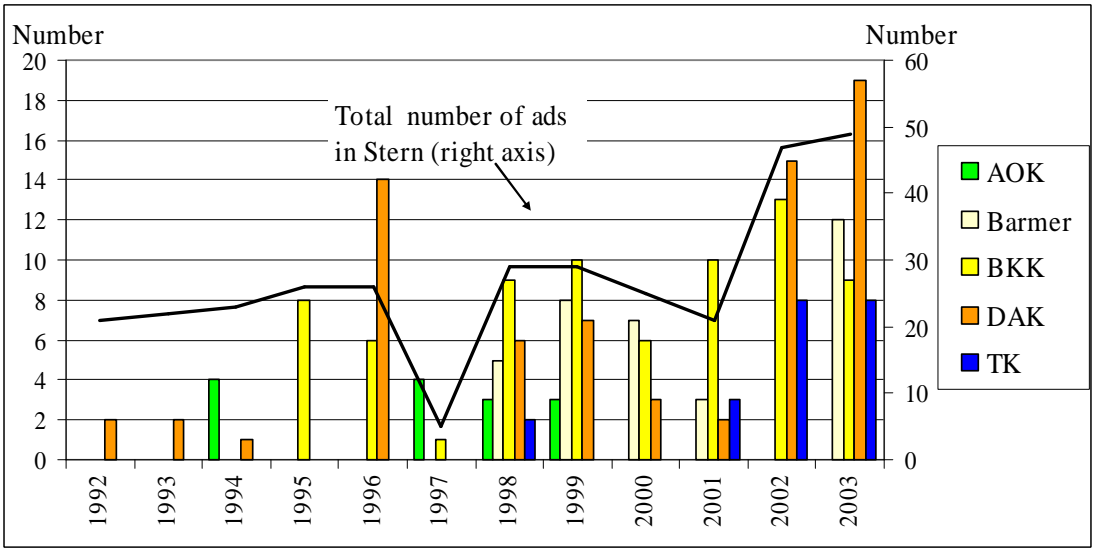
We label advertisements as ‘general’ when they mainly feature topics of general relevance for a healthy living but do not tend to allow for some differentiation between health funds, e.g., food/diet, sports and related issues. We label advertisements as ‘fund-specific’ when they communicate, or at least allude to, specific characteristics of the health funds such as contribution rates, costs and benefits or programmes for chronically ill and thus do allow for some differentiation. Figures 5 and 6 display the number of general and fund-specific advertisements, respectively.

Figure 5: Numbers of ‘general’ advertisements in *Stern*:  
Main German health insurance funds



Source: Own data (see Appendix II.1 and II.5)

Figure 6: Numbers of ‘fund-specific’ advertisements in *Stern*:  
Main German health insurance funds

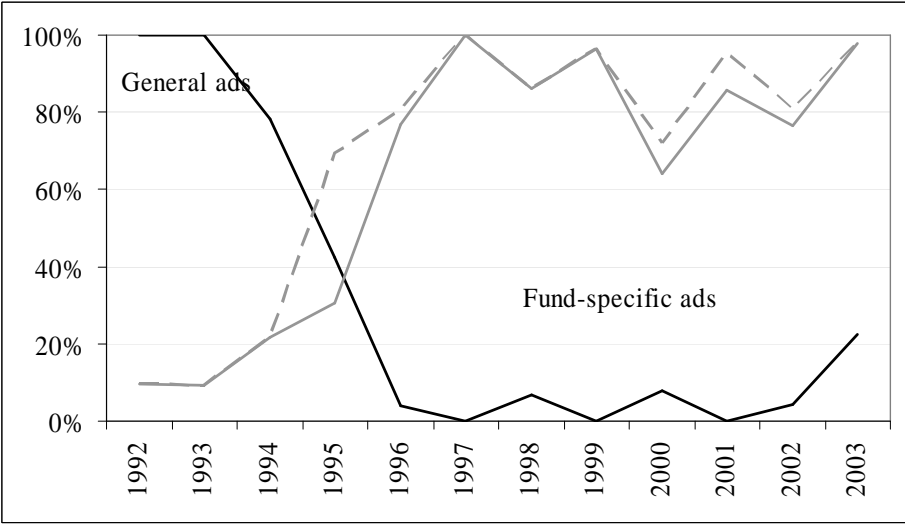


Source: Own data (see the Appendix II.2 and II.5)

The data show that the number of general advertisements was higher before the introduction of the various reforms whereas the number of fund-specific advertisements was higher afterwards. As to the funds which were most active we find that general advertisements were mainly placed by the AOK and DAK, and fund-specific contents were prevalent in the advertisements by the BKK, Barmer and TK as well as again the DAK. So, the DAK seems to have maintained its high activity level over the whole period studied while at the same time adjusting the content to the changed institutional environment in contrast to the other funds.

Figure 7 presents the share of the advertisements of each category in the total. We use two different measures to determine fund-specific advertisements, the one shown in Figure 6 and one that also includes advertisements which mention the size of the health funds, as information about the size might signal some unobserved characteristics, e.g., customer satisfaction.<sup>12</sup> This graphical representation highlights very clearly the shift in the relative importance of the two types of advertisements.

Figure 7: ‘General’ and ‘fund-specific’ advertisements as a share of all advertisements by the main German health insurance funds in *Stern*



Legend: Solid grey line: advertisements which contain at least one of the following: contribution rates, costs and benefits or programmes for chronically ill. Dashed grey line: advertisements which in addition contain the size of the fund. Source: Own data (see Appendix II.4)

Summarising, our data on the contents of the *Stern* advertisements suggest that the share of fund-specific advertisements has substantially increased, a process that started at about the

<sup>12</sup> As the size was largely determined by the institutional restrictions before 1996, the informational value is, however, limited.

same time when competitive measures were introduced into the German health insurance market, in contrast to general advertisements. Comparison with survey data suggests that the contents have changed towards the factors that matter most in individuals' decisions of whether or not to switch health funds.

#### **4. Risk selection, advertising and competition of health insurance funds**

We are now in a position to discuss the results of our analysis in the light of the intended outcome of the pro-competitive legislation. We are in particular interested in analysing whether competition among health insurance funds works as intended. Does it lead to more cost-efficiency, or do funds try to attract good risks, i.e. do they engage in risk selection?<sup>13</sup>

It is useful to consider the objective function of health insurance funds when they are subject to regulation such as in the German health market. We conjecture here that the objective of health funds, being non-profit organisations, is to increase their size in terms of the number of insured, as one strategy to remain in the market.<sup>14</sup> According to a survey of health fund managers, guaranteeing the continuity of the fund ranks first on their agenda (Haenecke, 2001). Besides, it is common practice that the contracts with the fund management contain clauses according to which bonuses are related to the growth of the fund (Höppner et al., 2006) while growth itself is linked to an increase in the reputation of the management.

From the discussion of the institutional framework of the German health market in Section 2, we know that benefits are largely determined by law and therefore largely equal across funds. It is often claimed that competition then takes place in terms of the price, i.e. the contribution rate, rather than in terms of the quality of service (Lauterbach and Wille, 2001; Greß, 2002).<sup>15</sup>

A lower price implies a competitive advantage. With perfect risk compensation, a fund would be the cheaper the more efficiently it operated. With imperfect risk compensation, the risk

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<sup>13</sup> A related aspect is the question whether health funds, which resort to indirect risk selection, are successful, i.e. whether via their advertising strategy they manage to affect the switching behaviour and through this the risk structure of their insured. See Becker and Uebelmesser (2010) for an econometric analysis of this question, and Becker, Hole and Uebelmesser (2010) for an analysis of the heterogeneity of households' preferences for individual health funds.

<sup>14</sup> Hart (1983) considers the case of firms run by so-called 'satisficing' managers who do not value profits per se but gain private benefits from keeping their job by maintaining the firm afloat. This may hold for managers of a non-profit organisation such as the German health insurance funds. In the model by Hart (1983), an increase in competition may then induce otherwise reluctant managers to increase their efforts to reduce costs in order to avoid bankruptcy. Cost reduction via increases in efficiency would be one way for health funds to reduce their contribution rate to attract new members, cost reduction via a lower risk portfolio would be an additional or an alternative way, and possibly a less costly one in terms of effort involved.

<sup>15</sup> For empirical analyses that show that the contribution rate is a significant factor of an individual's probability to switch their fund, see for example Andersen and Schwarze (1998), Schwarze and Andersen (2001), as well as Nuscheler and Knaus (2005) for Germany and Buchmueller and Feldstein (1997) as well as Strombom et. al. (2002) for analyses for the US.



structure of the insured becomes important. It is then well possible that funds benefit from successful risk selection and a favourable risk structure.

Was there any incentive in the German health care market for health insurance funds to engage in risk selection for the period under consideration? As has been shown by different studies for Germany (Breyer and Kifmann, 2001; Jacobs et al., 2002; Lauterbach and Wille, 2001), the number of risk adjusters under the current Risk Equalisation Scheme was far from sufficient to adequately reflect individual risks. For example, as discussed in relation to the characteristics of the *Stern* readers in Section 3, the educational level was not part of the Risk Equalisation Scheme even though education is likely to be positively correlated with the health status. Buchner and Wasem (2003) also demonstrate that risk compensation was less than perfect: Low-cost health funds with a less than 100% ratio of actual to standardised expenditures have grown fast in recent years, while funds with a ratio above 100% have lost members. Together with open enrolment, these shortcomings of the risk scheme have created incentives for insurers to engage in risk selection so as to either achieve or maintain a low risk profile.<sup>16,17</sup>

There is so far only anecdotal evidence that health funds engage in risk selection (e.g., Van de Ven et al., 2003; Buchner and Wasem, 2003). Glazer and McGuire (2006) conclude that it is not possible to evaluate the significance of the problem as there is no reported evidence on its prevalence. Nuscheler and Knaus (2005) indirectly test for risk selection of BKK funds. They do not find evidence for risk selection of BKKs when by comparing the health characteristics of individuals who switch to a BKK to the characteristics of those who switch to a non-BKK.<sup>18</sup> While the authors analyse the possible outcome or output of (successful) risk selection, we in this paper have the data to focus on a potential instrument of, or input to, risk selection, namely advertising.

How can these reflections about potential risk selection incentives be related to our analysis of the advertising activities of health insurance funds? For this, we resort to our content analysis. We consider first advertisements which focus on ‘general’ topics loosely related to health issues. By placing advertisements of this type, the funds might aim at providing incentives for the insured to improve their health status and thus lower the funds’ health expenditures while

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<sup>16</sup> See Höppner et al. (2006) for an overview of possible risk selection strategies and Van de Ven and Ellis (2000) for a discussion of several welfare-decreasing effects of risk selection.

<sup>17</sup> Observing that mainly the young and healthy switch funds is, of course, not proof of risk selection as switching costs might be lower for them (see Cutler and Zeckhauser, 2000; Nuscheler and Knaus, 2005).

<sup>18</sup> The analysis is based on the assumptions that non-BKKs do not engage in risk selection and can thus be taken as a benchmark, and that BKKs and non-BKKs are sufficiently homogeneous otherwise.

at the same time accepting that an advertisement of general content may also have positive spill-over effects on members of rival funds. One might, therefore, expect that general advertisements due to their public-goods character are mainly placed by large health funds and that the number of these advertisements falls when competition is introduced, if competition is assumed to reduce the size of individual funds.<sup>19</sup> This is indeed what we observe (cf. Figure 5).

In contrast to general advertisements, the number of fund-specific advertisements has increased since 1994/1995 (cf. Figure 6). The change in the relative importance of both types of advertisements as shown in Figure 7 can result from two different strategies.

On the one hand, the traditional theory of advertising postulates that advertisements communicate objectively useful information (Stigler, 1961 and in particular Nelson, 1970, 1974) which consumers use to rationally update their beliefs before making their choices. As individuals need information about the main characteristics of the health funds to be able to make a well-founded switching decision, one would expect that more competition would lead to an increase of the number of advertisements which convey ‘fundamental’ information about fund-specific facts, such as the contribution rate of a health fund, as the rational consumer’s demand for this type of information should increase. If advertisements indeed contained this information, this would indicate that competition works as intended. It pays for the funds to compete along the lines stipulated by law in contrast to pursuing risk selection activities.

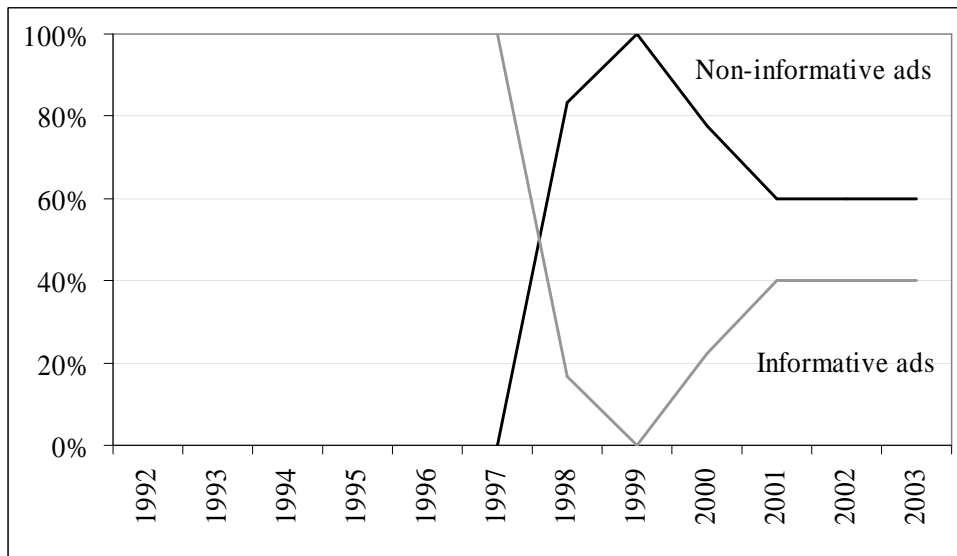
On the other hand, an increase of fund-specific advertisements might also follow from an incentive of the health insurance funds to create a subjective image, which can help in competing for the insured in two ways (Bagwell, 2008): First, it would allow funds to artificially differentiate themselves from competitors despite the a-priori homogeneity imposed on the funds by law, which might justify a mark-up on contribution rates *ceteris paribus* relative to competitors. Second, an image that would be appealing particularly to good risks could then enable the fund to reduce its contribution rate, thus becoming even more attractive to consumers. If funds followed this behavioural strategy, the introduction of competition should, similarly to the traditional theory, increase the number of fund-specific advertisements.<sup>20</sup> Competition would then, however, be associated with more risk selection.

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<sup>19</sup> This line of reasoning could provide another reason why the funds advertised already before the passing of the Health Care Structure Act (cf. Figure 3).

<sup>20</sup> Of course, also ‘general’ advertisements might be placed in order to create an image. But as this type of advertisement is no longer very important, we abstract here from further discussing it.

Figure 8: Advertisements mentioning costs and contribution rates:  
shares of those with informative and non-informative contents



Source: Own data (see Appendix II.3)

Note: There was only one advert in 1997 mentioning costs and contributions.

Hence the conclusions regarding potential risk selection and therefore regarding one effect of the introduced competition, will differ substantially depending on which advertising strategy the funds have been following. Identification of the strategy requires a careful analysis of the informational contents of the advertisements, and our data enable us to do this:

We focus here on the subgroup of fund-specific advertisements which mention costs and contributions (ignoring those mentioning benefits and services) as they should best allow a distinction between informative and non-informative contents. Only if advertisements refer to costs or contribution rates by giving precise information (e.g., total expenditure, expenditure per insured, contribution rate) are they labelled 'informative'. When they only generally mention costs or contribution rates, they are labelled as 'non-informative'. Figure 8 provides some details about the development of both types of advertisements.

The data suggest, therefore, that health funds may not primarily use advertising to communicate useful fact-based information.<sup>21</sup> Rather, there is some evidence that advertising may be one instrument which funds employ to try to attract good risks. This would, of course, be at odds with the intended effect of the pro-competitive legislation.

<sup>21</sup> Except for the size of the funds the advertisements hardly contain any detailed information. But as we have argued above the size is to a large extent determined by the institutional restrictions of the past and thus less of an indicator of the present quality of a fund.

## 5. Conclusions

We analyse the associations between the pro-competition measures recently introduced into the German health sector and the advertising activities of the major health insurance funds. We use two new datasets in this paper, one of the volume and costs of all advertisements placed by the main German health insurance funds in all German newspapers and magazines, and one of the advertisements placed in the most advertising-intensive magazine *Stern*.

Our results suggest that competition has gone hand-in-hand with an increase in advertising. Although the amount of fund-specific information in advertisements has increased, we have seen that even these advertisements are still relatively little informative. In line with this, a substantial number of survey respondents who did not even consider switching said that they did not see any significant differences between the various funds. This suggests that it may be important for health funds to create an insurance-specific image, with which to generate spurious differentiation and increase consumers' perception of the fund. This would then further increase the evidence in favour of the behavioural model of advertising and run contrary to the goals of the pro-competition reforms. In future research it would be interesting to see how far our tentative results for Germany may be applied to other countries with a similar institutional setting.

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## Appendix

### I) Data on number and costs of advertisements

#### 1) Number of ads

Funds	Obs.	Mean	Std.Dev.	Min	Max
AOK	14	2532.50	641.86	1591	3649
Barmer	14	143.00	105.44	7	307
BKK	14	414.50	269.14	43	956
DAK	14	515.29	506.45	9	1631
TK	14	258.79	248.87	32	935

Year	Obs	Mean	Std.Dev.	Min	Max
1990	5	343.8	697.658	8	1591
1991	5	389.4	799.5382	7	1819
1992	5	620.8	1220.753	31	2803
1993	5	745.2	1294.031	34	3046
1994	5	953.6	1527.374	49	3649
1995	5	1193.8	1407.854	154	3606
1996	5	1128.2	1204.562	253	3028
1997	5	665.4	702.2196	134	1889
1998	5	741	739.2966	213	1956
1999	5	700.2	847.0999	166	2194
2000	5	1056.2	917.2163	242	2561
2001	5	687	1005.476	92	2458
2002	5	895	1025.134	39	2639
2003	5	699.8	859.9629	170	2216

## 2) Costs of ads (in Euro)

Funds	Obs.	Mean	Std.Dev.	Min	Max
AOK	14	6711.071	1399.684	4891	10217
Barmer	14	1155.286	1506.149	9	3771
BKK	14	2426	1945.097	158	6843
DAK	14	4315	3475.109	4	10466
TK	14	1441.357	1059.634	168	3097

Year	Obs	Mean	Std.Dev.	Min	Max
1990	5	1260.6	2576.251	4	5865
1991	5	1301.8	2716.934	9	6160
1992	5	2593	3717.939	29	8602
1993	5	2970.4	3747.912	33	7238
1994	5	3868	4925.734	200	10217
1995	5	4962.4	4187.312	303	10466
1996	5	4092.2	3736.593	308	9590
1997	5	2459.4	2450.136	160	6183
1998	5	3425	1609.975	2279	6226
1999	5	3629.6	2144.263	1673	7307
2000	5	4320.6	2094.542	1768	7586
2001	5	2563.2	1606.917	979	5196
2002	5	3779.8	2556.808	112	6471
2003	5	3710.4	818.2477	2582	4891

Source: Nielsen Media Research (2005)

## II) Data on the contents of advertisements

### 1) Number of ads with general content (food, fitness and other)

		Year												Total
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
Funds	AOK	11	11	7								2	1	32
	Barmer							2		2			6	10
	BKK				3									3
	DAK	10	11	11	8	1								41
	TK												4	4
	Total	21	22	18	11	1		2		2		2	11	90

### 2) Number of ads with fund-specific content (benefits, services, costs, contribution rates)

		Year												Total
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
Funds	AOK			4			4	3	3					14
	Barmer							5	8	7	3		12	35
	BKK				8	6	1	9	10	6	10	13	9	72
	DAK	2	2	1		14		6	7	3	2	15	19	71
	TK							2			3	8	8	21
	Total	2	2	5	8	20	5	25	28	16	18	36	48	213

### 3) Ads with fund-specific content (only costs, contribution rates = CC)

– differentiated acc. to content (non-informative vs. informative)

		Year												Total
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
CC ads (non-info) in % of total CC ads							0	83	100	78	60	60	60	
CC ads (info) in % of total CC ads							100	17	0	22	40	40	40	
Total CC ads		0	0	0	0	0	1	12	15	9	10	5	15	67

### 4) General and fund-specific ads in % of total number of ads (per year)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
General content	100	100	78	42	4	0	7	0	8	0	4	22	
Fund-specific content	10	9	22	31	77	100	86	97	64	86	77	98	
Fund-specific content incl. size of the fund	10	9	22	69	81	100	86	97	72	95	81	98	

### 5) Total number collected versus total number acc. to Nielsen data

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Total number (manually collected ads)	21	22	23	26	26	5	29	29	25	21	47	49	323
Total number (Nielsen data)	27	24	24	29	29	6	30	30	28	18	51	51	347
Collected ads in % of ads from Nielsen	78	92	96	90	90	83	97	97	89	117	92	96	93

Source: Manually collected advertisements placed in *Stern*