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Raimond Maurer / Barbara Somova

**German Insurance Industry:
Market Overview and Trends**

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MARKET OVERVIEW AND TRENDS***

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Abstract

This article presents an overview of the contemporary German insurance market, its structure, players, and development trends. First, brief information about the history of the insurance industry in Germany is provided. Second, the contemporary market is analyzed in terms of its legal and economic structure, with statistics on the number of companies, insurance density and penetration, the role of insurers in the capital markets, premiums split, and main market players and their market shares. Furthermore, the three biggest insurance lines—life, health, and property and casualty—are considered in more detail, such as product range, country specifics, and insurance and investment results. A section on regulation outlines its implementation in the insurance sector, offering information on the underlying legislative basis, supervisory body, technical procedures, expected developments, and sources of more detailed information.

Keywords: German insurance industry, market participants, market trends, regulation.

JEL Classification: G22, G28, G34

1. HISTORY OF PRIVATE INSURANCE MARKETS IN GERMANY

The private insurance business in Germany has its origins in three different lines: mutuals, public, and commercial insurance companies (for details on the German insurance market's history, see Wandel, 1998, pp. 59–65, and Koch, 1988). The first mutuals were organized during the sixteenth century, and they typically provided fire insurance to members of specific groups such as guild members (called *Brandgilden*). In 1821 the *Gothaer Feuerversicherungsbank* and in 1827 the *Gothaer Lebensversicherungsbank* were founded by Ernst Wilhelm Arnoldi, with both companies organized as mutuals. Following these examples, many mutuals were created in all insurance lines during the second half of the nineteenth century. The first public insurer in Germany, the *Hamburger General-Feuercasse*, was formed as a merger of many *Brandgilden* in 1676. Following this example, other public insurers providing fire insurance to homeowners, who were often required by the authorities to insure their property, were formed in nearly all other German states during the eighteenth and nineteenth centuries.

After this period, public insurers also started to offer coverage in other lines of the private insurance market. The first commercial (i.e., profit-seeking) insurers were sea transport insurers, created in 1765 and headquartered in Hamburg and Berlin. It was only in the mid-eighteenth century that the first commercial life insurer was created in Germany (Brockhaus, 1974). One of the major factors in the development of the life insurance industry was discoveries in mathematics, particularly in probability theory. The German mathematician Carl-Friedrich Gauss (1777–1865), for example, consulted a life insurer in Göttingen on premium calculations for life annuities, where he already used statistical data for death probabilities based on age (Gauss, 1973).

In the first half of the nineteenth century, commercial insurers were mostly active in three market segments: transport insurance, fire insurance, and life insurance. The nineteenth century also marked the beginning of the formation of large insurance stock companies. In 1818 the *Agrippina* insurance company was created (presently the *Zürich-Agrippina*), and in 1890 the *Allianz Versicherungs-Gesellschaft*. A catastrophic fire in Hamburg in 1842 destroyed almost the entire city center. This led to the creation of reinsurance companies, the first being the *Kölnische Rückversicherungsgesellschaft* in 1846, followed by the *Münchener Rückversicherungsgesellschaft* in 1880.

The first law governing state supervision of private insurers, subsequently the Insurance Supervisory Law (*Versicherungsaufsichtsgesetz*, or VAG) of May 12, 1901, created a central supervisory and regulatory body. In addition, the Insurance Contract Law (*Versicherungsvertragsgesetz*, or VVG) of May 31, 1908, regulated the legal rights and duties of the parties involved in insurance contracts. Both laws created the legislative basis for the private insurance

industry and increased the influence of the state on the insurance business. General economic growth and the rapid development of industrial manufacturing led to an increased demand for insurance coverage. Before World War I, there were 962 life insurers, 48 property and casualty insurers, and 101 fire and building insurers in Germany. New insurance branches appeared, such as insurance against theft, credit insurance, insurance against air traffic risks, and automobile insurance.

After World War I, the destruction of German industry and the confiscation of assets owned by German insurers in coalition countries combined with high inflation dealt a severe blow to the insurance industry. The currency reform in 1924 left many companies on the brink of bankruptcy, and the number of life insurers was reduced to 691 companies. The calls to intensify state regulation grew louder. The amendment of the insurance company act in 1931 considerably increased the state's influence on private insurers. On the other hand, obligatory insurance coverage in some areas (e.g., liability insurance for master craftspeople and automobile owners) was introduced. During the years 1933 to 1945, the direct influence of the government on insurers further increased. Only the collapse in 1945 prevented the envisaged nationalization of the insurance sector.

The initial years after World War II were challenging. Private insurance was prohibited and substituted by the state-owned monopoly in the Soviet (East) sector, putting an end to the development of the private insurance systems there and forcing existing companies to move to the West.

In the West sector, however, the regulation of insurers differed considerably between the British, French, and U.S. zones of occupation, complicating reconstruction. No functioning state insurance supervision authority was in place until 1951. The liquidation of seven insurance companies was conducted by the Council of the Allied Forces in 1947. These insurers originally were owned by the trade unions and then integrated by force in the national-socialistic state as the companies of the Deutsche Arbeitsfront. Increasing economic growth since the mid-1950s and favorable political developments such as the creation of the European Economic Community in 1957 facilitated the establishment of strong and reliable structures in the German private insurance market.

The remainder of this article provides an overview of the contemporary German private insurance market and its legal and economic structure; supplies basic information about main product groups and their country specifics; outlines the fundamental regulatory issues; and gives an outlook for some possible avenues of future development.

2. GENERAL MARKET OVERVIEW

2.1. Legal Structure

German insurers are organized as stock corporations, mutual insurance associations, or insurance companies under public law. Figure 1 provides information about the number and the market shares with respect to premium volume of these legal structures from 1997 to 2002. Most insurers are organized as stock corporations and, as such, account for about 75 percent of the premium volume. While mutuals still play an important role with respect to the number of companies in the market, their market share is only about 20 percent of total premium volume. The importance of insurance companies under public law is minor, both with respect to the number of companies and the premium volume written.¹

¹ An institution under the public law is a corporate body whose existence and activities are regulated not by the set of private law regulations, but by that of public law, usually governing the relationship between the authority and the citizen. An institution under a public law is created by authority's decree and serves a public purpose defined in that decree. This legal form has its roots in the historical economic and state development.

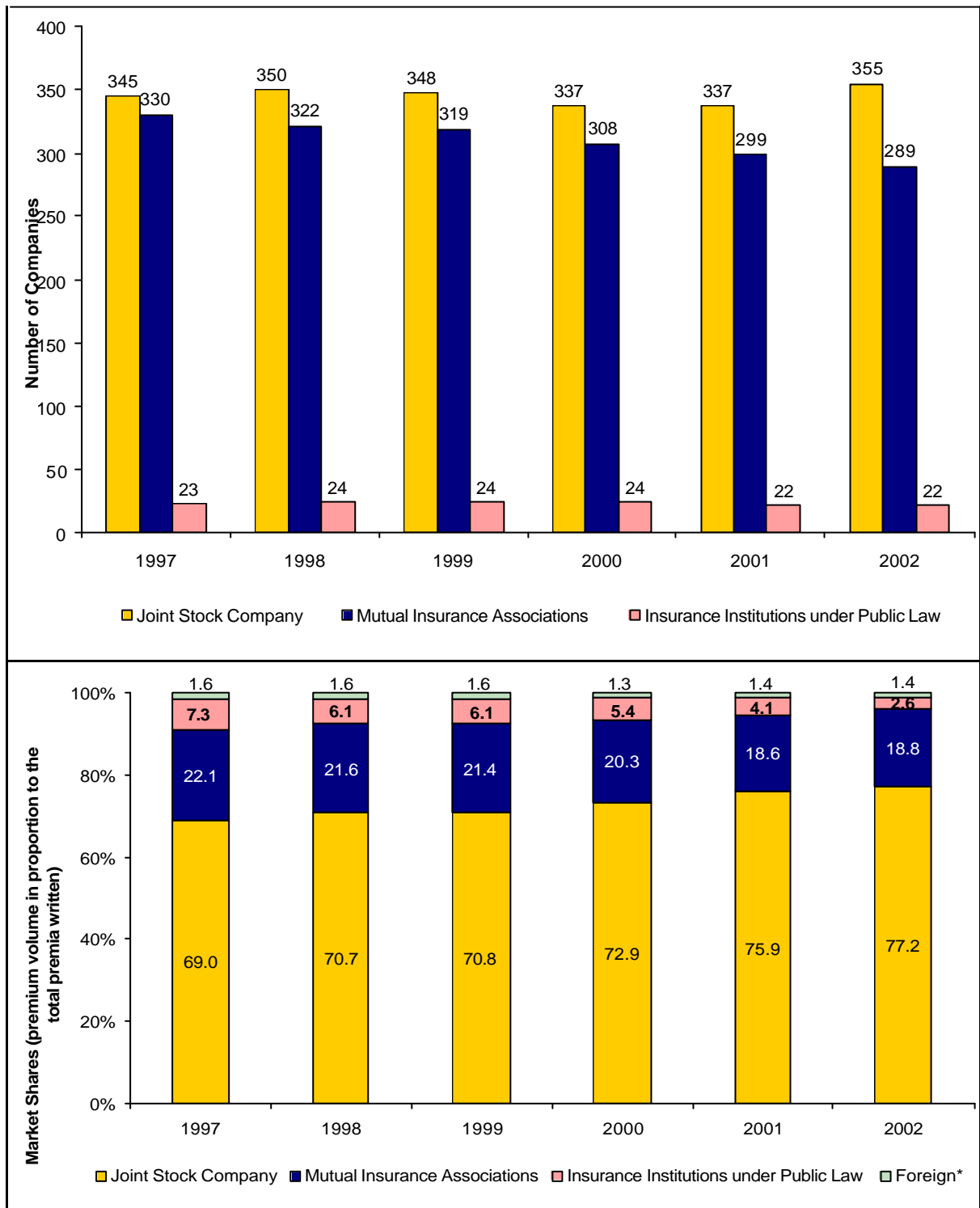


Figure [1]: Insurance companies in Germany by legal structure and respective market shares. Source: Gesamtverband der deutschen Versicherungswirtschaft (editor), *The German Insurance Industry, Statistical Yearbook 2003*, tables 3, ; *Statistical Yearbook 2004* table 7. Foreign companies are companies with branch offices in Germany, independent of the ownership.

A reason that stock corporations are the dominating legal structure in the private insurance market can be at least partly explained by organizational and capital requirements specified in section 7 (organizational requirements), and sections 22 and 53 (capital requirements) of the Insurance Supervisory Law (VAG), which apply to the insurer as long as it is in business. Obviously, stock corporations provide the better basis for compliance with those requirements. Interestingly, only about 20 percent of stock corporations are listed on the stock exchange (Elgeti and Maurer, 2000).² One explanation is that German insurance regulation forbids conducting life and health insurance business and property and casualty business under the roof of one legal entity, the Spartenrennungsprinzip, codified in section 106(c) of VAG. This requirement aimed to prevent unmanageable cross-subsidies between insurance lines within one insurance company or compensatory pricing that could endanger the financial stability of the company. In order to offer insurance coverage in different lines, holding companies listed on a stock exchange were created whereby the separate legal entities for life, health, and property and casualty insurance are fully owned by the head of the group. Another reason is, in order to combine the advantages of a mutual insurance association with those of a stock company, and to avoid the legally and economically difficult process of outright demutualization, a holding company in the form of a mutual insurance association is often created with wholly owned subsidiaries as stock corporations. (An example of such a structure is the Gothaer Versicherungen). On a consolidated basis, the importance of mutuals with respect to premium volume increases.

Foreign insurers are allowed to conduct business in Germany, provided that their relevant subsidiaries are incorporated in Germany and are under the supervision of the Federal Financial Supervisory Authority (BaFin). However, insurers from the European Union (EU) are granted the right to conduct business in Germany, not only by establishing a legal entity in the German market, but also by offering services from their original land of incorporation (Europapass). Supervision of these companies is incumbent upon the supervisory body in their country of origin.

Currently, the German market is dominated by insurance companies domiciled in Germany, with the share of foreign companies under federal supervision by premiums written comprising less than 2 percent of the market. In fact, the companies with ultimate foreign ownership are very active in the German market: among the market's top ten are, for example, Generali, Zürich, and AXA (see Table 1).

² According to the German Companies Act (*Aktiengesetz*, or AktG), the listing on an organized stock is not an obligatory feature of a stock corporation (AktG, §§1, 3). The legal form of a nonquoted company gives all advantages of a public company, such as, for example, simplified procedure of the share transfer, without being burdened by the considerable costs of a stock exchange listing. The requirements regarding the ownership of the nonlisted corporations are identical to the listed one; they are codified in AktG (requirements for all stock corporations) and the Insurance Supervisory Law (for insurance companies only).

However, these companies historically conduct business in Germany through their subsidiaries, which are incorporated in Germany and are subject to supervision by German authorities and are thus statistically treated as German companies. Foreign companies are solely those that have only a branch office.

With regard to the participation in insurance companies, there is no general restriction for investors. Particularly, no special legal restrictions with regard to foreign investors, as well as the insurance/bank, bank/insurance or industrial company/insurance ownership combinations exist, and all examples can be found in the market. However, special requirements for owners of significant insurance stakes (i.e., more than 10% of the equity capital) are codified in the Insurance Supervision Act (cf. §104 VAG). For example, if an investor intends to acquire a significant participation of an insurer, the supervisory body must be informed. Under certain quite restrictive circumstances (i.e., if, after the participation, effective supervision of the insurer is not possible) the supervisory body can delay or forbid the transaction.

Ranking Non-Life by Gross Written Premium					Ranking Health by Gross Written Premium					Total Group Ranking by Gross Written Premium				
2002	(2000)	Group	Market Share 2002	Market Share (2000)	2002	(2000)	Group	Market Share 2002	Market Share (2000)	2003	(2002)	Group	Market Share 2003	Market Share (2002)
1	(1)	Allianz	19.50%	18.70%	1	(1)	Ergo	15.30%	16.00%	1	(1)	Allianz	18.66%	17.70%
2	(2)	Ergo	5.90%	6.10%	2	(2)	Debeka	13.20%	13.10%	2	(2)	Ergo	9.66%	9.04%
3	(4)	Gerling	5.20%	5.60%	3	(3)	Allianz	12.50%	12.50%	3	(3)	Generali	8.59%	8.58%
4	(3)	AXA	4.90%	5.80%	4	(4)	Signal Iduna	7.50%	7.60%	4	(4)	R+V	4.97%	4.69%
5	(5)	HUK Coburg	4.80%	5.10%	5	(5)	Generali	5.40%	5.40%	5	(5)	Zürich/ Agrippina	4.66%	4.62%
6	(6)	R+V	4.60%	4.60%	6	(6)	Continentale/ Europa	4.80%	4.90%	6	(6)	AXA	4.53%	4.31%
7	(8)	Zürich/ Agrippina	4.40%	3.60%	7	(7)	Bayerische Beamten- Kranken- kasse	4.30%	4.60%	7	(7)	Debeka	4.22%	3.90%
8	(7)	Generali	3.90%	3.90%	8	(8)	Barmenia	4.10%	4.20%	8	(9)	Talanx (former HDI) Bayern Vers. Öffentlicher LV	3.70%	3.21%
9	(10)	HDI	3.20%	3.00%	9	(9)	DBV Winterthur	3.70%	3.70%	9	(8)	Anstalt	3.58%	3.34%
10	(9)	Württembergische/ Wüstenroth	3.00%	3.20%	10	(10)	Parion	3.20%	3.30%	10	(9)	Signal Iduna	3.21%	3.06%
Top 3			30.60%	30.40%	Top 3			41.00%	41.60%	Top 3			36.91%	35.32%
Top 5			40.30%	41.30%	Top 5			53.90%	54.60%	Top 5			46.54%	44.62%
Top 10			59.50%	59.60%	Top 10			73.90%	75.40%	Top 10			65.78%	62.43%

Table [1]: Top 10 Insurance companies by insurance lines.

Source: *GDV Annual Report Database Online*, Inquiry on 15th-19th November 2003, own calculations, group-wise aggregation of not consolidated data. For 2003, total group ranking including all insurance lines: *Zeitschrift für Versicherungswesen*, Vol. 55 (2004), No. 19, page 560.

2.2. Economic Structure

As in other countries with developed insurance markets, German insurers offer a wide range of products in various lines. The most important direct lines are life, property and casualty, and private health insurance. Figure 2 provides information about the number of companies under the supervision of the German supervisory body from 1990 to 2003 with respect to the most important direct insurances lines. In 2003, there were 679 insurers, with numbers being relatively stable over the last ten years. The life insurance sector has the largest number of companies (324), followed by property and casualty (251). Only 55 companies are active in private health insurance. In addition, 49 companies are active in the reinsurance business, but this sector is not the focus of this chapter.

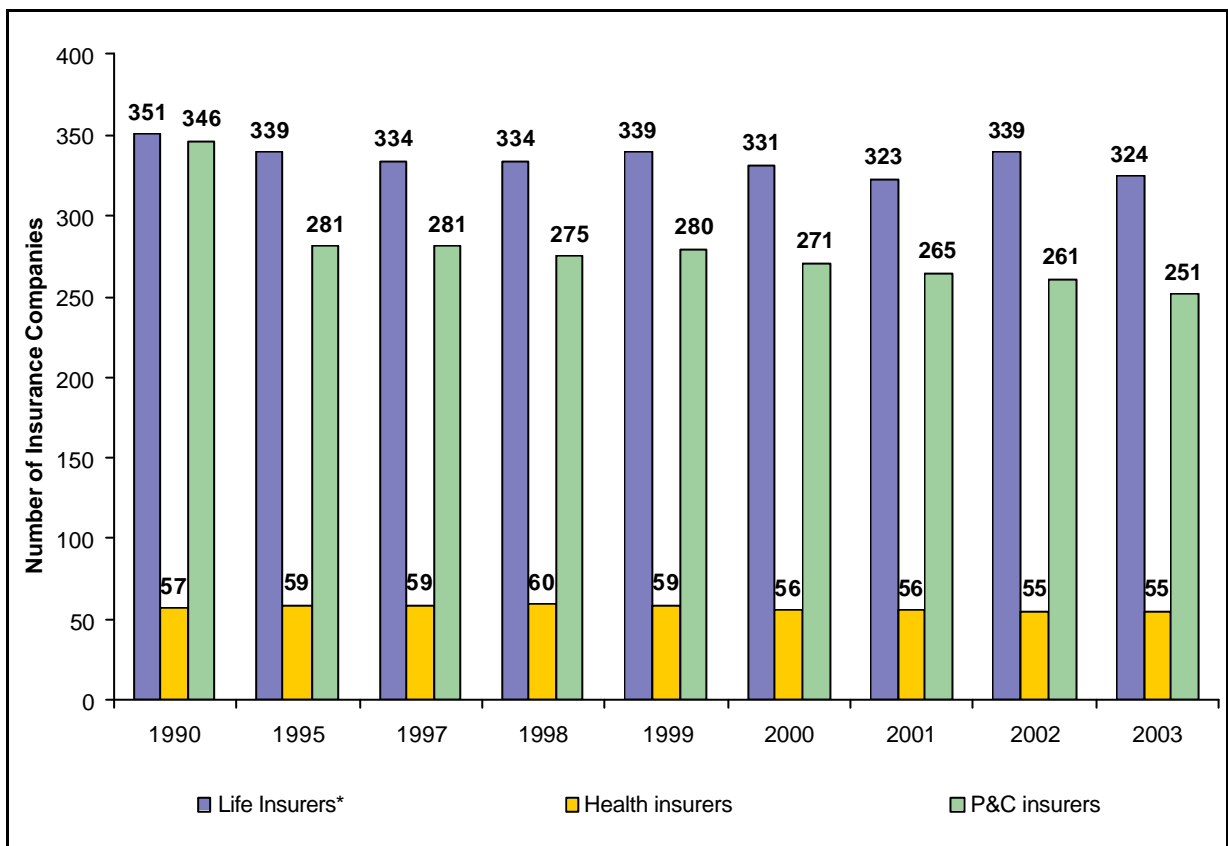


Figure [2]: Number of insurance companies in Germany by insurance line.

Source: Gesamtverband der deutschen Versicherungswirtschaft (editor), *The German Insurance Industry, Yearbook 2003*, page 66; *Statistical Yearbook 2004*, table 2.

*Life insurers including Pensionskassen and Sterbekassen The details for the Pensionskassen are given in the table 4.

In terms of the number of insurance contracts, motor vehicle insurance has a clear lead with 98 million contracts in 2002, followed closely by life insurance with 91 million contracts in 2002. Property insurance, with 67 million contracts, is the third-strongest insurance branch based on the number of contracts (German Insurance Association, 2003, p. 68). The ranks change, however, if the premiums written by insurance sector are considered. As can be seen in Figure 3, the premiums written by life insurers constitute approximately 45 percent of the total premium volume written in 2003, followed by property and casualty, including motor vehicle, liability, casualty, legal claim,

property, and transport insurance (37%). Private health insurance is in third place with a market share of 17 percent.

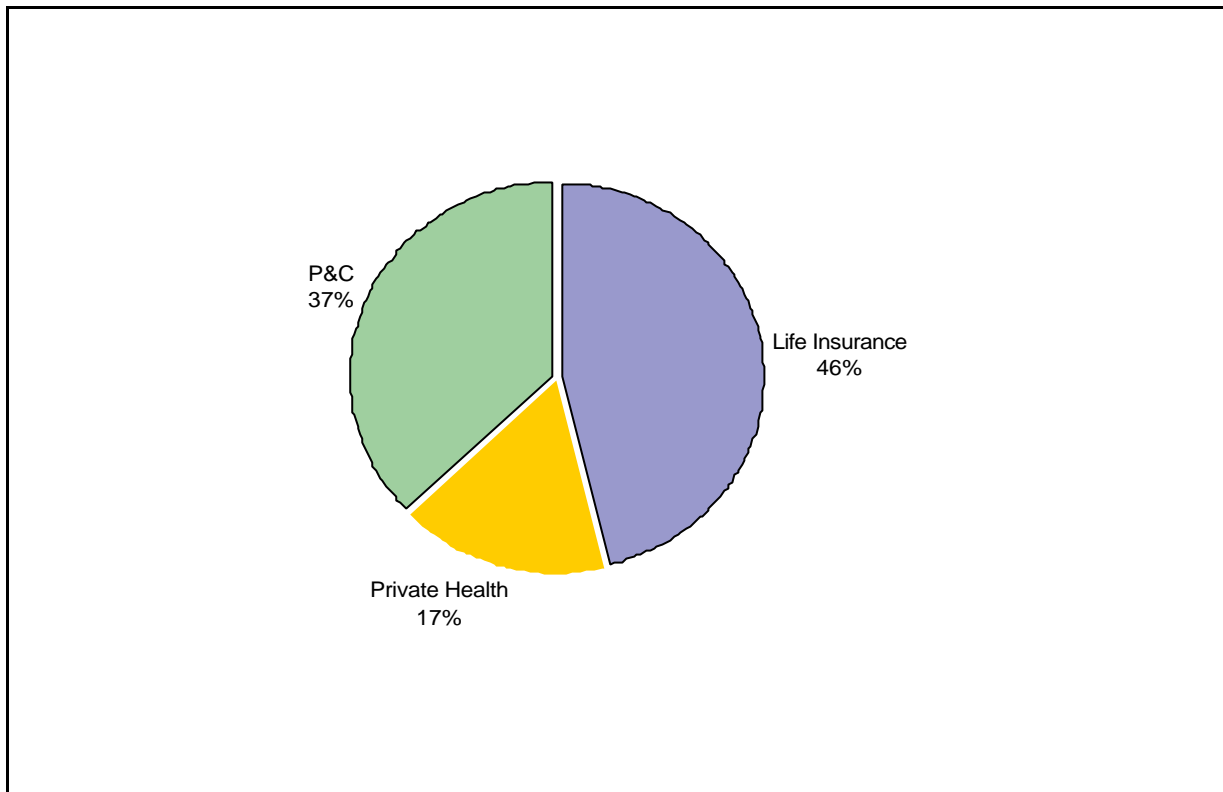


Figure [3]: *Split of insurers' premium income in 2003.*

Source: *Gesamtverband der deutschen Versicherungswirtschaft (editor), Statistical Yearbook 2004, table 6.*

Table 1 depicts information about the concentration in the German insurance market as well as in the different lines. Measured by premiums written in all lines, about 35 percent of the market share belongs to the top three companies, whereas the top ten companies cover a market share of more than 60 percent. The picture in the different lines is quite similar: the health sector shows a slightly higher and the property and casualty sector a slightly lower concentration compared to the total market.

Figure 4 compares important measures for the German insurance market to other countries' markets for the years 1980 to 2002. With respect to premiums written in 2002, the German insurance industry is the fourth-largest insurance market in the world, after the United States, Japan, and Great Britain (the aggregate EU countries is given for better comparison with the United States). Yet, over the last twenty years, Germany has lost a substantial part of its global market share. Around 5 percent of the world's premium volume was written in the German insurance market in 2002, while in 1980, this ratio was approximately 9 percent. The figures for insurance density, defined as premiums received by primary insurers per capita, and insurance penetration, defined as premiums received by primary insurers in percent of the gross domestic product, have also considerably declined since 1980. In 1980, Germany was second only to the United States in terms of insurance premiums per capita and by penetration of insurance, these numbers being above the average of the leading industrial countries.

In 2002, the insurance penetration ratio of 6.8 percent was substantially lower than in many developed countries. Moreover, the insurance density of \$1,628 also lies below the G7 average. This loss can at least partially be explained by the fact that insurance products have progressively been shifted away from public social security (especially in the health and pension sector) to private contracting in the United States and the United Kingdom, whereas the German public social security system still provides generous benefits. However, the population's awareness of the need to privately provide for retirement and health insurance, together with the impossibility of maintaining public social security benefits at formerly generous levels, is expected to change this situation.

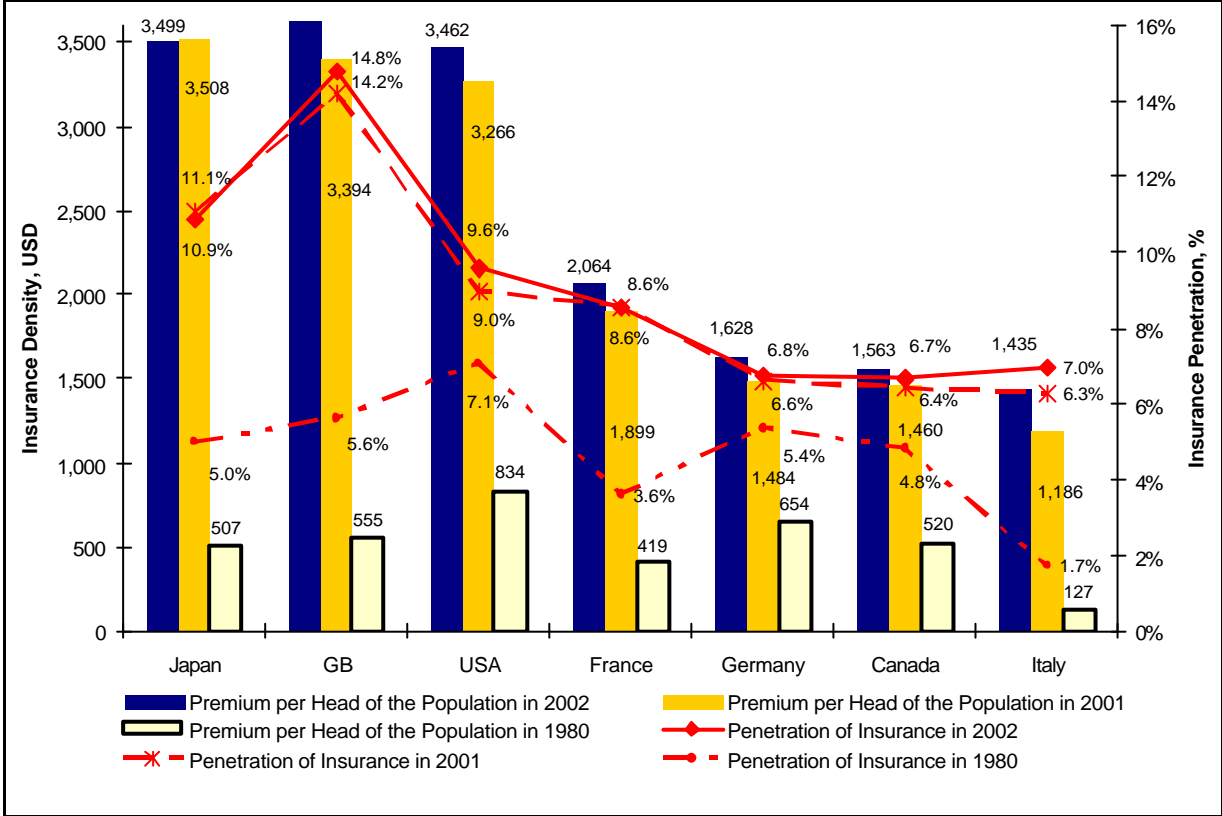


Figure [4]: Insurance density* and insurance penetration** in Germany and G7 countries in 1980 and 2002. Source: Gesamtverband der deutschen Versicherungswirtschaft (editor), The German Insurance Industry, Statistical Yearbook 2003, Statistical Yearbook 2004, tables 71-72.

* P.a. premium income received by primary insurers per head of the population.
 ** P.a. premium income received by primary insurers in percent of the GDP.

With more than 800 billion euros worth of assets under management in 2003, insurance companies are among the most important institutional investors in the country. As shown in Table 2, life insurers account for approximately 75 percent of the amount. For comparison, in 2003, the assets under management of German mutual funds amounted to 436 billion euros and special funds to 520 billion euros. Special funds are investment vehicles comparable to mutual funds and are regulated like the latter in the Investment Company Act but are available only for institutional investors. With a market share of about 50 percent, measured in terms of assets under management of all special funds, insurers are important users of this vehicle for outsourcing asset management activities within a

regulated framework. The assets of the German banking sector, amounting in 2003 to 6.471 billion euros, cannot be used for a proper size comparison: German banks are universal banks and carry a huge amount of loans on their balance sheets, especially to non-banks. More than half of the insurance industry's assets consist of fixed-income instruments. However, the figures vary from 50 percent in property and casualty insurance to over 70 percent in health insurance. Direct investments in stocks and real estate play only a minor role in all insurance lines.

The market standard for the majority of German insurers is the multichannel approach such as agents, brokers, banks, direct insurance, Internet, and other niche distribution channels. Agents (tied—i.e., obliged to exclusively distribute the products of a single insurer—and free) are the main distribution channel for German insurers, contributing more than half of annual new business. However, insurers are not obligated to disclose their distribution statistics. The distribution of insurance products through banks is not widespread. Some cooperations last for many years (for example, R+V Insurance and Volksbanken Raiffeisenbanken), thus giving reason to believe in their value. In contrast, daily media reports reveal some evidence of dissatisfaction of the Allianz with the cross-selling results of its subsidiary, Dresdner Bank (VWD-Vereinigte Wirtschaftsdienste, 2003). Former hopes about selling insurance through the Internet seem to have been dampened by the fact that most insurance contracts have complicated structures and require a considerable amount of consultation, which is difficult to provide via the Internet. This obstacle reduces possibilities of Internet distribution to the provision of simple descriptive information and channeling the request for a call from the insurance company's representative.

In EURm	1998	1999	2000	2001	2002	2003	In EURm	1998	1999	2000	2001	2002	2003	In EURm	1998	1999	2000	2001	2002	2003
Life Insurance ^{a)}							P&C Insurance							Private Health Insurance						
Real Estate	6,142	15,536	15,478	14,905	15,080	14,134	Real Estate	4,809	4,694	4,465	4,304	4,068	3,971	Real Estate	1,737	1,795	1,787	1,891	1,770	1,882
Growth	n.a	152.9%	-0.4%	-3.7%	1.2%	-6.3%	Growth	n.a	-2.4%	-4.9%	-3.6%	-5.5%	-2.4%	Growth	n.a	n.a	-0.4%	5.8%	-6.4%	6.3%
in %							in %							in %						
of subtotal	1.4%	2.3%	2.9%	2.6%	2.6%	2.3%	of subtotal	5.3%	5.0%	4.6%	4.3%	3.9%	3.7%	of subtotal	3.0%	2.8%	2.5%	2.3%	2.0%	1.9%
Stocks*	21,825	21,080	25,356	23,209	15,258	11,786	Stocks*	5,360	5,898	6,051	5,592	3,491	2,461	Stocks*	2,234	2,822	2,957	2,804	1,818	1,497
Growth	n.a	-3.4%	20.3%	-8.5%	-34.3%	-22.8%	Growth	n.a	10.0%	2.6%	-7.6%	-37.6%	-29.5%	Growth	n.a	26.3%	4.8%	-5.2%	-35.2%	-17.7%
in %							in %							in %						
of subtotal	4.8%	4.2%	4.7%	4.1%	2.6%	1.9%	of subtotal	5.9%	6.2%	6.3%	5.6%	3.3%	2.3%	of subtotal	3.9%	4.3%	4.1%	3.5%	2.0%	1.5%
Shares in Pooled Investments	74,559	98,274	116,252	128,400	135,757	141,474	Shares in Pooled Investments	17,595	20,617	22,790	25,095	28,139	29,494	Shares in Pooled Investments	9,362	12,579	15,438	17,253	20,129	20,041
Growth	n.a	31.8%	18.3%	10.4%	5.7%	4.2%	Growth	n.a	17.2%	10.5%	10.1%	12.1%	4.8%	Growth	n.a	34.4%	22.7%	11.8%	16.7%	-0.4%
in %							in %							in %						
of subtotal	16.4%	19.4%	21.5%	22.5%	23.0%	23.3%	of subtotal	30.8%	31.6%	31.4%	31.0%	31.7%	30.1%	of subtotal	16.4%	19.3%	21.2%	21.3%	22.7%	20.5%
Participations**	14,815	15,848	17,942	18,619	20,680	21,621	Participations**	11,444	12,146	13,768	15,577	19,255	19,296	Participations**	1,663	1,803	2,120	2,346	3,172	3,017
Growth	n.a	7.0%	13.2%	3.8%	11.1%	4.6%	Growth	n.a	6.1%	13.4%	13.1%	23.6%	0.2%	Growth	n.a	8.4%	17.6%	10.7%	35.2%	-4.9%
in %							in %							in %						
of subtotal	3.3%	3.1%	3.3%	3.3%	3.5%	3.6%	of subtotal	12.6%	12.9%	14.3%	15.7%	18.5%	17.8%	of subtotal	2.9%	2.8%	2.9%	2.9%	3.6%	3.1%
Fixed Income	334,262	352,981	363,906	381,664	399,975	416,733	Fixed Income	51,657	50,810	48,728	48,593	48,949	53,073	Fixed Income	42,019	45,961	50,100	56,225	61,422	71,217
Growth	n.a	5.6%	3.1%	4.9%	4.8%	4.2%	Growth	n.a	-1.6%	-4.1%	-0.3%	0.7%	8.4%	Growth	n.a	9.4%	9.0%	12.2%	9.2%	15.9%
in %							in %							in %						
of subtotal	73.7%	69.8%	67.2%	67.0%	67.8%	68.6%	of subtotal	56.7%	53.8%	50.7%	48.9%	46.9%	48.9%	of subtotal	73.5%	70.5%	68.9%	69.5%	69.2%	72.8%
Other Investments	1,795	2,227	2,702	2,770	3,125	2,100	Other Investments	166	232	324	306	399	325	Other Investments	141	213	283	434	429	218
Growth	n.a	24.1%	21.3%	2.5%	12.8%	-32.8%	Growth	n.a	39.8%	39.7%	-5.6%	30.4%	-18.5%	Growth	n.a	51.1%	32.9%	53.4%	-1.2%	-49.2%
in %							in %							in %						
of total	0.4%	0.4%	0.5%	0.5%	0.5%	0.3%	of subtotal	0.2%	0.2%	0.3%	0.3%	0.4%	0.3%	of subtotal	0.2%	0.3%	0.4%	0.5%	0.5%	0.2%
Subtotal Life	453,398	505,946	541,636	569,567	589,875	607,848	Subtotal P&C	91,031	94,397	96,126	99,467	104,301	108,620	Subtotal Health	57,156	65,173	72,685	80,953	88,740	97,872
Growth	n.a	11.6%	7.1%	5.2%	3.6%	3.0%	Growth	n.a	3.7%	1.8%	3.5%	4.9%	4.1%	Growth	n.a	14.0%	11.5%	11.4%	9.6%	10.3%
in %							in %							in %						
of total	75.4%	76.0%	76.2%	75.9%	75.3%	74.6%	of total	15.1%	14.2%	13.5%	13.3%	13.3%	13.3%	of total	9.5%	9.8%	10.2%	10.8%	11.3%	12.0%
Total ***	601,585	665,516	710,447	749,987	782,916	814,340	Total ***	601,585	665,516	710,447	749,987	782,916	814,340	Total ***	601,585	665,516	710,447	749,987	782,916	814,340
Growth	n.a	10.6%	6.8%	5.6%	4.4%	4.0%	Growth	n.a	10.6%	6.8%	5.6%	4.4%	4.0%	Growth	n.a	10.6%	6.8%	5.6%	4.4%	4.0%

*shares and other variable-yield securities
**shares in affiliates and participating interest
*** without reinsurance
^{a)} life insurance without Pensionskassen and Sterbekassen

Table [2]: Investments of Insurance Companies.

Source: Gesamtverband der deutschen Versicherungswirtschaft (editor), The German Insurance Industry, Statistical Yearbook 2003, Tables 30, 38,63; Statistical Yearbook 2004, tables 27, 37, 62, own calculations.

2.3. Merger and Acquisition Activities

The considerable number of insurers in Germany could indicate a strong merger and acquisition capacity in the market. However, this has not been the case. Although Thomson Financial has counted more than 80 mergers and acquisitions in or with the involvement of the German insurance industry during the last four years, almost all of those transactions have not considerably changed the competitive landscape and were often only a result of restructuring within the insurance conglomerates (for details, see Lier, 2003, p).

A prominent example of such a merger driven by restructuring is the creation of ERGO by Munich Re in 1997, whereby the insurance subsidiaries of this large reinsurer were gathered together under one name, creating Germany's second-largest insurance group (see Table 1). The most important pure merger and acquisition transactions in the industry were Dresdner Bank/Allianz in 2001 and Signal/Iduna in 1999. The Dresdner Bank was taken over by the Allianz AG, one of its biggest shareholders, following failed merger talks with the Deutsche Bank in March 2000 and the Commerzbank in June 2000. The disclosed reasons for the transaction were the building of a global finance conglomerate on the side of the Allianz and pressure on the Dresdner Bank to grow in order to remain a global player. According to the Allianz's financials for 2003 and 2002, its banking business in those years was experiencing considerable operating losses and had undergone considerable restructuring (Allianz Group, 2003, pp. 2, 75–76).

The Signal/Iduna group was created in 1999 by the alliance of two mutual insurance groups: Signal Group, specializing in health and property and casualty insurance, and Iduna, specializing in life insurance and related products. The goal of the alliance was to form an all-around insurance group and secure the position of a countrywide player. Currently, Signal/Iduna belongs to the top ten insurance groups in Germany (see Table 1).

The sluggish merger and acquisition activity may be attributable, at least in part, to the legal structure of the market: about 300 insurance companies have the legal form of mutuals or institutions under public law. The specifics of such legal structures could make mergers with or acquisitions of such companies less attractive for investors. On the other hand, there is merger and acquisition potential in this market segment, especially in view of Solvency II requirements, because mutuals and public insurers have restricted access to the capital markets. Therefore, industry experts anticipate mergers within the same legal forms as well. It is expected that the number of mutual insurers would drop further and that the number of institutions under public law will be substantially reduced by the creation of bigger institutions operating countrywide (Lier, 2003).

The idea of a conglomerate offering both banking and insurance services (also called bankassurance) might be another driver for merger and acquisition activities. However, it has been

somewhat damaged by the unfavorable development in the Allianz/Dresdner Bank case. The banking subsidiary is experiencing losses in its core activities (*Dresdner Bank AG*, p. 41) with limited cross-selling advantages for the insurance business. According to the press, less than 40,000 Dresdner Bank customers are so far Allianz-insured (VWD, 2003). Public insurers had a similar but not so publicly known experience as a result of their much longer cooperations with banking institutions under public law. Although the target clients of both insurers and banks under public law are to a large extent the same, only around 15 percent of such a bank's customers have bought insurance from the cooperating insurer (Lier, 2003).

3. INSURANCE LINES

3.1. Life Insurance

Life insurers provide insurance coverage for dependents against the financial risk of death in exchange for a fixed premium.³ Additionally, they are important vehicles for long-term savings and draw down accumulated savings for pension payments during retirement. Of the 324 companies that were operating in this sector during 2003, around one-third (119) offered life insurance coverage in the retail market. The other 205 companies were Pensionskassen, which are a special kind of life insurance only operating in the market for occupational pensions. The majority of these companies are organized as mutuals, legally independent from the sponsoring employer (typically a company, public corporation, or industry group) and provide occupational retirement benefits for employees. Since the benefits of this type of occupational pension scheme include substantial insurance features (e.g., mortality and disability coverage) and defined benefit elements, the regulation of Pensionskassen is similar to that of life insurers. With a market share of about 3 percent of total life insurance premiums written in 2003, less than 1.6 percent of the total insurance premiums written in 2003 (2.25 billion euros vs. 67.66 billion euros and 148.2 billion euros, respectively), Pensionskassen play only a minor role in the German insurance market. The key information for Pensionskassen is summarized in Table 3.

³ This section draws heavily on Maurer (2004).

Key Figures on Pensionskassen	1980	1990	1995	2001	2002
	<i>In EUR m</i>				
Gross Premium Written	1.496	2.866	1.853	1.919	2.247
Gross Expenditure on Insurance Claims	690	2.046	1.704	2.600	2.765
Investment Portfolio ⁽¹⁾	16.500	35.200	49.800	70.700	72.000
	<i>Pension insurance contracts in force in thousands</i>				
Expectant Pensioners	2.202	2.557	2.634	2.352	3.244
Disabled and Old-Age Pensioners	387	616	711	320	969
Survivors	110	108	104	130	126
Number of Pensionskassen	266	162	135	136	154

⁽¹⁾ At year-end

Table [3]: Key Figures on Pensionskassen.

Source: *Gesamverband der deutschen Versicherungswirtschaft (editor), The German Insurance Industry, Statistical Yearbook 2004*, table 29.

Individual endowment policies are, with 55 percent of the gross premiums written in 2003, the most important products in the German retail insurance market. *Life annuities*, which are a traditional and common vehicle to draw down accumulated assets during retirement, enjoy a market share of 25 percent with respect to total premium volume. Collective policies, whereby an individual who is a member of an association becomes eligible to buy individual life policies with the same conditions for all its members subject to a group rebate, show a market share of about 13 percent. Other types of life insurance products (e.g., *supplementary policies*), which provide death benefits within other insurance policies (e.g., disability or private accident policies), are playing a less vital role with a market share of 7 percent (see Figure 5).

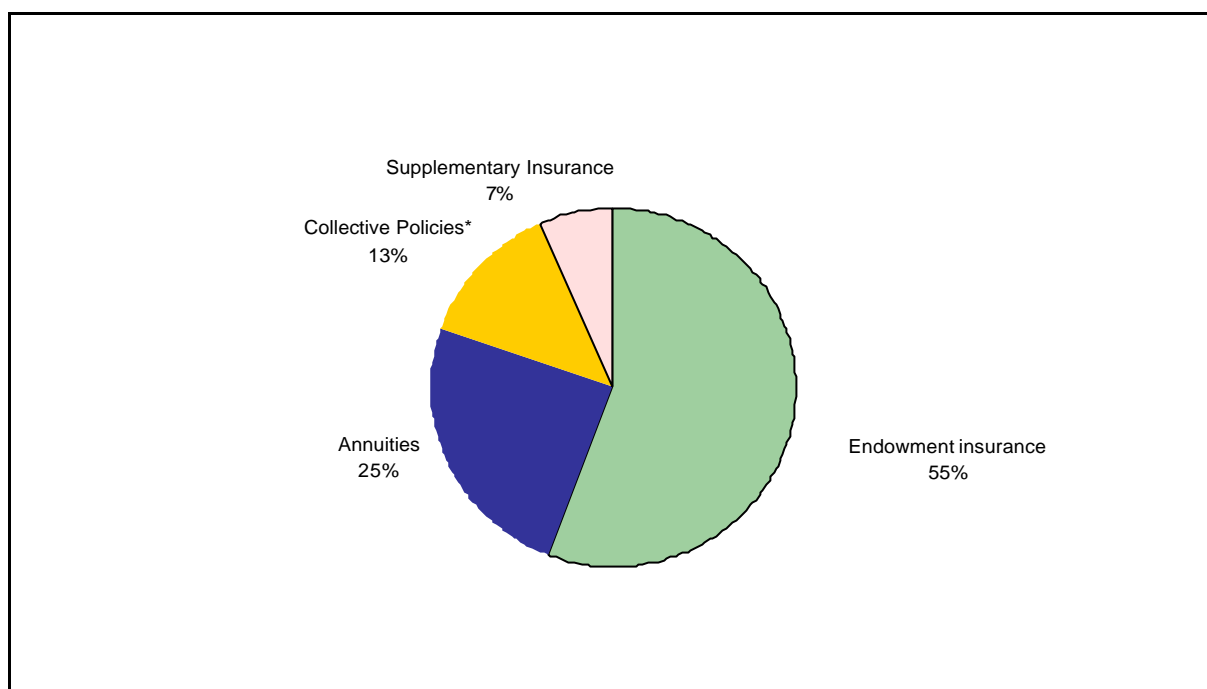


Figure [5]: *Product split of life insurance sector for 2003*. The position *Collective Policies* includes individual policies subject to a group rebate, which otherwise would have been counted as individual endowment insurance. Source: *Gesamtverband der deutschen Versicherungswirtschaft (editor), The German Insurance Industry, Statistical Yearbook 2004*, table 24.

* In a collective policy an individual who is a member of an association becomes eligible to buy individual life policies with the same conditions for all its members subject to a group rebate.

Endowment policies consist of an insurance component and an investment component. The first provides death benefits (determined by the face value of the policy) if the insured dies within the insurance period. The latter creates a cash value over time, which the insurance company must pay at the end of the insurance period (which is on average about 28 years) or if the contract is terminated. Endowment policies with no investment component—that is, pure term life policies—play only a minor role with respect to premiums written. To back the cash value, the life insurer must generate funding reserves. The registered assets covering these reserves must be kept in a special fund, which must be managed separately from other insurance company assets. Usually, endowment policies are contractual plans—that is, the insured person is obligated to pay a series of fixed premiums (generally on a monthly basis), which are primarily determined by the insured’s age upon issue, gender, the face value and the duration of the contract. The life insurance company uses a certain part of the periodic premiums paid by the policyholder to cover the mortality cost for death benefits (based on a mortality table), a second part to cover distribution and administrative expenses, and a third part is invested in specific assets to generate a cash value.

Depending on how the cash value is generated, endowment policies can be classified into index-linked, unit-linked, and participating-with-profits policies. In the case of an *index-* or *unit-linked life policy*, the investment component is typically backed by a specific equity or bond portfolio

represented by an appropriate index or a mutual fund account as chosen by the policyholder. As a result, the cash value of the policy (and, in part, also the death benefits) depends on the uncertain returns of the specific assets to which the policyholder allocates the investment component. The market for unit-linked or index-linked life insurance products is underdeveloped in Germany. Most insurers consider such policies to be a necessary complement of the product range. Stagnant capital markets further slowed the growth in this segment.

The predominant product in the German life insurance market is the traditional *participating cash-value policy*, whereby the investment component is designed with a guaranteed yearly minimum return and a variable nonguaranteed surplus. The guaranteed return is set when the policy is issued and remains fixed until the contract is terminated. The maximum return an insurer is allowed to guarantee is limited by regulation—that is, it should not exceed 60 percent of the return on long-term government bonds; in 1994, the maximum return guarantee for all life insurers was set at 4 percent per year; in 2000, it was lowered to 3.25 percent per year; and in 2004, to 2.75 percent per year. According to German regulation, life insurers must distribute not only the profits, which were guaranteed as described above, but also at least 90 percent of their annual profits (in the form of an annual/terminal bonus) to policyholders, which are called the variable nonguaranteed surplus. Besides the insurer's experience with mortality and expenses, the nonguaranteed surplus mostly depends on the performance of the investment portfolios.

Despite the fact that the surplus return is not guaranteed, German life insurers traditionally preferred to keep surplus rates stable over time, partly to create an additional impression of stability with their customers. This is realized by using several smoothing possibilities legally permissible under German accounting standards. For example, to calculate investment returns, the assets are evaluated on a book value rather market value basis. This allows the generation of hidden asset reserves arising in “good years”—that is, when (market-based) investment returns are temporary higher than the historical average. In “bad years” —when the insurance company (market-based) investment performance is temporarily less than the historical average—the reserves can be used to keep the surplus stable over the next several years (for details on return smoothing, see Albrecht and Maurer, 2002, and Richter and Ruß, 2002). However, this practice of smoothing return fluctuations in the capital markets is limited. Figure 6 depicts the development of net investment returns collected from the annual accounting statements of German life insurers over the years 1994 to 2003. The sample includes 113 life insurers, members of the German Insurer's Association (*Gesamtverband der Deutschen Versicherungswirtschaft*, or GDV), and represents more than 90 percent of the German insurance market.

Net Investment Return (NIR) of Life Insurance Companies, per annum	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1. Quantil NIR	6.71%	7.20%	7.17%	7.20%	7.15%	7.09%	6.52%	5.05%	3.50%	4.40%
Median NIR	7.21%	7.38%	7.40%	7.48%	7.48%	7.46%	7.28%	5.82%	4.54%	5.03%
3. Quantil NIR	7.38%	7.60%	7.61%	7.80%	7.81%	7.81%	7.66%	6.39%	5.09%	5.60%
Capital Market Returns										
Annual DAX-Return*	-7.06%	6.99%	28.17%	47.11%	17.71%	39.10%	-7.54%	-19.79%	-43.94%	37.08%
YTM Government Bonds	7.50%	5.60%	5.20%	5.10%	3.70%	5.00%	4.40%	4.60%	4.10%	4.00%

* DAX, German Stock Index for 30 Blue Chips

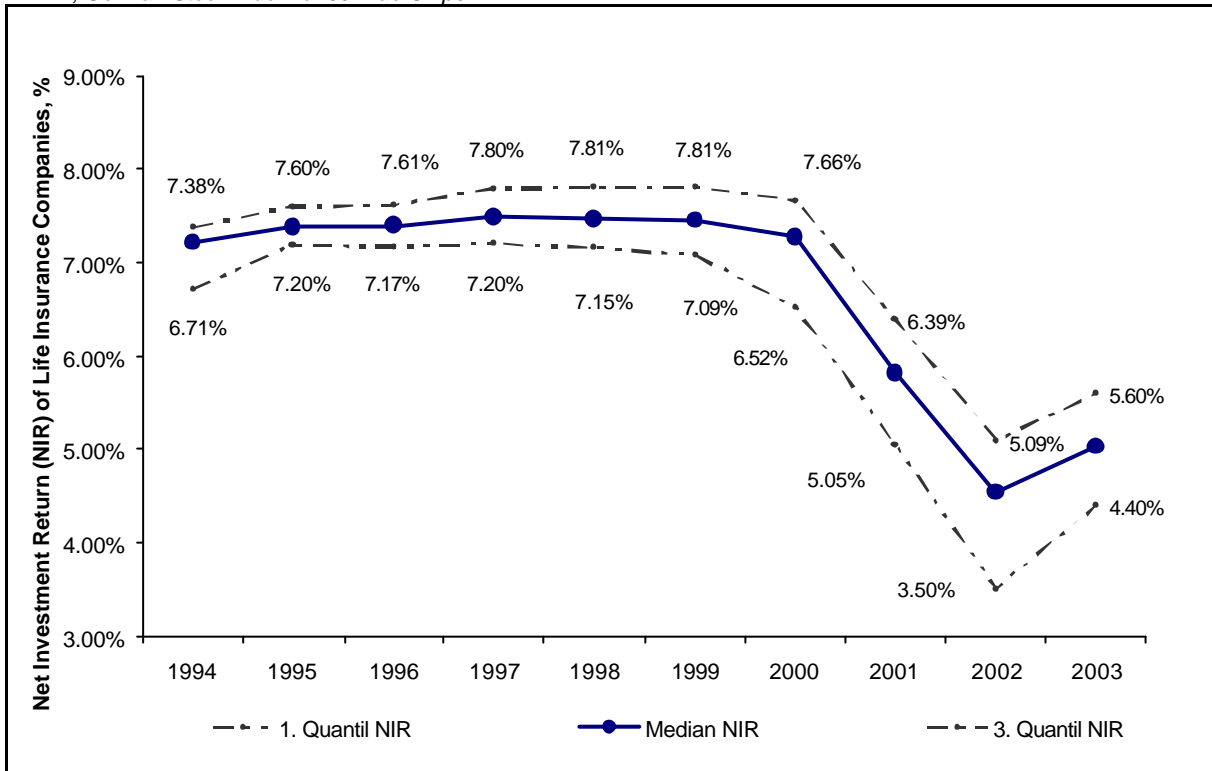


Figure [6]: Net Investment Return** of Life Insurance Companies 1994-2003.

Source: GDV Annual Report Database Online, Inquiry on 15th-19th November 2003 and 04th May 2004, own calculations on the basis of the financial data of the non-consolidated insurance companies.

** Ratio of net earnings p.a. to the year's average invested assets.

Looking at the net investment returns over the years 1994 to 2000, the distance between the 25th and 75th percentiles is less than 1.2 percent in each year—that is, the (cross-sectional) investment performance of the various companies is characterized by a high degree of homogeneity. In addition, the investment returns are very stable over that time period, showing a range for the median company of a minimum 7.21 percent in 1994 and a maximum of 7.48 percent in 1998. However, the years 2001 and 2002 were characterized by a sharp decline in the investment results—5.82 percent in 2001 and at 4.54 percent in 2002 for the median company, respectively. This is caused by a substantial downturn in the equity markets (which determines about 10 to 30 percent of the assets held by insurers) together with a sustained decline of interest rates for fixed-income investments since 1995 (which determines about 70 to 90 percent of the average insurance asset allocation). This results in the exhaustion of asset reserves in the books for most life insurers, followed by a substantial reduction in investment returns and surplus participation.

Distribution and administrative costs are the major cost positions in the life insurance industry. To offer insight into the development of these positions, both cross-sectional as well as over time, we calculate the administrative expense ratio, the distribution expense, and the total expense ratio for a sample of 113 German life insurers from 1998 to 2003. They are expressed in percent and measured as a ratio of distribution or administrative costs to gross premiums received in the period under consideration. Table 4 depicts information about the 25 percent, 50 percent, and 75 percent quartiles of these measures over the course of years. The mean total expense ratio, consisting of distribution and administrative expenses, exhibits a level of 14 to 16 percent over a number of years. The administrative expense ratios display a level of approximately 3 to 4 percent and the distribution expense ratios, presented as the difference between total and administrative expenses, of approximately 12 to 13 percent over time. However, the (cross-sectional) range of these cost ratios between the various insurance companies is considerable. On the one hand, it illustrates the importance of distribution activity for life insurers; on the other hand, it shows that certain improvement possibilities toward cost structure optimization exist.

Life insurance market	1998	1999	2000	2001	2002	2003
25% Quantil of the market participants by expense ratios	12.59%	15.21%	11.47%	11.97%	12.15%	11.60%
Median expense ratio market	15.24%	18.64%	14.26%	15.93%	15.44%	16.12%
75% Quantil of the market participants by expense ratios	18.84%	23.38%	17.34%	21.36%	18.28%	21.23%
25% Quantil of the market participants by administrative expense ratios	2.98%	2.81%	2.73%	2.72%	2.56%	2.43%
Median administrative expense ratio market	3.65%	3.37%	3.40%	3.48%	3.46%	3.48%
75% Quantil of the market participants by administrative expense ratios	5.34%	4.78%	4.95%	5.02%	4.80%	4.59%

Table [4]: Expense Ratios* of Life Insurance Companies 1998-2003.

Source: Gesamtverband der deutschen Versicherungswirtschaft (editor), Annual Report Database Online, Inquiry on 15th-19th November 2003 and 04th Mach 2004, own calculations on the basis of the financial data of the non-consolidated insurance companies.

* Ratio of administrative and distribution costs to annual premium income.

The economic significance of distribution expense ratios reported in Table 4 should be interpreted with caution. The German cost system in life insurance traditionally uses front-end loads to cover distribution costs. The broker receives a lump-sum payment of about 4 percent of the policy's face value from the insurance company after the contract is signed, both in the case of a policy with a single premium as well as in the case of a contractual plan with a series of regular premiums. Due to the front-end load for the first several years that a policy with regular premiums is in effect, the cash value is usually significantly less than the premiums paid by the policyholder or even zero. The distribution expense ratios reported in Table 4 show what part of the premiums received in the year

under consideration was spent on the acquisition of new insurance contracts. Without information about the development of the insurance portfolio, this ratio cannot be unambiguously interpreted, especially not as an indicator for the burden with distribution cost per contract. Acquisition costs can be high if the insurer has acquired many new contracts or if a precise risk assessment was practiced. A low distribution expense ratio can be observed if the insurance undertaking has no new business at all. Disproportionately many life insurance contracts with single premiums or with short contract periods, relative to the whole portfolio, could also bias the ratios.

Traditionally, life insurance products have been used as a means to provide for the insured's old age or that of family members and to provide a number of tax advantages for the policyholder and the beneficiary. First, if the insured person dies, the death benefits paid to the beneficiary are free from income taxation. In addition, if an individual pays (unlimited) premiums based on a contractual plan (i.e., a series of at least yearly premiums is necessary) into a cash-value life insurance policy, and the policy runs for at least twelve years, then the periodic increase in the policy's cash value is free from income taxation. In addition, certain professional groups (i.e., civil servants, self-employed) may deduct (within certain limits) the insurance contributions from their taxable income. These tax advantages made cash-value life insurance policies attractive as pension, as well as a general savings vehicle, for all parts of the population. More than 80 million life insurance contracts were in force during 2003; on average, each German citizen owns one life insurance contract. However, these tax privileges for cash-value life insurance policies with premiums paid from taxed income were abolished as of 2005. For all life insurance policies signed after 2004, 50 percent of the proceeds realized at the maturity of the contract will be taxed with respect to the insured's personal income tax rate. Such a move by the government considerably lowers the expected after-tax yield of such life insurance contracts and therefore, its attractiveness as a private pension vehicle.

However, three additional governmental programs offer tax inducements for voluntary funded pension savings during a person's working life and could strengthen the market for products offered by life insurers. All of these programs are designed to facilitate the proper development of the German old-age insurance system, which rests on three pillars: a statutory pension scheme, occupational schemes, and personal retirement provisions. Primarily, within the second-pillar occupational pension system, workers have the option to pay part of their income (up to a certain limit) into a cash-value life insurance policy (so-called direct life insurance policies) on a pretax basis. This type of company pension scheme is frequently used, particularly by small and medium-sized companies and creates the first additional demand for life insurance products. In 2003, about 5.82 million contracts were allocated to direct life insurance policies, covering an amount of 153.73 billion euros.

The second additional demand for life insurance products results from the introduction of a new tax-shielded funded system of supplementary pensions within the Retirement Savings Act (*Altersvermögensgesetz*), which became effective in 2002 (also known as *Riester* pension reform,

named after Walter Riester, the German Labour Minister during 1998–2002). Coupled with a substantial cut of public pay-as-you-go pension benefits, individuals will be able to invest a part of their income on a pretax basis into Individual Pension Accounts (IPAs), offered by regulated financial institutions, such as commercial banks, investment management companies, and life insurers. Additional incentives are given in the form of direct subsidies for low-income earners and extra contributions for children. In order to qualify for a tax credit, the IPAs must satisfy a number of criteria, codified in a certification law. For example, certification of IPA requires that, when the age of retirement is reached, a certain fraction of the accumulated assets must be drawn in the form of a lifelong annuity (offered by a life insurer), or a phased withdrawal plan, which must revert into a life annuity not later than the age of 85. Another condition is a “money-back-guarantee” whereby each provider must promise that the contract cash value at retirement is at least equal to the contributions paid into the IPA. Both legal conditions are in line with the features of products offered by life insurers. Until 2003, individuals signed about 3.3 million *Riester* contracts offered by life insurers.

The last program regarding the reform of the German social security system was launched in 2004 and will become effective in 2005. This reform was triggered by changes in the Law on Taxation of Retiree Revenues (*Alterseinkünftegesetz*), which aimed to introduce the principle of deferred taxation for all pillars of old-age provisions—the statutory, employer-sponsored, and private. Benefits from the public pension systems before that act are—for most retirees—not subject to income taxation, while, after the act for future retirees, they will be. To compensate for the cut in future state pension benefits due to the introduction of deferred taxation, individuals can invest a part of their income into special registered individual pension accounts (also known as *Rürup* pension plans, named after Bert Rürup, the head of the Commission for the Social Security Reform) on a pretax basis. The criteria to qualify for such *Rürup* pension plans are different than those of the *Riester* reform discussed above. Only those plans with lifelong payments starting not before the age of 60, which cannot be transferred to another person nor bequeathed (even in the accumulation phase) and which can be only partially be borrowed on, can qualify as a *Rürup* plan. It is obvious that deferred life annuities offered by life insurers fit these legal provisions. So far, it can be expected that the life insurance industry will generate new business in such tax-supported funded pensions.

3.2. Private Health Insurance

In Germany, the main sources of health benefits are the statutory social security program and individual private health insurance. As a rule, employees and their nonemployed dependents (children, spouse) are compulsory members of the statutory health program, which provides substantial but highly regulated health benefits. Based on the principle of solidarity, premiums in the statutory health security program must be paid (half of this is paid by the employer/employee) as a percentage of the current family working income, while the coverage provided is equal for all members. In addition, students, retirees, the unemployed, and disabled persons pay reduced premiums. Some key data with respect to the statutory health insurance program are provided in Table 5.

	2001		2002		2003	
	Former FRG Territory	East German States and East Berlin	Former FRG Territory	East German States and East Berlin	Former FRG Territory	East German States and East Berlin
Insured Persons in Millions	Insured Persons in Millions					
Members, of Which	41.3	9.7	41.3	9.6	41.1	9.5
Compulsory (without pensioners)	23.3	5.7	23.2	5.6	23.3	5.5
Share of Compulsory Members in %	56.42%	58.76%	56.17%	58.33%	56.69%	57.89%
Sickness Rate of Compulsory Members in % ⁽¹⁾	4.2	4.3	4.0	4.1	3.6	3.7
In EUR	In EUR					
Pay-Related Compulsory Membership and Contributions Assessment Ceiling per	3,336	3,336	3,375	3,375	3,450	3,450
Annual Growth Rate in %	n.a	n.a	1.17%	1.17%	2.22%	2.22%
Contribution Rate (as %) of Monthly	13.6	13.7	13.5	13.8	14.3	14.3
Annual Growth Rate in %	n.a	n.a	-0.74%	0.73%	5.93%	3.62%
In EUR bn	In EUR bn					
Total Contribution Income	114.6	21.2	118.6	21.7	119.3	21.4
Total Expenditure	115.7	23.1	119.4	24.2	120.0	24.6
Surplus (+) / Deficit (-) Rate in %	-0.96%	-8.96%	-0.67%	-11.52%	-0.59%	-14.95%

⁽¹⁾ number of compulsory members unable to work due to sickness as % of total number (annual averages)

Table [5]: Key Data on the Statutory Health Insurance.

Source: Gesamtverband der deutschen Versicherungswirtschaft (editor), *The German Insurance Industry, Statistical Yearbook 2004*, table 112.

The demand for policies offered by private health insurers stems from different sources: First, high income workers earning more than the social security ceiling (currently approximately 4,000 euros per month) have the choice between staying in the statutory health program and protecting themselves against medical expense risk via an individual policy offered by commercial health insurers (called substitutive private health insurance). Additional demand for individual private health insurance policies is generated by those who are not compulsory members of the state health program (e.g., self-employed individuals or civil servants). In both cases, individuals usually sign insurance policies providing full coverage for medical expenses and long-term care. Further demand stems from members of the statutory health insurance program, who may purchase different types of complementary insurance policies. Such policies provide coverage for situations in which the statutory health insurance denies or restricts benefits to a minimal extent. A widely used example is a policy giving the statutory-insured person an option to receive an extra level of service in the event of

hospitalization: The insurance policy pays the difference between the costs that the statutory insurance is obliged to settle and the actual costs incurred by the treatment, within the limits of the complementary private insurance contract. Another prominent complementary product is the foreign travel health insurance policy, which pays (unexpected) medical costs if the insured individual is temporarily abroad (e.g., for a business trip or on holiday).

in millions of persons	1998	1999	2000	2001	2002	2003
Persons with Full Cover	7.21	7.36	7.49	7.71	7.92	8.11
<i>Growth</i>	<i>n.a.</i>	2.1%	1.9%	2.9%	2.8%	2.3%
Insurance of Optional Benefits in Hospital	10.64	10.78	10.91	11.20	11.44	11.80
<i>Growth</i>	<i>n.a.</i>	1.3%	1.2%	2.7%	2.2%	3.1%
Daily Benefits for Disability	2.34	2.54	2.62	2.78	2.94	3.12
<i>Growth</i>	<i>n.a.</i>	8.4%	3.3%	6.1%	5.8%	6.0%
Supplementary Long-Term Care Insurance	0.54	0.57	0.61	0.66	0.69	0.75
<i>Growth</i>	<i>n.a.</i>	5.0%	6.1%	8.4%	5.2%	8.7%
Compulsory Long-Term Care Insurance	8.13	8.23	8.37	8.62	8.83	9.00
<i>Growth</i>	<i>n.a.</i>	1.2%	1.7%	3.0%	2.4%	1.9%
Foreign Travel Health Insurance	23.04	23.35	25.43	27.15	26.82	26.60
<i>Growth</i>	<i>n.a.</i>	1.3%	8.9%	6.8%	-1.2%	-0.9%
Total Privately Health Insured Persons	51.90	52.82	55.42	58.11	58.65	59.37
<i>Growth</i>	<i>n.a.</i>	1.8%	4.9%	4.9%	0.9%	1.2%
Total Population	82.04	82.16	82.26	82.44	82.54	82.53
<i>Growth</i>	<i>n.a.</i>	0.2%	0.1%	0.2%	0.1%	-0.01%

Table [6]: *Business in Force in Private Health Insurance.*

Source: *Gesamtverband der deutschen Versicherungswirtschaft (editor), The German Insurance Industry, Statistical Yearbook 2003, Statistical Yearbook 2004, tables 36, 37; own calculations.*

The growth of the number of insured individuals over time is shown in Table 6. In a country with a population of 83 million, almost 27 million people use commercial insurance companies to purchase foreign travel health insurance, 12 million have optional hospital benefits insurance, and only 8 million have full health insurance coverage with commercial health insurers. However, the full health insurance coverage product line provided 71 percent of the annual premium income in 2003, followed by supplementary insurance (13% in 2003) and long-term care insurance (8% in 2003), as shown in the Table 7.

In EUR bn	1998	1999	2000	2001	2002	2003
Full Cover	12.29	13.01	13.72	14.68	15.89	17.53
<i>Share of Total</i>	63.6%	65.3%	66.2%	67.6%	68.8%	70.9%
Daily Benefits Insurance in the Event of Hospitalisation	0.77	0.80	0.78	0.77	0.76	0.76
<i>Share of Total</i>	4.0%	4.0%	3.8%	3.5%	3.3%	3.1%
Supplementary Long-Term Care Insurance, Supplementary Hospitalisation Insurance etc.	2.86	2.84	2.86	2.91	2.99	3.10
<i>Share of Total</i>	14.8%	14.3%	13.8%	13.4%	12.9%	12.5%
Daily Benefits for Disability	0.87	0.88	0.90	0.94	0.98	1.03
<i>Share of Total</i>	4.5%	4.4%	4.3%	4.3%	4.2%	4.2%
Compulsory Long-Term Care Insurance	2.15	1.98	2.01	1.96	1.99	1.85
<i>Share of Total</i>	11.1%	9.9%	9.7%	9.0%	8.6%	7.5%
Special Types of Insurance	0.39	0.41	0.45	0.46	0.49	0.47
<i>Share of Total</i>	2.0%	2.0%	2.2%	2.1%	2.1%	1.9%
Total	19.32	19.91	20.71	21.72	23.08	24.74
<i>Growth</i>	<i>n.a.</i>	3.1%	4.0%	4.9%	6.3%	7.2%

Table [7]: *Premium Income in Private Health Insurance.*

Source: *Gesamtverband der deutschen Versicherungswirtschaft (editor), The German Insurance Industry, Yearbook 2003, page 87; Statistical Yearbook 2003, table 35; Statistical Yearbook 2004, table 34; own calculations.*

The total insurance expenditures of health insurers consist of more than 60 percent of claims paid out to insureds. More than 30 percent of expenditures are the funds allocated to increasing age provisions. The remaining expenditures (approximately 10%) are bonus and rebate provisions (GDV, 2003, p. 86). They are the expected amount of the premiums to be returned to the insured in an accounting period due to the cost-reduction programs. Such programs were introduced by almost all health insurers and encourage the insured to bear minor health treatment costs themselves, keeping the insurer's administrative costs and claims expenditures low. In turn, the insured person gets back a certain portion of his or her annual premium as a reward. Recent expenditure increases were mainly based on the treatment costs themselves and less on portfolio growth, with the main contributors to the increase being costs for medications and dressings (+9.4% per year), standard hospital benefits (+9.1% per year), and remedies and aids (+4.2% per year). The costs for hospital accommodation decreased by more than 21 percent per year during the years 2002 and 2003 (GDV, 2003, p. 87), mostly due to patients choosing cheaper accommodation forms such as shared rooms.

Compared to the statutory health insurance program, the pattern of private health insurance policies is much more flexible with the risk coverage. Premiums are calculated by individual risk characteristics, such as defined health benefits, age upon signing the contract, and gender. In contrast to the state health insurance program, premiums must be paid for each family member. Private insurance contracts providing full health coverage are, by regulation, lifelong policies, usually with a fixed monthly premium. If a private health insurer accepts a risk, it may not terminate the contract as long as the premiums are paid on time. The power to terminate or to change the contract is held solely by the insured. The company must—similar to rules for life insurers—calculate a constant premium over the total lifetime of the contract at the time the policy is issued and base the calculation on an actuarial mortality and morbidity table. To take into account the increasing life expectancy of the insured, the mortality tables used for the tariff calculation were modified in 2003.

The company can increase (or decrease) premiums if the underlying actuarial assumptions provably change. Yet, it may not raise premiums because of the increasing age of the policyholder. When the policyholder is young, the difference between the required premium and the yearly expected claim payments (plus expense loadings) is positive; it becomes negative as the policyholder ages. Thus, to smooth the premiums over time, the company is required by law to set up an aging reserve. When the policyholder is young, the aging reserve is built up with parts of the premium; it is managed by the insurance company on behalf of the policyholder. When the policyholder becomes old, the health insurance company must use this aging reserve to finance the negative difference between the premiums received and expected claim payments.

Comparable to the mathematical reserves for life insurers, the aging reserve is backed by the registered assets that are specially designated for underlying of this reserve and separated from others; dispositions are only possible with the approval of an appointed trustee. But this smoothing practice

has a negative aspect, because the policyholder loses his or her aging reserve if the contract is terminated. By tying the insured to the insurance company, it hinders the policyholder from changing to another private health insurer or, after the insurance contract has been in force for a couple of years, makes it practically impossible for economic reasons. Thus, the insured is deprived of the means to react in the event of unfavorable economic developments of the insurer or the poor quality of its service. Therefore, discussions are currently underway to require health insurers to transfer the insured person's share in the aging reserve to the new insurer of his or her choice, should the insured person desire to change insurers.

Due to increasing deficits in statutory health insurance caused by continuous expenditure increases, unfavorable demographic development, and the absence of individual risk-based premium calculations, the state is forced to gradually reduce the benefits paid in statutory health insurance. Simultaneously, it tries to restrict the outflow of the healthier and wealthier members of the population to private health insurance, which offers a broader range of services in exchange for benefit-related contributions, by annually increasing the salary-related (or wage-related) ceiling of the compulsory membership. A governmental commission was created to investigate the crisis situation in statutory health insurance. The commission's suggestions are still being discussed. Some of them, if implemented, could seriously endanger the further development and even existence of private health insurance.

3.3. Property and Casualty Insurance

Property and casualty insurers offer insurance coverage for a wide variety of events: loss, damage, destruction of property, loss or impairment of income-producing ability, claims for damages by third parties from alleged negligence, and loss resulting from injury or death caused by work-related accidents. With a market share of about 41 percent of total premium volume, motor vehicle insurance is by far the largest line in the property and casualty sector, followed by property insurance with 27 percent, general liability insurance with 12 percent, and private accident insurance with 11 percent (data for the year 2003). The rest is unequally shared between legal expense insurance, marine insurance, and tourist assistance insurance (see Figure 7).

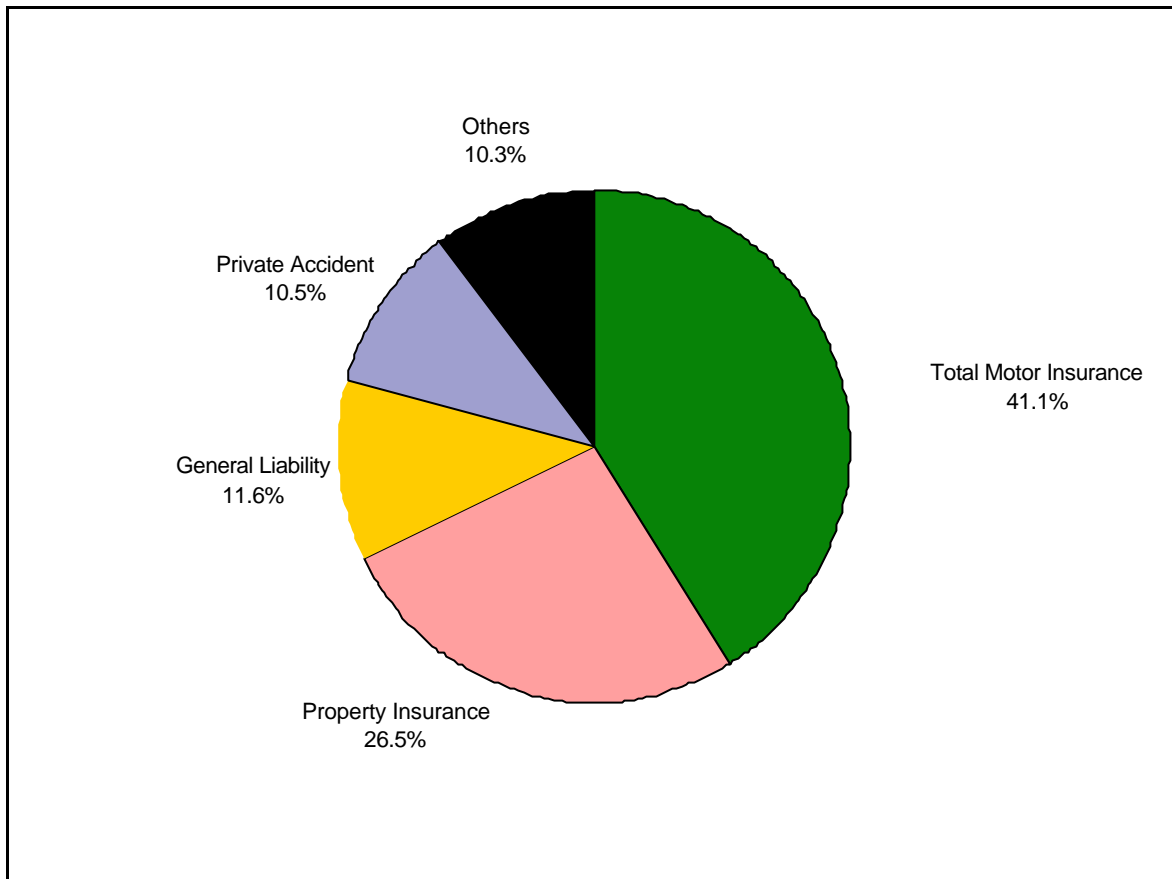


Figure [7]: *Gross written premiums of different P&C-lines by class in 2003.*

Source: *Gesamverband der deutschen Versicherungswirtschaft (editor), The German Insurance Industry, Statistical Yearbook 2004, table 42.*

The overall loss ratios across the total property and casualty sector have been relatively stable, ranging between 70 and 80 percent, since 1998 (see Table 8). However, the situation varies considerably within the insurance lines and thus deserves more attention. Motor vehicle insurance had the highest and most variable loss ratios over the time span considered, with a maximum of 104.70 percent in 1999 and 88 percent in 2003. Within the motor vehicle insurance line, the semi-comprehensive coverage line (covering damage on the insured's motor vehicle that is not caused by the insured's incorrect actions) has loss ratios of under 80 percent since 1998; the third-party liability (TPL) coverage was loss-bringing and the loss ratios only fell below 100 percent once in the same period. This situation forced insurers to increase premiums in TPL by 4.7 percent in 2001 and 3 percent in 2002 (German Insurance Association, 2003, pp. 90, 93), despite considerable competition in the market.

In EUR bn	1998	1999	2000	2001	2002	2003
Motor Business						
Earned Premiums	20.07	19.84	20.40	21.34	21.98	22.27
Loss Ratio	99.50%	104.70%	99.80%	94.40%	92.60%	88.00%
Property Insurance Business						
Earned Premiums	12.47	12.46	12.40	12.41	13.10	n.a
Loss Ratio	79.50%	78.50%	72.20%	71.90%	94.40%	n.a
General Liability Business						
Earned Premiums	5.74	5.88	5.91	5.98	6.17	6.44
Loss Ratio	82.40%	83.10%	78.90%	84.40%	75.30%	73.00%
Private Accident Business						
Earned Premiums	4.31	4.40	4.46	4.51	4.57	4.62
Loss Ratio	57.40%	57.00%	55.20%	54.40%	52.40%	52.00%
Property & Casualty Business Total*						
Earned Premiums	45.75	46.97	50.69	52.68	56.91	n.a
Loss Ratio	71.1%	75.0%	74.4%	77.8%	78.3%	n.a
Expense Ratio	25.8%	26.0%	26.7%	27.1%	26.3%	n.a.

Table [8]: Gross earned premiums, claims paid and loss ratios** in non-life insurance.

Source: *Gesamtverband der deutschen Versicherungswirtschaft (editor), The German Insurance Industry, Yearbook 2003, page 89; Yearbook, page 77; Yearbook 2001, page 82; Statistical Yearbook 2003, table 48; Yearbook 2003, page 106; Yearbook 2002, page 96; Yearbook 2001, page 98; Statistical Yearbook 2003, table 46; Yearbook 2003, page 100; Statistical Yearbook 2004, tables 42,47; own calculations.*

* Total property and casualty business includes position *other insurance businesses*. Expense ratios are shown only for the total property and casualty position due to impossibility to allocate the costs by sector.

** Ratio of claims incurred to premiums earned.

Loss ratios in property insurance increased greatly from 70–80 percent to over 90 percent in 2002, due to extreme storms and floods that year, resulting in the largest claims ever in the history of German insurance. The data available for 2003 indicate positive overall developments due to the absence of major weather-related damages. Loss ratio patterns in general liability insurance declined from 80 percent in 1998 to 73 percent in 2003. However, future claims in many areas of general liability insurance are expected to increase, especially due to pharmaceutical and car recall cost risks. The exposure to those risks has amplified ever since European and German (amendment to the Damage Compensation Law—*Schadenersatzgesetz*) liability laws have become stricter.

The dependence of German property and casualty insurance on investment results (also known as cash flow underwriting) is an important feature of the market. As shown in Table 9, the technical results (i.e., the results from the insurance underwriting activity) of the property and casualty insurance segment as a whole were negative from 2000 to 2002. Only the general accident insurance business has exhibited stable positive technical results since 1998 (GDV, 2003a, Table 62). Positive profits in the segment could be achieved mostly due to positive recurrent investment (i.e., not including the results from writeoffs and other exceptional actions) results, which amounted to more than 10 percent of the gross premium received in these periods. This is an important difference to the life and health insurance businesses, where already technical results deliver a positive profit contribution. The reason for such a development is a more intense and less regulated competition in the property and casualty business, as compared to the life and health business. Annual insurance contracts, which are usual for property and casualty insurance, make changing insurers easier. In the largest sector, motor vehicle insurance, insurance benefits are largely predefined by legislation, facilitating comparison between insurers.

Total of P&C Insurers, in EUR bn	2000	2001	2002
Gross Premium Received	55,421	57,444	59,581
Gross Technical Result	-1,089	-1,944	-2,695
<i>in % of Premium</i>	-1.96%	-3.38%	-4.52%
Recurring Investment Result	6,511	7,977	7,133
<i>in % of Premium</i>	11.75%	13.89%	11.97%

Table [9]: Technical and investment results of P&C insurers.

Source: *Bundesanstalt für Finanzdienstleistungsaufsicht (editor), Jahresbericht der Bundesanstalt für Finanzdienstleistungsaufsicht 2002, Table 540.*

A particularity of German property and casualty insurance accounting is the existence of the legally prescribed equalization fund (*Schwankungsrückstellung*). It is a special balance sheet liability position, permissible only to property and casualty insurers, which aims to smooth reported underwriting results over time. The profits reported in the annual accounting statement of a company is also relevant for taxation—that is, the equalization fund is an important vehicle to immunize the tax burden of a company with respect to the volatility of underlying results. The requirements for the creation of an equalization fund depend on the scale of the insurer's business, the sum of the actual loss and expense ratios, and their volatility in the legally determined time period. As soon as the required minimum level of equalization fund is achieved, the company must reduce it if the loss ratio of the current year is higher than the average loss ratio calculated over the legally prescribed number of years, which depends on the nature of the underwritten business. If the actual loss ratio of a company is lower than the historical average for the period defined by the legislation and differentiated by the type of business, then the equalization fund must be increased. The amounts by which the equalization fund is reduced or increased depend on the difference between the actual and average loss ratios and on the actual premiums written. In 2002, for example, the reserves from the equalization fund were withdrawn in order to reduce the negative technical results.

The property and casualty insurance sector is quite heterogeneous, and various developments might be observed. In motor vehicle insurance, a rise in tariffs could be expected, as well as the introduction of further measures for more precise classification and pricing of risks. The property insurance business would increasingly depend on the climatic influences. On one hand, the many natural catastrophes of 2002 taught the insurance industry to get accustomed to new, bigger damage dimensions. On the other hand, the analysis of the current market situation shows that the insurance density for catastrophe insurance is quite low: According to information supplied by the German Insurer's Association, only one out of ten citizens has insured the contents of his or her household against the risk of a natural catastrophe. This indicates new business opportunities. However, this also indicates the possibility of even bigger claims than currently known as well as of negative risk readouts resulting from the fact that, particularly households in endangered areas such as those close to rivers, would increasingly seek insurance coverage. Currently, the government is discussing a project that would introduce compulsory insurance for the risk of natural catastrophes. In general liability insurance, the amendment of the Damage Compensation Law, which took effect in 2002, extended

claims for pain and suffering to cases where the damage-incurrent incident was not due to the insured's fault. The fears that this would lead to a considerable increase in the claims paid, especially in the event of industrial accidents, have not materialized. However, it is estimated that only in the TPL insurance could the legislation change lead to an additional burden of 50 million euros. Another challenge for property and casualty insurers is the coverage for terrorism risks. In Germany the national solution was the creation of *Extremus Versicherungs-AG* in September 2002. *Extremus* is an insurance company created by sixteen insurance groups engaged in the German market that offers emergency coverage exceeding 25 million euros for property damage and associated business interruption claims resulting from terrorist attacks. One and a half billion euros are provided from *Extremus* founding insurance companies and another 1.5 billion euros by the international reinsurance market. Claims in excess of 3 billion euros are covered by a government guarantee for 10 billion euros.

4. REGULATION

4.1. Goals and Structure of Current Regulation and Supervision

The insurance industry has always been highly regulated due to the longevity of most insurance contracts, their possibly significant impact on the economic situation of the insured, and the position of the insured as a conditional creditor to the insurance company in case the insured event occurs. This is true for the German market as well. The main goal of state regulation for German insurers is to protect the insured by providing high credibility that the insurance company is able to meet its (contingent) obligations against the insured persons and policyholders. Traditionally, this is done by controlling the financial stability of an insurance company by restricting its insolvency risk to a low level. The Insurance Supervision Law—exercised by the Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*, or BaFin) —subjects German insurers to substantial legal provisions. Here, the supervision body is concerned with every legal entity conducting insurance business, irrespective of its affiliation to a larger group or its holdings. By use of directives and circulars, the BaFin has the opportunity to explicate and/or specify general rules codified in the Insurance Supervision Law.

Like other regulated financial institutions (e.g., banks, mutual funds, pension funds), insurers must obtain official authorization from the supervisory body before they are allowed to offer insurance products in the German market. Additional conditions governing a direct insurer's business after official authorization stem from the permanent supervision of its financial stability, which focuses on four main areas:

- Establishment of sufficient technical provisions
- Solvency requirements
- Investment restrictions
- Stress tests

The establishment of sufficient liability reserves should adequately capture the (uncertain) financial liabilities resulting from the insurer's underwriting activities. The most important positions (i.e., technical provisions) in the various property and casualty lines are the unearned premium and loss reserve; in health insurance, they are the aging reserve (*Alterungsrückstellung*); and in life insurance, they are the funding reserve (*Deckungsrückstellung*). According to current regulation, the volume of such provisions must be based on prudent prospective actuarial valuations, which cover the timing and stochastic nature of future liabilities as determined by the policy conditions. In addition, the appropriateness of the liability reserves of life and health insurers must be checked by an appointed actuary.

The second area is the regulation of the matching assets used to cover the technical provisions. In general, those assets should be adequately diversified and should account for the risk potential, the possible termination dates, and the currency of the underlying insurance business. The third area is the upholding (over and above technical provisions) of a sufficient supplementary reserve, solvency capital, which acts as a buffer against adverse business fluctuations. Finally, with a yearly stress test, the possible impact of substantial losses in the insurer's investment portfolio on its solvency situation must be analyzed and reported to the supervisory body.

Since the deregulation of the Insurance Supervision Law in 1994, the products offered by licensed insurance companies are no longer subject to prior approval by the supervisory authority. There is no direct price regulation for any line in the German insurance market, and the suppliers of insurance coverage are, in general, free to compete on premiums as well. However, the space for such competition is limited by the regulatory requirements regarding the establishment of sufficient liability reserves and solvency capital. In addition, in the life and health lines, an appointed actuary must verify the calculation of premiums and technical provisions. In the property and casualty market, the competition is more rigorous than in the life and health markets, the most severe being in the motor vehicle insurance segment. The short-term contracts with a typical duration of one year—customary for the property and casualty market—make it easier for customers to switch insurers. In contrast, life and health insurance contracts—although the policyholder is not denied the right to terminate them according to the rules defined by legislation—by design contain implicit economic incentives making it more difficult for the policyholder to quit. Examples of such incentives are the existence of the nontransferable old-age reserve in health insurance, which smoothes insurance premiums over time, and the negative surrender values during the first retention years of the life insurance contract.

It is impossible to thoroughly discuss all aspects of regulation areas within the scope of this chapter. Therefore, the remainder outlines the main aspects of regulations on solvency requirements, investment of restricted funds, and stress tests. The details of actuarial valuation techniques to determine the liability reserves and the accounting rule for their representation in the balance sheet are beyond the scope of this chapter.

4.2. Current Solvency Requirements

The currently applicable German solvency regulations are based on the European Community Directives from 1973 (for casualty and property/accident insurance) and 1979 (life insurance). Although both directives were modified in 2002 within the framework of the Solvency I project, their basic structure has remained unchanged. Incorporated into the domestic legislation, they control for availability of the risk-adequate level of solvency capital using a two-step procedure: First, the required solvency capital is estimated based on certain measures of the insurer's risk exposure. Second, it is compared with the available solvency capital represented by assets free of any foreseeable liabilities, which is not the same as the insurer's stated equity capital. The solvency situation of an insurance company is sufficient if the available solvency capital exceeds the required solvency capital. If the solvency requirements are not met (i.e., the coverage is less than 100 percent), the supervisory authority intervenes—for example, it has the right to require a plan for the restoration of adequate solvency or to prohibit the underwriting of the new business. In no case should the solvency margin fall below a minimum guarantee fund—an absolute amount, equal for all insurance companies doing the same type of business.

The required and available solvency capital must be reported to the supervisory body on a quarterly basis. However, the insurer is obliged to maintain an adequate level of available solvency capital at all times. The calculation of both the required solvency capital as well as the available solvency capital is different for non-life insurers (property and casualty and health) and life insurers.

4.2.1. Solvency for Non-Life Insurers

The currently enforceable directive governing the solvency margin requirements for non-life insurance undertakings is Directive 2002/13/EC. The basic economic idea of the solvency requirements is to limit exposure due to underwriting risk with respect to a certain level of solvency capital by setting an upper limit with respect to insurance leverage. Technically, this is realized for property and casualty insurers by determining the solvency margin based on the higher premium index or claims index. The premium index is defined as the yearly gross premium proceeds (minus operation costs) across all lines, multiplied by the predefined constant coefficient of 18 percent for premium amounts up to 50 million euros, and of 16 percent for the premium amounts comprising the excess. The claims index is defined as an average of the claims paid during the last three (for some businesses seven) years, multiplied with a constant coefficient of 26 percent for amounts up to 35 million euros and of 23 percent for amounts comprising the excess. Reinsurance coverage can reduce both premiums, as well as the claim index, up to a limit of 50 percent. The ratio of claims paid to the premiums received at which the premium index becomes larger than the claims index is approximately 70 percent. In calculating the solvency margin for health insurers, the same procedure is used as for property and casualty insurers except that applied constant coefficients are reduced to a third. This is done despite

the fact that the premiums in German health insurance are calculated according to the principles of life insurance.

It is remarkable that explicit measures of other risk factors that are economically relevant for the overall risk exposure of a non-life insurance company (e.g., investment risk, liability reserve risk, or operational risk) are not taken into consideration.

The available solvency capital for health insurance and property and casualty companies consists not only of the equity capital as stated in the balance sheet, but also participating certificates (special hybrid financing instruments having the features of both equity and debt) and subordinated debt. In exceptional cases and only with the permission of the supervisory body, hidden asset reserves, which result from the differences in accounting and market valuation rules, might also be part of the available solvency capital. For 2002, German property and casualty insurers under the supervision of BaFin had a total required solvency capital of 7.41 billion euros. The surplus coverage for the market amounted on average to 337 percent. Thirty-six percent of the companies had a surplus coverage of up to 100 percent; 21 percent of the companies had 100 to 200 percent; 14 percent had 200 to 300 percent; and 24 percent had over 300 percent. Approximately 5 percent of the companies had insufficient coverage (BaFin, 2004b, p. 138). Only 52 health insurers had to file the solvency report with BaFin. They exhibited the total required solvency capital of 1.298 billion euros. Nine companies showed a surplus coverage of up to 50 percent; ten companies showed 50 to 100 percent; seventeen companies showed 100 to 200 percent; and sixteen showed over 200 percent (BaFin, 2004b, pp. 137–138).

4.2.2. Solvency for Life Insurers

The currently enforceable directive governing the solvency margin requirements for life insurance undertakings is Directive 2002/83/EC. The solvency margin for life insurers should incorporate the underlying investment, management, and mortality risk. In general, the required solvency capital consists of the following components: (1) If the insurance company bears an investment risk (e.g., for endowment policies, annuities, unit-linked policies with minimum return guarantees), a 4 percent fraction of the mathematical provisions is required. (2) For unit-linked life policies whereby the insurer bears no investment risk but the allocation to cover management expenses is fixed for a period exceeding five years, a 1 percent fraction of the technical provisions is required as a solvency margin. (3) The mortality risk for all life policies is estimated as a 0.3 percent fraction of the capital at risk—that is, the insured death benefits minus the provision belonging to the policy. Reinsurance coverage can reduce the required solvency margin up to certain limits.

For life insurers, the available solvency capital consists of three parts: The solvency capital A is to a large extent the same as for property and casualty insurers—that is, the equity capital, participating certificates, and subordinated debt as stated in the balance sheet. In addition to these

positions, the solvency capital B includes profit reserves, particularly the noncommitted bonus reserves. With the approval of the supervisory body, hidden reserves and estimated future profits (solvency capital C) can also be part of the considered available solvency capital. A detailed description of the procedures is given in VAG section 53(c) and the Directives 2002/83/EC and 2002/13/EC. For 2002, the supervisory authority reports that German life insurers showed a total required solvency margin of 23.348 billion euros, vis-à-vis an available solvency capital of 39.775 billion euros, resulting in an average coverage ratio of about 170 percent. More specifically, 64 percent of the companies showed a coverage ratio between 100 and 200 percent; 10.3 percent between 200 and 300 percent; 5.6 percent between 200 and 300percent; and 7.5 percent of the companies possess a coverage ratio of over 300 percent (BaFin, 2004b, pp. 136–137). About 17.3 percent of the total available solvency capital stems from solvency capital A and 81.2 percent from solvency capital B. For about 12 percent of life insurers, the supervisory authority allows the use of solvency capital C (i.e., estimated future profits) to cover the required solvency margin.

4.3. Investment of Assets Covering Insurance Provisions

Some insurance company funds economically belong to the insured but are administrated by the insurance company during a considerable period of time. To prevent their abuse, the legislation distinguishes between two types of funds: free and tied. All assets covering the technical provision as given in sections 54 and 66 of VAG (i.e., the loss reserve, aging reserve, funding reserve, and unearned premium reserve) belong to the tied funds. All other assets belong to the free funds. In contrast to the free fund, the investments of the assets belonging to the tied funds are subject to regulation. An investment directive of the supervisory body exactly defines the categories of authorized assets permissible for the tied fund and requires some qualitative investment principles (e.g., safety, yield, diversification, and marketability of investments). The regulation also sets quantitative restrictions regarding the insurer's asset allocation. For certain risky assets, maximum investment weights (with respect to the tied fund) must be taken into consideration—for example, no more than 35 percent in stocks and a maximum of 25 percent in real estate. In addition, short sales in any assets are not allowed; open currency positions that are nonmatched with liabilities are restricted; and financial derivatives such as options, futures, and swaps can only be used for hedging purposes. For life insurance contracts where the benefits are directly linked to the value of units in a mutual fund (i.e., the insurer bears no investment risk), the assets of the corresponding tied fund must be represented by those units as closely as possible.

The currently enforceable modification of the July 9, 2004, Investment Directive (replacing the Directive of December 20, 2001) accommodated the latest changes and trends in the capital markets as well as financial products offered in these markets. It widens the list of authorized assets by new ones, such as asset-backed securities, specific mutual funds, and hedge funds. It also enlarges the

list of assets previously authorized by making stocks and interest rate instruments quoted on an organized market outside the European Economic Area qualify (BaFin, 2001, 2004a).

4.4. Stress Tests

Since the beginning of 2003, and within the modernization program for insurance supervision methods, the legislation requires a detailed analysis of insurance companies' risks and demands elaborated asset liability management. Within asset liability management, a stress test considering market risk, credit risk, and liquidity risk as well as foreign exchange, operational, and legislative risks has been introduced to estimate the impact of the external changes in the nontechnical factors on the financial stability of the insurance company (BaFin, 2002). The authorities specified the methods of conducting the stress tests, thus making their results comparable. More formally, three (deterministic) scenarios should analyze the possible impact of a loss in the insurer's investment portfolio with respect to its solvency situation. Scenario one considers a 10 percent reduction in the market value of interest rate instruments only; scenario two reflects a 35 percent reduction in the market value of stocks only. Scenario three analyzes the impact of market value change on the combined portfolio of interest rate instruments and stocks assuming a 5 percent drop in the market value of interest rate instruments and a 20 percent drop in the market value of stocks (BaFin, 2004).

The default risks of interest rate instruments must be taken into account through a percentage reduction of their value in accordance with their rating, varying from 0 percent for AAA–BBB grades to minus 30 percent for noninvestment grades (CCC–D). (For a detailed discussion of stress tests, see also Schradin, 2004, pp, 611–664.)

The underwriting fluctuations should be captured by the required solvency capital, which depends on the insurer's underwriting risk and historical claims experience and has to be recalculated and reported to authorities on a quarterly basis.

4.5. Solvency II

Current regulation and financial supervision of insurance companies is based on a system of fixed ratios, allowances, and restrictions to quantitatively cope with the investment risks, solvency capital requirements, and their interaction with the technical risks. The low numbers of insolvencies (only one case, that of Mannheimer Lebensversicherung AG, in the last ten years) in the German insurance industry prove that the existing system was—up to now—effective in securing the fulfillment of the insurer's obligations. However, the necessity to optimally use all the available resources in the insurance undertaking, the growing number of financial innovations, the interdependencies between banking and insurance products, the necessity to capture the operational risks, and the interactions between the different risk sources within an insurance company called for the introduction of qualitative, flexible, and integrated control methods.

The Insurance Committee of the European Commission, in close cooperation with supervisory authorities of the member states as well as with auditors' and insurers' associations, works on the development of new European insurance regulation. Due to the fact that Germany is a member of the European Union, the final adopted regulations will have to be incorporated in German regulation and legislation.

The new developments in European insurance regulation, known as Solvency II, follow the example of banks, which introduced the first draft for their new regulation as early as 1999. The modified version of this draft was published in 2001 as The New Basel Capital Accord (Basel II), and aims to create the aggregated financial services legislation in the long term.

For insurance regulations, a three-pillar structure will be introduced as it is in the Basel II: Pillar I will set quantitative requirements for capitalization, distinguishing between the optimum capitalization (target capital) and its absolute minimum level. It is still under discussion whether the calculation of the minimum level requirements would be defined similarly to the existing regulation or whether it will be a fixed percentage of either the technical reserves or the optimum capitalization. For the calculation of the optimum capitalization, a risk-based standard model is being developed under the coordination of the German Insurance Association. Alternatively, companies will be allowed to run their internal models, if approved by the supervisory body. In both models, the following risks should be considered: technical risks (including underwriting and the creation of technical reserves), investment risks (the question whether a distinction between the restricted and unrestricted assets would endure is still open), credit risks (from both investments and reinsurance), and operational risks (including organizational, informational, and personnel risks as well as risks from external influences). Thus, the new regulation seeks to capture the influence of all relevant risk sources on the insurance company and makes the required guarantee capital depend on the total risk of the insurance undertaking. The envisaged dynamic models will be more powerful instruments in measuring the risks as compared to the existing fixed-ratio and discrete models. However, they will also be more complex and more difficult to build, handle, and standardize. The following are just a few of the challenges: modeling the external parameters (for example, interest rates) or modeling risk interdependencies, especially for risks not identically distributed or even belonging to different distribution families (Hartung and Helten, 2004).

Pillar II will impose qualitative requirements for the risk management systems within insurance undertakings, incorporating the harmonized review procedures into the supervisory law. The main goal for these requirements would be the creation of such risk management systems within the insurance undertaking, which take into account all relevant risk sources and their interdependencies. Among others, these qualitative requirements will regulate the investment and asset liability management policies as well as the implementation and functioning of stress tests, which will not only

be used to analyze the effects of certain scenarios on investments, but also to model their impact on other balance sheet items.

Pillar III will regulate the disclosure requirements, thus fostering market transparency and market discipline. The requirements for Pillar III will be based on the international accounting standards for insurance companies, which are still pending.

There are no specific regulations for any of the pillars yet. For more detailed descriptions of the Solvency II procedures, a discussion on regulation novelties, and drafts of risk models, see Schradin (2004). In 2007, new European solvency requirements (Solvency II) are expected to become effective.

4.6. Non-Regulatory Means To Ensure the Credibility of Insurance Obligations

The German insurance industry employs several nonregulatory means to enhance the proper functioning of the market: In close cooperation with the supervisory authority, the market players have added a further safety net within their community, which would protect customers in the event that their life insurer slid into financial trouble. In November 2002, following the decline in capital markets and rumors about the deteriorating ability of some insurers to fulfill their obligations, the insurance industry set up Protektor life insurance. It is a registered (nonlisted) stock corporation whose stockholders are members of the German Insurance Association (representing more than 97 percent of German gross insurance premiums) and committed to back the company with up to 1 percent of their asset under management. Thus, Protektor has available funds of about 5 billion euros.

Protektor is not an active participant in the market, but solely a rescue company: If a participating life insurer becomes insolvent, Protektor will take over its existing insurance contracts, leaving their insurance benefits unchanged. The insurance portfolio of a troubled company will thus be rehabilitated and then sold to financially sound insurers. The takeover of the troubled company's existing contracts, whereby that company will cease to exist, represents the last stage of the rehabilitation measures when everything else has proved insufficient. The prior rehabilitation stages, which must be conducted under the supervision of BaFin, include restructuring measures within the troubled company and/or the sale of the company's parts to another insurer. Protektor already took over and sold its first insurance portfolio to another insurer—that of Mannheimer Lebensversicherung AG, which slid into financial trouble due to investment losses in 2003 (cf. BaFin, 2004b, pp. 10, 148). The owners of Protektor invested 240 million euros in the Mannheimer Lebensversicherung case.

This example in the life insurance industry led to the creation of a similar organization for health insurance—the Medicator. It was established in 2003 by eight large German health insurers (BaFin, 2004b, pp. 11, 154). The goal of Medicator is to take over the insurance portfolios of financially endangered health insurers in order to enable the proper functioning of insurance contracts

during the transition time, which should end with an integration of those portfolios into financially sound insurance companies. In October 2004, the government put forward a proposal to give legislative backing to the initiatives of the insurance industry, thus trying to make the participation in a rescue fund legally obliging, to fix the contribution criteria, and to eliminate the bottlenecks in the insolvency legislation that occur while creating and using the rescue funds. The suggested changes in the Insurance Supervisory Law call for the creation of a safety fund, which would be financed by life and health insurers with 0.2 percent of their respective technical provisions, and for the possibility to reduce the insurance payments by 5 percent if the safety fund proves to have insufficient capacity for a single insolvency. The proposed changes in the insolvency law would also regulate the transfer procedure of the insolvent insurer's contract portfolio to a safety fund, which should restructure and sell it.

5. CONCLUSION: DEVELOPMENT AND OUTLOOK

The German insurance industry has its origins in medieval mutual insurance companies and, after several setbacks caused by natural and man-made disasters including World Wars I and II, succeeded in creating stable and reliable structures. Currently, the industry is dominated by large stock corporations, mostly organized as holding companies, serving the fourth-largest insurance market in the world (with respect to premiums written). Insurers in Germany are also important investors on the capital market. The biggest line in the German insurance market is life insurance, followed by property and casualty insurance and health insurance. The development of all insurance lines heavily depends on regulation—traditionally rather strong in Germany—and on developments in the tax and social security legislation.

The development of the life insurance sector depends on the taxation of policy payouts and on the reform of the state-owned retirement system. Additional demand for life insurance products is anticipated because of the ongoing reductions of public pay-as-you-go pensions in favor of an extension of tax subsidized private funded pension plans. Due to some legal prerequisites that require annuitization in the decumulation phase (e.g., within *Riester* and *Rürup* plans), especially the demand for annuity products should increase. However, such programmed new business is not without risk. A key factor to covering the financial aspects of longevity risk by organizing risk pools is to develop appropriate mortality tables for annuitants. A further challenge is the provision of the long-term guarantees both with respect to return as well as to mortality tables, which are typical for the contemporary life insurance business. Currently, the further existence of the return guarantees in their traditional form—that is, nominal and fixed at signing for the entire life of the contract (often more than thirty years)—is being questioned. Such factors as the increasing life expectancy and low interest rates, unlikely to change soon, make it more difficult for insurers to securely fulfill their guarantee obligations. Under discussion, initiated by the insurance industry, are adjustment mechanisms that would allow either changing premiums during the lifetime of the insurance contract or altering the

benefits. This would, however, weaken the main difference between life insurance and investment fund products in the market for old-age provisions. Another possibility to make the guarantees more bearable is to link them to a consumer price index instead of to a fixed nominal interest rate. For the insured, the advantage of such a solution would be the protection against the risk of inflationary erosion of the contract's value. The insurance company would benefit from the closer link of its liabilities resulting from return guarantees to the development in the capital markets. However, the implementation of this solution would heavily depend on the availability of inflation indexed bonds, which are still not very established financial instruments in Germany.

The main challenge for private health insurers will remain the desolate situation of the state health program and the resulting attempts by the state to improve it by limiting access to private health insurance.

The suggestion of the European Commission about a directive on unisex tariffs and a proposed ban on gender-based tariff differentiation would have considerable impact on the life and health insurance businesses. If implemented, it would cause significant changes in life insurance and the private health insurance business. While life annuities and private health insurance tariffs would become cheaper for women, risk life insurance would become more expensive because of women's longer life expectancy. The proposed changes could also cause an unfavorable development in the portfolio of the insured, leading to the overrepresentation of one gender compared to its numbers in the population. Germany already implemented the idea of unisex tariffs for those private pension insurance contracts that are eligible for state subsidies (e.g., *Riester* plans). Beginning in 2006, those contracts cannot contain a gender-based differentiation; otherwise, the state subsidies would be rejected.

Property and casualty insurance includes several insurance lines that do not always develop similarly. For the main sector, motor vehicle insurance, it will remain important to cost-effectively control the quality of the accepted risks and to strike a balance between the sufficient loads in premium calculations and competition in the market.

Historically, the development of the insurance industry in Germany was closely tied to the overall economic development of the country, satisfying the insurance needs created by economic activities in other sectors. Thus, for further positive development of the insurance industry in Germany, the current economic stagnation must be overcome.

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