

## SUMMARIES

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ZVersWiss 1993 p. 1 - 11:

**The State as an Insurer**

(Der Staat als Versicherung)

by Professor Dr. Roman Herzog, President of the Federal Constitutional Court, Karlsruhe

1. All claims arising from private insurance contracts or social insurance are to be regarded as private property within the meaning of the Constitution and are, therefore, protected by constitutional law. This paper explains the reasons for this dictum which has been developed by the Constitutional Court, and clearly presents its object of protection: social security represented through private property for the holder.

2. The modern State to an increasing extent dispenses its citizens from the risks of unusual damage or loss and, insofar, works in the same fields as insurance companies do, often even without asking for special premium payments. This development, but also a growing lack of understanding for a mere risk insurance system on the part of the citizen, brings about lots of difficulties for the idea of insurance as a whole.

3. Further and mostly historic parts of this paper show how the State on the one hand and insurance companies on the other, in the performance of their respective duties meet on the basis of risk prevention or limitation.

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ZVersWiss 1993 p. 13 - 37:

**Liability in a State of Change**

(Haftung im Wandel)

by Dr. Erich S t e f f e n , Presiding Judge at the Federal Court of Justice, Karlsruhe

This article deals with fundamental questions of the development of the German law of damages. In his capacity as presiding judge of a civil law senate of the German Federal Court of Justice competent in these matters the author starts by describing various criteria of a civil liability for a certain damage with regard to the following aspects: unlawfulness, fault, and the so-called connection of imputation (Zurechnungszusammenhang) as well as a growing extent of strict liability regardless of fault. Further comments are concerned with special problems of an allocation of the burden of proof and, especially, with the term of 'damage to be compensated'.

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ZVersWiss 1993 p. 39 - 56:

**Insurance in a State of Change**

(Versicherung im Wandel)

by Karl-Dietrich B u n d s c h u h , Presiding Judge at the Federal Court of Justice, Karlsruhe

The author, presiding a civil law senate of the German Federal Court of Justice, is mainly concerned with the promotion and development of insurance law through jurisdiction during the last two decades. Special attention is given to questions of interpretation of the German insurance contract law with special regard to the aspect of consumer protection. Furthermore, problems of German insurance law in connection with the European home market are discussed.

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ZVersWiss 1993 p. 57 - 70:

**The Economic Analysis of Law**

(Die ökonomische Analyse des Rechts)

by Professor Dr. Hein K ö t z , Hamburg

The article provides a general introduction to "The Economic Analysis of Law". After a brief description of the premises on which the economic

approach to social problems is based the author uses three examples to demonstrate the insights an economic analysis of legal problems may provide. One is tort liability for negligently inflicted harm. In this connection, the article discusses the economic rationale of liability for negligence and defends this approach against some objections likely to be raised by lawyers. In the second example, the economic reasons for the legal control of exemption clauses and “contracts of adhesion” in general is found in the informational asymmetry existing at the time of the conclusion of the contract. In the third example the author describes the economic reasons for and against the duty of disclosure in pre-contractual bargaining. In all three examples due attention is given to a possible conflict between the efficiency postulate and the postulate of distributional fairness.

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ZVersWiss 1993 p. 71 - 96:

**Theory of Health Economics**

(Theorie der Gesundheitsökonomik)

by Professor Dr. J.-Matthias Graf von der S c h u l e n b u r g , Hanover

Health economics is a fairly new but fascinating discipline. Its theoretical foundation rests on many economic fields, especially on applied micro-economics, regulation theory, industrial organization and risk and insurance.

The paper provides a comprehensive survey on the methods and applications of the theory of health economics. The article is structured as follows: The first section describes the development of health economic theory and offers a definition of health economics. The second section presents a brief description of the research on demand, utilization and supply of health services. Five different approaches and methods of the theory of health economics are described and explained by various examples (in parentheses) in the third section: microeconomic theory (supplier induced demand of physicians), risk and insurance (effects of cost sharing), public choice and game theory (cost containment policy), economic policy (solidarity principle) and evaluation of health services (cost-effectiveness studies and the concept of quality-adjusted-life years). The final section provides an overview of the health economic literature and professional journals.

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ZVersWiss 1993 p. 97 - 122:

**Health Care Costs and Financing**

(Die Kosten der Gesundheit und ihre Finanzierung)

by Professor Dr. Klaus-Dirk Henke, Hanover

The article deals with health care costs and the financing of health care services. Various cost categories are differentiated: (a) direct, indirect, and psycho-social costs; (b) costs, expenditures, and prices from a business point of view; (c) costs in a cost-effectiveness analysis; and finally (d) expenditures and contributions as the most important cost indicators in health policy. A second chapter deals with the justification of cost curtailment and discusses arguments in favor and against such health policy. This discussion is important since cost curtailment is the major principle of health care policy in almost all countries.

The third and last part analyses the different possibilities of financing health care services. In this connection not only taxes or the question of contributions versus premiums are discussed, but also different mechanisms of financing, e.g. office-based physicians and hospitals. Many tables and figures are included and also the literature used by the author.

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ZVersWiss 1993 p. 123 - 160:

**Health Economy and Insurance**

(Gesundheitsökonomie und Versicherung)

by Professor Dr. Jürgen Waseem, Cologne

The readiness of German political decision-makers to intervene in the structure of the health insurance system is growing in the face of continually increasing health expenditures. At the same time, the international dimension of the discussion about alternatives to insure against the possible costs of illness is becoming more important especially regarding European integration and the transformation processes in the Eastern European countries. Taking this into account, the article analyses the German health insurance system from the perspective of the economics of health comparing it with ideal models. Here the focus is on the degree of consistency with the "social market economy" as a general pattern. Both extremes, i.e. a purely private health insurance system and a purely public one effect suboptimal results. The German health insurance system comes close to a "second best solution" where competition between private and public insurer is possible, although points of conflict might likely erupt.

## **The Tasks and Essentials of High-Performance Medicine**

(Aufgaben und Notwendigkeiten der Hochleistungsmedizin)

by Professor Dr. Rudolf Pichlmayr and Dr. Eckhard Nagel, Hanover

'High-performance medicine' can be described as a work- and cost-intensive form of medical research, diagnosis, and therapy. The debate about the allocation of scarce resources in the health care sector and their use for costly diagnosis and therapy often raises the objection that these resources might be used more efficiently when allocated to other forms of medical care. Medical, ethical, and economic considerations have to be taken into account in the evaluation of high-performance medicine.

Four arguments for using this form of medicine can be given:

1. The limitations of current health care can be revealed, and relevant fields of research can be established. On the other hand, the introduction of the results of basic research into clinical practice is often expensive and frequently can only be applied in individual cases.

2. Results from one field of basic and clinical research can often be applied to other fields of medicine; e.g. the results of transplantation immunology have revealed new aspects in the treatment of rheumatism and auto-immune disorders.

3. Many diagnostic and therapeutic approaches that are performed as a routine nowadays were originally characterized as high-performance medicine; the transition from experimental to accepted clinical practice is often not clear-cut.

4. For the individual patient these measures are frequently the final chance for effective care. Severe disability, even death, would otherwise occur. This is the most important aspect for the physician. Despite his efforts on behalf of the individual patient the physician has to take into consideration the effects of his work on the community. The application of high-performance medicine must be carefully scrutinized: the level of resources used, the therapeutic effectiveness and the long-term results have to be determined. Careful consideration of the distribution of the limited resources within the health care sector (and even outside of it) will always be necessary; it is almost impossible to solve this problem satisfactorily.

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ZVersWiss 1993 p. 193 - 224:

**Collective Risk Consolidation on the Basis of CAPM**

(Der Risikoausgleich im Kollektiv auf der Grundlage des CAPM. Eine kapitalmarkttheoretische Fundierung der Versicherung)

by Dr. Harald K o t s c h , Meckenheim

The results of *Braeß* (1938; 1960) regarding the risk consolidation of insurance firms are confirmed using modern finance theory. It is, therefore, necessary to modify the risk price and the risk measure defined by *Sharpe* (1964), *Lintner* (1965) and *Mossin* (1966) so as to avoid a model inconsistency underlying the security market line and the value function developed by the three authors. This paper shows that rational behaviour of insurance companies requires a calculation based on marginal costs, whereas the most widespread application of the CAPM in insurance theory, the so-called "Financial Insurance Pricing Models", imply an average costs calculation. A welfare economic analysis of the perfect competitive equilibrium on the insurance market is also provided. Insurance companies produce positive external effects on the stock market. Therefore, the number of policies signed by them is too small from a social viewpoint and welfare losses occur.

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ZVersWiss 1993 p. 225 - 243:

**Advantage and Disadvantage of Quality Marks for Insurance Products**

(Vom Nutzen und Nachteil eines Gütezeichens für Versicherungsprodukte)

by Oberregierungsrat Peter P r ä v e , Berlin

In Germany quality marks are widely spread. They are used in many economic sectors to describe the quality of certain products. In the past such a quality mark was not necessary in the field of insurance. The abolition of the prior approval of premiums and conditions should be a reason to introduce a quality mark also for insurance products. The German "Umweltzeichen" (Environment Mark) can be taken as an example. A legal regulation seems to be appropriate. Competition rules, rules of trademark law and of European law should be taken into account.

A quality mark makes the "invisible product" insurance more visible. By this one who is interested in insurance will get a quick grip on information about the product and will, consequently, be more able to appreciate its value. The quality mark should not be awarded by the state, the Supervisory Authority, however, should be involved. The insurer should be free to use or not to use the mark. Maybe small insurers might stand on safer grounds in the forthcoming united market if they use such a mark.

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ZVersWiss 1993 p. 245 - 253:

**The Insured Interest in Property Insurance in Connection with Corporations and General Partnerships**

(Das versicherte Interesse bei Sachversicherungen im Zusammenhang mit Kapital- und Personengesellschaften)

by Assessor Christian Armbrüster, Berlin

In German property insurance law the question frequently arises whether, in addition to the owner's property interest in the insured objects, the personal liability interest of third persons (e.g. tenants or stockholders) is included. The question is of considerable importance: If the liability interest is not insured, the insurance company having compensated the owner, can take recourse against liable third persons (sect. 67 VVG). Provided one accepts the general possibility of a property insurance including liability interests, the following rules with regard to companies can be put forward:

i) If an insurance for a corporation exists, the personal liability interest of the stockholders is insured as far as they get into contact with the property just because of their position as stockholders. Furthermore, the corporation's agents are insured because they act on the company's behalf, exerting the owner's powers as representatives.

ii) Different rules apply to general partnerships if they are not considered as artificial persons having a separate legal entity: not the partnership but every single partner's immediate property interest is insured. If, however, following a new opinion, general partnerships are regarded as artificial persons, the rules established above for corporations apply.

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ZVersWiss 1993 p. 283 - 323:

**Legal Questions on the Insured's Participation in the Life Insurance Company's Profits**

(Rechtsfragen zur Überschußbeteiligung in der Kapitallebensversicherung)

by Professor Dr. Egon Lorenz, Mannheim

In Volume 81 (1992) of this journal Professor *Basedow*, Augsburg, has published an article on "The Insured's Participating in the Life Insurance Company's Profits" (ZVersWiss 1992, p. 419 - 455; summary ZVersWiss 1992 p. 688). In his opinion, the participation (of the insureds) is by far too low. He has given reasons for his criticism by characterising the life insurance contract as a so-called "participant" contract (partiarischer Vertrag) which is a general feature of German contract law. Additionally, he has

assumed that life insurance contracts which limit the insured's claim to participation in the gross amount of surplus on the balance sheet are incompatible with sect. 9 of the Act concerning the use of general terms and conditions (AGBG – Gesetz zur Regelung der Allgemeinen Geschäftsbedingungen) and, therefore, are null and void.

In his article the author intensely discusses these arguments. In his opinion the principles relating to “participant contracts” cannot improve the insured's contractual participation in the company's profits. In his reasoning he refers to the priority of contractual provisions which (in his view) even in standard form contracts are compatible with the legal provisions of the AGBG.

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ZVersWiss 1993 p. 325 - 337:

**Duties and Obligations of Disclosure of the Insured or Policyholder**

(Auskunftspflichten und -obliegenheiten des Versicherungsnehmers)

by Professor em. Dr. Karl Sieg, Hamburg

Various provisions of German Insurance Law contain duties of disclosure on the part of the insured or policyholder which are genuine legal duties. These duties may either be based on law (BetrAVG), on contract, or may be developed by jurisdiction pursuant to the principle of good faith. Furthermore, the paper deals with the enforcement of such claims of disclosure during legal proceedings and in the course of judicial execution.

During legal proceedings in connection with the insurance claim the insured or policyholder may be confronted with obligations of disclosure which are known under the term of ‘burden of substantiation’. This applies especially to defences on the part of the insurer coming from the sphere of the insured or policyholder. An insured or policyholder who fails to state full particulars takes the risk of losing his case. Burden of substantiation and prima-facie evidence are comparable. The refusal to state full particulars is related to obstructing evidence and, in consequence, leads to a reversal of the burden of proof.



ZVersWiss 1993 p. 339 - 361:

**Factors of Performance of Insurance Brokers Related to the Developments in the National and International Insurance Markets**

(Erfolgsfaktoren der Versicherungsmakler vor dem Hintergrund der Entwicklungen auf den nationalen und internationalen Versicherungsmärkten)

by Professor Dr. Dieter F a r n y , Cologne

Factors of performance of insurance brokers are the essential determinants for the profit potentials of this special type of insurance intermediaries. In future, they will be substantially influenced by the development of the national (i. e. German) insurance market and international markets with the Single Market of the EC representing a special case.

Insurance brokers produce brokerage services between insurance companies and policyholders. Their most important services offered are the procurement of insurance covers for policyholders and selling services for insurers, in some cases they also handle parts of the business transactions. In practice, their performance is mostly oriented to customers' requirements.

From the German point of view the szenario of future national and international insurance markets shows an increase in cross-border insurance business and, due to the forthcoming deregulation, a stronger competition particularly in the German market. This will lead to an increasing differentiation of insurance products offered with the transparency of the market decreasing at the same time. Within this situation the independent insurance brokers will dispose of better business potentials due to their profound knowledge of the market and an increasing number of customers and insurance companies in wider markets. Owing to this process a polarisation of brokerage firms may occur, i. e. small firms versus big ones, generally working brokers versus specialised ones. Furthermore, international brokerage cooperations are to be expected.

Faced with the new market situation the most important factors of performance for insurance brokers are the size of the firm, their legal form, their business philosophy being more customer oriented or insurer oriented, the provision of resources especially the quality and quantity of employees, information available, knowledge and special know-how as well as data processing capacities. Another decisive factor will be the handling of the liability problem with regard to the "best advice".

ZVersWiss 1993 p. 363 - 387:

**Insurance and the Capital Market**

(Versicherung und Kapitalmarkt)

by Dr. Helmut Gr ü n d l , Passau

A premium calculation formula based on an extended version of the Capital Asset Pricing Model (CAPM) is developed. The study is motivated by the shortcomings of the Standard-CAPM calculation formula in which – especially in its microeconomic basis – the claims to be evaluated are not considered.

Therefore, the Standard-CAPM is presented first, showing its application to insurance rate-making and the problems arising hereby. In this context the results of *Kotsch* who tried to prove a risk equalization effect within the CAPM-framework are rejected. Furthermore, *Breuer's* analysis in a previous issue of this journal cannot be accepted as a contribution to the development of capital market oriented insurance rate-making. Although the issues he deals with are interesting per se, they are remote from reality and have nothing in common with the usual framework of capital market equilibrium.

In the proposed model based on the extended CAPM the price formula for financial securities reveals that risks within the private sector of the economy – whether insured or not – will influence the prices of these securities.

Because this price system is also valid for shares of an insurance company, the minimum insurance premium in capital equilibrium can be calculated. It is determined by the minimum price the company must take from the persons insured in order to fulfill the requirements of the policyholders of the insurance firm with regard to risk and return of their shares. Thus, a premium results in which – in contrast to earlier studies on insurance rate-making based on the Standard-CAPM – the correlation between the risk to be insured and all other risks of the economy necessitates a risk adjustment in the insurance premium.

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ZVersWiss 1993 p. 389 - 406:

**Insurance Companies' Strategic Choice in a Volatile Economic Environment – the Case of Ghana**

(Strategische Planung im Versicherungsunternehmen unter unbeständigen gesamtwirtschaftlichen Bedingungen – Beispiel Ghana)

by Dipl.-Kfm. Albert Gemegah, Hamburg

The performance of the domestic economy of a developing country is very crucial to the prospects of growth and stability of that country's insurance industry. Also, the ability of the individual insurance company to achieve set corporate goals within the given economic environment is determined by the strategic behaviour of management. An empirical study of the Ghanaian insurance industry seeks to identify major economic factors which influence the performance of insurance business operation and to evaluate the extent to which management of the insurance company is able to accommodate those factors in their planning process. Results of the study reveal a very volatile economic environment in the past decade. Under the given economic conditions, insurance companies primarily pursued financial goals and also placed emphasis on growth and expansion strategies. Inflationary pressure, government policies as well as religious and cultural differences in the Ghanaian society have been identified as the most obstructive factors in the effort to achieve corporate goals. On the other hand, the recent positive trend in economic growth as well as technological advancements with applications in insurance are considered stimulative.

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ZVersWiss 1993 p. 459 - 489:

**Coverage of Damage to Boilers caused by Explosion under the German Fire Insurance**

(Behälterexplosionsschäden in der Feuerversicherung)

by Rechtsanwalt Walter Meyer-Kahlen, Ratingen

The General Conditions for Fire Insurance in Germany (AFB 87) provide that the insurer shall indemnify the insured in respect of any property damage caused by an explosion. The definition of explosion is the sudden manifestation of force due to the expansion potential of gases or vapours.

The explosion of a boiler and other pressure vessels (subsequently referred to as boiler) is a special type of explosion. It shall be deemed to have occurred only when the walls of the boiler are damaged to such an extent that the pressure inside and outside the boiler is equalised instantaneously. Only in such an event will the insurer indemnify the insured for the damage caused to the walls and other parts of the boiler.

The requisite elements of an explosion must also be present in the event of an explosion of a boiler. A sudden manifestation of force as described in the definition of an explosion is the sudden release (expansion) of pressurised gases or vapours impacting on the surroundings. The explosion of a boiler shall be deemed to have occurred if the sudden release of the pressurised gases or vapours within the boiler occurred, after the walls of the boiler began to split. To be sudden, the release must be at least 85 % and occur within a very short period of time. The cracks in the walls of the boiler must be large enough in order that a sudden release of the gas is possible. The expansion potential of the gases or vapours must be the immediate cause of the sudden release.

It is very difficult to determine, in the individual case, how long the expansion to at least 85 % took and whether this can be considered to be a sudden expansion. How long the expansion takes is dependant upon the volume and content of the boiler, the pressure inside the boiler and the size and position of the crack. The draft regulation DIN 2903, of December 1960, whilst taking account of the different volumes of boilers, provides that a sudden expansion and thus an explosion of the boiler should be deemed to have occurred if the crack exceeds a certain size. If the parties to the fire insurance contract have agreed, either prior to or after the loss, to apply this draft of a DIN regulation, then difficult questions in respect of how long the expansion lasted and whether or not it was a sudden expansion, need not be addressed. Often this is to the insured's advantage, but not always.

Disputes may also arise in respect of the definitive volume of the boiler. Which parts belong to the boiler and which do not? Decisive is the entire space that can be left empty when gas, vapour, or liquid escape after the walls have been ruptured, but limited by the stop cocks at the entry and exit points of the pressurised area. The pipes that can be shut off from the steam boiler do not belong to the steam boiler itself.

If an explosion of a boiler occurs, the insurer will indemnify not only the damage occurring to the boiler but also all other damage caused to insured property inside or outside of the boiler by the explosion, e.g. damage to insured buildings. In addition to the damage caused by the blast, indemnification will also be made in respect of damage to the insured property, caused for example by chemical effects of gases that have, following the explosion, escaped from the boiler.

If an explosion of a boiler does not occur, due to the crack in the boiler being too small, and thus no sudden expansion taking place, then there is no indemnification in respect of the damage to the boiler or any resultant damage. An exception is if the gases or vapours having first escaped from the boiler and then cause an explosion outside of the ruptured boiler.

The explosion of a boiler, as against an explosion inside a boiler caused as the result of a chemical reaction must be differentiated. In the latter case, any damage to the boiler will be indemnified irrespective of whether the walls of the boiler have been ruptured or not.

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ZVersWiss 1993 p. 491 - 509:

**Fire Risk from the Viewpoint of the Insurance Industry**

(Das Risiko Feuer aus der Sicht der Versicherungswirtschaft)

by Dipl.-Kfm. Helmut K ü h l , Cologne

The article is divided into three segments:

- (1) Fire risk
- (2) Analysis of the number of claims and their causes
- (3) Development tendencies in the German industrial fire insurance market

The first chapter defines fire risk and depicts the individual insurance lines in which fire is included as an insured danger. Factors in calculating the fire risk for particular insurance lines (general property, for the most part) are portrayed. The importance of fire risk for the economy rounds off the introduction. Particular mention is made of the dramatic rise in taxes in the past and for the future.

In the second part the number of claims and claims costs for fire damage in Germany are shown. A special survey regarding the development of damages of one million marks or more is conducted. Conclusions are reached through a scrutiny of claims causes.

In the third part an investment analysis for fire prevention is shown. Inflationary tendencies calculated on the basis of the average claim are mentioned. The demands on the insurance industry for coping with the fire risk, particularly the accumulation control from the standpoint of the direct insurer, are described along with possible conclusions for the retention policy of the direct insurer.

Current questions regarding capacity due to the discontinuation of the monopoly will confront direct insurers with considerable problems in 1994 and 1995, the solutions for which must be found.

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ZVersWiss 1993 p. 511 - 533:

**Fire Risk from the Viewpoint of Science and Technology**

(Das Risiko Feuer aus der Sicht von Wissenschaft und Technik)

by Professor Dr.-Ing. Dietmar H o s s e r , Braunschweig

Fire safety requirements according to the building code are appropriate for usual buildings but not directly applicable to buildings of special type or use. In such cases, the fire risk can be evaluated and optimum fire protection measures can be derived from the help of fire safety engineering methods. The first part of the paper deals with the state of the art of fire engineering methods including fire experiments as well as theoretical fire models. In practice, such methods often help to solve open fire safety questions. This is demonstrated by using three typical examples out of the author's consulting activities – the fire protection concept for a storage hall for chemical products, the smoke extraction concept for an atrium of 30 m height in an office building, and the evaluation of an actual fire in a shopping mall.

In the second part of the paper, some features of the system SAFIR for computer aided fire risk evaluation and safety design for special buildings are presented. Advanced and less sophisticated fire safety engineering methods according to the state of the art are integrated in a library of procedures and can be applied for a detailed, risk-oriented fire safety design of buildings. The building code requirements and the protection measures according to the respective standards and the present technology are incorporated in a library of rules and are used for designing fire protection measures on a "normal level". Finally, data from fire reports of fire brigades, fire damage reports of insurance companies, and fire safety reports of fire protection engineers are collected in a data bank. Based on these data, statistical information with respect to fire risk and fire protection measures for a building of given type and use can be produced to get a first rough design proposal.

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ZVersWiss 1993 p. 535 - 543:

**Exposure to Fire Perils – Fire Protection – Fire Insurance in Industry and Commerce**

(Brandgefährdung – Brandschutz – Feuerversicherung in Industrie und Gewerbe)

by Assessor Reinald R ö s l e r , Munich

Summary of a paper given at the conference of the "Abteilung für Versicherung und Technik des Deutschen Vereins für Versicherungswissenschaft", in Munich on 18th November 1993.

The paper was presented in the form of several theses:

Thesis 1:

The perils (fire, explosion, lightning and impact of aircraft) usually covered in fire insurance are not manageable without the application of technical means for protection.

After 10 minutes fires develop to a size that cannot successfully be contained by the fire brigade in its first attempt. The speed of the fire spreading is 1 m/min., 2 m/min. and 3 m/min. with low, medium and high fire loads.

In the case of the Ford loss in Cologne in 1977, the fire speed (after failure of the sprinkler protection) was 1.56 m/min. on average with a max. of 6.97 m/min. and comprised an area of 32,000 m<sup>2</sup> after two hours.

Protection by fixed fire fighting installations is usually successful with a failure rate of 2% for sprinkler and CO<sup>2</sup> systems according to the statistics of the German Property Insurers Association 1971 - 1992.

Losses due to explosion contribute 11% to the overall losses. Even the effects of explosions can be mitigated by technical means. Special problems are posed by the so-called unconfined vapour cloud explosions predominantly in the oil, gas, and petrochemical industries. Computer-assisted models have been developed to estimate the probable maximum loss.

Thesis 2:

The exposure to fire and explosion damage is a dynamic process related to the technological progress and productivity of the industry.

Ethylene production in Western Europe, for example, dropped from 18 million tons in early 1980 to 15 million tons in 1985, whereas the demand rose from 12 million tons to 16 million tons. In the subsequent years the demand was met by increasing the output of existing plants. In 1989, the insurance industry was hit by losses worldwide of 1.8 billion US-\$ in property and 2 billion US-\$ in business interruption with a huge portion of Western European losses in ethylene units. (See also a study by Munich Re "Losses in the Oil, Petrochemical and Chemical Industries – a Report".)

The dynamic process can also be illustrated by a decrease of fire insurance property policies by 26% and business interruption policies by 10% from 1980 - 1989 in the German market. The insured values in the same period rose by 72% in property and by 141% in business interruption. This shows the concentration process in the industry (takeovers and acquisitions) and at the same time the increased productivity.

### Thesis 3:

Exposure to fire/explosion perils and fire/explosion protection are balanced. Are there any other factors?

This can be proved by the fact that the loss ratio in the German market (losses incurred vs sums insured) over a longer period of time stays at the same level with high fluctuations in individual calendar years. Some influence of increased numbers and amounts of deductibles is felt.

Because of insufficient pricing for the insurance protection, the insurers are, nevertheless, hit by increasing loss amounts in DM. Some influence on the loss development can also be attributed to the overall economic situation with stagnating loss figures in a recession period and increasing figures during high economic activity.

### Thesis 4:

Within the system "man and technology" the human element is the weak point.

Human failure is the reason for losses even in plants with adequate technical protection. Wrong planning, bad workmanship, mistakes in handling, sabotage and arson, and system failures caused by human negligence are prime causes.

In the German market arson accounts for 22 % of all losses with a total of 30 % including unidentified causes of losses, the respective amount being close to 1 billion DM.

### Thesis 5:

The management of industrial fire risks should contain the application of risk management techniques, adequate fire protection, adequate deductibles, and the transfer of the remaining risk to the insurance industry at adequate terms and conditions.

All of these elements are in use but not at a desirable level.

### Thesis 6:

Increasing attention must be paid to the exposure to natural hazards and catastrophes.

Economic and insured losses due to natural hazards show a steep upward trend. This is the case not only due to climatic changes but also to increased concentrations of values and higher population densities and more industrial plants in exposed areas, particularly in coastal regions, and due to an increased density of insurance protection.



These perils also have to be managed by proper protection, adherence to building codes, sizable deductibles and adequate pricing of the insurance covers.

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ZVersWiss 1993 p. 545 - 563:

**Proposals for a Clear and Reliable Income Statement of Insurance Companies**

(Vorschläge für eine aussagekräftige und willkürfreie Erfolgsrechnung der Versicherungsunternehmen)

by Professor Dr. Otto Altenburger, Regensburg

In the course of the transformation of the EC Insurance Accounts Directive into German law new schedules for the annual financial statements of insurance companies will soon be enacted. As to the income statement, there are three main issues to be discussed:

- the presentation of revenues and expenses from reinsurance ceded
- the presentation of investment revenues and expenses
- the presentation of operating expenses

*Revenues and expenses from reinsurance ceded*

The current schedules treat life and health insurance companies differently from all other insurance companies. The main difference lies in the presentation of the revenues and expenses from reinsurance ceded. Life and health insurance companies have to use gross numbers, i.e. revenues and expenses include the portions of reinsurers, whereas the second group of insurers has to show net numbers. The EC Directive provides an improvement in information on reinsurance ceded for this second group, but a decline in information for life and health insurance, thus not following the net or the gross method clearly. Additionally, life and health insurance are still treated differently from the other branches of insurance.

Since there are no material arguments for this unbalanced practice, *the revenues and expenses from reinsurance ceded should be treated equally in all branches of insurance*. Also, the ambiguous position of the Directive regarding the method used (gross or net) should be modified in order to achieve clarity. Among others, the fact that expenses for reinsurance premiums hardly show the expenses for reinsurance coverage, and that the yield of reinsurance ceded is a helpful figure to forecast adjustments of reinsurance conditions are strong arguments for the *gross method*.

### *Investment revenues and expenses*

It is questionable to calculate income from insurance operations without taking the yield on investment into consideration. The current schedules again treat life and health insurance companies and all other insurance companies differently from each other. Life and health insurance companies have to show investment revenues (“Erträge aus Kapitalanlagen”) and investment expenses (“Aufwendungen für Kapitalanlagen”) in the upper section (insurance operations section) of the income statement, whereas the other insurers have to show these revenues and expenses in the lower section (non-insurance section) and to transfer small portions thereof to the upper section. The EC Directive imposes a similar approach but provides for rules concerning a transfer of investment income to the lower section of the income statement in life and health insurance.

The Directive, therefore, enables a correct segregation of income: *That part of investment income that is caused by insurance operations should be shown in the insurance operations section* of the income statement. Investment administration expenses would comprise solely directly attributable items; only *indirectly attributable expenses*, such as personnel expenses, should not be included in the investment expenses.

### *Operating Expenses*

Currently, operating expenses have to be shown in a system of (at least) seven functional areas (e.g. loss adjustment, investment administration). The EC Directive compresses these items into only four, but fails to specify all necessary details. The problem is that, except for directly recorded costs, expenses can only be identified as originated in a functional area if they represent variable overhead, which many of the operating expenses do not, i.e. that the reliability of expenses underlying this type of allocation is low. Therefore, the income statement should not show expenses in functional areas, but types of expenses (e.g. personnel expenses, social expenses, commissions, depreciation).

Given the above-mentioned frame of splitting up operating expenses into functional areas, *the income statement must show contribution margins* in order to achieve reliable figures. The upper section of the income statement should contain only expenses representing variable costs, the lower section showing the expenses that are not associated with single insurance contracts. Combined with a corresponding procedure in handling investment revenues and expenses, a useful and reliable figure for the sum of all contracts' contribution margins would emerge. Given a certain segmentation of business, expenses representing fixed costs of business segments could be shown en bloc (without being split) in the upper section of the income state-

ment, thus lowering contribution margins. In this case, the segregation of investment income should also be adjusted accordingly.

#### *Implementation of the proposals*

According to the EC Directive, members of the EC may allow or impose disclosure of additional information. Considering the fact that the Directive generally requires less disclosure than is demanded by current German law, the implementation of the above-mentioned proposals would not offend against § 330 of the German Commercial Code which limits additional disclosure requirements. After further arguments for the implementation of the proposals a schedule for the upper section (insurance operations section) of the income statement is presented.

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#### **Modern Insurance and the Rationalistic Spirit of Modern Times**

(Moderne Versicherung und rationalistischer Geist der Neuzeit)

by Professor Dr. Atsushi T a k a o , Kobe/Japan

Insurance business is open to rational considerations if it is understood as the transfer of loss distributions against payment of a certain premium. This may be proved by means of analogies to option tradings which show a similar structure to that of insurance business.

Thus, the development of insurance, especially with regard to innovative insurance products, may be derived from the processes of enlightenment and rationalism. In the present article this is described for Japan in general and especially with regard to two innovations which are linked to the rational handling of a difficult process of life, i. e. the transitional period from life to death: heart transplantations and dread disease insurance covers. The respective hypotheses are based on the fact, that both innovations have been developed and introduced in the Republic of Southafrica.