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THE ECONOMIC THEORY OF NON-LIFE INSURANCE

by

Noriaki Niwata

Part I. Issues on the economic aspect

1. *Mutual approach of non-life and life insurance*

What is non-life insurance, and hence life insurance? This is an old yet new problem. In the theory of insurance, its substance and definition, historically it has been strived to grasp both insurance unitarily, but at present it will be difficult to find any theorem that has attained this aim and can be a settled theory in academic circles. Yet we have a convenient way of studying insurance. That is,—escaping from honest wrestle with such difficult definition of insurance, non-life insurance and then life insurance—to illustrate legal properties of current insurance contracts and expose economic features of the insurance system, and through this process to make the substance of insurance appear. In other words, as against the study of substance and definition staying at great confusion and hardship, it is attempted to probe indirect, suggestive and comprehensive substance by way of gazing into actual pictures of insurance, its concrete existence and activities prevalent in the present society. It is to recognize important features known as the substance, instead of searching for the substance as it is. Inevitably such substance lacks exactness and clarity but may be said more realistic and practical.

However, it may be unfair to say the substance or definition of insurance is almost needless in the actual insurance business world. Economic society of today is developing and moving in close connection with government and administration. This direction is noticiable especially for insurance, and so officially approvable definition of the substance of insurance is indispensable in order to settle the sphere and contents of governmental administration. No serious problems would arise even if insurance firms operated business on individual standpoints, their fields of activities were somewhat blurred, non-life and life insurance intersected each other, or insurance interflowed with other industry. However, if in administrative organs and their standpoints definite grasp of insurance were absent, distinction between insurance and other business were not clearly exhibited, and the border between non-life and life insurance were not settled, confusion and hardship would emerge in the insurance policy, which should greatly affect the insurers and insureds. As regards the current problem of writing both life and non-life insurance business by one company, unless it is made clear what is non-life insurance, what is life, and what differences of functions lie between the two, probably judgement may be impaired on the significance of the prohibition of writing both business or its softening and repeal. Definition must stand on the reality, while actual movements and Government supervision must be based on definition.

In the literature of the insurance theory we see various ways of classification of insurance such as general (property) and personal, non-life and fixed sums, non-life and life and so forth, each respectively being based on own standards and with own meaning. There some theorists assert that the distinction of non-life and life is nothing more than division on the Commercial Code of Japan, not scholarly one. By the generally accepted theory the division into non-life insurance (viz. variable-insurance-money) and assurance of fixed sums is regarded most proper. Yet the inbetween presence of many kinds of social insurance is making such classification troublesome. And recently confusion has been all the more increased through discussion on the status of accident insurance and by the birth of property life insurance and policy, until many theorists have appeared who insist on practical insignificance of the distinction between non-life and life.

In our Commercial Code (Pt. 3, commercial acts, Sect. 10 insurance, Paragraph 1 non-life insurance) Art. 629 states "A non-life insurance contract becomes effective by agreement of one of the concerned persons to reimburse a loss possibly incurred by a certain accidental event and that of another to give remuneration for it." Similarly life insurance is defined (Paragraph 2 life insurance, Art. 673) as "A life insurance contract becomes effective by agreement of one of the concerned persons to pay a certain amount of money for life or death of another person or third person and that of another to pay remuneration for it." Apart from argument on theoretical preciseness, these are true reality-governing distinction.

To take life insurance as personal insurance, this personal insurance is divided into life and accident. In accident insurance money is paid in case the insured has accidentally incurred an injury on his body. So this is not genuinely life insurance but abundantly involves the element of non-life insurance. On the contrary life insurance as personal insurance is conceived to take death of man as the insured event. Then how should this phenomenon—personal insurance approaches non-life insurance through accident insurance or sickness insurance and ultimately life and non-life insurance are very closely posited—be understood avoiding insurance-theoretical contradictions. The pattern of benefits —fixed or variable—is already unsuitable to explain this situation. Attainment of economic security is common in both non-life and life insurance but this is too simple to be fully explanatory. Security here denotes acts to provide for fortuitous and unforeseen events and unhappy situations for the sake of maintaining a certain economic position in future.

Significance and Classification of Non-Life Insurance Contracts

I. Significance

(1) Definition—A contract that becomes effective by agreement of one of the concerned persons (insurer) to indemnify another person (policyholder) for a loss possibly incurred by a certain accidental event and payment of remuneration (premiums) for it.

(2) Insured events (risks)
- a. Fortuity (uncertainty of occurence of the event): subjectivity does suffice=no need of objectivity; however, a contract is made ineffective by its clause if the risk is not objective presence, whether the policyholder-insured knows it or does not.
- b. Causes of events
  natural power (storm, earthquake, flood, etc.); human acts (arson, burglar, etc.)—these must not derive from a bad faith or gross negligence of the policyholder.

(3) Coverage of loss (insurance benefits)
- a. Meaning of loss; economic disadvantages incurred on the policyholder (excl. mental or religeous ones)
- b. Range of loss
  - A. (a) direct loss (e.g. burn-down of a house); (b) indirect loss (loss of imaginary profit)—reduces to what the insurable interest is.
  - B. (a) Principle of Adequate Causation (accepted theory, Profs Ishii, Tanaka); (b) theory of causa proxima; (c) natural course theory (Prof. Katō).
- c. Coverage of actual loss (within the bound of amount insured)×fixed-sums (life insurance).

(4) Insurable interest=subject of insurance×subject-matter insured (object insured)

(5) Premiums—cash benefit. Sum of premiums=total insurance money (requirement of insurance technique)

II. Classification

(1) Classification by insurable interest
- a. Property insurance—fire ins., marine ins., transportation ins. (these three pursuant to the Commercial Code), water pipe ins., plate glass ins., and turbo-set ins., burglary ins., live-stock ins., hail ins., frost ins., harvest ins., forest ins.
- b. Insurance on failure of others
  - contract bonds—to indemnify obligee for loss due to obligor's default (credit ins.).
  - fidelty gurantee ins.—to indemnify employer for loss due to illegal acts of employees.
  - insurance on securities, unoccupied buildings ins.
- c. Liability insurance
  - liability ins., reinsurance.
  - automobile ins.—on legal liability by motor vihicle accident.
- d. Insurance on imaginary profit—weather ins., movie ins.

(2) Classification by places of insured events
- a. Land insurance—extending to risks in flat water areas (lakes, rivers, ports).
- b. Marine insurance—in principle risks on water other than flat water but exceptionally covers risks on flat water and land.
- c. Aviation insurance—aircraft hull ins., air transport ins., aircraft third party liability ins.

(3) Classification by volumes of subject-matter insured

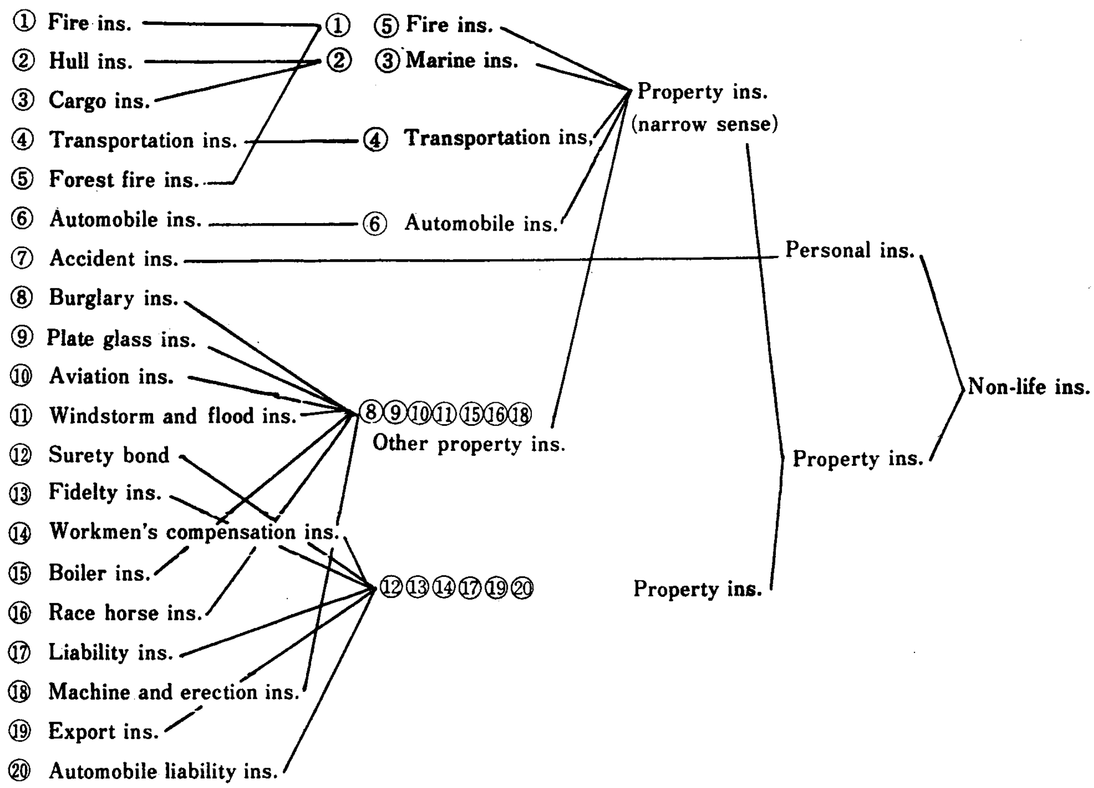
- A.
  - a. Individual insurance—on individual goods (fire ins. on a house).
  - b. Collective insurance—on group of goods (fire ins.), on movables in a house.
- B.
  - a. Comprehensive insurance
    - (a) significance—identy of a policy is maintained while admitting alteration of individual subject-matter insured (general ins.)×preengagement of a contract.
    - (b) example—running policy, day ins., provisional policy
    - (c) content—effected comprehensively on various subject-matter insured and the insurance relation is born when the object insured have been specified (difference from collective insurance).
    - (d) sorts—
      - daily comprehensive ins.—effected on all goods transported or warehoused in the same day.
      - yearly comprehensive ins.—utilized fo the same year.
  - b. Special policy—usual contracts as against comprehensive insurance.

* Source: S. Toda, *Zusetsu Shōhō Taii* (Kaishō, Hoken), 1954, p. 100.

Sort	Fire ins. 665-668	Transportation ins. 669-672	Marine ins. 815-841	
	Commercial Code, Pt. 3, Sect. 10 (land)		Commercial Code, Pt. 4, Sect. 6	
Object insured	Buildings, movables	Goods on transport	Cargo	Hull
	(keeper's responsibility) 667	(freight, imaginary profit, etc.) (expense, liability by special clause in marine ins.)		
Risk covered	Fire (straight, named peril) 665	Risk of inland transport (comprehensive) 669	Maritime perils (comprehensive) 815-816	
Place of object insured	Fixed 668	Moving 671, 873		
Insured (holder)	Specified	Specified→unspecified (changeable)	Specified	
Insurable value (contract principle)	Principle of change 638, 637	Principle of non-change 670, 817, 818, 819, 820		
	(unvalued policy) 638	(valued policy) 639		

Note: Figures represent articles of the Commercial Code. The Table is confined to stipulations in the CC. There are other clauses such as profit insurance, additional living expenses insurance, fire insurance for mortgagee's interest and special clause for various insurable interest in transportation and marine ins.

* Source: H. Minamide & K. Tanabe, *Hoken Man no Hōritsu Chishiki*, 1970, p. 132.

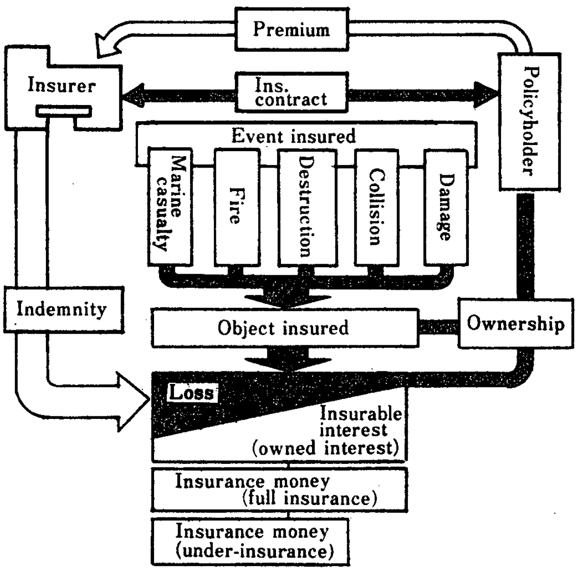


Source: E. Kimura, Wagakuni ni okeru Kōei-Shiei Hoken, in Collected Essays in Memory of Dr. Itō, *Shakai Seisaku no Kihon Mondai,* 1960, p. 113.

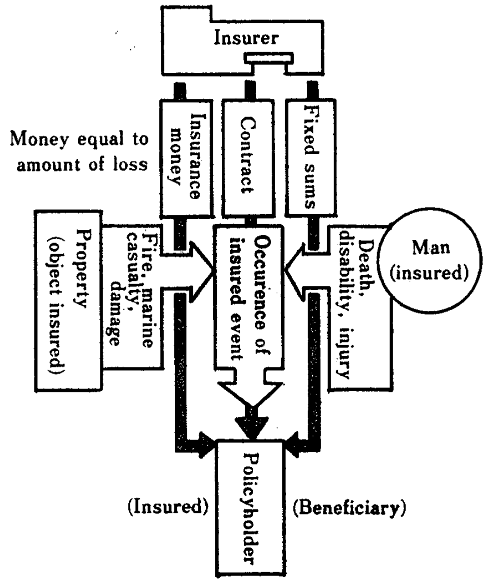
<table>
<tr><th>Patterns of interests</th><th>Patterns of disadvantages</th><th colspan="2">Structure of contract</th><th></th></tr>
<tr><td rowspan="2">Calculable interests:
—Vested interests embodied in specific assets (incl. those securable in future)
—Limited interests embodied in unspecified assets
—Vested interest embodied in total assets plus limited interests latent in gaining power</td><td rowspan="2">Calculable disinterests:
—Total or partial loss of vested interests (definite damages)
—Loss of security of vested interests (probable damages)
—Bearing of liability or costs of a definite amount (probable damages)</td><td rowspan="2">Presence of insurable value</td><td>Principle of non-average; its quantitative exception</td><td rowspan="2">Non-life insurance</td></tr>
<tr><td>Principle of non-average; its qualitative exception</td></tr>
<tr><td>Uncalculable interests:
—Interests embodied in total assets plus non-limited interests latent in gaining power
—Non-limited interests latent in gaining power</td><td>Uncalculable disadvantages:
—Emergence of prospect of bearing uncalculable costs (latent damages)
—Total or partial loss of gaining power (latent damages)</td><td colspan="2">Benefit of fixed fund or annuity</td><td>Assurance of fixed sums</td></tr>
</table>

Y. Tanabe, Hokenkeiyaku no Bunrui ni tsuite, in *Shōhōgaku Ronshū* in memory of seventieth birth day of Prof. Komachiya, 1964, p. 274.

Non-Life Insurance



Non-Life insurance Life insurance



Source : Horitsu Yogo Kaisetsu Iinkai, Zukainiyoru Horitsu Yogo Jiten, 1969, p. 368, p. 373.

	Personal ins.	Property ins.
Assurance of fixed sums	Life ins. (death, pure endowment, endowment)	Profit ins.
Non-life ins.	Accident ins., sickness ins., unemployment ins., etc.	Fire ins., marine ins., transportation ins., etc.
Property depreciation ins.		Property life ins.

H. Innami, General Theory in The Tokio Marine & Fire Ins. Co. ed., *Songaihoken Jitsumu Kōza*, Vol. 1, 1954, p. 3.

Capital ins.	Ordinary ins.	Property ins.
Workmen's ins.	Social ins.	Personal ins.

Source : S. Shirasugi, *Hoken-gaku Sōron*, 1954, p. 75.

Life ins.	Personal ins.
Non-life ins.	Property ins.

Source : E. Kimura, *op. cit.*, p. 114.

By the by in the present capitalist society people are engaged in labor in principle, sell labor power immanent in the body and health as commodity on the labor market, and by means of its price, wages, build most of income to sustain livelihood. Labor power is commodity and hence attached price to its economic value. If the event of life insurance is defined as life and death or bodily accidents no concept of loss is involved, and so common or unitary comprehension of life and non-life insurance is impossible. Square reasoning for understanding the recent fact of mutual approach becomes impossible. This trend, however, can be explained by defining life insurance as security against losses incurred when the value of labor power, namely its price, comes to exhibit some phenomenon of loss, destruction or damage due to old age, sickness or invalidity, in short, economic extinction or decline of labor power.

Indeed man or human bodies do not in themselves fit into the role and function of insurance as a modern economic system. A problem lies in that while buying and selling of labor power concern labor power, actually buyer's control extends over man or human bodies, its dwelling. When human bodies or health, whose worth for each individual is infinite and not confined to economic areas, become the object of economic transactions with other people or of use in an economic society, they are grasped as nothing other than immanent labor power, ability or potentiality. In the present social structure labor power is a commodity and given economic value, price. Destruction of bodies or health represents loss or decrease of labor power as commodity, which in the end becomes loss or decrease of income by labor or employment, that is, emergence of economic loss by that much. Coverage for this loss by insurance can be understood as non-life insurance, if not genuine. For example, in many cases of accident insurance the events include not only payment of medical expenses but also various benefits such as disability benefits, sum payable at death and even partial indemnity of living cost to cover decrease of income due to obstacles of labor power. Here life and non-life insurance in a popular sense are constructed in a unitary body.

Labor power immanent in human bodies or health is displayed with enormously different fruits in utilization according to efficiency. Right for this reason reversely insurance has to be of fixed sums. Life insurance takes the fixed-sums form because the economic value of labor power cannot be fixed, contrary to goods. Yet economic appreciation of human life cannot be boundless. Quite reversely it is evalued on the base of income or wages. The human body or health—the home in which labor power as commodity dwells—has some certain worth-price which naturally sets the insurable value, if appreciably elastically. It is for this reason that one cannot form insurance contract of an arbitrarily high amount. And because labor power is given price as wages finally at reasonable levels on the labor market, the human body or health, which always implies labor power and releases it according to occasions, is regarded to have given value. In fact in life insurance contracts the limit of amount is set according to income. The point is that even life insurance is not confined to insurance that

Insurance—

- Personal ins.
  - Man, body itself (not always for economic value)—
    - To provide for death
    - 〃 existence
    - } Genuine life ins.
  - Economic value of labor power (as commodity)—
    - To provide for loss: death, disability, unemployment
    - To provide for decrease: old age, injury, sickness
    - } Life ins. with non-life ins. nature
- Property ins.
  - Economic value of home life goods—
    - To provide for loss
    - 〃 decrease
  - Liability—
    - To provide for
      - emergence in home life
      - 〃 business
  - Value of production goods in business—
    - To provide for loss
    - 〃 decrease
  - Imaginary profit in business—
    - To provide for losss
  - } Genuine non-life ins.
  - Manpower in business—
    - To provide for: labor accident, welfare, death or retirement of manager
    - } Non-life ins. with life ins. nature

Personal lines: from "Man, body itself" through "Genuine non-life ins."; Lines of business: from "Genuine non-life ins." through "Non-life ins. with life ins. nature".

functions on the object of human death or injuries themselves; more essentially it is devised to insure against loss or decrease of the value of labor power economically taken as commodity. It matches with modern age to interpret it as insurance on life and death of man not natural but economic.

Keyman insurance, which covers economic losses due to death of managers, is right life insurance and also non-life insurance. The economic value of labor power is realized only in enterprises, and this is so for entrepreneurs-businessmen as well as workers. And labor power is different from goods in that it is reproduced in human homes as self-cycles. If only some level of living is maintained reproduction is at least possible automatically, daily and yearly, and so one can have some extent of margin for the insurable value. One can decide the amount freely according to his taste, aim or principle. Insurance benefits are given as a fixed sums by this decision. And when a home is grasped as a place where labor power reproduction is conducted not only through a laborer's lifetime but also through generation to generation—from parent to son, from son to grandson—the economic significance of insurance against death may be truly understood.

2. *Utility of non-life insurance*

Utility of non-life insurance is in a word indemnity. The policyholder has his losses by contingent accidents covered by the insurer with insurance money. In this sense the insurer bears the risk of possibility of loss emergence by receiving premiums. This function of risk-bearing by the insurer is generally pointed out in the insurance theory and economics at large. Among the policyholders themselves the relation is understood to be distribution of risks and losses. "Shift of risks" refers "from the policyholder to the insurer," and so the relation among the policyholders should be mentioned as risk or loss distribution. As the problem of the policyholder himself this insurance may be a means of risk management or relief for losses incurred.

Relation from insurer to policyholder—coverage of loss (indemnity), bearing of risk;

Relation from policyholder to insurer—shift of risk, shift of loss;

Relation among policyholders—distribution, allotment or diffusion of risk;

Problem for policyholder himself—risk management, relief measure for losses incurred.

It is supportable to define the utility, purpose or task of non-life insurance as indemnity, yet it may be more proper to say that, going beyond such definition, indemnity is in the end a process toward fulfilment of economic security of the policyholder. Sheer indemnity seems too defensive a task either for household economy or for business management; only negative significance, having nothing to heighten the tone of non-life insurance as an economic system. Through indemnity really economic security of the policyholder is promoted and expanded, and it is this economic security that is indispensable for construction of welfare in the modern-age home and business. Thus it should be regarded as positive factor, by which a high-dimensional mission is recognized.

In studying non-life insurance we must have square realization on that very impressive phrase "One for all, all for one," to which every theorist or businessman of insurance refers. First the ideal of insurance implied in this phrase should not be grasped from a viewpoint of "motive at entry." That is to say, one takes out insurance in the interest of all members of the policyholder group, or the public, and all others do so in the same sense—one for others and others for one. One benefits others by taking out insurance, and others benefit one by doing so. For this reason there is high and noble significance in effecting policies. One thinks of himself as well as others. This logic places weight on the motive. Yet obviously this is contrary to the fact. In this society of individualism and self-responsibility it is inconceivable that a policyholder thinks of other people he has never seen or talked. His motive may be fully for his own sake and self-oriented.

It hits the fact to comprehend this phrase "One for all, all for one" as the structure of insurance. Let's take this as a grasp from the viewpoint of "system" or "scheme-mechanism." One takes out insurance individually for himself and other people do so for themselves each; then insurance becomes possible as a system; a scheme is established; the insurance system is born and continues. Economic connections therein are compactly expressed by this phrase. And in concrete it refers to the actuarial technique, namely calculation of probabilities based on the law of large numbers. True insurance as a system is founded by participation of a large number of persons, and only by assembling "all" each person can enjoy the utility of insurance confidentially and safely. The structure and mechanism of the insurance system are just as expressed by this phrase. Yet in this comprehension, if confined to this extent, the ideal aspect or spiritual element is lacked.

It seems most appropriate to interpret this phrase from the viewpoint of "function." Each one effects a policy and makes a contract for his own sake. In this sense what is sought is utility for oneself alone. Yet when many policyholders are gathered under an insurer and an insurance association as mass-public is organized, as the whole each one's self-oriented effectuation unexpectedly serves for all through the position as a member. By reason of this effect insurance-taking seems as if for the benefit of all. Thus the phrase must be understood through the function of insurance and its work. It is not that directly social joint and several responsibility or mutual-aid is sought, but in effect self-oriented insurance contributes to other people through the functioning of mechanism. The act of insurance-taking based on individualistic principle of self-responsibility is unconsciously connected with relief or aid to other people, exerting an effect of mutual assistance. Interpretation of this phrase may be fitted to modern insurance only by taking it as expression of the function of securing all the insureds while directly insuring oneself.

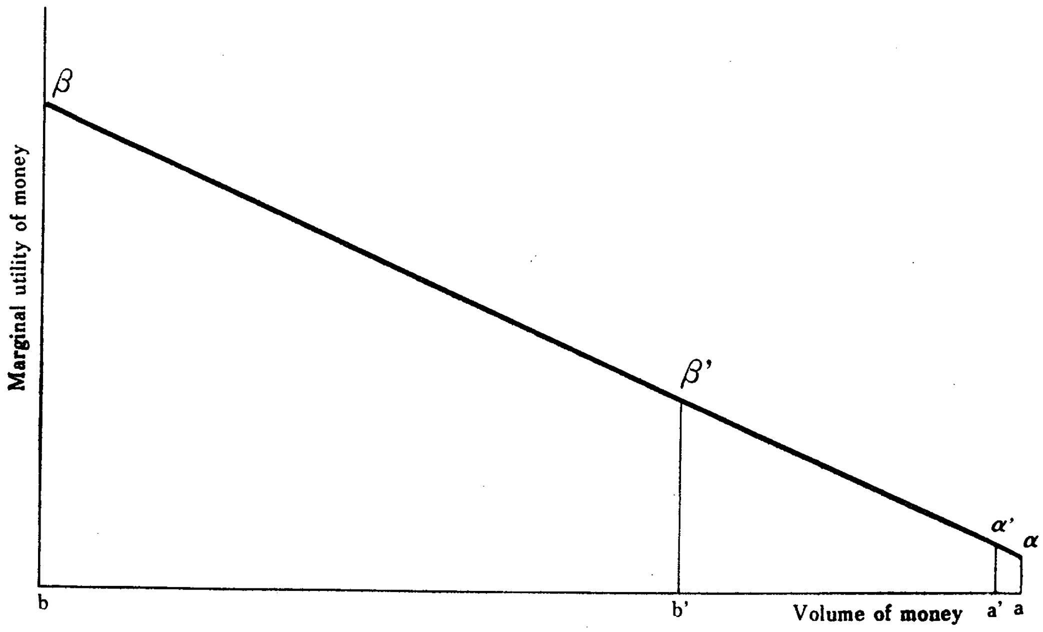
To summarize: interpretation of "One for all, all for one" from the viewpoint of:

"Motive of taking out insurance"—unjustifiable, contrary to the fact;

"Scheme"—proper but imperfect;

"Function"—appropriate as grasp from both aspects of function and philosophy.

Since in non-life insurance physical elements are stronger than in life insurance the impression of the phrase is weaker. And hence the public-interest character is inferior while the character of economic dealing is stronger. And non-life insurance firms have deeper color of business, and in this sense are more modern. It is interesting that non-life insurance, while being inferior to life insurance in using the actuary technique, a modern science, as business is more intensified in the modern spirit, that is, matters of dealing. In it the principle of individualistic self-responsibility is more emphasized. It is more industry-connected, capitalistic and hence of capitalism spirit.



An illustrative case where a non-life insurance policy is effected on two-thirds of the total value of goods=property of a person and a total loss is incurred.

ba=estimated money value of total goods-property of the person;

α=marginal utility of money at the time point prior to premium payment =marginal utility of the last unit of the estimated money value of the total property;

α'=marginal utility of money at the time point of premium payment =marginal utility of money after premium payment;

ba'=amount of the loss (a total loss);

bb'=total volume of insurance money received after occurence of the event (coverage of two-thirds of loss, ba', a total loss);

$a'a$=amount of premiums;

$a'a\alpha\alpha'$=total utility of money expended for premiums;

$bb'\beta'\beta$=total utility of insurance money received;

β'=marginal utility of money at the time point receiving insurance money;

b=amount of money and property owned at the time point of the event (actually zero);

β=degree of want the person feels at the time point of the event and before receiving insurance money (greatly varies by persons; here the point at which the extended line of $\alpha\alpha'\beta'$ crosses the vertical axis is taken for β);

ba=total volume of money prior to premium payment;

ba'=money volume at the time of premium payment;

$$bb'=2b'a'=\frac{2}{3}ba'$$

$b'\beta' > a'\alpha'$ (at all times)

$bb'\beta'\beta > a'a\alpha\alpha'$ (at all times with an overwhelming difference);

Accordingly non-life insurance works a decisive effect necessarily and in all means.

(1) The marginal utility of money or goods-property at the time point of premium payment, $a'\alpha'$, must always be smaller than the marginal utility of it at the time point of insurance money payment, $b'\beta'$. According to the principle of prohibition of gains and coverage of losses in non-life insurance, necessarily the amount of loss is larger than that of insurance money, and the economic value, worth or price of the subject-matter insured is larger than the amount of loss and insurance money value. $b'\beta'$ is always larger than $a'\alpha'$, or at least equal.

(2) The total utility of premiums paid at each time or annually, $a'a\alpha\alpha'$, is decisively and absolutely smaller than the total utility of insurance money when once the insurance event has occurred with a difference of overwhelming magnitude. Payment of premiums at each time is only of a small amount, probably no heavy burdens to household economy or business. Nevertheless payment of insurance money at the event may have utility that governs the beneficiary's fortune. In exchange for small utility one can receive big utility.

(3) $P=\omega Z=\frac{1}{n}Z$

where P is premium, ω probability, $\frac{1}{n}$ another expression of ω, and Z insurance money.

Pay-and-abandon of premiums is said a characteristic of non-life insurance, but this conclusion derives from consideration limited to one year or at the longest, a policyholder's lifetime. For a longer period, e.g. n times or n years, it is reasonable to suppose on probability calculation or law of large numbers that probably an insurance event will occur and some loss be incurred. Generally, however, this n is a very large number far surpassing the life period of the policyholder. If payment of premiums continues for n times-years surely insurance money will be paid, and so in principle premiums are never pay-and-abandon.

$nP=Z$

For a long-run relation between insurer and policyholder premiums are paid back as insurance money during n times-years. Accordingly benefit and counterbenefit are equal in the money volume. The policyholder receives the money amount he has paid, neither gain nor loss in economic calculation. Then doubtless it is a benefit to the policyholder that he can enjoy economic security and feeling of safety in every year and for long. If $n=100$, for example, the calculation is that a policy is continued for 100 years, premiums are paid 100 times, while insurance money is received once. Thus $100\ P=Z$, showing that the benefit and counterbenefit become equal between insurer and policyholder.

(4) The total utility of money lost for payment of premiums for n times-years, viz. n-fold of $a'a\alpha\alpha'$, is absolutely smaller than the total utility of insurance money that might be received during that period, viz. $bb'\beta'\beta$, so long as law of diminishing marginal utilities applies, and this means that the policyholder has made rational use of money through non-life insurance by the amount of this difference between premiums and insurance money.

As to the total as well as marginal utility of premiums and insurance money non-life insurance is an effective and rational system for the policyholder. The sum total of utility of premiums expended at each time of payment is behind the total utility of insurance money occasionally paid. And because of the feeling of security the system is all the more rational.

3. Character and current state of non-life insurance

(1) Rivalry between non-life and life insurance

According as non-life and life insurance approach each other in functions, and insurance with elements common to both is devised, it is supposed that rivalry will become sharp with respect to management, in particular the aspect of sale. Especially as a situation of the life insurance side, being faced with follow-up of social security and industrial life insurance with a social-political nature, it becomes indispensable to develop new fields of business, new-sort or new-style policies. In addition, in view of the fact that mutual-aid systems of various sorts combine both non-life and life business, life insurance will become most willing in devising and promoting life insurance with a non-life insurance nature. Since primarily possibilities of new sorts are poor in life insurance advance into the non-life insurance field must become especially active.

Again in the field of non-life insurance rivalry with the social security system is conceivable, if to a lesser extent than in life. If non-life insurance advance into that of a life insurance nature, an aim will be effective utilization of sales organization and channels of the latter, and another will be fortification and expansion of funds to bring up financial power. In case a life insurance firm steps into non-life insurance business and a non-life insurance firm into life, the former will find its merit in possible increase of policy sorts while the latter in utilization of sales channels. It is to be noted that in the argument of diversification of life insurance business firstly non-life insurance was mentioned preceding other activities such as multiple financial service, housing and regional development, medical insurance and information service, as follows.

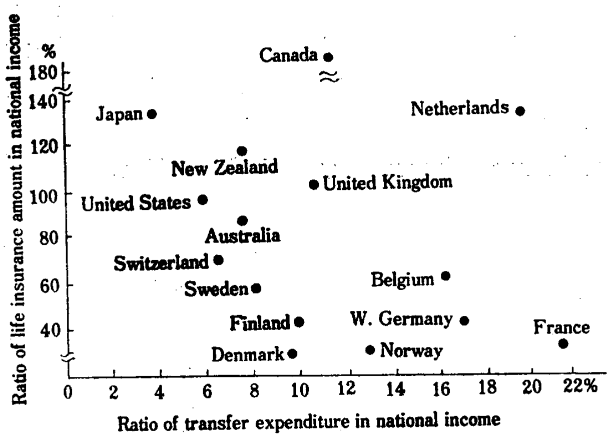
(1) Non-life insurance

"Although combined business of life and non-life insurance is at present legally prohibited, already in the field of personal accident insurance rivalry existence of the two is seen. Room of reexamination of this problem is left as an object of business expansion in view of the homogeneity as the same system of security of living. Its realization will facilitate presentation of a comprehensive system including personal and property insurance. Again from the viewpoint of utilization of sales channels and a response to market needs it makes a theme to be positively exploited." (Seimeihoken Kyōkai Gyōmu Vision Iinkai, *70-nendai no Seimeihoken Marketing*, 1971, p. 222.)

System factors	Social insurance	Non-life insurance
1. Risk	Social risks	Individual risks
2. Amount insured or benefits	Legal benefits (social, objective appreciation)	Benefits by contracts (individualistic, subjective decision)
3. Insured	Contributive community, Gemeinschaft, mainly labor-income class	Interest community, Gesellschaft, no limitation of insured
4. Premium	Equal receipt-outlay principle, average premium (taking account of income)	Equal receipt-outlay principle, equal value principle (technical equality), individual premiums (taking account of risk degrees)
5. Business form	Non-profit-making, compulsive, statecentered, monopolistic	Profit-making, arbitrary, private business, international

Source: H. Minamide, ***Songaihokenjigyō to Shakaihoshō,*** 1964, p. 16.

Choice between Public Social-Security and Private Insurance



The ratio of social security expenditures becomes higher as the position moves rightward. As is seen in Japan delay of social security is being covered by private insurance. Comparison as of 1970 when Japan's pre-capital income reached a level of $1583. Prepared by the UN, *Yearbook of National Accounts Statistics*, etc. Source: *White Paper on Japan's Economy*, 1972.

(2) Sale of non-life insurance and net premiums

As for the loading portion of premiums it is already a settled view among the academic and business circles that it decreases with increase of sales except extraordinary cases, say, the more the better. On the contrary as to the net premium it is pointed out that notwithstanding any sales increase it remains to be the same value—no phenomenon of decrease—since it is calculated on the actuary technique and probability. Yet is this true? This can be said identical with saying that, looking the net premium as raw materials in manufacturing, these are included in every product at a given value even in mass production whatsoever. However, mass in-stocking of materials for mass production will in the end result in decrease of such a value. Then it is needless to regard the net portion of premiums simply as fixed. It also varies according to conditions.

As the number of contracts or the volume of sale increases, calculation of probabilities on law of large numbers becomes more and more accurate. Since the term of contracts is long it is a requisite of insurance to hold risk rates a little higher taking account of variation in this calculation, yet if by dint of pile-up of contracts the actuary techniques works more rigidly and exactly it becomes possible to diminish this portion of allowance. Thus the net premium can be reduced by that much, and through this again the risk margin is contracted. Yet this contraction refers only to individual contracts. As the matter of insurance business it follows a trend of increase so long as mass sale continues.

Next decreasing appears in the portion of the reinsurance premium. Mass sale ultimately results in fortification of insurer's capacity to ensure, enlargement of fund volumes and strengthening of underwriting power. Accordingly reinsurance decreases its need, and larger self-consumption of risks by insurers themselves diminishes their demand for and expectation to reinsurance which means reliance on other insurers, wish for their cooperation, joint business and linkage. Thus the reinsurance premium can be reduced. This also may be said a decreasing trend of the net premium itself accompanying mass sale. In short not only the portion of loading but also that of the net premium can be moved. Insurance business should be carried on a large scale.

(3) Two major profit sources in non-life insurance business

The original and primary function of non-life insurance is attainment of economic security through coverage of losses. Profits obtainable from execution of this function may be said "operation" gains, while those from its subsidiary or secondary function—management of assets—be named "asset" gains. The latter have been gradually increasing and further increase in future is anticipated. Noteworthy phenomena are pointed out in the relation of volume between the two. To quote some remarks on this point:

(1) "If dividends to stockholders and business costs could be covered by asset gains, premium rates naturally would be lowered. Advance in this direction is the proper way of business of tomorrow, and this must be fully taken into consideration in setting up long-range plans." (J. Suzuki, Keiei Bunseki in The Tokio Marine & Fire Ins. Co. ed., ***Shin Songai Hoken Jitsumu Kōza***, vol. 2, ***Songai Hoken Keiei***, 1965, p. 112.)

(2) "Net profit-loss calculation of a non-life insurance company denotes sum the operation profit-loss balance and the asset receipt-outlay balance. Moves of operation and asset gains and losses for the past nine years are as shown in the table. From 1959 to 1962 operation losses have been covered

by asset gains to reckon net profits. In accompany with the increase of capital and internal reserve in the assets account are remarkably increasing. (S. Nagasaki, *Songai Hoken*, 1967, p. 81.)

Operation and Asset Gains-Losss
(in billions of yen)

	Operation gain-loss	Asset gain-loss	Net profit-loss
1954	2.0	2.2	4.2
1955	1.5	3.2	4.2
1956	—	5.4	5.4
1957	0.6	5.8	6.5
1958	0.5	7.0	7.5
1959	▲ 0.6	8.1	7.6
1960	▲ 3.5	11.4	7.9
1961	▲ 7.1	16.1	9.1
1962	▲ 3.1	13.4	10.3

(Mark ▲ shows losses.)

(3) "To observe the recent ten years investment gains are enough to cover operation losses and stockholders' dividends and to spare, contributing to the growth of surplus reserves." (M. Imada, Songai Hoken Jigyo no Rijun Sokuteihōhō, *Hokengaku Zasshi*, No. 438, Sept. 1967, 119.)

To summarize:

① The profit of non-life insurance business consists of operation gains and asset gains.

② In volume as well as importance asset gains are substituting for operation gains. This would advance further if non-life insurance were intensified its nature of long duration and saving.

③ To the profits of non-life insurance often request for a ceiling is made from the view point of public interests.

④ Issue of accident insurance may lead to profits but often results in losses.

⑤ In many cases profits come out not from all sorts of insurance but rather one or several sorts play a leading part.

(4) Character and prospect of non-life insurance business

Non-life insurance contains various contents as business, not to wait for diversification. If they are separately taken up this comes to business diversification. Although currently very favorable growth is continuing as economic security business, yet the character of non-life insurance must not be grasped in a simple line because primarily insurance is of high dimension and complex in the task, scheme and form.

① Non-life insurance is an industry of indemnity and for provision or fulfilment of economic security.

② Because international transactions and reinsurance are involved this industry has an aspect akin to foreign trade.

③ To take policies as merchandise, the industry is a branch of commodity trade, namely commerce in a wide sense.

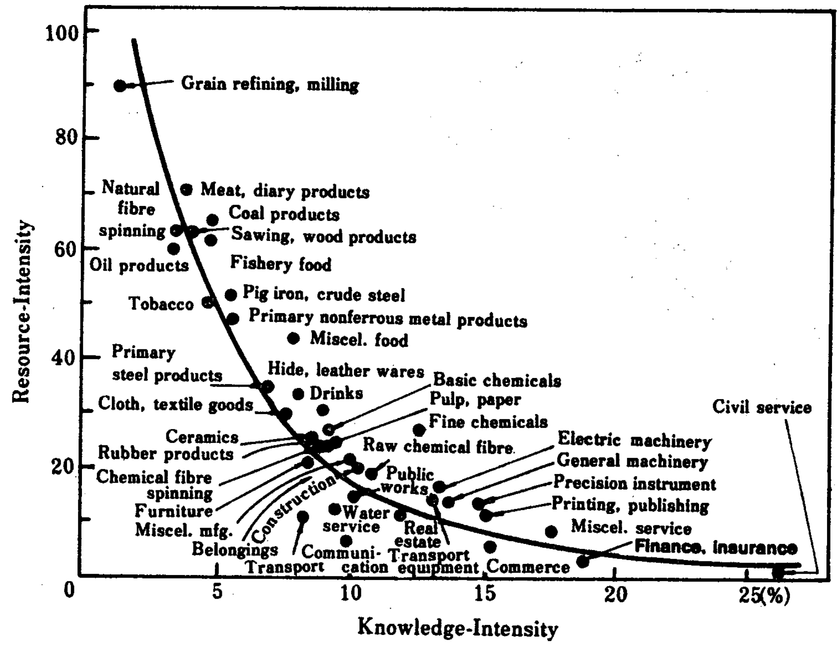
④ The business can be considered as a service industry devising, managing and carrying out non-life insurance in place of policyholders.

⑤ The business can be posited in the finance industry naturally in managing insurance funds.

⑥ In covering losses on goods and property by accidents, by obsolescence, or by depreciation due to natural consumption or use, the industry executes business like value control, and hence has an element of trust-managing business.

⑦ The business can be characterized as an information industry since it deals with insurance that utilize statistics and is constructed on many sorts of experience, supplies information while selling insurance, and more essentially is founded on collection of information in a large volume and from many quarters.

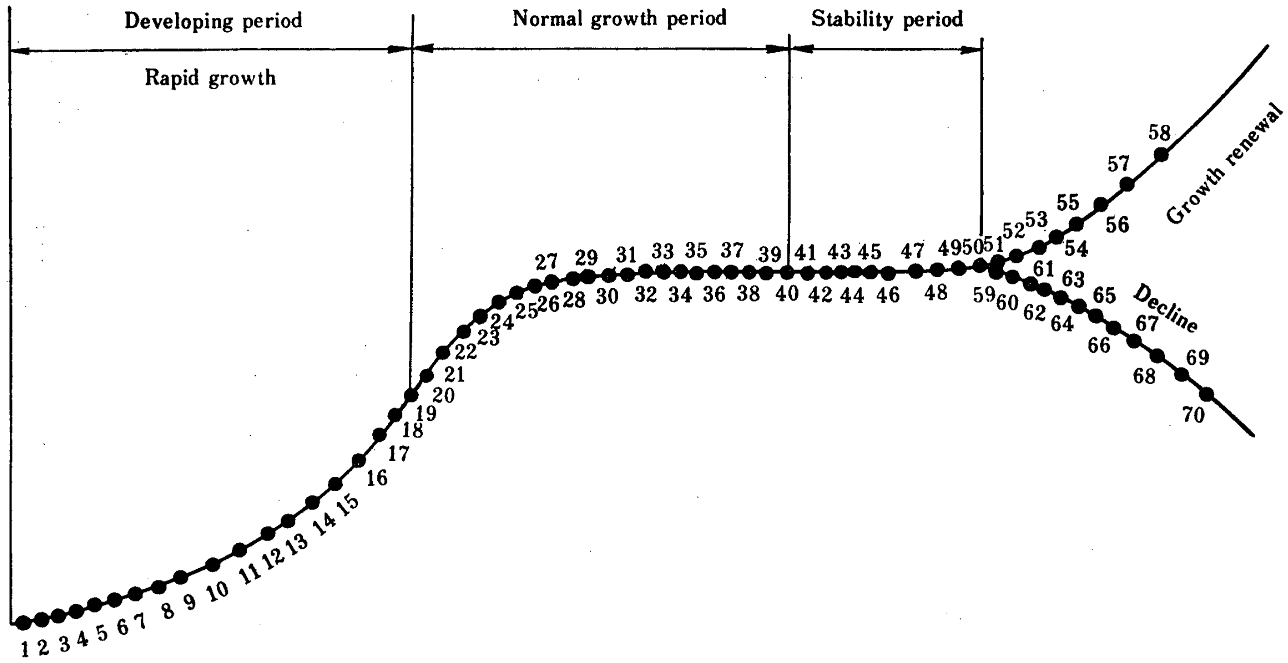
Relation between Knowledge-Intensity and Resource-Intensity



Source : K. Tanaka, *Nihon Retto Kaizoron*, 1972, p. 68

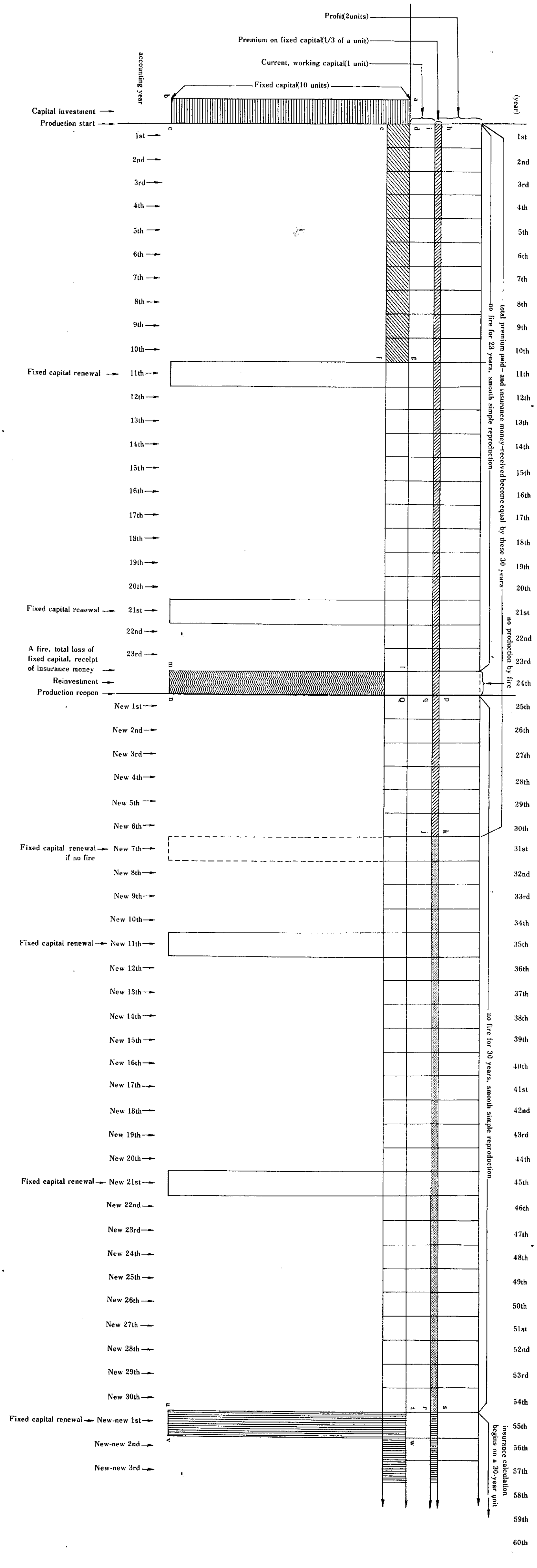
Doubtless insurance is a knowledge industry and this character will be intensified more and more in future. Knowledge is required not only of the actuary technique, laws, economy and marketing but also of various aspects of engineering, medical care and welfare. Its future rests on the way how it summarizes and utilizes high-level knowledge. Since in company with advance of liberalization and introduction of the law of competition competition is anticipated to become sharper and inevitable with other industries and foreign big

Babson Industrial Growth Curve
——study in growth and decline of industries——



Source: H. Tomura, *Kigyo Hatten no Riron*, 1965, p. 40.

1. ————
2. Solar energy
3. ————
4. ————
5. Super-sonic
6. Isotope
7. High energy fuel
8. Missile, space airplane
9. Electronic radiation body
10. Salt water conversion
11. Rare metals, earths
12. Automatic control
13. Synthetic fibre, plastics
14. Mental medicine
15. Electronic engineering
16. Aluminium alloys
17. Chemicals
18. Air conditioning
19. Office equipment
20. Gas turbin
21. Natural gas
22. Television
23. Electrical equipment
24. Home apparatus
25. Metal goods
26. Machinery
27. Construction
28. Electric household apparatus
29. Fertilizer
30. Steel
31. Pulp, paper
32. Automobile
33. Farm machinery
34. Oil
35. Pipe line
36. Airplane
37. Bank
38. Telephone
39. **Insurance**
40. Cosmetics
41. Retailing
42. Radio
43. Glass
44. Food
45. Special steel
46. Iron
47. Soft coal
48. Welding
49. Cotton
50. Movie
51. Printing, publishing
52. Agriculture, farm chemistry
53. Material hadling
54. Package, container
55. Automatic sale machine
56. Preservable food
57. Rubber products
58. Photograph
59. Rayon
60. Railway facilities
61. Wool
62. Soap
63. Lumber
64. Telegram
65. Railway
66. Hard coal
67. Hide, leather
68. Coal gas
69. Electric car
70. Ice making



Relation between Premiums and Insurance Money of Fire Insurance in a Firm

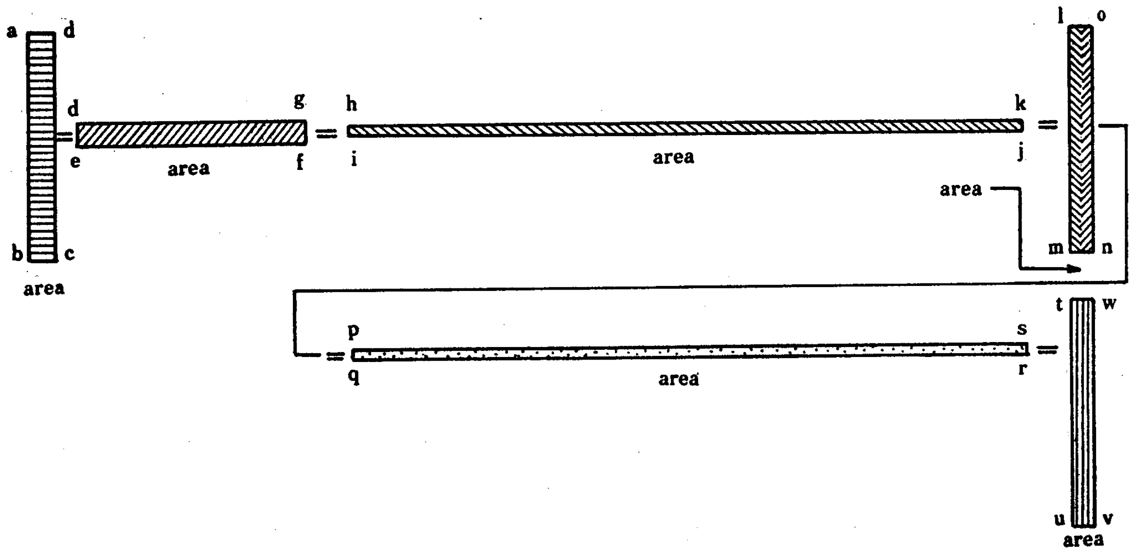
capital, concentration and accumulation of knowledge must be hastened. An age of competition in the aspects of intellectual power and service, in addition to capital and creditability, will come according as competition shifts from price to quality while the commodity is individualized and idea-rights on it are promoted.

The scheme and structure of insurance are that it has factors and effects to stabilize society in itself, while it can stabilize itself only when society is stabilized. It can be established where the frequency and sort of risks are settled. Non-life insurance, however, requires that subject-matter insured are always increasing and expanding to generate demand for insurance and that there is money surplus or reserves sufficient to embody such demand. And the more the goods-property are fluid and shifting, the more will insurance increase its necessity. Again appearance of new-sort risks affords a ground of development of non-life insurance. Thus stable growth is expectable only in normal-growth periods of economic society.

[Description of Table: Relation between Premiums and Insurance Money of Fire Insurance in a Firm]

1. Only fixed capital is considered, putting aside current or working capital.
2. The fire is assumed to have occurred on fixed apital alone, not affecting other capital; complete burn-down, hence total loss.
3. The value of fixed capital is 10 units; 10 years' depreciation; annual depreciation of unit; 1 unit is recovered through the price of commodities.
4. Current-working capital is 1 unit; 1 unit is invested and recovered each year.
5. Profit is gained in 2 units each year; hence its rate is 2/11.
6. $P=\frac{1}{n}Z, nP=Z$. n is 30, that is, one fire for 30 years; to express otherwise in every year a fire occurs on one of 30 contracts.
7. Premiums are paid from profits; the rate is 1/3 of a unity by calculation of probabilities.
8. Probability of fire is 1 during the 1st～30th year period; actually it occurred in the 24th year.
9. In the 24th year the fire, total loss of fixed capital and receipt of insurance money; reinvestment of the money in fixed capital; production is stopped for this year, reopening in the 25th year; here the past insurance calculation for 30 years comes to end.
10. New insurance calculation for 30 years, from the 25th to 54th; no fire this time, contrary to the fire in the 24th. There is a relation of mutual offsetting between early time and later time of fire occurrence; similarly between a 30-year period with many fires and that of no fire.
11. Insurance calculation is commenced for a 30-year period after the 55th.

12. By dividing the sum total of fixed-capital depreciation (1 unit), current-working capital (1 unit) and profits (2 units including premiums of 1/3 unit) by the total number of commodities produced in the year, the price of 1 commodity is obtained.
13. If payment of premiums is continued for 30 years and meanwhile once fixed capital is burnt down and a loss of 10 units is incurred, economic values of the two (premium and insurance money) become equal.
14. $abcd = defg = hijk = lmno = pqrs = tuvw$.
15. The principle of benefit-counterbenefit equality in insurance is taken to mean equality between the premium and economic security for each year, but it is also possible to understand as equality between n-times of the premium and economic value of insurance for the loss probably incurred once for n years.



Part II. Issues on the business aspect

1. Consumers of non-life insurance

The consumer of non-life insurance may mean one who has taken out it, the policyholder, the insured or the beneficiary of insurance money. To speak more generally he may be defined as one who has demand for economic utility of insurance. Here the demand is not confined to what is overt but includes what is latent but substantial, what has strong tendency to become overt, and what can be overt if the demand wishes. Thus the concept of demand concerns the pre-step of insurance taking, say pre-fact grasp, not the step of finishing insurance, say post-fact grasp. It is not a concept of the consumer at the time of receiving insurance money. Here no appreciable difference lies from understanding the consumer as one who has will to buy insurance or who has concern to insurance.

Non-life insurance consumers are naturally different from life insurance consumers. And I think consumerism on non-life insurance is a little heterogeneous to that on life insurance and less severe. Reflecting these conditions in the business idea or philosophy of non-life insurance profitability is strongly held while public interests are left a step behind. On the contrary in life insurance the latter is placed at the front or makes the whole scene, with the former being hidden in its shade in many instances. Direct consciousness on consumers as people may be stronger in life insurance as is supposed. In reverse in non-life insurance such consciousness is cultivated through the way of being or activities as business or firms. In life insurance business itself is grasped as a welfare activity, while non-life insurance considers itself as being in line with welfare because it holds connection with welfare activities of society, and makes contribution and cooperation to them.

Then where do lie the characteristics and problems of consumerism around non-life insurance? In life insurance consumerism concerns emotional aspects such as draw-back or fade-away of welfare by ullage of security; in non-life insurance technical aspects are apt to represent consumerism. In most contracts of non-life insurance male people take initiative or leadership and so an independent attitude is seen in taking out policies. Relations with local communities are considered, which are stressed in dealing with sales agents. In life insurance sale by fieldmen is the main course in which basically human connection, mental or emotional, provides the main line, an independent attitude in purchase is apt to fall away, room for work of reason is narrowed—all these make consumerism in later days stronger by that much.

Again the feature and structure of non-life insurance are more advantageous than those of life insurance in relation with consumerism. The following features of non-life insurance may be mentioned: the nature as saving is less essential;

the sphere of the duty of disclosure is narrower, only being more rigid in the duty of notice; the sector of corporation insurance is larger, where matters are dealt by intellectual and business-wise relations rather than by consumerism developed around various household insurance schemes; generally non-life insurance is a commodity of higher-class intelligence; and in non-life insurance doubtless there are numerous beneficiaries in a vulgar sense of having received insurance money, who act as the witness or spokesman of the utility of insurance. And an obvious advantage is that it is free from rival relations with the system of social security which abundantly stresses welfare. The fact that joint-stock company organization makes its main business form, in which presence of stockholders and deliberation and service to them are required, testifies its existence as a commercial enterprise, which allows this insurance to stay at indirect relations with various requests of consumers.

However, non-life insurance has consumer-irritative contents of its own. First abnormal risks are always accompanying, which in case of actual exposure inevitably cause head-on collisions with consumerism. And as regards exposure to general risks there may be a possibility of troubles about adjustment, contrary to life insurance. Moral hazard can intervene more frequently than with life insurance. All these raise problems at payment of insurance money. It may be said a system or commodity with a too strong legal odor. And non-life insurance is inferior to life in the effectiveness of law of large numbers and the exactitude of calculation of probabilities, and hence managerial calculation or business performances are greatly affected by social situations and changes.

Non-life vs. Life insurance on consumerism

Non-life ins.; sense of a system concerning "goods and money."
Life ins.; sense of a system concerning "life and money."

Non-life ins.; antipathy referring to and criticizing favorable and easy business.
Life ins.; antipathy from failure to relieve actual destruction of living or from burdens of paying for a long term.

Non-life ins.; antipathy from imperfect grasp and understanding of the contents of the commodity.
Life ins.; antipathy from difficulty of just and compact understanding of the system structure.

Non-life ins.; grasp as a commodity-selling industry → criticisms merely at each occasion of dealing.
Life ins.; grasp from a standpoint of system formation such as attainment and promotion of welfare → criticisms extending to the substance of system and developing throughout the long-term relation with system.

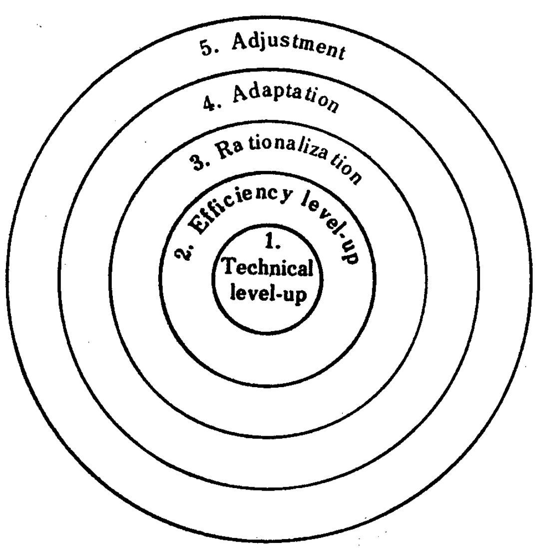
Non-life ins.; premium calculation on the assessment method → short term → merchandise → weak consumer pressure.
Life ins.; premium calculation on the accumulation method → long term → institution → strong consumer pressure.

Non-life ins.; premiums are treated as necessary expenses → meagre feeling of resistance against expenditure.
Life ins.; premiums are treated as saving in household economy → strong resistance against expenditure.

Non-life ins.; worry is with appearance of new-sort policies one after another and the no-loss no-profit principle thereof.
Life ins.; worry is with existence of and comparison with social security and its new improvement plans ignoring financial consideration.

In the management of non-life insurance, according as technical level-up, efficiency level-up, rationalization, adaptation and adjustment are required as shown in Figure 1, internally individual or partial thinkings are expanded to

Figure 1

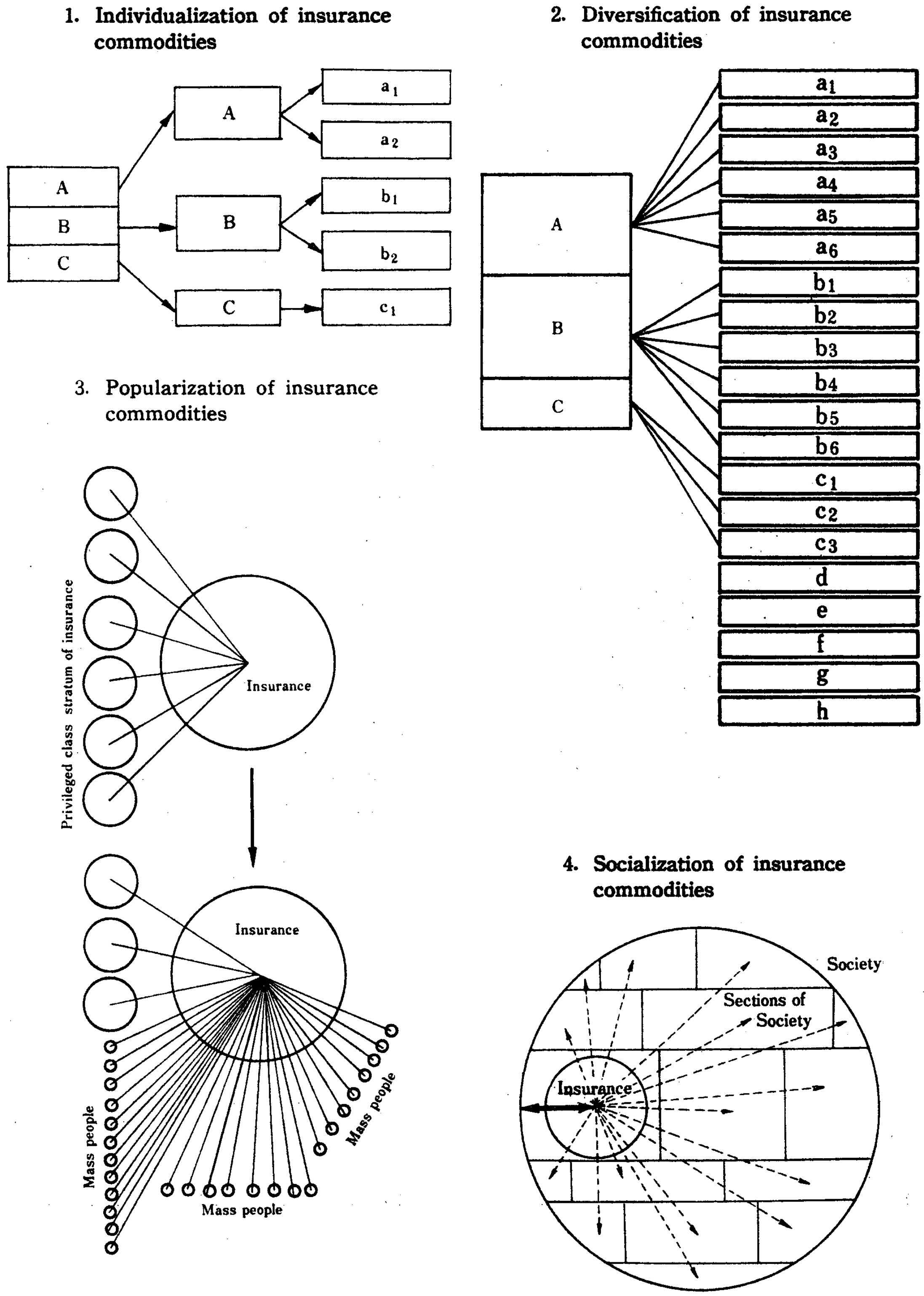


1. Technical level-up=technique division =actuary=legal relations.
2. Efficiency level-up=operation activities =judgement by operation groups, by responsible sections.
3. Rationalization=middle management= judgement by operation control division.
4. Adaptation=top management=judgement on business system, on business-related social affairs, on business environments.
5. Adjustment=historical and future-looking philosophy, =superstratum decisionmaking organ=social, national, further international judgement.

synthetic and overall ones. At the same time the dimensions of judgement based on such thinkings are sought at higher and higher levels. And through this process relations or connections with outside are extended until sometimes matters are discussed from a wide viewpoint by a supreme or super-stratum organ (often suitable men from outside organs are dispatched and participate in decision-making). Therein it is intended not only to make management adapted to the moves of society, but also on future-looking thinkings to judge how it should behave toward society on the ground of philosophy built up through a long time, and on such lines to improve business. At the stages of adaptation and adjustment in the Figure consumers and their representatives come to participate in management and affect decision-making.

In the non-life insurance management another line or tendency may be observed, that is, a series of moves in insurance commodities including individualization, diversification, popularization and socialization. This may be said historical inevitability, and can be understood in the end as activities based on

Figure 2


1. Individualization of insurance commodities
A
B
C
A
B
C
a_1
a_2
b_1
b_2
c_1
2. Diversification of insurance commodities
A
B
C
a1
a2
a3
a4
a5
a6
b1
b2
b3
b4
b5
b6
c1
c2
c3
d
e
f
g
h
3. Popularization of insurance commodities
Privileged class stratum of insurance
Insurance
Insurance
Mass people
Mass people
Mass people
4. Socialization of insurance commodities
Society
Sections of Society
Insurance

consciousness about consumers and sales promotion.

Please see Figure 2-(1~4). First, *individualization.* Within individual firms as well as the whole circle the customary way of business has been to provide the same (or very kindred) commodities (if with some difference of names) at the same periods (often at sale boom times). On the contrary by individualization commodities and firms are separated, giving particularities to each and implying a stimulus to competition, and are provided to society in parallel. In individualization particularities of commodities are kept, evading and prohibiting imitation and following. Through this move firms strive for specialization of commodities while consumers can exert rights of selection from among various ones.

Diversification of commodities may be attained by the said individualization plus development of new-sort or new-type policies. Thereby the sorts are increased and the contents are differentiated. Both are to be promoted. Particularities are given to commodities in order to match the diversity of consumers' taste, and if this is not sufficient additionally new sorts are provided. Under individualization as well as diversification there is flowing differentiation of consumers' values and demand within them. To explain by Figure insurance A-B-C, which have few differences and have been grasped as one body, are divided into commodities A, B and C, and further subdivided into commodities a_1, a_2, b_1, b_2 and c_1, each forming an independent commodity. This is individualization.

By diversification, in addition to these commodities $a_1, a_2 \ldots a_6$, $b_1, b_2 \ldots b_6$, c_1, c_2 and c_3 subdivided by individualization new-sorts or types such as *d*, *e*, *f*, *g* and *h* are born. Thus twenty commodities are formed, provided and put on sale. With more or less different contents and features, they are selected and purchased by consumers. This is the phenomenon of diversification.

Popularization, or mass-people orientation, implies a change in the way of being of insurance—which generally has been formed for and oriented to the high or privileged classes—so that all people, including these classes and the masses, can utilize it. Such a policy aiming specifically at big-value contracts is amended, and in place of it sale in a large volume, even if of small-value policies, is intended toward all corners of society. And through this process weight is shifted from the sector of lines of business to that of personal lines. Popularization at present implies also such shift of weight. By the cultivation and diffusion personal lines, the ground for a further jump of insurance is strengthened, and on another hand actually a countermeasure to business cycles and or recessions is provided.

In a welfare-esteeming age such as today completion of environments for people's welfare and better living is a task unescapable to some extent in any recession times. So long as this is true a portion of income to be reserved for premiums must always be secured. Hence non-life insurance business is tough against recessions, endurable through business cycles. Also in this sense popularization must be achieved. It is a proper line of tomorrow to transform insurance for the privileged classes of a small number and range to that taking the masses for the object.

Socialization of insurance commodities sits on the extension of popularization. It means to spread insurance into every corner of society, to relate it with all parts of society structure as wide as possible, grasp insurance with high level-dimension consciousness about society, and to promote it on a justifiable course. Equality in utilization of insurance may also come under this. An effort of approach to a system that provides necessary insurance of necessary amounts to necessary people, or an effort for adequacy and squareness of utilization may also be included. Here, however, an inclination will be seen that the problem of quantity goes ahead and that of quality behind. Anyhow, for socialization it may be necessary to consider insurance as a social being and to treat it with a social way of thinking. The appearance of red-ink accident insurance, no-loss no-profit insurance and public insurance may be regarded as a phenomenon that social requests and intentions have overcome those of insurance firms. Different from simple development or popularization, there is involved an idea that efforts of improving society by insurance result in the benefit of insurance.

Now, amid such tendencies around insurance business and commodities, philosophy of management of insurance firms have come to pose a problem. These tendencies are being fostered ultimately on the ground of philosophy of management. At present we can find some inclinations about philosophy of management.

(1) Philosophy of management is born from long history of each firm, and hence it should not be such one that some people arbitrarily and dogmatically sets up.

(2) However, when once it has become apparent that, since progresses and changes of society are quick, customary business attitudes, practices and habits do not allow smooth disposition of matters, in other words deviation or separation has emerged between business and society, philosophy must be positively established and exhibited.

(3) When the way of being of insurance firms show separation from, disharmony with or isolation from people's requests, reexamination of philsophy comes to be required. On the other hand, on the side of firms that have begun to feel social responsibility because of big scales, or that are on a process of rapid growth, reconfirmation of philosophy is required involving a meaning of reexamination of themselves.

(4) On the process of popularization and socialization people increase knowledge of insurance and begin to cast criticisms on it. In face of this, firms grope measures and attitudes to cope by way of amendment or new preparation of philosophy. People are not deceived simply by, for example, profit-reducing or welfare-aiming management of funds, development of welfare-cooperation of commodities, etc. Thus development of new philosophy and square attitudes based on them become indispensable. Social adaptation of insurance → its high-pace

development → expanded scales of firms → dogmatic and desposic attitudes → isolation from people → break-out and concentration of people's criticisms → attack of consumerism → amendment of attitudes by reconfirmation of philosophy → restoration of the character as insurance for people → further development.

2. *Countermeasures to business risks in non-life insurance*

It is not without reason that today insurance business, especially non-life insurance, is being exposed to a criticism of "overmuch profits." In fact in the high-rate growth period up to recent years almost all industries and their firms have been profiting (too much). This is not for insurance business alone, yet only the case of insurance is severly attacked, which men of insurance may say unjustifiable. Nevertheless people have something to say from their standpoint. It is not useless to inquire into reasons for this.

Insurance may be said a system of countermeasures against risks—fulfilment of economic security against existence of risks. Now on such risks insurance, from its composition and structure, takes a way of grasp exclusively aiming at safety—higher estimation of risks for fully safe rates—and on this base calculates and collects premiums. Only thus insurance is safe and "attainment of economic security of policyholders" is secured. And it is said that from this source there born what are called risk profit (mortality profit in life insurance). Interest surplus and loading surplus are explained on similar logic. This is convincible and let's call it "overcoming of insurance-immanent risks." The system of reinsurance may be for the safe aim speaking broadly.

A question lies concerning treatment of insurance-operation risks. Such risks must not be charged on policyholders or insureds. All should be undertaken by entrepreneurs, managers, and investors-stockholders. In exchange for this act of bearing of risks profits of a large (often huge) amount or bonuses are dedicated to them at times of favorable and successful operation. Now the question is whether or not evasion of operating risks goes too far. And if evasion is taken into account there should not be profits (over the average rate) given to bearing of risks, because are born keeping balance with possibilities of emergence of operating loss. True there may be a fact that even such operating risks are charged on consumers in addition to insurance-immanent risks. Safety loading against insurance-immanent risks is permissible, yet unallowable is that of safety against operating risks which is attendant to every business. Dissatisfaction of people is reasonable if pursuit of safety in business is attained by consumers' burdens while large gains or profits, when acquired, are distributed within the management circle. Such a policy has been possible for a long time and to a large extent because of the completion of oligopolistic and further monopolistic insurance markets in Japan. Insurance business, while being safe in executing its function of providing economic security, is too safe also in carrying business. On this ground profits and gains are sufficiently obtained, so people are thinking.

In the end various risks attendant to device of insurance compose the cost of insurance and are added to premiums as expenses. In addition to this insurance cost, since insurance firms are enterprise bodies, naturally there exist many dangers and risks around management. Primarily such costs-expenses to provide for such risks are to be financed by transfer or reduction of profits. Insurance firms, entrepreneurs and managers must always keep a portion of profits as expenses to deal with such risks, and that a substantial portion to provide for concrete emergence-exposure of operating risks in case of large profits. However, to the eyes of the public, people or consumers it appears that even such operating risks are mixed with insurance risks, woven into premiums, treated as a composite element and finally charged on them. They think profits are put as profits in the pocket of managing stockholders or employees. Herein lies a factor inviting criticisms. Whether this is merely a misconception, whether this stems from pathetic repulsion against favorable business of insurance, or whether it is a truth: the insurer circle is liable for plain and correct explanation.

Figure 3

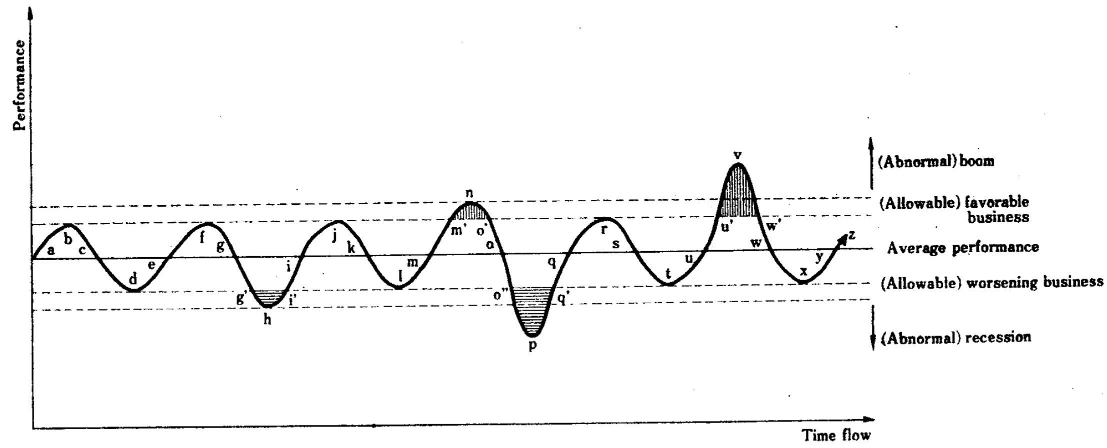
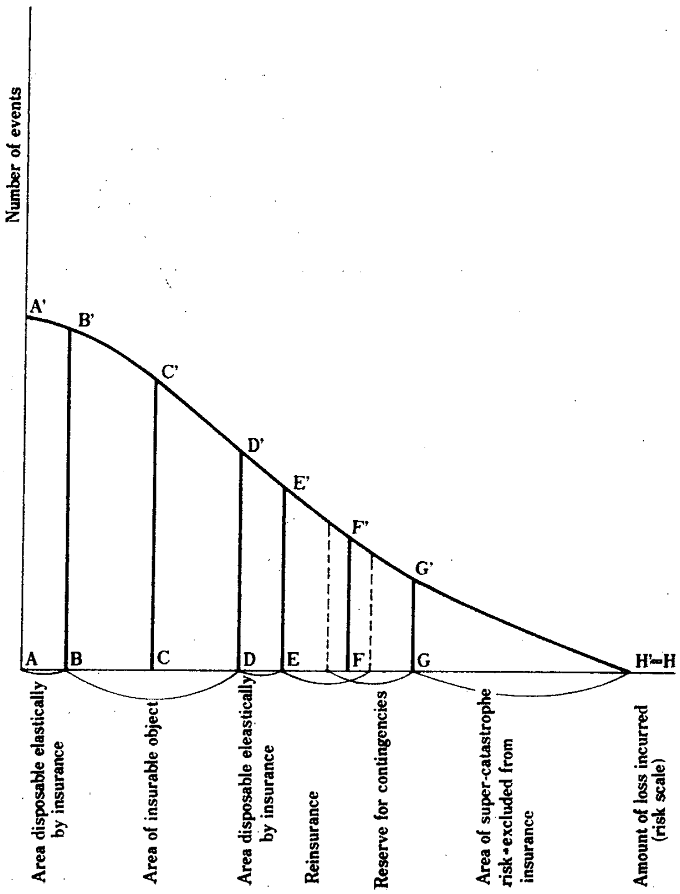


Figure 3 shows the relation of business operation with emergence of profits and losses. The area *g′ h i′* represents a loss usually attendant to operation, apt to emerge generally, and hence easily endurable and allowable. On the same idea the area *m′ n o′* is a profit in a usual sense. These loss and profit are both occasional and unordinary cases—not normal ones—yet not extraordinary. They are offset among themselves through continuance of business and passage of time. On the contrary the areas *o″ p q* and *u′ v w′* mean respectively appearance of a loss and a profit of an extraordinary extent. These do not so frequently arise. Such emergence is regarded as a very rare phenomenon as to time (at long intervals) and volume (a large volume normally unthinkable). To look as a long run these loss and profit also can be mutually offset, yet generally the loss *o″ p q′* is covered by allocating a portion of normal-current profits or by charging on buyers or consumers by dividing minutely and mixing in prices as a cost by the play of market control power. In this case the large extraordinary profit $u' v w'$ is vested all in the firm or concerned persons. To make this possible firms must be big or super-big scales or the circle must be of monopolistic or oligopolistic structure. This is just what the non-life insurance industry is.

Some portion of abnormal risks covered will be placed on reinsurance or be coped with by a system of reserve for contingencies. As seen in Figure 4 the "risk-loss" which insurance can take as its object is the area AA′E′E. Such a small risk-loss as lies in the lefthand side to the line AA′ does not pose the object and people will not use insurance to meet it. Contrastively the area GG′H (=H′) means super-abnormal risks-losses to which insurance is unavailable as a counter-measure. This is called the limit of insurance. By the by there is an opinion that two systems are duplicated for the same aim—internal reserve for contingencies and reinsurance; either one is unnecessary. However, since some portion of risks cannot be undertaken by the reinsurer, not all risks are put on reinsurance, and furthermore failure of reinsurance companies is well conceivable,

Figure 4



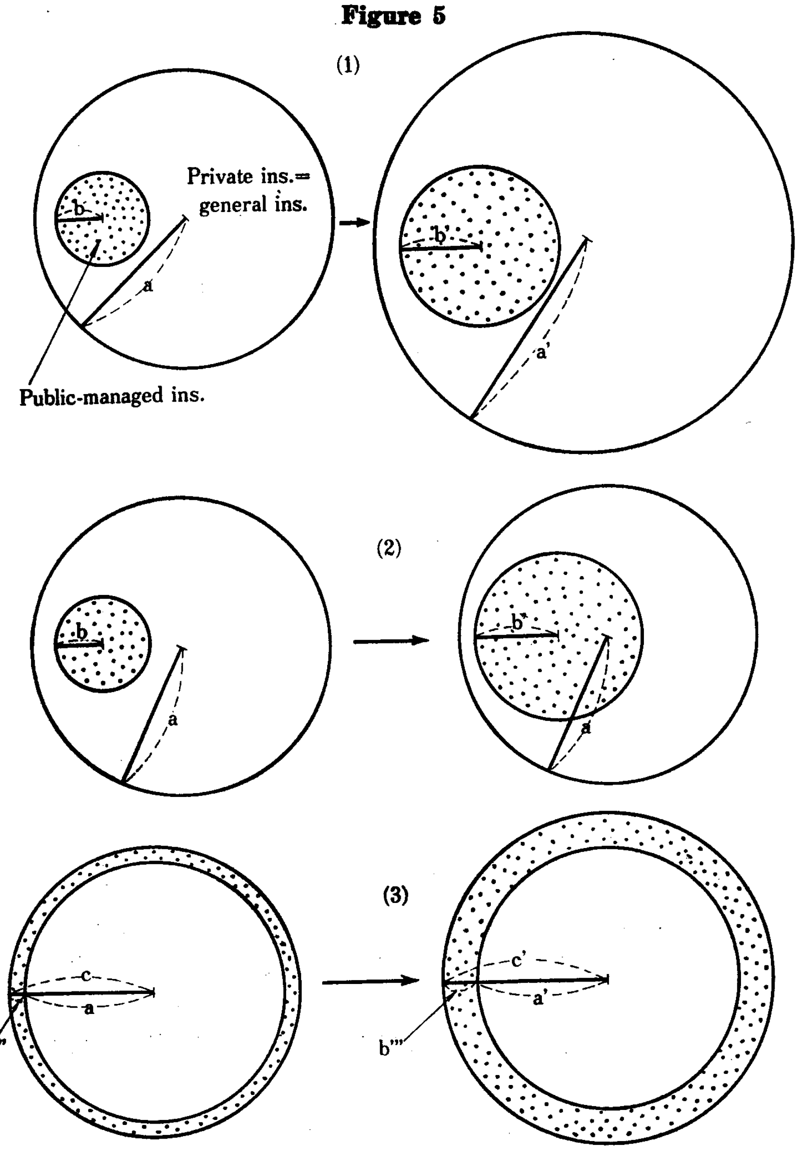
coexistence of the two systems and side-by-side utilization of them can be approved so long as not excessive. The area DD′E′E shows the portion of risks → losses which can be elastically disposed by insurance, whose width will depend on the current state of business and the magnitude of accumulated funds. And as for the area AA′B′B, that is, risks → losses too small to make the object of normal, regular insurance, generally it depends on the power relation between the supplier and demander whether it is taken into the object. In a policy containing a automatic reinstatement clause, the magnitude of nature of AA′B′B may possible cause a situation to threaten the soundness of business. This is because in case of mushroom emergence of small risks → losses the total may reach a huge amount.

3. On the growth of non-life insurance firms

Growth of business in non-life insurance firms involves various factors which may be divided into two. One is growth by the effort of rationalization and successful improvement of efficiency by the firm itself. Another is attainment of growth by dint of social economy or circumstances, improved and wealthier positions of household economy, and the resultant increase in demand and sales. To speak broadly more cases of growth have been supported by better turn of circumstances than by accumulation of efforts. In other words customary policies are sold in a larger volume and new-sort policies are buoyantly demanded resulting in firm growth. According as the social economy becomes more active, economic goods flow buoyantly and assets-goods become affluent, both customary and new policies are demanded in larger volumes and new ones appear. Firms should correctly take hold of this trend, skillfully increase sales, and consider adequate merchandising.

True the sort of insurance commodities may become more plentiful and various new sorts may appear, yet here arises a problem of private vs. public insurance. There may be three patterns of relation between the two fields. Figure 5 describes this. In its (1) there is seen growth in both private and public insurance. Here whatever the growth of public may be, it will not threaten the business and existence of private. In (2), however, while the whole insurance sector in the social economic realm hardly expands and the insurance market remains as it has been, only the realm of public insurance has been extended. As the result private insurance is contracted contrarily to public, thereby its business has diminished and difficulty increases. Actually this case is seldom seen but when, for example, a country's economy is proceeding toward socialization or tighter state control nationalization or government management of insurance may be advanced leading to the case (2). In developing countries examples are seen that almost all of private insurance and new fields appearing one after another are nationalized or shifted to government management. In socialist countries all is public insurance.

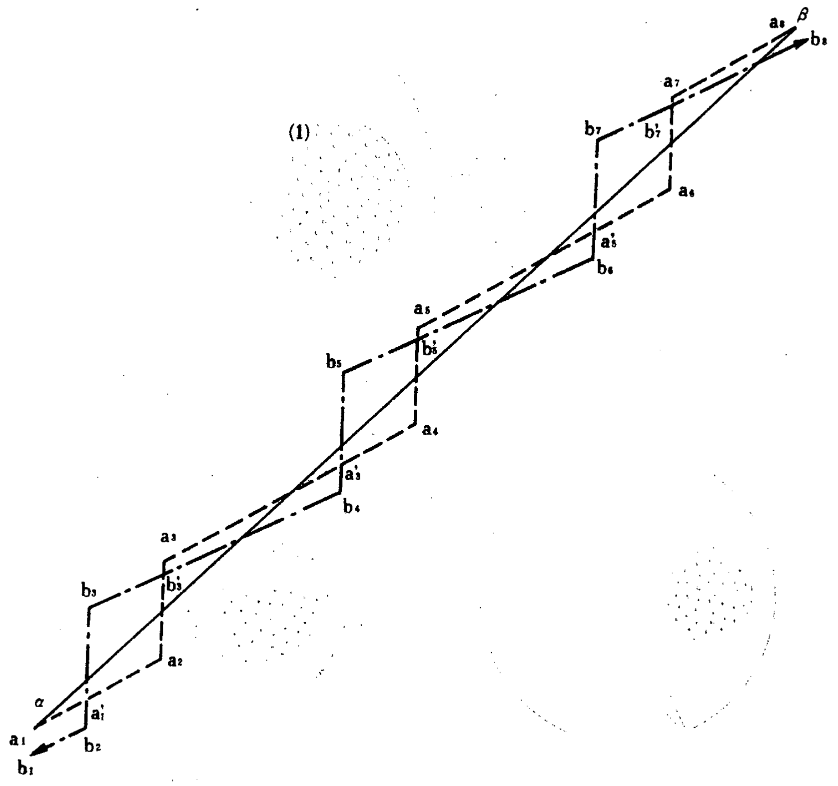
Figure 5



In the pattern (3) private insurance makes the core and, as if surrounding it, there is public insurance. And this public insurance is to expand its realm, yet this does not mean invasion into the realm of private insurance. Only relatively the realm of the latter is narrowed. In future phenomena akin to this case (3) are expected to arise in many countries. This may be said a tendency deriving from the public-interest nature of insurance. Now apart from these three patterns there will be an inclination that private insurance itself intensifies the public-interest or welfare nature, if slowly. Public insurance is different from public-managed insurance. Yet the more the public-interest nature increases, the more will profiting become difficult. The position will at worst remain at "no-loss no-profit." With insurance of such a position increasing, the profit rate of firms inevitably declines, as if dilution by water.

Let's exhibit the growth of non-life insurance in relation with that of economy of the time as in Figure 6-(1) and (2). First the line $\alpha\beta$ grasps economic

Figure 6 (1)



growth as a very normal and flat level. Yet the actual picture of growth is considered to be combination of two trends, that is, slow upward moves and jumpy ones at some stages. This is shown as the line $a_1, a_2, \ldots a_8$. The growth of non-life insurance meanwhile can be described by two refracting lines. The one is the line $b_1, b_2, \ldots b_8$ in Figure 6-(1). On the stage b_1 b_2 it grows at a rate below economy. At the point b_2 it shows a big jump, surpasses economic growth and precedes it. But after the moment when economy has made a great development insurance becomes inferior to economy, showing lag of progress.

① $b_1 b_2$ ($b_1 \sim b_8$ represents growth-advance line of non-life insurance) is beneath $a_1 a_1'$ ($a_1 \sim a_8$ represents growth-advance line of economy), lag of advance;

② $b_3 b_3'$ is above $a_1' a_2$, preceding in advance;

③ $b_3' b_4$ is beneath $a_3 a_3'$, lag of advance;

④ $b_5 b_5'$ is above $a_3' a_4$, preceding in advance;

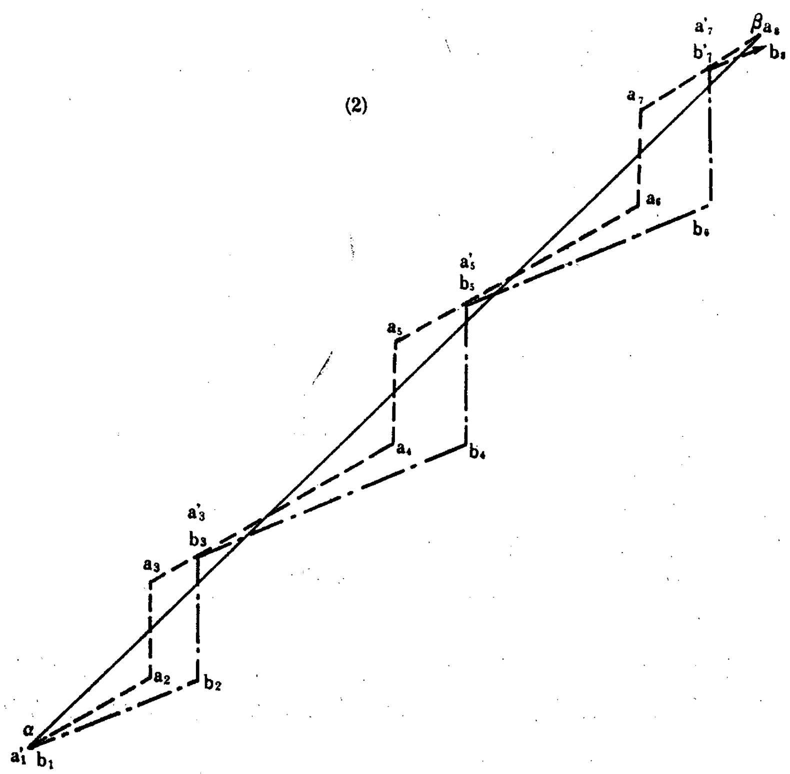
⑤ $b_5' b_6$ is beneath $a_5 a_5'$, lag of advance;

⑥ $b_7 b_7'$ is above $a_5' a_6$, preceding in advance;

⑦ $b_7' b_8$ is beneath $a_7 a_8$, lag of advance.

Actually it is regarded to be a rare and special phenomenon that non-life insurance surpasses or precedes the age and economic growth. In this sense where economy and insurance have developed to a certain level the growth or evolution of non-life insurance presupposes that of economy. It may be said

Figure 6 (2)



that in postwar Japan such a stage is not yet reached. If and when non-life insurance has attained a round and become saturated, and especially if in a low growth period, it will become to go behind the steps of the age and economy. This situation is shown as Figure 6-(2). Here again the age, economy as well as non-life insurance continue slow upward advance the normal progress line $\alpha\beta$, on the combination of two trends—normal slow rises and occasional jumps.

① $b_1\, b_2$ is beneath $a_1\, a_2$ and $a_3\, a_3'$, lag of advance;

② $b_3\, b_4$ is beneath $a_3'\, a_4$ and $a_5\, a_5'$ lag of advance;

③ $b_5\, b_6$ is beneath $a_5'\, a_6$ and $a_7\, a_7'$, lag of advance.

This is the phenomenon called the conservatism or rear-going nature of non-life insurance. What can break the fixedness of this phenomenon is only arrival of the welfare age and general respect on non-life insurance there.

When new insurance, namely new-sort policies or commodities, are put on sale at first there will be big sales contributing to business results. As time passes on, however, sales gradually decline and the result drops. In other words there is fall of growth. However, if after some interval next new insurance or commodities are devised and supplied, their sales are added to those of foregoing ones (though declining) which represents the total sales at this time point. And this means the level of growth and development there. Again this second-new insurance shows favorable sales at first alike with the first one, and then its sales fall. Then the third-new insurance appears. Repetition of this phenomenon continues up to a certain stage maintaining the growth of insurance.

Let's begin with Figure 7-(1). At the timepoint Ⓐ a new-sort policy or commodity A is put on sale and its first sales amount is assumed to be *a* or 5 units. This A disappears at the timepoint Ⓖ, after passing 30 units of time, because sale stops completely.

Now at the timepoint Ⓑ another new insurance B is put on sale, with the first sales being 5 units. This also disappears at Ⓗ after 30 units of time. At Ⓑ the sum of sales of A and B is ⓑ, namely 9.15 units. At Ⓒ again a new insurance appears, with the first sales being 5 units. The volume of sales of A, B and C at Ⓒ amounts to ⓒ, 12.45 units. This process is repeated, in which each insurance gradually decreases its sales and disappears respectively within 30 units of time flow. After the timepoint Ⓕ, that is, after sales of 17.45 units, this figure is sustained.

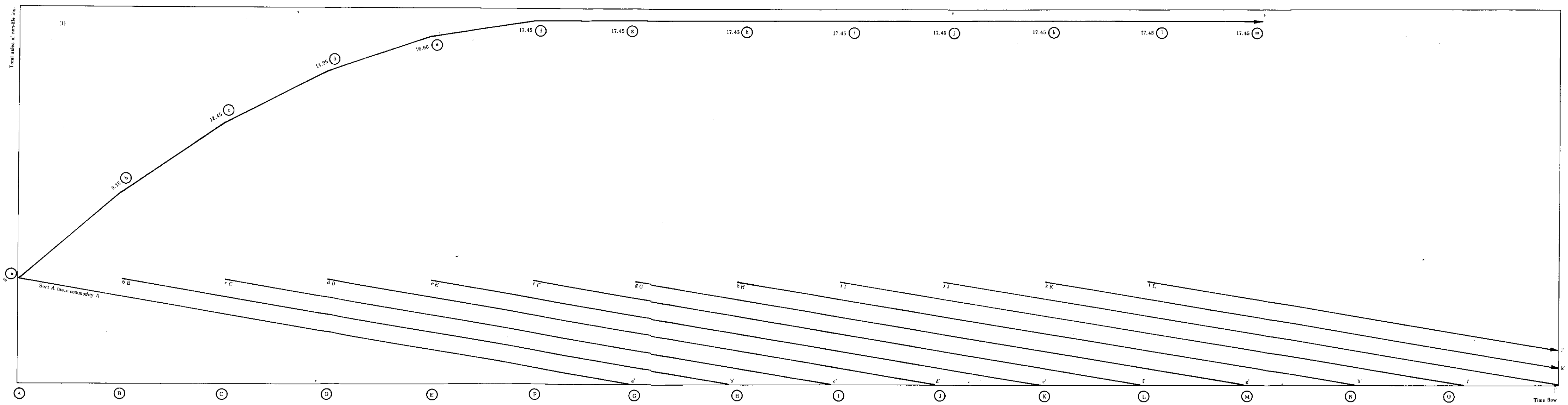
The situation is somewhat different in Figure 7-(2). There it is assumed that, while the commodity A keeps 30 time units from appearance to disappearance, this duration decreases by 1 unit for later commodities, that is, 29 units for B, 28 units for C, 27 units for D and so on. This tells that life cycles of commodities become shorter in company with speed-up in society and economy through the time flow. By this expression the largest amount is 17.0 units at the timepoint Ⓕ. Thereafter sales decline—16.5 units at Ⓖ, 15.9 at Ⓗ, 15.4 at Ⓘ and so forth.

Thus in Figure 7-(1) the total sales on the refraction line move as ⓐ 5, ⓑ 9.15, ... ⓕ 17.45, ... ⓖ 17.45, ... ⓜ 17.45, ..., while in Figure 7-(2) as ⓐ 5, ⓑ 9.2, ... ⓕ 17.0 (increase hereto), ⓖ 16.5, ... ⓛ 13.6, ⓜ 13.1 (gradual decrease).

To consider for a very long time every insurance commodity or sort will ultimately decline, diminish and disappear. Figure 7-(1) and (2) have shown growth in the whole non-life insurance under this condition. To observe a short or medium time, however, the situation is different. There lies a condition under which various sorts or commodities are put on sale and their sales increase with the time flow. It is never such length of time as saturation is arrived, a round is finished or a retreat appears. Figure 8 presents the growth of sales on such a condition.

In the Figure insurance A is put on sale and its sale follows an (increasing) trend of AA′. Similarly the lines BB′,...KK′ appear. If the sales of AA′ are added to BB′ the volume becomes the line *b b*′. Similarly the lines *c c*′, *d d*′,... *k k*′ are drawn. At the timepoint Ⓐ the total sales volume is *a* : *b* at Ⓑ, *c* at Ⓒ, ... *k* at Ⓚ. Now the line XY, connecting *a*, *b*, *c*, *d*, ... *k*, shows the trend of total sales in the flow of time. Here, however, it is assumed that every commodity continues to increase sales.

As a matter of fact gradual increase of sales will not continue endlessly for all commodities. Let's suppose that commodity A, for example, continues gradu-


Total sales of non-life ins.
(1)
9.15
12.45
14.85
16.60
17.45
17.45
17.45
17.45
17.45
17.45
17.45
17.45
Sort A ins.=commodity A
Time flow

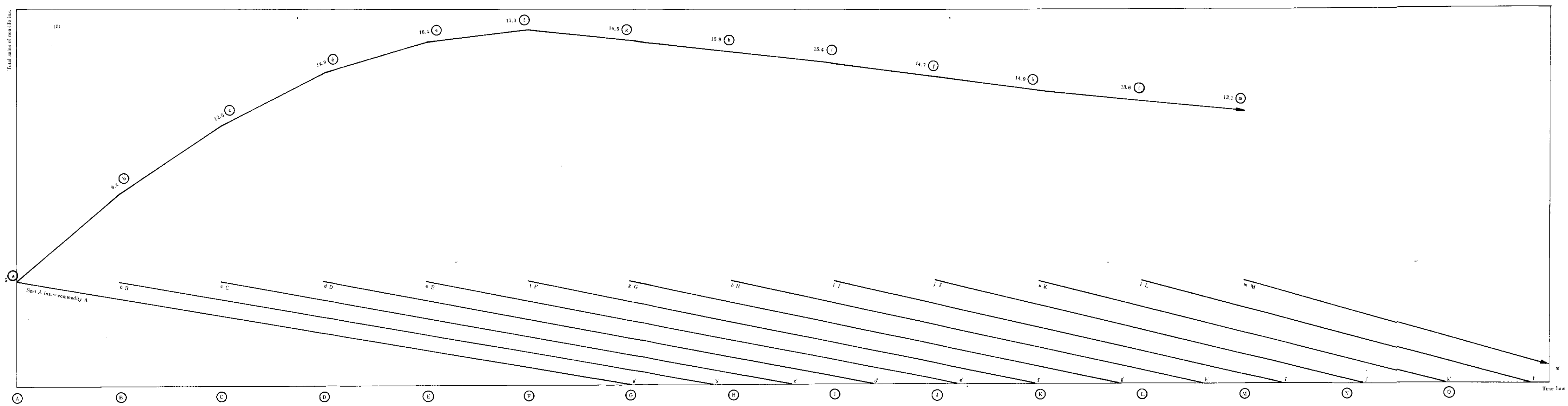
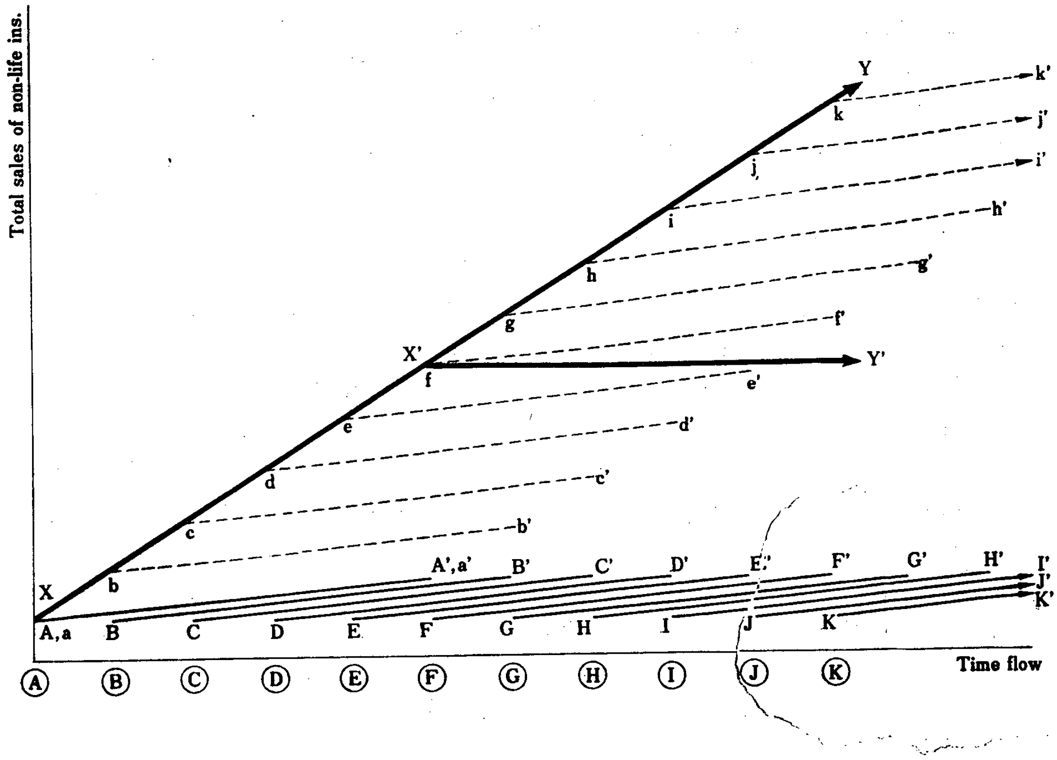

Total sales of non-life ins.
(2)
5
8.3
12.5
14.9
16.4
17.0
16.5
15.9
15.4
14.7
14.0
13.6
13.1
Sort A ins.=commodity A
Time flow

Figure 8



ally-increasing sales for 10 units of time range and then disappears. This is shown by AA′; similarly the lines BB′, CC′, ... KK′. Under this assumption the sales volume at Ⓕ becomes the largest volume of total sales and thereafter the line becomes crablike. Thus the line X′Y′ emerges. The line XX′Y shows the total sales here; the line XY those under the condition of increasing sales.

4. *Profits of non-life insurance firms*

The amount of profits a non-life insurance firm raises through its activities not only gathers concern in the simple sense of "How much" but also presents an important object of analysis to appreciate its business contents. Theoretically a profitless firm may be said on a favorable course in the sense of sound contents of management. Yet such is an unpractical idea, especially under the joint-stock company system. If such a firm existed, it would be a public-owned or public-managed corporation. The magnitude of profits should be said what reflects firm's real state of business. And as regards non-life insurance business it is proper to pursue the problem from two aspects of operating (or underwriting) profit-loss and assets profit-loss and then consider net profit—its presence, change and magnitude.

Analytical angles of non-life insurance business

1. In a high-rate growth period expansion of the growth rate or relevantly the market share should be kept in consciousness, and in low-rate growth increase in the profit rate or relevantly the volume of profit should be

contemplated.

2. For this sake it makes an adequate policy to make efforts of selling main commodities in a larger volume and more concentrically.
3. It is said a policy matched with a low growth period to sell main profitable commodities concentrically within a certain short period rather than to continue for long to sell commodities of small or only adequate profits.
4. Since in a low growth period it may be difficult to change market shares actually, the strategy should be to raise the largest profits possible within the bound of the present share.
5. When inflation is advancing it is difficult for firms with small market shares and high costs raise prices. Contrastively firms with a market-leading position and low costs can win in competition merely by keeping current prices because this in itself means price-down.
6. Gains being born from commodities reaching a maturity period should be mostly used for preparation to develop new-sort or new-type policy and its offer on the market.
7. Under such a situation as business is recovering, the market is buoyant and high-rate growth is expectable, also non-life insurance firms must make beforehand completion of organization, reexamine sales promotion of main commodities, and prepare for development and big-scale sale of new commodities.
8. For the management of non-life insurance the volume of collected information and accumulated experience has great significance.
9. When cost-down of commodities has become possible due to a decline of risk rates or other conditions, consequently lowering of prices = rate of premiums may be possible. The longer the interval between these two affairs, the larger the profits may be. Yet delay of lowering premiums may derive counter-attacks of consumerism, and so profiting should depend on the effort of hastening cost-down.

Japan's non-life insurance circle holds oligopolistic structure under administrative protection, allowing no new entry. Accordingly the price system is that

Figure 9

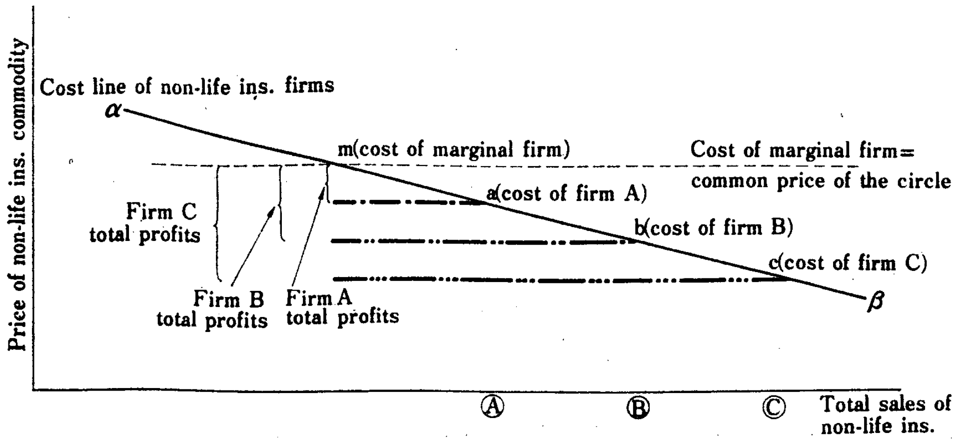
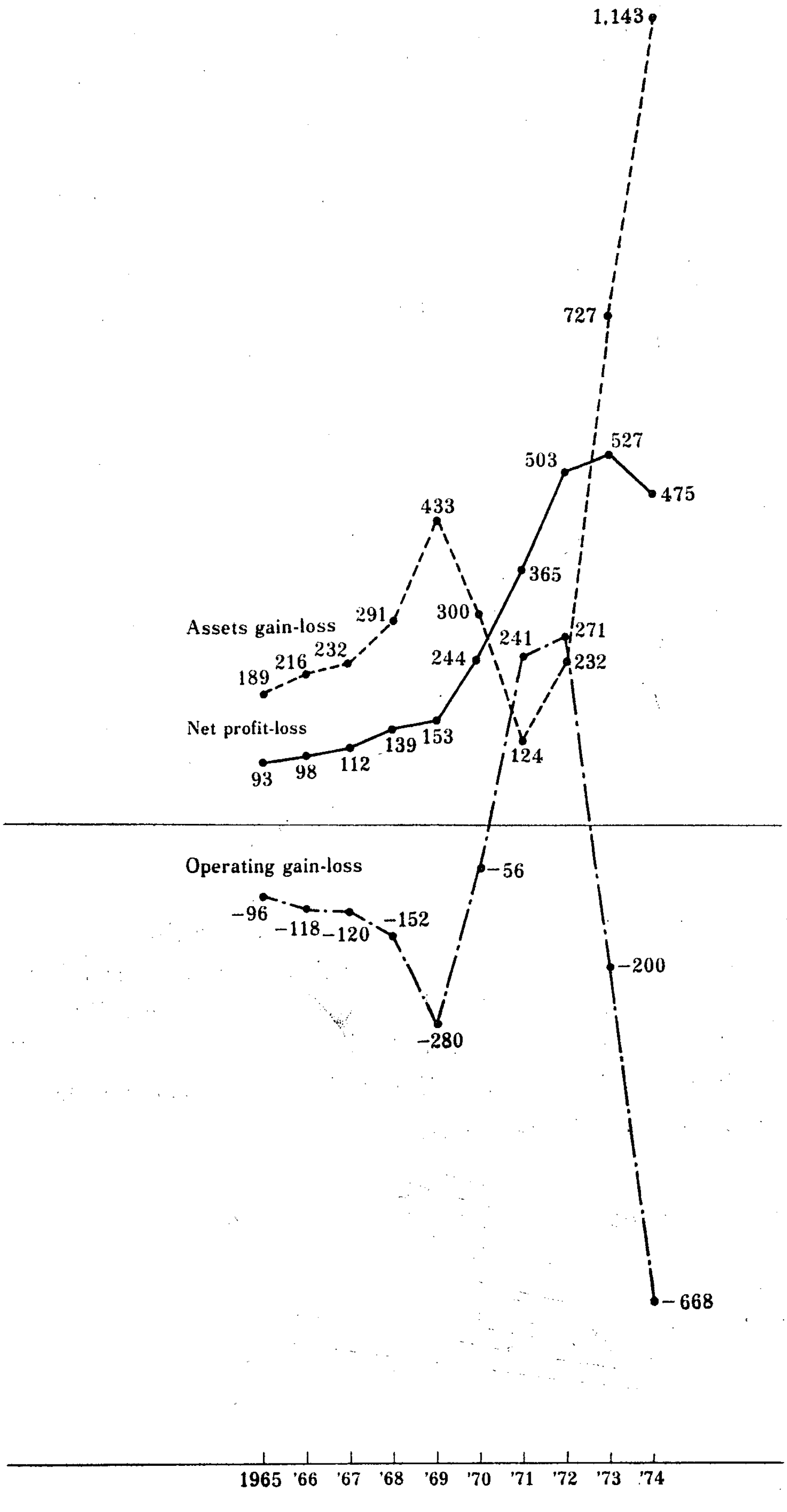


Figure 10


1,143
727
527
503
475
433
365
300
291
Assets gain-loss
271
241
232
244
216
232
189
Net profit-loss
139
153
124
93
98
112
Operating gain-loss
-56
-96
-118
-120
-152
-200
-280
-668
1965
'66
'67
'68
'69
'70
'71
'72
'73
'74

a price for all firms is set at the price that renders possible existence of an enterprises of the worst efficiency, in other words the marginal firm. It is a business circle with particular market structure. And to focus observation on the total sales—putting minor conditions aside—the larger the sales volume, the lower become the cost, and hence profits increase as the difference from the price set by the cost of the marginal firm. On the contrary, the smaller the sales, the smaller the profits, and occasionally such a firm becomes the very marginal firm with trifle or no profits. This is shown as Figure 9.

The commodity cost of the marginal firm makes the price common in the insurance circle. Firm A sells volume Ⓐ whose cost is a. Then deducting a from m, cost of the marginal firm, the residue makes A's profits. Similarly the profits of Firms B, C and so on can be calculated. Now a line $\alpha\beta$ can be drawn connecting a, b and c, which may be named the cost line of non-life insurance firms. This line shows also the functional relation between total sales and price. This means presence of a tendency that the flatter is this line, the more volume must be sold to get the same profits. On the contrary if the line is steep only a small increase of sales brings about more profits.

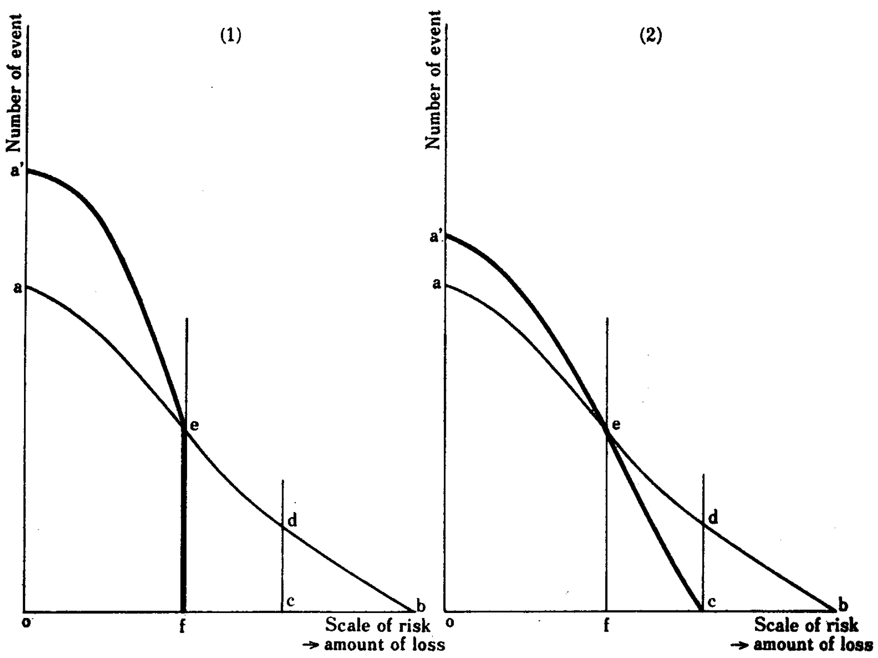
Now let's turn our eyes to the actual state of business and profits in Japan's non-life insurance. Net profits-losses of insurance firms are calculated from the operating (or business) gain-loss and assets gain-losses.

By Figure 10 the operating gain-loss and the assets gain-loss hold a relation of inverse increase and decrease. That is, when the asset gain increases the operating loss increases or the operating gain decreases. When the assets gain decreases the operating loss decrease or the operating gain increases. When the operating gain increases the assets gain decreases. When the operating gain decrease the assets gain increases. When the operating loss decreases the assets gain decreases. And when the operating loss increases the assets gain increases. As a general inclination the assets gain covers the operating loss to reckon a net profit, and a net profit is governed by the magnitude of the assets gain. Generally in the operating gain-loss a loss emerges, and in the assets gain-loss always a gain appears.

5. *Additional issues——reinsurance and inflation*

The reinsurance system is utilized more positively in non-life insurance than in life insurance. This is because currently non-life insurance firms have not yet accumulated and hold funds enough to assume huge risks, and again the number of assured huge risks does not suffice to establish insurance. In order to overcome these managerial difficulties and to render possible to assume huge risks the scheme of reinsurance has been contemplated. This scheme dissolves such huge risks as are small in the number of acceptance into assumable normal-scale risks, and through this dissolution increases the number of acceptance. However, super-huge risks cannot be assumed even presuming existence

Figure 11



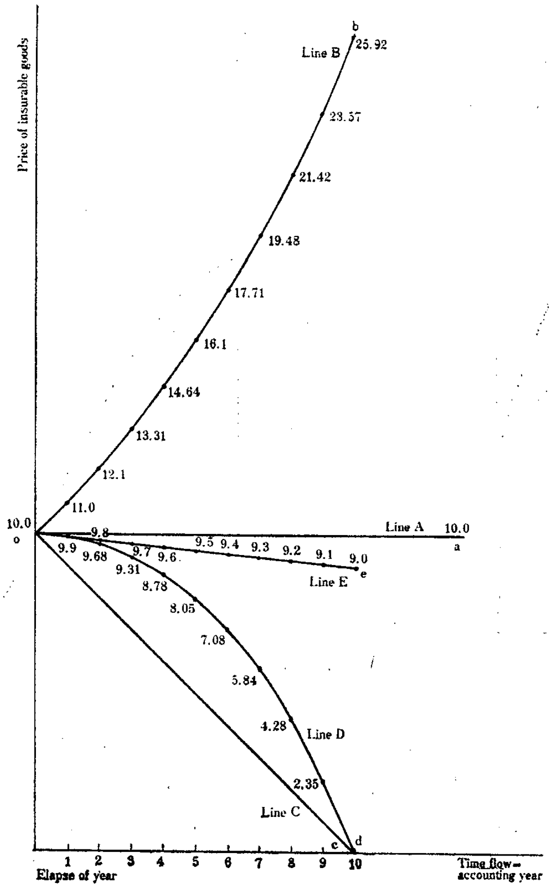
of reinsurance. This is because such super-huge risks lie outside the bound of insurance, which cannot be disposed even by dissolution into normal scale risks and increase of numbers. In this sense utilization of reinsurance also has its limit. The tendency toward huge risks is too fast compared with increase of insurance funds.

Figure 11-(1) and (2) exhibit the position and function of reinsurance in the insurance system. In both figures small-ordinary losses (damages) are excluded from object insured. Again the area of super-huge risks, *cdef*, is excluded (they are small in the numbers of presence and loss occurrence). Now in (1) the area of huge risks, *cdef*, is all reinsured. As the result an area *aa'e* is added to the area *aofe*, namely the insurable risks (above or below normal-scale risks within a certain breadth). Here the area *aa'e* shows reinsurance. In (2) not all the area *cdef* is put on reinsurance, but the area *cde*. And with the area *a'ae* being added to *aofe*—the object insured—the area *a'ofe* is treated as insurance. The area *a'ae* represents reinsurance. Naturally *a'ae* in (1) is wider than that in (2). Reinsurance may be said a scheme heightening the mountain of the numbers of insurable risks, contracts and hence loss occurence.

In non-life insurance also the problem of inflation is entangled, if not so complex as in life insurance. Discussion of this problem is unescapable in respect of the recent request of consumerism. Again the trend of prolonged insurance terms does not allow to neglect it.

Figure 12 illustrates the relation of non-life insurance to inflation. Suppose that here are economic goods with worth=price of 10 units, annually 10% is depreciated, and hence at the 10th-year stage the worth becomes zero. And

Figure 12



general prices rise annually at a rate of 10%, that is, 10% inflation. First the direct line A or o *a*, connecting o (10.0) and *a* (10.0) expresses the amount to be insured (or insurable) when neither inflation nor depreciation exists. This case will never exist in the reality. Next the line B shows how the price of the goods rises under 10% annual inflation. Unless depreciation is considered in the shape of the curve o *b* (10.0~25.92) the price goes upward. This tells that economic goods worth 10.0 now cannot be bought unless paying 25.92 after 10 years under this progressing inflation.

The line C, namely o *c* (10.0~0), shows decline of worth when depreciation is performed at 10%, not taking account of inflation. If there is no inflation it is proper to effect insurance along this line; over-insurance if above it. In the case of the line B, under-insurance if below it.

On the line D or o *d* (10. 0~0), for example, after one year 10% depreciation is conducted, yet due to 10% inflation the worth=price of the un-depreciated portion reversely rises resulting in 9. 9. It becames 8. 0 after two years, but due to successive two years of 10% inflation the worth is calculated as $8.0\times\frac{110}{100}\times\frac{110}{100}$ $=9.68$. Next it becomes $7.0\times\frac{110}{100}\times\frac{110}{100}\times\frac{110}{100}=9.31$, and thereafter moves as 8. 78, 8. 05, ... 4. 28, 2. 35 and 0.

The line E is still more complex. After one year the worth of 10 units becomes $10.0\times\frac{90}{100}\times\frac{110}{100}=9.9$ due to 10% depreciation and inflation. Two years after, by applying the similar calculation to 9.9 we have $9.9\times\frac{90}{100}\times\frac{110}{100}=9.8$; again as to this 9.8 we have $9.8\times\frac{90}{100}\times\frac{110}{100}=9.7$. The line E or o *e*, moving as 10.0~9.9~9.8~9.7~9.6~9.5~9.4~9.3~9.2~9.1~9.0, tells that the portion depreciated successively by 10% continues price-up due to successive 10% inflation. If in each year insurance is effected at the price on this line E, just sufficient insurance is attained. If in every year full iusurance on the combination of inflation and depreciation on all insurable goods, most safe, sufficient, adequate and reasonable utilization and growth of insurance will be attained. It is shown that generally in non-life insurance prices fall by about 10% at most.

By the by the amount and volume of contracts increase rather under progressing inflation, a very rapid increase. However, at the same time various expenses, personnel expenses and others also rise, and loading increases. For non-average insurance system especially payment of insurance money increases. Nevertheless if inflation is that coming from business-stimulating policies, generally demand for money in economy becomes more active and the assets gains or profits by management of funds increase. People will become easier to take out insurance and the market becomes buoyant. Accordingly inflation of a certain extent (not excessive) is not always disadvantages to growth and management of non-life insurance.