Title	An essay on operating expenses of the life insurance business
Sub Title	
Author	前川, 寛(Maekawa, Yutaka)
Publisher	
Publication year	1982
Jtitle	Keio business review Vol.19, (1982.) ,p.51- 62
JaLC DOI	
Abstract	Determining whether or not economies of size for the insurance business as an industry work is an indispensable element in evaluating not only the efficiency of the insurance market but also the operating efficiency of an insurance company. Indeed, this is considered one of the most important issues in the field of insurance economics, and it is for this reason that particular attention has been paid to the subject.
Notes	
Genre	Journal Article
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AA00260481-19820000-03920079

AN ESSAY ON OPERATING EXPENSES OF THE LIFE INSURANCE BUSINESS

by
Yutaka Maekawa

Determining whether or not economies of size for the insurance business as an industry work is an indispensable element in evaluating not only the efficiency of the insurance market but also the operating efficiency of an insurance company. Indeed, this is considered one of the most important issues in the field of insurance economics, and it is for this reason that particular attention has been paid to the subject.

1. *Problem*

Economies of size has been separately mentioned previously when Japan's nonlife insurance and life insurance were discussed. In this present study, the conclusions drawn from the *Expenses and Size of Japan's Life Insurance Business* will be described.*

In that study, the least square regression was applied to the cost function $\log Y = \log a + b \log X$. The cost function was drawn from the function of the total cost against the output by cross-sectional data.

It resulted in the finding that the so-called economies of size cannot be observed in the life insurance industry in Japan. The larger the scale of a business, the smaller the relative expenses of its business activities; this is what is called economies of size. This fact indicates that the cost curb for Japan's life insurance business is not the shape of the letter L at least. If not, it denies the hypothesis of the L-shape cost curve which is widely supported in other industries. Judging from these phenomena, it was mentioned that the hypothesis of the law of constant return can be applicable rather than the L-shape cost curve. However, there still remained doubt about it. What should be clarified here, therefore, is the contradiction between the hypothesis of the L-shape cost curve and that of constant return. It also is required to clarify the types of cost curve, since the hypothesis of constant return is mentioned.

* Y. Maekawa, *Expenses and Size of Japan's Life Insurance Business*, Mita Business Research Institute, Vol. 11, No. 1, 1968, Keio University Business Research Institute, pp. 146–151.

It is naturally necessary to examine the general reasons for the contradiction between the results from actual testings and the theoretical hypothesis. However, we should first take a look at the method that led to the conclusion of the above-mentioned results. The most important subject that should be discussed again is the method of extracting the relations between size and cost. It should be done in as simplified a form as possible, simplifying complicated phenomena. It means the reexamination of the samples as an object of observation that includes the relations between the size of business and cost factors. Theoretically, the insurance market is formed by the different kinds of insurance. In the previous study, the market was defined according to the lines of insurance business due to the lack of materials. That is to say, the market that is formed by the insurance companies was the subject of study on the ground that the market is controlled by the same regulation. It is debatable if such a market is in accord with the concept of the theoretical market. Accordingly, it is required to find out the factors that cast influence over the relationship of these market forms and to control these factors in order to extract the purest possible relations between the size and costs. One of the methods of realizing it is to analyze the relative relations among various factors that are assumed to exert an influence over the size and costs.

On the contrary, one very valuable and suggestive positive study was applied to the discussion of this issue. That is S. T. Pritchett's *An Intercompany Expense Comparison for Thirty Life Insurers.**

In this thesis, Pritchett compared cost efficiency in an ordinary life insurance market. To compare the cost efficiency, Pritchett categorized the size of the business in advance and compared the expense ratios among these categories. It is assumed that there is a possibility of being able to predict certain trends between the size and expense ratios among the categorized sizes. At any rate, it might be possible to further clarify the relations between the size and expenses as well as the types of cost curve by appropriately categorizing the sizes in advance. And almost doubtlessly, it will contribute to the solution of the problems here. Therefore, we have decided to discuss the situation of expenses concerning Japan's life insurance business, although there still remain some problems.

2. *Method*

The sizes are to be categorized first and the long-run expense ratios within these categorized sizes are to be observed and compared.

Sample: For the purpose of comparing the expense ratios among the categorized sizes, the samples that are to be discussed should be taken out to start

* S. Travis Pritchett, *An Intercompany Expense Comparison for Thirty Life Insurers*, The Journal of Risk and Insurance, Vol. XXXVIII, No. 4, December, 1971, pp. 553–562.

with. There were 21 life insurance companies that had been set up on the basis of the Insurance Business Law and two firms on the Enforcement Regulation of the Law Concerning Foreign Insurers, totaling 23 firms at the end of 1978. Each of these 23 firms differs in its business activities when observed in detail. But it is the only way to categorize the market according to this category, since the formation of market in accordance with each kind of insurance system is not possible. Accordingly, it is required to simulate each one of the insurance companies in the market. To simulate them, the following factors that are assumed to have a strong influence over the relations between the size and costs should be examined. They are: (1) The location where the company received its business license. (2) The region where the firm actually practices its business. (3) The number of years in business. (4) The system of its sales activities. (5) Kinds of insurances it deals with.

As for condition (5) among the five cited above, the ratio between the individual insurance and the group insurance as well as the volume of reinsurance business deals were taken into special consideration. The conditions required for the simulation, of course, are not limited to these five factors.

As the samples, 18 firms among the 23 companies were chosen. From the standpoint of market share, the 18 companies are assumed to be sufficient enough to talk about what Japan's life insurance market is.

Indices and materials: To categorize the sizes of these samples and compare their long-run expense ratios, the indices for the size and expenses ratios are necessary. In the business of life insurance, expenses are indicated under the category of business expenditure. In general, the business expenditure corresponds to the part of loading in the total premium. Accordingly, the expenses mean the business expenditure. The percentage of operating expenses sometimes means the ratio of actual operating expenses against the expected operating expenses. In this case, however, it means the ratio of the operating expenses against the premiums received, on the assumption that the expected premiums as the indices for the size are used in connection with the corresponding relations to the operating expenses.

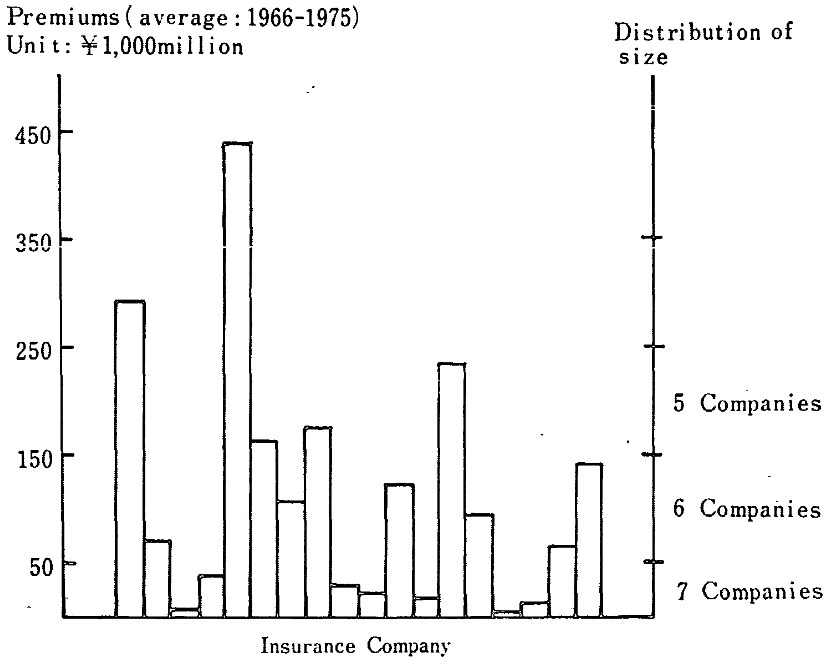
Both the expense ratios of the operation as an index and the premiums received were taken from "Insurance" (The Statistics of the Japanese Life Insurance Business). The figures were taken from the statistics compiled in the 10 years between 1966 and 1975.

The figures compiled before 1966 were different from those filed after 1966. In order to keep continuity and also to examine long-term trends, only the statistics in the 10-year period are applied.

Category of size: Chart 1 shows the average premiums received in the 10 years between 1966 and 1975 for the 18 companies selected on the basis of the above-mentioned conditions.

These 18 companies can be categorized into three groups in accordance with their sizes, although the categorization is to be made on the basis of subjective

Chart 1. Distribution of sizes



judgement. For the purpose of convenience, the three categories are to be called small-size, medium-size and large-size. The small-size group is the category with less than ¥5,000 million in premiums received, the medium-size with more than ¥5,000 million and less than ¥15,000 million, and the large-size more than ¥15,000 million.

Problems concerning the categorization of sizes on the subjective judgement should be explained. The large-size group is composed of the companies with more than ¥15,000 million in premiums received. A wide-range of different companies is covered in this category simply as just one group. It might be better to divide this group into two: one with less than ¥25,000 million and the other with more than ¥25,000 million when the difference in scale is taken into consideration. If so, the total categories would become five groups; three in the under ¥15,000 million category and two in the over ¥15,000 million group. In fact, slightly different tendencies can be observed in the operating expense ratios between the two groups with more than ¥15,000 million in premiums received. However, if the number of companies in one category is extremely smaller than that in the other categories, it is assumed that the comparison between them would not lead to the proper result. That is to say, a very peculiar condition in one company may determine the characteristics of the whole group, unfortunately. If that happens, the findings would not be able to be used for the account of the over-all tendency of the whole market. For this reason, it was decided to categorize them into three groups as mentioned earlier, instead of minimizing them into groups. As a result, 7 companies were categorized under the small-size group, 6 under the medium-size and 5 under the large-size group. The distribution of the sizes is shown on the right side of Chart 1.

3. *Analysis*

Prior to the observation of the expenses, it is necessary to analyze the above-mentioned operating expenses. The insurance companies are required to report their operating expenses to the Ministry of Finance. These are composed of the expenses for new business, expenses of non-new insurance and expenses needed for the collection of premiums. The expenses for new business cover the expenses for sales personnel, for field organizations, sales promotion, medical care and others. The expenses for the collection of premiums are composed also of labor costs and the cost of consumption articles. The observation of the expenses is to be made on the total expenditure that is structured by these expenses for the new business, expenses of non-new insurance and the collection of premiums to start with.

The second step is to make an observation on the expenses as the main factor that influence over the operating expenses. The analysis of the operating expenses can be made through the analysis of their elements; the expenses for new business, expenses of non-new insurance and expenses in connection with the collection of premiums. This traditional way of analyzing has been useful for the evaluation of the internal business efficiency of each insurance company. However, what is necessary here is to examine the life insurance industry activities that the operating expenses as the total expenses reflect. Accordingly, the operating expenses are to be effectively analyzed from the viewpoints of the main activities of the business activities for the life insurance firms and also from the viewpoints of organization. The most important activities for the life insurance companies are sales activities exercised through field organizations. From such a point of view, the business activities of the life insurance firms are largely divided into two categories: sales activities and others. The other activities include the function of home office, which means general administration. It is difficult to obtain accurate data on expenses that correspond to these two groups of activities. But let us define the expenses that correspond to sales activities done mostly through field organizations as "field expenses" and the expenses that correspond to the activities of the home office as "home office expenses." If we look for the data of operating expenses for the field expenses and the home office expenses, the expenses for new business and collection of premiums should be included in the field expenses and the expenses of non-new in surance in the home office expenses. There might, of course, be opposition to the idea of categorizing the operating expenses on the basis of the concept of the field and home office expenses.

Do the concept of the field expenses and home office expenses sharply reflect sales activities and other activities? One of the problems is handling the expenses for collecting premiums, which have been traditionally dealt with separately from the expenses for new business, under the category of field expenses. The reason that the expenses for new business and the collecting of premiums are atributed to historical factors. In Japan, life insurance exercised by the private sectors mainly dealt with annual (or semi-annual) ordinary insurance, until sales of a monthly premium individual insurance were introduced after World War II and the collection of premiums was separated from the sales activities of the insurance. Along with the sales of monthly debit individual insurance after the war, however, the debit system for the collection of premiums began to be exercised through the sales organizations. Since then, the collection of premiums has been exercised through the sales organizations. Since then, the collection of annual premiums and premiums for monthly debit ordinary insurances both has been made through the block systems of the field organizations. It, however, is not clear if the selected 18 companies use these systems presently. If we go along with the comment that "the systems of the collection of premiums by the sales persons after the first round of collection is adopted by many companies at the present moment for the purposes of raising the payments to the sales persons and building up and expanding the stability of field organizations," then it is acceptable to include the expenses for the collection of premiums in the field expenses.*

When the operating expenses are divided into the field expenses and the home office expenses, problems arise in the contents of the expenses for new business that are included in the field expenses and the expenses of non-new insurances that are included in the home office expenses. Among the expenses of non-new insurance as a part of the field expenses, expenses for home office, that is sales promotion/facility expenses, are included. On the contrary, in the expenses of non-new insurance as the home office expenses, labor costs for the branch of offices and sales department in home offices as well as the cost for general consumption articles in connection with sales activities are included. Therefore, it is not necessarily proper to divide the business activities of insurance companies into two categories and call them field and home office expenses, if we examine the contents of each expense that forms the operating expenses. It might seem to be more appropriate to call the field expenses as sales expenses and the home office expenses as general administrative costs. But the purpose of the study here is to grab the expenses as the factors that are assumed to exert an influence over the operating expenses, and detailed discussion on the concepts or the names of expenses should be avoided. So, the term "field expenses" is to be used as a substitute for "sales expenses," and the "home office expenses" as a substitute for "general administrative expenses."

A long-term tendency of these operating expenses, field expenses and home

* Tamako Kobayashi, "*Accounting: C Operating Expenses*", New Life Insurance Lecture, Vol. 5, Selection, Maintenance, Accounting, Finance: Yuhikaku, 1966, p. 294.

office expenses are to be compared among the small, medium and large-size business scales. In the observation of long-term tendency, the average fluctuation percentage of average expense ratios between 1967 and 1969 as well as average ratios between 1972 and 1974 are used in order to avoid confusion.

4. *Results*

Operating expenses: As shown in Table 1, the expense ratios for all of the small, medium and large-size companies have declined between 1967 and 1969 as well as during the period between 1972 and 1974. The percentages of reduction are 1.08, 2.13 and 0.19 each. The medium-size firms that show the decline rate of 2.13 overwhelm the other two. It is more than ten times higher in comparison with 0.19 of the large-size companies. The decline of 1.08 for the small-size firms is also larger than that of the large-size companies. Chart 2 shows it. The solid lines show the ratios of operating expenses in each year between 1966 and 1975 in each category and the dotted lines combine the average percentages of business expenditures between 1967 and 1969 and those between 1972 and 1974. The dotted lines, therefore, show the percentage of change.

Table 1. Expense ratios for the different categories of life insurance companies

Year	Small-size 7 companies	Medium-size 6 companies	Large-size 5 companies
		Operating expense ratios	
1967–1969	29.27	24.21	29.77
1972–1974	28.19	22.08	28.86
Coefficient	-1.08	-2.13	-0.19
		Field expense ratios	
1967–1969	19.27	17.19	24.34
1972–1974	17.34	16.20	22.87
Coefficient	-1.93	-1.71	-1.47
		Home office expense ratios	
1967–1969	9.95	6.31	5.40
1972–1974	10.53	5.50	5.69
Coefficient	0.58	-0.81	0.29

Field expenses: All the ratios of the field expenses in the 1967–1969 and 1972–1974 periods show declines in every one of the categories. The difference in the percentage of decline is not large. The percentage of decline for the small-size companies is the largest, followed by that of the medium-size companies and large-size companies. Chart 3 shows them. The declining tendency

Chart 2. Operating expense ratios for the different categories of life insurance companies

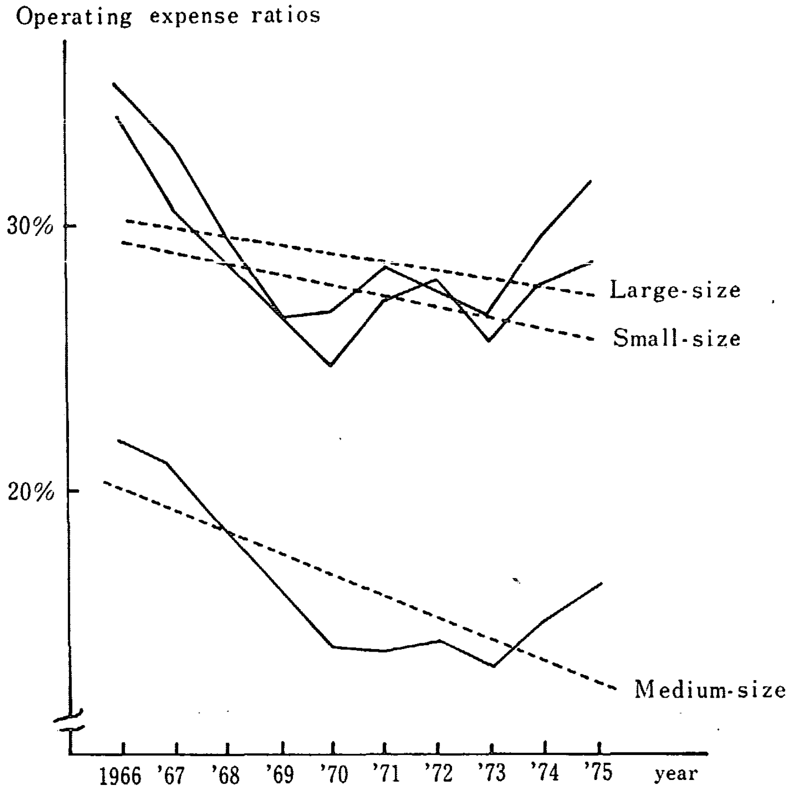
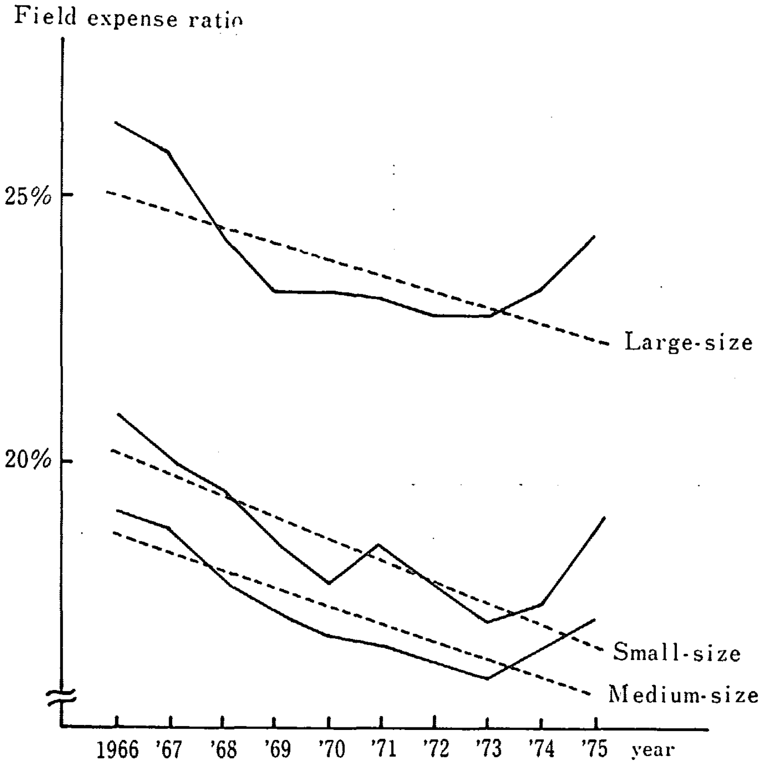


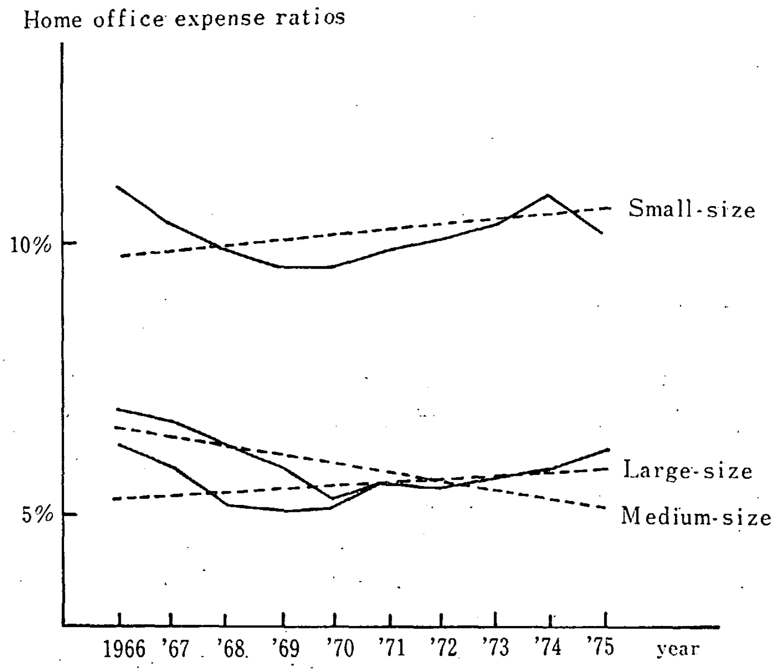
Chart 3. Field expenses for the different categories of life insurance companies



can be applied to all the categories. When we compare the size of the ratios of operating expenses, the rate of decline is the smallest for the medium-size, followed by the small-size and the large-size companies. The expense ratios for the large-size insurance companies is by far the largest.

Home office expenses: It shows a rise of 0.58 and 0.29 between the 1967–1969 period as well as between the 1972–1974 period for the small-size and the large-size companies. On the contrary, the medium-size firms show a reduction of 0.81. The rate of decline for the medium-size companies is larger than the percentage of growth for the small-size and large-size firms. Also, the growth rate for the small-size companies is larger than that of the large-size firms. The medium-size companies show the opposite tendency from the small-size and large-size companies. Chart 4 shows it. Taking a look at the fluctuation in each year, the home office expense ratios for the large-size companies between 1966 and 1970 is lower than those of the small-size companies and medium-size firms, and after 1971, the home office expense ratios for the large-size companies become almost the same as those of the medium-size companies, showing a tendency of growth. Accordingly, an observation is needed for the tendency after 1976, although the tendency lines show opposite directions here. Against the growing tendency for the medium-size and the large-size companies, the small-size firms show a tendency of decline in 1975.

Chart 4. Home office expense ratios for each category of insurance companies



5. *Summary and implication*

Summary: The above results can be summarized as follows:

The operating expense ratios are the highest for the large-size companies, followed by the small-size firms with little difference. In comparison with those categories, the medium-size companies show relatively low figures. This indicates that the cost curve for Japan's life insurance business shows the shape of a U instead of an L. The field expense ratios cast a strong influence over the operating expense ratios. In the field expense ratios, the large-size and small-size companies show by far larger figures than those of the medium-size companies. The field expense ratios show a declining tendency for all of the three categories. On the contrary, the home office expense ratios of the large-size and medium-size companies show relatively lower figures than that of the small-size firms. Accordingly, it seems to be that economies of size functions when it is limited to the home office expense ratios. As mentioned earlier, however, we should pay attention to the fact that the expense ratios for the large-size companies are trending upward. From these facts, it is apparently assumed that the high ratios of the operating expenses for the large-size category reflect the high ratios of the field expense. The operating expense ratios for the small-size category reflect both the field expenses and home office expenses, and the influence of the home office expenses has relatively stronger effects.

Implication: The results drawn from this essay confirm the conclusion, as previously mentioned by the author, that economies of size cannot be recognized in clear-cut form in Japan's life insurance business, and at the same time they indicate the U-shaped cost curve as clearly shown in the observation of the operating expenses ratios. This is in accord with the hypothesis of the long-run average cost curve in traditional economic theory. In economic theory, the reason why the long-run average cost curve shows the shape of a U, that is, the reason why the cost factors grow in the final analysis, is generally attributed to the possibility that the inefficiency of business management overwhelms the business efficiency of a large-size operation. The U-shaped curve in this study, however, is concluded not from the home office expenses but from the field expenses. From this essay, it is impossible to conclude anything regarding the internal problems of the high ratios of the field expense. It is easily understood that efficiency is the most important issue for Japan's life insurance business. If it is limited to the 10-year period of observation, efficiency is being promoted in the whole life insurance market. For the promotion of efficiency, one should not simply draw the conclusion that the price of insurance rates should be reduced, but it can be at least discussed as one possibility.

Next, an observation on the relations between the results drawn here and the promotion of efficiency should be made. Since the introduction of the concept of competition on the ground that it leads to free trade and free foreign exchange practices, the efficiency of the life insurance business has been the central issue. A report of the Insurance Council made in 1975 has especially great importance on the issue. As an extension of the 1975 report, a new report was submitted in 1979 along with changes in social conditions. In this 1979 report, the issue of merger was mentioned in connection with the problem of efficiency. The report says that "mergers in the life insurance business would contribute to the promotion of efficiency through the expansion of size and avoidance of duplication in investment... (abbreviated) ... but it is not necessarily an easy task to promote mergers smoothly." The report clearly stated that the expansion of business scale would contribute to the promotion of efficiency. However, it is not easy to realize mergers, since as the report says, "for the time being, no merger between life insurance companies has come to reality and... (abbreviated) ... they should respond to the needs of the people in detail through ideas and innovation on the basis of appropriate competition." To reach the goal, the report requests the Government to furnish the needed environment. The report continues, "mergers in the life insurance business should be basically examined with maximum care. If there appear companies that do not actively promote policies for the improvement of efficiency and that contribute nothing significant to society, mergers may become necessary for the purpose of protecting the interests of the public in accordance with the rules of 'insurance law.'*

As can apparently be judged from the context, the 1979 report is not necessarily promoting mergers in the life insurance business. But it is significant that the council took up the issue in the process of promoting efficiency. In this study, however, not mergers themselves but the difference of the reasoning of the mergers mentioned in the report and the findings of this essay should be clarified. As clearly shown in the summary of the report, the 1979 report is assumed to base its discussion on the L-shaped cost curve, since it said that an expansion of size promotes efficiency. And the question about the conditions on which efficiency policies are actively promoted or not promoted is interpreted to be asked to the small-size companies. Accordingly, it is merger between the small-size firms and large-size companies if the mergers are to be promoted. However, if it is allowed to use the U-shaped cost curve concluded from this study, a different discussion is quite possible. According to the findings drawn from the U-shaped curve, there exists an optimum size for the life insurance business also, and the problem of whether the promotion of efficiency is actively to be advised or not can not only be applicable to the small-size organizations but also to the large-size companies. The form of mergers also cannot be talked about in stereotyped discussions of the large-size company with the small-size firms.

Finally, the results concluded in this study differ from other theories which

* The report of the Insurance Council, First Section: *On the Future Life Insurance Industry* (June 14, 1979).

have been discussed in Japan. However, the results here depend upon the methods one uses to come to these results, analyses and statistical data. Accordingly, it is just one set of facts observed under certain limited conditions. Therefore, it is necessary to develop the study further and repeat them again and again under different conditions.

* This essay was written on the basis of the contents of the report announced at the seminar on the study of insurance held on Dec. 22, 1979 under the sponsorship of The Research Institute of Life Insurance Welfare. In connection with the achievement of this study, valuable contributions were given by Mr. Shin'ichiro Inoue, Head of the Tokyo Office. The Research Institute of Life Insurance Welfare (Osaka) and Mr. Tadao Shibata, Director of the Institute. Also contributing to this study was Ms. Kazuko Takahashi of the library of the Institute. Taking this opportunity, I would like to express my gratitude to them.

Reference materials

[1] Arthur Pedoe, *The Trend of Life Insurance Company Expenses,* Transactions of the Society of Actuaries, Vol. 4, 1952, pp. 485–510.

[2] ...., *Further Notes on The Trend of Life Insurance Company Expenses,* Transactions of the Society of Actuaries, Vol. XIII, March-April 1961, pp. 1–30.

[3] Tadaichi Yamada, *Field Expenses,* New Life Insurance Practical Lecture, Vol. III, Marketing I, Yuhikaku, 1965, pp. 269–293.

[4] S. Travis Pritchett, *Operating Expenses of Life Insurers, 1961–70: Implications for Economies of Size,* The Journal of Risk and Insurance, Vol. XL. No. 2, June 1973, pp. 157–165.

[5] Joseph R. Brezezinski and Charles S. Patridge, *LIMXRA Agregate Expense Analysis,* Best's Review (Life and Health ed.), September 1977, pp. 16–82.