

risque, études ayant permis, notamment, d'aboutir à une formule générale pour le calcul des primes et réserves mathématiques.

Malgré les difficultés d'une transposition de données nécessairement complexes d'un pays à un autre, l'auteur estime que les découvertes acquises en Allemagne, notamment l'existence d'une „fréquence fondamentale” commune à tous les tarifs, et ne dépendant que de l'âge et du sexe et d'un „paramètre de fréquence” propre à chaque tarif, doivent être retenues, ainsi que la méthode d'investigation elle-même, qui s'est révélée fructueuse.

L'article fournit quelques données numériques au sujet des primes et réserves, et se termine par un essai d'évaluation de la réserve globale pour risques croissants en pourcentage de l'encaissement, dans l'hypothèse d'une production constante.

Etude d'Ordre Statistique et Nosologique par M. RENÉ RISSER. *Bulletin de l'Institut des Actuaire Français*, Septembre 1957

Cette étude comprend trois parties:

1°—étude de l'assurance longue maladie dans la région parisienne de 1946 à 1954. L'analyse porte sur les nombres de malades admis et sortis par guérison, invalidité, décès ou extinction des droits.

2°—étude de statistique médicale établie par la Caisse Centrale de Sécurité Sociale de la Région Parisienne. Elle porte principalement sur : tuberculose, cancer, affections cardiaques et vasculaires, maladies de l'appareil respiratoire et maladies de l'appareil génital féminin.

3°—Rappel des résultats obtenus en matière d'assurance longue maladie par les Actuaire Suédois et Suisses. P. D.

Principles for Administration Control in Insurance Companies. Summarised by the author, BÖRJE MÖLLER, Stockholm.

The purpose of this study and the problems covered.

In the autumn of 1953 the Business Research Committee of Swedish Insurance Companies (FFN) published "A Standard Plan of Accounts for Swedish Insurance Companies". The plan dealt chiefly with financial accounting, i.e. the recording of the contacts of an insurance company with the outside world. This, however, is only one part of a company's internal activities. Others are the recording and control of the sacrifice of means of production in its different sections for the performance of various functions and services. With this in view the Committee felt that further investigation was required to throw more light on the main principles governing various costing methods and on the internal accounting of costs and revenues which provides the basis for all costing.

Following a general introductory stage, the investigation was limited to the problems involved in the consecutive administration control of departments and branches of insurance by top management and department managers. By restricting the investigation to consecutive control only, it was possible to exclude various types of occasional calculation. Many of the points made, however, are of course also applicable to occasional calculations.

Administration.

The activities of an insurance company include its regular insurance business, the administration of real estate and investment, and general administration. The first of these involves sharing out between policyholders the costs of the risks to which they are exposed. The administration of real estate and investment concerned with transforming payments received from policyholders into interest-bearing capital (in so far as these funds are not required for meeting the insurance claims made on the company).

General administration is taken to include all activities performed in the company with a view to creating and maintaining business, the work of development etc. The investigation concentrated chiefly on this section. Among activities which can be included in the above concept of general administration may be mentioned: sales activities, the estimation of risks, the issuing of insurance policies and the compiling of records and statistics, the receiving of payments, the planning of measures to counteract risk, service activities and activities connected with insurance claims.

According to official Swedish statistics (Official Statistics of Sweden, Private Insurance Companies—Stockholm 1957) administration costs in life insurance companies for 1955 amounted to almost 120 million crowns and in fire and casualty insurance companies to a good 310 million crowns.

Methods.

During the first stage of the investigation the relevant literature was studied and contacts were made with people active in the field and research workers dealing with similar problems. When the problems to be tackled had been defined, a series of interviews was carried out with all levels of management in two insurance companies. Forms and other material from these interviews and group discussions were being collected, while work on the literature and contacts still continued. In conclusion, statistical material was collected from one company with a view to illustrating the theoretical argument of the report.

The general outline of the report.

The report consists of three parts. Part I, "General Problems of Cost-Revenue Analysis with Reference to the Conditions of the Insurance Industry", covers chapters 1—3. Part II, "The Problems of Departmental and Product Control" covers chapters 4—6. Part III, chapters 7 and 8, consists of illustrations of control in practice, as seen against the background of the earlier theoretical discussion.

Summary of the Report.

In the first chapter it is claimed that the distinguishing feature of a cost-revenue analysis is the comparison made between different alternatives rather than between the costs and revenues for a definite alternative. The latter is known as analysis of results. In this context it is pointed out that the result arrived at in such an analysis is relative. It depends on the purpose of the analysis, on the standpoint from which the analysis is being made, on whether the analysis covers a single activity or a whole series, on the length of time covered, etc. It is also worth mentioning that all other possible alternatives affect any particular analysis. This may also be expressed thus: conditions

on the supply and demand sides affect the analysis; or thus: the relativity of the analysis is closely connected with the choice of costs to be considered, how they are spread over different periods and the evaluation of sacrifice and revenue. An important problem in comparisons between the registered cost and revenue items relevant to a particular analysis, concerns the comparability of these quantities in both time and space. Some re-grouping is almost always necessary, and either costs or revenues are re-grouped, to follow whichever of the two variables is being kept constant. It is even possible to re-group both costs and revenues. The choice between these courses depends on the practical demands of the situation and on what guidance is being sought from the classification. However, the most usual course is to re-group costs. This method is known as "cost unit accounting" because the costs are either allocated direct (from cost elements) or indirectly (from cost elements *via* cost centres) to the cost unit (i.e. the products) where the revenues for the products arise.

In "cost centre accounting" the costs are allocated to cost centres, to which the re-grouped revenues are also assigned. Thus the profitability of the cost centre will be revealed. This re-grouping gives some idea of how the company's total result is divided between different departments, i.e. between the areas of responsibility belonging to the various department managers. This method is expected to provide answers to the questions *where*, *who* and *why*. The comparison of costs in different departments may be set out either as an analysis of activities or as an estimation of people. A central problem in all cost (or revenue) allocation concerns the aim and the method chosen. Some claim that an analysis of activities must be based on *causation*. Another possible starting-point for allocation is *dimensioning*. An estimation of people, on the other hand, is based on the conditions of responsibility.

No attempt has been made to evaluate these different methods, since their value depends on the aim in each particular case. Since this investigation is concerned with economic control of products or persons, cause or responsibility will be the relevant bases for our allocation.

Cost-revenue analysis consists of the estimating of profitability and cost control. In chapter 2, "Problems of Classification—Some Discussion of Terminology", it is pointed out that the classification of costs and revenues has a decisive influence on the concept of profitability. There are two main types of concept, namely accounting concepts and the concepts of economic theory (e.g. decision-making costs). The first type is connected with various regulations, laws etc. A cost which takes the evaluation process into consideration is called an *opportunity cost*. These are quite independent of historical book values. The *historical costs and revenues* obtained from the accounting can be of value for the future only as a *starting-point* for prognoses.

A pair of cost concepts which are very important for purposes of control are *fixed* and *variable costs*, since, in time, (regardless of the length of time in each particular case), these always reveal a *different degree of controllability*.

Starting from the object which gives rise to them, costs can be classified as *separable* or *common* costs.

From the point of view of responsibility control, none of the above concepts are really relevant. A new pair of concepts has therefore been introduced, taking into account the limits of responsibility and authority in the company. This classification leads to the concept of *controllable* and *non-*

controllable costs. A possible further division of the first group into controlled (the executive alone rules entirely over this type) and controllable (partly or in co-ordination with someone else) costs is also recommended.

As in the case of all administrative tools, *the goal of the company, the particular accounting situation, the company's commitments* etc., will strongly influence the choice of concept to be used in accounting for control. Since the goal of an insurance company is made up of a conglomeration of simple and complicated subsidiary goals, both top management and department managers need an instrument:

- 1) as a basis for choosing between alternative courses of action,
- 2) for co-ordinating the actions of subordinates,
- 3) for controlling the achievement of subsidiary goals.

By the commitments of the company are meant the limitations on a company in making changes, in place or time, in its line of product. This limitation is particularly noticeable in life insurance companies.

The investigation has shown that executives at various levels feel a need for some instrument to guide them in planning and control. Efforts should thus gradually be made to build up a mechanism for the control of profitability, through which all members of the staff would have their attention directed to questions of an economic nature, each within his own sphere of action. If this is to be achieved, costs must be classified in such a way that they can be allocated according to spheres of responsibility. This applies also to revenues. In allocating costs to department managers, one therefore has to distinguish between controllable, non-controllable and partly controllable costs.

Chapter 3 presents an analysis of the costs and revenues of insurance companies. The classification has been taken from the Standard Plan of Accounts for Insurance Companies. The costs dealt with are commission, staff costs and other administrative costs. For each of these groups the method of financial accounting is reported and an analysis is made of separable and common costs and of controllability, viewed from the point of view of the various executives. This analysis is of central importance to the investigation. The survey gives a clear picture of the complicated nature of administrative costs. Whether these costs are generally caused by the cost units will depend on the organization of each individual company. Commission and staff costs dominate, accounting for 70 % to 80 % of all administrative costs. For the classification of the remaining 20 % a more frequent use of a random sample is recommended, since a full investigation of all the details of these cost elements would be expensive and out of all proportion to its value.

The method discussed here was based on empirical material collected in the course of the interviews mentioned previously. Revenues which can be assigned to administrative activities—premiums, commission on re-insurance and revenues set against administration expenses—have also been the object of a similar classification and analysis.

The second main section of the report begins with chapter 4, in which different forms of control are discussed. Here one of the main tasks of the various executives, regardless of status, is defined as follows: to check that all activity is carried out in accordance with the prescribed aims and given

instructions of top management. One condition of efficient control is that control in one section of the company should be co-ordinated with control in other sections. Furthermore it is desirable that the machinery of control should be co-ordinated with the formal organizational pattern of the company, while also taking into account informal organizational aspects. In building up a system of control, co-ordination with all the other economic activities of the company must obviously be borne in mind, so that all sections are striving towards the same subsidiary or overall goal. It is particularly important that the system of control be arranged in such a way that it can provide a basis for future planning. In the long run it would seem desirable to aim at creating an automatic instrument with its own warning signals for any deviation from plan beyond a certain size. In this context it is also pointed out that control must always be profitable, i.e. in checking the control function for profitability it is essential to see not only that the item is sufficiently large to merit control but also that any error discovered would be of sufficiently serious significance. From this it can be seen that management has more use for quick appraisals of the contemporary situation than for exact information provided long after the event.

Control can be directed towards actions or people. Actions can be defined in different ways. The concept of action can be given different scope in time or space. The cost and revenue factors should consequently be grouped with regard to

- a) their causal connection over a shorter or longer period with the object of the control, and
- b) how far the different executives can influence costs and revenues by their decisions or other actions.

The main point about "person centered control" is that it should facilitate the work of "the controlled" himself and that it should come into play at just those points where the person in question is able to influence the factors under review. One way of achieving this is to introduce a system of departmental accounting in which positive or negative results are assigned to the different sections of the company.

The diagram on page 27 illustrates the principles on which departmental accounts could be drawn up. All registered costs are charged to the cost centre, which is then credited with a certain pre-determined price times the number of services performed. Any difference which may arise could depend on price changes, changes in the actual quantitative consumption (compared with what had been estimated) and changes in the employment of available capacity.

From our various contacts and interviews it seemed to be clear that executives usually lacked any detailed knowledge of the cost situation in their own areas. In our opinion the difficulties involved in producing cost data means that the staff are less cost-conscious than they would otherwise be. To a great extent cost consciousness may be said to be a result of the attitudes and behaviour of the superior.

Product control aims at assigning costs and revenues to products (see diagram on page 25). Here the registered direct costs are allocated direct to the product while the indirect costs are assigned to the cost centres, whence they are charged to the products at a pre-determined value.

Chapter 5 discusses alternative norms for comparison. If a fact is to have real significance, it must be considered in relation to some other data. Thus some sort of control base has to be created with which measurable deviations may be compared. Suggested control bases are: corresponding data from earlier periods, the same data for the current period from another department, standards or budgets or a combination of the two.

Figures from previous periods are used most frequently on account of their relative accessibility. The drawback here is that historical conditions will affect a norm which is supposed to express a more or less ideal or normal situation. Strictly speaking historical data can be used only under certain conditions (e.g. if technical developments and price changes have been negligible).

If, instead, data from other organizational units is used, the chronological problem of the above-mentioned method is eliminated. The weakness here is that the prevailing differences in efficiency are preserved by the necessary use of index numbers.

A third alternative is the use of some type of standard. In this case it should preferably be one that does express improvements and that is genuinely attainable, so that it creates a real incentive for the staff. For purposes of control it should be reasonably simple to revise the standard in the face of any big or important changes.

A fourth alternative is to use budgets and to compare actual data with carefully planned figures. If the budget is to serve the purpose of person control, an attempt should be made to divide costs into those that are controllable, partly controllable and non-controllable.

Standards and budgets are recommended as norms for comparison since they give figures for the relevant period, even if fictitious. The investigations in the various insurance companies have shown that there are good prospect of introducing standards into most departments. It is important that the staff should be made to realise the advantages of standards and budgets by means of suitable education and training.

In chapter 6, "Some Principles for the Creation of Tools for Control", it is explained that economic control may be directed towards revenues or costs alone or to both of these together, i.e. towards profitability. Any control of the profitability of actions must be based on the casual connection between costs and revenues on the one hand, and departments and branches of insurance on the other. The control of the profitability of persons is based on a comparison between a controllable contribution and some norm for comparison. The separable costs for different departments or branches of activity are assumed to be controllable by the department or insurance manager.

A series of diagrams (see pages 120, 111, 113, 117, etc) gives some outlines for the setting up of control.

Part III of the report reveals, against the background of the earlier discussion of methods, how the machinery of control can gradually be built up and developed. The example has been drawn from material provided by a life insurance company. The company carries four types of insurance and, in 1956, had 500 office staff and 5,200 insurance salesmen of whom 5,000 were spare time agents. The claims department of this company was chosen as the object of our study. Some form of time accounting has been suggested as a first alternative for a control instrument. In the example this type of accounting has been put forward and supplemented by statistics on services.

On the other hand a comparison could be made between the standard time (for services performed) and standard wage cost (for services performed).

In a more highly developed example we have described a control instrument based on the comparison of registered separable costs and standard separable costs for services performed. The separable cost elements included are wages and salaries, pension costs, lunch and other personnel costs, cost of premises, inventory costs and costs for stationery. Figures and diagrams relating to this method are to be found on pages 170, 173 and 177. In the example the control of revenues takes the form of a comparison between estimated revenues (i.e. estimated in accordance with the current basis for premiums) and services performed.

The control of profitability is illustrated chiefly in two ways: in one, the estimated revenues are set against the registered separable costs in each department: in the other, estimated revenues are compared with standard separable costs for services performed.

In chapter 8 we show, purely theoretically, how the control of profitability in one branch of insurance can be arranged. The example is based on a comparison of separable revenues and separable costs. Our task was made easier since this branch of insurance was separated organizationally from other sections of the business during the period of our study.

The psychological reactions to budget control are discussed in an appendix. The discussion follows the lines of an investigation by Chris Argyris of the University of Michigan, Human Problems with Budgets (Harvard Business Review, Vol. 31 No. 1).
P. D.