DETERMINATION OF LIFE & HEALTH INSURANCE PREMIUMS IN GHANA – PRACTICE, PROBLEMS & PROSPECTS

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1. INTRODUCTION

Insurance is a mechanism where a pool is established, where many people facing similar risks contribute into a common fund, and out of the fund, those who suffer loss are compensated; meaning, insurance involves a sharing of or pooling of risks among a large group of people.

The origins of insurance go back many years, and can be traced to members of a community helping out others who suffered loss in some form or other. For example, people would help out neighbours who had suffered a death or illness in the family. While such aid was in many cases due to altruistic feelings, there was also a motivation of self interest. You would be prepared to help out a neighbour who suffered some calamity, since you or your family could similarly be aided by others when you required such help. This eventually became more formalized, giving rise to insurance companies as we know them today.

With this development, the sharing of risk is no longer confined to the scope of neighbours or community members one knows, but rather among all those who chose to buy policies from a particular company.

Although there are many different types of insurance, the underlying, basic principle is similar. A company, known as the ***insurer***, agrees to pay out money in the form of a compensation, which is here referred to as benefits, at specified times, upon the occurrence of specified events causing financial loss. In return, the person purchasing insurance, known as the ***insured***, agrees to make payments of prescribed amounts to the company. These payments are known as premiums. The contract between the insurer and the insured is referred to as the insurance policy.

The risk is thereby transferred from the individual facing the loss, to the insurer. The insurer in turn reduces its risk by insuring a large number of individuals. Consider the following example, which admittedly, is vastly oversimplified, but designed to illustrate the basic idea of premium determination:

Suppose that a certain type of event is unlikely to occur, but when it does, it causes a financial loss of ¢100,000. The insurer estimates that about 1 out of every 100 individuals who face the possibility of such loss will actually experience it (i.e.: 1% of the number of insureds). If the company insures 1,000 people, it can then expect 10 losses (i.e.: 1% of 1,000 people). Based on this model, the insurer will charge each person a premium of ¢1,000 (here, we ignore certain factors such as expenses and profits). It would collect a total amount of ¢1,000,000 and have precisely enough to cover the ¢100,000 loss for each of the 10. Each individual has eliminated his or her risk, and in so far as the estimate of 10 losses is correct, the insurer has likewise eliminated its own risk.

The example illustrates what is known as a deterministic model. The insurer in effect pretends it will know exactly how much it will pay out as benefits, and then charges premiums to match this amount. Of course, the insurer knows that it cannot really predict these amounts precisely. Use of deterministic models is justified by relying on the statistical concept known as the 'law of large numbers', which intuitively says that, if a sufficiently large number of individuals are insured, then the total number of losses will likely be close to the predicted (assuming that the original estimate of the likelihood of a loss – the 1 out of a 100 figure in the above example is correct).

For greater sophistication, a stochastic model is needed, which will assign probabilities to the occurrence of various numbers of losses.

Premiums received by insurers are invested, and the resulting earnings can be used to help provide the benefits. Consider again the simple example given above, and suppose that the benefits do not have to be paid until 1 year after the premiums are collected. If the insurer can invest the money at say 5% interest for the year, then it does not need to charge the full ¢1,000 in premium, but can collect ¢1,000/1.05 from each person. When invested, this amount will provide the necessary ¢1,000 to cover the losses. Again, this example is oversimplified and there are many more complications.

2. LIFE & HEALTH INSURANCE

2.1 Life Insurance

Life Insurance is a contract between an insurance company and an individual(s), which provides a hedge against untimely death of that individual(s). It is fundamentally a contract, which on the death of that individual(s) requires the payment of a lump sum of money (sum insured) to the nominated beneficiaries of the policyholder.

The insurance contract is a simple one. The individual (insured) pays some money (premium) to the insurance company (insurer). The amount of premium is based on such factors as the individual's age, gender, medical history and the benefit amount. In return for this premium payment, the insurer promises to pay the insured compensation if a specified event happens. The contract therefore allows the insured to transfer the risk of loss to the insurer.

Life Insurance, like other forms of insurance, is based on three concepts:

- Pooling many individuals into a group
- Accumulating the fund arising from contributions
- Paying from this fund, losses of those who die each year

That is, Life Insurance involves the group sharing of individual losses. In other words, a group of individuals share the burden of loss from death by providing funds to the nominated beneficiaries of those who die.

Modern day life insurance however, has extended beyond pure protection, and now, many life policies are taken for investment purposes. It has become a major channel for savings and investments for the individual and the national economy.

2.2 Forms of Life Insurance

The traditional forms of life insurance are: term life insurance, whole life insurance and endowment insurance.

The term life insurance provides for payment of the sum insured to beneficiaries on death of the insured, on condition that death occurs within a specified term or period. Should the insured survive to the end of the term, the insurance cover ceases, and no money is payable. Term life insurance is the cheapest form of protection and it can offer a high level of insurance cover for a low premium.

Under a whole life insurance policy, the sum insured is payable on death of the insured whenever it occurs, and premiums are payable throughout life.

Endowment insurance policies combine savings with life insurance. With this, the sum insured is payable in the event of death within a specified period; however if the insured survives to the end of the period, the sum insured is also paid.

In order to make their products more attractive to the public, the life insurance industry has moved away from these traditional or conventional policies with the introduction of what is referred to as universal life policies which combine features of the aforementioned policies, and as well, links the policy's performance directly to the underlying investments. Universal life policies are designed to be versatile enough to meet all the life insurance and investment needs of the policyholder throughout life.

2.3 Health Insurance

Health Insurance is essentially a method for financing or paying for the cost of healthcare. It entails the spreading of the risk of incurring healthcare cost over a group of individuals. The larger the number, the lower the risk.

The individual who belongs to a Health Insurance Scheme contributes regularly into a fund irrespective of whether or not he/she is sick. At the time of sickness of any such individual contributor, the cost of healthcare is borne by the scheme with payment from the fund.
This means, the individual members of the scheme are collectively sharing the burden of the cost and risk of ill-health among themselves.

The advantage of Health Insurance is that, the individuals' access to healthcare is independent of his ability to pay out of his pocket at the time of illness.

2.4 Forms of Health Insurance

The main categories for the funding of health services are:

- Government Finance through Tax
- Social Insurance
- Mutual Insurance
- Private Insurance
- Direct Payment for Services by Patients

With the exception of the last option, the other systems all provide an element of insurance (i.e.: risk pooling or risk sharing). Services are provided on the basis of right derived from past contributions. There is therefore an element of protection from the risk of ill health. Such systems therefore provide an element of mutual support. Those of higher risk and those on lower incomes are supported in part by people with higher incomes and low risk. Given the correlation between low incomes and high risk of ill-health, there is a case for providing this support.

Government tax-funded systems pay for health services out of general government revenue.

A social health insurance plan refers to one whose basis for contribution is the payroll. The contributor pays a percentage of his payroll earnings into a fund, with an extra percentage coming from the employer or even government. It is a not-for-profit scheme. Contributions are based on ability to pay, and access to health services depends on need. Mutual health insurance plans are also not-for-profit schemes, and have a strong community focus and ownership. Contributions to the scheme are community-rated and the risk is shared across the pool of individuals.

Private medical insurance plans however base contributions on the risk of individuals incurring healthcare cost; i.e. risk-related premiums are charged. Those with higher risk pay more. It is operated for profit, and ownership of the scheme is by the company and shareholders of the company.

It is worthy of note that even under health insurance, services would still have to be paid for just that, beneficiaries would no longer have to pay out-of their-pockets for the required service at the time of illness. They have already prepaid against the possibility of ill-health by contributing to an insurance fund.

Direct payment by patients involves neither insurance nor mutual support. Patients are charged according to a set tariff for the services they use.

3. INSURANCE RATING

Insurance pricing, or rating, refers to the scientifically determined factor that is applied on the value of insurance to determine the amount of premium payable. It involves the determination of appropriate premium for a risk to ensure that a sound and equitable underwriting is always realized.

The importance of this practice cannot be over-emphasized in an industry that thrives on the law of large numbers, where insurance clients contribute premium to a pool for the coverage of their risks and expect the replacement of the subject matter of insurance, or receive appropriate compensation in the event of a loss.

In insurance business, the premium rate is the rate per unit of exposure, and this depends on the average claim frequency per annum per unit of exposure. The present value of the average size of claim is also factored into the premium rate determination. Generally, insurance rates are usually determined in relation to the nature, class, location and quantum of risk.

The general rule in insurance business is that premiums collected have to be adequate to meet the total losses in any one year, and also cover the costs of operating the pool, including the profit of the insurer. This implies that when an insurer applies a low rate, just to acquire or be on a risk, the occurrence of a claim would necessitate drawing from another source in the basket of risks to meet its liability to the clients. This is a factor that forms the foundation for distress and inability to pay claims among insurance companies.

Clearly, scientific pricing of risks is necessary to achieve annual equilibrium between premiums and claims, commissions, management expenses, overheads, reserves and profits.

The overriding task is to ensure that the premiums, together with investment earnings, are adequate to provide for the payment of benefits. If this is not true, then it will not be possible for the insurer to meet its obligations, and some insureds will necessarily not receive compensation for their losses.

The challenge in meeting this goal arises from several areas of uncertainty. The amount and timing of the benefits that will have to be paid, as well as the investment earnings, are unknown and subject to random fluctuations. Substantial use of probabilistic methods can be used to handle this uncertainty.

Another goal is to achieve equity in setting premiums. If an insurer is to attract purchasers, it must charge rates that are perceived as being fair. Premiums must fulfill the goals of adequacy and equity.

The fundamental equation for calculating premiums from first principles, is by use of the equation of payments:

i.e. Present value of Gross Premiums = Present value of Benefits + Present value of Expenses

The gross premium comprises what is referred to as the risk premium (net premium) which takes into account interest and mortality, in addition to allowance to cover administrative expenses which may in turn include margins to cover contingencies and profits.

For the actuary working in life insurance, a major objective for premium determination is to estimate the mortality pattern which will be exhibited by a group of individuals. A basic device for accomplishing this is known as a life table, which is also known as a mortality table. A mortality table is a tool constructed from population mortality to facilitate the calculation of probabilities of death or survival. It is constructed by carrying out a study in which there is observation of how long people of different ages will live.

With reference to premium determination under Health Insurance, detailed claim costs are the most needed information in pricing health benefits. Claim costs data are generally collected for a 12-month incurral period and are tracked for medical services categorized into in-patient and out-patient hospital services; namely, surgical, radiology, pathology, miscellaneous physician services and prescription drugs. This is further sub-divided into in-patient stays, in particular, admission rate and average length of stay.

The variation in claim cost by age and sex is substantial, whiles variation by geographical area is also significant, except that there is usually difficulty in finding a database, large enough to study this in a credible manner.

To develop premium rates, detailed data is necessary – data to develop the cost of a given medical service and the expected utilisation of that service.

The following types of data may be needed:

- In-patient hospital utilisation data
- In-patient hospital unit cost data
- Frequency of visits to a physician or clinic
- Physician costs per unit of service
- Utilisation and unit costs of ancillary services such as x-rays and radiological procedures, laboratory tests and prescription drugs.

There are many potential sources for the above data. These include:

- General data from governmental bodies, or from other agencies that collect healthcare data
- Specific data from individual hospitals or physician groups
- Databases collected by insurance companies or consulting firms
- Other miscellaneous sources such as large local employers

In many situations, the data gathered from any of these sources must be modified for the specific characteristics of the health insurance scheme being rated.

The approach for determining the premium is by what is referred to as:

- Provider cost or budgetary method
- The benefit cost or actuarial method

The actuarial method uses assumptions for utilisation rates and costs per unit of service by different benefit categories. The composite claim cost is then increased by appropriate administrative expenses, profit margins, and any other retention items to develop the premium rate.

To develop cost assumptions, the actuary first divides services into two major categories – hospital and physician services. A third, smaller category is ancillary services not provided by the hospital, and other benefits such as prescription drugs. Each category of service is then analysed, and projections made of:

- The annual utilisation or the frequency of services provided per member per year, and
- The cost per unit or the charge associated with each service

The gross benefit cost per member per month is the product of the annual frequency and the average charge per service divided by 12 to get the monthly amount. Components are then subtotaled and the total net benefit cost per member per month is derived. In simple terms, the budgetary method considers all of the major expense areas of the scheme, and then determines the necessary revenue needed to cover these expenses.

Gross premiums consist of the expected claim costs, loaded to reflect expenses, commissions and contribution to surplus. To be viable in the long-run, an insurer must make adequate provision in its premium structure to cover the cost of creating, selling, underwriting and administering its products. Additionally, it must cover its share of the company overhead expense. The expense component of gross premiums is intended to balance the insurance company's total actual costs, competitive position, and strategy.

4. THE SITUATION IN GHANA

4.1 The life Insurance Environment

There are 21 direct insurance and 2 reinsurance companies in Ghana. 15 of the direct insurance and 1 reinsurance company underwrite life insurance.

The life insurance industry has grown significantly over the past few years. Growth in premium income over the period 2000 – 2005 has on the average been over 60% per annum.

The growth for this period is attributed to several factors including more modern marketing of products by the insurance companies, improvement in finances of the companies as well as stronger market regulation. In particular, over the period, several insurance companies introduced new life insurance products many of which incorporate retirement and investment elements; there has also been a drive by several companies to modernize their operations and improve their public image.

Despite these, the state of the life insurance industry is at a relatively low-level due, among other reasons, to the fragile state of the economy.

There is a large informal sector which is estimated at over 80% of the country's active workforce. They are predominantly engaged in agriculture, fishing and retail trade, where incomes are often low and irregular, and less use is made of the banking sector for arrangements to be made to deduct premium on behalf of insurance companies.

This is worsened by the fact that, a significant percentage of the population is still illiterate, and this group has often grown apart from the mainstream of affairs, yet, that group represents a huge amount of untapped grassroots capital which is yet to be fully exploited by the insurance companies.

Lack of requisite information on insurance is also a major setback. Many people hold the view that insurance is only for the elite and the affluent in society and very little is known of the different polices insurance companies in the country offer. Serious efforts should be made to reach this group through aggressive marketing.

It is worth mentioning that in recent times, a significant amount of effort is being advanced by the insurance companies to provide a good number of attractive life insurance products to the Ghanaian market.

With reference to the pricing of life insurance products, the process has involved the use of adjusted British or South African Life Tables, because of the non-availability of an official Life Table modeling the Ghanaian experience. In particular, the following Life Tables have been extensively used: A24/29,
A1967-70 and South African 1956-62.

4.2 The Health Insurance Environment

The framework for Health Insurance in Ghana is stipulated by the National Health Insurance Act, 2003 (Act 650). The Health Insurance Act permits the establishment and operation of three types of health insurance schemes in the country, namely:

- District Mutual Health Insurance Schemes (DMHIS)
- Private Commercial Health Insurance Schemes (PCHIS)
- Private Mutual Health Insurance Schemes (PMHIS)

Features of these are described below:

4.2.1 District Mutual Health Insurance Scheme

It is a scheme that should be established in every district of the country for residents of the district, and is to be operated exclusively for the benefit of the members. The schemes shall be provided with subsidy from the National Health Insurance Fund. The members are required to pay contributions determined by the scheme; however, exemptions must be granted to indigents, pensioners of SSNIT, and SSNIT contributors whose monthly contributions amount to or exceed the minimum monthly contribution required under the DMHIS.

Membership is to take effect within six (6) months from the date of enrolment of the applicant, upon the payment of the initial contribution.

A member of a DMHIS who moves to reside in an area other than the area where the scheme on which the member is enrolled, is entitled to have the membership transferred to the DMHIS in the new area of residence.

4.2.2 Private Commercial Health Insurance Scheme

A PCHIS is regarded as a limited liability company under the companies code and considered a business venture. It is required, as a condition for registration and licensing to deposit with the Bank of Ghana, a sum of money as security for its members, which shall be maintained throughout the period that the business is carried on. Provisions relating to the insurance Law of 1989, also apply to this scheme.

4.2.3 Private Mutual Health Insurance Scheme

Any group of persons resident in the country may form and operate a PMHIS, which must operate exclusively for the benefit of the members.

There are general provisions which apply to all schemes. For instance, every scheme must have a governing body and a scheme manager. Also, every scheme must provide its members with at least minimum prescribed healthcare benefits, and provide members with identity cards.

The regulatory body NHIC must see to it that healthcare providers put in place programmes that secure quality assurance, utilization review and technology assessment to ensure that:

- The healthcare delivered is of reasonably good quality and standard;
- Basic healthcare services are of standards that are uniform throughout the country;
- The use of medical technology and equipment are consistent with actual need and standards of medical practice and ethics; and
- Drugs and medication used for the provision of healthcare in the country are those included in the National Health Insurance Drug List of the Ministry of Health.

5. THE HEALTH FUND

The Act establishes a National Health Insurance Fund, with the objective of providing finance to subsidize the cost of provision of healthcare services to members of the DMHIS, part of which is to be set aside for the healthcare cost of indigents. The main sources of money for the Fund are: the National Health Insurance Levy, and the 21/2% of each person's 17½% contribution to SSNIT.

So far, Over 100 District Mutual Health Insurance Schemes (DMHIS) have been established out of the 138 districts. Some of the schemes are operating efficiently and paying claims for services rendered to their members, while others are plagued with problems of claims management, over-utilisation of services and inadequate trained human resources to manage the schemes.

Three private schemes are operational in Ghana, namely the GLICO Health plan, operated by Gemini Life Insurance Company (GLICO), Nationwide Mutual Insurance, operated by Vanguard Assurance Company, and Medical Express Scheme (Med-X).

In terms of premium determination under these schemes, whiles the premiums of the private schemes are actuarially determined, that for the DMHIS is fixed at a minimum of ¢72,000.

It is observed however that, there is no clear scientific or actuarial basis for which premiums have been determined for the DMHIS. As a result, a fund has been created to provide substantial subsidy to support the schemes.

On observation, it appears that the premium for the DMHIS is on the low side when related to the kind of benefits that are provided by the schemes. The sustainability of the schemes will depend on appropriate premiums being charged, as well as efficient claims and other administrative expenses.

6. RECOMMENDATIONS

In the light of the aforementioned issues, there is the need to consider the following:

- There is the need to establish Research and Monitoring Departments at the National Insurance Commission, and the National Health Insurance Council to collect, collate and analyse appropriate mortality, morbidity and other relevant statistics peculiar to the Ghanaian experience on a continuous basis, in order to guide formulation of policies, which will be used to direct the operation of Life and Health Insurance in Ghana.
- There should be the need in recruiting and training of personnel skilled in disciplines like actuarial science, statistics, demography and related areas, in the operation of these regulatory bodies, as well as in the insurance companies.
- There is the need for good links to be established between the Life & Health Insurance Industry and research institutes, e.g.: ISSER, Kintampo Health Research Institute, Department of Statistics, Legon, and other like institutions, to facilitate industry-specific research, etc.

7. CONCLUSION

Much more needs to be done beyond what currently pertains, for the appropriate determination of premiums for Life & Health Insurance in Ghana; since the sustainability and credibility of the life and health insurance industry is dependent on getting it right so far as the determination of premiums is concerned.

This can be facilitated by institutionalising the collection of appropriate data on a continuous basis, to assist this important area of the industry's administration, and all effort must be made in this direction if success is envisaged.