Title: Underwriting life-insurance	
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Aspects of underwriting life-insurance

Agreement

Insurance is an agreement. Members of the Mutual Insurance take out policies with the Mutual. This agreement is called insurance. The document that lays down the agreement is called policy. Members pay a price for the agreement. We call that price premium. The insurance pays out an amount in certain cases. We call these cases claims. The members are therefore buying security. Every term they pay a small amount. In return they get security. This security means that they will get an amount of money in the case of claims. If there are no claims, compensation is not needed. The Mutual Insurance then looks like an office that collects money off its members. The Mutual pays this money to members who have suffered claims. The people entitled to a payout when there are claims are called the insured. They can be the members, but also other people from their family.

Security

Security is the basis of insurance. Members pay premiums and know for sure that they will not be hit financially by certain disasters. Members never pay premiums for nothing. Even when a member suffers no claims, he still does not pay premiums for nothing. After all he has received security over that period.

Saving or insuring

There are several ways to protect against a calamity. One can get financial protection either by saving or by insuring. Saving is appropriate for goals that one selects; insuring is appropriate for calamities of which one does not know if and when they may happen. Saving can be done individually for an individual goal. Insuring cannot be done individually per definition. One does that together with others. Insuring rests on the principle of solidarity. People do not all die at the same time, therefore one can get insured against the financial consequences of dying.

Saving and borrowing

Saving is an appropriate method for a specific goal. You can, e.g., save for a machine. You know its price. You can calculate how long you must save a certain monthly amount to get the needed capital. You can decide how long you want to save and then calculate the monthly amount. And vice versa. Borrowing is really delayed saving. You first buy a product with somebody else's money and then you pay him back in monthly instalments. A problem occurs when you cannot pay back the loan, because of disability or an accident or death. The family is then stuck with a debt.

Insuring

Insuring is an appropriate method when you do not have your eyes set on a specific goal. The purpose of insurance is to provide financial protection; protection against the consequences of a disaster. In insurance-speak we call a disaster the claims. You can protect yourself against, e.g., accidents or against (an unnatural) death. As you do not know in advance when the disaster (claims) is going to strike, saving is not an appropriate solution. Should it happen within a year, then you will not have saved enough. You must then save a lot in a short time to have sufficient funds should the disaster strike early. The disadvantage is that you cannot use the money for other purposes. Another disadvantage is that you may be saving for something that never happens, looking back. Not everybody has accidents.

The product

The insurance agreement clearly describes the security you are buying. Not every financial setback is insured. Certain products offer security in the case of death. Other products offer to cover accidents. Each product has a certain price. The price is related to the product's security.

Premium

The members pay a premium for the insurance they take out. The premiums paid by all members together are the Mutual's income. The sum of all the premiums is in a sense the Mutual's budget. The Mutual pays claims from the premiums. For this it needs a reserve. See below with claims. The Mutual also pays its agents. Finally a certain amount of money is needed for office expenses. The office expenses are made up of material and staff salaries. Materials are office furniture, computers, leaflets, etc. The sum of the premiums collected is therefore higher than the sum of the Mutual's claims payments. The Mutual's articles of association can also determine what share of premiums can be spent on paying agents. The articles of association can also determine the share meant for office materials.
So, for a particular year:
The sum of all premiums = all claims + office costs + payments to agents + contribution to general reserves.

Determining the premium

It is important to set the right premium for every product. When the premium is too low the Mutual may one day no longer be able to pay for claims. When the premium is too high the Mutual runs the risk that people will not buy the product when the risks are low in their estimate. This is called anti-selection. This means, that only people who estimate the risk of claims as high buy a policy. In the end the Mutual then also pays many claims and gets into financial problems. Determining a premium is in fact an exercise in estimating the probability of incurring claims. Determining a premium is therefore about calculating the probability of dying or an accident.

Premium and age

For products that insure the risk of dying the premium very much depends on the risk. After all: the older, the bigger the chance of dying. For the premium this means the following:

- The premium for old people is higher, because an older person dies sooner than a young person and pays the premium over a fewer number of years, but the payout for claims remains the same.
- In the case of old people the period between the start of premium payments and the claims is shorter than for young people. This means that the insurer earns less interest on premiums collected from old people.
- The costs of selling a policy, its administration and claims procedures are the same for young and old people. These fixed costs impact relatively more on the policies of older people, because they have made fewer premium payments.
- The above factors imply an extremely high premium for old people and hence create the danger of anti-selection. You can only break out of this when there is sufficient solidarity and the option of an apportionment system[1]. The insurer then chooses deliberately to set high premiums for young people so as to lower the premiums for old people. To prevent anti-selection you can set a quota, for instance, no more than one old person insured for every five young people insured.

An alternative for insuring old people is to turn it into a kind of savings scheme. When some one dies the total amount of paid premiums is paid out, possibly increased with a generous interest.

Selection and anti-selection

The premium the Mutual sets is based on the probability of claims. That probability is based on historical data. The probability is thus an average of past claims for a particular region or a particular age group. The principle only works when future claims are in the same group of people. That is why it is important that the products are sold to members who do not deviate too much from the average. We call this selection. When the premium of a certain product is too high anti-selection can happen. When anti-selection happens only people with a high probability of claims buy a policy. The danger of anti-selection is that future claims turn out to be higher than had been estimated in advance. An example will make this clear. Suppose you are selling a product that offers a payment when the insured dies. When the premium for this product is much too high the average person will not buy this product. But it is still attractive to people who are

[1] Normally when premium tariffs are set it is assumed that every risk has its own premium. Every new policyholder pays the premium that belongs to his risk. Premiums are set on the basis of a risk calculation. In an apportionment system the claims are the point of departure. Everybody who wants to join can do so and you calculate how much premium is needed. The premium is then divided over the insured using certaina standards (slight age tariff).
In a premium system one really saves, and in an apportionment system one is really borrowing. Current payouts are done from current and future risks. In fact, you do not need reserves in an apportionment system. The danger is, you are not sure of the future inflow of newly insured people; especially when there are many payouts in an early phase, the premium has to go up quite a bit and the question then remains if people are still prepared to get insured. However, when it works the demand for insurance will be very high and in the long-term premiums go down and a high degree of mutual solidarity has been reached.

seriously ill or so old that they expect to die in a couple of years. The Mutual is then confronted with many claims. Should you then decide to increase the premiums in order to cover the claims, the problem will only get worse.
You must select well the people you want to insure. For instance, by setting age limits. Another method is to not fully pay out claims that happen within 2 or 3 years of buying a policy, but only to payout the premiums already paid.

Group insurance

Insuring a group of people as a whole has several advantages. In this construction it is not the individual person or family that is insured, but a certain group of people, of e.g. 20 adults, that exhibits solidarity. The group is acting like a collective. It pays the premium in one go for the entire group, and there is only one policy. The advantage of this construction is a functioning mutual solidarity. People watch over each other to ensure that the premium is collected. It leads to fewer problems with arrears. It also reduces the chance of anti-selection because the other members of the group compensate the individual bad risk. It is in a sense the law of big numbers for small-scale operations.