

What Does Voluntary Retirement Insurance Insure Against?

Compared to other ways of saving, voluntary retirement insurance has a number of special features. One of these is how it is taxed. Voluntary retirement insurance, as variable annuities are called in Finland, is taxed more lightly than most alternative ways of saving. On the other hand, the tax benefits are tied to savings not being withdrawn before the age of 62. Another, and more fundamental, difference from other forms of saving is that, as the name suggests, voluntary retirement insurance is not just a way of saving, but is also a particular type of insurance. But what does voluntary retirement insurance insure against and why should one buy such insurance?

INSURANCE AGAINST A LONG LIFE

Home insurance provides insurance against damages to property. In the case of an accident, the insurance company compensates the homeowner for losses according to the terms of the contract. In order to see the analogue with retirement insurance, it is useful to think of a contract where the insurance company is committed to a stream of payouts, or pensions, until the death of the insurance holder. If the insurance holder lives very long, he may then receive far more pensions than what he has saved for. On the other hand, if he dies relatively young, he receives less pensions than what he has saved for. In the latter case, the outcome is similar to the case of a home insurance holder whose property is never damaged. In other words, retirement insurance insures against living a long life: the longer an individual lives, the more he receives in payouts from the insurance company.

To most people, a long life is something worth pursuing. Thus, in contrast to perhaps all other insurance schemes, retirement insurance



NIKU MÄÄTTÄNEN

Researcher, ETLA

insures against a happy outcome. But what is the point of insuring oneself against something one wishes to happen? In the economic literature, the usefulness of retirement insurance is based on how it helps people smooth their consumption over time. The idea is immediately intuitive, so let us illustrate it with the following example.

THE CONSUMER'S PROBLEM

Let us consider a consumer who knows that he will live at least one period and at most two periods (a period here could mean, say, 10 years). He also knows that he will die with probability 0.5 immediately after the first period. The consumer has savings worth 90,000 euros, but no income whatsoever. The basic assumption is that in both periods he would like to consume as much as possible, but that the more evenly his total consumption is spread over the two periods the better. In other words, if he is to live for two periods, he is better off by consuming 45,000 euros in both periods rather than consuming, say, 80,000 euros in the first period and only 10,000 euros in the second. We first assume that the consumer doesn't wish to leave a bequest. For simplicity we assume that the interest rate is zero and abstract from all tax issues.

The problem of the consumer is to decide how much to consume in the first period and how much to save for the second period, knowing that in the second period he may not be alive to enjoy his savings. Obviously, it is not optimal for him to spend all his savings in the first period, because then he wouldn't be able to consume anything in the second period, when he may well still be alive. On the other hand, he probably doesn't find it optimal to save as much as half of his wealth for the next period, because he may well not be there to consume his savings. In this situation, his optimal plan might be to consume 60,000 euros in the first period and to save the remaining 30,000 euros for the second period.

Let us now introduce retirement insurance. The following contract is an example of retirement insurance: In the first period, the consumer pays the insurance company 30,000 euros. In the second period, if the consumer is still alive, the insurance company pays him X euros. If the consumer dies at the end of the first period, the company doesn't pay anything to anyone.

In order to proceed with our example, we first need to determine X . From the insurance company's point of view, the return on each individual contract is uncertain. Its business is based on selling a large number of similar contracts, so that the risks related to individual contracts cancel each other out. In this case, the insurance company makes zero profits if, in exchange for a purchase payment of 30,000 euros in the first period, it offers a payout of 60,000 euros in the second period if the consumer is then still alive. Recall that the payment of these consumers is retained by the insurance company. If all consumers die with a probability of 0.5 at the end of the first period, (about) half of them die before receiving benefits. Hence, for each consumer who does receive a benefit there is one consumer who doesn't. Of course, in reality there must be some costs involved and the company may be

able to make profits. So, the payout would be somewhat less than 60,000. However, as long as the extra charges are not very large, they do not substantially change our example, so let us assume that $X=60,000$.

Should our consumer purchase this retirement insurance? If he does, he is left with 60,000 euros to consume in the first period. If he is still alive in the next period, he may then consume another 60,000 euros. Of course, this is much better than saving 30,000 euros in the first period (in a bank account) because, in that case, only 30,000 euros worth of consumption would be available in the second period. With retirement insurance, those alive in the second period receive an extra return to the insurance payment which is related to average mortality.

RETIREMENT INSURANCE AND BEQUESTS

Retirement insurance looks very attractive in this example partly because of the assumption that the consumer doesn't want to leave a bequest. A bequest motive reduces the demand for retirement insurance but it doesn't make them useless. Let us assume that the consumer wishes to leave a bequest of 30,000 euros. In this case, his optimal solution is to leave 30,000 euros aside for the bequest, consume 40,000 euros in the first period and pay 20,000 euros to the insurance company in exchange for a retirement benefit worth 40,000. In that case, he will leave a bequest worth 30,000 independently of when he dies. In the absence of retirement insurance, both second period consumption and the size of the bequest would be uncertain.

Given the structure of retirement insurance contracts commonly available in Finland, the extent to which a retirement insurance contract really is insurance depends mainly on the length of the payout phase and whether or not it includes a death benefit. In Finland, it is possible to withdraw all savings in just two years starting from the age of 62 without losing tax benefits. It is clear that in that case the

insurance role is negligible, simply because the possibility of dying before having received all benefits is very small. The longer the payout phase, the more important is the insurance aspect. Let us consider the role of a death benefit with our example.

DEATH BENEFITS

A death benefit means that the insurance holder chooses a beneficiary who receives a payout if he dies before the end of the payout phase. Let us assume that the consumer in our example buys a death benefit which pays 30,000 euros to his beneficiary in the case he dies at the end of the first period. How much does the death benefit cost? With probability 0.5 the consumer dies before the payout phase and the company needs to pay 30,000 euros to his beneficiary. Abstracting again from fees and charges, the price of the death benefit is thus 15,000 euros.

The death benefit doesn't help the consumer in smoothing consumption or even assuring a certain bequest. As long as the death benefit is not larger than savings, he could always guarantee the same bequest by setting aside whatever he wishes to leave as a bequest. As an extreme example, we can consider the case where the death benefit is the same as the

payout from retirement insurance. As we noted above, for a purchase payment of 20,000 euros, our consumer receives a payout of 40,000 in the second period. Similarly, a purchase payment of 20,000 euros for a death benefit will give his beneficiary 40,000 euros if the consumer dies before the second period. Hence, the consumer pays 40,000 euros in the first period in exchange for receiving, together with his beneficiary, 40,000 euros in the second period. For the consumer, this is equivalent to saving first 40,000 euros in a bank account and simply giving and bequeathing that to the same person that would be the beneficiary of the death benefit.

MANDATORY AND VOLUNTARY RETIREMENT INSURANCE

Of course, our mandatory pension system already provides insurance against a long life. Pension benefits are paid until death and there is usually no death benefit associated with them. Mandatory pensions reduce the demand for voluntary retirement insurance. On the other hand, most people probably appreciate this insurance aspect of the pension system. The economic situation of retirees would be quite difficult if all benefits were paid out as a lump-sum transfer at the time of retirement.