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INSURANCE AS INVESTMENT

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L'ASSURANCE VUE COMME UN INVESTISSEMENT
RESUME

Se fondant sur une extension du concept d'investissement - *toutes les acquisitions d'un agent investisseur dans un groupe d'actifs (réels ou financiers) capables de lui procurer des services ou un revenu durant une certaine période*, on parvient à la conclusion que la souscription d'une police d'investissement peut être considérée comme un investissement stratégique. Cette notion, qui relève de l'économie financière, est utilisée pour signer les investissements dont l'objectif est de réduire les risques associés à l'activité d'une entreprise - par exemple garantie de fourniture de matières premières rares - ou à des problèmes de type social, tels que ceux liés à la protection sociale. Il est facile d'étendre cette terminologie à la famille.

Un projet d'investissement de rentabilité espérée (*μ*) et de risque prévu (*σ*), pour un investisseur *A* aux préférences duquel est associée une fonction d'utilité *U* (*μ*, *a*), peut être considéré comme hors de portée, puisque très risqué. Ainsi, lors du report d'une partie du risque sur l'assurance, bien que le profit espéré baisse du fait du paiement de la prime (*Π*), le risque étant réduit à 0, l'utilité d'entreprendre le projet est :

\[ U(\mu', \sigma') > U(\mu, \sigma) \quad \mu' = \mu - \pi \]

et le projet devient possible.

On envisage le concept d'actif financier, applique aux modalités de l'assurance - vie. Le concept d'investissement initial inclut le placement d'actifs financiers. Pour l'investisseur, les caractéristiques les plus intéressantes de ces concepts sont :

- la rentabilité espérée,
- le risque implicite,
- le niveau de disponibilité.

L'auteur analyse ces aspects des polices d'assurance - vie, en examinant les problèmes posés par des modalités telles que l'assurance à terme fixe à simple prime avec remboursement à n'importe quel moment, en se fondant sur une hypothèse scientifiquement fondée, selon laquelle les clauses spéciales qui affectent une opération, telles que celles indiquées plus haut, sont plus ou moins significatives, et peuvent ou non être considérées comme des opérations d'assurance. Plus spécifiquement, la condition à exiger pour qu'il s'agisse de véritables opérations d'assurance, est la garantie d'assurance. En conséquence, le fait que la prime soit unique ou périodique, n'est pas considéré comme significatif, pas plus que le fait que l'opération soit à court ou long terme, ou que le remboursement soit possible ou non à tout moment.

Ces caractéristiques doivent être prises en compte dans la gestion des compagnies d'assurance, particulièrement lors de l'évaluation de la structure du portefeuille d'investissements, de la fixation du taux d'intérêt technique, de l'affectation des coûts administratifs ou de la rémunération du réseau, etc. - mais sans se poser la question de savoir s'il faut, ou non, les envisager des opérations d'assurance.

La dernière partie de ce travail analyse les avantages des opérations à prime unique, du point de vue macro-économique.
INSURANCE AS INVESTMENT

By Dr. Eugenio Prieto Perez

1. YIELD AND RISKS FOR THE INSURANCE INVESTOR

We will begin by defining the term investment, which has been given many similar but different definitions. We will briefly try to express the meaning we apply to the term in this work. The loose meaning of investment as we understand it is the acquisition, by an agent - investor, of assets (real or financial) which provides services or income during a certain period of time.

All the different investment possibilities can be put in different classifications and, among them, one that is of interest to us here is that which was introduced by Eric Schneider, which distinguishes real investment from financial investment.

The first type of investment is made for the purpose of some productive process, in the loosest sense of the word, in order to offer goods or services to the market. The second type, that is, financial investments, are those that are made in order to gain financial assets.

Now there is another concept we must define. Financial assets are seen as the flow of monetary income to which one is given the right, because they represent a reserve of acquisitive potential. From the point of view of the financial investor financial assets can be grouped in three large categories:

a) Financial assets that are preferred for their liquidity. In this group we have demand deposits, savings accounts, stocks, bonds and things of this nature;

b) Assets that satisfy a specific need (life insurance, retirement pensions, old age, other types of insurance policies, etc.). Assets that cover specific needs can be chosen and designed by the issuer so that they cover the needs and preferences of a wide variety of individuals and, this implies that the time period of the investment can be different and that it can have different degrees of liquidity.

The properties of financial assets, in general, are based on trust that the holders of them have that they are in their possession, and that simultaneous use will not be made of them.

Obviously, insurance policies are financial assets which belong to group b). The specific need that they satisfy is to cover risks that are associated with goods, property, income or plans of policy holders, whether an individual or company. A significant example is: Fire Insurance, which covers the risk of fire, which could cause damage to or destroy property, which is necessary for a carrying out an activity that is essential to the policy holder, a simply in order to serve as an office or home etc.

The purpose of these policies is to diminish the risk of investments, making many of them feasible that otherwise wouldn't be, precisely because of the high risk implied for the investor.

In this example, insurance is a complementary investment whose benefit is a function of the profitability of the main investment. Investment in Fire Insurance and in general, in Property Insurance, would have to be included among the so-called strategic investments, a term which is applied in the economy of a company to those investments whose aim is to diminish risks within the company or those that may result from concerns for social order, as well as perhaps well-being of personnel. This terminology can obviously be extended to other areas such as the family.

From the point of view of the real investor, the most important characteristics of an investment plan are:

1) The expected yield.
2) The risk involved.
3) The maturity period, or time it takes to get back the investment.

We will look at, without it restricting the conclusions that might be made, the first two characteristics, which in general are not independent of one another, since greater benefits are expected for plans that represent greater risks.

Let's take investment plan P which offers expected benefits \( \mu \) and risk \( \sigma \). To this risk/benefit combination \((\mu, \sigma)\) for the investor \( A \), whose preferences are given by the utility function \( U(\mu, \sigma) \), there is a corresponding utility index, \( u = U(\mu, \sigma) \).

If the utility function should correspond to an investor who has an aversion to risk, and their objective was to minimize it, on the basis of giving it up, to whoever is willing and in a situation to take it, the Insurer, for example, could look something like this: Give up part of the risk, so that which is taken by the investor in \( P \) would become \( \mu' \); but for this positive element, which is the reduction of the risk, a premium, \( \Pi \), must be paid.

When \( \frac{\partial U}{\partial \sigma} < 0 \) it is said that the investor has a behavior characterized by an aversion to risk, a term which means they prefer low-risk investments, among those of equal expected benefits.

Therefore, we find that investment plan \( P^* \), which was not considered feasible at first because it was too risky, can become feasible, with insurance. Notice that when this occurs, it could be verified that \( U(\mu', \sigma') > U(\mu, \sigma) \).

The most important characteristics of financial assets, for one who invests in them are:

1) The expected yield.
2) The risk implied.
3) The degree of liquidity or needs that can be satisfied.

\[ \text{It is denominated marginal utilities of function } U(\mu, \sigma) \text{ with respect to } \mu \text{ and } \sigma, \text{ correspondingly, } \frac{\partial U}{\partial \mu} \text{ and } \frac{\partial U}{\partial \sigma}. \]
Liquidity is understood to mean the ease with which financial assets can be converted to cash. In relation to financial assets of class a), questions related to liquidity are usually considered to be basic:

- For the fact that investors in financial assets in many cases require it, to handle the flow of expenses confronts them;
- Because it is necessary to control the degree of liquidity provided by the issuers of certain financial assets which are issued with this guarantee.

Liquidity, as it has been defined, is not a measurable magnitude in operative terms; rather it represents the ease of negotiation and security of capital. This latter refers to the possibility of predicting its market value for the future.

Liquidity of a financial asset can be achieved basically in two ways:

a) By providing financial assets with this characteristic.

b) With efficient secondary markets, where the acquirers of financial assets can get rid of them, when their need for individual liquidity requires it.

Among all the financial assets, money is the most liquid. With this in mind, we can take for example non-life insurance policies, which provide security and, in which those that the obligations of the insurance companies may or may not become services, according to whether or not a risk materializes that is covered in one or several accidents. In the field of Insurance there are policies which, besides satisfying a need (that - term a long * term), are characterized by a high degree of liquidity. The most current example is Insurance at a Premium whose service is to supply capital, which can be accessed at any moment. These policies are of the type of financial assets whose issuers guarantee liquidity; also of this type are bonds issued by entities that are not on the stock market, with a repurchase clause. Obviously, when the bonds are on the stock market, there is no need for a repurchase clause.

The profitability of a financial asset is measured by its yield, which is figured by comparing cost with the flow of income that can be provided. This flow of income is generally uncertain, that is, there is no certain flow of income in the absolute sense, so that the decisions for making acquisitions must be made on the basis of the expected yield, which later can vary to a greater or lesser degree.

The risk that a financial asset implies is defined as the possibility of obtaining a certain yield that comes to less than that which was expected.

Investment in financial assets will require greater expected profitability, when the risk is higher. The risk is something which is potential, so that it is possible that an investment that has provided subsequent profitability of 20 or 25%, might be considered low, when,

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3 As A. BERTONI indicates: "Monetary theory tries to overcome an overly shortsighted view of money to establish an increasingly wider synthesis in which credit represents a special case of financial assets and the same financial phenomena are integrated with real assets within logical well-defined schemes." (ACTIVIDAD MONETARIA DE LOS INTERMEDIARIOS FINANCIEROS NO BANCARIOS. I. C. E., Ediciones, 1973).
because of the risk that is implied, an expected profitability of 30% is required. On the other hand, a profitability of 8% might be considered high, if the risk of the investment is valued at lor 2% of the profitability.

For us to decide to invest in a certain investment project, we would require the imbalance to be verified:

Expected profitability ≥ required for investing in assets that don't imply risk + risk premium

The risk premium would be what Insurance would cost that might cover the risk of obtaining a profitability of that which is less than expected. The Insurance might not be contracted because the investor might be set up as his own insurer, but this does not mean that it is not valued and that compensation is not required from it in terms of expected profitability.

In this context and, for real investments as well as financial investments, insurance diminishes the risk of investments, for the investor, and if the investor has an aversion to risk, insurance can make investments possible (feasible projects) that otherwise would not be possible because the risk factor would be too high, that is, the possible results of an investment could mean the ruin of an investor, foil or make him in change his plans or simply cause him to lose assets or property.

As an example, we will analyze a situation which is quite common, which in light of the theoretical model that we have developed, it justifies many behaviors and preferences that have been characteristic of savers in the past years?

Let’s suppose that a 40 year-old person wants to have capital of 10 million pesetas at retirement; for this purpose there is a Savings Plan, consisting of annual payments in a fund which yields 8%. The payments should come to approximately 136,800 pesetas to reach this goal. Of course, this would not be the case if for one reason or another (loss of job, disability, going out of business or simple loss of reputation, etc.) income is reduced and the amount of savings required is not possible.

If instead of opting for the savings plan one opts for investment in securities, there would then be a different set of possibilities; one could invest in fixed-interest stocks or variable-interest stocks, or in a securities portfolio in which holdings of several investors are combined, so that one could have an efficient portfolio. In any case, added to the causes indicated for those that would not achieve their desired objective could be the a profitability of less than was expected (decrease in stock prices, risk of insolvency, unfavorable developments in the economic outlook, labor conflicts in the companies issuing the securities, etc.) which might result in any of the events that could be classified under the term systematic risk, that is, a risk that is not avoidable through efficient diversification. In recent history and in the near future, the stock market has been characterized by turbulence and a high degree of volatility.

4 Of course, this sensibility that is shown by savers towards risk and volatility in the financial markets is not considered by the legislator, and good proof of this is the Law to Regulate Pension funds and plans, and their rules.

5 According to H. MARKOWITZ, an efficient portfolio is understood to mean one that is composed in such a way that for its level of risk, σ, it provides the highest profitability possible, taking into account the profitability and risk of the different
Certain types of Life insurance present the double condition of covering foreseen needs and at the same time are a form of savings. The profitability of these financial assets issued by life insurance companies comes in various ways: one, because when the premium is calculated it is considered a technical interest, which can depend on various factors: the duration of the policy, the characteristics of the insurance and even the situation of the financial markets. A second way refers to the benefits gained, through death of persons or not, according to policies for the case of life, death or both, they do not get to take advantage of the benefits that accumulate to those that do. Lastly, there is a profits participation, for which the insurance company will pay as a share, a high percentage of the difference between the profitability that is obtained from the investment from the mathematical provisions and the amount of guaranteed technical interest, therefore, for example, at the time of retirement, the policyholder if he or she lives can collect 10,000,000 pesetas, and when:

- The amount of technical interest is 6%.
- 11,000,000 accumulates per contribution in benefits.
- 1,850,000 is paid in single premium and would have a subsequent profitability of 11.25%.

So, this type would have a subsequent risk of not collecting anything, because of death, which is figured to be 2% profitability; and approximately 1.5%, for the fact that the profits participation is not insured.

It should be noted that in the worst case, that is, when the profitability of the investments of the insurance company is not more that 6%, this certain profitability, in the most absolute sense, would be guaranteed, as well as the 10 million pesetas or the equivalent income. This guarantee is made through the calculation and constitution of mathematical provisions, which along with checking the solvency of the insurance companies, reduces the risk to zero.

Mortality risk can be reduced through countersigning, for example, making an insurance contract for the case of death, at variable capital for the amount of 1,850,000 from the date the contract is signed until the date of death, if it occurs before reaching 65 years of age. But notice that this is not a certain operation but rather the integration of two uncertain operations, which counteract one another, elimination risk to the policy holder, if not for the insurer.

A type of policy like the one studied can provide immediate liquidity, simply by means of a clause for redemption at any time. This simply means that the issuers of the financial assets are free to make the assets available in order to satisfy the needs of potential subscribers, within the boundaries of current legislation.

Notice that the time period of the operation can be any length of time. Let us suppose, for example, that an investor has 1,850,000 pesetas and is thinking about buying stock, but this investor is afraid that there might be volatility in the stock market or a
rise in interest rates or simply that certain measures are expected to be taken to fight inflation; in this case, the investor could take out an insurance policy similar to the one we have discussed as that simply consist of the payment of capital equivalent to the technical interest of 8%, redeemable at any time. If the contract was initially designed to last 2 years, the capital would come to 2,157,840 pesetas. Let us also suppose that redemption at any time was an amount of capital equivalent to the single premium of 1,850,000 pesetas, at 6% at the time of redemption. In this way, the policy holder would become free of the risk that existed during that time, for the investment in stock. Besides this, the investor, through this single premium insurance policy and the redemption clause, would have made an investment of maximum liquidity and security. The investor would permit him, once the unfavorable conditions had passed, to request the redemption and proceed with any other possible investment. In short, he was able to obtain profitability with risk of 6% or 8%\(^6\), without loss of any investment opportunities.

Many say that people who have this type of policy have everything; they exchange uncertain profitability (6 or 8%) as the case may be. The insurer takes the investment risk, which can partially eliminated through diversification. In the case that the risk is not eliminated, the insurer has a margin of solvency to take care of negative variations in profitability\(^7\).

One could argue that this type of risk is a business risk that no financial entity or business person can escape. The operation in question finally has all the ingredients of a financial operation, with a contingent payment; the actuarial insurance model is also respected, or in other words, the guarantee of the insurance is offered. The insurer should calculate, account for and cover the mathematical provisions at 100% and also cover with own assets, the minimum margin of solvency. The Spanish law for the Regulation of Private Insurance, in article three, prohibits insurers to carry out operations which lack actuarial basis, and article two specifies that "capitalization operations based on actuarial methods" must follow the law. In these references, the problem goes from defining what insurance is not, to what is understood by the actuarial insurance model. The law clearly identifies the characteristics of the actuarial insurance model:

1) The premiums should be equitable and sufficient, to cover the payments and costs of the transaction so that the operation can take place;

2) The constitution of technical provisions that correspond according to the cases, and,

3) The coverage of the minimum margin of solvency.

\(^6\) Eight per cent, if the operation reaches maturity.

\(^7\) We should clarify that a negative variation is considered a level of profitability which is below that which was expected. This profitability would represent a partial or total loss of the capital invested.
2. ANALYSIS OF "TERME FIX AND SINGLE PREMIUM INSURANCE"

In light of the actuarial insurance model, analysis of fixed time and single premium insurance can be made in the following terms:

The payment consists of providing a single premium $P$, at the beginning of the operation and, the payment at the end of $n$ years of capital $C$, whether the policy holder lives or not.

Capital $C$ is the quantity of the single premium in $n$ years, or, the operation can also be described as the payment of quantity $P$ to receive the amount at the end of $n$ years, to the amount $iP(1 + i)^n$.

According to the actuarial insurance model, the insurer should constitute mathematical provisions at 100%, and that, for example, in year $t$, they would be:

$$t R = P(1 + i) - (n - t) = P(1 + i)^t$$

The minimum solvency margin required for this operation, according to the Solvency Margin model of the EEC, is a percentage of $t R$.

There is no doubt that the guarantees or special clauses that affect an operation like the one we are analyzing can be very significant in whether an operation can be qualified insurance or not. For example, if the guarantee offered by the insurer was a mortgage, then we wouldn't be dealing with an insurance operation. When bankers carry out a transaction like the one being analyzed, without a guarantee other than that of the bank itself and, therefore, without the constitution of reserves or mathematical provisions, it would amount to a time deposit, and there are many other examples like these in the wide variety of formal conditions of the same financial operation with identical substantive conditions.

Another question that we have to discuss is that the condition of the insurance operation in the fixed time type of insurance, does not depend on the operation being carried out as a single premium or periodic premiums; that depends on whether or not an insurance guarantee is offered. Nor does it depend the redemption being at any time or at a certain time. Obviously, these characteristics should be taken into account from the point of view of the management of insurance companies, and of course, in the structure of the investment portfolio of the insurer, in the fixing of the amount of interest of the operation, of the assignment of administrative costs or payment to the commercial network, etc. But, they are not significant from the point of view of whether or not they should be considered insurance operations.

3. SOME MACROECONOMIC CONSIDERATIONS ON SINGLE PREMIUM OPERATIONS

It seems unnecessary to explain that types of insurance exist that make no sense, if they are not single premium contracts. This is the case of an annuity policy (life or not), which a person wishes to acquire an immediate life annuity policy. Also, the policies that are for one year or less are usually single premium policies.
For the moment we will not make recommendations for monetary policy, but we would like to note that:

1) In a context of rising inflation, which is being fought with monetary measures, it is evident that the single premium insurance policy is a help to the monetary policy. This statement is confirmed by experience and there are many precedents in the area of consumption finance, through installment purchases. Indeed, in moments of excessive liquidity there is usually a rise in the minimum percentage that should be paid in cash in installment sales.

2) The offer of insurance in which the payment is in capital, with redemption at any time, helps to increase the efficiency of the economic system, through the concurrence of the financial entities, with a financial assets that are highly competitive, but different; in this case for the type of guarantee offered.9

3) The real or initial length of a Life Insurance policy, whatever type, is not a pernicious element which should be fought against for monetary reasons, for reasons already expressed; but one should do it with many other financial assets, without entering any inadvisable transactions. The correct thing to do, at least according to economic theory and experience, is to act with the conviction that this type of insurance operation only has advantages, helping the monetary policy to be successful, compared to other types such as putting assets in a current account to guarantee high interest and to contribute to the expansion of the money supply through this procedure.

If, as indicated in certain recent publications that include the opinions of official sources, single premium operations have been used by certain banks or savings and loans as financial assets in which they have put large sums of money held among their clients in current accounts; logically, the actions of monetary authorities should be centered on this fact and not on thinking about deposits in a special open account in the Bank of Spain, equal to a percentage of the mathematical provisions that they generate and with no remuneration; to set a maximum percentage for redemption of less than 100% of the Mathematical Provisions, or simply to prohibit this type of operation from taking place by insurers. These measures can only be based on misinformation of the characteristics of the assets, of the actuarial insurance model and the elementary principles of monetary theory.

Because, obviously, having highly liquid financial assets, such as a single premium Life Insurance policy with redemption at any time, is much different than having a current account balance. Indeed, in the first case, the insurers are limited to being mere financial intermediaries with no power to create money, and, consequently, they do not transfer

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8 It should also be noted that:

1) Whether or not it is a life annuity policy is not a valid criteria for separating insurance operations from non-insurance operations;

2) nor is it the time period: term or whole life.

9 The insurance guarantee is stronger than a mortgage guarantee, since it not only affects the benefits, but also the interest; also it not only involves the insurer, but also reinsurance and the insurance system, if the proportions of the operation make it necessary.
more resources to those received from the particular ones. Life insurance companies are limited to obtaining financial resources from other economic agents, giving them in exchange financial assets that fit their needs, following in any case current insurance legislation. The specific form that these policies take should not hide their function, and especially, whatever investment may be made with the obtained resources, the circulating means was already created and is accounted for by the banking system as the issuing bank.

To prohibit this type of operation because of possible misuse would be like killing the bearer of bad news.

The last reason is that such measures, all of them, run contrary to the community DIRECTIVE of March 5, 1979 on the coordination of legislative, regulatory and administrative provisions related to access to the activity and practice of direct Life Insurance. We will not make an analysis of these aspects because this is not the purpose of this work.

The instability of the capital market has often been made evident, which is governed exclusively by financial and banking intermediaries and, as this usually implies in economic agents, especially in businesses, a propensity for self-financing of investment plans. This clearly implies a decrease in the possibilities for investors, in securities.

The monopoly that the commercial bank enjoys in the issuing of bank currency does not prevent non-banking intermediaries, in what is referred to as asset operations, from competing with them, in obtaining savings and, on the other hand this agreement, which implies competition for perfectly differentiated financial assets, although they have the same or similar characteristics as far as security, profitability and liquidity, means more efficiency and stability in capital markets, and also less financial cost for real investments.