

# CONTRIBUTION N° 50

## INSURANCE AS INVESTMENT

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L'ASSURANCE VUE COMME  
UN INVESTISSEMENT

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## 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 désigner 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 ( $\mu$ ) et de risque prévu ( $\sigma$ ), pour un investisseur A aux préférences duquel est associée une fonction d'utilité  $U(\mu, \sigma)$  peut être considérée 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 ( $\pi$ ), le risque étant réduit à  $\sigma'$ , 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, appliqué 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 impliqué,
- 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, 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.

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<sup>1</sup> 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 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**.

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<sup>1</sup> see E. PRIETO PEREZ: "TEORIA DE LA INVERSION." I.C.E Ediciones. Madrid, 1973.

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  $a$ . To this **risk/benefit combination**  $(\mu, a)$  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 a aversion to risk<sup>2</sup>, 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  $a'$  ; 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  $U(\mu', \sigma') > U(\mu, a)$

$$\text{being } \mu' = \mu - \pi$$

**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.

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<sup>2</sup> It is **denominated marginal utilities of function**  $U(\mu, a)$  with respect to  $\mu$  and  $a$ , correspondly, to.

$$\frac{\partial U}{\partial \mu} \text{ and } \frac{\partial U}{\partial \sigma}$$

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**<sup>3</sup>. 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 (**short** - term **and** 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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<sup>3</sup> 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 1 or 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  $\geq$  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**<sup>5</sup>. 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.

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<sup>4</sup> *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.*

<sup>5</sup> *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,  $\sigma$ , 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 policy - holder 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 than 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 **a** 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 liquidity 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%<sup>6</sup>**, 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<sup>7</sup>.

**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.

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<sup>6</sup> *Eight per cent, if the operation reaches maturity.*

<sup>7</sup> *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  $\pi$ , 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 i, of the single premium in n years, or, the operation can also be described as the payment of quantity  $\pi$  to receive the amount at the end of n years, to the amount  $i\pi(1+i)^n$ .

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

$$tR = \pi(1+i)^t - (n-t)\pi = \pi(1+i)^t$$

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

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), for which a person wishes to acquire an immediate life annuity policy<sup>8</sup>. 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**<sup>9</sup>.

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**

<sup>8</sup> *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) *xxx is it the time period : term or whole life.*

<sup>9</sup> *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. **Lie 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 **or** 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 **Lie 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.