Fundación MAPFRE

ELEMENTS FOR THE DEVELOPMENT OF LIFE INSURANCE

MAPFRE Economics

Elements for the development of Life insurance

An analysis of public policies designed to boost savings through the development of Life insurance

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Life insurance provides protection to people and their equity against unforeseen events, either with coverage for death, with products intended for savings or through coverage that combines both modalities. This insurance protection helps make people less vulnerable to risks such as illness, accidents and even death, and helps citizens to plan their retirement so that they can cope better in old age. Moreover, the insurance industry in general, and Life insurance in particular, plays a significant role in the economy and in financial activity, since it is one of the biggest institutional investors.

The size of the Life insurance market in each country is different and the reasons that have influenced its greater or lesser development vary depending on a number of factors, including regulatory, demographic, economic and social factors. As can be seen from the statistical information, in developed countries this insurance coverage is more widespread in society than in emerging countries, where only part of the population is protected by Life insurance. In this sense, this new study by MAPFRE Economics, entitled *Elements for the development of Life insurance*, deals with a typological description of the different Life insurance products that exist globally and presents a discussion of savings and their role in the economic growth process, analyzing the Life insurance market in a number of selected countries in order to identify those practices that can be considered as a benchmark when designing public policies aimed at stimulating savings through this type of product.

With the publication of this study, Fundación MAPFRE is reaffirming its commitment to contributing to the dissemination of knowledge on insurance and social protection as one of its founding objectives. Through these publications, Fundación MAPFRE is participating in the financial education of citizens, providing them with information on how insurance works and how it behaves across different insurance markets, with the aim of providing them with the tools they need to make informed decisions for a better management of their equity, for a less uncertain future.

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Introduction

The definition and implementation of mechanisms to boost economic growth is one of the main objectives of public policy. Through this process, governments seek to identify the appropriate instruments for society to generate greater levels of material wealth and, in a broader sense, to achieve ever higher levels of well-being.

Because of its role in the economic process of generating wealth and creating the basis for sustainable individual consumption in post-employment scenarios, savings are one of the essential instruments in the design of these public policies. In this respect, domestic savings, and in particular those channeled through the financial system, are the fundamental factor in boosting the capital creation process on the one hand, and the creation of supplementary pension funds for retirement on the other.

Within the range of financial instruments that contribute to this objective is Life insurance, which not only offers compensation and personal protection against the risks of death and those related to retirement, but also provides a stable flow of resources for the financing of medium- and long-term productive projects, which provides the economic system with an important anti-cyclical stabilization tool. Against this backdrop, the purpose of this report is to provide a comparative analysis of international experience regarding the mechanisms that, in a diverse set of markets, have been used to make Life insurance a public policy tool to stimulate savings, especially in the medium- and long-term.

We are confident that this report will contribute to the identification of a set of best practices through which, within the framework of the design and implementation of public policies, the insurance industry can help strengthen the process of generating domestic savings and, in so doing, contribute to the economic growth and well-being of our societies.

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Executive summary

Life insurance and savings

Life insurance, in addition to the compensation and personal protection that it provides to the insured parties and policyholders against death and retirement-related risks, plays a central role in the economy's savings-investment process. Through the investment of the resources that support the technical provisions of Life insurance, the insurance industry contributes to the creation of domestic savings and thus to the process of capital creation and long-term economic growth. Thus, the insurance industry is one of the main institutional investors at a global level, insofar as the technical provisions from Life insurance alone can represent very significant amounts of a country's gross domestic product, channeling not only savings to the financing of medium and long-term productive activities, but also providing an element of anti-cyclical stabilization to the economic system.

Therefore, the design and implementation of public policies aimed at strengthening the creation of domestic savings in an economy should explicitly consider the development of insurance activity in the Life segment, to the extent that it has the capacity to provide the economic system with a stable flow of medium- and long-term savings.

Overview of Life insurance markets

Global Life insurance premiums reached 2.82 billion dollars in 2018. 93.5% of Life segment premiums worldwide were concentrated in three regions: Asia (37.7%), Western Europe (32.8%) and North America (23%). The remaining 6.5% was distributed among Latin America and the Caribbean (2.5%), Africa (1.6%), Oceania (1.1%), Eastern Europe (0.7%) and the Middle East and Central Asia (0.6%).

In terms of penetration, Life insurance premium volumes represented 3.2% of the world's gross domestic product in 2018, with the Western European region showing the highest level of development, with a penetration level of 4.5%, followed by Asia (3.5%) and North America (2.9%). The average penetration of Life insurance in developed markets was around 4.3% of GDP at the close of 2018, although there was a downward trend throughout the 2008-2018 period, largely due to the low interest rate environment that has been widespread in the world economy as a result of the economic slowdown caused by the 2008-2009 global economic crisis.

The behavior of the economic cycle is a fundamental determinant of the development of Life insurance, whereby GDP growth promotes the growth of Life insurance premiums and vice versa. It is particularly relevant for Life protection products and also has an influence on Life savings and investment insurance, although there are other factors of great relevance in the latter lines of business, such as the behavior of risk-free interest rates, the risk differentials of fixed income bonds (sovereign and corporate) and, in some markets, the behavior of variable equity markets. The analysis of the various Life insurance markets covered in this report

confirms that these latter factors can sometimes lead to anti-cyclical behavior in Life insurance markets. The volatility of these factors is also an important element that often limits their development when market turbulence leads to high levels of volatility. With regard to interest rates, it is the short-term risk-free rates that have the greatest impact on the behavior of the insurance markets, but sometimes it is the differential between short- and long-term rates (term premium) that sets the pattern of their behavior (as is the case, for example, in the Italian insurance market).

In general, the most dynamic markets of the decade tend to be markets that began at lower levels of development, in line with the idea that the elasticity of growth in insurance markets is greater the smaller their relative size as measured by penetration (premium volume as a proportion of GDP). Thus, over the 2008-2018 period, the level of Life insurance penetration has suffered a general decline in virtually all regions of the world, with the exception of Latin America and the Caribbean, where it increased by 0.3 percentage points, and the Middle East and Central Asia, with an increase of 0.2 percentage points. In the same vein, the Life insurance markets in Russia (with an average growth of 25%), Vietnam (19.7%), Costa Rica (14.9%), the Philippines (13%) and China (12.6%) grew over the 2008-2018 period.

This study makes a detailed analysis of a sample of Life insurance markets, which are considered to be representative due to their regional importance, the level of development of the products they market and their dynamism, among other factors. This selection of markets aims to cover a wide range of Life insurance products offered by insurance companies worldwide, as well as different regulatory models, in order to identify those practices that can be considered as a benchmark when designing public policies aimed at protecting policyholders, stimulating savings through this type of product and the stability of the global financial system.

Types of Life insurance products and their integration into different markets

a) Life Protection insurance products

This type of product, in which the risk component is the main element considered at the time of its design, was originally and still is one of the main pillars of Life insurance companies' business. In all the markets analyzed, there has been an evolution over time from simple products with pure risk coverage for the case of death to products that combine this coverage with other complementary coverage (accident, disability and illness, among others), and even more complex versions that incorporate other elements such as savings components, investment components or technical and financial profit-sharing.

Term Life insurance in the case of death

In the early stages of the development of a country's insurance industry, this type of product is marketed in its simplest form, i.e. guaranteeing a capital sum in the event of the death of the policyholder (who pays the premium) during the period of coverage. At the end of the coverage period, the contract expires unless the policyholder and the insurer agree to renew it under the new conditions agreed at the time of renewal. In order to accurately measure the probability of death, it is necessary to complete questionnaires on health, profession or lifestyle, among other factors, and, at times, to conduct medical tests during the process of taking out this insurance.

As countries' economic development advances and the insurance market matures, this type of insurance begins to be introduced as part of the companies' employment benefits package with their employees in the form of group insurance, in which case the policyholder is the company itself, the insured party is the employee, and the beneficiaries are their family members. In these early stages of economic development,

this type of Life insurance also tends to become widespread as a guarantee for the payment of loans, mainly mortgages, constituting an instrument of cover for both parties, creditor and debtor, in the event of the death of the latter. In this scenario, the insured capital is periodically adjusted to the amount of the outstanding debt.

In all the insurance markets analyzed there are structured products that incorporate additional coverage within a wide range of complementary coverage (accident, disability, serious illnesses such as cancer, heart attack, heart surgery, stroke, hospitalization due to accident, advice or telephone attention to medical consultations, second medical opinion, cancellation of outstanding balances on credit cards, unemployment, funeral expenses or assistance or advances in case of terminal illness, among others). Although uncommon, they sometimes incorporate some technical profit-sharing element or benefits in the form of temporary income.

Today, most insurance companies offer *online* quotes from their websites and, in some cases, the possibility of completing the health questionnaire electronically with a physician, such as in the United Kingdom. In the latter market, with its high levels of sophistication, there are renewable term insurance modalities that offer the possibility of renewing it without the need for additional tests on the state of health with increasing capital to adapt it to changes in family circumstances and with the possibility of receiving benefits in the form of an income (family policies), as well as so-called convertible policies that allow the policy to be transformed into an endowment insurance or whole Life insurance, without the need for additional questionnaires on health status, within limits in terms of the capital insured.

The markets of the United States and Japan stand out for their extension to health coverage, which represents a substantial turnover for Life insurance companies operating in these markets. In particular, the demographic evolution of Japanese society toward an aging population is certainly playing an important role in this development.

Whole Life insurance

Whole Life insurance provides a capital to the beneficiaries in the event of the death of the insured person, at the time of death. This is a whole-life insurance, which covers the risk of death, in which the policyholder pays the premiums until the time of the policyholder's death. In the markets analyzed, the regular premiums agreed are often smoothed out to make them roughly constant over time. This means that, at first, the premiums paid are higher than those for term insurance, but as time goes by the situation is reversed. To this end, the insurer sets up a reserve with the additional premium paid over and above that which would correspond to the risk of death in order to be able to meet lower premiums in the future, when the premium becomes lower than its theoretical cost. This addresses the main disadvantage of renewable term insurance in the event of death, where if the policyholder and the insurer want to renew the policy at maturity, the price increases with each renewal.

This type of insurance therefore has a savings element that is precisely the reserve being created during the stage of the contract when the premiums being paid are above their theoretical cost. This reserve is also based on the financial return consisting in a guaranteed interest rate agreed in the policy. The development of whole Life insurance policies is characterized by differences between the markets being analyzed in this report. The market in which they have reached the highest level of development is Japan. Since World War II, the expansion of Life insurance in Japan has concentrated on Life protection insurance as a guarantee of family economic protection, with a considerable development of whole Life insurance. Over the years, this type of product has continued to be the industry's main product.

The UK insurance market also offers a wide range of whole Life products. Although in principle they are usually associated with a certain savings element, in the UK it is common for such products to be marketed without entitlement to a surrender value, in order to offer lower premiums when they are underwritten. This means that premiums are not entirely smoothed out, but are subject to a review process throughout the life of the insured party, usually every ten years, with these review periods shortening as the insured party ages. These reviews usually offer the possibility of increasing the premium or reducing the insured capital.

Whole Life insurance is also common in the Mexican market. There are individual whole Life insurance policies aimed at the general public, as well as individual insurance policy versions designed for certain groups, such as workers in the education sector, health sector or public officials.

In Spain and Brazil, however, although it is offered by some insurance companies, this type of insurance is not very common. In Spain, the fact that they have a certain savings element associated with them is leading to a decrease in supply and demand for these products, as a result of the low interest rate environment in which the market currently operates, as the incentive associated with the profitability of the investments in which the mathematical provision becomes a reality disappears.

As for the United States market, whole Life insurance is available, but at present the most marketed risk products have evolved toward more complex products, such as universal and/or variable Life insurance.

Universal Life insurance

Universal Life insurance provides a capital to the beneficiaries in the event of the death of the insured party, at the time of death. It shares many similarities with whole Life insurance, as it is an insurance with a lifetime coverage that covers the risk of death, in which the policyholder pays the premiums until the time of the insured party's death. However, the difference is that there is flexibility in the amount and timing of the payment of premiums during the life of the contract (within certain limits), which has implications, as the capital that beneficiaries would receive if the insured party dies also varies.

As with whole Life insurance, these products are designed so that the amounts paid at the start of the contract, when the insured party is younger, are higher than those corresponding to the risk of death, which allows for premiums lower than the risk to be paid in the future. With these additional premiums and their returns (there is usually a guaranteed interest rate with this type of product), a reserve is established, so they also have a savings element that is managed within the general portfolio of the insurance companies, without creating separate accounts.

This kind of insurance policy became very popular in the United States in the 1980s, in an environment in which monetary policy was focused heavily on fighting inflation, resulting in sharp increases in interest rates. This caused a change in the design of Life protection products in order to compete with banking products, which are more sensitive to short-term interest rate variations.

Subsequently, the use of this type of product has spread to other countries, although not widely. They are present and sold in the United Kingdom (known as flexible whole Life insurance), although they have a lesser market share than in the United States, which is the leading market for this type of product.

In Mexico, various companies with a US parent are operating in the market meaning that similar products to those sold in the United States can be found, albeit adapted to the specific features of the Mexican market. However, universal Life insurance is not very widespread, with some products offering the possibility of modifying the capital insured in the event of death during the life of the contract without additional requirements, within certain limits.

With respect to the other markets analyzed, these products can also be found in Japan, but they are rare. In Spain and Brazil, they have very little market presence and are practically not offered.

Variable Life insurance

This is an insurance that also shows many similarities with whole Life insurance, however the main difference is the way in which the savings reserve generated by the Life insurance is managed, which does not have a guaranteed interest rate, but depends on the behavior of the investment portfolio decided by the policyholder, depending on the risk they are willing to assume. The variation in this reserve also causes the insured capital for the beneficiaries in the event of the insured person's death to vary, although a minimum capital is usually agreed and this is received under all circumstances. These kinds of insurance are usually managed through separate accounts from the general account of the insurance company.

They have also become available in the United States and can be found in other markets, although not extensively. In the British market they are also common and are marketed as Life-investment insurance with profit sharing (called single-premium investment bonds or, simply, investment bonds). These products do not expire, meaning the policyholder can remain on the contract throughout their life, unless they decide to redeem it. The policyholder is exposed to losses if market conditions are adverse at the time of redemption. If the contract has been implemented through the acquisition of units from a mutual fund (this is now the norm), the amount corresponding to the value of the units at the time of redemption (the bid price) will be paid. However, the death benefit is guaranteed in these products and is not subject to reduction.

Variable-universal Life insurance

These kinds of insurance are similar to whole Life insurance, but they have two main differences: the first is the flexibility in the payment of premiums (as with universal Life), and the second is the way in which the reserve is managed, which depends on the behavior of the investment portfolio decided by the policyholder depending on the risk they are willing to assume (as with variable Life, without a guaranteed interest rate and with management of the reserve in separate accounts).

In the United States, this type of product is very popular and continues to be sold today. They are also present on the British market. For those versions in which the value of the policy is matched to the performance of the fund units to which it is linked, there is a wide variety of options regarding its composition (fixed income in all its forms, equities, real estate, cash, among others). In the United Kingdom, there are various forms of this type of insurance, such as the so-called maximum cover plans, in which the level of the premium is fixed for a period of time, at the end of which it is revised upward, depending on the age of the policyholder. They usually give the option of reducing the insured sum if the new premium becomes too burdensome for the policyholder. Other versions set the premium so that it does not need to be revised during the lifetime of the policyholder, as long as the units of the mutual fund linked to the policy generate a return equal to that previously established when the policy was taken out ("standard cover"). These products offer flexibility to increase the insured capital by raising the premium, although if it is a substantial increase a new medical examination may be required. This possibility is sometimes offered when a certain event occurs, such as the birth of a child, and no new medical questionnaire is required in these cases.

In the rest of the markets analyzed in this study, this type of product is not common.

b) Life savings insurance products

Endowment insurance without return premiums ("pure endowment")

In this insurance policy, the insurer undertakes to pay the insured capital at the end of the agreed term if the insured person is still alive when this term expires. This type of insurance

involves two capitalization processes for people who survive. First, a financial capitalization due to the guaranteed rate from the investments in which the reserves being generated are invested. And, second, an actuarial capitalization due to the reserves of the insured parties who do not survive, which increase the capital of those who do. This means that if the insured party dies before that time, the premium or premiums paid remain in the hands of the insurance company, which will use them to pay the capital of the insured parties who do survive. This makes it a difficult product to sell and it makes up a very small share of the markets analyzed, since it is not usual for people to want to take substantial amounts from their assets with the risk of leaving their relatives bereft in the event of their death.

Endowment insurance with return premiums

This type of single premium term insurance policy combines the payment of deferred capital at the end of a certain period with capital in the event of the death of the insured. They incorporate an interest rate guarantee and a paid return premium element in the event of early cancellation, subject to some kind of penalty that acts as a disincentive, thus attempting to eliminate or reduce the risk of disinvestment assumed by the insurer in the event of redemption by the policyholder. The way these products are designed makes them look very similar to a fixed-term bank deposit with a guaranteed interest rate. The big difference is in the additional capital they offer in the event of the death of the insured, which is not a feature of fixed-term bank deposits.

This type of product is present in all the markets analyzed, although the low interest rate environment that developed countries are experiencing is making its marketing virtually impossible, despite previously being a very common product. In the United States and Brazil, another type of Life investment-savings insurance policy is more common, namely variable annuity, meaning that endowment insurance policies make up a lower proportion of these markets.

In Mexico, there are Life savings insurance policies in the form of deferred capital and savings plans with guaranteed minimum interest rates, and it is common to find these products combined with a whole Life insurance or renewable term insurance policy covering death, accident, serious illness, invalidity and/or coverage of funeral expenses, among other supplementary guarantees. It is common for these products to offer the option of taking out the insurance in Mexican pesos or dollars and the level of guaranteed interest depends on which of these is chosen. The same product is often offered with a variety of options in terms of its duration. The majority are structured in order to offer the insured party a guarantee of continuity for the education of their family members in the event of death, illness or disability.

Savings account insurance (savings plans)

This product is similar to the previous one, but with regular premiums. They are common in the same markets where endowment insurance policies with return premiums are sold and they are also being adversely affected in developed markets by the low interest rate environment.

In the United Kingdom, they are mostly marketed in the form of term savings plans with a guaranteed capital at maturity consisting of the amount of premiums paid plus a return that depends on the risk-free rates at the time of issuing and, usually, a share in financial profits. Profit-sharing is implemented in two different ways: one is through investment in specific units of mutual funds ("unit-linked endowments"), and the other depends on the performance of the insurer's profits obtained from their investment portfolio and does not affect specific policies. The latter provides greater flexibility in distributing these profits, and can soften the impact of financial market cycles by setting aside part of the profits during upturns to compensate in downturns, allocating additional profits from this reserve.

In Italy, the Life savings business also shows a significant level of development. Most of this

consists of traditional single-premium or regular-premium savings insurance with a guaranteed interest rate and a share in financial profits. Profit sharing is implemented in two different ways. Typically, it is established on the basis of the performance of the profits obtained from its investment portfolio, giving the insurer greater flexibility in distributing these profits. However, the low interest rate environment currently affecting the entire eurozone is forcing the market to evolve, and Italian insurance companies have reacted quickly by developing a new type of hybrid product that combines into one policy a traditional savings insurance policy and policyholder risk insurance policy ("*prodotti vita ibridi, multiramo*"). The increasing use of these products also leads to greater complexity in risk management because of the options they incorporate, as well as greater legal and reputational risk. However, the growth of business in this type of product since its introduction to the Italian market has been spectacular, achieving a percentage of over a third of total new business premiums for individual savings insurance in four years.

In Japan, endowment insurance policies in their simplest forms are also common. Between 2008 and 2018, the number of policies in this country grew by 57%. At present, these products are also facing a low interest rate environment that makes them difficult to sell.

Annuity insurance with return premiums

These are insurance policies that provide a monthly annuity to the policyholder in exchange for a single premium, together with a death benefit payable to the beneficiaries designated by the policyholder (or their heirs) for the amount of the premium paid. It is also possible to terminate the contract early, recovering the amount of the premium paid, in which case a penalty applies if the realization value of the investments is lower than the premium at the time of redemption, for the difference. Based on the way the product is designed, it is very similar to a non-maturity savings account in which interest is charged on a monthly basis, with a guaranteed interest rate that remains fixed throughout the life of the insured party.

The way this product is structured involves the acquisition of a fixed income bond that supports the transaction. The difference between the yield from the bond acquired and that granted to the policyholder constitutes the margin on the transaction, after deducting the amount intended to cover the credit risk assumed in the investment. This type of product has been quite common on the Spanish market, although the low interest rate environment has made it less attractive.

c) Life-investment insurance products

This category includes those Life insurance products in which the policyholder assumes the investment risk, depending on the performance of a certain investment portfolio or mutual fund (unit-linked insurance) or a certain index (index-linked insurance). They also incorporate an additional capital in the event of the death of the insured party during the term of the contract. The risk and returns arising from the performance of the portfolio or the benchmark index correspond to the policyholder, who can decide on the risk to assume based on the composition of the portfolio in which they invest or whose performance is replicated. The insurance company manages the investments in exchange for a fee and assumes the risk of death benefit in exchange for the corresponding premium.

The United Kingdom is the most developed market for this product. In Italy, this type of product also accounts for a considerable share of the market. In the United States and Brazil, however, these types of insurance are of limited importance, given the prominence of variable annuity insurance in these markets. In Spain, Japan and Hong Kong, they also have a limited presence.

In the Mexican market, products that combine contributions to a savings-investment account with Life insurance in the event of death, offering regular liquidity windows, are common. They do not incorporate an interest rate guarantee, leaving the policyholder to bear the risk of the investment. However, the contract guarantees that the premiums paid will be invested in low-risk assets, and it is very common to invest in public debt instruments (the so-called Federal Treasury Certificates, CETES to use its Spanish initials). This leads to sovereign risk exposure and minimizes market risk by investing in short-term assets, of less than one year. It should be noted that these savings-investment products usually have some kind of tax break associated with them. Unit-linked Life investment products are also sold with a protection element that offers different investment alternatives according to the profile of the policyholder. These are usually grouped into conservative, moderate and the most risky, allowing them to change their profile throughout the life of the contract and to make contributions in a flexible way.

d) Survivorship annuity insurance products

Annuity insurance in exchange for a single premium (*annuities*)

This type of product ensures a regular flow of income for its beneficiary immediately or after a period of delay, temporarily or for life, that is constant, growing or variable depending on a given index. These products have a presence in all the markets analyzed. However, they are particularly well established in the UK. The main reason is the obligation that was in force until April 2015 to transform the funds accumulated in the occupational pension plans into this type of annuity. However, the increased cost of these products due to the sustained environment of low risk-free interest rates and the increase in the probability of survival, coupled with the detection, by the supervisory authority and the courts, of punishable conduct in their marketing, led to the removal of this obligation by the public authorities. There are still high amounts of mathematical provisions from portfolio products, but the new business has brought this to light and their demand has fallen sharply since then. Many workers currently opt for more flexible planned withdrawal formulas or for the full withdrawal of funds, rather than acquiring annuities. Some of the insurance companies offering these products have chosen to stop marketing them.

Variable annuities

These are long-term insurance contracts consisting of two phases: a first phase of accumulation, and a second phase of withdrawal of accumulated funds (drawdown) containing at least one disposal option in the form of an annuity. These products are characterized by the fact that the premiums paid during the accumulation phase are normally managed in accounts separate from the general account of the insurance company and are invested according to the specifications of the policyholder, depending on the risk they wish to assume.

The policyholder has the option of converting the value of the account into a Whole Life annuity in the future, with the conditions agreed at the beginning of the contract in terms of the guaranteed rate and actuarial assumptions to be used. This is just one option, so the policyholder can decide to access the value accumulated in their account differently, in a lump sum or, depending on what has been agreed, other options. They also often incorporate the option for the policyholder to withdraw all or part of the funds during the accumulation phase within certain limits and/or subject to certain penalties.

The simplest versions of these products do not incorporate guarantees in the accumulation phase, and the value of the funds fluctuates depending on the performance of the investment portfolio linked to the policy, which is managed in separate accounts. The more complex versions include a wide variety of guarantees and options, both in the

accumulation phase and in the disposal of accumulated funds (Guaranteed Minimum Death Benefit, Guaranteed Minimum Accumulation Benefit, Guaranteed Minimum Income Benefit, Guaranteed Minimum Lifetime Withdrawal Benefit or Guaranteed Minimum Withdrawal Benefit, in line with the terminology used by the Organization for Economic Cooperation and Development). It should be noted that some of these modalities offer the option, in the withdrawal phase, of linking the income to be received to the performance of the portfolio in which the mathematical provision is invested (managed in separate accounts). This means that, in these cases, the amount of income received during the withdrawal phase may vary on a daily basis.

These products are widely distributed in the United States market. Most products are designed to cover the life cycle of the policyholder, and are therefore medium- to long-term contracts that offer a wide variety of options and/or guarantees for the policyholder. The risk management of these products is complex and it is not sufficient to have an operating license in the Life segment to be able to issue them, as they require specific authorization from the state supervisor. In addition to variable annuities, other important income products are the so-called indexed linked annuities. This is a new category of annuity insurance that emerged in 2010 in the United States and has had a significant expansion, representing 9% of the technical provisions of Life insurance at the close of 2018. They are a hybrid between a fixed annuity and a variable annuity. This type of annuity insurance incorporates a minimum guarantee of profitability, which can be increased depending on the performance of a given securities index. Unlike variable annuities, these products are subject only to state insurance regulations and are not subject to the federal securities regulations.

In the case of Brazil, the most prominent product is the so-called "*Vida Gerador de Benefício Livre*" (VGBL) (Life Free Benefit Generator), which is the simplest version of the variable annuity type products. Variable annuities do not account for a very high proportion of the insurance markets in the United Kingdom, Spain and Italy. They do exist in the Japanese market, but are relatively uncommon.

e) Pension products offered by Life insurance companies

This type of Life insurance product refers to retirement related pension products (in the form of pension plans) that Life insurance companies issue in some markets, and which are similar to those managed by pension plan management companies, but incorporating the managed assets into the balance sheet of the insurance companies.

The benchmark market in this respect is the United Kingdom, where there is an obligation for companies to enroll employees in a company group pension plan (automatic enrollment). These occupational pension plans can be implemented through contracts with insurance companies (contract-based pensions) or through pension plan managers (trust-based pensions). Most contributions are managed through contracts with insurance companies, hence the large size of the Life insurance market in this country.

In the United States, the redistributive bias of its public pension system means that the supplementary system is also highly developed. In this market, specific insurance products have emerged that are more flexible for employers, such as the so-called deposit-type contracts or immediate participation guarantee contracts (IPG), which have a significant weight in the total savings managed, around 9% of the aggregate provisions for Life insurance.

In Brazil, the main mechanism that acts as a supplement to the public pension system is the survivorship annuity product called "*Vida Gerador de Benefício Livre*" (Life Free Benefit Generator) (VGBL). Moreover, the private pension system, which is voluntary and supplementary to the public pension system, is supplemented by the "*Planes de Previsión Privada Abierta*" (Open Private Pension Plans), marketed by insurance companies or by "Entidades Abiertas de Previsión Privada" (Open Private Pension Companies - EAPP). Most open private pension plans

are sold by insurance companies, who by law are allowed to manage these products within their balance sheet. Practically all products of this type belong to the so-called "*Plano Gerador de Benefício Livre*" (PGBL) (Free Benefit Generator Plan) modality, as described in the part of the study analyzing the Brazilian Life insurance market.

The mandatory pension system in Mexico provides for mandatory contributions by workers, employers and the federal government into individual employee-owned accounts, in order to accumulate resources that will form a pension at the time of retirement. Alongside these compulsory contributions, the worker can make additional voluntary contributions to improve their pension status. One mechanism is through voluntary contributions that would directly feed their individual account, and another is through the contracting of so-called personal retirement plans that can be administered, among other financial institutions, by insurance companies.

In Spain, insurance companies can manage private pension funds. There is also an insurance product for pension savings, called the "*plan de previsión asegurado*" (PPA), (insured pension plan), which can be marketed by insurance companies as part of their balance sheet. This type of product enjoys the same tax breaks as (non-cumulative) pension plans and its main difference is that it offers a guaranteed minimum return. However, its weight is relatively small in relation to the savings managed by Life insurance companies in the Spanish market. There is also another collective social protection instrument, the so-called "*planes de previsión social empresarial*" (PPSE), (company savings plans), which companies can promote for their workers by guaranteeing a financial return, but which currently have limited standing as the pension plans of the employment system prevail as a vehicle for the channeling of companies' pension commitments to their workers.

In Italy, the wide coverage of the compulsory pension system means that the degree of development of supplementary pension systems is lower than in other markets such as the United Kingdom or the United States. However, there is an additional, voluntary and supplementary occupational system, which is mainly structured through occupational and individual pension funds, with tax breaks within certain contribution limits. Insurance companies can be managers of the open system, employment and individual pension funds, so it is not usual for them to issue pension insurance products in their balance sheets, the weight of which is very low in the technical provisions of Life insurance. This is without prejudice to savings products not directly linked to the pension system, which are widely available in the Italian Life insurance market.

In Japan, the annuity insurance market is well developed, as a direct result of the aging population and the need for protection systems in addition to those provided by the public pension system. Thus, complex products of the variable annuity type can be found. However, the weight of the latter products is not significant when compared to fixed income products (fixed annuities), which are the most prevalent, alongside other risk products with a certain savings element, such as whole Life insurance. With regard to retirement-related pension products, a large percentage of workers in Japan are members of employer pension plans, which are coordinated through workplace pension funds. As a result, the pension products marketed by Life insurance companies are of lesser importance.

In Hong Kong, the mandatory system (Mandatory Pension Fund (MPF) System) was designed as the second pillar of the multi-pillar retirement protection model: a mandatory, privately managed and fully financed contribution system which is coordinated through trusts. Employees and employers who are covered by the MPF are required to make regular mandatory contributions of 5% of the employee's relevant income, subject to the relevant minimum and maximum income levels.

f) Reverse mortgages

Lastly, it should be noted that in some countries the process of demographic transition toward older populations has led to the development of a specific category of products designed to supplement public pensions, known as *reverse mortgages*. For this reason, a specific analysis of this type of product has been included in this study (see Box 2.5.2).

Public policies for the development of Life insurance

Considering the importance of the design and implementation of public policies aimed at strengthening the creation of domestic savings that explicitly consider the development of the insurance activity in the Life insurance segment (to the extent that this has the capacity to provide the economic system with a stable flow of medium- and long-term savings), the report reviews the main elements of public policy that emerge from the analysis of the insurance markets reviewed, in order to specify those lines that could be taken into consideration when designing strategies to promote the creation of savings.

These public policy elements have been structured into three groups:

(i) measures associated with the definition of aspects relating to the prudential regulation to which the insurance activity is subject;

(ii) measures linked to the role of Life insurance in the framework of supplementary pension schemes, and

(iii) measures related to the implementation of tax incentives.

In the first group (*measures associated with the definition of aspects relating to the prudential regulation to which the insurance activity is subject*), aspects such as: the importance of the rules relating to access to the insurance market in the Life insurance segment; the need for regulatory stability for a long-term business; the importance of establishing incentives for innovation in the design of the products brought to the market, and the elements related to market conduct in the promotion and sale of this type of product are emphasized.

In the second group (*measures linked to the role of Life insurance in the framework of supplementary pension schemes*), the following public policy lines are highlighted: the establishment of complementary pension systems with mandatory membership of the employment system, and the establishment of voluntary pension schemes. Lastly, in the third group (*measures related to the implementation of tax incentives*), the following issues are highlighted: the convenience of applying fiscal incentives to savings and investment products; the use of fiscal incentives in Life protection insurance products, and the need to avoid disincentives related to the application of indirect taxes to Life insurance products.

In view of their importance, the third chapter has been devoted specifically to these public policies and it is one of the main elements dealt with in the summary and conclusions section of this report.

1. Conceptual framework

1.1 Life insurance, savings and the economy

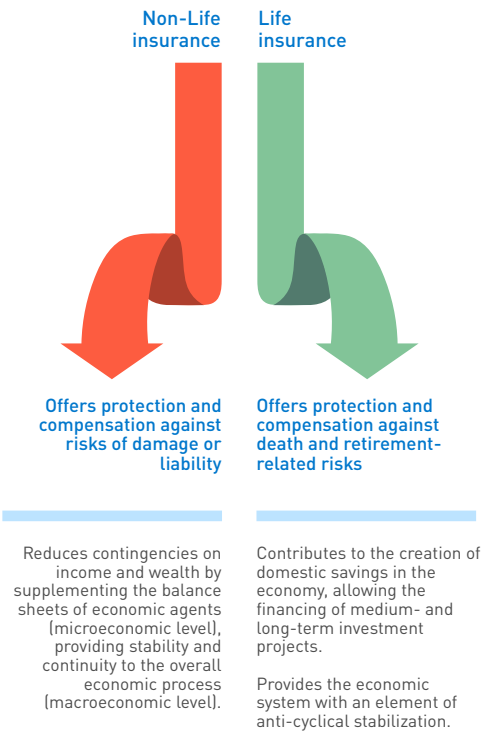
1.1.1 Linking insurance with economic activity

There are various macroeconomic factors that have an impact and, to some extent, condition the activity and dynamics of the insurance industry. The pace of economic activity, the level and trend of interest rates, the behavior of exchange rates, and the degree of financial volatility are factors that, among other issues, impact the level of demand for insurance products, the income and cost structure of insurance companies, the value of their assets, and the ability to manage those assets in relation to their liabilities[1]. Moreover, factors such as the behavior and level of interest rates may have a determining influence on the viability of certain part of the business model in Life insurance, as has been demonstrated in those regions of the world where the insurance markets have faced prolonged periods of low interest rates.

The level of conditioning of the insurance industry with respect to the main economic and financial variables can be explained by the close ties that the insurance activities maintain with practically all areas of economic operation. This link can be analyzed from two main perspectives: the first, which has to do with the role of Non-Life insurance, and the second, which is related to the function that derives from Life insurance (see the diagram in Chart 1.1.1). At the microeconomic level, Non-Life insurance makes possible the process of protection and compensation of risks which, by reducing contingencies on income and wealth, gives completeness to the balance sheets of economic agents (companies and families)[2] and, therefore, at the macroeconomic level, provides stability and continuity to the general economic process, which would otherwise be interrupted and affected by the occurrence of both high frequency and low severity risks, and high severity and low frequency risks (catastrophic events).

However, in addition to the compensation and personal protection that they provide to insured parties and policyholders against the risks of death and retirement, Life insurance plays a central role in the savings-investment process of the economy. Through the investment of the resources that support the technical provisions of Life insurance (notably those involving savings elements, as well as the funds that support investment Life insurance), the insurance industry contributes to the creation of internal savings in the economy and, with it, to the process of capital formation and long-term

Chart 1.1.1
Diagram showing the link between insurance and the economy



Source: MAPFRE Economics

economic growth. This characteristic of Life insurance has made the insurance industry one of the main institutional investors at a global level, insofar as the technical provisions derived from them can represent very significant fractions of countries' gross domestic product. Furthermore, it should be noted that the institutional investment carried out by insurance companies is not only a way to channel savings into the financing of productive activities, but, in a broader sense, it provides an element of anti-cyclical stability to the economic system.

Unlike with other institutional investors, the institutional investment function performed by the insurance industry (and, in particular, the Life insurance business) presents several particular characteristics that have made it become known as an instrument of anti-cyclical stabilization. The first factor is that institutional investment in the insurance industry offers a stable flow of resources to the extent that, due to the characteristics of its business model and its implicit investment function, the investment decisions of insurance companies are based on the characteristics of their liabilities. This makes the investment function of the insurance companies a function that is subsidiary and dependent on the specific features of the liability structure (liability driven), meaning that the structure of their investments are only modified over relatively long periods.

The second characteristic is that, insofar as most of the investments made by insurance companies support Life insurance obligations (in their various forms), these are mostly medium- and long-term investments, which allows for the financing of long-term investment projects that would encounter greater difficulties through traditional financing mechanisms.

The third characteristic, which derives from the first two, is that the investment flows from the insurance industry do not experience significant variations in the recession stages of the economic cycle, which moderates volatility in the financial markets and provides the economic system with an element of stability when overall economic activity is depressed.

In this way, the contribution that the insurance industry makes through Life insurance clearly goes beyond its own important compensation and personal protection related to the risk of death and the processes of creating retirement funds, and is at the heart of one of the functions that, as with capital creation, is key to the growth process of an economy. Therefore, having a developed Life insurance industry entails the possibility not only of extending protection to a larger portion of the population against the risks typically protected by this type of financial instrument, but also, in a broader sense, of having a structural stimulus mechanism for the performance of a country's economic system.

In this sense, the development of the Life insurance segment can constitute a key element in the design and implementation of public policies aimed at increasing the rate of savings and investment in an economy, with the positive effects that these phenomena bring in terms of growth of material wealth and levels of well-being in society. In order to underpin this important aspect, the following paragraphs of this section of the report present a brief discussion of savings and their role in the growth of the economy.

1.1.2 Economic growth and savings

Definitions

From a conceptual point of view, the total savings available to an economy is the sum of two elements. First, *foreign savings* (CF_t), i.e., those coming from abroad in the form of current account financing by the financial account. Secondly, there is *gross national savings* ($SNB_{total\ t}$), i.e., the amount generated domestically, which is made up of the sum of public savings and private savings and which indicates the amount of domestic resources that a country has to invest in itself, expanding the capital stock of domestic and/or global assets.

In this way, in line with national accounting criteria, an identity is established between savings and investment:

$$SNB_{total\ t} = (S_{Ht} + S_{Et}) + (T_t - G_t) + (CF_t) \equiv I_{total\ t}$$

Where:

(CF_t) is the balance sheet of the financial accounts financed by the current account[3] and, therefore, *foreign savings*,

$(T_t - G_t)$ is the balance sheet of public accounts and therefore *public domestic savings*, and

$(S_{Ht} + S_{Et})$ the sum of private family and corporate savings[4], being the sum of both is equal to *private domestic savings*.

In other words, *gross national savings* is the total amount of savings generated in a country over a period of time, which, added to public savings and foreign financing[5], forms the *total savings* ($SNB_{total\ t}$) which are the resources available to a country to finance its investment. It should be noted that the investment to be financed relates to the existing capital (*stock*) plus capital additions to replace depreciation (dK_t). Therefore, you can also write:

$$SNB_{total\ t} \equiv I_{total\ t} = K_t + dK_{t-1}$$

Lastly, on the income and use side, it can be established that savings are the disposable income left over after devoting part of this income to consumption and therefore it comes from the gross national product[6]:

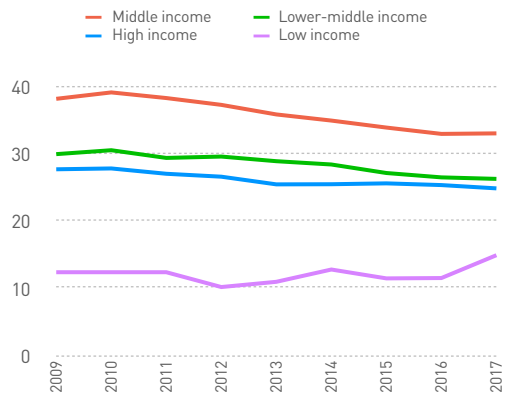
$$SNB_{total\ t} \equiv Y_{available\ t} - C_t$$

For the purposes of this study, the concept of *domestic private savings* will be treated in the same way as *total savings* ($SNB_{total\ t}$), leaving aside *public* and *foreign savings*, and refer to them simply as "*savings*"[7].

Savings behavior

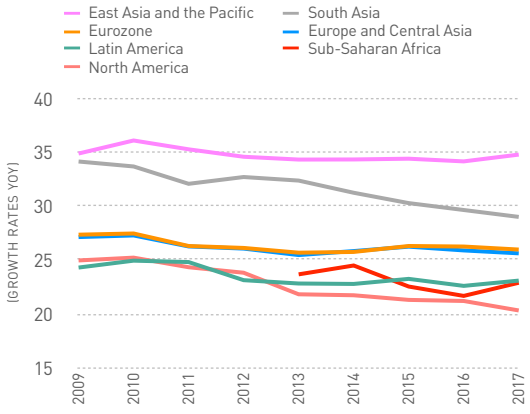
An economy's savings are highly (though not uniquely) dependent on a country's income. Empirical evidence shows that savings help, in most emerging countries, to become more income convergent with more developed countries (see Charts 1.1.2-a and 1.1.2-b), although not in all cases do savings and income level correspond[8].

Chart 1.1.2-a
Gross domestic savings by income level
(% GDP)



Source: MAPFRE Economics (based on data from the World Bank)

Chart 1.1.2-b
Gross domestic savings by geographical area
(% GDP)



Source: MAPFRE Economics (based on data from the World Bank)

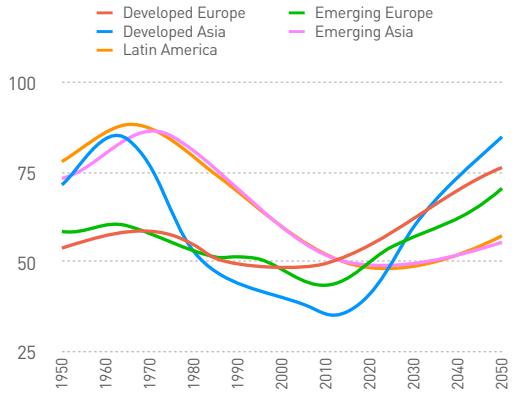
Furthermore, the positive relationship between savings and income depends on the level of financial deepening and the capacity of the finance sector (especially the non-banking sector) to attract long-term savings. Demographic factors also have an important influence on the savings dynamics of countries, which have varying degrees of influence depending on the way in which society relates, to a greater or lesser extent, to its demographic dividend[9] (see Charts 1.1.2-c, 1.1.2-d and 1.1.2-e).

Generally, savings are treated either from the point of view of overlapping generations models (to examine intertemporal financing applied to the analysis of pension adequacy), or from the neoclassical perspective as a central element of growth theory and decisions throughout the economic cycle. This analysis focuses on elements of the second point. We examine, therefore, the behavior of savings both as a result of the individual decisions of a rational savings consumer or as a complementary aggregate to consumption with equivalents to income and investment according to national accounts.

In this context, seen as a result of the decisions of a typical consumer, savings are understood fundamentally as an element to soften and distribute consumption throughout the cycle (life or economic). In this sense, there are two basic theories that attempt to explain their behavior. The first is M. Friedman's *Permanent Income Hypothesis*, which implies that savings, being complementary to consumption ($S = Y - C$), is a proportion of permanent income (or the expected wage and non-wage income flows over the consumer's lifetime discounted at present value[10]). For this reason, as with consumption, it will be affected by the level and variations in population, employment, income, financial conditions and uncertainty over the cycle.

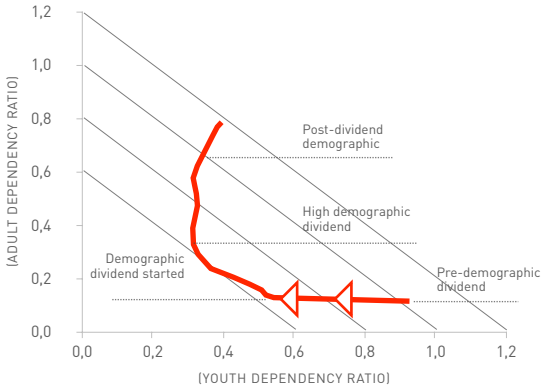
The second is F. Modigliani's *Life-Cycle Hypothesis*, which states that savings are calculated by agents by discounting how much they will have to consume during their active life and un-saved during their inactive life (see Box 1.1.2). This means that the savings are a proportion of the ratio between the individual's residual time as an active person [*VRA*] and the total residual time [*VTA*], i.e.,:

Chart 1.1.2-c
Dependency rate by region



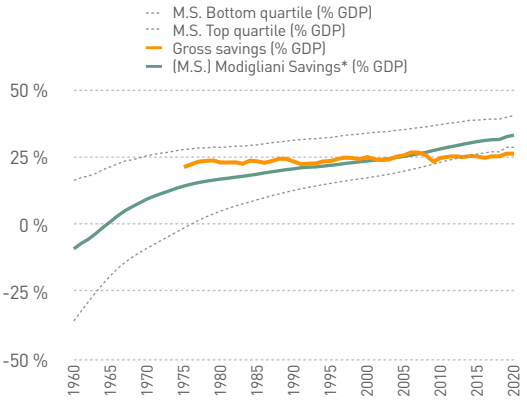
Source: United Nations, Population Division, Department of Economic and Social Affairs (2017)

Chart 1.1.2-d
Transition of consumption and savings possibilities by dependency rate



Source: United Nations, David N Weil (2006), and prepared by the authors on the basis of data from the World Bank and the United Nations.

Chart 1.1.2-e
Savings and demographic structure according to the Life-cycle Hypothesis



Source: United Nations, David N Weil (2006), and prepared by the authors on the basis of data from the World Bank and the United Nations.

Box 1.1.2
The life-cycle hypothesis

Income, consumption and savings throughout the life cycle

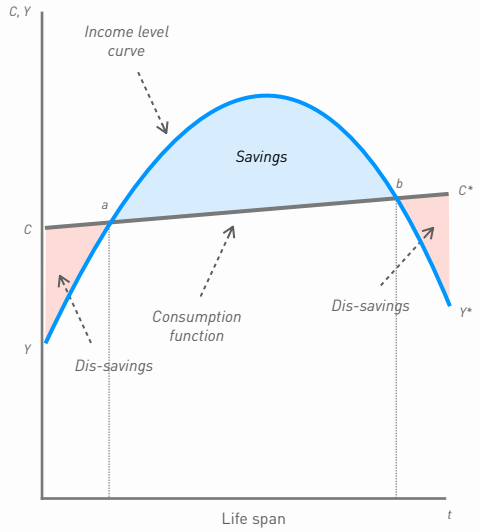
From an economic perspective, and in view of its dimension as an instrument for channeling medium- and long-term savings, the development of Life insurance is bound to the capacity of individuals to generate savings. In this sense, the life-cycle hypothesis postulated by the Italian-American economist Franco Modigliani offers a good perspective on how Life insurance can be coupled with this capacity to generate savings throughout the life cycle.

From the point of view of the decisions taken by economic agents, life can be divided into three stages. The first stage is the pre-work life stage; the second is the stage of working activity itself; and the third is the stage of retirement once the cycle of productive activity has been completed (see the diagram presented in Chart A).

In the first of these stages (the initial stage of life) the level of income is lower than the individual's consumption needs, which are financed through credit or family transfers, generating a phase of dissaving. In the second stage, that of working life, the income of the individual allows not only to meet their consumption needs, but also to generate a surplus in the form of savings. Finally, in the third phase, the retirement stage, there is again a process of dis-saving in which the individual uses the savings generated throughout their working life (once the compensation of the initial phase of dis-saving is discounted) to meet their consumption needs.

While it is true that some empirical evidence has shown that the dis-saving process at the retirement stage may not be as fast as the life-cycle hypothesis originally postulated (given the existence of a precautionary savings margin, as well as the inclination to bequeath some of those savings to children) and thus tends to present a reduction in consumption levels, the general pattern postulated by Modigliani does explain the behavior of individuals with regard to consumption and savings throughout their lives.

Chart A
Income, consumption and savings level in the life-cycle hypothesis



Source: Modigliani, (1966).

As indicated above, the diagram is useful not only for understanding the logic that governs the process of generating savings at a microeconomic level, but also for rationalizing the way in which Life insurance, as an instrument for channeling medium- and long-term savings, can be inserted (and be very useful) into the individual's life cycle, especially in the phases of generation of savings and dis-savings in the retirement stage.

Furthermore, this microeconomic vision supports the analysis of the impact that Life insurance has on the process of saving and investment in the economy, insofar as it generates a stable and long-term supply of resources in financial markets, thereby supporting the process of capital creation.

Source: MAPFRE Economics (based on data from: Franco Modigliani, "The Life Cycle Hypothesis of Saving, the Demand for Wealth and the Supply of Capital," 1966)

$$S_t = (1 - \frac{VRA_t}{VRT_t}) * Y_t$$

Where:

S_t is savings,

Y_t is the available income,

VRA_t is the active life that each individual has left at time t, which depends positively on the age of retirement, and

VRT_t is the total remaining life of the same agent, which depends positively on life expectancy.

Savings are therefore strongly conditioned by life expectancy, fertility, longevity and, especially, by the (mature) dependency rate of a society, which define the demographic dividend[11]. Thus, the basic conclusion is that the maturation of society, measured by the demographic dividend, has several stages when it comes to savings. First, at an *initial stage*, as fertility decreases, the proportion of savers producing increases (support ratio) and child dependency decreases, population and gross savings increase (in theory), if life expectancy and retirement age are extended, the demographic dividend is prolonged and so is savings. Second, in a *stage of population aging*, in which adult dependency increases and this savings capacity is reduced either because wage income is reduced (with retirement), or because assets are reduced, or because the composition of the portfolio is altered (toward cash and real assets) and, as a result, savings stop growing. Thirdly, at a *stage of advanced age and adult dependency* (as is the case in the eurozone and Japan), when savings are reduced and increasingly devoted to health and long-term care, thus increasing real balances (the money supply), but not intermediate savings.

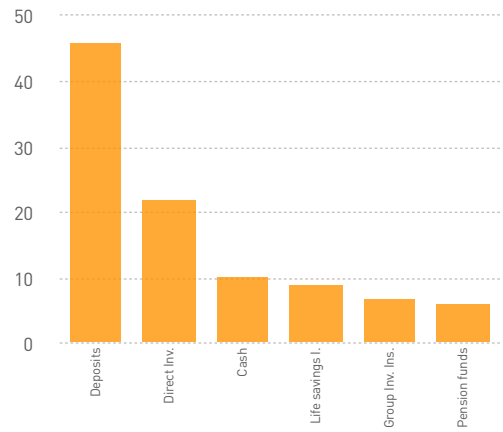
Savings for economic growth

The fundamental savings for the process of economic growth and, therefore, of increasing the levels of well-being of a society, is *gross domestic private financial savings*, i. e. savings generated by families and companies at the national level and deposited and intermediated in the form of liquid assets by the finance sector of a country.

It should be noted that these savings are limited to the concept of "*domestic*" because the savings generated abroad are the financing of the Current Account through the Financial Account (portfolio flows, foreign direct investment and credit), which is ideally low (2%-3% of GDP). Moreover, savings generated abroad cannot be proactively managed and the high dependence on them reduces a country's monetary and financial sovereignty, as well as entailing risks and vulnerabilities, given the possibility of their abrupt cessation. The concept of "*private*" is also used because public savings are in fact the intermediation by the public sector of part of the income of the private sector which is ultimately leveled by the action of the private sector itself in response to the action of the State[12]. The concept of "*gross*" is used instead of "*net*," because the amount that an economy must set aside for growth is the amount that finances its entire capital stock, including additional capital and depreciation of existing capital (net savings only refer to additional capital and therefore $SB_{total\ t} = Snet_{total\ t} + dK_{t-1}$. And "*financial*" is used to refer to that which is intermediated by the finance sector (banking and non-banking), since this is the sector which, either because of the term transformation function of the bank or the insurance or pension industry investor function, is transformed into credit (in the case of the former) or direct investment (in the case of the latter); for this reason, savings that are relevant are those that exclude illiquid assets (such as real estate or corporate property, plant and equipment), as well as undeposited cash or other interchangeable assets, but outside the financial system.

On the liabilities side, as an example, Chart 1.1.2-f illustrates the case of Spain. In that country, the proportion of deposits and cash mediated by banks far exceeds the savings mediated in the form of individual or collective investment (three times as much), and much

Chart 1.1.2-f
Gross domestic financial savings in Spain
(% GDP)



Source: MAPFRE Economics (based on data from the Central Bank of Spain)

more than savings mediated by Life insurance and pension funds companies (which weigh less than one fifth of the total savings pool). On the assets side, Table 1.1.2-a confirms how, in general, in the insurance industry (although this is also the case in the banking sector) there is a strong bias toward investment in fixed income (sovereign) assets, which is accentuated in Latin America and Spain.

Thus, increasing *gross domestic savings* intermediated by the finance sector, in particular managed through long-term assets, is essential for three reasons. Firstly, it helps to mitigate the effects of population aging[13] on public pension systems by complementing pension systems and social spending in general (in particular health and long-term care).

Second, it reduces the vulnerabilities resulting from dependence on foreign savings; vulnerabilities associated with imbalances that are generated in stages of abundant liquidity (excessive credit, foreign currency leverage, etc.), or those arising from the loss of monetary policy sovereignty in the face of financing corrections caused by "sudden stops."

Thirdly, and most importantly, savings are intermediated in the long-term, since this is the mechanism for financing investment: (i) it affects activity cyclically in the short-term (on employment and income growth); (ii) in the long-term, it ensures the financing of the capital stock necessary for an economy to function by determining the constant levels of capital, disposable income and consumption of a (hypothetical) stationary state in which an economy would be located; (iii) through investment in skills and infrastructure, it affects productivity and determines, together with the intensity of capital gained, the potential growth of a country, which is, in the end, what determines the speed of convergence toward that hypothetical long-term income level, conditioning the convergence in disposable income toward the levels of markets with higher standards of well-being; and (iv) the increase in savings intermediated by the finance sector takes resources away from the accumulation of informal savings in the form of real assets (residential, etc.) or informal liquidity, which, first, limits the emergence of imbalances as bubbles in the price of residential assets and, second, helps to curb the deterioration in the profitability of capital and interest rates in the long-term (a problem that structurally affects developed countries).

Table 1.1.2-a
Structure of assets in the balance sheet of the insurance system

Asset types	Eurozone	United States	United Kingdom	Spain	Brazil	Mexico
Fixed income	64 %	65 %	55 %	75 %	91 %	83 %
Equity	16 %	14 %	16 %	5 %	8 %	12 %
Loans	5 %	10 %	9 %	1 %	0 %	3 %
Cash and deposits	5 %	4 %	10 %	8 %	0 %	1 %
Real estate	2 %	1 %	3 %	3 %	0 %	1 %
Other investments	8 %	7 %	7 %	6 %	0 %	0 %

Source: MAPFRE Economics (based on data from regulators and supervisory bodies)

Optimal level of savings

As established before, according to neoclassical theory, savings are the part of income that is not used for consumption but to finance investment, both that destined for the replacement of depreciated capital (dK, where d is the rate of depreciation) and the acquisition of new capital to equip each new member of the active population (nK, where n is the rate of population growth); i.e., $S = Y\text{-}C = I = nK+dK$. Thus, it is possible to establish a *theoretical level* at which savings should be placed in the long-term, which would correspond to the stationary state, which is the state in which the growth of income, capital, savings and consumption per capita is zero, because all its components grow at the same rate ($n = \Delta K = d = \Delta C$).

During the transition to such an equilibrium, savings and other elements can grow, but in the long-term, savings do not influence income growth, but rather the level at which it is located, also determining the level of consumption of the stationary state, but not its growth. Only technological change and demographic change, through alterations in productivity, produce growth in capital and income in the long-term.

In the stationary state, $s \cdot Y = (n+d) \cdot K$, i.e., per capita savings are determined by the rate of population growth and depreciation, so that higher savings determine greater capital stock. Using this relationship, per capita income in the long-term (in the stationary state) is a proportion of savings, and capital depreciation is $Y = s/d$ (where s is the savings rate and d is the capital depreciation rate).

Using the last equilibrium relationship in the accounting identity between consumption and investment income in the stationary state ($Y^* = C^* + I^*$) is derived that the savings rate that maximizes consumption in the long-term is that which complies with the following formula $C^* = s \cdot (1\text{-}s) \cdot d$. Thus, s^* should be the equilibrium savings rate given the depreciation of existing capital and the population growth rate[14]. It should be noted that, in the transition to equilibrium, the savings rate can grow as long as consumption, at the level reached, is lower than the golden rule; once this level is reached, increases in the savings rate lead to increases in capital accumulation which, when depreciating, take away more income saved to cover the depreciation. For this reason, it is not a question of saving as much as possible, but rather that which allows us to reach maximum levels of income and consumption per capita, without the excessive accumulation of capital per capita leading to the need for greater proportions of savings to be used to replace existing capital to the detriment of consumption. The latter occurs with some industrialized countries that currently have little technological progress and *quasi*-stationary population dynamics (e.g., Germany and Japan, where the paradox of frugality was confirmed in the 1990s). In contrast, a lack of savings is also a problem, because this does not allow for sufficient investment to grow and reach a balance of higher per capita income; this is what happens to some emerging countries such as those in Latin America.

Theoretical considerations aside, the reality is that savings respond more to economic factors and the socio-demographic and financial reality of each country, and therefore their desirable level varies. Thus, not necessarily *all savings* nor *many savings* need to generate gains in social well-being.

First, a shortage of savings (as in some emerging countries) can lead to insufficient financing and dependence on the external sector, and to low growth potential, creating an inability to converge on the income and consumption levels and increasing inequality[15] (a comparison of international savings can be seen in Table 1.1.2-b). Second, excessive non-intermediated savings can lead to liquidity problems (if it is savings in real assets) and, if it is poorly intermediated savings such as cash and deposits, it can have little effect on investment[16]. Moreover, excessive cash savings can also be counterproductive, as increasing real money balances reduce long-term interest rates, which in turn can put

Table 1.1.2-b
Savings breakdown, 2016-2018
(as % of GDP, average data)

Asset types	Latin America	Emerging Asia	Developed countries
Gross domestic savings	16 %	34 %	23 %
Gross public domestic savings	-2 %	9 %	-3 %
Gross private domestic savings	18 %	25 %	26 %
Foreign savings	3 %	-4 %	1 %
Total domestic savings	**19 %**	**30 %**	**24 %**

Source: MAPFRE Economics (based on data from the World Bank)

downward pressure on aging savings societies where the capital stock per worker is excessively high. These excessive savings can lead to stagnation in economic growth, falls in interest rates, depression in consumption and even deflation (the prime example being Japan), resulting in losses in well-being and aggravating financial risks.

Developed economies have a *gross domestic savings* rate of about 25% of GDP. The consensus establishes this as the desirable level for financing investment, allowing them to be placed at the current constant levels of per capita income and consumption[17](see the path indicated in Chart 1.1.2-d). However, to reach that level, countries must converge on savings and investment, and, to do so, investment must be growing for a time at a rate that allows a ratio of more than 30% to GDP, which implies that it must be financed with equivalent *gross domestic savings*. This is the case of the emerging Asian countries and their history of rapid convergence, but not that of Latin America (see Table 1.1.2-b), where we can see that national savings are and have been too low, insofar as domestic savings are insufficient to finance sustained investment levels such as those described above. The result of this savings differential is a differential in capital intensity, in productivity growth and, therefore, in output, which largely explains the current lag in per capita income convergence in Latin America. This means that, although Latin America has raised its middle classes over the last 20 years, it could have achieved more income per capita if its gross savings rate had been higher.

Promote savings to stimulate growth

The shortage of formal financial savings is commonly identified with demand problems. The most notable causes are usually the low level of per capita income (the propensity to save is proportional to income), labor informality, distortions and lack of correct fiscal incentives and, in certain markets, mistrust of institutions. Moreover, and in a very notable fashion, the phenomenon of population aging not only increases savings, but also produces a balance sheet recomposition toward non-formal savings, either in illiquid assets to store value or in the form of immediate liquidity to assume the contingencies derived from health and long-term care.

However, there are important supply-side factors that prevent the emergence of financial agents willing to capture and transfer these savings in the form of investment (an example of this is the low penetration of Life insurance in Latin American markets). The most notable supply problems concern the legal, regulatory and market restrictions that prevent the creation of a sufficiently large, liquid and deep, financial system capable of transferring investment savings. Some public policy elements related to addressing these issues are discussed in the final section of this report.

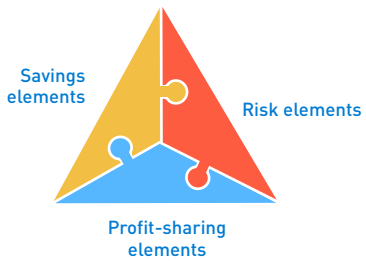
In conclusion, formal long-term savings intermediated by the finance sector are crucial to support economic growth through investment, productivity growth and offsetting the effects of population aging. In this sense, savings are

the guarantee of a sustained level of income and consumption in the long-term, consistent with the standards of developed countries; a natural ambition that drives the convergence of emerging countries. This is determined by a number of factors and the fact that their development differs from that of some emerging economies is an incentive to seek the causes of their underdevelopment. Some causes are obvious demand factors, others are deeper and related to population dynamics and the institutional context, and some are supply factors, both legal and regulatory and market-based. In order to overcome them, an ambitious, comprehensive public policy exercise is needed, which includes, among other elements, stimuli for the development of the Life insurance industry. Against this backdrop, this report reviews the Life insurance segment, which we hope will shed light on current practices at the global level and on the public policies that can boost it.

1.2 The design of Life insurance products

The design process of a Life insurance product is a structuring exercise in which, after detecting a need through the corresponding market analysis, the specific elements to be included in the contract are decided. In order to guide the study of the insurance markets covered by this report, a series of main elements have been extracted which, from a coverage point of view, are common when structuring a Life insurance product.

Chart 1.2
Elements in the structuring of a Life insurance product



Source: MAPFRE Economics

In general terms, these elements are of three types: *risk*, *savings* and *profit-sharing*. Firstly, *risk elements*, which are those that refer to the different basic and additional insured protection coverages that a Life insurance policy may consider: (i) protection against the risk of death; (ii) additional protection against the risk of disability; (iii) additional protection against the risk of invalidity; (iv) additional protection against the risk of illness; (v) additional protection against the risk of accident; (vi) protection for the contingency of survival; and (vii) protection in the form of capital, income or loss of earnings.

Secondly, *savings elements*, which are those that involve (in a complementary manner to risk protection) the possibility of the insured party or the policyholder having access to a mechanism for the constitution of an amount of savings, which may take the form of: (i) deferred capital in the event of survival; (ii) immediate or deferred, temporary or lifetime contingent rents; (iii) financial rents; (iv) reversion of rents to other persons; (v) return premiums; (vi) interest rate guarantees; (vii) options and surrender or reduction values; (viii) other financial guarantees and options; (ix) assumption of investment risk by the policyholder; and (x) loans on the value of the policy.

Thirdly, are the *profit-sharing elements*, which are those in which, in addition to the risk and savings elements, a certain percentage is set on the aggregate technical result of the insurance contract when there has been a surplus on the income statement of the respective policy, in favor of the policyholder. Within these elements are: (i) technical benefits, (ii) financial benefits without related accounts, and (iii) financial results with related accounts (positive or negative).

Thus, if we consider the number of elements that can be incorporated into the process of structuring a Life insurance contract, we can encompass the great variety of different products that arise from that process, taking

into account the high number of possible combinations.

However, once the elements that make up the product have been decided, the price or premium for the insurance (single or periodic) is determined by means of the corresponding actuarial calculations. In general, the insurance premium should cover the expected cost of the coverage offered, marketing and distribution expenses, administration expenses and the insurance company's profit margin. In this way, the final price will be determined by the result of these calculations plus the taxes and surcharges that, where applicable, are stipulated by the regulations of each country.

Moreover, the decision on which Life insurance products are finally launched on the market depends on both demand and supply factors. Among the former, interest rates and economic cycles are of great importance, which, as discussed in the initial section of this chapter, affect the consumption and savings capacity of families and companies. On the supply side (i.e., the ability of insurance companies to place these products on the market), the regulatory requirements and the level of development of the financial markets of the market in question must be considered in view of their particular relevance.

1.3 Types of Life insurance products

Given the diversity of Life insurance products in the markets of different countries, it is difficult to find a classification that would suit all of them. However, for the purposes of this study, five main categories have been defined which attempt to encompass them according to the weight of the different elements incorporated in their structure: (i) Life protection insurance products; (ii) Life savings insurance products; (iii) Life investment insurance products; (iv) Survivorship annuity insurance products, and (v) pension plans offered by Life insurance companies (see the diagram presented in Chart 1.3). The main characteristics of each of these categories are analyzed below.

1.3.1 Life Protection insurance products

This first category includes all those products whose main purpose is protection and where, consequently, the risk component is the main element considered when structuring the product. Sometimes this is pure risk cover, but it is not uncommon to find products that combine this cover with return premium elements, technical profit sharing or even savings elements. Some of the most commonly used product types are discussed below.

a) Term insurance

This type of product guarantees capital in the event of death of the insured party and is a very common form of Life insurance in all the markets analyzed. In the early stages of the

Chart 1.3
General types of Life insurance products

Life protection insurance
Products in which the risk coverage element is the main factor.

Life savings insurance
Products which aim to build up capital through the payment of a single premium or regular premiums, which are not linked to retirement.

Life investment insurance
Life insurance products in which the policyholder assumes the investment risk associated with them.

Survivorship annuity insurance
Products whose main benefits are associated with the contingency of retirement.

Pension products offered by Life insurance companies
Pension products in the form of retirement plans issued by Life insurance companies.

Source: MAPFRE Economics

development of a country's insurance industry, this type of product is marketed in its simplest form, i.e. guaranteeing a capital sum in the event of the death of the policyholder (who pays the premium) during the period of coverage. At the end of the coverage period, the contract expires unless the policyholder and the insurer agree to renew it under the new conditions agreed at the time of renewal.

When the insured person is young, the premium for this insurance is relatively small compared to the capital received by the beneficiaries, as it depends on the probability of the insured person's death during the coverage period. However, its price increases with age as the probability of death increases. Therefore, in some markets these products are marketed by paying a "level premium" for the duration of the contract, which implies the payment of a premium higher than the theoretical cost in the first years and offsets the payment of a premium lower than that parameter in the final years of the contract. In order to accurately measure the probability of death, the underwriting of these contracts is usually supplemented with questionnaires on health, profession or lifestyle, among other aspects, and in some cases with medical tests. It is also common to find modalities in which the option of renewal by the policyholder is agreed without the need to complete these questionnaires and medical tests during a predetermined period of time (renewable term insurance).

As countries' economic development advances and the insurance market matures, this type of insurance begins to be introduced as part of the companies' employment benefits package with their employees in the form of group insurance, in which case the policyholder is the company itself, the insured party is the employee, and the beneficiaries are their family members. In these early stages of economic development, this type of Life insurance also tends to become widespread as a guarantee for the payment of loans, mainly mortgages, constituting an instrument of cover for both parties, creditor and debtor, in the event of the death of the latter. In this scenario, the insured capital is periodically adjusted to the amount of the outstanding debt.

Lastly, and although this is not standard practice, this type of insurance sometimes incorporates some technical profit-sharing element or payment in the form of annuity instead of a capital sum upon death. It is also not uncommon to see structured products that incorporate additional benefits in case of accident, disability or illness.

b) Whole Life insurance

Another product variant within this category is called whole Life insurance. This product grants a capital to the beneficiaries in the event of the death of the insured party, at the time of death. This is an insurance policy for life, which covers the risk of death and in which the policyholder pays the premiums until the death of the insured party. The regular premiums that are agreed are usually leveled, so that they are more or less constant. This means that, at first, premiums are paid that are higher than those that would result from renewable term insurance, but as time goes by the situation is reversed. To this end, the insurer sets up a reserve with the additional premium paid over and above that which would correspond to the risk of death in order to be able to meet lower premiums in the future, when the premium becomes lower than its theoretical cost. This solves the main disadvantage of renewable term insurance in the event of death, where if the policyholder and the insurer want to renew the policy at maturity the price increases with each renewal and where it is less common to see policies with level premiums that provide for a surrender value.

This type of insurance therefore has a savings element that is precisely the reserve being created during the stage of the contract when the premiums being paid are above their theoretical cost. This reserve is also enhanced by the financial return that consists of a guaranteed interest rate agreed in the policy. In

the simplest versions of this type of insurance, the funds are integrated into the general account of the insurer without creating separate accounts. It is important to note that the regulations governing insurance contracts in different countries usually establish a right of withdrawal for the policyholder for the reserve generated in the event of wanting to terminate the contract, to which the insurance company can apply penalties.

c) Universal Life insurance

As with whole Life insurance, universal Life insurance provides a capital to the beneficiaries in the event of the death of the insured party, at the time of death. It is, therefore, a whole-life insurance that covers the risk of death, in which the policyholder pays the premiums until the time of death of the insured party. As we can see, this type of product shares many similarities with whole Life insurance. However, unlike the above, it is characterized by flexibility (within certain limits) in the amount and timing of premium payments during the life of the contract, which has implications for the capital that beneficiaries would receive if the insured party dies.

As with whole Life insurance, these products are designed to provide a "level premium" mechanism. Thus, the amounts paid at the beginning of the contract (when the insured person is younger) are higher than those corresponding to the risk of death, which will allow them to pay lower premiums than the risk in the future. With this additional premium and its returns (in this type of product it is usually a guaranteed interest) a technical reserve is created, so they also have a savings element that is managed within the general portfolio of the insurers without creating separate accounts.

It should be noted that this type of insurance became very popular in the United States insurance market in the 1980s. Subsequently, its use was extended to other countries, although not widely.

d) Variable Life insurance

This is an insurance that also shows many similarities with whole Life insurance, however the main difference is the way in which the savings reserve generated by the Life insurance is managed, which does not have a guaranteed interest rate, but depends on the behavior of the investment portfolio decided by the policyholder, depending on the risk they are willing to assume. Consequently, the variation in this reserve also causes the insured capital for the beneficiaries in the event of the insured person's death to vary, although a minimum capital is usually agreed and this is received under all circumstances. Because of the way in which the savings reserve is managed, variable Life insurance is usually managed through accounts separate from the general account of the insurance company. They have also become available in the United States and can be found in other markets, although not extensively.

e) Variable-universal Life insurance

These kinds of insurance are similar to whole Life insurance, but they have two main differences. The first is the flexibility they offer in the payment of premiums, as is the case with universal Life insurance. The second relates to the way in which the insurance savings reserve is managed, which depends on the behavior of the investment portfolio decided by the policyholder according to the risk they are willing to assume, as in the case of variable Life insurance, without a guaranteed interest rate and with the management of the reserve in accounts separate from those of the insurance company.

1.3.2 Life savings insurance products

The second category of this type includes those Life insurance products whose purpose is to build up capital through the payment of a single premium or periodic premiums, and which are not linked to retirement. These types of products are usually relatively liquid, so it is com-

mon to incorporate some kind of incentive for the policyholder to remain in the contract, or small penalties linked to risks associated with early termination of the contract, which act as a disincentive for early cancellation of the policy. Often, these disincentives are associated with public policies that seek to encourage savings, establishing tax advantages that are lost in the event of early cancellation of the contract.

a) Endowment insurance without return premiums ("pure endowment")

With this insurance, the insurer undertakes to deliver the insured capital at the end of the agreed period, if the insured is alive at the end of this period. This means that if the insured party dies before that time, the premium or premiums paid remain in the hands of the insurance company, which will use them to pay the capital of the insured parties who manage to survive. This type of insurance involves two capitalization processes for people who survive. First, a *financial capitalization* by the guaranteed interest rate coming from the investments in which the reserves that are generated are invested. Second, an *actuarial capitalization* for the reserves of insured persons who do not manage to survive, which increases the capital of those who do survive.

In their pure form, these are unusual types of insurance as they are difficult to market. The reason for this can be found by analyzing the extreme case in which a substantial single premium is paid to receive a deferred capital within 20 years. If the insured party dies within two months of taking out the insurance, their heirs will see that the money paid by the insured party is no longer part of the estate of the deceased, as it remains in the hands of the insurance company, which must use it to pay the survivors. Therefore, it is not common for people to want to draw substantial amounts from their wealth at the risk of leaving their relatives without it in the event of their death.

This type of insurance could be included in the group insurance that companies take out for their employees, although other formulas are usually used instead that incorporate some right for family members, such as contributions to pension plans, although the capital received in the event of survival is less than in the case of pure endowment insurance, as the effect of actuarial capitalization is lost.

b) Endowment insurance with return premiums

This type of insurance seeks to offset the negative aspect of pure endowment insurance without return premiums. These are temporary, single-premium types of insurance that combine the collection of a deferred capital at the end of a certain period with a capital in the event of the death of the insured party. They incorporate an interest rate guarantee and a paid return premium element in the event of early cancellation, subject to some kind of penalty, which covers, in whole or in part, the risk of disinvestment assumed by the insurer in the event of redemption by the policyholder and acts as a disincentive to cancellation.

The way these products are designed makes them look very similar to a fixed-term bank deposit with a guaranteed interest rate. The big difference is in the additional capital they offer in the event of the insured's death, which is not present in fixed-term bank deposits.

c) Savings account insurance (savings plans)

Savings account insurance (also known as "savings plans") has characteristics very similar to those of endowment insurance with return premiums. However, their main difference from these is that they are term insurance with regular premiums.

d) Annuity insurance with return premiums

Lastly, this category includes annuity insurance with return premiums, which guarantees the policyholder an income for as long as they live and a death benefit for their beneficiaries in the event of death equivalent to the amount of the premium paid. Moreover, the policyholder has a right of redemption equal to the amount of the premium, unless the realization value of the

investments associated with their policy is less than the amount of that premium, in which case they would receive the value of the investments.

1.3.3 Life-investment insurance products

The third category includes those Life insurance products in which the policyholder assumes the investment risk associated with them. Two types of insurance products stand out within this category: the so-called "Unit-linked" and "Index-linked" insurance.

a) Unit-linked insurance

This type of product guarantees the policyholder the returns derived from the investment on the premium paid, depending on the performance of a given investment portfolio. They also incorporate an additional capital in the event of the death of the insured party during the term of the contract.

The risk arising from the performance of the benchmark portfolio is assumed in full by the policyholder, who can decide what risk to assume on the basis of the composition of the portfolio in which they invest or whose performance is replicated. These Life insurance products share many similarities with mutual fund holdings, with the additional capital due to death being the main difference with respect to these products.

b) Index-linked insurance

Index-linked insurance is a product that guarantees the policyholder the returns derived from the investment of the premium paid on the basis of the performance of a given index. As with unit-linked products, this type of product incorporates an additional capital in the event of the insured party's death during the term of the contract; they are also similar to unit-linked products in other respects.

1.3.4 Survivorship annuity insurance products

The fourth category of this type includes those Life insurance products whose main benefits are associated with the contingency of retirement, either directly or by taking effect at a date close to retirement age. This type of product is characterized by guaranteeing a contingent income, which is associated with the probability of survival of the policyholder and/or other individuals. Also included in this category are long-term Life insurance products that give the option of transforming the reserve set up during the accumulation phase into this type of income.

The characteristics of these Life insurance products are sometimes defined by tax legislation, which may grant the tax benefit of deferring the payment of taxes associated with the income with which the premiums are paid to the time when the benefits derived from the insurance are received, provided that certain limits are not exceeded and the conditions established in said legislation are met. Within this type of product, annuity insurance in exchange for a single premium (the so-called annuities and variable annuities) stands out.

a) Annuity insurance in exchange for a single premium (annuities)

Firstly, annuity insurance in exchange for a single premium is the traditional and basic product within this category. This type of product guarantees a regular flow of income to its beneficiary, either immediately or after a period of deferment, whether temporary or for life, which is constant, increasing or variable according to a certain index.

b) Variable annuities

Second, variable annuities are long-term contracts consisting of two phases, a first phase of accumulation and a second phase of disposal of accumulated funds ("drawdown") containing at least one disposal option in the form of an annuity. This type of product is characterized by the fact that the premiums paid during the accumulation phase are normally managed in accounts separate from the general account of the insurance company and are invested ac-

cording to the specifications of the policyholder, depending on the risk they want to assume.

The policyholder has the option of converting the value of the account into an annuity in the future, with the conditions agreed at the beginning of the contract regarding the guaranteed interest rate and actuarial assumptions to be used. This is an option by which one could decide to access the accumulated value in their account in a different way, collecting a lump sum or other options, depending on the agreement. They also usually incorporate the possibility for the policyholder to withdraw all or part of the funds during the accumulation phase, within certain limits and/or subject to certain penalties.

This type of insurance arises in markets with high levels of development, and requires a considerable financial infrastructure. In addition to guarantees relating to the optional annuity, they usually include other types of options and guarantees such as a certain guaranteed interest rate in the accumulation phase ("roll-ups") or minimum guaranteed levels for the value of the account on certain predefined dates in the contract ("ratchets"). The valuation and hedging of these guarantees and options is complex and requires adequate control of the counterparty risk of the financial derivatives that are usually used for hedging.

The existence or not of these additional guarantees gives rise to different modalities of these products. Following the classification developed by the Organization for Economic Cooperation and Development (OECD)[18] the following categories can be identified:

- Variable annuities without guarantees or financial options during the accumulation phase.

- Variable annuities with a minimum guaranteed benefit in the event of death. This includes the so-called Guaranteed Minimum Death Benefit (GMDB) which, in addition to the guarantees common to all variable annuity products, guarantees a minimum capital to be paid to the beneficiaries in the event of death; this capital will be the maximum between the real value of the account and the guaranteed value.

- Variable annuities with guaranteed minimum accumulation benefit. This includes the so-called *Guaranteed Minimum Accumulation Benefit* (GMAB). In this case, the additional collateral is a minimum return on the assets for the purpose of withdrawing a lump sum at a specified future date; the amount paid will be the maximum between the actual value of the account and the guaranteed value.

- Variable annuities with guaranteed minimum income benefit. This additional guarantee includes the so-called Guaranteed Minimum Income Benefit (GMIB). This type of product guarantees a minimum rate of return on investment during the accumulation/disposal phase for the calculation of the conversion of accumulated funds into a constant Whole Life annuity, which translates into the guarantee of a minimum level of income from this annuity. The minimum income level differs according to the age at which payment begins.

- Variable annuities with guaranteed minimum lifetime withdrawal benefit. This includes the so-called Guaranteed Minimum Lifetime Withdrawal Benefit (GLWB). These products guarantee a minimum level of withdrawals, typically defined as a percentage of the level of the guarantee, which in some cases has the potential to continue to increase if the value of the account grows. This type of benefit allows continued participation in financial market earnings during the withdrawal phase without requiring a complete transformation of funds into a lifetime income, and can guarantee withdrawals for life, even if the value of the account falls to zero. They provide longevity protection as an annuity would, albeit at a lower guaranteed income level. The guaranteed income level will vary depending on the age at which payments begin.

- Variable annuities with guaranteed minimum withdrawal benefit. This includes the so-called Guaranteed Minimum Withdrawal Benefit (GMWB). This is a similar product to the GLWB, but it does not guarantee withdrawals for life, only for a specific number of years.

It should be noted that for products incorporating this type of guarantee, a fee is periodically

deducted from the value of the account to cover the cost of that guarantee, in addition to the administration fee. The risks assumed by the insurance company and which must be passed on to the insured party through the aforementioned fee are market risk, biometric risk and/or the risk derived from the behavior of the insured party with regard to the options for withdrawing funds and possible redemptions, depending on the guarantees incorporated into the product.

1.3.5 Pension products offered by Life insurance companies

Lastly, the fifth category in this type of Life insurance product refers to retirement products (in the form of pension plans) that Life insurance companies issue in various insurance markets, without necessarily assuming any insurance risk. These products are similar to those managed by pension plan management companies, but incorporate the managed assets into the balance sheet of the insurance companies. Throughout this study, an express reference to this type of product has been included when analyzing the different markets.

2. Analysis of the Life insurance market in selected countries

2.1 Overview

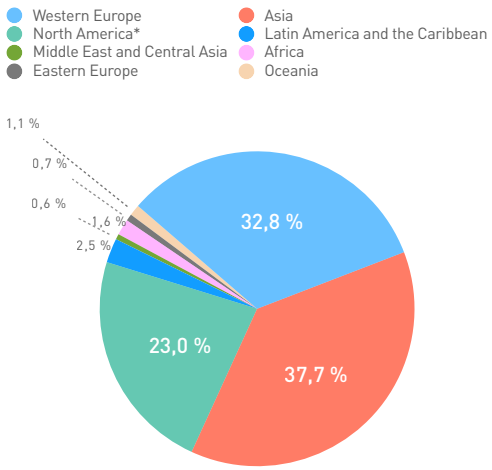
Penetration and depth of Life insurance

Global Life insurance premiums reached 2.82 billion dollars in 2018. As illustrated in Chart 2.1-a, 93.5% of Life premiums worldwide were concentrated in three regions: Asia (37.7%), Western Europe (32.8%) and North America[19] (23%). The remaining 6.5% was distributed among Latin America and the Caribbean (2.5%), Africa (1.6%), Oceania (1.1%), Eastern Europe (0.7%) and the Middle East and Central Asia (0.6%).

In terms of penetration, Life insurance premium volumes represented 3.2% of the world's gross domestic product in 2018, with the Western European region showing the highest level of development, with a penetration level of 4.5%, followed by Asia (3.5%) and North America (2.9%).

It is important to note that, over the 2008-2018 period, the level of Life insurance penetration has generally decreased in virtually all regions of the world, with the exception of Latin America and the Caribbean, where it increased by 0.3 percentage points, and the Middle East and Central Asia, with an increase of 0.2 percentage points (see Table

Chart 2.1-a
Structure of Life insurance premiums by region, 2018



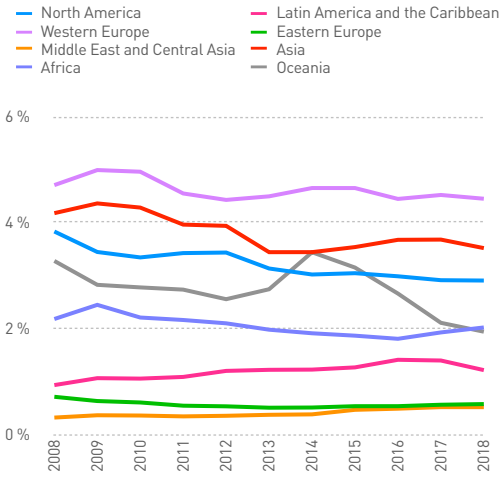
Source: MAPFRE Economics (based on data from Swiss Re)
* Without Mexico (included in the data for Latin America and the Caribbean)

Table 2.1-a
Penetration of Life insurance by region, 2008-2018
(Life premiums/GDP)

Asset type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Δ2008-2018
North America*	3,8 %	3,4 %	3,3 %	3,4 %	3,4 %	3,1 %	3,0 %	3,0 %	3,0 %	2,9 %	2,9 %	-0,9 %
Latin America and the Caribbean	0,9 %	1,1 %	1,1 %	1,1 %	1,2 %	1,2 %	1,2 %	1,3 %	1,4 %	1,4 %	1,2 %	0,3 %
Western Europe	4,7 %	5,0 %	5,0 %	4,6 %	4,4 %	4,5 %	4,7 %	4,7 %	4,4 %	4,5 %	4,5 %	-0,3 %
Eastern Europe	0,7 %	0,6 %	0,6 %	0,5 %	0,5 %	0,5 %	0,5 %	0,5 %	0,5 %	0,6 %	0,6 %	-0,1 %
Middle East and Central Asia	0,3 %	0,4 %	0,4 %	0,3 %	0,3 %	0,4 %	0,4 %	0,5 %	0,5 %	0,5 %	0,5 %	0,2 %
Asia	4,2 %	4,4 %	4,3 %	4,0 %	3,9 %	3,4 %	3,4 %	3,5 %	3,7 %	3,7 %	3,5 %	-0,7 %
Africa	2,2 %	2,4 %	2,2 %	2,2 %	2,1 %	2,0 %	1,9 %	1,9 %	1,8 %	1,9 %	2,0 %	-0,2 %
Oceania	3,3 %	2,8 %	2,8 %	2,7 %	2,6 %	2,7 %	3,4 %	3,2 %	2,7 %	2,1 %	1,9 %	-1,3 %
World	3,8 %	3,8 %	3,7 %	3,5 %	3,4 %	3,2 %	3,3 %	3,3 %	3,3 %	3,3 %	3,2 %	-0,5 %

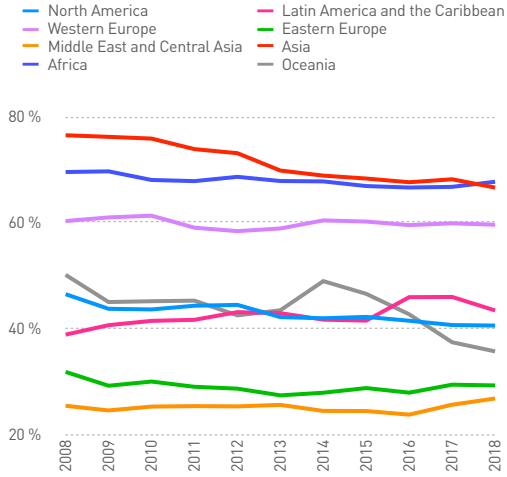
Source: MAPFRE Economics (based on data from Swiss Re)
* Without Mexico (included in the data for Latin America and the Caribbean)

Chart 2.1-b
Penetration of Life insurance by region, 2008-2018



Source: MAPFRE Economics (based on data from Swiss Re)
* Without Mexico

Chart 2.1-c
Depth index by region, 2008-2018



Source: MAPFRE Economics (based on data from Swiss Re)
* Without Mexico

2.1-a and Chart 2.1-b). The largest declines in Life insurance penetration were in the North American and Asian markets, with -0.9 and -0.7 percentage points, respectively. It should be noted that this fall in Life insurance penetration between 2008 and 2018 (which overall meant a reduction in penetration of -0.5 percentage points) has been greatly influenced by the prolonged low interest rate environment that the most developed market economies are currently experiencing.

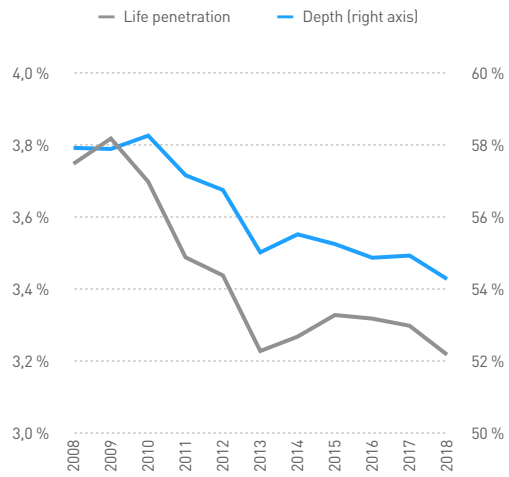
A further indicator that empirically helps to identify the trend of an insurance market toward greater development and sophistication is the depth index, which relates the size of the Life insurance segment to the total insurance market of a country or region. According to this indicator, between 2008 and 2018 the global depth level deteriorated by -3.6 percentage points, mainly driven by the reduction of the indicator in the insurance markets of Oceania (-14.5 percentage points), Asia (-9.9) and North America (-5.9). Only two regions, by contrast, showed an increase in depth over the last

Table 2.1-b
Depth index by region, 2008-2018
(Life premiums/total premiums)

Asset type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Δ 2008-2018
North America*	46,5 %	43,7 %	43,6 %	44,3 %	44,5 %	42,1 %	41,9 %	42,2 %	41,4 %	40,6 %	40,5 %	-5,9 %
Latin America and the Caribbean	38,8 %	40,6 %	41,4 %	41,6 %	43,1 %	42,9 %	41,7 %	41,5 %	45,9 %	46,0 %	43,4 %	4,6 %
Western Europe	60,3 %	61,0 %	61,3 %	59,0 %	58,4 %	58,9 %	60,4 %	60,2 %	59,5 %	59,9 %	59,6 %	-0,7 %
Eastern Europe	31,8 %	29,2 %	30,0 %	29,0 %	28,6 %	27,4 %	27,9 %	28,7 %	27,9 %	29,4 %	29,2 %	-2,6 %
Middle East and Central Asia	25,4 %	24,5 %	25,2 %	25,3 %	25,3 %	25,6 %	24,4 %	24,4 %	23,7 %	25,6 %	26,8 %	1,4 %
Asia	76,5 %	76,2 %	75,9 %	73,9 %	73,1 %	69,8 %	68,9 %	68,3 %	67,6 %	68,2 %	66,6 %	-9,9 %
Africa	69,6 %	69,7 %	68,1 %	67,8 %	68,7 %	67,9 %	67,8 %	66,9 %	66,6 %	66,8 %	67,7 %	-1,8 %
Oceania	50,1 %	45,0 %	45,1 %	45,3 %	42,5 %	43,4 %	48,9 %	46,5 %	42,7 %	37,4 %	35,7 %	-14,5 %
World	57,9 %	57,9 %	58,3 %	57,2 %	56,8 %	55,0 %	55,5 %	55,3 %	54,9 %	54,9 %	54,3 %	-3,6 %

Source: MAPFRE Economics (based on data from Swiss Re)
* Without Mexico (included in the data for Latin America and the Caribbean)

Chart 2.1-d
Global depth and Life penetration, 2008-2018



Source: MAPFRE Economics (based on data from Swiss Re)

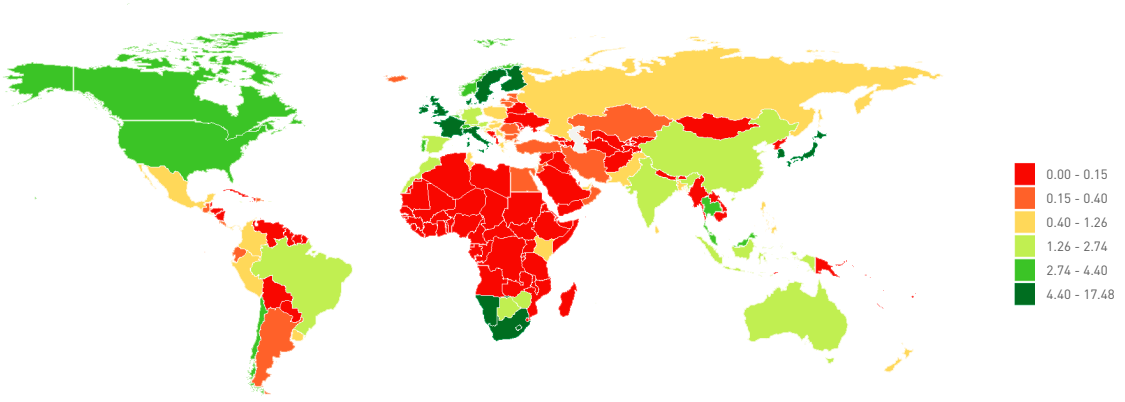
decade: again Latin America and the Caribbean, with a gain of 4.6 percentage points, and the Middle East and Central Asia, with an increase of 1.4 percentage points in the indicator (see Table 2.1-b and Chart 2.1-c).

Thus, as illustrated in Chart 2.1-d, throughout the 2008-2018 period, a structural deterioration can be observed in the Life insurance segment at a global level (with falls in both the penetration of the Life segment and the depth index), determined, on the one hand, by the effect on personal disposable income caused by the economic slowdown caused by the 2008-2009 world economic crisis, as well as by the environment of low interest rates that has become widespread in the world economy since that time.

Some parameters for selected markets

Chart 2.1-e illustrates in a schematic fashion the situation of Life insurance penetration levels worldwide in 2018. Table 2.1-c and Chart 2.1-f present this information in more detail for a selected group of countries. As can be seen from these data, the insurance markets with the highest level of penetration in the Life segment in 2018 were Taiwan (17.5%) and Hong Kong (16.8%), followed by South Africa (10.3%), the United Kingdom (8.3%) and Finland (8.1%). However, in terms of increased penetration over the last decade, once again two Asian markets stand out due to the significant progress made during this period: Hong Kong, with an increase of 7.3 percentage points over the period, and Taiwan with an increase of 4.8 percentage points. Other insurance markets also saw gains in penetration over the course of the decade: Italy (2.8 percentage points), Denmark (1.6), Finland (1.5) and Thailand (1.5). In terms of the biggest declines during

Chart 2.1-e
Life insurance penetration, 2018
(Life premiums/GDP)



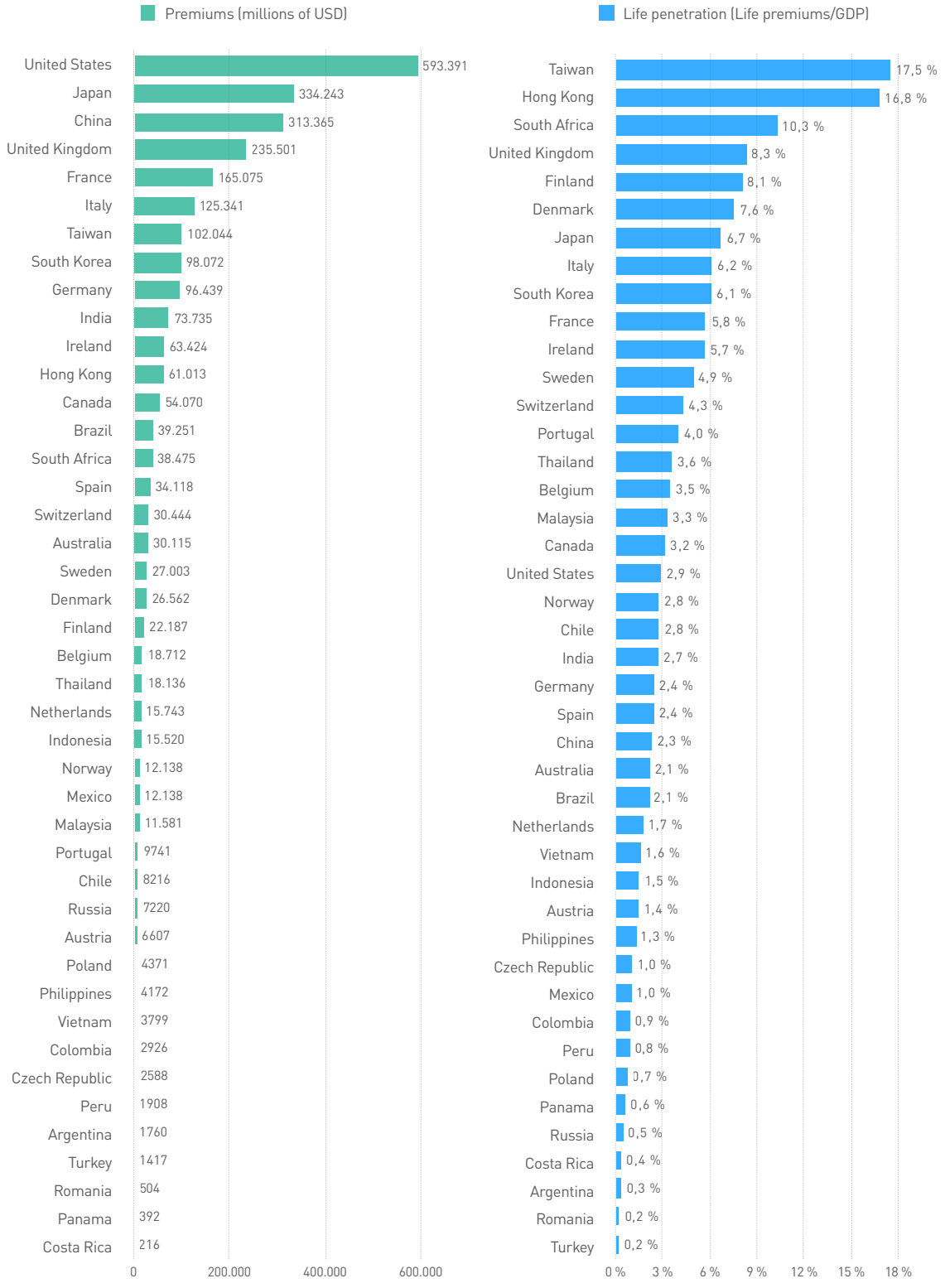
Source: MAPFRE Economics (based on data from Swiss Re)

Table 2.1-c
Penetration of Life insurance in selected countries, 2008-2018
(Life premiums/GDP)

Asset type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Δ2008-2018
Taiwan	12,7 %	13,4 %	14,4 %	13,3 %	14,7 %	14,8 %	15,0 %	15,3 %	16,0 %	17,4 %	17,5 %	4,8 %
Hong Kong	9,5 %	9,4 %	9,8 %	10,3 %	11,0 %	12,1 %	13,1 %	13,7 %	16,3 %	16,6 %	16,8 %	7,3 %
South Africa	12,0 %	12,3 %	10,3 %	9,9 %	11,0 %	11,4 %	11,8 %	11,6 %	11,2 %	10,4 %	10,3 %	-1,7 %
United Kingdom	9,8 %	9,0 %	8,2 %	8,2 %	8,3 %	7,9 %	7,4 %	7,5 %	7,3 %	8,5 %	8,3 %	-1,5 %
Finland	6,6 %	7,2 %	8,3 %	7,5 %	8,1 %	8,8 %	9,1 %	9,3 %	8,3 %	8,2 %	8,1 %	1,5 %
Denmark	6,0 %	6,0 %	6,1 %	6,4 %	6,5 %	6,5 %	6,6 %	6,8 %	7,3 %	7,5 %	7,6 %	1,6 %
Japan	7,5 %	7,8 %	7,7 %	8,0 %	8,3 %	7,5 %	7,7 %	7,6 %	6,8 %	6,5 %	6,7 %	-0,8 %
Italy	3,3 %	5,2 %	5,6 %	4,5 %	4,3 %	5,3 %	6,5 %	6,6 %	6,2 %	6,2 %	6,2 %	2,8 %
South Korea	6,6 %	6,5 %	6,5 %	6,6 %	8,3 %	7,1 %	7,4 %	7,5 %	7,3 %	6,6 %	6,1 %	-0,5 %
France	6,1 %	7,1 %	7,2 %	6,0 %	5,4 %	5,6 %	6,0 %	6,2 %	6,0 %	5,9 %	5,8 %	-0,4 %
Ireland	6,6 %	6,3 %	6,9 %	6,2 %	5,7 %	6,4 %	6,2 %	5,5 %	5,7 %	5,7 %	5,7 %	-1,0 %
Sweden	5,0 %	5,9 %	6,0 %	5,7 %	5,0 %	4,7 %	5,0 %	5,3 %	4,7 %	5,0 %	4,9 %	-0,1 %
Switzerland	4,9 %	5,0 %	4,9 %	4,9 %	5,0 %	5,1 %	5,0 %	5,0 %	4,6 %	4,4 %	4,3 %	-0,6 %
Portugal	6,2 %	5,9 %	6,8 %	4,3 %	4,1 %	5,4 %	6,0 %	4,8 %	3,6 %	3,6 %	4,0 %	-2,1 %
Thailand	2,1 %	2,5 %	2,6 %	2,7 %	3,0 %	3,2 %	3,6 %	3,7 %	3,7 %	3,6 %	3,6 %	1,5 %
Belgium	5,5 %	5,3 %	5,2 %	4,9 %	5,4 %	4,1 %	4,0 %	3,7 %	3,5 %	3,3 %	3,5 %	-2,0 %
Malaysia	2,8 %	3,3 %	3,3 %	3,1 %	3,3 %	3,3 %	3,3 %	3,4 %	3,4 %	3,3 %	3,3 %	0,6 %
Canada	3,0 %	3,3 %	3,1 %	2,9 %	2,9 %	2,9 %	3,0 %	3,2 %	3,2 %	3,2 %	3,2 %	0,1 %
United States	3,9 %	3,5 %	3,4 %	3,5 %	3,5 %	3,2 %	3,0 %	3,0 %	3,0 %	2,9 %	2,9 %	-1,0 %
Norway	2,5 %	2,6 %	2,6 %	2,6 %	2,8 %	2,7 %	2,9 %	2,9 %	3,0 %	2,8 %	2,8 %	0,3 %
Chile	2,3 %	2,2 %	2,3 %	2,2 %	2,5 %	2,5 %	2,5 %	2,8 %	3,1 %	2,8 %	2,8 %	0,5 %
India	4,1 %	4,4 %	4,0 %	3,4 %	2,9 %	2,8 %	2,6 %	2,7 %	2,7 %	2,7 %	2,7 %	-1,3 %
Germany	2,9 %	3,2 %	3,3 %	3,0 %	2,9 %	3,0 %	2,9 %	2,7 %	2,6 %	2,5 %	2,4 %	-0,5 %
Spain	2,4 %	2,6 %	2,4 %	2,7 %	2,5 %	2,5 %	2,4 %	2,4 %	2,8 %	2,5 %	2,4 %	0,0 %
China	2,1 %	2,1 %	2,3 %	1,8 %	1,6 %	1,6 %	1,7 %	1,9 %	2,3 %	2,6 %	2,3 %	0,2 %
Australia	3,7 %	3,1 %	3,0 %	3,0 %	2,8 %	3,0 %	3,9 %	3,5 %	3,0 %	2,3 %	2,1 %	-1,5 %
Brazil	1,3 %	1,6 %	1,5 %	1,6 %	1,8 %	1,8 %	1,8 %	2,1 %	2,3 %	2,3 %	2,1 %	0,8 %
Netherlands	4,1 %	3,4 %	3,4 %	3,4 %	2,9 %	2,8 %	2,6 %	2,1 %	2,1 %	1,9 %	1,7 %	-2,4 %
Vietnam	0,6 %	0,7 %	0,6 %	0,6 %	0,6 %	0,6 %	0,7 %	0,9 %	1,1 %	1,3 %	1,6 %	0,9 %
Indonesia	1,0 %	1,0 %	1,1 %	1,3 %	1,3 %	1,2 %	1,3 %	1,4 %	1,6 %	1,6 %	1,5 %	0,5 %
Austria	2,5 %	2,6 %	2,6 %	2,3 %	2,0 %	2,0 %	2,0 %	2,0 %	1,7 %	1,6 %	1,4 %	-1,1 %
Philippines	0,7 %	0,7 %	0,8 %	0,9 %	1,1 %	1,4 %	1,2 %	1,4 %	1,2 %	1,2 %	1,3 %	0,6 %
Czech Republic	1,4 %	1,5 %	1,8 %	1,7 %	1,7 %	1,6 %	1,6 %	1,3 %	1,2 %	1,1 %	1,0 %	-0,4 %
Mexico	0,8 %	0,9 %	0,8 %	0,9 %	0,9 %	1,0 %	1,0 %	1,0 %	1,0 %	1,0 %	1,0 %	0,2 %
Colombia	0,8 %	0,7 %	0,7 %	0,7 %	0,7 %	0,9 %	0,7 %	0,8 %	0,9 %	0,9 %	0,9 %	0,1 %
Peru	0,5 %	0,6 %	0,8 %	0,7 %	0,7 %	0,8 %	0,9 %	0,9 %	0,8 %	0,8 %	0,8 %	0,3 %
Poland	2,7 %	1,9 %	1,9 %	1,7 %	1,9 %	1,5 %	1,3 %	1,2 %	1,0 %	1,0 %	0,7 %	-2,0 %
Panama	0,9 %	0,9 %	0,8 %	0,7 %	0,6 %	0,6 %	0,6 %	0,6 %	0,6 %	0,6 %	0,6 %	-0,3 %
Russia	0,0 %	0,0 %	0,0 %	0,1 %	0,1 %	0,1 %	0,1 %	0,2 %	0,3 %	0,4 %	0,5 %	0,4 %
Costa Rica	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,3 %	0,3 %	0,2 %	0,3 %	0,3 %	0,4 %	0,2 %
Argentina	0,5 %	0,4 %	0,3 %	0,4 %	0,4 %	0,4 %	0,4 %	0,4 %	0,4 %	0,4 %	0,3 %	-0,2 %
Romania	0,4 %	0,3 %	0,3 %	0,3 %	0,3 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	-0,1 %
Turkey	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,0 %

Source: MAPFRE Economics (based on data from Swiss Re)

Chart 2.1-f
Life insurance premiums and penetration in selected countries, 2018
(millions of USD; Life premiums/GDP, %)



Source: MAPFRE Economics (based on data from Swiss Re)

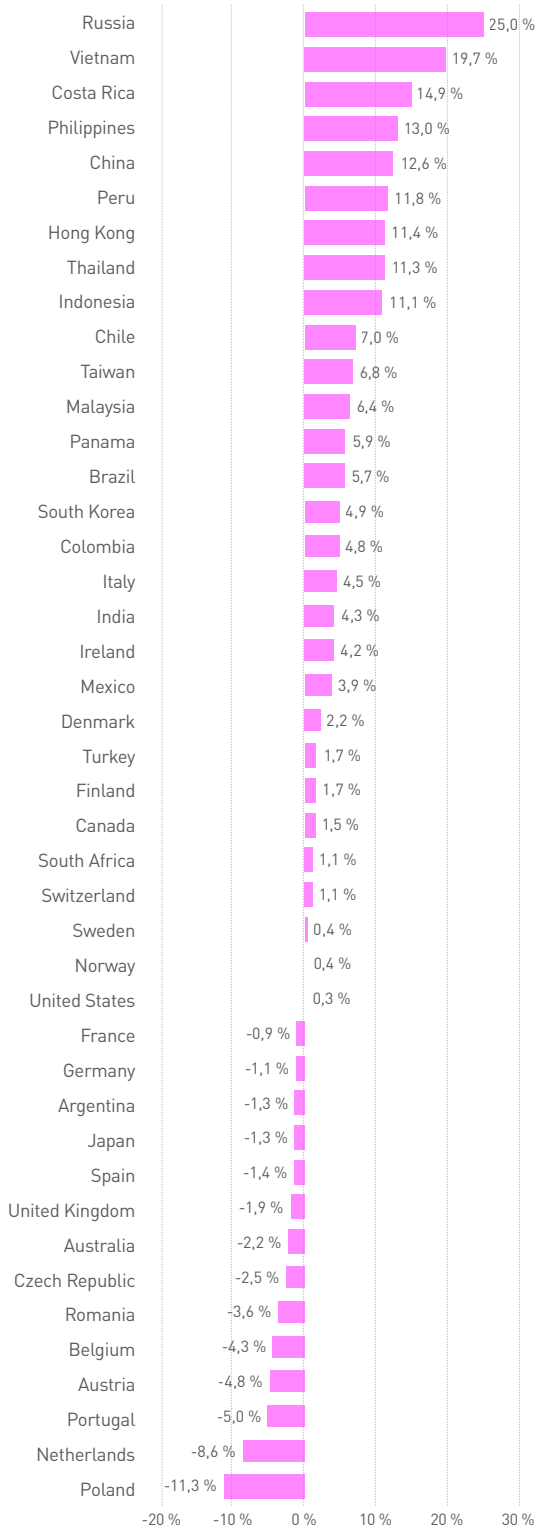
2008-2018, the Netherlands (-2.4 percentage points), Portugal (-2.1), Belgium (-2.0) and Poland (-2.0) all stand out.

In the Asian region, the high penetration of Life insurance in Japan stands out, which is the second largest premium market in the world after the United States. In Western Europe, the highest level of penetration in 2018 was in the UK Life insurance market, where premiums for this line of business reached 8.3% of its gross domestic product. This high level of development is largely due to the role played by Life insurance companies in the supplementary pension system and the wide diffusion of Life insurance in which the policyholder assumes the investment risk (of the unit-linked type). The high level of development of the Italian Life market is also significant in this region, reaching a penetration level of 6.2% in 2018, in contrast to other markets such as Spain or Germany, where it represented 2.4% of gross domestic product.

In the Latin American and Caribbean region, the largest Life insurance market by premium volume is Brazil, which exhibits a substantial degree of development, with Life insurance premiums of 2.1% in relation to its gross domestic product in 2018, second only to the Chilean market (2.8% of GDP) because of the role played in the latter country by Life insurance companies in mandatory and supplementary pension systems. The next largest market in the region by premium volume is Mexico, which is, however, significantly less developed than Brazil, with a Life insurance penetration level in the Mexican economy of 1% of its gross domestic product.

Lastly, it is worth noting the case of Africa, a region where the high level of penetration of South African Life insurance (10.3% of GDP) stands out, raising the region's indicator to 2%. However, most African countries have the lowest levels of development on the planet.

Chart 2.1-g
Average growth in Life insurance premiums in selected countries, 2008-2018
(%)



Source: MAPFRE Economics (based on data from Swiss Re)

Thus, excluding the figure for South Africa, the penetration of Life insurance in that region would be only 1.4%, while the depth figure would be 38.9%, 28.8 percentage points below the original figure.

Growth performance

Chart 2.1-g shows the average annual growth of the main Life insurance markets over the 2008-2018 period. In general, the most dynamic markets of the decade tend to be markets that began at lower levels of development, in line with the idea that the elasticity of growth in insurance markets is greater the smaller their relative size as measured by penetration (premium volume as a proportion of GDP). Life insurance markets in Russia (with an average growth of 25%), Vietnam (19.7%), Costa Rica (14.9%), the Philippines (13%) and China (12.6%) grew significantly over the 2008-2018 period.

Likewise, mature markets have shown little growth over the 2008-2018 period, and have either decreased or stagnated. The examples of the Netherlands[20] (with an average growth of -8.6%), Portugal (-5%), Austria (-4.8%), Japan (-1.3%) and the United States (0.3%) stand out.

Scope of the study

The following sections of this study provide an in-depth analysis of a selection of Life insurance markets, which are considered representative due to their regional importance, the level of development of the products they market and their dynamism, among other factors. This selection of markets aims to cover a wide range of Life insurance products offered by insurance companies worldwide, as well as different regulatory models, in order to identify those practices that can be considered as a benchmark when designing public policies aimed at protecting policyholders, stimulating savings through this type of product and the stability of the global financial system.

2.2 United States

2.2.1 Structural elements of the market

In terms of the structure of US insurance market penetration, Life insurance premiums accounted for 2% of the US gross domestic product in 2018 (2.9% if Life insurance companies' health and accident premiums are included), compared to a 4.3% average in developed markets (see Chart 2.2.1-a).

Chart 2.2.1-a
United States: Life penetration index, 2008-2018

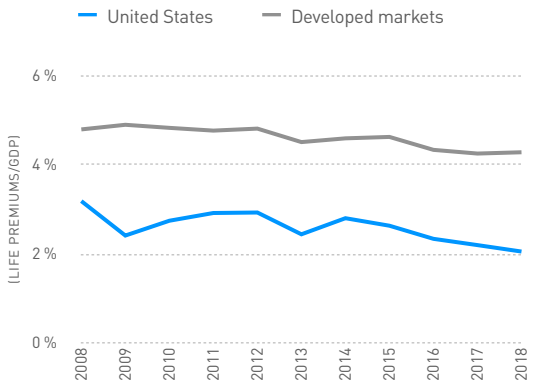
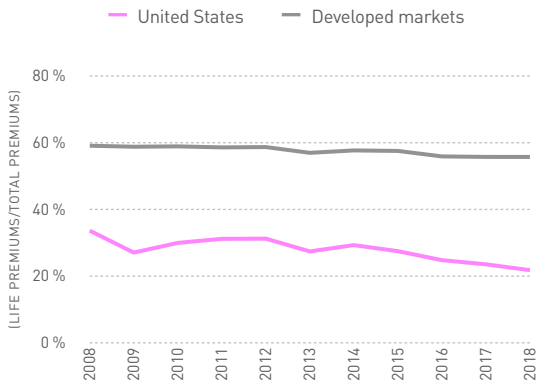
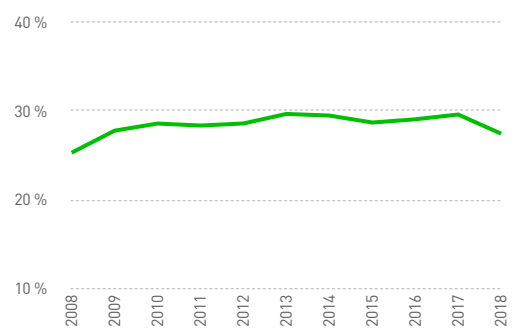


Chart 2.2.1-b
United States: depth index, 2008-2018



Source: MAPFRE Economics (based on data from NAIC, Swiss Re and OEF)

Chart 2.2.1-c
United States: technical provisions of Life insurance compared to GDP, 2008-2018



Source: MAPFRE Economics (based on data from NAIC and OEF)

Likewise, the weight of Life insurance premiums over total premiums (depth index) was 21.8% compared to 55.7% in developed markets (see Chart 2.2.1-b). The historical series of these two indicators illustrated in the above-mentioned charts shows that the Life insurance market in the United States exhibits a significant difference from other developed countries throughout the last decade, showing a tendency to grow throughout the period. However, in absolute terms, the United States is the world's largest insurance market in the Life segment and the types of products marketed are highly sophisticated.

Moreover, provisions for Life insurance in the US market, including deposit-type contracts underwritten by Life insurance companies, amounted to 5.6 trillion dollars at the close of 2018, around 27% of GDP. The weight of Life technical provisions over GDP is a relative measure of the savings managed from Life insurance contracts. Most of the managed savings come from annuity insurance (63% of the total in 2018). This is followed by traditional Life insurance other than annuity insurance (28%) and, finally, by deposit-type contracts underwritten by Life insurance companies (9%).

Chart 2.2.1-c shows the evolution of the weight of provisions for Life insurance compared to GDP in the United States over the 2008-2018 period. In recent years, this indicator had been close to 30% of GDP. However, in 2018 it suffered a slight setback, reaching 27% of GDP, to which the performance of equities in that country contributed, which experienced a fall in 2018, particularly pronounced in the last quarter of the year, and the five interest rate hikes carried out by the Federal Reserve in 2018, with the negative effect that these hikes have on the valuation of fixed income portfolios with significant durations.

Chart 2.2.1-d
United States: Life technical provisions*, 2008-2018

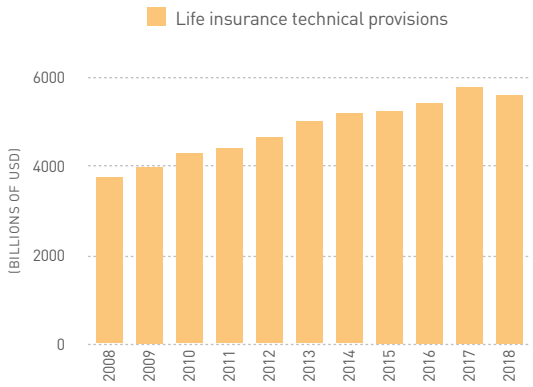
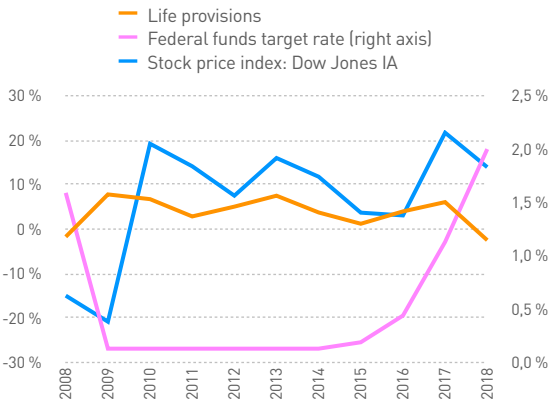


Chart 2.2.1-e
United States: variation in Life technical provisions*, 2008-2018



Source: MAPFRE Economics (based on data from the American Council of Life Insurers and Bloomberg)
* Does not include provisions for the health business

Life insurance provisions, except for the sharp decline they experienced at the height of the last economic crisis (2008), have been growing at an average of 3% over the 2008-2018 period, while Life insurance premiums have done so at 1.5%, also on average. This is a market in which variable annuity-type products have a significant weight, with part of the investments in risk assets in the accumulation phase in which the policyholder assumes the investment risk, so that the valuation of provisions for Life insurance is sensitive to the behavior of equities and not only to risk-free interest rates, after a long period in which the latter were close to zero (see Charts 2.2.1-d and 2.2.1-e).

Moreover, an analysis of changes in Life insurance premiums in real terms shows a significant negative influence of the environment of low risk-free interest rates, which lasted from 2008 to 2016, the year in which monetary policy interest rate levels began to rise in the United States. Expectations of further increases in 2017 and the first three quarters of 2018 also contributed to some slowdown in the Life business. This meant that in 2018, Life insurance premiums (excluding health premiums marketed by Life insurance companies) were -9.6% lower than a decade ago (-22.5% in real terms). During this period, the behavior (generally negative) has been somewhat irregular and has also been affected by the behavior of the economic cycle and of equities, by the shift in the US Life market toward income products in which policyholders assume investment risk and by a movement of their portfolios toward higher risk positions, due to the low interest rate environment (see Charts 2.2.1-f and 2.2.1-g).

The Life insurance market in the United States is characterized by the significant weight of group Life insurance, which is used by companies as an additional instrument to meet pension commitments to their employees, in addition to company pension plans. The significant volume of health and accident business premiums marketed by Life insurance companies is also noteworthy, as they contribute an aggregate volume of additional premiums to the Life business of around 27% of total premiums.

As shown in Chart 2.2.1-h, with data as of the close of 2018, the largest market share by volume of Life business (including contributions to deposit-type contracts marketed by Life insurance companies and excluding health and accident premiums) was that of MetLife, with a 14.2% market share, followed by Prudential

Chart 2.2.1-f
United States: Life premiums*, 2008-2018

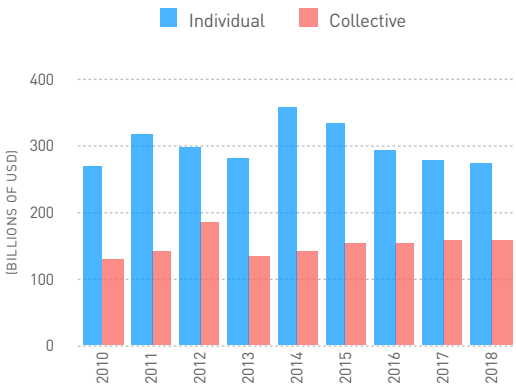
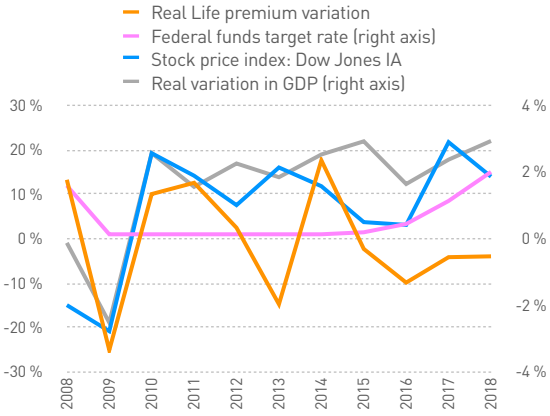
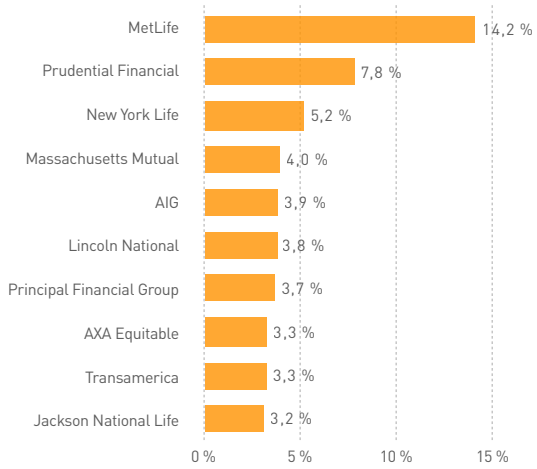


Chart 2.2.1-g
United States: real variation in Life premiums*, 2008-2018



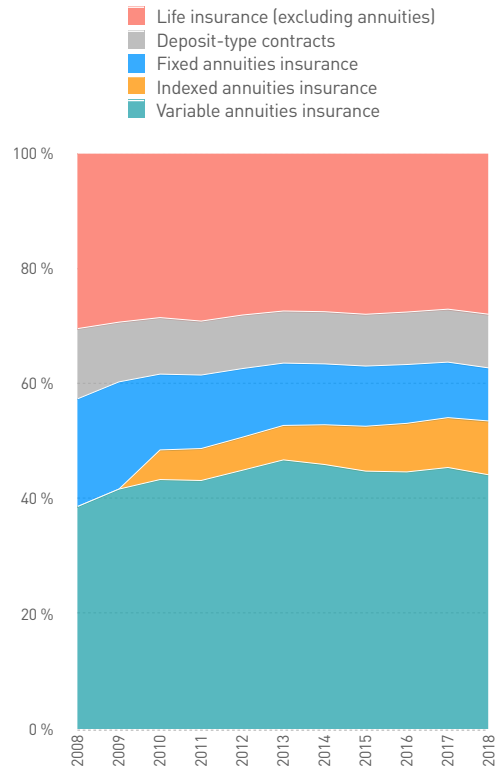
Source: MAPFRE Economics (based on data from the American Council of Life Insurers)
* Does not include health premiums, accidents, or deposit-type contracts.

Chart 2.2.1-h
United States: ranking of Life insurance companies, 2018



Source: MAPFRE Economics (based on data from the Federal Insurance Office, US Department of the Treasury)

Chart 2.2.1-i
United States: structure of Life technical provisions, 2008-2018



Source: MAPFRE Economics (based on data from the Insurance Information Institute, American Council of Life Insurers and NAIC)

Financial Group, with 7.8% and New York Life with 5.2%. Regionally, the largest Life insurance market in the United States is New York State, with a Life premium volume (excluding health and including deposit-type contracts) exceeding 85 billion dollars in 2018, which means that, individually, it would be among the ten largest Life insurance markets in the world. This classification also includes the states of California, with a market of around 60 billion dollars, and Texas and Florida, with markets of around 40 billion dollars[21].

Lastly, Chart 2.2.1-i shows the structure of technical provisions for Life insurance products and their evolution over the 2008-2018 period. As can be seen, income products predominate, among which variable annuities stand out, representing 44% of the Life provisions at the close of 2018. Traditional Life insurance, excluding annuity insurance, represented 28% of the provisions at the close of that year. Lastly, it should be noted that in 2018, around 51% of Life insurance business in the US market was brokered by independent insurance brokers and dealers, 38% by tied agents, 6% by direct sales and 5% by other channels. The trend in recent years has been toward a reduction in the weight of the independent broker channel in favor of direct sales and, to a lesser extent, tied agents.

2.2.2 Analysis of Life insurance product categories

The following is a summary of the situation in the US Life insurance market for the product categories considered in the conceptual framework of this study.

a) Life protection insurance products

The US insurance market has a wide variety of Life protection insurance products, some of which are highly sophisticated. Traditionally, temporary Life protection insurance has been widely accepted, with a varied offer in relation

to the terms for which it is taken out, and whole Life insurance with a level premium, especially from the second post-war period among the "baby boom" generation, as an instrument of family and individual protection, but also being offered by companies to their workers as part of their salary package. It should be noted that the development of this type of product was also influenced by the economic boom experienced during that period[22]. They are usually marketed by offering capital to cover the costs of children's education, mortgage payments and funeral expenses, among other things, in the event of the death of a parent.

The monetary policy of the eighties, which was very focused on controlling inflation, led to abrupt increases in interest rates, causing a change in the design of Life protection products to be able to compete with banking products, which were more sensitive to short-term interest rate variations. More complex risk products such as "universal Life," "variable Life" and "variable-universal Life" then emerged and became very popular and are still marketed today. Its main attraction compared to whole Life insurance is the flexibility in the payment of premiums (universal Life) and/or the way in which the reserve is managed, which in some products depends on the behavior of the investment portfolio decided by the policyholder, depending on the risk they are willing to assume (such as variable Life and variable-universal Life), with no or minimum guaranteed interest rates and with management of the reserve in separate accounts.

In general, Life protection products that have a savings element associated with them offer the tax benefit of deferring the payment of taxes on the income they generate. They also offer the possibility of mobilizing funds that accumulate through loans or redemptions, subject to the penalty that may have been agreed.

b) Life savings and Life investment insurance products

It can be said that the US public pension system has a redistributive character toward low income pensioners, so that the replacement rate falls very sharply for those in employment with a history of high and medium salaries. This has opened the field for the development of savings and investment instruments for both the second pillar of the pension system (collective insurance by companies for their employees) and the third pillar (voluntary individual private insurance) (see Box 2.2.2).

As noted above, the US savings-investment Life insurance market has the highest level of sophistication in the world. As a result, most of these types of insurance incorporate options for transforming the funds set up into term or Life annuities, or are deposit-type contracts linked to the companies' pension commitments to their employees.

c) Survivorship annuity insurance products

Survivorship annuity insurance is a widely available product on the US market. Most of these products are designed to cover the life cycle of the policyholder, so they are medium- and long-term contracts that offer a wide variety of options and/or guarantees for the policyholder. The risk management of these products is complex and it is not sufficient to have an operating license in the Life segment to be able to issue them, as they require specific authorization from the state supervisor.

The most widely marketed annuity products in the United States are variable annuities insurance, which accounted for 44% of Life provisions at the end of 2018, up 5.5 percentage points from 2008. In addition to variable annuities, other important income products are the so-called indexed linked annuities and fixed annuities. In the first case, indexed-linked annuities are a new category of annuity insurance that emerged in 2010 and has had a wide development, so that it represented 9% of the Life provisions at the end of 2018; a weight that has gained at the expense of income insurance of the fixed annuity type that represented 9% of the provisions in 2018, 9.5 percentage points fewer than in 2008 (see Chart 2.2.1-i).

A large part of the mathematical provisions derived from these types of insurance are managed in separate accounts, so that the insurance companies that market them present in their balance sheets the mathematical

Box 2.2.2
Supplementary pension savings instruments in the United States market

The case of workers with medium- and high-salary backgrounds

Given the characteristics of the public pension system in the United States, which is particularly geared toward the pensions of low-income workers, the public pension of workers with middle- and high-wage backgrounds tends to represent a small percentage of their last active salaries.

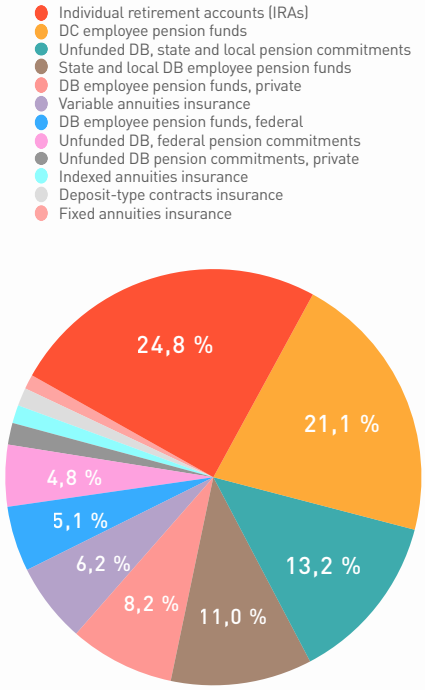
In order to soften and compensate for the loss of purchasing power that these workers suffer at retirement, the pension system in the United States offers two main mechanisms. First, a significant portion of this supplement may come from the commitments assumed by employers (both private companies and public companies) to their workers; the so-called "second pillar" of the pension system. And, second, the pensions of this segment of middle- and high-income workers can also be compensated through the contracting of individual voluntary private coverage (the so-called "third pillar").

Some basic facts

In the case of the United States, at the close of 2018, the sum of accumulated funds in retirement savings products, as well as unfunded commitments of employers' supplementary pension plans to their employees, amounted to 35.5 trillion dollars, an amount equivalent to 173% of the United States gross domestic product.

It should be noted that 20% of these commitments were not backed by funds and were mostly commitments made by state and local public entities to public employees. At the same time, accumulated funds in savings products amounted to 28.5 trillion dollars (equivalent to 80% of total commitments and 139% of gross domestic product), of which 3.6 trillion dollars were accumulated funds in savings products issued by Life insurance companies (i.e. 12.6% of total funds).

Chart A
Pension assets and commitments supplementary to public pensions, 2018



Source: MAPFRE Economics (based on data from the Investment Company Institute and NAIC)

As a reference, Table A and Chart A present a breakdown, with a greater level of disaggregation, of the assets and commitments linked to the supplementary social protection system in the United States.

Box 2.2.2 (continued)
Instruments for pension savings as a supplement to pensions in the United States market

Table A
Structure of assets and commitments for supplementary retirement pensions to public pensions, 2018

	USD (trillions)	Structure (%)
Variable annuities insurance	2,2	6,2 %
Fixed annuities insurance	0,4	1,1 %
Indexed annuities insurance	0,5	1,4 %
Deposit-type contracts pension insurance	0,5	1,4 %
Individual retirement accounts (IRAs)	8,8	24,8 %
Defined contribution employment pension funds	7,5	21,1 %
Private sector defined benefit employee pension funds	2,9	8,2 %
Public sector, federal defined benefit employee pension funds	1,8	5,1 %
State and local public sector defined benefit employee pension funds	3,9	11,0 %
Unfunded private sector, defined benefit employee pension commitments	0,6	1,7 %
Unfunded public sector, defined benefit employee pension commitments, federal	1,7	4,8 %
Unfunded public sector, state and local defined benefit employee pension commitments	4,7	13,2 %
Total amount	**35,5**	**100,0 %**

Source: MAPFRE Economics (based on data from the Investment Company Institute and NAIC)

provisions of Life insurance managed in the general account and the provisions that constitute separate accounts, in which the policyholder has identified the investments that form part of their individual account for the purpose of allocating their income. However, it should be noted that these investments are not individually affected by the fulfillment of their contract, in the event of bankruptcy of the insurance company.

Variable annuities

Among survivorship annuity insurance, variable annuities are the most common type of insurance product on the US market, ranging from the simplest to highly sophisticated versions. The simpler versions do not incorporate guarantees in the accumulation phase, with the value of the funds varying according to the behavior of the investment portfolio linked to the policy, which is managed in separate accounts.

The more complex versions also include a wide variety of guarantees and options, both in the accumulation phase and in the disposal of accumulated funds, finding practically all the varieties described in the conceptual framework of this study (GMDB, GMAB, GMIB, GLWB or GMWB, according to the terminology used by the OECD). It should be noted that some of these modalities offer the option in the withdrawal phase of linking the income to be received to the behavior of the portfolio in which the mathematical provision is invested (managed in separate accounts). This means that, in these cases, the amount of income received during the withdrawal phase may vary on a daily basis.

Variable annuities are the income products that share most similarities with other non-insurance investment products, which means that in the United States they are subject to both state insurance regulation and federal securities regulation. They therefore have all

the elements of investment products, such as the information leaflet on the profile of the investments, risk assumed and commissions applied, among other aspects. In addition, the persons who market them must be registered with the Financial Industry Regulatory Authority (FINRA) and the Securities Exchange Commission (SEC).

This type of product has flexibility in terms of the amount of contributions and the insured party is entitled to request redemption, in part or in full, during the accumulation period. In the event of the death of the insured party during the accumulation period, the balance of the mathematical provision is made available to the beneficiaries specified in the contract. If the death occurs during the withdrawal phase, it will depend on the option chosen by the policyholder, and if a whole Life annuity was chosen, the heirs will have no rights, although it is possible to take out annuities with reversion to the surviving spouse or children, and even annuities with reimbursement of the amount of funds accumulated in the provision to the persons specified in the policy. All this will have an impact on the amount of income to be received by the policyholder, which will be, in these cases, less.

Depending on the type of product contracted, the policyholder usually has flexibility in the withdrawal of the funds after the accumulation period. Normally, the conversion of the funds into an income is optional, and you can choose to receive all the accumulated funds at once, in which case you will be taxed on all the income accumulated during the life of the product to date. In other cases, it is allowed to defer taxation of earnings as they are received. Biometric tables, technical interest and the mechanism for updating the income, if applicable, are usually agreed in the initial contract.

The variable annuity is contracted individually, but is also an instrument used by companies in the form of group insurance to cover pension commitments to their employees. In fact, they originally emerged as a group insurance formula first used in 1952 by the Teachers' Insurance and Income Association (TIAA-CREF). Through this mechanism, they sought the separate management of the invested funds, isolated from the insurance company's general asset account, and to be able to invest in equities to protect themselves from high inflation. However, not all states approved the use of separate accounts, which slowed the growth of these products for several decades[23].

Fixed annuities

Another type of annuity product with a relevant weight are fixed annuities. According to the description of the National Association of Insurance Commissioners (NAIC), this category includes annuities on which the calculation is based on the principal paid and a guaranteed minimum interest rate. Also included are annuities which, in addition to the minimum guaranteed rate, incorporate a share in profits not attributable to the behavior of a certain investment portfolio, which are determined on the basis of rates declared by the insurance company, which may vary only on an annual basis.

Indexed annuities

Lastly, in recent years a new category of annuity products, called indexed annuities or equity indexed annuity, has emerged on the US Life insurance market as a hybrid between a fixed annuity and a variable annuity. This type of annuity insurance incorporates a minimum guarantee of profitability, which can be increased depending on the performance of a given securities index. Their weight has increased significantly since they began to be marketed in 2010 and they are now close to that of fixed annuities in terms of managed savings. It is important to note that, unlike variable annuities, this type of product is subject only to state insurance regulation and is not subject to federal securities regulation.

d) Pension plans offered by Life insurance companies

In the United States it is common for companies to offer pension plans to their employees through group annuity insurance. This practice, which was further developed after World War II, has evolved as a result of the shift in preference toward more flexible formulas for employers, such as so-called deposit-type contracts or immediate participation guarantee contracts (IPGs). In this sense, the portfolio of insurance companies has progressively reflected this change in preferences, and now constitutes a category of products that has a significant weight in the total number of managed savings, which is around 9% of the aggregate provisions for Life insurance, although the current trend is toward a reduction in its relative weight (see Chart 2.2.1-i). At the close of 2018, the accumulated reserve for deposit-type contracts was 223 billion dollars, while the accumulated reserve for immediate participation contracts (IPGs) was 187 billion dollars.

Deposit-type contracts

Deposit-type contracts allow insurance companies to keep the promoting companies' pension contributions in an offshore fund until the employee reaches retirement age, at which time the funds are withdrawn from the deposit account in an amount sufficient to acquire a fixed income for the employee for the amount guaranteed in the employment contract. Deposit-type contracts do not incorporate coverage for contingent risks such as survival, mortality or disability. Companies that take on pension commitments to their employees find this formula attractive because they do not need to be fully capitalized and it gives them greater flexibility in terms of when to make contributions. Their disadvantage is that, because they are not fully capitalized, employees are at risk of having their rights damaged in the event of their company's bankruptcy.

It is important to note that since 2001 accounting regulations have been amended so that contributions and withdrawals of cash under this type of contract are not recorded as premiums or insurance benefits, but are directly recorded as an increase and reduction of the amount of the reserves, respectively.

Immediate participation guarantee contracts (IPGs)

So-called IPGs allow insurers to attribute investment returns to pension plan promoters and to withdraw insured pension payments directly from the deposit, provided that the guarantee remains fully funded with the necessary funds to cover it. If the fund falls below the capital required to cover the guarantee, the IPG is transformed into a deferred income. IPGs allow the companies that promote the plan to maintain control of their retirement accounts and have a more direct link to the market.

2.2.3 Solvency regulations

The system of prudential regulation applicable to insurance companies in the United States is decentralized at the state level. However, state supervisors are organized in a national entity, the NAIC, which prepares and publishes supporting documents for the supervision of insurance companies, which is carried out by state supervisors. These documents adopt the "Model Act" and instruction manuals, which are guides with standards that reach all levels of the supervisory framework.

In terms of solvency prudential regulations, since the beginning of the 1990s, the NAIC has been developing a standard method for calculating the minimum capital deemed necessary to support the undertakings of the insurance firms, based on their size and risk profile, known as Risk-Based Capital (RBC). It is a modern regulatory system, with a quantitative calculation of regulatory capital based on risk. Currently, all states have adopted the NAIC model RBC law, with no or only minor changes, so it can be said that the NAIC-designed RBC calculation is widely applicable in the US insurance market.

2.3 Mexico

2.3.1 Structural elements of the market

Life insurance premiums in the Mexican market amounted to 242.8 billion pesos (12.1 billion dollars) in 2018, representing 1% of the country's gross domestic product, a figure that contrasts with the 4.3% average recorded by developed insurance markets. Thus, in the case of the Mexican market, this is a line of business that still has little weight in the economy and therefore has great potential.

The depth index (the share of Life insurance premiums compared to total premiums) stood at 46.3% in 2018, compared to 55.7% on average for developed markets in the same year. Charts 2.3.1-a and 2.3.1-b present a historical series of these two indicators. From this information, it can be seen that the Life insurance market in Mexico exhibits a significant difference with other developed countries throughout the last decade, although with a tendency to decrease throughout the referenced period. Despite this, it can be said that the degree of sophistication of the Mexican insurance market is relatively high, both because of the type of products marketed and because of the advanced prudential and tax regulations applicable to this type of business.

Chart 2.3.1-c illustrates the evolution of the weight of Life insurance technical provisions with respect to the gross domestic product in Mexico throughout the 2008-2018 period. These data confirm an upward trend from 2.1% to 3.5% over this period. Despite this, the accumulation of technical provisions in this market segment is still far from the weight it has in other developed insurance markets (e.g., in the United States these provisions represented 27% of GDP in 2018, while in the United Kingdom it was 84%).

In terms of managed savings from Life insurance contracts, the weight of Life technical provisions at the close of 2018 represented 69.3% of the total technical provisions, this proportion having increased by five percentage points over the last decade. It should be noted that, as illustrated in Chart 2.3.1-d, Life insurance provisions have experienced remarkable growth throughout the 2008-2018 period, having tripled over this time. However, it is also noteworthy that, as of 2015, the growth rate of the technical provisions has steadily declined (see Chart 2.3.1-e).

Chart 2.3.1-a
Mexico: Life penetration index, 2008-2018

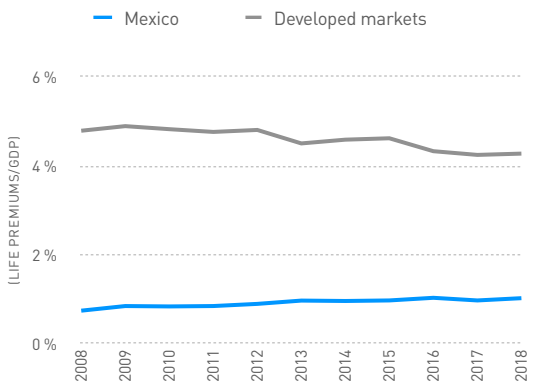
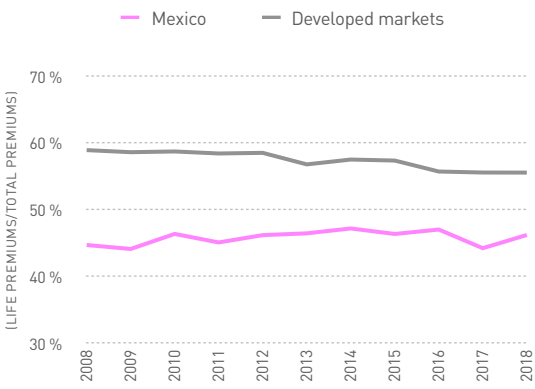
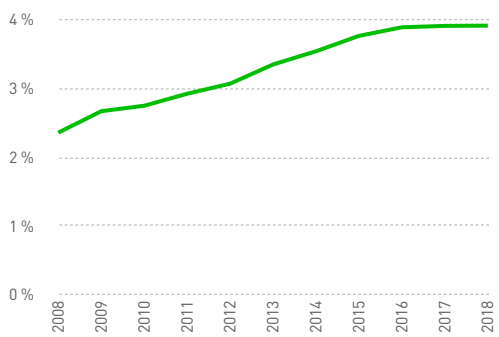


Chart 2.3.1-b
Mexico: depth index, 2008-2018



Source: MAPFRE Economics (based on data from CNSF, Swiss Re and OEF)

Chart 2.3.1-c
Mexico: Life insurance technical provisions compared to GDP, 2008-2018



Source: MAPFRE Economics (based on data from CNSF and OEF)

The evolution of the Life insurance segment in the Mexican market, measured by premium volume, also shows significant real growth over the last decade (see Chart 2.3.1-f). The Mexican Life insurance market is characterized by the significant weight of group Life insurance, mainly of companies and their employees, as well as a smaller but growing importance of pensions derived from social security schemes. Once the effect of inflation has been corrected, with the exception of the years 2010 and 2017, the Life insurance segment showed positive real growth in premiums over that period (see Chart 2.3.1-g).

Lastly, from the point of view of market structure, as shown in Chart 2.3.1-h, the largest market share by premium volume for Life insurance in 2018 was held by MetLife (20.5%), followed by BBVA (16.2%) and Grupo Nacional Provincial (12.7%).

2.3.2 Analysis of Life insurance product categories

This section presents a summary of the situation of the Life insurance market in Mexico in terms of the different product categories considered in the conceptual framework of this study.

a) Life protection insurance products

Term insurance

The Mexican Life protection insurance market offers this type of insurance in its simplest versions, although at present it is common to find structured products that combine guarantees in the event of death with a wide range of complementary coverage (accident, serious illness, disability, coverage of funeral expenses or advances in case of terminal illness, among others). They are also marketed

Chart 2.3.1-d
Mexico: Life technical provisions, 2008-2018

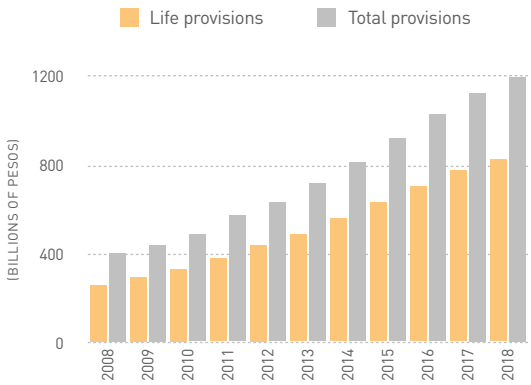
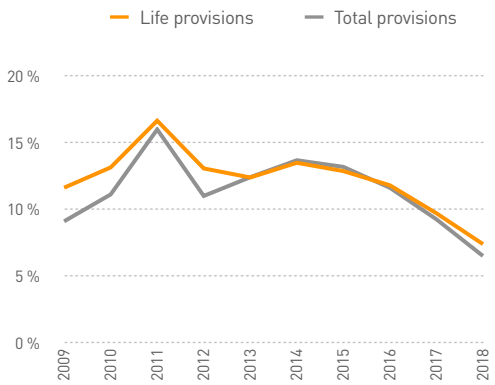


Chart 2.3.1-e
Mexico: variation in Life technical provisions, 2008-2018



Source: MAPFRE Economics (based on data from CNSF)

Chart 2.3.1-f
Mexico: Life premiums, 2008-2018

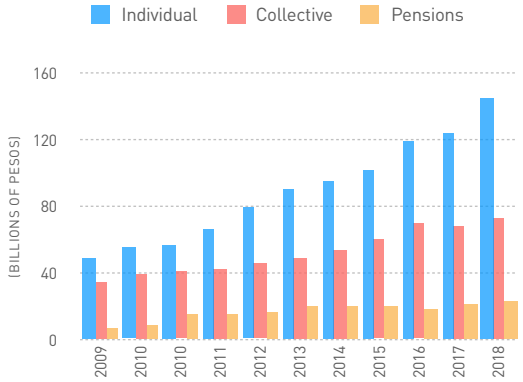
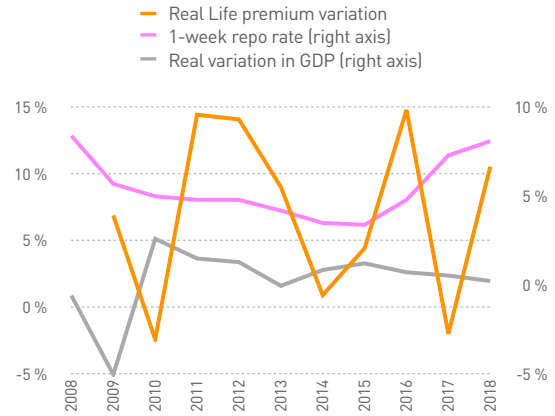


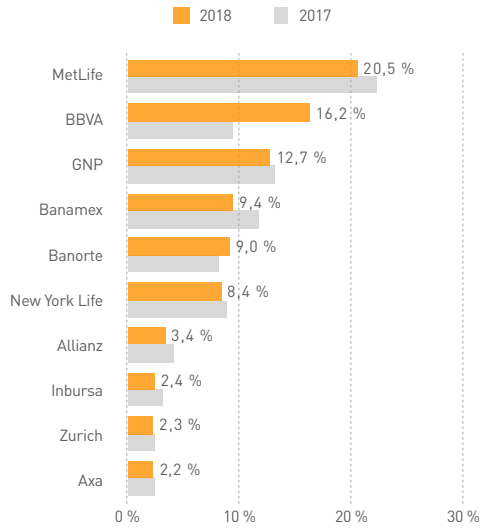
Chart 2.3.1-g
Mexico: real variation in Life premiums, 2008-2018



Source: MAPFRE Economics (based on data from CNSF)

as coverage for the cancellation of mortgage loans in the event of death, disability or loss of employment (the latter guarantee usually with a limit on the monthly payments covered).

Chart 2.3.1-h
Mexico: ranking of Life insurance companies, 2017-2018



Source: MAPFRE Economics (based on data from CNSF)

Whole Life insurance

This type of insurance is also common in the Mexican market. There are individual whole Life Insurance policies aimed at the general public, as well as versions of individual insurance policies designed to be marketed to certain groups, such as workers in the education and health sectors or civil servants.

Variable-universal Life insurance

Within the ranking of the largest insurance companies operating in the Mexican market, there are several companies whose parent company is in the United States. Therefore, although they have adapted to the specific characteristics of the Mexican market, it is possible to find products that are similar to those marketed in the United States.

However, variable-universal Life insurance is still not very widespread in Mexico, although some of the products marketed by these companies offer the possibility of modifying the insured capital in the event of death throughout the life of the contracts without additional requirements, within certain limits.

b) Life savings insurance products

There are forms of Life savings insurance in the form of deferred capital and savings plans with a guaranteed minimum interest rate, and it is common to find these savings products combined with whole or renewable term Life insurance in the event of death, accident, serious illness, disability and/or coverage of funeral expenses, among other complementary guarantees. It is also common for these products to offer the option of taking out insurance in Mexican pesos or dollars, which affects the level of guaranteed rates depending on whether one currency or the other is chosen.

Similarly, the same product is often offered with a variety of options in terms of duration. For example, many of them are structured to offer the insured party a guarantee of continuity in the education of their family members in the event of death, illness or disability.

c) Life-investment insurance products

In the Mexican market, products that combine contributions to a savings-investment account with Life insurance in the event of death are common, offering regular windows of liquidity. Usually, they do not incorporate an interest rate guarantee, with the policyholder assuming the risk of the investment. However, it is usually guaranteed in the contract (or at least offered as an option) that the premiums paid are invested in low-risk assets, with investment in so-called Federal Treasury Certificates (CETES) being very common, which means only exposure to sovereign risk minimizing market risk when investing in short-term assets, usually less than one year[24]. It should also be noted that some of these savings-investment products usually have some kind of tax break associated with them.

Unit-linked products are also sold on the Mexican market, combining a protection element and offering different investment alternatives in accordance with the profile of the policyholder. These alternatives are usually grouped into conservative, moderate and the most risky, allowing the policyholder to change profile throughout the life of the contract and offering flexibility in the contributions. As in the cases mentioned above, some of these products usually offer certain tax breaks.

d) Survivorship annuity insurance products

Annuity insurance in exchange for a single premium (Annuities)

The annuity market in Mexico is linked to the country's social security scheme. Annuities are the final pension or retirement mechanism, and are acquired through the payment of a single premium corresponding to the balance of the individual account accumulated by the worker throughout their active life.

At present, this market is underdeveloped, but this is expected to change in the near future, when the people who decided to join the new defined-contribution and individual capitalization pension system[25] introduced in 1997 (for private sector workers) and in 2007 (for federal government workers) begin to reach retirement age[26]. These individuals can choose between acquiring a monthly Whole Life pension (which is offered by a specialized insurance company) or the option of programmed withdrawals of the funds accumulated in their respective individual accounts (offered by the Retirement Fund Administrators, AFORES)[27]. If the monthly whole-life pension is chosen, it will have an annual increase in the month of February, according to the National Consumer Price Index (CPI). Likewise, if the worker has fewer than 25 years of contributions at the time of retirement, they can withdraw the balance of the individual account in a single payment or continue to contribute until it is complete.

First, some Life insurance companies market temporary financial annuities (which continue to be collected by the heirs in the event of the

death of the annuitant until maturity), with an additional insurance guarantee that prolongs the collection of the annuity by adding a series of monthly payments after the expiration of the financial annuity for a period determined in the contract, in the event of the death of the holder of the original annuity, which would be collected by their heirs.

Variable annuities

This type of insurance, which offers the option of transforming the capital accumulated during the savings phase into an annuity with the conditions relating to the survival tables and interest rates guaranteed in the contract, is virtually non-existent in the Mexican market. However, there are some products of this type marketed by US parent companies, although not all of them offer them and their presence in the Mexican market is minimal.

e) Pension plans offered by Life insurance companies

The Mexican mandatory pension system (known as the Sistema de Ahorro para el Retiro, SAR (Retirement Savings System)) is regulated by the Social Security Law, the Law of the Institute of Social Security and Services for State Workers and the Law of the Retirement Savings Systems. This regulation provides for mandatory contributions to be made by workers, employers and the Federal Government to the individual accounts owned by the employees, in order to accumulate resources for obtaining a pension at the time of retirement. Alongside these compulsory contributions, the worker can make additional voluntary contributions to improve their pension status. One mechanism is through voluntary contributions that would directly feed their individual account, and another is through the contracting of so-called personal retirement plans that can be administered, among other financial institutions, by insurance companies.

Personal retirement plans are accounts or investment channels that are established for the sole purpose of receiving and administering resources intended exclusively for use when the holder reaches the age of 65 (or in the event of the holder's disability or inability to perform paid personal work), provided that they are managed in individualized accounts by insurance companies, banks, brokerage firms, retirement fund managers (AFORES) or mutual fund operating companies authorized to operate in the country, and provided that they obtain prior authorization from the Mexican tax authority (Servicio de Administración Tributaria).

It is notable that not only the AFORES (who are the managers of mandatory pension funds), but also other financial institutions such as banks, insurance companies and mutual fund managers, can manage these voluntary contributions options, resulting in a wide range of possibilities for this type of saving and, consequently, a high level of competition in the market.

f) Tax incentives in the taxation of savings through Life insurance

Generally speaking, Mexican tax regulations currently provide various tax benefits for Life insurance:

- Life insurance premium payments granted for the benefit of workers are tax deductible for companies when the benefits of such insurance cover the death, disability or incapacity of the worker. In addition, in the event of a claim, the amounts received by the insured party or beneficiaries will not be subject to income tax.

- Income from the individual account of the retirement savings system in cases of disability, incapacity, unemployment, old age, retirement and death, whose daily amount does not exceed fifteen times the general minimum salary of the geographical area of the contributor, and the benefit provided for in the Universal Pension Law, is exempt from payment of the income tax.

- The amounts paid by the insurance companies to the insured party or their beneficiaries when the risk covered by the policies covering the survival of the insured

party occurs are also exempt, provided that the indemnification is paid when the insured party reaches the age of 60 and, in addition, at least five years have passed since the date the insurance was taken out and the indemnification is paid. This benefit will only be applicable when the premium is paid by the insured party.

- Individuals, in order to calculate their annual tax, can apply a deduction of 10% of the cumulative income for the year (with a certain maximum) for voluntary contributions made directly to the supplementary retirement contributions sub-account or to personal retirement plan accounts.

- There is also a tax break for taxpayers to deduct premium payments for insurance contracts based on age-related pension, retirement or annuity plans authorized by the tax authority (excluding the portion of the premium that corresponds to the Life element which must be broken down in the respective insurance contract).

Lastly, it is important to note that the Mexican tax system does not apply other types of indirect taxes such as value added tax or insurance premium tax to Life insurance premiums intended to cover the risk of death or benefits in the form of annuities or pensions.

2.3.3 Solvency regulations

Mexico has advanced solvency prudential regulations applicable to insurance companies, which are fully consistent with risk-based regulation. Accordingly, the regulatory scheme applicable in Mexico obtained the declaration of provisional equivalence to the Solvency II regime from the European Commission in 2015, for a period of ten years.

2.4 Brazil

2.4.1 Structural elements of the market

In the case of the Brazilian market, Life insurance premiums in 2018 stood at 130 billion reais (35.6 billion dollars), which represented 1.9% of the country's gross domestic product (2.1% if we consider open private pension products); this penetration indicator contrasts with the 4.3% average observed in developed insurance markets that year. Moreover, the depth index (i.e. the weight of Life insurance premiums in total market premiums) stood at 61.8% of the total premiums, higher than 55.7% of the aforementioned markets.

If we look at the historical series of these two indicators for the 2008-2018 period shown in

Chart 2.4.1-a
Brazil: Life penetration index, 2008-2018

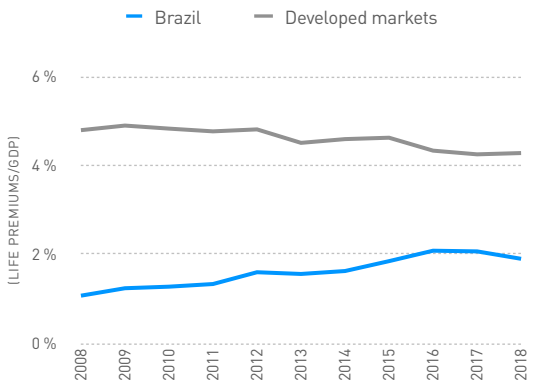
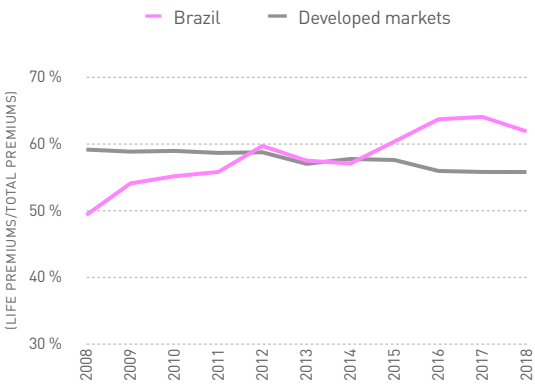
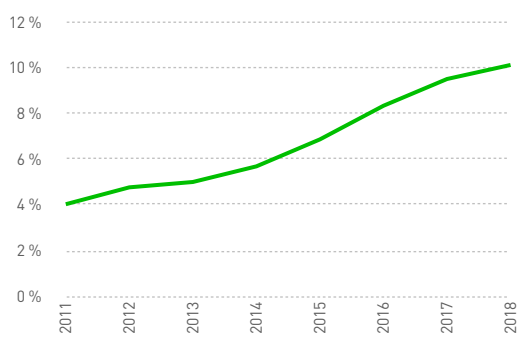


Chart 2.4.1-b
Brazil: depth index, 2008-2018



Source: MAPFRE Economics (based on data from SUSEP, Swiss Re and OEF)

Chart 2.4.1-c
Brazil: Life insurance technical provisions compared to GDP, 2011-2018



Source: MAPFRE Economics (based on data from SUSEP and OEF)

Charts 2.4.1-a and 2.4.1-b, it can be seen that the Life insurance market in Brazil (whose products are highly sophisticated) has been significantly closing the gap in Life penetration with respect to developed countries over the last decade, although it is still significantly less developed, which means that it still has a high potential. This situation is confirmed when analyzing the evolution of the depth index over the last decade, which, in the case of the Brazilian market, shows a clear upward trend, standing in 2018 even above the average of the developed insurance markets.

Chart 2.4.1-c, meanwhile, shows the evolution of the weight of provisions for Life insurance in relation to the GDP in Brazil for the 2011-2018 period. As can be seen from these data, the indicator shows a strong growth trend, standing at 10.1% of GDP in 2018, with an increase of 6.1 percentage points over this seven-year period. However, the indicator is still far from the weight found in other developed markets, such as the United States (where it represented 27% of GDP in 2018) or the United Kingdom (84% of GDP).

Furthermore, in terms of the managed savings from Life insurance contracts, the weight of Life technical provisions at the close of 2018 represented 90.2% of the total technical provisions of the Brazilian insurance market, a percentage that has been growing notably in recent years. It should be noted that technical provisions for Life insurance have grown significantly over the 2012-2018 period, although this trend has slowed between 2016 and 2018 (see Charts 2.4.1-d and 2.4.1-e).

It should be noted that, in the Brazilian Life insurance market, the most important products, both in terms of premiums and

Chart 2.4.1-d
Brazil: Life technical provisions, 2011-2018

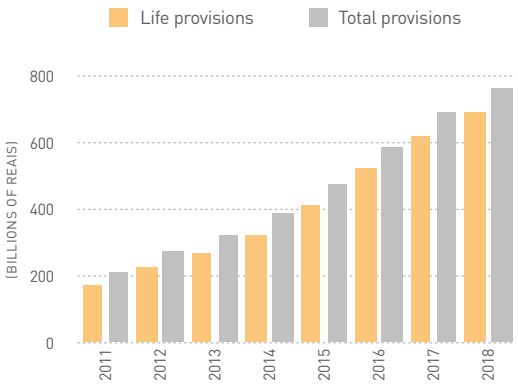
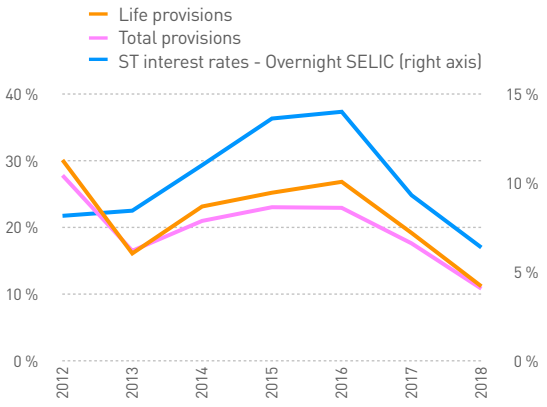
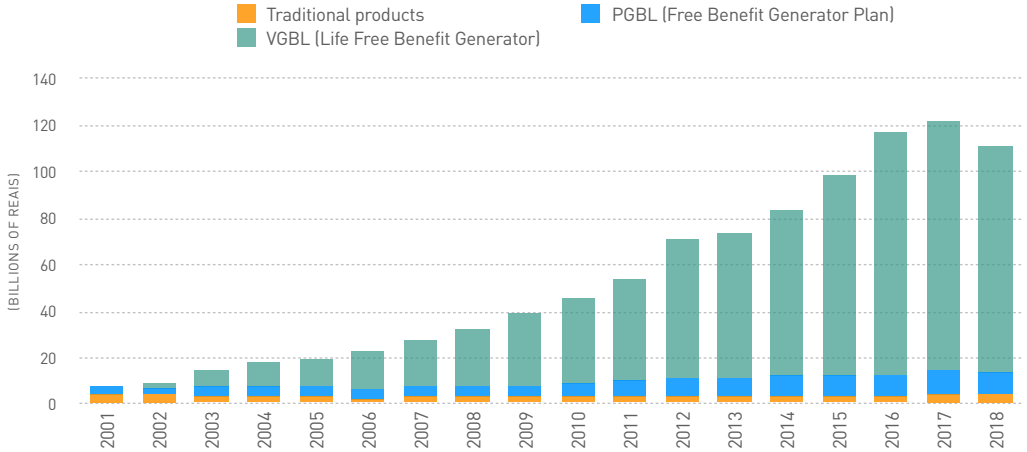


Chart 2.4.1-e
Brazil: variation in Life technical provisions, 2012-2018



Source: MAPFRE Economics (based on data from SUSEP and OEF)

Chart 2.4.1-f
Brazil: private pension plan and Life insurance premiums, 2001–2018



Source: MAPFRE Economics (based on data from SUSEP)

volume of managed savings, are *variable annuities* and, within these, the so-called "*Vida Gerador de Benefício Livre*" (VGBL) (Life Free Benefit Generator) (see Chart 2.4.1-f).

However, the evolution of the business in the Life insurance segment, as measured by premium volume over the last decade, shapes this positive performance. It is worth noting, however, the strong predominance of insurance in which the policyholder assumes the investment risk (unit-linked products) in explaining the growth, as opposed to traditional individual and, to a lesser extent, group Life insurance (see Chart 2.4.1-g).

Similarly, in the analysis of changes in Life insurance premiums in real terms presented in Chart 2.4.1-h, the notable influence of the level of interest rates is observed, with a fall in real premium growth when short-term interest rates fall, which compensates for the effect of economic growth to the point of anti-cyclical behavior in much of the historical series. In this regard, it is important to note that the economic crisis suffered by Brazil in 2015 and

Chart 2.4.1-g
Brazil: Life premiums, 2011-2018

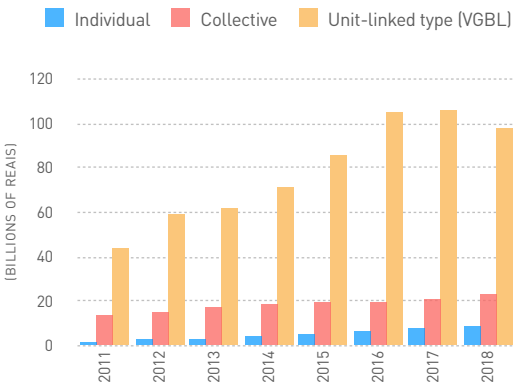
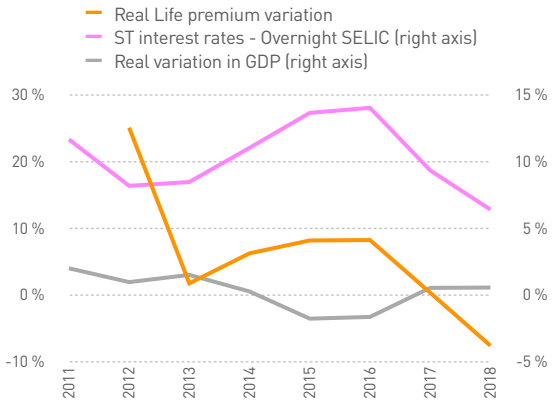
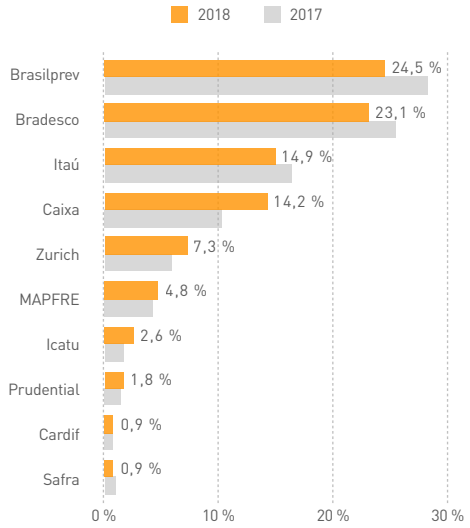


Chart 2.4.1-h
Brazil: real variation in Life premiums, 2011-2018



Source: MAPFRE Economics (based on data from SUSEP and OEF)

Chart 2.4.1-i
Brazil: ranking of Life insurance companies, 2017-2018



Source: MAPFRE Economics (based on data from SUSEP)

2016 (with a combined fall in GDP of close to -7% in real terms) led the Central Bank of that country to raise monetary policy interest rates to levels of around 14%. This gave a very significant boost to the development of Life insurance, whose premiums experienced notable real growth despite the deep economic crisis, by making it possible to offer Life insurance policyholders products with substantial returns. Once the crisis was over, in 2017 and 2018, risk-free interest rates began to return to normal, falling to levels below 7%, which meant that the rates guaranteed to policyholders on Life insurance products also fell abruptly, explaining the sharp slowdown in Life insurance premiums in 2017 and the decline in 2018.

With respect to the structure of participants in the Brazilian Life insurance market, in 2018 the largest market share by premium volume was that of Brasilprev with 24.5%, followed by the Bradesco group with 23.1% and Itaú with 14.9% (see Chart 2.4.1-i). As can be seen from this data, the Life segment in Brazil is a business in which the bancassurance channel predominates.

2.4.2 Analysis of Life insurance product categories

The following is a general analysis of the situation of the Brazilian Life insurance market, with a view to the various categories of insurance products proposed in the conceptual framework of this report.

a) Life protection insurance products

In the Brazilian Life protection insurance market it is common to find guarantees in case of death combined with other complementary coverage such as disability, incapacity, hospitalization due to accident, funeral assistance or compensation for serious illnesses such as cancer, myocardial infarction, heart surgery and stroke, among others. It should be noted that, in addition to the traditional channels, the main companies that market this type of product have simulators on their websites that quote prices online.

There are also Life protection products that are marketed as coverage for the cancellation of mortgage loans in the event of death, disability or loss of employment; the latter guarantee has a limit on the monthly payments covered.

The more complex versions, such as whole Life insurance or variable and/or universal Life insurance, are not well established in this market. Thus, practically all the products on the market are temporary Life protection insurance.

b) Life savings and Life investment insurance products

The importance of these types of insurance is limited in the Brazilian market, considering the weight of the "*Vida Gerador de Benefício Livre*" (VGBL) (Life Free Benefit Generator) insurance, which we have classified within the category of survivorship annuity products, which are explained below.

c) Survivorship annuity insurance products

As indicated above, the most important product is the so-called "*Vida Gerador de Benefício Livre*" (VGBL), which is the simplest version of the variable annuity-type products as defined in the main part of this study. VGBL is a product that aims to supplement pensions, which enjoys favorable taxation conditions. The amount of income to be received during the withdrawal phase depends on the funds set up in the accumulation period. The income is calculated at the end of that period with an interest rate, a survival table and an inflation index guaranteed at the time the contract is signed. These financial and actuarial guarantees will be applied at the future moment when the accumulated capital is transformed into an income and this is what gives them the status of insurance, although in the accumulation phase they do not provide any guarantee, either financial or actuarial, with the policyholder assuming all the risk. Although these products are of an insurance nature, they are usually referred to as *VGBL* plans (and, where applicable, plan regulations).

In the accumulation phase of VGBL insurance, the mathematical provision is remunerated on the basis of the performance of the investment portfolio linked to the plan, usually mutual funds linked to the plan (known as FIEs for its Spanish acronym). Losses may occur at this stage and these are borne by the policyholder. The investment portfolio can be structured in the form of sovereign income, fixed income and mixed plans, and can provide for a decreasing percentage of exposure to higher risk investments, especially in equity assets, at the time of contracting.

The investment portfolio structure at the aggregate level of the sector, by underlying asset, reveals that the percentage of fixed income investments in recent years has fluctuated in the region of 95%[28]. Other indicators, such as the performance of the aggregate insurance provision in the face of interest rate changes, suggest that the average duration of the portfolio is not high. Therefore, the main risk assumed by policyholders in this type of insurance essentially depends on the credit risk of the counterparties, which is normally Brazilian sovereign risk, without prejudice to those policyholders who have decided to enter into portfolios with a higher risk.

As regards the fees that apply to the schemes, two types should be noted: the *loading fee* and the *management or administration fee*. The first of these (*loading fee*), can be collected at the time of payment of premiums, and/or in transfers and redemptions. It may not exceed the limit of 5% in the case of early collection and 10% in the case of deferred collection[29]. In defined benefit plans this fee may be higher, but such plans are rarely marketed. However, market analysis indicates that, in practice, insurers often do not apply loading charges, or apply reduced charges, that are far beyond the regulatory limits, in order to make these products attractive. The second fee (*management or administration fee*), is a percentage charged on the equity of the fund to which the provision is applied.

VGBL products are flexible in terms of the amount of the contributions. The insured party has the right to request a partial or total redemption or the transfer of the resources accumulated in their provision during the accumulation period, subject to the grace periods and intervals laid down in the regulations. In the event of the death of the insured party during the deferment period, the balance of the mathematical provision shall be made available to the beneficiaries specified in the contract.

Moreover, portability can only be made between similar Life insurance plans, i.e. it is not possible to transfer VGBL insurance to pension plans of the "*Plano Gerador de Benefício Livre*" (PGBL) (Free Benefit Generator Plan) type (explained in the next point of this section). In the latter case, the change of modality (to a PGBL) requires the redemption of the VGBL plan for subsequent reinvestment in another PGBL plan, which would involve the payment of taxes.

The plan participant has flexibility in the withdrawal of the funds after the end of the accumulation period and can choose one of the following benefits: (i) monthly annuity; (ii) monthly term annuity; (iii) monthly annuity with guaranteed minimum term; (iv) monthly annuity reversible to the indicated beneficiary; (v) monthly annuity reversible to the spouse with continuity for minors, or (vi) single payment. The options depend on what is agreed in the contracted VGBL plan.

The biometric tables, technical interest and the mechanism for updating the annuity are set out in the plan regulations and the right to demand the calculation of the chosen annuity in accordance with these parameters is lost only in the event of switching to another plan. It is also possible to agree on a share in the surpluses of the investment portfolio in which the mathematical provision of future annuity is invested, at a certain percentage, in addition to the minimum guaranteed interest rate. The reversal of the financial results during the period of payment of the insured capital in the form of an annuity is optional only if the actual interest rate provided for the calculation of the contracted annuity is higher than 2.5% per annum. If it is lower than this, current regulations require the reversal of these at minimum percentages, which depend on the guaranteed rate[30]. Lastly, it should be noted that the technical note for the product must be previously approved by the supervisor (Superintendency of Private Insurance, SUSEP). It should be noted that, as part of the information available to the insured, the latter can verify whether their VGBL plan has been approved by SUSEP, simulate the value of the annuity to be received or verify information provided by the insurer by accessing the SUSEP website.

The taxation of gains obtained from VGBL insurance during the accumulation period depends largely on the length of time the investment is held, benefiting those who remain under contract and penalizing those who redeem early, except in the case of small redemption amounts (*regressive tax system*). Thus, if the redemption occurs during the first two years of the contract's life, it will be taxed at a rate of 35% on earnings, above the tax rate applicable to other types of financial products. However, if the investment is maintained, the tax rate falls at a rate of 5% every two additional years, until it reaches a tax rate of 10% for those who maintain it for more than ten years, lower than the rate applicable to profits obtained from other financial products.

There is, however, another system of taxation that can be used by persons who redeem the investment early, known as the *progressive tax system*, which makes it possible to soften the fiscal impact of redeeming too early. Under this other system, tax rates are applied to earnings depending on the amount redeemed, starting at 7.5% (applicable to small redemptions), and increasing by an additional 7.5% for larger redemptions, with a maximum of 27.5%. At the time of the redemption, the policyholder must choose between one of two available tax regimes (*progressive* or *regressive*).

In addition to VGBL, Brazilian regulations provide for the existence of other more complex forms of *variable annuity* Life insurance (known by the acronyms VAGP, VRGP and VRSA), which incorporate certain guarantees of profitability, participation in the surplus of the investment portfolio at a certain percentage, and/or revaluation of the provision set up during the accumulation phase[31], but which are practically not marketed.

Lastly, in addition to the VGBL, the "*Vida de Renda Imediata*" (VRI) (Immediate Life Annuity), a traditional immediate annuity product, guarantees, by means of the payment of a single premium, the collection of a survivorship annuity from the moment the premium is paid, for as long as the insured person lives. In this case, income is calculated according to a biometric table, a revaluation index and a guaranteed interest rate, and may also optionally grant a reversion percentage of the surplus generated by the investment portfolio in which the mathematical provision is invested.

d) Pension plans offered by Life insurance companies

The private pension system in Brazil, which is voluntary and complementary to the public pension system, is operated by complementary pension entities and includes plans that can be of two types: Open private pension plans or closed private pension plans

Open private pension plans

Firstly, *Open Private Pension Plans* are marketed by insurance companies authorized to operate in personal insurance or by Open Private Pension Entities (EAPPs for its Portuguese acronym), constituted in the form of corporations and whose purpose is to promote and operate this type of plan, granted in the form of an income or single payment, accessible to any individual. These products can be contracted individually or jointly. The functions of the regulatory and supervisory body are exercised by the Ministry of Finance, through the National Council of Private Insurance (CNSP) and the SUSEP. Most of the open private pension plans are managed by insurance companies, as they are allowed by law to manage these products on their balance sheets.

In addition to survivorship cover, the open private pension segment can offer consumers risk cover (death and permanent disability), which consists of benefits paid in one lump sum or in the form of an annuity, technically structured on a pay-as-you-go basis.

Almost all of the products sold on the market are in the so-called "*Plano Gerador de Benefício Livre*" (PGBL) (Free Benefit Generator Plan) modality. In this product, during the accumulation period the remuneration of the mathematical provision is made in accordance with the profitability of the investment portfolio established for the plan (FIE), with no guarantee of minimum remuneration and may produce losses, which would be assumed by the participant. The plan can have its investment portfolio structured under the modalities of sovereign income, fixed income and mixed plans, being able to foresee at the time of contracting a decreasing percentage of exposure to investments with greater risk, especially in equity assets.

The participant in this type of plan also has flexibility in the withdrawal of the funds after the end of the accumulation period, and can choose one of the following benefits: (i) monthly annuity; (ii) monthly term annuity; (iii) monthly annuity with guaranteed minimum term; (iv) monthly annuity reversible to the indicated beneficiary; (v) monthly annuity reversible to the spouse with continuity for minors, or (vi) single payment. The biometric tables, technical interest and the mechanism for updating the annuity are set out in the plan regulations, and the right to require the calculation of the annuity chosen in accordance with these parameters is lost only in the event of moving to another plan.

As can be seen, PGBL and VGBL products are very similar. The main differences are that the PGBL can also be offered by open private pension companies and, especially, by the tax regime applicable to it. In this sense, all contributions made to the plan during the accumulation phase can be deducted from the income tax calculation base, up to 12% of the annual gross income, provided that the client also contributes to the social security system or private pension plan. Therefore, the payment of income tax is postponed until the time of withdrawal of the funds, which will be taxed on the total amount, as it is received (contributions plus return generated during the accumulation period).

There are other modalities of open private pension plans that incorporate certain guarantees of profitability, participation in the investment portfolio surplus in a certain percentage and/or revaluation of the provision constituted during the accumulation phase[32] (known as PAGP, PRGP and PRSA), but they are rarely marketed in the Brazilian market.

Lastly, it is also worth noting the product known as "*Plano de Renda Imediata*" (PRI) (Immediate Annuity Plan), similar to the traditional immediate annuity VRI, which guarantees, by means of a single contribution, the collection of a survivorship annuity for the duration of the insured's life. Income is calculated according to a biometric table, a revaluation index and a guaranteed interest rate, and may also optionally grant a reversion percentage of the surplus generated by the investment portfolio in which the mathematical provision is

invested. As in similar cases, the product's technical note must be previously approved by SUSEP.

Closed private pension plans

Secondly, *Closed Private Pension Plans* are plans created by companies and aimed exclusively at their employees. Unlike open plans, closed plans are not marketed by insurance companies. Those in charge of managing these plans are the Closed Supplementary Pension Companies (EFPC for its Portuguese acronym), and they are accessible to the employees of a company or group of companies, to the public employees of the Union, the States, the Federal District, the Municipalities (sponsors), and to the associates or members of professional, associative or sectoral legal entities (institutors). In this case, the supervisory body is the National Superintendency of Supplementary Pensions (Previc).

It should be noted that EFPCs are organized in the form of a non-profit foundation or civil society. Contributions to the plan are made by both the employer and the employee. When an employee leaves the company sponsoring the plan, they can remain in the fund, as long as they assume the contributions of the former employer. The beneficiary may also request the transfer of their funds to another pension fund (for example, one offered by their new employer) or to an open pension plan.

2.4.3 Solvency regulations

Lastly, Brazil has advanced solvency prudential regulations for insurance companies, having obtained the declaration of provisional equivalence to the Solvency II regime from the European Commission, which will be in force for a period of ten years.

2.5 Spain

2.5.1 Structural elements of the market

In 2018, Life insurance premiums in the Spanish market amounted to 29 billion euros, representing 2.4% of the country's gross domestic product, compared to an average of 4.3% in developed insurance markets. Moreover, the weight of Life insurance premiums in relation to total premiums (depth index) represented 45% of total premiums, compared to 55.7% in the aforementioned developed markets.

Analyzing the 2009-2018 historical series of these two indicators shown in Charts 2.5.1-a

Chart 2.5.1-a
Spain: Life penetration index, 2009-2018

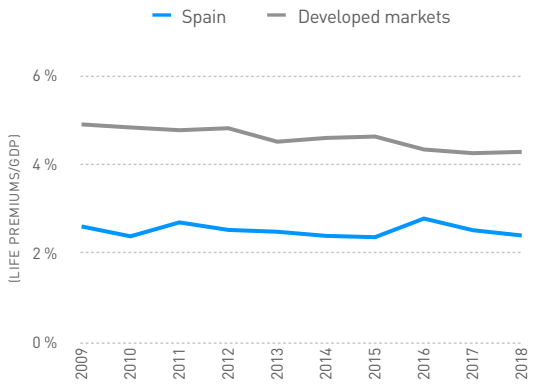
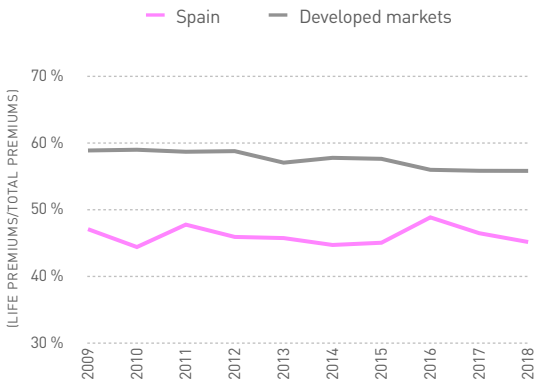
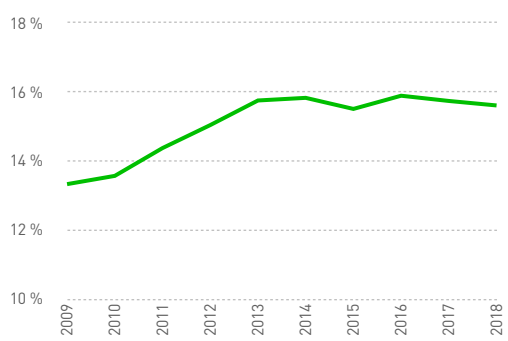


Chart 2.5.1-b
Spain: depth index, 2009-2018



Source: MAPFRE Economics (based on data from ICEA, Swiss Re and OEF)

Chart 2.5.1-c
Spain: Life insurance technical provisions compared to GDP, 2009-2018



Source: MAPFRE Economics (based on data from ICEA and OEF)

and 2.5.1-b, it can be seen that these differences have existed throughout the series, so that, in the case of Spain, it is a market that presents a significantly lower degree of structural development than the average of those developed and, therefore, the type of products that are marketed presents a lower degree of sophistication.

Chart 2.5.1-c shows the evolution of the weight of provisions for Life insurance with respect to GDP in Spain over the 2009-2018 period. This indicator shows strong growth between 2009 and 2013, mainly due to the fall in GDP in that period as a result of the sovereign debt crisis. The technical provisions for Life insurance in that period, however, showed slight growth, which led to a substantial improvement in the indicator. Since then, it has stabilized at values close to 16% of GDP, almost reaching this level in 2016, but with a fall in recent years that seems to have changed the trend as a result of the negative effect of the low interest rate environment in which the Spanish market finds itself. A good part of this change in trend can be explained by the ultra-lax monetary policy developed by the European Central Bank (ECB), with the aim of stabilizing the economies of the peripheral countries of the eurozone, since the aforementioned crisis in 2012. This monetary policy, accompanied by unconventional policies for the acquisition of sovereign and corporate bonds by the ECB, has left interest rates free of risk in negative values in the short and medium tranches of the rate curve, and has substantially relaxed the spreads on fixed income bonds, damaging the traditional savings and annuity Life insurance business by making it increasingly complex to offer products with attractive interest rate guarantees for policyholders. Thus, the indicator is still far from the weight it has in other developed markets, such as the United States, where it

Chart 2.5.1-d
Spain: Life technical provisions, 2009-2018

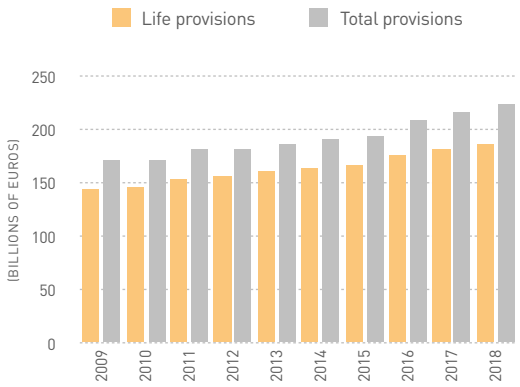
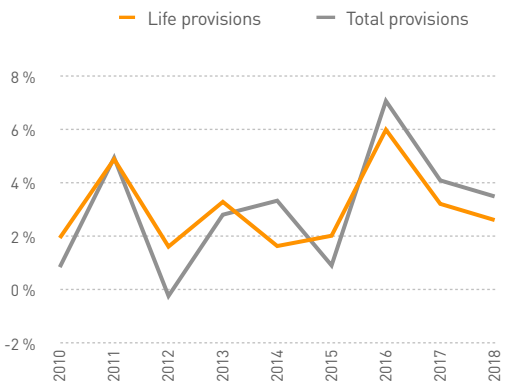


Chart 2.5.1-e
Spain: variation in Life technical provisions, 2010-2018



Source: MAPFRE Economics (based on data from ICEA and OEF)

Chart 2.5.1-f
Spain: Life premiums, 2009-2018

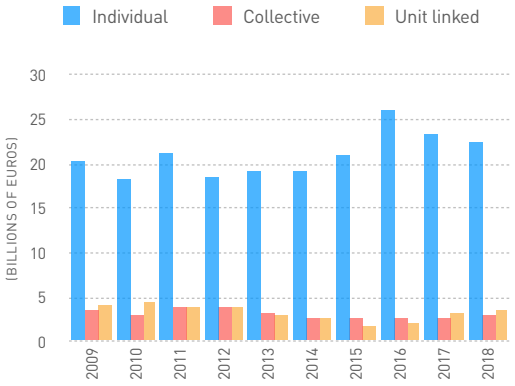
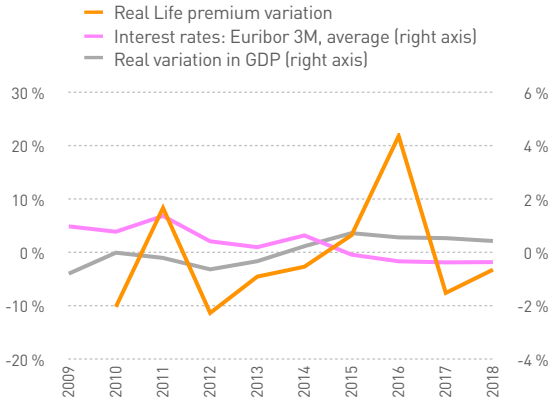


Chart 2.5.1-g
Spain: real variation in Life premiums, 2010-2018



Source: MAPFRE Economics (based on data from ICEA and OEF)

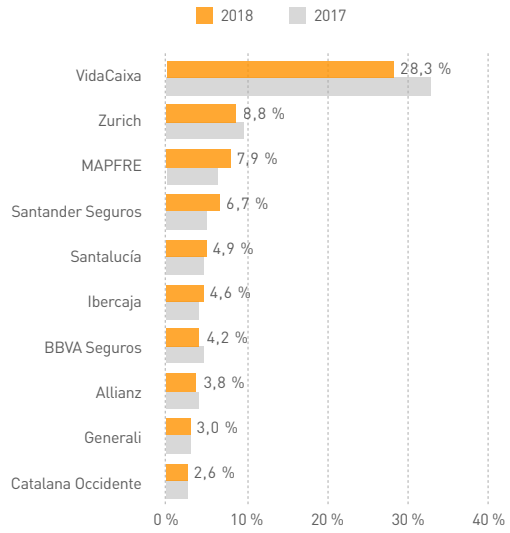
represented 27% in 2018, or the United Kingdom, which amounted to 84% of GDP in the same year.

Moreover, in terms of managed savings from Life insurance contracts, the weight of Life technical provisions at the end of 2018 represented 83.7% of total provisions, practically the same percentage as a decade ago. These technical provisions for Life insurance (which at the end of 2018 amounted to 188.5 billion euros) have grown slightly over the period 2009-2018, close to the profitability of the portfolios in which these provisions are invested, which is another symptom of their stagnation (see Charts 2.5.1-d and 2.5.1-e).

With regard to the evolution of the insurance business in the Life segment as measured by premium volume, its performance over the last decade shows a remarkably irregular performance with high variability in real growth, periods of practically zero growth and significant downturns.

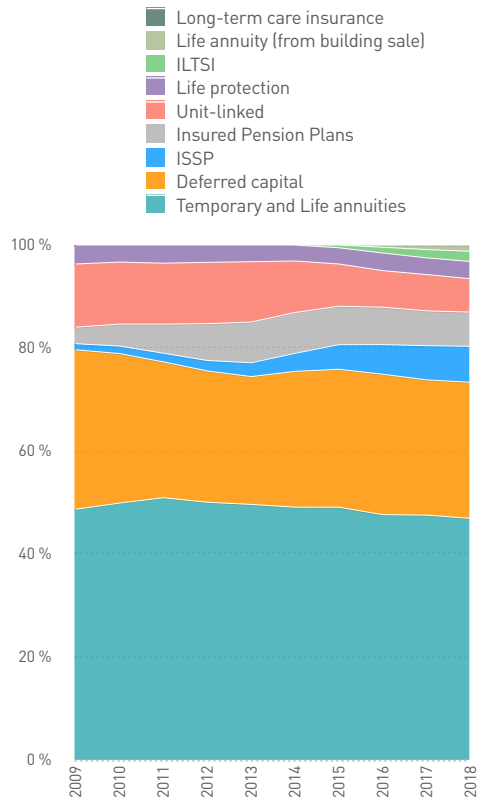
There is also a predominance of traditional individual Life insurance over group insurance and insurance where the policyholder assumes the investment risk. Thus, there is a notable influence of the economic cycle on the evolution of Life insurance premium variations in real terms, with real growth when GDP grows and vice versa. However, the influence of the level of interest rates can also be seen, which amplify the effect of fluctuations in GDP on the Life insurance business and can even sometimes lead to counter-cyclical behavior of the same in the short-term (see Charts 2.5.1-f and 2.5.1-g).

Chart 2.5.1-h
Spain: ranking of Life insurance companies, 2017-2018



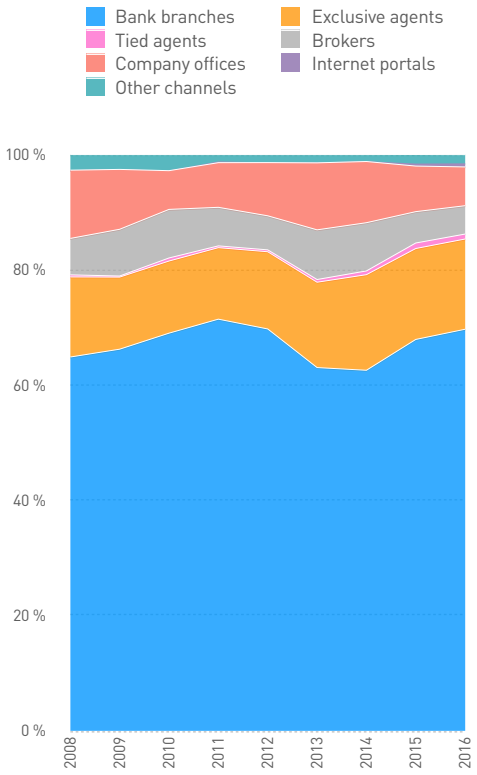
Source: MAPFRE Economics (based on data from ICEA)

Chart 2.5.1-i
Spain: structure of Life technical provisions, 2009-2018



Source: MAPFRE Economics (based on data from ICEA)

Chart 2.5.1-j
Spain: structure of distribution channels in the Life segment, 2008-2016



Source: MAPFRE Economics (based on data from the General Directorate for Insurance and Pension Funds - DGSFP)

With regard to market shares in Life insurance in 2018, the largest premium volume was that of VidaCaixa, with 28.3%, followed by the Zurich-Bansabadell group, with 8.8%, and MAPFRE, with 7.9% (see Chart 2.5.1-h).

Chart 2.5.1-i shows the distribution of the weight of marketed products over technical provisions and their evolution over the 2009-2018 period. As can be seen from these data, term annuity and Life annuity products predominate in this measurement, although the weight of deferred capital products is also significant.

Lastly, as regards product distribution, it should be noted that the Spanish Life insurance market is clearly characterized by the predominance, in the first place, of the bancassurance channel, followed by that of agents linked to institutions (see Chart 2.5.1-j).

The Internet channel still has very little weight in terms of business mediated, but it is an important route through which policyholders can begin the search process, even if they eventually purchase the insurance through the other channels.

2.5.2 Analysis of Life insurance product categories

This section describes the situation of the Life insurance market in Spain with respect to the different product categories considered in the conceptual framework of this study.

a) Life protection insurance products

Term insurance

This type of insurance is very common in the Spanish Life protection insurance market. Today it is increasingly common to find these as structured products that combine guarantees in the event of death with complementary coverage (disability, accident, insured capital in the case of the diagnosis of certain serious illnesses, advice or telephone attention to medical consultations, second medical opinion, cancellation of outstanding balances on credit cards or burial services, among others).

The coverage offered usually depends on the age and family situation of the insured party. Normally only a health questionnaire is required, but if the insured capital exceeds a certain limit, which varies according to the insurer, a medical examination is carried out before the insurance is taken out. They are also marketed as coverage for cancellation of the outstanding amount of mortgage loans in practically all the mortgages granted on the Spanish market, in the event of the death or disability of the loan debtors.

It should be noted that most insurance companies offer online quotes from their websites.

Whole Life insurance

Although they are offered by some insurance companies, this type of insurance is not entirely common in the Spanish market. The fact that they have a certain savings element associated with them is leading to a decrease in the supply and demand for these products, as a result of the low interest rate environment in which the market currently operates, as the incentive associated with the profitability of the investments in which the mathematical provision is materialized disappears.

Variable-universal Life insurance

This type of product, as defined in the conceptual framework of this study, is not very well established in the Spanish insurance market and is hardly marketed.

b) Life savings insurance products

Endowment insurance with return premiums

Unlike pure deferred capital, which barely exists in the Spanish market, deferred capital with return premiums is a common product that is marketed in most cases in the form of medium- or long-term savings plans, with a guaranteed capital at maturity consisting of the amount of premiums paid plus a return that depends on the risk-free interest rates at the time of issue and, sometimes, a share in financial profits. There is hardly any actuarial capitalization in these products, since they incorporate a guarantee in the case of death for the amount of the premiums paid. In addition, the early cancellation of the contract implies the return of premiums with an associated penalty that is linked, in practically all the products offered on the market, to the value of the investments in which the corresponding mathematical provision is made.

The link to the value of the investments in the event of early cancellation is important from the point of view of the risk management of insurance companies, since the new solvency regulations apply greater capital requirements in the absence of such a link. However, there are still portfolios in which the penalty was not associated with them, but these are tending to disappear.

Moreover, this type of product does not enjoy tax breaks, and is taxed in a similar way to other non-insurance products linked to savings that are offered by other financial institutions, unless they are offered in the form of products that meet the requirements of tax regulations, which are explained in the following points.

They are usually marketed to provide a non-finalist savings vehicle, although sometimes they are aimed at people with children to build up capital when they reach the age when they begin their higher education, incorporating additional capital in the event of the death of either (or both) parents.

Savings account insurance with tax incentives

The design of this type of product in Spain is marked by the limits imposed by tax regulations in order to benefit from tax exemptions. Two products are currently included: *individual long-term savings insurance* and *individual systematic savings plans*.

Individual long-term savings insurance (SIALP)

These are insurance policies that function like a savings account, in which the insurance premiums are incorporated into an account held by the policyholder and invested according to the specifications of the policy, within a series of options that are offered according to their risk profile and with a guarantee that covers at least 85% of the premiums paid on maturity of the contract. Currently, the maximum contribution limit is 5,000 euros per year. The accumulated return is exempt from taxation provided that at least five years have elapsed since the first contribution.

There are modalities of individual long-term savings insurance that additionally guarantee 85% of the premiums paid not only at maturity but also in case of mobilization or withdrawal of the accumulated savings before maturity, although this is not a requirement in the design of the product in order to benefit from the tax exemption.

This is a tax incentive from which bank deposits that meet the same requirements (known as CIALPs) can also benefit, and is therefore not an exclusive tax break for the clients of insurance companies. It should be noted that this type of product can be moved to another SIALP or to a CIALP.

Individual systematic savings plan (PIAS)

The return obtained by these products is exempt from taxes if it is maintained for more than five years and is received as a Whole Life annuity. There are two modalities, one with the financial guarantee of the return of the capital contributed, and another that in the savings phase is "unit-linked," with the policyholder assuming the risk of the investment. In turn, there are modalities that guarantee the invested capital in case of mobilization or withdrawal of accumulated savings before maturity, and others that do not incorporate this guarantee.

The maximum annual contribution limit is 8,000 euros. As of April 1, 2019, Whole Life annuity requirements have been introduced, which must be met in order to qualify for the exemption. These requirements seek to ensure that the Whole Life annuity has a certain actuarial capitalization element in order to be eligible.

Annuity insurance with return premiums

These are insurance products that, in exchange for a single premium, provide a monthly Whole Life annuity to the policyholder, along with a death benefit in the amount of the premium paid to the beneficiaries designated by the policyholder or their heirs. It is also possible to terminate the contract early, recovering the amount of the premium paid, in which case a penalty applies if the realization value of the investments is lower than the premium at the time of redemption, for the difference. Based on the way the product is designed, it is very similar to a non-maturity savings account in which interest is charged on a monthly basis, with a guaranteed interest rate that remains fixed throughout the life of the insured party.

The way this product is structured involves the acquisition of a fixed income bond that supports the transaction. The difference between the return on the bond acquired and that granted to the policyholder constitutes the margin on the transaction, after deduction of the amount

intended to cover the credit risk assumed in the investment.

This type of product has been quite common on the Spanish market, although the low interest rate environment has made it less attractive. However, they still accumulate significant levels of mathematical provisions for products marketed in previous years that remain in the portfolio, as they are medium- and long-term savings products. Their actuarial capitalization is very limited, which means that their income is lower than that of pure survivorship annuity insurance (without death benefit in favor of the insured party's heirs).

c) Life-investment insurance products

In terms of Life-investment insurance products, two types of products stand out: unit-linked insurance and systematic individual savings plans. Firstly, unit-linked insurance is marketed as an option to invest in mutual funds or in certain baskets of assets, together with a small additional capital in the event of death. It is common for them to offer the possibility of modifying the funds or the basket of assets during the life of the contract. The two main differences from traditional mutual funds, with which they compete in the market, are in the additional capital guaranteed in the event of the death of the policyholder, and that changes in the chosen funds or portfolios have no tax consequences.

Secondly, there are the systematic individual savings plans (PIAS), in their "unit-linked" modality. As already mentioned in the previous paragraph, they are not guaranteed interest rates during the accumulation phase and any positive income they generate is exempt from taxation if the balance is converted into an annuity at maturity, provided that the income meets the requirements of the applicable tax regulations.

d) Survivorship annuity insurance products

Survivorship annuity insurance is the one with the greatest relative weight in terms of savings managed in the Spanish market (see Chart 2.5.1-i). However, it is important to note that a significant part of the annuity products in Spain are savings products that provide a total or partial refund of the premiums paid to the heirs of the policyholder in the event of their death.

Annuity insurance in exchange for a single premium (Annuities)

In Spain, pure annuities, in which there is real financial-actuarial capitalization, are not common and are normally associated with company group insurance for their employees. This type of instrument was used to a greater extent by large companies that granted salary benefits to workers in the form of pension supplements, with an annuity calculated as a percentage of their last working salary. However, nowadays they have fallen into disuse and are only granted by some companies to very small groups as a policy for retaining these workers, normally conditional on a period of stay in the company. Nevertheless, in terms of managed savings, there are still old group policies that cover larger groups, which have emerged from old group bargaining processes and are no longer applicable to new workers. At present, this type of benefit, if it exists, is defined contribution and is usually implemented through occupational pension plans.

In order to encourage the individual contracting of annuities by older people, the tax regulations grant a significant tax exemption to the profits obtained by people over 65 from the sale of their habitual residence, if the proceeds of the sale are reinvested in an annuity, with certain limits. However, for the time being the weight of this type of product in the total provisions is very limited (see Chart 2.5.1-i).

Variable annuities

This type of product, as defined in the conceptual framework of this study, is not well established in the Spanish insurance market and is barely marketed.

e) Pension plans offered by Life insurance companies

Spanish insurance companies can be private pension fund managers, provided they meet certain requirements. However, unlike in other countries, the managed funds are not incorporated into its balance sheet, but become part of a separate fund, independent of the assets of the insurer.

Nevertheless, there is an insurance product for pension savings called *Plan de Previsión Asegurado* (PPA) (Insured Pension Plan) which can be marketed by insurance companies as part of their balance sheet. This type of product enjoys the same tax breaks as (non-cumulative) pension plans and its main difference is that it offers a guaranteed minimum return. It is an illiquid product, as it can only be redeemed at the time of retirement, or early in some special cases, such as long-term unemployment, serious illness, disability or dependency. Recently, a new liquidity feature has been introduced, with the option to redeem contributions that are at least ten years old from January 1, 2025.

These products have the advantage of allowing income tax breaks on the amount contributed, up to a limit of 8,000 euros, which will be taxed when received at retirement at marginal tax rates normally lower than those that would apply when the contributions are made. It should be noted that movement between the different pension plans and Insured Pension Plans is allowed, without losing the tax breaks. However, in these cases, Insured Pension Plans may apply some form of penalty.

Lastly, there is another group social protection instrument, the so-called "*planes de previsión social empresarial*" (PPSE) (company savings plans), which companies may encourage for their employees and which guarantee a financial return. This type of plan (which enjoys the same tax breaks as employment system plans) is incompatible with another occupational pension plan in the same company and is compatible with a group insurance policy for implementing pension commitments. Currently, they have little impact in the Spanish market where workplace pension plans prevail as an instrument to channel the pension obligations of companies to their workers.

2.5.3 Solvency regulations

Spain has advanced solvency prudential regulations for insurance companies, as it is subject to the Solvency II regime in force in the European Union (a highly harmonized system that does not allow for exceptions by member countries).

2.6 United Kingdom

2.6.1 Structural elements of the market

Life insurance premiums in the UK market amounted to 176.32 billion pounds (235.5 billion dollars), representing 8.3% of the country's gross domestic product for that year; this compares with an average of 4.3% for developed insurance markets. The penetration rate (the weight of Life insurance premiums with respect to total premiums) was 84%, compared to 55.7% in the aforementioned developed markets.

Charts 2.6.1-a and 2.6.1-b present a historical series of these two indicators over the 2008-2018 period. Based on this data, it can be seen that the Life insurance market in the United Kingdom has a level of maturity that is much higher than the average for developed countries over the last decade, a gap that had been narrowing until 2016 (due to the fall in the weight of Life insurance premiums in relation to

Box 2.5.2
The reverse mortgage

General aspects

A "reverse mortgage" can be defined as a credit or loan secured through a mortgage on the main residence, granted, as a lump sum or through regular payments, to a person who must be older than a certain age or able to prove that they are disabled or dependent to some degree. It does not need to be repaid until they die [1]. It is also known as a "home equity conversion mortgage," "whole-life mortgage" or "equity release mortgage." In most cases, unlike a normal mortgage, a reverse mortgage involves the debt growing over time until the heirs inheriting the property decide whether to take on the debt and retain ownership of the property or, alternatively, receive the money remaining once the loan has been repaid. The client taking out the mortgage normally retains ownership and use of the property.

The different types of reverse mortgage can generally be summarized as the following:

a) Single payment or lump sum, where the client receives the total amount of the loan in a single payment.

b) Temporary with monthly payments, where the beneficiary receives monthly income over a specific period of time.

c) Whole life with monthly payments, where the client has taken out Life insurance in addition to the reverse mortgage (deferred annuity insurance). As with the temporary type, the client receives monthly income from the mortgage for a specified time, determined in the contract, and if the beneficiary is still alive after that period ends, the annuity insurance is triggered and the client receives that until their death, transferring the longevity risk to the insurance company.

United States

The reverse mortgage[2] is a product that began to be offered in the United States in the 1960s. Although it was offered by many companies in the 1970s, it was not until the 1980s, specifically in 1983, that the Senate made a proposal for reverse mortgages to be insured by the Federal Housing Administration (FHA) to guarantee loans made by banks and credit institutions to purchase or build properties used for housing. In 1988, President Ronald Reagan signed the Housing and Community Development Act, which initiated a pilot program to improve their popularity in the country. In 1989 the Home Equity Conversion Mortgage (HECM) program was launched, which involved reverse mortgages being insured by the Federal Government. This program has been in place since 1998, the number of mortgages of this type increasing with successive updates of the federal program (HECM for purchase and HECM saver, among others).

There are basically three types of reverse mortgage in the US market:

a) Single purpose reverse mortgages. This type of mortgage is offered by state or local governments, or non-profit agencies. They offer very favorable financial conditions for borrowers (they do not require insurance and have low interest rates) and can be used for different housing-related expenses (repairs, property tax payments, etc.), even if they are not strictly linked to the mortgage.

b) HECM reverse mortgages[3]. These reverse mortgages are backed by the FHA, where the Federal Government guarantees that the companies offering this product will make the agreed payments. Moreover, when the loan balance reaches 98% of the maximum claim amount, the mortgage is assigned to the FHA and the government continues to make payments to the pensioner. Likewise, if the price obtained from the sale is less than the sum of the total mortgage debt, the government is responsible for the loss rather than the company and, if the price obtained is higher than the debt, the borrower or heirs receive the profit.

   An HECM is subject to the federal insurance known as MIP (Mortgage Insurance Premium) which, in 2013, established a series of important rights for consumers, increasing the

Box 2.5.2 (continued)
The reverse mortgage

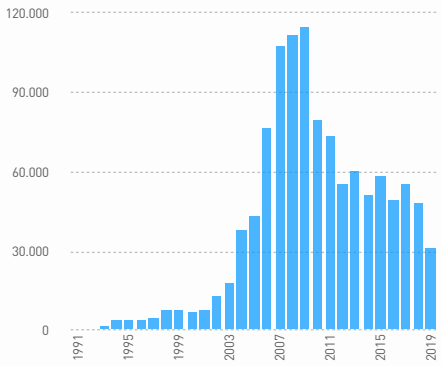
cost of the product (increased premiums, interest rates and limits on the value of the property applied for). These mortgages cannot exceed a property limit value that, in 2019, was set at 726,525 dollars Borrowers receive between 51% and 77% of the property valuation (or the FHA loan limit, whichever is lower), depending on age and choice of product. The borrower, or the youngest co-borrower, must be at least 62 years old. The FHA insures the borrowers and lenders by taking over the payments of the former when they cannot fulfill their responsibility under certain conditions. Pre-loan advice is also required[4].

c) Private reverse mortgages (Jumbo, Proprietary Reverse Mortgages). These reverse mortgages are offered by authorized financial institutions and do not have FHA-related insurance or a limit on the amount borrowed[5].

Currently, HECM reverse mortgages have a share of over 90% of the market for reverse mortgages in the United States, due to the financial benefits and guarantees that the FHA offers to lenders and borrowers. In addition to the FHA, there are other government agencies, such as the Department of Housing and Urban Development (HUD) and the Federal Housing Finance Agency (FHFA), which, respectively, help to ensure equal opportunities in the rental and purchase markets by supporting vulnerable people and helping to secure funding for the businesses in these sectors.

With data from the Department of Housing and Urban Development (HUD)[6] (see Chart A), it can be seen that the number of reverse mortgages was insignificant until 2003. From that year on, however, its number increased dramatically, with very high growth rates (109% in 2004, 77% in 2006), reaching the highest figure seen so far in 2009 with 114,692 HECM mortgages taken out. From that date, given the economic crisis at that time, there was a 31% reduction in 2010, with 79,106 mortgages. Since 2010, due to the tightening of the conditions for access to these loans (high costs and program requirements, among other factors), there has been a substantial reduction in the number of mortgages taken out.

Chart A
United States: evolution of HECM reverse mortgages, 1991-2019



Source: HUD (Department of Housing and Urban Development) until Sept. 2019

The reverse mortgage market in the United States has varied significantly in recent years. Until 2011, the market was dominated by large banks and insurers, with Wells Fargo, Bank of America and MetLife leading the way (the first two represented 43% of the market). However, the first two institutions decided to stop offering this type of product in 2011; soon after, in 2012, MetLife also exited the reverse mortgage market. Since then, the main suppliers of this product have been small organizations specialized in these loans, such as RFS (Retirement Funding Solutions) and the NRMLA (National Reverse Mortgage Lenders Association)[7].

Mexico

The contractual aspects of reverse mortgages in Mexico, also known locally as equity release mortgages, have only recently been regulated in Mexico City and the State of Mexico. However, this has not prevented this financial product from being sold in the rest of the country, although its development is still minimal. The future evolution of pension replacement rates and the high percentage of people aged over 60 who own their homes would seem to predict some potential in the coming years[8].

Box 2.5.2 (continued)
The reverse mortgage

The Mexican legislation on this product establishes that the minimum age to sign up for this product is 60 years, that the loan cannot be less than 70% of the property value. In addition, in Mexico City it was ruled that the pension would be updated in a proportion set by contract, so the valuation of the property must be updated periodically.

Brazil

Although in Brazil reverse mortgages are not yet regulated by federal law, since 2018 there have been several legislative proposals for their development and introduction[9].

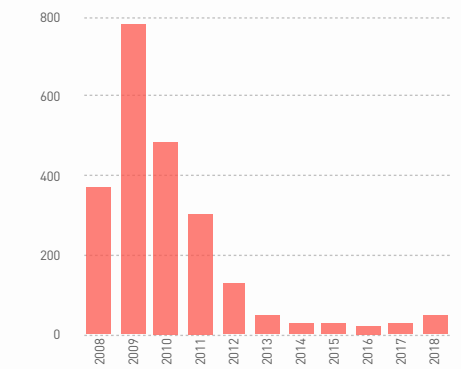
Spain

In Spain, the reverse mortgage regulations are contained in Law 41/2007, of December 7, 2007, as amended by Article 5 of Law 1/2013, of May 2013, on measures to reinforce the protection of mortgage debtors, debt restructuring and social housing rental. The recipients of this mortgage must be over 65 years of age, people with disabilities equal to or greater than 33%, and people with severe or great dependence.

Despite being available for several years, its development has been minimal for several reasons: little information on this very complex product, transparency problems in its marketing, fall in property prices at the beginning of the 2008 housing crisis, insufficient income (with the need in many cases to take out additional insurance policies to supplement the owner's Whole Life annuity), as well as the high interest rates that heirs have to face at the end of the process to pay the mortgage loan in the event of a delay in the sale of the property (see Chart B)[10].

It should be noted that this product offers exemptions from the tax payable on notarial documents, and for applicants who are severely dependent or have a major disability. It is important to note that, according to Law 41/2007, credit institutions and insurers authorized to operate in Spain may grant this type of mortgage, and they must provide independent advisory services to applicants for this product taking into account their financial situation and the economic risks derived from taking out this product.

Chart B
Spain: reverse mortgages taken out, 2008-2018



Source: General Council of Notaries of Spain

United Kingdom

Reverse mortgages were first introduced in the United Kingdom in 1965. At the end of the 1980s there was a movement against this type of mortgage due to the marketing of some products of this type that involved a high level of risk and that caused significant economic damage to a large number of elderly people. In 2000, to prevent this situation from recurring, a large number of companies opted for self-regulation and created the SHIP (Safe Home Income Plans) and adopted a binding code of conduct for the members of the organization. Later, in 2012, this body became the ERC (Equity Release Council), which also includes independent advisers for this type of product. Although it is not mandatory to be part of the organization, the vast majority of suppliers in the sector do belong to it[11].

In 2000, the Financial Services and Markets Act was approved, which classifies all types of activity related to these products as regulated activities, meaning that advisers, board directors, intermediaries and suppliers must obtain the mandatory authorization to operate in this

Box 2.5.2 (continued)
The reverse mortgage

market. In 2004, the FCA (Financial Conduct Authority) started regulating lifetime mortgages and finally in 2007, home reversion plans. This regulation is supplemented by the manual published by the FCA (FCA Handbook)[12].

There are two main types of reverse mortgage in the British market[13]:

a) Lifetime mortgages. This is the most popular reverse mortgage option in the United Kingdom. The consumer retains ownership of their property and takes out a loan guaranteed by this property. The loan can be received as a single payment, regular income, line of credit or a combination of all three.

b) Home reversion plans. In this type of product, the consumer wholly or partially sells their property to the provider, but retains the right to live in it (at low or zero cost) until their death or they are moved into a nursing home.

The age at which you can apply for a reverse mortgage in the United Kingdom is 55 years. According to ERC data, this mortgage market grew by 23% in 2018, with the lifetime mortgages segment experiencing the highest annual growth in terms of the number of clients for the third consecutive year. As for the type of client, the average age remains constant at around 68-70 years[14].

Traditionally, the companies that offered equity release programs were small and medium-sized companies specialized in the sector. However, since the entry of Nationwide in the market in 2017, other large institutions (such as L&G) have started to offer reverse mortgages. Currently, there are 13 member companies of ERC[15].

Japan

Although the reverse mortgage was launched in 1981 in the metropolitan area of Tokyo, it is not a popular product and its take-up is limited due to the conditions required which prevent it from being as flexible as in other countries. One of the most unique features of reverse mortgages in Japan is that in most cases, apartments are not eligible. Moreover, only the value of the land can be used as security for the loan. The fact that the value of the property is not taken into account means that the size of the loans can be quite small. The applicant's minimum age for taking out this mortgage is set at 60 years[16].

In addition, if it is taken out with Life insurance, it can only be used for the construction, purchase or renovation of housing, as payment of the total sum to live in rented accommodation with care services or to refinance an existing loan.

As in the United States, the supply of reverse mortgages in Japan is both public and private, and the JHF (Japan Housing Finance Agency) is the Japanese public agency offering mortgage insurance to private financial institutions within its program. Here, two methods are used: direct, in which the local government provides the loans, and indirect, in which the local government teams up with a financial institution to grant the mortgage.

Hong Kong

This financial product has been available in Hong Kong since July 2011. The government agency in charge of regulating reverse mortgages is the Hong Kong Mortgage Corporation (HKMC), which offers a credit improvement and advice service to the commercial banks that grant this financial product, also providing them with liquidity through the securitization of the loans.

Applicants can increase the value of their loan by taking out Life insurance policies. The requirements are for the debtor to be aged 55 or older, and free of debts and asset seizure requests. The mortgaged property must also be located in Hong Kong, not have been built more than 50 years ago, be unrestricted in its resale and cannot be rented out. As many as ten different banks offer this financial product in Hong Kong, although it is not a very popular product (up to mid-2019, there were only 3,395 applications)[17].

Box 2.5.2 (continued)
The reverse mortgage

References

[1] Central Bank of Spain, Access guide to the reverse mortgage in Spain. At: https://www.bde.es/f/webbde/Secciones/Publicaciones/Folletos/Ficheros/GUIA.pdf

[2] History and evolution of the reverse mortgage in the United States. See:
https://files.consumerfinance.gov/a/assets/documents/201206_cfpb_Reverse_Mortgage_Report.pdf
https://www.housingwire.com/articles/45657-feature-financial-assessment-is-here
https://www.americanadvisorsgroup.com/news/history-reverse-mortgage
https://www.reversemortgages.com/infographics/reverse-mortgage-history
https://www.reversemortgage.org/About/Types-of-Reverse-Mortgages/HECM-for-Purchase
https://www.forbes.com/sites/wadepfau/2016/02/16/how-did-reverse-mortgages-get-such-a-bad-reputation/#7b8fa13e6eca

[3] Mortgages with federal insurance. Home Equity Conversion Mortgage (HECM). At: https://www.hud.gov/program_offices/housing/sfh/hecm/hecmabou

[4] FHA (United States) insurance characteristics. See: https://www.fha.com/fha_requirements_mortgage_insurance -

[5] Private reverse mortgages (Jumbo) Proprietary Reverse Mortgages (United States). See: https://www.investopedia.com/mortgage/reverse-mortgage/types/

[6] Reverse mortgages through HECM data (United States). See:
https://www.nrmlaonline.org/2019/10/04/annual-hecm-endorsement-chart
https://reverse.mortgage/2019-limits

[7] Companies and agencies offering reverse mortgages in the United States. See:
https://reversemortgagealert.org/reverse-mortgage-lenders/
https://www.bankrate.com/finance/mortgages/for-reverse-mortgages-try-smaller-banks-1.aspx
https://en.wikipedia.org/wiki/Reverse_mortgage#United_States
https://reversemortgagedaily.com/2019/07/09/new-yorks-new-reverse-mortgage-law-what-you-need-to-know/
https://www.newviewadvisors.com/commentary/wp-content/uploads/2019/09/NV-Endorsement-2019_08.pdf

[8] Regulation and introduction of reverse mortgages in Mexico. See:
https://legislacion.edomex.gob.mx/sites/legislacion.edomex.gob.mx/files/files/pdf/cod/vig/codvig001.pdf
http://www.congresoson.gob.mx:81/Content/Doc_leyes/doc_439.pdf
http://aldf.gob.mx/archivo-0bd3121a0334f53844d2fe92b52fb5a2.pdf

[9] Regulation and introduction of reverse mortgages in Brazil. See:
https://www25.senado.leg.br/web/atividade/materias/-/materia/132282
https://www.camara.leg.br/proposicoesWeb/fichadetramitacao?idProposicao=2204486
http://www.planalto.gov.br/ccivil_03/LEIS/2002/L10406.htm

[10] Reverse mortgage data in Spain: General Council of Notaries. At: https://www.notariado.org/liferay/web/cien/estadisticas-al-completo

[11] Regulation and introduction of reverse mortgages in the United Kingdom. See:
https://www.equityreleasecouncil.com/about/standards/rules-and-guidance/
https://www.telegraph.co.uk/financial-services/retirement-solutions/equity-release-service/who-are-equity-release-council/

[12] See: https://www.handbook.fca.org.uk/handbook

[13] See:
https://www.telegraph.co.uk/financial-services/retirement-solutions/equity-release-service/what-happens-to-equity-after-death/
https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7706#fullreport
https://www.fca.org.uk/news/speeches/future-uk-mortgage-market
https://blogs.deloitte.co.uk/financialservices/2018/03/equity-release-the-fcas-scrutiny-is-set-to-increase-further.html

[14] ERC Market Report, Spring 2019. At: https://www.equityreleasecouncil.com/documents/erc-spring-market-report-2019/

[15] Companies and institutions offering reverse mortgages in the United Kingdom. See:
https://moneyfacts.co.uk/retirement/equity-release/
https://www.keyadvice.co.uk/about/market-monitor

[16] Regulation and introduction of reverse mortgages in Japan. See:
https://books.google.es/books?id=QAmXDwAAQBAJ&pg=PA71&lpg=PA71&dq=jhf+reverse+mortgage&source=bl&ots=cPSNSX5tug&sig=ACfU3U066Ud1Cpz3CEGmRojxWwHfJb0DpQ&hl=es&sa=X&ved=2ahUKEwiY4Nb6h9XkAhUm3uAKHWWoByEQ6AEwD3oECAkQAQ#v=onepage&q=jhf%20reverse%20mortgage&f=false

[17] Regulation and introduction of reverse mortgages in Hong Kong. See:
http://www.hkmc.com.hk/eng/our_business/reverse_mortgage_programme.html
https://en.wikipedia.org/wiki/Reverse_mortgage#Hong_Kong
https://hub.hku.hk/bitstream/10722/207665/1/FullText.pdf

Chart 2.6.1-a
United Kingdom: Life penetration index, 2008-2018

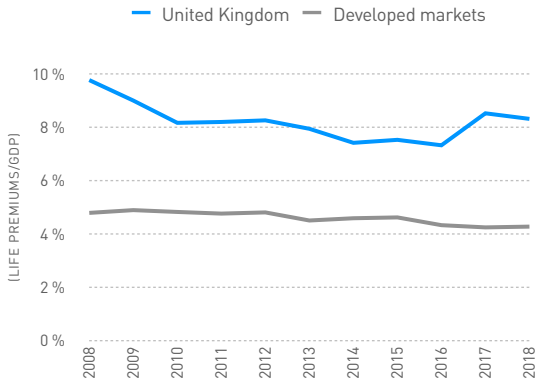
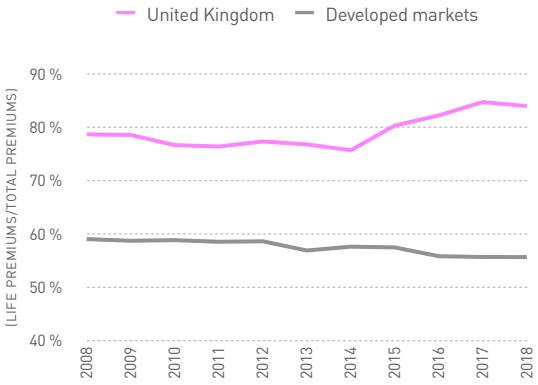


Chart 2.6.1-b
United Kingdom: depth index, 2008-2018

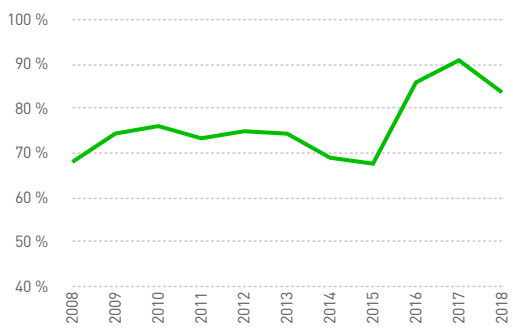


Source: MAPFRE Economics (based on data from ABI, Swiss Re and OEF)

GDP in the UK market), but which has returned to levels above 8% in recent years.

Chart 2.6.1-c shows the evolution of the weight of provisions for Life insurance with respect to GDP in the United Kingdom over the 2008-2018 period. As can be seen, by the end of 2018, these stood at around 84% of GDP, amounting to 1.7 trillion pounds. It should be noted that, until 2015, it had been close to 70% of GDP. Since then, the percentage has increased as a result of the entry into force of Solvency II, the new framework of solvency regulations applicable in the European Union, which introduced significant innovations in the method of calculating technical provisions for Life insurance.

Chart 2.6.1-c
United Kingdom: Life insurance technical provisions compared to GDP, 2008-2018



Source: MAPFRE Economics (based on data from EIOPA and OEF)

The breakdown of technical provisions for Life insurance shows the importance of unit-linked insurance in the United Kingdom, which at the end of 2018 represented 66% of managed savings from Life insurance (see Chart 2.6.1-d). Apart from the abrupt increase in the provision in 2016 (due to the aforementioned entry into force of Solvency II), the influence of monetary policy interest rates can be seen in the variations in provisions for Life insurance over the last decade. Thus, in 2008, the drop in interest rates led to an increase in the amount of the technical provision due to the effect of valuations. In recent years, the influence of the behavior of equities can also be seen, after a sustained period of low interest rates and the development of products in which the policyholder assumes the risk of investment in this market, which provide flexibility in terms of the risk profile of the portfolios in which the funds are invested, being able to incorporate a higher percentage of equities without tax consequences in terms of the returns generated, as long as the policy is not redeemed. The sustained environment of low interest rates has fueled this type of strategy, which explains the sensitivity of the amount of technical provision to stock market behavior (see Chart 2.6.1-e).

Chart 2.6.1-d
United Kingdom: Life technical provisions, 2008-2018

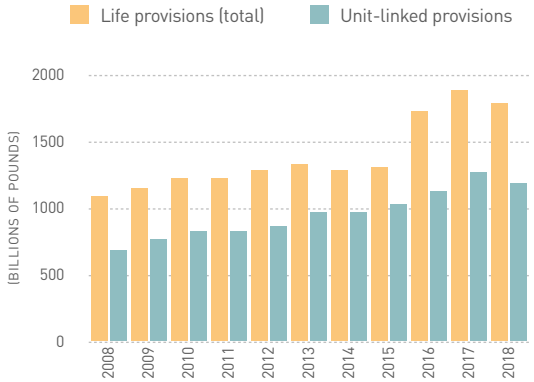
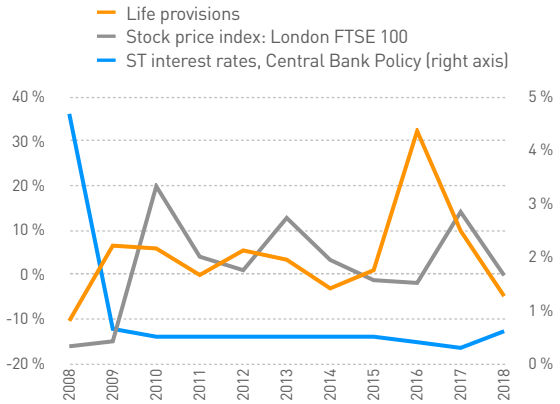


Chart 2.6.1-e
United Kingdom: variation in Life technical provisions, 2008-2018



Source: MAPFRE Economics (based on data from EIOPA and OEF)

In the analysis of changes in Life insurance premiums in real terms, it is important to mention two public policy decisions that have been taken in the United Kingdom in recent years that have had a major impact on the behavior of this market.

The first was taken as a result of the rise in the price of annuity products as a result of the sustained environment of low risk-free interest rates since 2008, in addition to the general increase in life expectancy. In this context, together with certain problems of market behavior in their marketing, the obligation to transform the pension funds of the employment system into annuities was eliminated at the beginning of 2015, which has motivated many workers to opt for other more flexible programmed retirement formulas.

The second of these public policies was the introduction of the obligation for companies to register employees in a company group pension plan (automatic enrollment), which was done in phases, with a significant entry in 2017 of workers into company supplementary pension plans. These plans can be implemented through contracts with insurance companies, an option

Chart 2.6.1-f
United Kingdom: Life premiums, 2008-2018

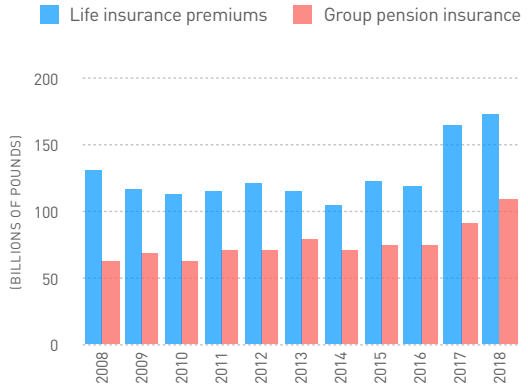
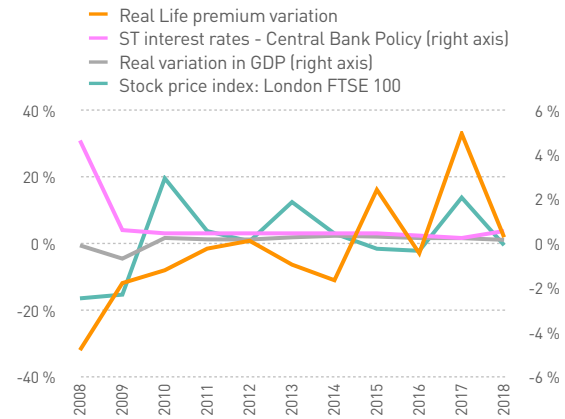


Chart 2.6.1-g
United Kingdom: real variation in Life premiums, 2008-2018



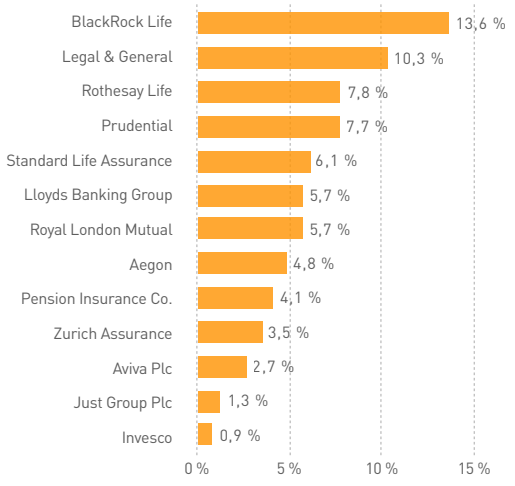
Source: MAPFRE Economics (based on data from ABI and OEF)

that until now is the most used by companies, which influenced the notable increase in Life insurance premiums in that year. Furthermore, the behavior in this period has been somewhat irregular and with some setbacks, and has also been marked by the behavior of the economic cycle and of equities, by the idiosyncrasies of the British market (with a high weight of Life products in which policyholders assume the investment risk and a movement of their portfolios toward higher risk positions), and by the low interest rate environment (see Charts 2.6.1-f and 2.6.1-g).

The UK Life insurance market is also characterized by the significant weight of group Life insurance, which is used by companies as an additional instrument to meet pension commitments to their employees. In 2018, this type of insurance represented around 64% of total Life premiums.

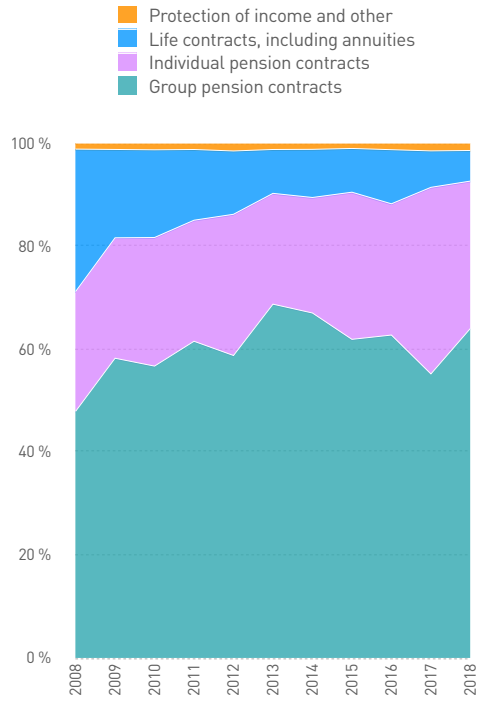
With respect to the structure of the participants in the Life insurance market in the United Kingdom in 2018, as illustrated in Chart 2.6.1-h, the largest market share by turnover was that of BlackRock Life, with 13.6%, followed by Legal & General (10.3%), Rothesay Life (7.8%) and Prudential (7.7%). It should be noted that in 2016, Prudential was at the top of the ranking, having fallen to fourth place in two years after announcing its withdrawal from the annuities business in February 2016. Aegon made a similar announcement in September of that year, having fallen from third to eighth place in that period.

Chart 2.6.1-h
United Kingdom: ranking of Life insurance companies, 2018



Source: MAPFRE Economics (based on data from SFCR)

Chart 2.6.1-i
United Kingdom: structure of Life insurance premiums, 2008-2018



Source: MAPFRE Economics (based on data from ABI)

Lastly, Chart 2.6.1-i shows the distribution of the weight of marketed products on premiums and their evolution over the 2008-2018 period. As can be seen from these data, pension-related products predominate, representing 92.6% of Life insurance premiums in 2018.

2.3.2 Analysis of Life insuraśnce product categories

Below, we set out the situation of the UK Life insurance market for the various product categories considered in the conceptual framework of this report.

a) Life protection insurance products

Term insurance

This type of insurance is widely used in the UK market, both at an individual level and in the form of group insurance for companies and their employees. They are usually found as renewable term insurance that combines guarantees in the event of death with complementary coverage such as disability, accident, capital insured in the event of a diagnosis of terminal illness or certain serious illnesses, suspension of premium payments in the event of temporary disability, cancellation of outstanding balances on credit cards or burial services, among others.

This is a market with a high level of maturity and competition in which most of the insurance companies that offer these products have a great capacity to adapt to the needs of the policyholder. Thus, when taking out the policy, the capital to be insured, the term, the state of health, personal circumstances and the lifestyle of the insured are all taken into account. If it is a medium- or long-term contract and there is the possibility of contracting it at a level premium. As far as the term is concerned, there are forms of renewable term insurance that offer the possibility of renewal without the need for additional proof of health status, even with increasing capital to adapt to changes in family circumstances and with the possibility of receiving benefits in the form of an annuity (family policies).

The depth of the necessary preliminary checks in terms of the state of health depends to a large extent on the capital insured. There are policies, called "convertibles," which allow the policy to be transformed into either endowment insurance or whole Life insurance without the need for additional questionnaires on the state of health.

They are also marketed as coverage for the cancellation of the outstanding amount of mortgage loans or other types of loans with decreasing insured capital in line with the amount of the outstanding debt, in the event of the death or disability of the debtor. There is also coverage for accidents, illness or unemployment (payment protection), which offers protection both at the individual level and to companies for their workers. As is the case in other markets, most insurance companies offer online quotes from their websites and, in some cases, the possibility of completing the health questionnaire with a doctor, electronically.

Whole Life insurance

The UK insurance market also offers a wide range of whole Life products. Although in principle whole Life insurance is usually associated with a certain savings element, in the UK it is common for it to be marketed without the right to a surrender value, in order to offer lower premiums at the time of taking out the insurance[33]. This means that premiums are not entirely level, but are subject to a review process throughout the life of the insured, usually every ten years, although these review periods are usually shortened as the insured gets older. These reviews usually offer the possibility of increasing the premium or reducing the insured capital.

Variable-universal Life insurance

These types of products are marketed in the United Kingdom (they are known as "flexible whole Life insurance"), although they are less established than those in the United States market, which is the benchmark for this type of product. For those versions in which the value of the policy is matched to the performance of the fund units to which it is linked, there is a wide variety of options regarding its composition (fixed income in all its forms, equities, real estate, cash, among others). If the policy is surrendered, the surrender value is calculated with the value of the units of the fund assigned to the policy at the time of surrender ("bid value"). In the event of death, if the value of the policy exceeds the sum insured, the greater of the two amounts shall be paid to the insured parties.

There are various forms of this type of insurance, such as the so-called "maximum cover plans," in which the level of the premium is fixed for a period of time, at the end of which it is revised upward in line with the age of the policyholder. They usually give the option of reducing the insured sum if the new premium becomes too burdensome for the policyholder. Other versions set the premium so that it does not need to be revised during the life of the policyholder, provided that the units of the mutual fund linked to the policy generate a return equal to that established previously when the policy was taken out ("standard cover"). They can also offer flexibility to increase the insured capital by raising the premium, although if it is a substantial increase, a new medical examination may be required. On occasion, this possibility is offered when a certain event occurs, such as the birth of a child, without requiring a new medical questionnaire[34].

b) Life savings insurance products

Pure endowment is barely present in the UK market, and it is common for this type of product to be marketed in combination with death capital, if this occurs before the end of the contract ("endowment policies"). It is therefore a product that is marketed in most cases in the form of savings plans with a certain term, with a guaranteed capital at maturity, consisting of the amount of premiums paid plus a return that depends on the risk-free rates at the time of issuing and, usually, a share in financial profits. These products incorporate a guarantee in the event of death for an amount close to that of the premiums paid, and the early cancellation of the contract implies the return of the premiums with a penalty that is normally linked to the value of the investments in which the corresponding mathematical provision is made. There are versions of these products with a single premium (guaranteed bonds) and a regular premium, the latter being more common. Given the way in which the products are structured, it can be concluded that there is hardly any actuarial capitalization since they incorporate a surrender value and a guarantee in the event of death for an amount close to that of the premiums paid.

Profit-sharing is instrumented in two different ways: either through investment in specific units of mutual funds ("unit-linked endowments"), or on the basis of the performance of the insurer's profits obtained from its investment portfolio not affecting specific policies. Products that base profit-sharing on the results of their investment portfolios provide greater flexibility in distributing those shares, and can soften the impact of financial market cycles by setting aside part of those profits during good times to compensate in bad times, allocating additional profits from that reserve. The contractual terms and conditions of these contracts give the insurance companies a large amount of discretion when allocating these profits (bonuses), increasing the value of the policy annually.

In the UK there are also versions of low cost endowments and low start endowments linked to the development of the real estate market, which combine a deferred capital product (with profit sharing) with decreasing death benefit, designed to cover the outstanding debt of a mortgage loan only in the event of the death of the insured party.

In order to encourage the development of products with a greater savings element in the event of survivorship, there are tax incentives in the United Kingdom that exempt from taxation the amounts received and apply reduced rates to the income generated by the product, provided that they meet the requirements established by the tax regulations, including guaranteeing a minimum capital in the event of survivorship of 75% of the premiums paid during the term of the contract. However, the introduction of annual ceilings on the premiums paid that can benefit from the tax breaks in 2013 has led to a significant fall in new business for this type of product.

The Life Settlement Model Act of 2017 (LISA) introduced new tax incentives with the individual life savings account, a new long-term savings vehicle, although annual ceilings remain low. However, the incentives are important, as people between 18 and 40 years old can save 4,000 pounds (4,679 dollars) each fiscal year and receive a guaranteed government bonus of 25% at the end of each fiscal year. The investments are exempt from income taxes and are not taxed when the funds are received at retirement. The product is designed specifically for the purpose of saving for retirement or for a first-time home deposit on a purchase of up to 450,000 pounds.

c) Life-investment insurance products

The UK investment Life insurance market is the most developed in the world. Currently, unit-linked products predominate in this market, although some versions of profit-sharing deferred capital products still exist and are marketed.

Unit-linked insurance is a pure investment product that incorporates a capital in the event of death guaranteed during the term of the contract for a small amount, in addition to the value of the units, in order to reduce the cost of this guarantee, which reduces financial profitability. High death capitals can be a major expense and a disincentive to the acquisition of these products by the elderly, which is why in most cases the death benefit is 101% of the value of the fund units[35].

Unit-linked insurance premiums are used to acquire the units of the mutual fund chosen by the policyholder, depending on their risk profile. The surrender value of the policy is given by the value of the units of the fund in which the premium has been invested ("bid value"). Taking the "bid value" in the valuation of the units means that the surrender value immediately after acquiring the product is lower than the premium paid, since there is always a range between the "bid value" (seller price) and "offer value" (buyer price) that is not advantageous to the seller, which is a source of income for the fund manager. In addition, some kind of penalty may apply for early redemption of the policy. Investments are sometimes made through other vehicles in the form of companies (open-ended investment company, OEIC), similar to the so-called mutual funds in the United States or the SICAVs in the European Union, instead of unit trusts, which do not apply this range, although they may apply fees.

From this point on, the profitability of the product depends on the behavior of the "net asset value" (NAV) of the units, with the policyholder assuming the risk of the investment. If the policy matures at a time when the financial markets have fallen, it can generate heavy losses depending on the risk profile of the investments, so this type of product usually offers the option of extending the maturity in these cases.

Another common product in the UK market is Life-investment insurance with profit sharing, called "single-premium investment bonds" or simply "investment bonds." These are normally acquired in the form of whole Life insurance, so they do not expire, so that the policyholder can continue in the contract throughout their life, unless they decide to redeem it.

In this case, the policyholder is exposed to losses if market conditions are adverse at the time of redemption. If the contract has been instrumented through the acquisition of units from a mutual fund (this is now the norm), the amount corresponding to the value of the units at the time of redemption (at the bid price) will be paid. However, the death benefit is guaranteed in these products and is not subject to reduction.

d) Survivorship annuity insurance products

Annuity insurance in exchange for a single premium (Annuities)

Immediate Life annuity insurance in exchange for a single premium has a long tradition in the UK. The main reason is the obligation that was in force until April 2015 to transform the funds accumulated in the occupational pension plans into this type of annuity. The high cost of these products due to the sustained environment of low risk-free interest rates and the increased probability of survival, together with the detection by the supervisory authority and the courts of punishable conduct in their marketing, led to the removal of this obligation by public authorities. There are still large amounts of mathematical provisions from the products in the portfolio, but the new business has been affected and its demand has fallen very sharply, since a large part of the workers now opt for other more flexible programmed retirement formulas or for the total withdrawal of the funds. As a result, some of the insurance companies offering these products have chosen to stop marketing them. In order to make them more attractive to certain groups (for whom this obligation was particularly burdensome), some insurers have developed products such as so-called *enhanced Life annuities*, which offer higher payments to individuals with health conditions or risk factors that imply a lower life expectancy.

Variable annuities

This type of product, as set out in the conceptual framework of this study, has virtually no presence in the UK insurance market.

e) Pension plans offered by Life insurance companies

In the United Kingdom, companies are required to enroll their employees in a company pension plan ("automatic enrollment"). This obligation was introduced in phases, starting with companies with more than 250 employees in October 2012 and a deadline of April 2017 for smaller companies. Newly created companies (between April 1, 2012 and September 30, 2017), however, had a staggered schedule until February 1, 2018. Contributions to such plans are called "quasi-mandatory," a term that reflects the fact that companies are required to enroll employees in an employment plan, but the employee may choose not to join.

The company, the worker and indirectly the state contribute to the employment plans through the granting of a tax benefit. A gradual implementation schedule was defined for the minimum contributions starting at 2% of the salary in 2012, and should reach 8% in 2019, the contribution percentage currently applied. The minimum contribution of the worker is 3% and the state contribution, in the form of a tax benefit, is 1% from April 2019. The computable salary for calculating the contribution is defined by the company and can be the entire gross salary or a lesser amount, within certain limits. So far, this system has had a positive impact on the volume of long-term savings and the gradual increase in employee contributions has not yet had a significant impact on the number of employees who decide to leave the plan (which remains at low levels).

Occupational pension schemes in the UK can be implemented through contracts with insurance companies (contract-based pensions) or through pension plan managers (trust-based pension schemes). It should be noted that most contributions are managed through contracts with insurance companies. It should also be noted that, although they have already fallen into disuse, there are still mathematical provisions coming from the remaining defined benefit plans. However, given the general obligation for all companies to offer an occupational pension plan, for small companies that do not have their own plan, the State has created a plan called the "National Employment Savings Trust" (NEST), which is absorbing the management of part of the funds derived from these plans and which has among its objectives to apply reduced management fees. In addition, multi-company managers ("Master Trusts") are emerging and beginning to gain market share from the insurance companies, which is raising the level of competition in this market.

2.6.3 Solvency regulations

With regard to the prudential regulation scheme, the United Kingdom has, for the time being and subject to possible developments after its exit from the European Union, advanced solvency prudential regulations for insurance companies, as it is subject to the Solvency II regime.

2.7 Italy

2.7.1 Structural elements of the market

In 2018, Life insurance premiums on the Italian market were 106.11 billion euros, representing 5.8% of the country's gross domestic product (6.2% if premiums for complementary cover are included), compared to the 4.3% average observed in developed insurance markets. Moreover, the weight of Life insurance premiums in total market premiums (depth index) was 76.7%, compared to the 55.7% average of the aforementioned insurance markets.

When analyzing the historical series of these two indicators (penetration and depth) for the 2008-2018 period, it can be seen that, in general, the Life insurance market in Italy shows a level of maturity higher than the average of developed countries over the last decade, with the exception of times of sharp falls in Life premiums during the most acute episodes of the last economic crisis in 2008, 2011 and 2012. Also noteworthy is the high volatility of the penetration rate as a differential element with respect to other markets, which can be linked to the equally volatile behavior of interest rates on Italian sovereign debt, as explained in more detail below (see Charts 2.7.1-a and 2.7.1-b).

Moreover, in terms of managed savings, technical provisions for Life insurance at the close of 2018 amounted to 749 billion euros (around 39% of GDP). Chart 2.7.1-c shows the evolution of the weight of provisions for Life insurance with respect to GDP in Italy over the 2008-2018 period. It is worth noting the positive evolution of this indicator throughout this period, in which it experienced notable growth of 18 percentage points, placing it in 2018 above the weight it presents in other developed markets, such as the United States in which it represented 27%, but still far from the United Kingdom which amounted to 84% of the GDP.

Chart 2.7.1-d shows the evolution of technical provisions in the Italian Life insurance market over the 2008-2018 period. As noted above, the influence of sovereign debt interest rates can

Chart 2.7.1-a
Italy: Life penetration index, 2008-2018

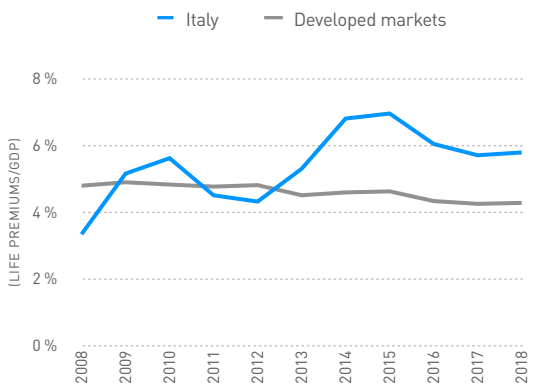
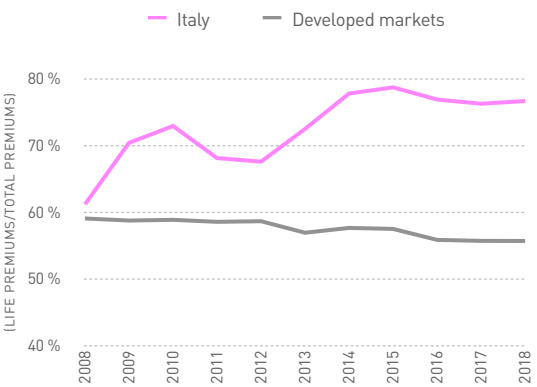
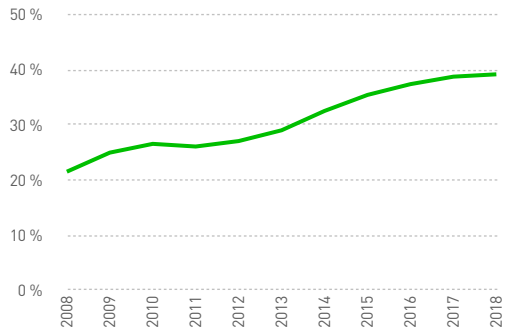


Chart 2.7.1-b
Italy: depth index, 2008-2018



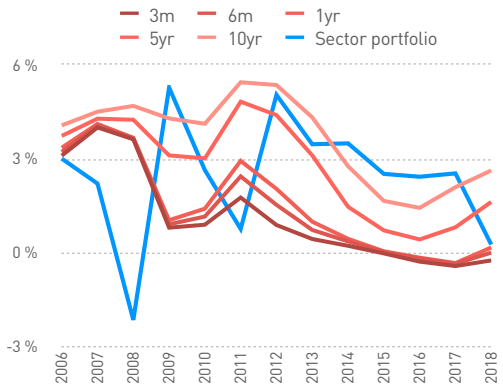
Source: MAPFRE Economics (based on data from ANIA and Swiss Re)

Chart 2.7.1-c
Italy: Life insurance technical provisions compared to GDP, 2008-2018



Source: MAPFRE Economics (based on data from ANIA and OEF)

Chart 2.7.1-f
Italy: sovereign debt yield versus sector investment portfolio yield, 2006-2018



Source: MAPFRE Economics (based on data from ANIA and Bloomberg)

be seen in the changes in technical provisions for Life insurance over the last decade (see Chart 2.7.1-e). Thus, the sharp rises in interest rates in 2011 led to a significant drop in the growth of the provisions, due to the effect of valuations and redemptions of policies marketed at below-market interest rates. It should also be noted that, at an aggregate level, interest rate rises affect assets and liabilities in a fairly similar way, which is an indicator of proper ALM management by the Italian insurance industry. However, the value of investments tends to fall slightly above the value of the technical provisions, a symptom of a certain mismatch in durations. It is also worth noting that interest rate hikes on Italian sovereign debt have had a negative impact on the profitability of the insurance industry in the year in which they occur, which can be attributed to the fall in the valuation of its sovereign bond portfolios, and vice versa (see Chart 2.7.1-f).

Chart 2.7.1-d
Italy: Life technical provisions, 2008-2018

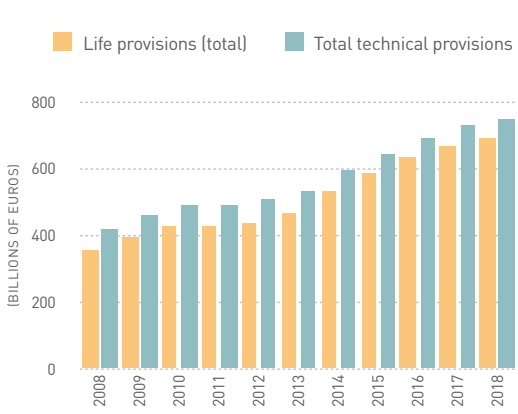
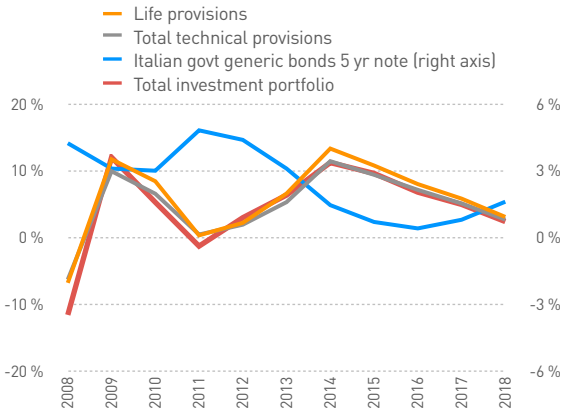


Chart 2.7.1-e
Italy: variation in Life technical provisions, 2008-2018



Source: MAPFRE Economics (based on data from EIOPA and OEF)

Chart 2.7.1-g
Italy: Life premiums, 2008-2018

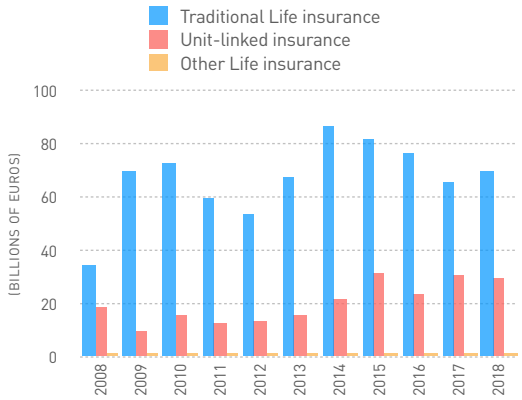
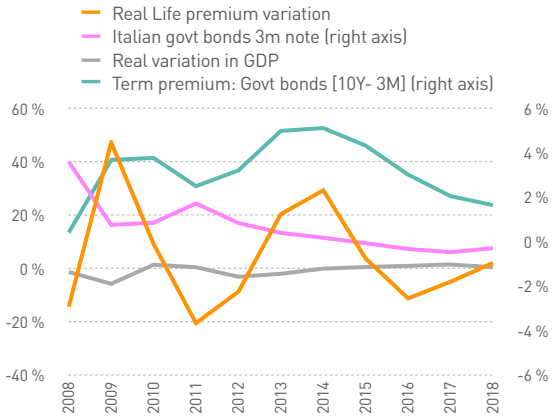


Chart 2.7.1-h
Italy: real variation in Life premiums, 2008-2018



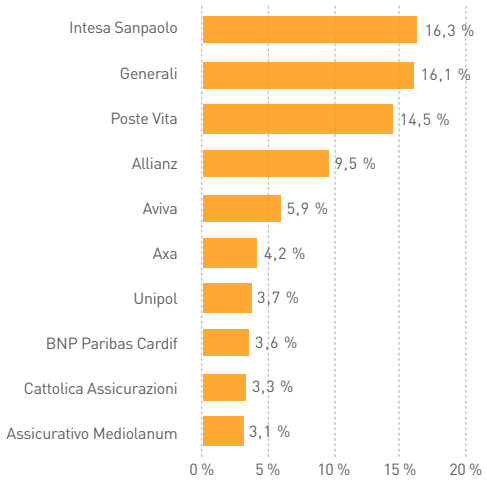
Source: MAPFRE Economics (based on data from ANIA and OEF)

Charts 2.7.1-g and 2.7.1-h show the analysis of the evolution of Life business premiums in Italy over the 2008-2018 period. Again, it can be seen from these data that the behavior of sovereign debt interest rates influences Life's business volume, causing it to exhibit anti-cyclical behavior at certain points in the series, with increases in Life premiums when real GDP falls and vice versa. In the period under analysis, it can be seen that variations in Life premiums follow the path marked by the difference in interest rates for long-term sovereign debt compared to short-term rates (term premium). It is worth noting the fall in Life premiums in 2011, a year in which the term premium fell sharply due to the sharp rise in short-term rates from 1% in January to 4.7% in November. Expectations of short-term interest rate increases at that time caused Life insurance sales to fall sharply during the year (-18% for the year as a whole).

Conversely, in the composition of the Life business, a significant weight can be seen in the insurance premiums in which the policyholder assumes the investment risk (unit-linked) which, in 2018, represented 29% of the total Life insurance premiums. However, this type of product experienced a sharp fall in 2009, when it accounted for 12% of Life premiums, compared to 34% in 2008 (47% in 2007). Since then, its weight in the total Life business has been recovering, although it is still at lower percentages than those reached before the 2008 crisis, in relative terms.

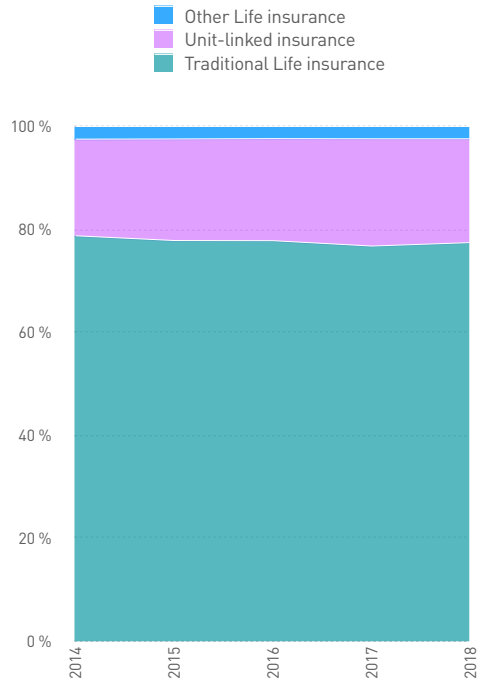
With respect to the structure of the participants in the Life insurance market in Italy, with data at the end of 2018, the largest share of the Italian market by premium volume in the Life business was that of Intensa Sanpaolo, with

Chart 2.7.1-i
Italy: ranking of Life insurance companies, 2018



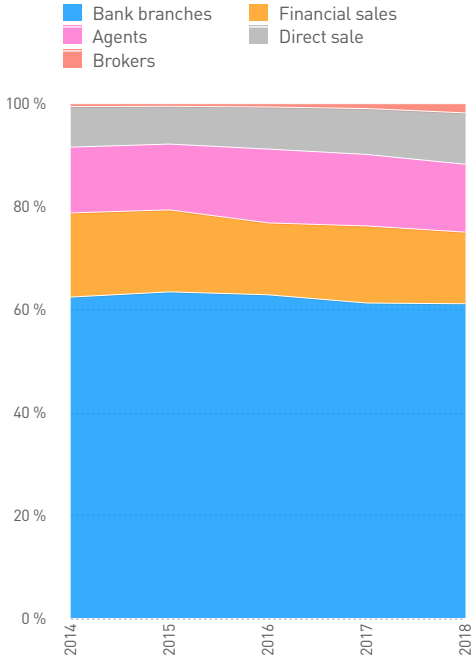
Source: MAPFRE Economics (based on data from ANIA)

Chart 2.7.1-j
Italy: structure of technical provisions for Life insurance, 2014-2018



Source: MAPFRE Economics (based on data from ANIA)

Chart 2.7.1-k
Italy: structure of distribution channels in the Life segment, 2014-2018



Source: MAPFRE Economics (based on data from ANIA)

16.3%, followed by Generali (16.1%), Poste Vita (14.4%) and Allianz with 9.5% (see Chart 2.7.1-i).

Chart 2.7.1-j illustrates the distribution of the weight of the technical provisions for Life insurance products and their evolution over the 2014-2018 period. As can be seen, traditional Life insurance products predominate, accounting for 77.4% of Life insurance provisions at the close of 2018, with most of these being savings insurance policies with profit sharing. This was followed by unit-linked insurance, which accounted for 20.2% of the total portfolio.

Lastly, it is worth noting the significant weight of the bancassurance channel in the distribution of Life insurance products in the Italian insurance market, which in 2018 brokered 62.2% of the premiums in this line of business (including the post offices that Poste Vita uses as part of its distribution network). The rest of the distribution is carried out through financial commercial intermediaries (13.9% of premiums), insurance agents (13.2%) and through direct sales mechanisms of the institutions (10.0%), while the channel of brokers has a marginal weight in this market segment (see Chart 2.7.1-k).

2.7.2 Analysis of Life insurance product categories

The situation of the Italian insurance market for the various categories of Life insurance products considered in the conceptual framework of this study is set out below.

a) Life protection insurance products

The Life protection insurance products marketed in Italy are similar to those described in the rest of the markets analyzed throughout this report, and are commonly found as

structured products that combine guarantees in the event of death with the typical complementary coverage, which have already been extensively described. It is also usual to market them as family policies, as well as to use them as coverage for cancellation of the outstanding amount of loans. Normally, only a health questionnaire is required as part of the signing of the contract, but if the insured capital exceeds a certain limit, depending on the insurer's criteria, a medical examination is carried out before the contract is signed. However, variable/universal Life insurance is not common on the Italian market.

b) Life savings insurance products

The Life savings business is currently undergoing a significant level of development in Italy. Most of it consists of traditional single premium or regular premium savings insurance with a guaranteed interest rate and a share in financial profits. Profit sharing is implemented in two different ways. It is normally established on the basis of the performance of the profits obtained from its investment portfolio, giving the insurer greater flexibility when distributing these shares. However, the low interest rate environment affecting the eurozone is causing the market to evolve, and Italian insurance companies have reacted quickly by developing a new type of hybrid product that combines traditional savings insurance and policyholder risk insurance in a single policy ("*prodotti vita ibridi, multiramo*").

Although it is true that interest rates on Italian sovereign debt have been moving differently from those of the other major European markets (due to increases in their risk premiums), this offers business opportunities for traditional savings products at certain times to those insurance companies that decide to take on these increases in the assessment of sovereign risk in their balance sheets. However, despite the upturns, interest rates are currently on a downward path and there are companies that are limited in assuming greater risk in their balance sheets by their own internal limit control policies (including through sovereign debt), which is driving Life insurance companies to market these insurance products that combine traditional savings insurance coverage (with profit sharing), with investments in mutual fund units. In this case, the initial division of the premium between the different types of cover can be changed during the course of the contract at the request of the insured party or the insurer. The portion invested in products linked to fund units is exposed to investment risk, which is assumed by the policyholder.

The hybrid nature of these multi-class products allows the insured parties to move into higher risk positions in search of higher returns than traditional products, while reducing the capital requirements for insurers compared to traditional interest rate guaranteed products. However, the possibility of changing the original premium allocation after the contract is signed complicates the risk measurement and management of insurers. When the option is in favor of the insured party, its exercise may require a rapid change in the insurance company's portfolio allocation, with market risk repercussions that require an appropriate evaluation by the insurer, both in the design of the product and in the formulation of the investment strategy. It should be noted that the increasingly widespread use of these policies also implies greater legal and reputational risk due to their complexity[36]. However, the growth of business in this type of product since its introduction on the Italian market has been spectacular, reaching in four years a percentage of more than one third of total new business premiums for individual savings insurance (more than 820,000 new "multi-line" insurance policies in 2018 and a volume of 28.6 billion euros, 10.1% more than in 2017[37]).

c) Life-investment insurance products

Unit-linked insurance is well established in the Italian market and is marketed in most of the markets analyzed, with an option to invest in units of mutual funds or in certain baskets of

assets that replicate a certain index, along with a small additional capital in the event of death. In 2018, this type of insurance represented 29% of total Life insurance premiums in that market.

d) Survivorship annuity insurance products

Immediate Life annuity insurance in exchange for a single premium is also common within the offer of Italian Life insurance companies. This is not the case, however, with variable annuities, which are not well established in the Italian insurance market.

e) Pension plans offered by Life insurance companies

The 1995 reform (known as the Dini reform) radically changed the Italian pension system by introducing notional defined contribution accounts as the basic reference scheme. It meant moving from a model with a single defined-benefit, pay-as-you-go pillar to a model composed of a mandatory, publicly managed first pillar that maintains the pay-as-you-go system but is articulated through Notional Defined Contribution (NDC) accounts, and a voluntary second pillar based on capitalization and instituted primarily through collective bargaining.

The notional account system has a contribution rate of 33%, of which approximately one third is paid by the employee and two thirds by the employer. At retirement, the pension is calculated with the contributions accumulated over a lifetime, updated with the nominal GDP growth rate (as a five-year moving average) and a transformation coefficient. The accumulated notional capital is converted into an annuity taking into account the average life expectancy at retirement.

In 2018, the typical retirement age was 67, about three years higher than the average for the Organization for Economic Cooperation and Development (OECD) countries. The combination of a high mandatory retirement age and a high pension contribution rate of 33% results in a very high net replacement rate of 92% for the average salary earner over the entire career, compared to the OECD average of 59%. If the worker retires three years earlier, at age 64, the net replacement rate decreases substantially, to 79%.

The wide coverage of the Italian statutory pension system means that the degree of development of supplementary pension schemes is lower than in other markets, such as the United Kingdom or the United States. However, there is an additional, voluntary and supplementary occupational system, which is mainly structured through occupational and individual pension funds, with tax breaks within certain contribution limits. Insurance companies can manage open system, employment and individual pension funds, so it is not usual for them to issue pension insurance products managed within their balance sheets whose weight in Life insurance provisions is very low, around 2.2% at the end of 2018 (16 billion euros), compared to assets managed through pension funds which amounted to 167 billion euros at the close of that year.

2.7.3 Solvency regulations

As with the other European countries analyzed in this report, Italy has advanced solvency prudential regulations for insurance companies, as it is subject to the Solvency II regime in force in the European Union (a regime of maximum harmonization, which does not admit exceptions by member countries).

2.8 Japan

2.8.1 Structural elements of the market

Life insurance premiums in the Japanese market in 2018 amounted to 36,886 billion yen (334.2 billion dollars), which represented 6.7% of Japan's gross domestic product, compared with an average of 4.3% in developed insurance markets (see Chart 2.8.1-a). Moreover, the weight of Life insurance premiums in total market premiums (depth index) was 75.9% in the same year, compared to 55.7% in the aforementioned developed markets (see Chart 2.8.1-b). Analyzing the historical series of these

Chart 2.8.1-a
Japan: Life penetration index, 2008-2018

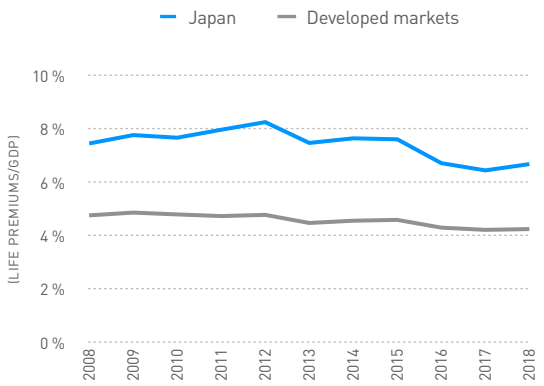
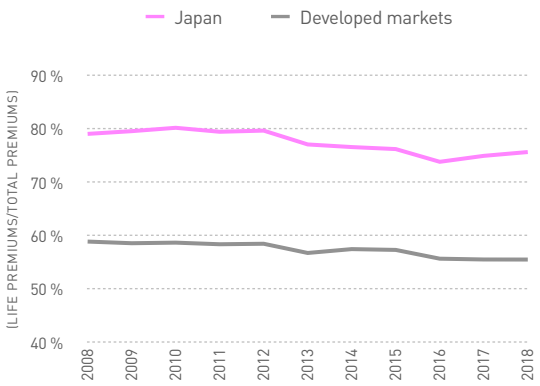


Chart 2.8.1-b
Japan: depth index, 2008-2018



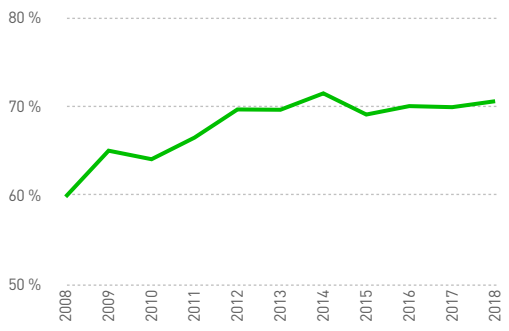
Source: MAPFRE Economics (based on data from The Life Insurance Association of Japan and Swiss Re)

two indicators presented in the above-mentioned charts, it can be seen that the Life insurance market in Japan shows a level of maturity notably higher than the average of the developed countries over the 2008-2018 period.

In terms of managed savings, the assets of Life insurance companies at the close of 2018 amounted to 387,794 billion yen (around 71% of GDP). Chart 2.8.1-c shows the evolution of the asset weight of Japanese Life insurance companies with respect to GDP over the 2008-2018 period. It is worth noting the positive evolution of this indicator throughout this period, in which it experienced significant growth of 11 percentage points, placing it above the weight it presents in other developed markets, such as the United States, where it represented 27% of GDP, but below the United Kingdom, which amounted to 84% of GDP in 2018 (measured in both cases by the volume of Life insurance provisions).

In the analysis of the evolution of insurance premiums in the Life business over the 2008-2018 period in Japan (illustrated in Charts 2.8.1-d and 2.8.1-e), the notable drop in these premiums in 2013 (-6.6%, in real terms) stands out. The Association of Japanese Life Insurance Companies attributed this decline to a reaction to the strong sales of the previous year, prior to the reduction of the guaranteed interest rate (official interest rates thereafter began a downward path to negative levels in 2016). The second significant drop in Life insurance premiums that stands out in that period was that of 2016 (-11.3%, in real terms), which coincides with a deceleration in Japan's economic growth, with the entry into negative territory of the monetary policy interest rate and with a drop in the Nikkei index of -11.9% in that same year. All this would explain the sharp fall in premiums

Chart 2.8.1-c
Japan: assets of Life insurance companies compared to GDP, 2008-2018



Source: MAPFRE Economics (based on data from The Life Insurance Association of Japan and OEF)

Chart 2.8.1-d
Japan: Life premiums, 2008-2018

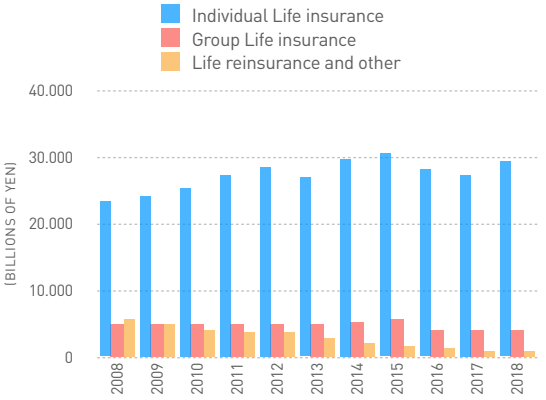
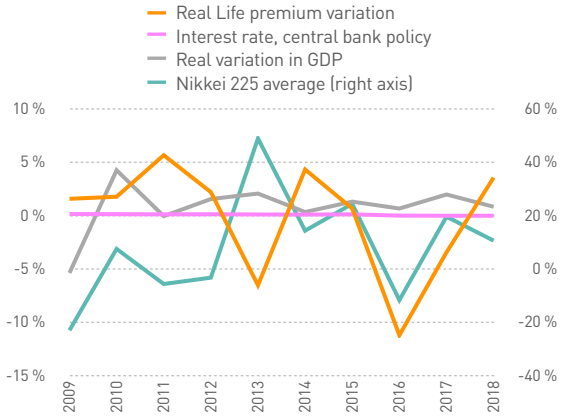


Chart 2.8.1-e
Japan: real variation in Life premiums, 2009-2018



Source: MAPFRE Economics (based on data from The Life Insurance Association of Japan and OEF)

that year, as three negative factors converge that have an impact on their behavior. Furthermore, it should be noted that in the composition of the Life business, a significant weight can be seen in the premiums for individual Life insurance, as opposed to group insurance.

Generally speaking, the development of the Japanese insurance industry has been marked by natural disasters, financial crises, periods of rapid economic growth and international expansion and, recently, by market liberalization. Also, unlike other Asian countries, this is a market that has not been dominated by foreign companies. The first insurances came to Japan around 1863, coinciding with the period of industrialization and opening up of the country to the outside world under the rule of Emperor Meiji (Meiji Restoration). The Japanese market quickly adopted the concept and it developed in a very short time. The first Japanese insurance companies were founded in 1868, and in 1881 the first Life insurance policy was issued by the Meiji Life company, followed by others such as Nipon Life and Dai-ichi Life in the following years, forming the Life Insurance Association in 1898. Due to the rapid economic expansion of the time, Life insurance developed equally rapidly, both in terms of penetration levels and the range of products offered.

In the mid-20th century, the need to rebuild the country as a result of the devastating effects of World War II led to a period of rapid economic growth known as the economic miracle (1955-1980). During this period, the insurance industry experienced a second stage of major development and, following the example of other large Japanese companies, insurance companies expanded internationally. Traditionally, insurance sales have been carried out by employees of Life insurance companies, known as Life insurance sales representatives, which continues to be the predominant channel in this market.

The crisis that broke out in 1989 brought about a low level of economic growth and, consequently, the growth of the insurance market slowed down. This, together with the aging of the population, a growing competition from emerging states and, especially, the bankruptcy of seven medium-sized insurance companies, led the country to take a policy of liberalization and restructuring of the insurance industry that would allow adaptation to the needs of clients and the globalization of the finance sector. The Insurance Business Act was therefore amended in 1995, inspired by the reforms carried out in

countries such as the United Kingdom. One of the biggest changes was the relaxation of the rates set by the associations, which encouraged companies to compete on price and service levels, and increased the number of products offered. Another consequence of this crisis and market reform was the merger and acquisition of several companies in the sector, creating several macro-companies. As a result, three large groups (MS&AD Insurance Group, Tokyo Marine Group and Sompo Group) control most of the Non-Life market, and five companies control more than half of the Life market (Nippon Life Insurance Company, Japan Post Insurance Co. Ltd., Meiji Yasuda Life Insurance Company, Sumitomo Life Insurance Company and Dai-ichi Life Insurance Co., Ltd). The market was also opened up to more international players.

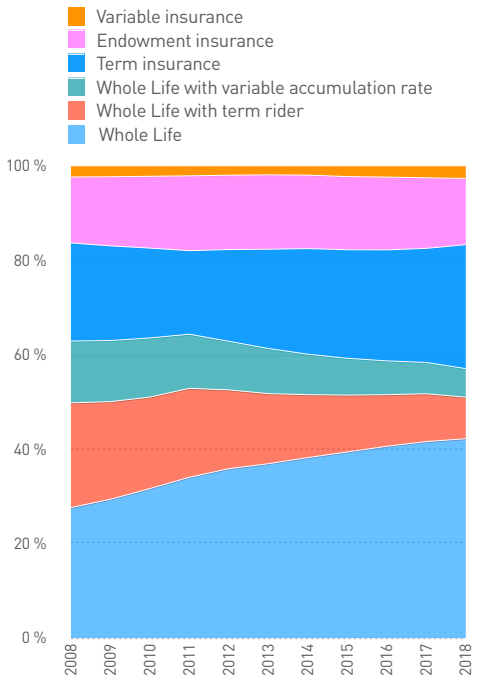
2.8.2 Analysis of Life insurance product categories

a) Life insurance products (other than annuity insurance)

Individual Life insurance

In the Japanese insurance market, individual Life insurance predominates over group insurance. The most common individual Life insurance products are described in this section. Also, in order to provide a general context, Table 2.8.2-a and Chart 2.8.2-a illustrate the importance of the different product categories and their evolution over the 2008-2018 period, broken down by the number of policies marketed.

Chart 2.8.2-a
Japan: structure of individual Life insurance policies, 2008-2018



Source: MAPFRE Economics (based on data from The Life Insurance Association of Japan)

Table 2.8.2-a
Japan: current individual Life insurance policies, 2008-2018
(millions of current policies)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Δ2008-2018
Whole Life insurance	16,7	18,3	20,6	23,2	26,4	29,0	31,5	34,1	36,6	38,3	39,8	139,1 %
Whole Life with term rider	13,4	12,9	12,6	12,8	12,3	11,7	11,0	10,4	9,9	9,3	8,3	-37,8 %
Whole Life with variable accumulation rate	7,9	8,1	8,2	7,8	7,6	7,5	7,1	6,8	6,5	6,1	5,7	-27,8 %
Term insurance	12,5	12,5	12,4	12,0	14,3	16,5	18,4	19,9	21,2	22,2	24,8	97,8 %
Variable insurance	1,4	1,5	1,5	1,5	1,5	1,5	1,6	2,0	2,2	2,3	2,5	77,6 %
Endowment insurance	8,4	9,1	9,9	10,8	11,6	12,4	12,8	13,4	13,9	13,8	13,2	57,1 %
Total	60,3	62,4	65,2	68,0	73,7	78,6	82,5	86,5	90,1	92,0	94,4	56,5 %

Source: MAPFRE Economics (based on data from The Life Insurance Association of Japan)

Whole Life insurance

Since World War II, the expansion of Life insurance in Japan concentrated on Life protection insurance as a guarantee of family economic protection, with a considerable development of whole Life insurance. Over the years, this type of product has continued to be the industry's main product. The number of whole Life insurance policies in effect increased by 139% over the 2008-2018 period. In Japan, universal Life and variable Life protection insurance modalities also emerged, but they have not yet taken root in this market, with a weight far removed from that of traditional whole Life insurance and in clear decline in the 2008-2018 period.

Temporary Life/survivorship insurance (Term insurance)

The growing trend toward the formation of households with fewer members and the increase in life expectancy has served to boost the participation of term/survivorship Life insurance. The number of policies in force for this type of product is somewhat lower than for whole Life insurance and, as with the latter, they have experienced a notable increase over the 2008-2018 period (98%).

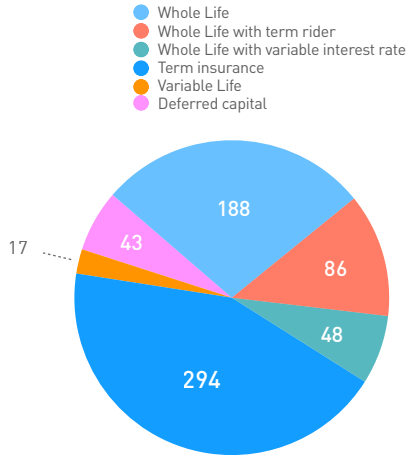
Deferred capital Insurance (Endowment)

At the close of 2018, there were 2.5 million endowment insurance policies in effect in the Japanese market, with insured capital amounting to 43 trillion yen (0.4 trillion dollars). Likewise, the growth in the number of policies over the 2008-2018 period was 57%.

Health and long-term care insurance (medical, cancer and nursing/long-term care)

In addition to Life insurance, another direct consequence of demographic developments in Japan is the increase in health and, to a lesser extent, long-term care insurance marketed by Life insurance companies. Accordingly, Japanese Life insurance companies marketed a total of 63.5 million health insurance policies in 2018. Of these, 38.5 million policies provided basic coverage for hospitalization and surgery, while 25 million were policies with specific coverage for cancer diagnoses. Over the 2008-2018 period, the number of these two types of health insurance policies increased by 90% and 34%, respectively.

Chart 2.8.2-b
Japan: insured capital of individual Life insurance, 2018
(trillions of yen)



Source: MAPFRE Economics (based on data from The Life Insurance Association of Japan)

In summary, for the total individual Life insurance portfolio in Japan, the amount of insured capital in 2018 amounted to 676 trillion yen (6.1 trillion dollars), with an emphasis on term Life protection insurance (294 trillion yen) and whole Life insurance (188 trillion yen). The breakdown of insured capital into the different products is shown in Chart 2.8.2-b.

Group Life insurance

The number of people insured through current group Life insurance policies in the Japanese market reached 40.5 million people in 2018, bringing the amount of insured capital to 391.7 trillion yen (3.5 trillion dollars). A large part of these types of insurance are Life protection insurance contracts that companies take out for their employees. Thus, 28.1% of the insured capital corresponded to the so-called "general welfare group term insurance," which is a compulsory Life protection insurance that the company must take out for its workers, with the

company having to pay the premium. Also, 18.6% of the insured capital corresponded to term Life protection insurance taken out voluntarily by the company for its workers ("group term insurance"), in which case the worker must pay the corresponding premium if they decide to take out this insurance.

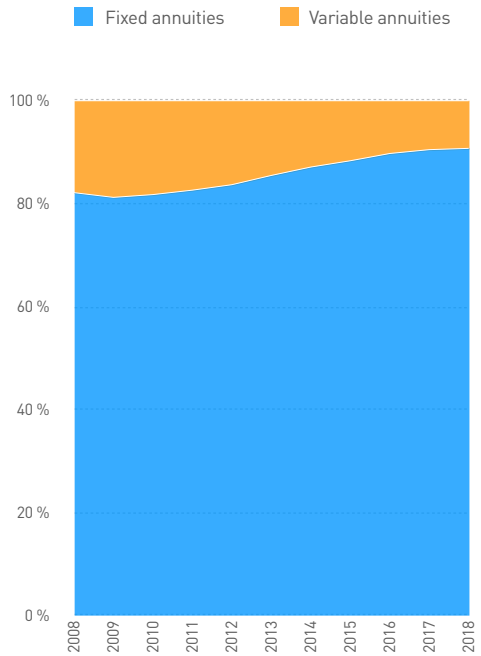
Of the remaining insured capital, the majority (48.4%) corresponded to capital from group Life insurance contracts intended to cover the risk of non-payment of mortgage loans. In these insurances, the policyholder and beneficiary of the policy is the bank or financial entity that grants the loan, and the insured is the debtor, so that if they die or the insured capital is invalidated, it will be paid to the policyholder to cancel the outstanding amount of the loan[38].

b) Annuity insurance products

Individual annuity insurance

The Japanese annuity insurance market is a well-developed market, largely as a result of the aging of the population and the need for protection systems additional to those provided by the public pension system, and sophisticated in the sense that complex products of the "variable annuity" type can be found. However, the weight of the latter products is not significant in the total portfolio of the sector, if compared to fixed income products ("fixed annuities"), having also experienced a significant drop in the number of policies over the 2008-2018 period (see Table 2.8.2-b and Chart 2.8.2-c).

Chart 2.8.2-c
Japan: distribution of individual annuity insurance policies, 2008-2018



Source: MAPFRE Economics (based on data from The Life Insurance Association of Japan)

The amount of reserves and funds managed through annuity insurance (managed savings) at the end of 2018 was 104.3 trillion yen (941 billion dollars), which represents around 27% of the sector's total assets. Chart 2.8.2-d shows the breakdown of managed savings through the two major categories of individual annuity products, fixed annuities and variable annuities, again showing the predominance of the former over the latter.

Table 2.8.2-b
Japan: current individual annuity insurance policies, 2008-2018
(millions of current policies)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Δ2008-2018
Fixed annuities	14,3	14,9	15,5	16,3	17,1	17,5	17,9	18,3	19,5	19,4	19,4	35,8 %
Variable annuities	3,1	3,4	3,5	3,4	3,3	3,0	2,6	2,4	2,2	2,0	2,0	-36,3 %
Total	17,4	18,3	19,0	19,8	20,4	20,5	20,5	20,8	21,8	21,5	21,4	22,9 %

Source: MAPFRE Economics (based on data from The Life Insurance Association of Japan)

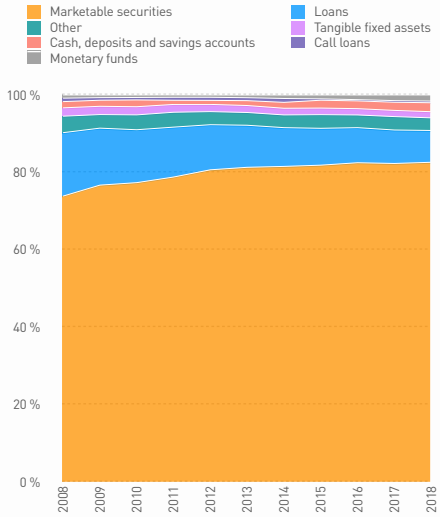
Box 2.8.2
Japan: management of duration and location of investments

The Japanese insurance market is characterized by the dominance of traditional Life insurance policies with guaranteed interest rates, rather than insurance policies in which the policyholder assumes the risk of the investment. As a result, at the end of 2018, savings managed in separate accounts corresponding to Life insurance with investment components (of the variable annuity type) accounted for only 2.7% of the total assets of Life insurance companies.

The latest report by the Japanese Ministry of Finance on the management of Japanese public debt (The Government Debt Management and the State of Public Debts 2019), reveals that Life insurance companies are an important source of investment for super-long-term government bonds (JGBs). In recent years, Life insurance companies have been increasing their investments in JGBs while reducing the holding of bonds with shorter maturities, extending the duration of their assets in order to match that of their liabilities. It should be noted that the last available estimate of the weighted duration of liabilities (in 2016) stood at 14 years, compared to an average weighted duration of their assets of 12.3 years.

In recent years however, investment by Life insurance companies in JGBs has stopped growing because, in the current low interest rate environment, these investments could generate returns lower than those guaranteed in their liabilities, putting the profit margin into negative territory. Therefore, the problem facing insurers in Japan today is how to maintain the return on investment but still align the duration of assets and liabilities, bearing in mind that portfolios from the 1990s still exist with relatively high guaranteed interest rates.

Chart A
Japan: distribution of assets of Life insurance companies, 2008-2018



Source: MAPFRE Economics (based on data from *Life Insurance Fact Books*, The Life Insurance Association of Japan)

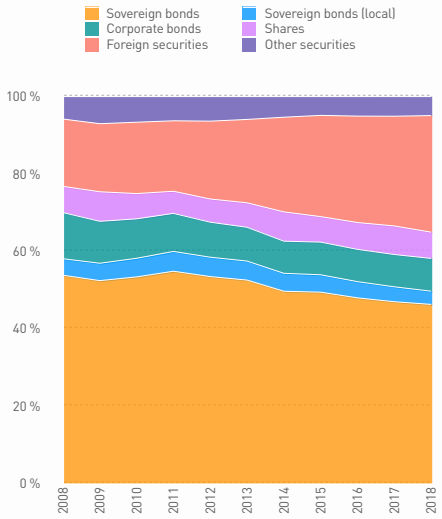
Table A
Japan: distribution of Life insurance assets, 2008-2018
(trillions of yen)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Δ2008 -2018
Cash, deposits and savings accounts	5,0	5,0	5,7	3,5	3,6	4,4	5,6	7,5	7,5	8,0	9,0	78,9 %
Call loans	2,8	2,1	2,0	2,5	2,8	2,7	3,7	1,3	1,2	1,6	1,7	-40,5 %
Monetary funds	2,6	2,2	2,1	2,0	2,1	2,5	3,3	3,7	4,5	5,6	6,2	138,4 %
Marketable securities	230,2	244,2	248,0	257,6	278,2	285,0	299,4	300,5	309,7	313,7	320,3	39,1 %
Loans	51,1	46,9	43,9	42,2	40,2	38,1	36,8	35,0	34,1	33,0	31,9	-37,6 %
Tangible fixed assets	6,7	6,8	6,8	6,6	6,5	6,3	6,3	6,3	6,1	6,1	6,2	-8,4 %
Other	13,3	11,2	12,3	12,6	11,6	11,6	12,1	13,0	12,3	13,2	12,6	-4,9 %
Total	311,7	318,4	320,7	327,0	345,0	350,6	367,3	367,2	375,5	381,3	387,8	24,4 %

Source: MAPFRE Economics (based on data from *Life Insurance Fact Books*, The Life Insurance Association of Japan)

Box 2.8.2 (continued)
Japan: management of duration and location of investments

Chart B
Japan: distribution of the marketable securities portfolio of Life insurance companies, 2008-2018



Source: MAPFRE Economics (based on data from *Life Insurance Fact Books*, The Life Insurance Association of Japan)

At the moment, the fact that much of the portfolio of the Japanese Life insurance companies is made up of Life protection insurance (in its whole Life insurance modality) has led to the technical profitability generated by this type of product partially offsetting the decrease in the yield from the investment portfolio. This is because the general increase in life expectancy in Japan has helped this product which covers the risk of death, so its real performance has been significantly better than was expected given the assumptions in the mortality tables used to price these products. The above is in addition to measures taken to improve their expense ratios and thus contribute to offsetting the reduction in financial income.

The analysis of the evolution of the investment portfolios of the Life insurance companies in Japan also shows a change in the composition of their assets to adapt to this situation. Table A and Chart A show the evolution of assets over the decade 2008-2018.

Table B and Chart B show the composition of the aggregate marketable securities portfolio of Japanese insurance companies over the decade 2008-2018, which represented 82.6% of the total assets of these companies at the end of 2018.

As can be seen, the reaction of insurance companies in this environment, in which the yield on long-term sovereign bonds does not allow them to continue increasing the durations of their assets without falling into negative margins, has been in the direction of increasing their foreign investments by starting to accumulate bonds from other countries (especially the United States, but also from the United Kingdom and emerging Asia), seeking

Table B
Japan: distribution of the marketable securities portfolio of Life insurance companies, 2008-2018
(trillions of yen)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Δ2008 -2018
Sovereign bonds	123,9	128,0	132,4	141,3	148,8	149,8	148,8	148,6	148,6	147,4	148,2	19,6 %
Sovereign bonds (local)	9,8	11,0	11,9	13,2	13,9	14,0	13,9	13,5	13,0	12,1	10,9	11,5 %
Corporate bonds	27,5	26,5	25,3	25,3	25,2	24,9	24,9	25,4	25,8	26,2	27,1	-1,3 %
Shares	15,6	18,7	16,2	14,7	16,7	18,0	22,7	19,8	21,5	23,2	21,8	39,4 %
Foreign securities	40,0	43,0	45,7	46,9	56,0	61,5	73,3	78,7	85,2	89,0	96,5	141,1 %
Other securities	13,4	17,1	16,4	16,1	17,7	16,8	16,0	14,6	15,6	15,9	15,7	17,6 %
Total	230,2	244,2	248,0	257,6	278,2	285,0	299,4	300,5	309,7	313,7	320,3	39,1 %

Source: MAPFRE Economics (based on data from *Life Insurance Fact Books*, The Life Insurance Association of Japan)

Box 2.8.2 (continued)
Japan: management of duration and location of investments

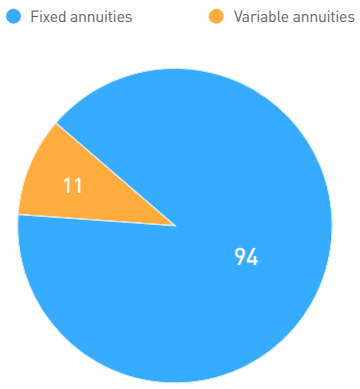
Table C
Japan: profitability of the investment portfolio of Life insurance companies, 2008-2018
(%)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bonds	1,7 %	1,6 %	1,9 %	1,9 %	2,0 %	2,0 %	1,9 %	1,8 %	1,8 %	1,8 %	1,8 %
Domestic equity	-4,4 %	2,3 %	1,3 %	1,6 %	0,6 %	5,1 %	5,3 %	5,2 %	5,8 %	6,6 %	6,7 %
Foreign marketable securities	-3,0 %	2,5 %	2,1 %	2,9 %	5,3 %	4,6 %	5,5 %	2,2 %	2,3 %	1,4 %	2,2 %
Financial loans	2,2 %	2,1 %	2,0 %	1,9 %	2,2 %	2,2 %	2,3 %	1,7 %	1,8 %	1,5 %	1,8 %
Real estate	3,2 %	2,9 %	2,5 %	2,3 %	2,4 %	2,4 %	2,5 %	2,6 %	2,8 %	2,8 %	2,9 %
Total return on assets	0,4 %	1,9 %	1,8 %	1,9 %	2,4 %	2,4 %	2,6 %	1,9 %	2,0 %	1,8 %	1,9 %

Source: MAPFRE Economics (based on data from *Life Insurance Fact Books*, The Life Insurance Association of Japan)

higher yields in order to meet their guaranteed interest obligations (see Table C). As a result, this has led to Life insurance companies being more exposed to the international markets and the risk of exchange-rate fluctuations.

Chart 2.8.2-d
Japan: savings managed in individual annuity insurance, 2018
(trillions of yen)



Source: MAPFRE Economics (based on data from The Life Insurance Association of Japan)

Group annuity insurance

Lastly, it should be noted that there is a market for group annuity insurance in the Japanese insurance market. At the close of 2018, the amount of group annuity insurance reserve was 35 trillion yen (315 billion dollars), which is about 9% of the sector's total assets. Within these reserves, assets for defined benefit pension commitments amounted to 16.1 trillion yen, compared with assets for other pension funds of 0.71 trillion yen.

2.8.3 Solvency regulations

Since the mid-1990s, Japan introduced a solvency margin standard applicable to both Life and Non-Life companies, which has been improved since that time. In this regard, there is an advanced solvency regime which has been significantly improved in terms of the treatment of insurance and financial risks, having obtained the temporary equivalence with Solvency II from the European Commission for five years (in the case of reinsurance and group supervision, the equivalence was granted for a period of ten years).

2.9 Hong Kong

2.9.1 Structural elements of the market

Life insurance premiums in the Hong Kong market[39] amounted to 61.01 billion dollars in 2018, representing 16.8% of the country's gross domestic product. This contrasts very positively with the 4.3% average recorded by developed insurance markets in that same year. The depth index (the weight of Life insurance premiums in total premiums) stood at 92.6%, which also compares very positively with the 55.7% of developed markets.

Charts 2.9.1-a and 2.9.1-b show a historical series of these two indicators for the 2008-2018 period. This information shows that, based on the performance of these metrics, the Life insurance market in Hong Kong has one of the highest levels of maturity in the world, much higher than the average for developed countries over the aforementioned decade.

In the analysis of the evolution of premiums in the Life business in Hong Kong during the period 2008-2018, the high growth rates experienced throughout the series are noteworthy, with the exception of 2008 and 2009, as a result of the global economic crisis that began in those years. From this time on, however, the market experienced double-digit growth until 2016 (when they grew by 23.6%) when monetary policy interest rates in Hong Kong began to rise after seven years at around 0.5%. This was compounded by a sharp fall in the securities markets, which may have led to a flight to lower-risk products, given that the Hong Kong Life insurance market is dominated by traditional products. Since then, growth has slowed, but still shows a significant increase, of around 8% (see Charts 2.9.1-c and 2.9.1-d).

Hong Kong has one of the most developed insurance markets in the region, with Life premiums per capita of 8,204 US dollars in 2018, well above other Asian markets such as Taiwan (4,320 dollars), Singapore (3,944 dollars) and South Korea (1,898 dollars). Moreover, it is one of the most open insurance markets in the world, with a high concentration of multinational insurers.

At the close of the 2018 financial year, the premium volume in the long-term Life business reached 461.44 billion Hong Kong dollars, 4.7% more than the previous year. The individual Life modality has a 92% share of this segment and 426.34 billion Hong Kong dollars in premiums. Technical provisions for this business line

Chart 2.9.1-a
Hong Kong: Life penetration index, 2008-2018

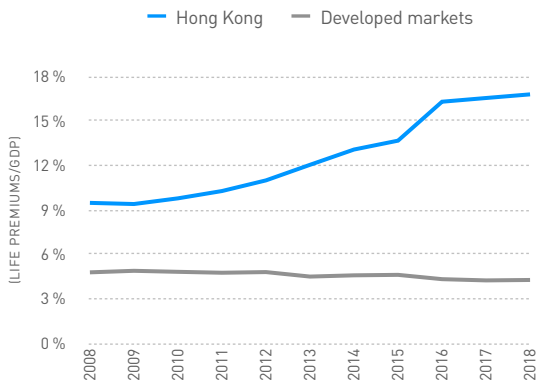
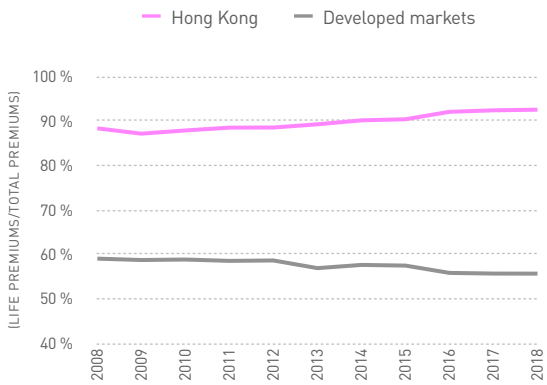


Chart 2.9.1-b
Hong Kong: depth index, 2008-2018



Source: MAPFRE Economics (based on data from Swiss Re)

Chart 2.9.1-c
Hong Kong: Life premiums, 2008-2018

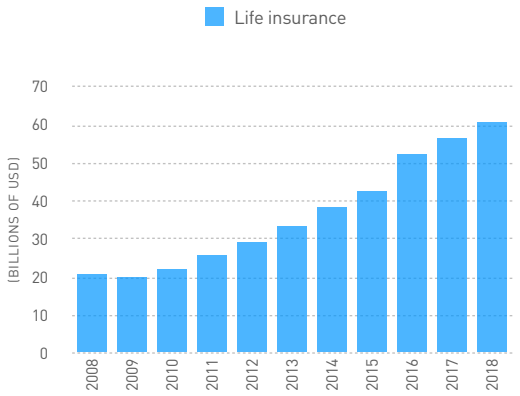
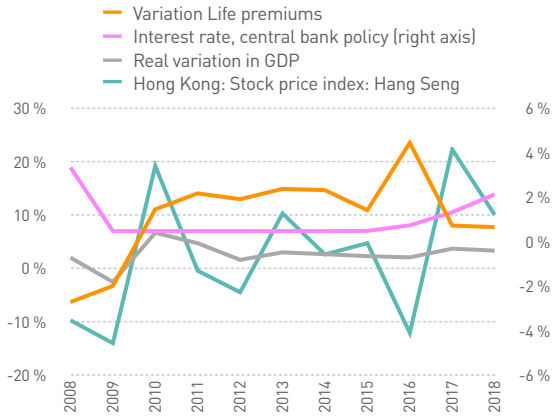


Chart 2.9.1-d
Hong Kong: real variation in Life premiums, 2009-2018



Source: MAPFRE Economics (based on data from Swiss Re and OEF)

amounted to 1.95 trillion Hong Kong dollars (68.2% of the country's GDP in that year).

As of June 2019, 162 insurance companies were licensed to operate in Hong Kong: 92 general insurance companies, 50 Life insurance companies and 20 mixed insurance companies. Of these, 90 were companies established in Hong Kong, while the rest came from 21 different countries or regions. In 2018, American International Assurance (AIA) had the largest market share in Life insurance in Hong Kong with 22% of the market, followed by Prudential Life (19% of the market), HSBC Life (10%) and Manulife (9%).

Life insurance products are mainly distributed through the agency channel, although the penetration of bancassurance has been growing rapidly. "Hong Kong's insurance distribution channels have historically consisted of a mix of agents, brokers and banks through their branch networks. Insurance companies have traditionally aligned themselves with one or more banks in this regard, but not exclusively, as they have also traditionally relied mostly on their own brokerage firms"[40].

2.9.2 Analysis of Life insurance product categories

a) Individual Life insurance products

Some 89% of the individual Life insurance products on the Hong Kong market are traditional (non-investment grade), of which the whole Life modality has the highest premium volume (with 69%) and technical provisions (58%), followed by the endowment product with 10% of premiums and 17% of technical provisions.

b) Traditional investment-linked insurance products

Only 11% of Life insurance and individual annuity premiums are investment-linked insurance products, and there has been a gradual decline in recent years in this type of product which may have been influenced by the regulatory measures introduced in 2013 by the Securities and Futures Commission (SFC).

The typical Life-investment insurance product is the so-called Investment-Linked Assurance Scheme (ILAS). This is a long-term Life insurance product with investment elements, which provides insurance protection and investment options, usually through mutual funds. ILAS

Box 2.9.2
China, Hong Kong SAR

Following the Sino-British Joint Declaration on the question of Hong Kong, signed on December 19, 1984, the two Governments held a handover ceremony on July 1, 1997, announcing the resumption of Chinese sovereignty over Hong Kong. Meanwhile, the Hong Kong Special Administrative Region (HKSAR) of China was formally established. The Basic Law of the Hong Kong Special Administrative Region, adopted in April 1990 at the Third Meeting of the Seventh National People's Congress, sets out clear and defined specifications for a high degree of autonomy for HKSAR and its political, economic, cultural and educational systems.

Moreover, the Closer Economic Partnership Arrangement (CEPA), signed in 2003, is an agreement establishing a form of free trade area between the Continent and HKSAR in three very broad areas: trade in goods, trade in services, and facilitation of trade and investment. Under the CEPA, the Agreement between Mainland China and Hong Kong on the basic liberalization of the trade in services in Guangdong (Guangdong-Hong Kong Agreement) was signed in December 2014. Subsequently, in November 2015, the Hong Kong government and the Chinese Ministry of Commerce signed the Agreement on Trade in Services, which was introduced in June 2016. This subsidiary agreement extends Guangdong's liberalization of services throughout the country. With regard to the insurance industry, Hong Kong companies and professionals can benefit from the CEPA agreement to gain better access to the insurance market in mainland China.

Another important plan forming part of the Chinese policy is the Belt and Road Initiative, which alludes to the old Silk Road, a trading and cultural link between East and West for more than two millennia. It is an ambitious program to connect Asia with Africa and Europe through land and sea networks along six corridors, with the aim of improving regional integration, increasing trade and stimulating economic growth. The initiative defines five main priorities: coordination of policies; infrastructure connectivity; free trade; financial integration; and connecting people.

Part of this initiative is The Greater Bay Area (GBA), an integration area around the Pearl River Delta promoted by the Government of the People's Republic of China, of which Macau and Hong Kong form a part, along with nine towns from the Guangdong Province. It covers an area of 56,000 square kilometers and had a population of approximately 70 million people at the end of 2017. In February 2019, the Chinese government issued its Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area, a general guidance document that analyzes the short-term (from now until 2022) and long-term (from 2022 to 2035) development objectives for the region. There are some key development sectors within the plan, including insurance and finance.

Insurance industry representatives agree that both initiatives offer excellent opportunities for the insurance industry in the future. In June 2018, the Insurance Authority organized a thematic forum at the Belt and Road Summit to explore the opportunities that the Belt and Road Initiative (BRI) can offer in terms of strengthening Hong Kong's role as a risk management center. The panel of experts who participated in the forum, entitled "Using Hong Kong as a Centre for Risk Management of Belt and Road Projects," identified the different risks faced by assets and businesses overseas under the BRI, provided information on how insurance can help investors manage these risks, and examined how Hong Kong can use its strengths to complement the national policies and support the continent's businesses so that they can once again become regional and global. The Insurance Authority undertook to strengthen Hong Kong's role as an ideal risk management center for BRI projects and to encourage the placement of insurance and reinsurance in Hong Kong by interested parties.

products and their offering documents, illustrative documents and advertising materials must be authorized by the SFC, unless an exemption under the Securities and Futures Ordinance (SFO) applies. Investment options for ILAS products may be linked to retail funds authorized by the SFC under the Unit Trusts and Mutual Fund Code and other portfolios that are managed internally by the insurance company on a discretionary basis. In 2013, the SFC launched a series of requirements to improve the disclosure of these products. A new document, and a statement of important facts, must be provided at ILAS product points of sale in order to provide clients with product information. Fees as a percentage of the premiums payable by the policyholder to the insurance company are an important disclosure that is made in such a statement. Generally speaking, the intermediaries selling ILAS (whether banks, insurance agents or brokers) products, must, inter alia, have sufficient knowledge of the nature and structure of the products, carry out an analysis of the financial needs and an assessment of the risk profile of the clients to ensure the suitability of the products for the client, and explain to them the risks and characteristics of the products.

c) Group Life insurance products

Group insurance is another modality of the Life business in the Hong Kong insurance market. In this segment, insurance premiums increased by 3.1% to 3.49 billion Hong Kong dollars, with net liabilities decreasing over the past three years to 999 million Hong Kong dollars by 2018.

d) Income and health products

Moreover, insurance premiums in the annuity segment and other businesses (mainly permanent health) increased by 63.8% in 2018 to 22.23 billion Hong Kong dollars, while liabilities grew by 33.7% to 58.03 billion Hong Kong dollars. In the last three years, under the heading of "other businesses" only permanent health insurance has income, with 7% of the premiums of the business in this segment.

e) Pension plans

Annual contributions to pension plans administered by insurers in Hong Kong increased by 5.2% in 2018 to reach 9.37 billion Hong Kong dollars, while technical provisions reached 125.22 billion Hong Kong dollars, remaining virtually unchanged from the previous year (125.17 billion). It should be noted that 95% of the contributions are to guaranteed pension plans.

f) Public policy elements

In addition to its prudential regulatory functions, the Insurance Authority (the regulator of insurance activity in Hong Kong) has taken on the important role of facilitating the sustainable development of the insurance industry market and promoting its competitiveness, from the perspective of proposing various public policies.

To this end, in December 2018 the Financial Services Development Council, (FSDC) released a paper entitled "Enhancing Hong Kong's Role as a Leading Life Insurance Centre" which discusses the importance of the Life insurance sector to Hong Kong and some significant opportunities to further enhance the industry's contribution to Hong Kong's economy, society as a whole and to a successful future.

The document describes Hong Kong as an International Life Insurance Center (ILIC), i. e. it presents its market as an ideal location for multinational Life insurance companies to establish their international and regional offices. Hong Kong is also a specialist service jurisdiction available to the international and regional Life insurance industry, and to the financial services industry generally, including asset and wealth management. The institution highlights the important role that the Life insurance sector plays in the social and economic development of Hong Kong and adds that it now faces increasing competition from other financial centers. In this context, in order to enhance Hong Kong's role as a leading

center for Life insurance, the document makes a series of recommendations for action in seven key areas.

Economic determination of capital requirements

To this end, it is envisaged that it may be financially attractive for multinationals to remain in Hong Kong by applying capital requirements that are "fit for purpose." Thus, capital requirements should not be excessively intensive and should therefore be established on a reasonable commercial and economic basis.

Offering long-term assets suitable for Life insurance companies

Deep and liquid capital markets can be driven by the issuing of long-term government debt and by the government's encouragement of companies to issue their own long-term bonds. A reduction in the capital risk weights of Life insurance companies on assets suitable to meet long-term liabilities (e.g. guarantees) would make the product more attractive to Life insurance companies, which are the natural buyers of long-term assets.

Advantageous opportunities on the continent

The paper recommends that Hong Kong continue to capitalize on its unique advantages, such as its proximity to the mainland and its status as a leading international gateway and center of excellence for the finance sector and innovation, and initiate a dialog with the central government to identify specific projects in which Hong Kong-based multilateral institutions can participate.

Tax breaks

It states that the government has made great progress in expanding international tax treaty coverage for Hong Kong and suggests that it should continue to work on creating a broad tax treaty network with a short-term emphasis on countries of strategic importance in the insurance industry to attract and retain multinational institutions. It also suggests that a simple, predictable and low tax system should be maintained and that appropriate tax incentives should be developed for insurance and reinsurance groups that establish and maintain regional offices in Hong Kong. In this regard, it is suggested that the government should consider granting tax deductions on insurance premiums for certain qualifying insurance products (e.g., for medical and Life protection products).

Supporting an environment of shared value creation

The government can promote an environment conducive to the creation of products and offerings that will appeal to the people of Hong Kong and help meet social needs.

Development as a center of excellence for InsurTech

It is claimed that Hong Kong is investing substantially in technology through the Innovation and Technology Fund administered by the Innovation and Technology Commission. The Insurance Authority has encouraged the implementation of emerging technologies in the insurance industry, through the creation of an *InsurTech Sandbox*, along with a pilot scheme to speed up authorization requests from insurers who intend to conduct their business exclusively via digital means. To this end, they recommend that Hong Kong establish a division of the Innovation and Technology Commission specializing in the Life insurance sector, to work and sponsor technology companies in *FinTech* in the field of Life insurance and to collaborate with the relevant agencies on appropriate regulatory developments.

Human capital

Lastly, the document proposes the establishment of measures to attract and develop the best talent.

Box 2.9.3
Hong Kong: regulatory aspects

Insurance

The Insurance Companies (Amendment) Ordinance 2015 was passed by the Legislative Council on July 10, 2015. The Ordinance regulates, inter alia, the establishment of an independent Insurance Authority to take over the functions of the former Office of the Commissioner of Insurance and the three Self-Regulatory Organizations (SRO) and exercise new statutory powers to license and regulate insurance intermediaries.

In addition to the Insurance Authority, another important institution in the insurance industry is the Hong Kong Federation of Insurers (HKFI), which was established in August 1988 to advance and promote the development of the insurance industry in Hong Kong, becoming a limited liability company in 1994. The HKFI is fully recognized by the Government of the Hong Kong Special Administrative Region as a representative body of the insurance industry and requires its members to comply with a Code of Conduct for Insurers and The Code of Practice for the Administration of Insurance Agents. These codes aim to promote best practices among insurance companies in conducting their insurance business and managing their insurance agents.

One of the priority tasks of the Insurance Authority on the regulatory front is to collaborate with the Office of Financial Services and Treasury to prepare the legislation needed for a new Policyholders' Protection Scheme (PPS). The proposal involves two separate funds, the Life Fund and the Non-Life Fund, which would be supported by levies collected from the insurers. Another important issue is developing the Risk-Based Capital (RBC) regime. The aim is to finalize the detailed rules of the RBC in 2020, introduce legislative amendments in 2020-21 and apply the rules gradually from 2021-22 onwards.

Pensions

There are two main pension laws in Hong Kong, the Occupational Retirement Schemes Ordinance (ORSO), and the Mandatory Provident Fund Schemes Ordinance (MPF). The Mandatory Provident Fund Schemes Authority (MPFA) is a statutory body established in September 1998 that regulates the operations of the mandatory provident fund plans and occupational retirement plans.

The ORSO entered into force in October 1993 and regulates the retirement plans voluntarily established by employers to provide retirement pensions for their employees. It applies to all schemes operated in and from Hong Kong, and also covers offshore schemes (i.e. schemes whose domicile is outside Hong Kong, where the scheme or trust is governed by a foreign legal system) that provide retirement pensions to members employed in Hong Kong. Contributions made to an ORSO scheme are tax deductible, up to the maximum amount of 18,000 Hong Kong dollars per year. Employers may claim tax deductions for mandatory and voluntary contributions made to their employees' MPF schemes. The maximum deduction amount is limited to 15% of the business expenses over the total salaries of the employees per fiscal year. The MPFA is also the Registrar of Occupational Retirement Plans. They process requests and notifications of changes, monitor compliance, recover contributions in arrears, collect the regular fees, manage queries and complaints, and maintain a public record of ORSO plans.

The mandatory regime, the Mandatory Provident Fund (MPF) System, was designed as the second pillar of the multi-pillar retirement protection model. This is a scheme of mandatory contributions, privately managed and fully financed. The Ordinance on Mandatory Provident Fund Schemes was passed in 1995 and then supplemented by subsidiary legislation in 1998, 1999 and 2000. The MPF system was launched in December 2000. Except in the case of exempt persons, employed persons and self-employed persons aged between 18 and 65 are obliged to join an MPF scheme. Employees and employers who are covered by the MPF System must make regular mandatory contributions of 5% of the employee's relevant income, subject to the relevant minimum and maximum income levels. For an employee paid monthly, the relevant minimum and

Box 2.9.3
Hong Kong: regulatory aspects

maximum income levels are 7,100 and 30,000 Hong Kong dollars, respectively. Employers, employees and self-employed workers may make voluntary contributions in addition to their mandatory contributions.

Since the launch of the MPF system, the MPFA has exempted several ORSO regimes that meet the respective exemption requirements (that is, MPF-exempt ORSO regimes). Employers with these MPF-exempt ORSO plans must give new employees a single choice between joining an MPF plan or the MPF-exempt ORSO plan.

Since April 2019, there has been a new type of contribution under the MPF system: Tax Deductible Voluntary Contributions (TVC). Members with contribution accounts or personal accounts under MPF plans, or members of MPF-exempt ORSO plans, are eligible to make these contributions. They can open a TVC account and make contributions directly into the account without going through their employers.

The main operators of MPF plans are trustees (commonly known as MPF trustees), but there are also MPF service providers and intermediaries that participate and perform different functions in the system. An MPF principal intermediary is a business entity registered by the MPFA to participate in MPF sales and marketing activities. It may be a financial institution, a corporation registered under the Securities and Futures Ordinance, a long-term insurance company, or a long-term insurance brokerage company. An MPF subsidiary intermediary is a person sponsored by an MPF principal intermediary and registered with MPFA to conduct MPF sales and marketing activities on behalf of the principal intermediary, including individual long-term insurance agents, long-term insurance agencies or a long-term technical representative.

The Ordinance for the Mandatory Provident Fund Scheme requires the establishment of a Compensation Fund by the MPFA to compensate MPF scheme members for accumulated losses attributable to misconduct or illegal conduct by MPF trustees or other persons related to the management of the funds.

On March 29, 2019, the Inland Revenue and MPF Schemes Legislation (Tax Deductions for Annuity Premiums and MPF Voluntary Contributions, Amendment) Ordinance 2019 was passed. This legislation introduces income tax deductions for qualifying annuity premiums and for voluntary contributions to the Tax Deductible Mandatory Provident Contributions Fund (TVC). Deductions apply to a fiscal year beginning April 1, 2019/20. A Qualifying Deferred Annuity Policy (QDAP) is an insurance policy: (a) under which the beneficiary of an annuity receives a regular payment during the contracted period; and (b) that it is certified by the Insurance Authority to meet the specified criteria published by the authority itself. The deduction permitted for each taxpayer must not exceed the total of the Qualifying Deferred Annuity premiums and the Tax-Deductible Voluntary Contributions to the Mandatory Provident Fund paid during the fiscal year or the specified maximum deduction, whichever is lower. The specified maximum deduction (the combined limit for both items) for the fiscal year 2019/20 onwards is 60,000 Hong Kong dollars. There is no limit to the number of Qualifying Deferred Annuity Policies, and the amount deductible is net of the premiums redeemed.

Source: MAPFRE Economics (with information from the *Insurance Authority* and the *Mandatory Provident Fund Schemes Authority*)

2.9.3 Solvency regulations

The Insurance Authority is the independent regulator and supervisor of the insurance market in Hong Kong[41]. The Insurance Authority is working on the development of a risk-based capital (RBC) regime, the detailed rules of which are to be completed by 2020 (see Box 2.9.3).

3. Public policies to stimulate saving through the development of Life insurance

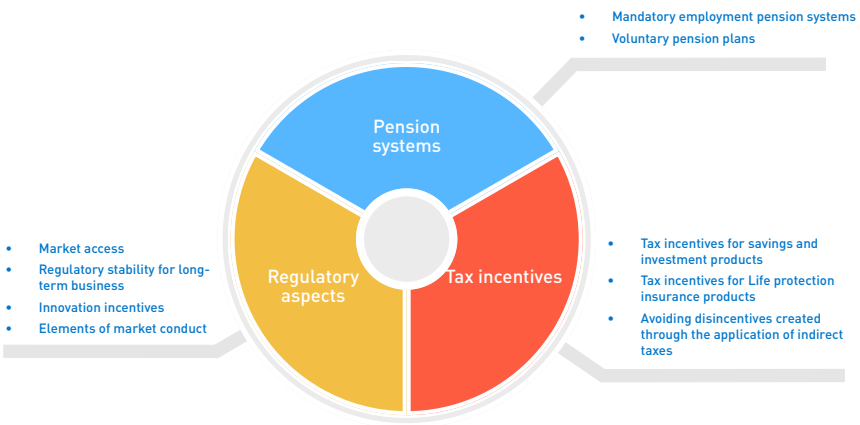
As noted in the initial part of this report, Life insurance, in addition to offering personal compensation and protection for insured persons and policyholders against the risks of death or those related to retirement, also plays a central role in the economy's savings-investment process. By investing the resources that support the technical provisions for Life insurance, the insurance industry contributes to the creation of domestic savings in the economy and thus to the process of capital formation and long-term economic growth.

In this way, the insurance industry is one of the main institutional investors globally, to the extent that the technical provisions derived from Life insurance policies can represent very significant proportions of the gross domestic product of countries, not only channeling savings into the financing of medium- and long-term productive activities, but also providing an anti-cyclical stabilizing element to the economic system.

Thus, the design and implementation of public policies aimed at strengthening the creation of domestic savings in an economy should explicitly consider the development of the insurance activity in the Life segment, to the extent that it has the capacity to provide the economy with a stable flow of medium- and long-term savings. The following is a review of the main public policy elements arising from the analysis of the insurance markets included in this report. The aim is to highlight those areas that could be taken into consideration when designing strategies to promote savings.

These public policy elements have been structured into three groups: (i) measures associated with the definition of aspects relating to the prudential regulations governing insurance activity; (ii) measures linked to the role of Life insurance in the framework of supplementary pension systems, and (iii) measures relating to the application of tax incentives (see Chart 3).

Chart 3
General outline of public policies to boost savings through Life insurance



Source: MAPFRE Economics

3.1 Prudential regulations

General considerations

The comparative analysis of Life insurance regulations and their evolution over time highlights the importance that, on the supply side, the regulatory environment can have in the development of the insurance markets in the countries analyzed. Given the characteristics of the business model, as well as its implications from the point of view of its potential negative externalities, the Life insurance segment is characterized as being the business line whose regulation imposes the greatest capital inflows and applies the most complex rules governing the activity of the insurance companies. Development of the Life business segment therefore demands an appropriate financial infrastructure and, unlike other business lines, it comes into competition with other financial institutions for some of its products in the market. In particular, savings and investment insurance products compete with those offered by banks and mutual funds.

The international principles and standards that govern the prudential regulation of insurance companies require the separation of the Life business into independent legal entities, allowing them to manage it with some risk covers that are naturally complementary, such as accident and health-related risks. In some markets, however, there is still the legacy of companies that obtained authorizations to operate the Non-Life and Life segments together, before the widespread imposition of this separation. In these cases, regardless of the legal existence of a single company, regulators often require separate management of the aforementioned businesses (*composites*). Finally, it should be noted that in some countries a specific license is required for the marketing of the most complex Life products, such as annuity insurance.

The fact that there is competition in the market with banks and mutual fund management companies sometimes means that the regulation of Life insurance companies should be brought more into line with the laws governing those companies, particularly with regard to market conduct rules and, to a lesser extent, solvency rules, in order to avoid regulatory arbitrage.

However, it should be noted that changing the regulations so that they are more in keeping with other non-insurance regulations is not always possible, as there are significant differences in the liability structure of the insurance companies compared to those of other types of financial institution. In the case of the former, their main liabilities come from the commitments they make to policyholders, and they must invest the funds they receive in a way that ensures that they will be able to honor those commitments when the insured event occurs, always subject to some uncertainty. Unlike the banks, whose usual operations involve borrowing money short-term from the central bank, the interbank market, and/or their clients' deposits to lend it over the long-term (lending portfolio), insurers do not make that change in maturities, instead having to keep the durations of the assets in which they invest in line with that of their liabilities, in order to have their risks properly controlled (it is an investment model of the liability driven type). In this way, Life insurance companies ensure that the valuations of their assets and liabilities move in parallel when market interest rates change, neutralizing the effect that these oscillations may have on their own funds (market risk) and minimizing the risk that these interest rate movements will prevent them from achieving the yields necessary to comply with the rates guaranteed in their insurance policies (reinvestment risk).

Experience also shows that major regulatory changes affecting the Life insurance segment often come about because of economic crises. The authorities establishing public policies on the prudential regulations for calculating the minimum solvency capital, the accounting standards, rules that, where appropriate, set limits on investments or prior policy controls, technical terms and conditions and/or rates,

among others, tend to respond reactively to crises by introducing stricter requirements that can sometimes limit business development, at least in the short-term. Empirical evidence shows, however, that over time these requirements are relaxed, in a kind of regulatory pendulum swing[42]. This type of swing may also generate some regulatory uncertainty and result in the withdrawal, by insurance companies, of products for which there is consumer demand, leaving this demand unmet in those periods when excessive regulatory requirements do not allow them to be offered in the market in a timely manner and at competitive prices.

This situation has ended up generating debate about the desirability of introducing a regulatory framework that offers greater medium- and long-term stability, that allows for innovation in product design within confidence levels that are considered appropriate for the protection of the policyholders, and that allows products to reach the market at competitive prices and in a timely manner, taking into account the speed at which the market is currently evolving as a result of technological progress. This debate is particularly intense in relation to Life insurance products with long-term interest rate guarantees, as this is an ideal savings instrument to channel savings for retirement, as a supplement to public pension systems. It is also clear that the regulatory framework must be supplemented by market conduct and consumer protection standards appropriate to the circumstances and risk profile of the policyholders.

Progress toward risk-based regulations

All the countries analyzed in this study have introduced, or are in the process of introducing, changes to move to risk-based solvency regulation. This type of regulation creates a pro-competitive incentive, as better risk management translates into lower capital requirements, with the same level of confidence for insurance policyholders. Moreover, although these regulatory frameworks are based on market valuations of the assets and liabilities when calculating the eligible own funds to cover capital requirements (total balance sheet approach), they tend to introduce mechanisms that correct the effects of a pure market valuation (mark-to-market), taking into account the medium- and long-term investor nature of insurance companies when acquiring the investments necessary to cover the commitments made in long-term Life savings insurance with financial guarantees. In this way, proper asset-liability management (ALM) allows insurance companies to maintain investments to maturity, not being directly exposed to the possible occasional shocks in the financial markets. Thus, the main risk these companies face would be the credit risk of the counterparties for the financial instruments in which they invest. Regulation that does not take this reality into account could force insurance companies to make forced sales in turbulent moments. This may have pro-cyclical, or even systemic effects as it would coincide with the problems that such turbulence may cause for other financial and non-financial institutions.

One issue of great importance to Life insurance companies is the valuation of liabilities arising from insurance contracts, both from the point of view of solvency regulations and from the accounting point of view. In some of the markets analyzed in this report, the solvency valuation rules and accounting standards are independent, as is the case in the European Union, where there is maximum harmonization in solvency regulations applicable to all its members (Solvency II), whereas the accounting system is not harmonized.

In the United States, the regulatory solvency and accounting powers are decentralized to the different states. The National Association of Insurance Commissioners (NAIC), has been developing a standard solvency methodology called Risk-Based Capital (RBC), which has been incorporated into its legal systems by the various states with little variation. This means that it is widely applied. In accounting matters, moreover, until 2017 there was a pronounced fragmentation, applying a valuation standard for provisions according to previous standards, with a historical valuation that incorporated a prudential margin when establishing maximum

interest rates and biometric tables set by the regulation, as a minimum prudential valuation standard. These prudential margins in the accounting valuations of the technical provisions often prevented products from being launched onto the market at competitive prices, especially annuity products. Currently, the various states of the American Union have adopted the so-called Standard Valuation Law, developed by the NAIC, which contains the accounting standard for the valuation of obligations derived from insurance contracts in the United States. Since 2017, it has been applied to the underwriting of new businesses, with different application dates according to the states; the last ones to adopt it were the states of Massachusetts (2018) and New York (2019). This system for valuing the technical provisions corresponding to insurance contracts introduces a new valuation method based on more modern principles, with forecasts of flows and stochastic calculations for Life insurance products with options, among others. Finally, it should be noted that the new standard only applies to the accounting of the insurance obligations of the new businesses underwritten since its entry into force, so portfolios valued in line with the old valuation standards will remain until their expiration.

Globally, the International Association of Insurance Supervisors (IAIS), at the request of the Financial Stability Board (FSB), has developed a harmonized framework (called "ComFrame") for the supervision of the solvency of Internationally Active Insurance Groups (IAIGs) that incorporates, as one of its key elements, an international standard for calculating risk-based regulatory capital and market-adjusted valuations (International Capital Standard, ICS). This standard takes into account the different risk categories to which insurance companies and their groups are exposed: Life insurance, Non-Life insurance and catastrophe risk, market risk, credit risk and operational risk, and taking into account the benefits of diversification in the aggregation of the capital risk weights of the different risk categories and the possible effect of financial instruments on their mitigation.

The implementation of this type of risk-based regulation and modern accounting valuations requires, on the one hand, the insurance companies to have the right means, information and technical instruments to enable them to model and measure risks and, on the other, a certain level of development of the financial markets in which they operate in order to acquire the hedging instruments necessary to mitigate these risks, usually financial derivatives acquired through centralized clearing houses or, occasionally, over-the-counter (OTC) derivatives. The latter imposes a natural limit on the development of certain Life insurance products in some markets, which in many cases results in differences between these markets[43].

As noted throughout this study, the United States, the United Kingdom and Japan are the most advanced markets in terms of the availability of the hedging resources and instruments needed to be able to issue complex savings insurance products, which offer greater flexibility to policyholders in the relationship between risk and the return they want to obtain, as well as in the options they offer throughout the life of the contract, which is reflected in a greater variety in the list of Life insurance products offered. This has enabled them to adapt to any long periods of low interest rates they face, moving toward products in which the policyholder fully or partially assumes the investment risk.

It should be noted, however, that even in these more developed insurance markets there are risks for which sufficient hedging instruments are not available. This is true, for example, for aggregate longevity risk, which acquires special relevance in annuity products. In this regard, the absence of hedging mechanisms to deal with the trend for increased life expectancy and uncertainty about its future performance due to

medical advances is a significant barrier to their further development.

Finally, it is worth highlighting the progress being made at the regulatory level in the last decade in terms of market conduct standards and protection for policyholders following the latest financial crisis, as well as the significant increase in cases in which the supervisory authorities or courts have convicted insurance companies and other financial institutions of selling savings products using inappropriate or improper marketing practices. In countries such as the Netherlands and the United Kingdom, these judgments have had a sector-wide impact on the configuration of their respective markets.

This type of reform (such as that being implemented in the European Union and that is still ongoing), tends to introduce requirements to ensure that investment products marketed to retail investors are suitable given their circumstances and risk profile, and transparent in terms of the commission received by intermediaries in the operation. The United Kingdom has even banned those intermediaries selling retail investment products from earning commission since January 1, 2013 (RDR regulation) and they can only earn their remuneration from the client ("fees") for their advice about purchasing the product. It should be noted that this prohibition does not apply to Life protection insurance products. This is an extreme case that has changed the configuration of the brokerage system in that market, where the dominant figure is currently that of the independent financial adviser (IFA).

Most systems have, however, chosen to reinforce the rules of transparency for the client about the commission received by the intermediary. Moreover, as indicated above, modern regulatory frameworks seek to ensure that the regulations applicable are the same as or similar to those for the retail investment products marketed by other financial institutions, in order to avoid possible regulatory arbitrage, considering the specific features of the products that incorporate some insurance component into their structuring, if relevant.

Public policy elements

From the review of the markets analyzed in this report, one can identify a set of public policy elements that have been implemented from the perspective of prudential regulation. These could be taken as a reference when considering possible reforms in the regulation of Life insurance companies that, while underpinning the solvency of these types of institutions, allow for the stimulation of saving in countries through the development of this market segment.

Market access

- As a guiding principle, prudential regulations on market access for new entrants should stimulate competition. However, considering the specific features of the Life business model compared to other insurance lines, the separate management of the Life business through independent legal entities is appropriate, preferably with an exclusive corporate purpose, allowing the development of complementary businesses to Life under the same authorization.

- Given the greater technical and financial complexity of certain Life products (*e.g.*, annuity products), market participants with a high level of specialization are also required. Therefore, it seems appropriate for the regulation to require an additional authorization to operate in these specific business segments.

Regulatory stability for long-term business

- The Life segment is, due to the characteristics of its business model, a highly specialized activity that matures and develops in the medium- and long-term. To that extent, its proper development entails,

among other aspects, the existence of a regulatory framework that is technically appropriate, stable and as uniform as possible. This implies the convenience of avoiding regulatory fragmentation (different systems in different countries and geographic areas), seeking alignment through standardized international frameworks such as those developed by the International Association of Insurance Supervisors (IAIS).

- In terms of the main principles to be taken into account, we firstly have the fact that prudential regulation involves mechanisms to correct the possible pro-cyclical effects of a pure market valuation of assets and liabilities ("mark-to-market"), taking into account the medium- and long-term investor nature of insurance companies, when they acquire the investments necessary to cover the commitments assumed in long-term Life savings insurance with financial guarantees.

- Second, in the extension of the solvency regulatory framework to accounting standards, and in response to the degree of development of the risk management function within the corporate governance of companies, it is appropriate to include provision valuation regulations that reflect modern techniques based on flow forecasts, avoiding the incorporation of maximum interest rates and overstated biometric tables as a minimum prudential valuation standard. These prudential margins in the accounting valuations of the technical provisions make it difficult to price products launched onto the market at competitive prices, especially annuity products, to the detriment of consumers. In any case, these prudential margins must be positioned within the concepts involved in the estimation of solvency capital requirements.

- In addition, in implementing risk-based regulations and modern accounting valuations, the public policies adopted should allow for the proper development of asset and liability management techniques, essential within the Life insurance business model. It is therefore appropriate for prudential regulations to consider the possibility of the use of hedging programs that may involve the use of certain derivative instruments, depending on the guarantees assumed with policyholders. These programs may include dynamic hedging strategies for those companies that have sufficient infrastructure and financial strength to be able to deal with this type of hedge and the underlying risk they assume with it. The more advanced markets only partially recognize the risk reduction provided by these dynamic programs, as they are also partial hedges (*e.g.*, delta or delta-gamma hedges, among others [44]).

- Finally, from the perspective of the overall market infrastructure, it is equally important for public policies to stimulate the development of the financial markets so that they are in a position to offer these hedging mechanisms to the Life insurance business and, to that extent, make the healthy development and expansion of this activity possible.

Innovation incentives

- A key aspect for the development of the Life insurance segment is for the prudential regulation systems to allow and encourage innovation in the design of products, within confidence levels that are considered appropriate for the protection of policyholders. In this way, the guidelines framework must facilitate the timely launch of competitively priced products on the market.

- Taking into account the current development of each market based on the degree of progress in the risk management that forms part of the corporate governance system of insurance companies, the guidelines framework should minimize prior controls on policies, technical terms and conditions and/or prices, as well as limits on the

investments of the insurance companies beyond the capital risk weights themselves, according to the assumed risk and the level of confidence established. That is why, from a public policy point of view, it is important to strengthen the mechanisms to make progress in the risk management of insurance companies and their groups through mechanisms such as the so-called Own Risk Solvency Assessment (ORSA) or Enterprise Risk Management (ERM).

Elements of market conduct

Finally, given the characteristics of Life products (especially Life savings and Life investment insurance), it is appropriate for public policies to consider adopting a framework of market conduct and policyholder protection standards, with requirements to ensure that the products they acquire are appropriate to their circumstances and risk profile, and transparent in terms of the commission received by the intermediaries of the operation. In the specific case of Life investment insurance products, modern regulatory frameworks seek to match or approximate the regulations applicable to the retail investment products marketed by other financial institutions, in order to avoid possible regulatory arbitrage, considering the specific features of the products that incorporate some insurance component into their structuring, if relevant.

3.2 Life insurance and supplementary pension systems

General considerations

From the analysis of the markets in this report, it can be concluded that there are three main formulas or mechanisms through which Life insurance companies play a supplementary role in pension systems. The first is *survivorship annuity products* offered in the market, in all the forms described in the conceptual framework and in the analysis of the different countries. The second is *retirement-related pension products*, issued by insurance companies and managed within their respective balance sheets, either in the general account or in separate accounts. The third of these mechanisms is *products linked to pension plans*, in which insurance companies act as one more element in the complex legal framework in which employers' commitments to their workers are coordinated, or *individual pension plans* (trusts), assuming the role of management companies for the plan without incorporating the assets into their respective balance sheets. Almost always, the characteristics of these products are marked by tax regulations that usually grant, to a greater or lesser degree, tax incentives for their use. This regulation also usually introduces minimum duration requirements for the products and rules regarding possible switching to other types of products, in order to not lose the tax benefits they offer.

The importance of each of these three mechanisms varies considerably between the different markets, this being a determining factor in their development and, consequently, in their respective size. For example, in those markets where trust-type products prevail, Life insurance companies are substantially smaller in size, measured both in terms of technical provisions and Life insurance premiums.

United Kingdom

The market that is the leading example of the supplementary role assigned to Life insurance companies in the pension system is the United Kingdom. As discussed in the respective section, in this market there is an obligation for companies to register employees in a collective company pension plan (automatic enrollment). Contributions to this type of plan are often known as "quasi-mandatory," a term which reflects that it is mandatory for companies to register a workplace plan but that the worker may opt out. These workplace plans receive contributions from the company, the worker and, indirectly, the State, through the granting of a tax benefit, and a total contribution of at least 8% of the computable salary must be

achieved for this, with a minimum contribution by the worker of 3%.

These occupational pension plans can be implemented through contracts with insurance companies (contract-based pensions) or through pension plan managers (trust-based pensions). However, most contributions are managed through contracts with insurance companies, hence the large size of the Life insurance market in that country, one of the largest in the world in both absolute and relative terms.

The general obligation for all companies to offer a workplace pension plan has created problems for small businesses that do not have their own plan. To address this situation, the State has created a plan called a National Employment Savings Trust (NEST), which is taking over the management of some of the funds created through the aforementioned plans. One of its aims is to charge lower management fees. In addition, multi-company managers ("Master Trusts") are emerging and beginning to gain market share from the insurance companies, which is raising the level of competition in this market.

United States

In the United States, the redistributive bias of the public pension system means that the supplementary system is highly developed. At the end of 2018, the sum of funds accumulated in retirement savings products amounted to 28.5 trillion dollars (139% of GDP), of which 3.6 trillion dollars were funds accumulated in savings products issued by Life insurance companies (12.6% of total funds). More flexible specific insurance products for employers have emerged in this market, such as the so-called deposit-type contracts or immediate participation guarantee contracts (IPG), which have a significant share of total managed savings (around 9% of the aggregate provisions for Life insurance).

Brazil

In Brazil, the main mechanism that acts as a supplement to the public pension system is the survivorship annuity product called "*Vida Gerador de Benefício Livre*" (Life Free Benefit Generator) (VGBL). Moreover, the private pension system, which is voluntary and supplementary to the public pension system, is supplemented by the so-called "*Planes de Previsión Privada Abierta*" (Open Private Pension Plans), marketed by the insurance companies or by "Entidades Abiertas de Previsión Privada" (Open Private Pension Companies - EAPP). Most open private pension plans are sold by insurance companies, who by law are allowed to manage these products within their balance sheet. Practically all products of this type belong to the so-called "*Plano Gerador de Benefício Livre*" (PGBL) (Free Benefit Generator Plan) modality, as described in the part of the study analyzing the Brazilian Life insurance market. In both VGBL and PGBL, the participant has flexibility in the availability of the funds at the end of the accumulation period, being able to choose between a monthly Life annuity, a monthly temporary annuity, a monthly annuity with guaranteed minimum term, a reversible monthly annuity for the indicated beneficiary, a reversible monthly annuity for the spouse with continuity for children, or a lump-sum payment. The biometric tables, technical interest and the mechanism for updating the annuity are set out in the plan regulations and the right to demand the calculation of the chosen annuity in accordance with these parameters is lost only in the event of switching to another plan.

There are also so-called "*Planes de Previsión Privada Cerrada*" (Closed Private Pension Plans), which are plans created by companies and aimed exclusively at their workers. Unlike open plans, closed plans are not marketed by insurance companies. Those responsible for managing these plans are the "Entidades Cerradas de Previsión Complementaria" (Closed Supplementary Pension Companies - EFPC), accessible to the employees of a company or group of companies, to the public employees of the Union, the States, the Federal District, the

Municipalities (sponsors), and the associates or members of legal entities of a professional, associative or sector-based nature (institutors). EFPCs are organized in the form of a non-profit foundation or organization, and the supervisory body is the "Superintendencia Nacional de Previsión Complementaria" (Previc) (National Superintendency of Supplementary Pensions).

Mexico

The Mexican mandatory pension system entails workers, employers and the Federal Government making compulsory contributions into individual employee-owned accounts, in order to accumulate resources that will form a pension at the time of retirement. Alongside these compulsory contributions, the worker can make additional voluntary contributions to improve their pension status. One mechanism is through voluntary contributions that would directly feed their individual account, and another is through the contracting of so-called personal retirement plans that can be administered, among other financial institutions, by insurance companies. The two systems have different support mechanisms through tax incentives. It is notable that not only the AFORES (who are the managers of mandatory pension funds), but also other financial institutions such as banks, insurance companies and mutual fund managers, can manage these voluntary contributions options, resulting in a wide range of possibilities for this type of saving and, consequently, a high level of competition in the market.

Spain

In Spain, if they have the corresponding authorization, insurance companies may be managers of private pension funds. There is also an insurance product for pension savings, called the "*plan de previsión asegurado*" (PPA), (insured pension plan), which can be marketed by insurance companies as part of their balance sheet. This type of product enjoys the same tax breaks as (non-cumulative) pension plans and its main difference is that it offers a guaranteed minimum return. It is an illiquid product, as it can only be redeemed at the time of retirement, or early in some special cases, such as long-term unemployment, serious illness, disability or dependency. Recently, a new liquidity feature has been introduced, with the option to redeem contributions that are at least ten years old from January 1, 2025. However, its weight is relatively small in relation to the savings managed by Life insurance companies in the Spanish market.

There is also another group social protection instrument called *company savings plans* (PPSE for its Spanish initials), which companies can promote for their workers, guaranteeing a financial return. It should be noted that this type of plan is incompatible, at the same company, with a workplace pension plan, and compatible with a group insurance plan for the implementation of pension obligations. They also enjoy the same tax breaks as workplace system plans. Currently, these plans have had little impact in the Spanish market where workplace pension plans prevail as an instrument to channel the pension obligations of companies to their workers.

Italy

In Italy, the comprehensive coverage of the mandatory pension system means that the degree of development of supplementary pension systems is lower than in other markets, such as the United Kingdom or the United States. However, there is an additional voluntary and supplementary occupational system, which is basically coordinated through workplace and individual pension funds, with tax breaks within certain contribution limits. Insurance companies can be managers of open, workplace and individual pension funds, so it is not common for them to sell pension insurance products managed within their balance sheets. These account for a very small share of the Life insurance technical provisions (16 billion euros, around 2.2% at the end of 2018), compared to the assets managed through pension funds (which amounted to 167 billion euros at the end

of that year). All of this is without prejudice to savings products not linked to the pension system, which are widely available in the Italian Life insurance market.

Japan

The annuity insurance market in Japan is well-developed as a direct consequence of the aging of the population and the need for protection systems in addition to the public pension system. Complex products (of the variable annuity type) can be found in this market, although the market share of these products is not significant when compared to fixed annuities, which prevail alongside other risk products with a certain savings element, such as whole Life insurance. With regard to retirement-related pension products, a large percentage of workers in Japan are members of employer pension plans, which are coordinated through workplace pension funds. As a result, the pension products marketed by Life insurance companies are of lesser importance.

Hong Kong

In the case of Hong Kong, the mandatory system (Mandatory Pension Fund (MPF) System) was designed as the second pillar of the multi-pillar retirement protection model: a mandatory, privately managed and fully financed contribution system. Employees and employers who are covered by the MPF are required to make regular mandatory contributions of 5% of the employee's relevant income, subject to the relevant minimum and maximum income levels, and coordinated through trusts.

Public policy elements

From the review of the supplementary role played by Life insurance companies within the pension systems of the markets analyzed in this report, a set of public policy conclusions can be drawn (excluding tax incentives, which are discussed in the next section of this report) that, at the same time as contributing to strengthening the retirement mechanisms for workers, stimulate national savings through the development of this segment of the insurance market.

Mandatory employment (occupational) pension systems

One area of public policy that fits well with the above premise is the establishment of "quasi-mandatory" social protection systems that supplement pensions. The best example of this type of policy can be found in the United Kingdom. In this country, the authorities have established the obligation for companies to register employees in a group company pension plan (automatic enrollment), with contributions made by the company, the worker and, indirectly, the State through the granting of tax benefits. This is open to insurance companies and supplemented with additional elements that increase the level of competition in this market, in order to guarantee competitive prices in management fees.

Voluntary pension plans

A second public policy system in this area concerns the implementation of measures to boost supplementary pension plans, both occupational and individual of the contribution type, as a supplement to the pensions in the first pillar of pension systems. This type of system could involve the three main formulas or mechanisms through which Life insurance companies play a role in supplementary pension systems, that is: (i) survivorship annuity products; (ii) retirement-related pension products issued by insurance companies and managed within their respective balance sheets, and (iii) products linked to pension plans in which the insurance companies act as plan management companies.

3.3 Tax incentives

General considerations

The establishment of incentives to promote saving is a public policy that generally seeks to: (i) support the co-financing of pension systems, (ii) finance investment in the economy and support growth, employment and increases in income levels; (iii) reduce the external vulnerability of the economy by strengthening the current account and encouraging deleveraging, and (iv) release savings to generate demand in a situation of cyclical slowdown. Tax instruments can be very effective in achieving these purposes, insofar as they are capable of altering the composition of demand and national savings. The most effective taxes for this purpose are those applied to people's income, business profits and wealth or equity (direct taxes). Thus, in the face of tax changes, economic agents react by modifying their decisions about participation in employment, savings and consumption, affecting the income generation process[45]. In contrast, the use of indirect taxes (such as value added tax or taxes on Life insurance premiums) should be avoided, to make sure there is equal treatment with other non-insurance financial instruments that channel savings. In environments where such indirect taxes are applied, there is a disincentive to use these products, encouraging individuals and families seeking to save for medium- and long-term goals to use other products that may not be the most appropriate for achieving this.

Under this economic perspective, the establishment of tax incentives for saving is a widespread practice in the markets analyzed in this study, especially in terms of medium- and long-term saving and, most notably, for purposes supplementary to the creation of retirement funds. In the experience analyzed, the scale of the tax incentives offered depends largely on two factors: firstly, the level of coverage of the public pension system and, secondly, where each country is in the process of demographic transition to a more elderly population, which causes tension in the sustainability of public pensions and which will also have an impact on health and long-term care spending for older people.

The most common formula for establishing this incentive system is through products whose contributions fall under the management of insurance companies, pension fund management companies or a combination of the two. Sometimes this also extends to banking products, seeking some neutrality in tax incentives for savings products. Incentives that exempt the income used to make contributions from taxation are often combined with others that defer and/or apply reduced or zero tax rates to the returns generated by the financial assets in which the accumulated funds are invested, or establish deductions on the amount to be paid on the income tax of a certain percentage of the amounts contributed. In practically all cases these products are compatible, that is, a person who decides to save through these products can invest in any or all of them, within the annual limits established by the respective tax regulations. In cases where the income used to make contributions is tax-free, the exemption is not absolute but is transferred to the moment when the accumulated funds are withdrawn, a moment when the applicable tax rates will normally be lower due to the progressive nature of personal income tax. Some systems also apply mechanisms that reduce or remove taxation on the income received at the time of withdrawal from retirement funds, within limits.

It is important to note that the analysis made reveals that tax regulations establishing savings incentives often change quite significantly over time, both in the requirements set and in the annual limits on the contributions that qualify for the aforementioned incentives (which tend to be reduced when they are most needed, because the very process of population aging generates budgetary tensions in the public accounts of the countries that establish them). Restrictions on the characteristics they must have are generally designed to encourage people to leave the money in the product (normally allowing movement between instruments that meet equivalent requirements), but they are modified fairly frequently through introducing new or different restrictions that

make the products difficult to understand, making their marketing more difficult, as potential savers do not become fully familiar with them.

Products that allow taxation of the income to be transferred to the time of receiving the accumulated funds are common in all of the markets analyzed. Their effectiveness is greater for those who suffer a significant fall in their income at the time of their retirement, because they receive a public pension that is significantly lower than their last salary from employment. This, in turn, depends on the design of the public pension system. The United States and the United Kingdom, for example, are good examples in this regard, as their public pension systems have a redistributive bias toward people on a low income and require a supplementary workplace and individual capitalization system that should cover practically all of the population. The annual limits on the amounts that may benefit from the deferment of the taxing of income and the characteristics of this type of savings product, due to its restrictions in terms of liquidity, mean that in both countries they are combined with other savings instruments that are more flexible in relation to the term and liquidity of the investments, through which it is possible to defer the payment of tax on the yield generated by the investments, and/or which are subject to lower tax rates than apply to other types of investments.

One notable case is the United Kingdom, where a further step has been taken by establishing additional savings incentives to try to reach the entire population. Thus, the State contributes 1% of the computable salary for workers who decide to remain in the pension plan their employer has been required to establish for them and has also created a savings account that grants a 25% bonus to those who make contributions, with a reduced annual limit, which is a strong incentive intended to try and encourage people with a low income to save through these accounts. This type of direct support is characterized by contributions made to the savings product that generates it, unlike incentives through personal income tax.

Likewise, the experience analyzed shows the widespread existence of incentives for the payment of Life insurance premiums made for workers, which are tax deductible for companies when the benefits of these insurance policies cover the death, invalidity or disability of the worker. Moreover, in the event of the occurrence of the covered contingency, the amounts received by the insured persons or beneficiaries are often exempt from personal income tax.

Finally, it should be noted that the systems analyzed generally do not apply indirect taxes (such as value added tax or insurance premium tax) to Life insurance products linked to savings, pension systems or those whose purpose is to cover the risk of death.

Public policy elements

As with the regulatory aspects and those associated with the creation of supplementary pension systems, the review of the markets analyzed in this report reveals some public policy elements that could be taken as a benchmark to stimulate saving through the development of the Life insurance market.

Tax incentives for savings and investment products

The establishment of tax incentives for savings and investment products whose contributions are managed by insurance companies, pension fund management companies or a combination of the two is a widely implemented public policy in the markets analyzed. In general, these incentives take various forms:

- Exemption from income tax on contributions. In cases where the taxation is moved to the time when the funds accumulated in these products are withdrawn, the system guarantees taxation at reduced tax rates, offsetting the progressive nature of personal income tax with mechanisms that reduce or exempt from taxation the income received at the time of withdrawal from retirement funds, within limits that are compatible with a savings stimulus fit for purpose.

- Deferment and/or reduced or zero tax rates on the returns generated by the financial assets in which the accumulated funds are invested.

- Reductions in the amount of income tax payable on a certain percentage of the sums contributed.

- Ability to combine products under the various tax incentives established.

- Stability in the tax regulations that introduce the requirements that products must meet in order to be eligible for the application of tax benefits, in the rules for switching between funds, in the annual limits on contributions and in the circumstances in which the tax benefits acquired are lost.

- Establishment of additional savings incentives to try to reach the entire population, including specific incentives for lower-income workers, such as bonuses.

Tax incentives for Life protection insurance products

The application of tax incentives to Life protection products is also a public policy line used in the markets analyzed in this report. Incentives for this type of product generally apply to Life insurance premium payments paid on behalf of workers, with tax deductibility for companies when the benefits of these insurance policies cover the death, invalidity or disability of the worker, for which they are not treated as remuneration in kind. In the event that the covered contingency occurs, there is exemption from personal income tax on the amounts received by the insured persons or beneficiaries.

Avoiding disincentives created through the application of indirect taxes

Finally, as has been established above, Life insurance is ultimately, in different ways and proportions, a medium- and long-term savings mechanism. To that extent, and as is the case in general for products that individuals and families use for their saving, the creation of disincentives for the use of these types of financial instruments, by subjecting them to indirect taxation, should be avoided. Examples include value added tax or Life insurance premium taxes. The levying of this type of tax significantly limits the appeal of these products and consequently encourages individuals and families seeking to save for medium- and long-term goals to use products that may not be the most appropriate for achieving this. Therefore, the public policy generally applicable in this regard entails not levying indirect taxes (such as value added tax or insurance premium tax) on Life insurance premiums linked to savings, investment and pension systems.

4. Summary and conclusions

4.1 Life insurance, savings and economic growth

Various macroeconomic factors have an impact and determine the dynamics of the insurance industry in general. The pace of economic activity, the level and trend of interest rates, the behavior of exchange rates and the degree of financial volatility are factors that have an impact on the level of demand for insurance products, on the income and cost structure of the insurance companies, on the value of their assets, and on the ability to manage those assets in relation to their liabilities. In particular, factors such as the behavior and level of interest rates may have a determining influence on the viability of a certain part of the business model in Life insurance, as has been demonstrated in those regions in the world in which the insurance markets have faced prolonged periods of low interest rates.

Life insurance, in addition to offering personal compensation and protection for insured persons and policyholders against the risks of death or those related to retirement, also plays a central role in the economy's savings-investment process. By investing the resources that support the technical provisions for this type of insurance, the insurance industry contributes to the creation of domestic savings in the economy and thus to the process of capital formation and long-term economic growth. This feature means that the insurance industry is one of the main institutional investors globally, insofar as its technical provisions can represent very significant proportions of the gross domestic product of countries. Furthermore, it should be noted that the institutional investment carried out by insurance companies is not only a way to channel savings into the financing of productive activities, but, in a broader sense, it provides an element of anti-cyclical stability to the economic system.

In contrast to the position of other institutional investors, the institutional investment function of the insurance industry has several characteristics that result in it having the aforementioned nature of an instrument for anti-cyclical stability. The first factor is that institutional investment in the insurance industry offers a stable flow of resources to the extent that, due to the characteristics of its business model and its implicit investment function, the investment decisions of insurance companies are based on the characteristics of their liabilities. This makes the investment function of the insurance companies a function that is subsidiary and dependent on the specific features of the liability structure (liability driven), meaning that the structure of their investments are only modified over relatively long periods. The second characteristic refers to the fact that, to the extent that most of the investments of insurance companies support their Life insurance obligations, they are medium- and long-term investments. This allows for the financing of long-maturing investment projects that would encounter greater difficulties through traditional financing mechanisms. The third characteristic, which derives from the first two, is that the investment flows from the insurance industry do not experience significant variations in the recession stages of the economic cycle, which moderates volatility in the financial markets and provides the economic system with an element of stability when overall economic activity is depressed.

Thus, the contribution of the insurance industry through Life insurance clearly goes beyond personal compensation and protection related to the risk of death and the retirement fund

creation processes, and it is at the core of one of the functions that, like capital formation, are key to the growth process of an economy. Therefore, the development of the Life insurance segment can be a key element in the design and implementation of public policies aimed at increasing the savings and investment rate in an economy, with the positive effects these phenomena bring in terms of the growth of material wealth and the levels of well-being in society.

4.2 Types of Life insurance products and their presence in the markets analyzed

a) Life protection insurance products

This type of product, in which the risk element is the main element considered in its structuring, was originally (and still is) one of the main pillars of the business of Life insurance companies. In all the markets analyzed in this report, one can see an evolution over time, from simple products with pure risk coverage in the event of death to products that combine this coverage with other supplementary coverages (accidents, invalidity and illness, among others), and even more complex versions that incorporate other elements such as savings elements, investment elements, and technical and financial profit sharing, among others.

Term insurance

In the early stages of development of a country's insurance market, this type of product is sold in its simplest form, that is, guaranteeing capital in the event of the death of the policyholder (who pays the premium) in the coverage period. The contract expires at the end of the coverage period, unless the policyholder and the insurer agree to renew it under the new conditions agreed upon at the time of renewal. To properly measure the probability of death, it is usually necessary to complete health, professional or habits-based questionnaires, among other aspects, and sometimes undergo medical tests during the application process. The coverage offered usually depends on the age and family situation of the insured; in this sense, it is common to sell them as family policies. Normally only a health questionnaire is required, but if the insured capital exceeds a certain limit a medical examination is performed before the contract is signed. It is also common to find policies in which, for a predetermined period of time, the insurance policy renewal by the policyholder is agreed without the need to complete these questionnaires and undergo medical tests (renewable term insurance policies).

As the economic development of countries progresses and the insurance market matures, this type of insurance starts to be introduced as part of the package of perks that companies offer their workers. This is in the form of group insurance policies, in which case the policyholder is the company itself, the insured party is the worker and the beneficiaries are their family members. In these early stages of economic development, it also tends to be widely used as a guarantee for the payment of loans (mainly mortgages), to provide coverage for both parties, creditor and debtor, in the event of the latter's death. In these cases, the insured capital is periodically adjusted to the amount of the outstanding debt.

Currently, in all the markets analyzed in this study one finds structured products that incorporate additional coverage from a wide range of supplementary coverage options: accident, invalidity, serious illnesses such as cancer, heart attack, cardiac surgery, stroke, hospitalization due to an accident, telephone advice or assistance for medical consultations, second medical opinion, cancellation of outstanding credit card balances, unemployment, funeral expenses or assistance or advance payments in the case of terminal illness, among others. Although it is not the norm, they sometimes also include some element of sharing in technical profits or benefits in the form of temporary annuity.

From the analysis carried out, it can be seen that nowadays, most insurance companies offer *online* quotes through their websites and, in some cases such as in the United Kingdom, include the option of conducting the health questionnaire telematically with a doctor. In the latter market, which is highly sophisticated, there are renewable term insurance options that offer the option to renew without the need for additional health tests, with increases in capital to adapt to changes in family circumstances and with the option to receive benefits in the form of income (family policies), as well as so-called convertible policies that allow the policy to be transformed into an endowment insurance policy or whole Life insurance policy, without the need for additional health questionnaires and within limits regarding the insured capital.

The United States and Japanese markets also stand out for the widespread use of health coverage, which represents substantial turnover for the Life insurance companies operating in those markets. In the United States, for example, the health and accident business premiums sold by Life insurance companies contribute, at the aggregate level, a volume of premiums in addition to the Life business of around 27% of the total premiums. In Japan, in 2018, Life insurance companies sold a total of 63.5 million health insurance policies, of which 38.5 million policies provided basic hospitalization and surgery coverage, while 25 million were specific policies in the event of a cancer diagnosis. In the decade 2008-2018, the number of these two types of health insurance policy on the Japanese market increased by 90% and 34%, respectively. The Japanese demographic evolution toward an aging population is certainly playing a significant role in this development.

Whole Life insurance

Whole Life insurance provides a capital to the beneficiaries in the event of the death of the insured person, at the time of death. This is an annuity insurance covering the risk of death, in which the policyholder pays the premiums until the time of the insured person's death. In the markets analyzed, the regular premiums agreed are often smoothed out to make them roughly constant over time. This means that, at first, the premiums paid are higher than those for term insurance, but as time goes by the situation is reversed. To this end, the insurer sets up a reserve with the additional premium paid over and above that which would correspond to the risk of death in order to be able to meet lower premiums in the future, when the premium becomes lower than its theoretical cost. This resolves the main drawback of renewable term insurance in the event of death, in which if the policyholder and the insurer want to renew the policy at maturity the price increases with each renewal, and in which it is unusual to see policies with smoothed out premiums that generate surrender value (although they do exist in some advanced markets such as the United Kingdom).

This type of insurance therefore has a savings element that is precisely the reserve being created during the stage of the contract when the premiums being paid are above their theoretical cost. This reserve is also enhanced by the financial return that consists of a guaranteed interest rate agreed in the policy. The regulation of insurance contracts in the different countries usually establishes a right to redemption for the policyholder of the reserve generated in the event that they want to terminate the contract, which may cause the insurance company to apply penalties.

The development of whole Life insurance policies is characterized by differences between the markets being analyzed in this report. The market where this type of product is most developed is Japan. Since World War II, the expansion of Life insurance in Japan concentrated on Life protection insurance as a guarantee of family economic protection, with a considerable development of whole Life insurance. Over the years, this type of product has continued to be the industry's main product. The number of whole Life insurance policies in effect increased by 139% over the 2008-2018 period.

The British insurance market, for its part, also offers a wide variety of whole Life products. Although, in principle, they normally have a certain savings element associated with them, it is common in the United Kingdom to sell them without the right to a surrender value, in order to offer lower premiums at the time they are taken out. This means that premiums are not entirely smoothed out, but are subject to a review process throughout the life of the insured party, usually every ten years, with these review periods shortening as the insured party ages. These reviews usually offer the possibility of increasing the premium or reducing the insured capital.

Whole Life insurance is also commonin the Mexican market. There are individual whole Life insurance policies aimed at the general public, as well as individual insurance policy versions designed for certain groups, such as workers in the education sector, health sector or public officials. In Spain and Brazil, however, although it is offered by some insurance companies, this type of insurance is not very common. In Spain, the fact that they have a certain savings element associated with them is leading to a decrease in supply and demand for these products, as a result of the low interest rate environment in which the market currently operates, as the incentive associated with the profitability of the investments in which the mathematical provision becomes a reality disappears.

Whole Life insurance can be found in the United States market, but nowadays the best selling risk products have evolved into more complex products such as universal and/or variable Life insurance.

Universal Life insurance

Universal Life insurance provides a capital to the beneficiaries in the event of the death of the insured party, at the time of death. It shares many similarities with whole Life insurance, as it is an insurance with a lifetime coverage that covers the risk of death, in which the policyholder pays the premiums until the time of the insured party's death. However, the difference is that there is flexibility in the amount and timing of the payment of premiums during the life of the contract (within certain limits), which has implications, as the capital that beneficiaries would receive if the insured party dies also varies.

As with whole Life insurance, these products are designed so that the amounts paid at the start of the contract, when the insured party is younger, are higher than those corresponding to the risk of death, which allows for premiums lower than the risk to be paid in the future. With these additional premiums and their returns (there is usually a guaranteed interest rate with this type of product), a reserve is established, so they also have a savings element that is managed within the general portfolio of the insurance companies, without creating separate accounts.

This kind of insurance policy became very popular in the United States in the 1980s, in an environment in which monetary policy was focused heavily on fighting inflation, resulting in sharp increases in interest rates. This caused a change in the design of Life protection products in order to compete with banking products, which are more sensitive to short-term interest rate variations.

Subsequently, the use of this type of product has spread to other countries, although not widely. They are present and sold in the United Kingdom (known as flexible whole Life insurance), although they have a lesser market share than in the United States, which is the leading market for this type of product.

In Mexico, various companies with a US parent are operating in the market meaning that similar products to those sold in the United States can be found, albeit adapted to the specific features of the Mexican market. However, universal Life insurance is not very widespread, with some products offering the possibility of modifying the capital insured in the event of death during the life of the contract without additional requirements, within certain limits.

With respect to the other markets analyzed, these products can also be found in Japan, but they are rare. In Spain and Brazil, they have very little market presence and are practically not offered.

Variable Life insurance

This insurance policy is also very similar to whole Life insurance, the main difference being the way in which the savings reserve generated by the insurance policy is managed. This does not have a guaranteed interest rate, but instead depends on the performance of the investment portfolio selected by the policyholder, depending on the risk they are willing to assume. The variation in this reserve also causes the insured capital for the beneficiaries in the event of the insured person's death to vary, although a minimum capital is usually agreed and this is received under all circumstances. These kinds of insurance are usually managed through separate accounts from the general account of the insurance company.

They have also become available in the United States and can be found in other markets, although not extensively. In the British market they are also common and are marketed as Life-investment insurance with profit sharing (called single-premium investment bonds or, simply, investment bonds). These products do not expire, meaning the policyholder can remain on the contract throughout their life, unless they decide to redeem it. The policyholder is exposed to losses if market conditions are adverse at the time of redemption. If the contract has been instrumented through the acquisition of units from a mutual fund (this is now the norm), the amount corresponding to the value of the units at the time of redemption (at the bid price) will be paid. However, the death benefit is guaranteed in these products and is not subject to reduction.

Variable-universal Life insurance

These insurance policies are similar to whole Life insurance, but have two main differences: the first is flexibility in the payment of the premiums (as with universal Life), and the second is the way in which the reserve is managed, which depends on the performance of the investment portfolio chosen by the policyholder according to the risk they are willing to assume (as with variable Life, with no guaranteed interest rate and the reserve managed in separate accounts).

In the United States, this type of product is very popular and continues to be sold today. They are also present on the British market. For those versions in which the value of the policy is matched to the performance of the fund units to which it is linked, there is a wide variety of options regarding its composition (fixed income in all its forms, equities, real estate, cash, among others). In the United Kingdom, there are various forms of this type of insurance, such as the so-called maximum cover plans, in which the level of the premium is fixed for a period of time, at the end of which it is revised upward, depending on the age of the policyholder. They usually give the option of reducing the insured sum if the new premium becomes too burdensome for the policyholder. Other versions set the premium so that it does not need to be revised during the lifetime of the policyholder, as long as the units of the mutual fund linked to the policy generate a return equal to that previously established when the policy was taken out ("standard cover"). These products offer flexibility to increase the insured capital by raising the premium, although if it is a substantial increase a new medical examination may be required. This possibility is sometimes offered when a certain event occurs, such as the birth of a child, and no new medical questionnaire is required in these cases.

In the rest of the markets analyzed in this study, this type of product is not common.

b) Life savings insurance products

Endowment insurance without return premiums ("pure endowment")

In this insurance policy, the insurer undertakes to pay the insured capital at the end of the agreed term if the insured person is still alive

when this term expires. This type of insurance involves two capitalization processes for people who survive. First, a financial capitalization due to the guaranteed rate from the investments in which the reserves being generated are invested. And, second, an actuarial capitalization due to the reserves of the insured parties who do not survive, which increase the capital of those who do. This means that if the insured party dies before that time, the premium or premiums paid remain in the hands of the insurance company, which will use them to pay the capital of the insured parties who do survive. This makes it a difficult product to sell and it makes up a very small share of the markets analyzed, since it is not usual for people to want to take substantial amounts from their assets with the risk of leaving their relatives bereft in the event of their death.

Endowment insurance with return premiums

This type of single premium term insurance policy combines the payment of deferred capital at the end of a certain period with capital in the event of the death of the insured. They incorporate an interest rate guarantee and a paid return premium element in the event of early cancellation, subject to some kind of penalty that acts as a disincentive, thus attempting to eliminate or reduce the risk of disinvestment assumed by the insurer in the event of redemption by the policyholder. The way these products are designed makes them look very similar to a fixed-term bank deposit with a guaranteed interest rate. The big difference is in the additional capital they offer in the event of the death of the insured, which is not a feature of fixed-term bank deposits.

This type of product is present in all the markets analyzed, although the low interest rate environment that developed countries are experiencing is making its marketing virtually impossible, despite previously being a very common product. In the United States and Brazil, another type of Life investment-savings insurance policy is more common, namely variable annuity, meaning that endowment insurance policies make up a lower proportion of these markets.

In Mexico, there are Life savings insurance policies in the form of deferred capital and savings plans with guaranteed minimum interest rates, and it is common to find these products combined with a whole Life insurance or renewable term insurance policy covering death, accident, serious illness, invalidity and/or coverage of funeral expenses, among other supplementary guarantees. It is common for these products to offer the option of taking out the insurance in Mexican pesos or dollars and the level of guaranteed interest depends on which of these is chosen. The same product is often offered with a variety of options in terms of its duration. The majority are structured in order to offer the insured party a guarantee of continuity for the education of their family members in the event of death, illness or disability.

Savings account insurance (savings plans)

This product is similar to the previous one, but with regular premiums. They are common in the same markets where endowment insurance policies with return premiums are sold and they are also being adversely affected in developed markets by the low interest rate environment.

In the United Kingdom (endowment policies), they are mostly sold in the form of savings plans over a certain term, with guaranteed capital at maturity, established by the amount of the premiums paid plus a return that depends on the risk-free interest rates at the time of their issuance and, usually, a share in financial profits. They incorporate a guarantee in the event of death for an amount close to that of the premiums paid, and the early cancellation of the contract results in the return of the premiums with a penalty that is normally linked to the value of the investments in which the mathematical provision corresponding to them is materialized. There are versions of these products with a single premium (guaranteed bonds) and a regular premium, the latter being more common.

Profit-sharing is implemented in two different ways: one is through investment in specific units of mutual funds ("unit-linked endowments"),

and the other depends on the performance of the insurer's profits obtained from their investment portfolio and does not affect specific policies. The latter provides greater flexibility in distributing these profits, and can soften the impact of financial market cycles by setting aside part of the profits during upturns to compensate in downturns, allocating additional profits from this reserve. The contractual terms and conditions of these contracts give the insurance companies a large amount of discretion when allocating these profits (bonuses), increasing the value of the policy annually.

In the United Kingdom, there are also so-called low-cost versions (low cost endowments and low start endowments) linked to the development of the real estate market, which combine a deferred capital product (with profit-sharing) with a decreasing death benefit. The aim is to cover the outstanding debt of a mortgage loan, only in the event of the insured person's death.

In Italy, the Life savings business also shows a significant level of development. Most of this consists of traditional single-premium or regular-premium savings insurance with a guaranteed interest rate and a share in financial profits. Profit sharing is implemented in two different ways. It is normally established on the basis of the performance of the profits obtained from its investment portfolio, giving the insurer greater flexibility when distributing these shares. However, the low interest rate environment currently affecting the entire eurozone is forcing the market to evolve, and Italian insurance companies have reacted quickly by developing a new type of hybrid product that combines into one policy a traditional savings insurance policy and policyholder risk insurance policy ("*prodotti vita ibridi, multiramo*").

Despite the recovery in Italian sovereign debt yields, the interest-rate trend is currently downward and there are companies facing limitations when it comes to assuming a greater risk within their balance sheets due to their own internal limit control policies (including through sovereign debt). This is forcing Life insurance companies to sell these insurance products, which combine traditional savings insurance coverage (with profit sharing) and investments in mutual fund units. The initial splitting of the premium between the different types of coverage can be changed throughout the course of the contract at the request of the insured person or the insurance company. The portion invested in products linked to fund units is exposed to investment risk, which is assumed by the policyholder. The hybrid nature of these "*multi-class*" products offers insured parties the option to move to higher risk positions in search of higher yields than offered by traditional products, while reducing the capital requirements for the insurance companies arising from traditional products with interest rate guarantees. However, the possibility of changing the original premium allocation after the contract is signed complicates the risk measurement and management of insurers. When this option is available to the insured person, its use may require a rapid change in the allocation of the insurance company's portfolio, with market risk repercussions that require an adequate assessment by the insurance company, both in product design and in the formulation of the investment strategy. The increasing use of these policies also carries a greater legal and reputational risk due to their complexity. However, the growth in sales of this type of product since it was introduced into the Italian market has been spectacular, reaching a proportion of more than one third of the total premiums for new individual savings insurance business in four years (over 820,000 new "multi-line" insurance policies in 2018 and a volume of 28.6 billion euros, +10.1% compared to 2017).

In Japan, endowment insurance policies in their simplest forms are also common. At the end of 2018, there were 2.5 million policies in force, with insured capital amounting to 43 trillion yen (0.4 trillion dollars). Between 2008 and 2018, the number of policies in this country

grew by 57%. Today, they are also faced with a low interest rate environment, making it difficult to sell them.

Annuity insurance with return premiums

These are insurance policies that provide a monthly annuity to the policyholder in exchange for a single premium, together with a death benefit payable to the beneficiaries designated by the policyholder (or their heirs) for the amount of the premium paid. It is also possible to terminate the contract early, recovering the amount of the premium paid, in which case a penalty applies if the realization value of the investments is lower than the premium at the time of redemption, for the difference. Based on the way the product is designed, it is very similar to a non-maturity savings account in which interest is charged on a monthly basis, with a guaranteed interest rate that remains fixed throughout the life of the insured party.

The way this product is structured involves the acquisition of a fixed income bond that supports the transaction. The difference between the yield from the bond acquired and that granted to the policyholder constitutes the margin on the transaction, after deducting the amount intended to cover the credit risk assumed in the investment. This type of product has been quite common on the Spanish market, although the low interest rate environment has made it less attractive.

c) Life-investment insurance products

This category includes those Life insurance products in which the policyholder assumes the investment risk, depending on the performance of a certain investment portfolio or mutual fund (unit-linked insurance) or a certain index (index-linked insurance). They also incorporate an additional capital in the event of the death of the insured party during the term of the contract. The risk and returns arising from the performance of the portfolio or the benchmark index correspond to the policyholder, who can decide on the risk to assume based on the composition of the portfolio in which they invest or whose performance is replicated. The insurance company manages the investments in exchange for a fee and assumes the risk of death benefit in exchange for the corresponding premium.

The United Kingdom is the most developed market for this product. In Italy, this type of product also accounts for a considerable share of the market. In the United States and Brazil, however, these types of insurance are of limited importance, given the prominence of variable annuity insurance in these markets. In Spain, Japan and Hong Kong, they also have a limited presence.

In the Mexican market, products that combine contributions to a savings-investment account with Life insurance in the event of death, offering regular liquidity windows, are common. They do not incorporate an interest rate guarantee, leaving the policyholder to bear the risk of the investment. However, the contract guarantees that the premiums paid will be invested in low-risk assets, and it is very common to invest in public debt instruments (the so-called Federal Treasury Certificates, CETES to use its Spanish initials). This leads to sovereign risk exposure and minimizes market risk by investing in short-term assets, of less than one year. It should be noted that these savings-investment products usually have some kind of tax break associated with them. Unit-linked Life investment products are also sold with a protection element that offers different investment alternatives according to the profile of the policyholder. These are usually grouped into conservative, moderate and the most risky, allowing them to change their profile throughout the life of the contract and to make contributions in a flexible way.

d) Survivorship annuity insurance products

Annuity insurance in exchange for a single premium (annuities)

This type of product ensures a regular flow of income for its beneficiary immediately or after a period of delay, temporarily or for life, that is constant, growing or variable depending on a given index. These products have a presence in all the markets analyzed. However, they are particularly well established in the UK. The main reason is the obligation that was in force until April 2015 to transform the funds

accumulated in the occupational pension plans into this type of annuity. However, the increased cost of these products due to the sustained environment of low risk-free interest rates and the increase in the probability of survival, coupled with the detection, by the supervisory authority and the courts, of punishable conduct in their marketing, led to the removal of this obligation by the public authorities. There are still high amounts of mathematical provisions from portfolio products, but the new business has brought this to light and their demand has fallen sharply since then. Many workers currently opt for more flexible planned withdrawal formulas or for the full withdrawal of funds, rather than acquiring annuities. Some of the insurance companies offering these products have chosen to stop marketing them.

Variable annuities

These are long-term insurance contracts consisting of two phases: a first phase of accumulation, and a second phase of withdrawal of accumulated funds (drawdown) containing at least one disposal option in the form of an annuity. These products are characterized by the fact that the premiums paid during the accumulation phase are normally managed in accounts separate from the general account of the insurance company and are invested according to the specifications of the policyholder, depending on the risk they wish to assume.

The policyholder has the option of converting the value of the account into a Whole Life annuity in the future, with the conditions agreed at the beginning of the contract in terms of the guaranteed rate and actuarial assumptions to be used. This is just one option, so the policyholder can decide to access the value accumulated in their account differently, in a lump sum or, depending on what has been agreed, other options. They also often incorporate the option for the policyholder to withdraw all or part of the funds during the accumulation phase within certain limits and/or subject to certain penalties.

These products offer flexibility in terms of the amount of the contributions and the insured person has the right to request a partial or total redemption during the accumulation period. In the event of the death of the insured party during the accumulation period, the balance of the mathematical provision is made available to the beneficiaries specified in the contract. If death occurs during the withdrawal phase, the outcome will depend on the option chosen by the policyholder. If a pure Whole Life annuity was chosen, the heirs will not have any rights, but it is possible to opt for annuities with reversal to the surviving spouse or children, and even annuities with a refund of the amount of funds accumulated in the provision paid to the people designated in the policy. All of this will affect the amount of income to be received by the policyholder, which will be lower.

The simplest versions of these products do not incorporate guarantees in the accumulation phase, and the value of the funds fluctuates depending on the performance of the investment portfolio linked to the policy, which is managed in separate accounts. The more complex versions include a wide variety of guarantees and options, both in the accumulation phase and in the disposal of accumulated funds (Guaranteed Minimum Death Benefit, Guaranteed Minimum Accumulation Benefit, Guaranteed Minimum Income Benefit, Guaranteed Minimum Lifetime Withdrawal Benefit or Guaranteed Minimum Withdrawal Benefit, in line with the terminology used by the Organization for Economic Cooperation and Development). It should be noted that some of these modalities offer the option, in the withdrawal phase, of linking the income to be received to the performance of the portfolio in which the mathematical provision is invested (managed in separate accounts). This means that, in these cases, the amount of income received during the withdrawal phase may vary on a daily basis.

These products are widely distributed in the United States market. Most products are designed to cover the life cycle of the policyholder, and are therefore medium- to long-term contracts that offer a wide variety of

options and/or guarantees for the policyholder. The risk management of these products is complex and it is not sufficient to have an operating license in the Life segment to be able to issue them, as they require specific authorization from the state supervisor. In addition to variable annuities, other important income products are the so-called indexed linked annuities. This is a new category of annuity insurance that emerged in 2010 in the United States and has had a significant expansion, representing 9% of the technical provisions of Life insurance at the close of 2018. They have become a hybrid between a fixed annuity and a variable annuity. This type of annuity insurance incorporates a minimum guarantee of profitability, which can be increased depending on the performance of a given securities index. Unlike variable annuities, these products are subject only to state insurance regulations and are not subject to the federal securities regulations.

In the case of Brazil, the most prominent product is the so-called "*Vida Gerador de Benefício Livre*" (VGBL) (Life Free Benefit Generator), which is the simplest version of the variable annuity type products. Variable annuities do not account for a very high proportion of the insurance markets in the United Kingdom, Spain and Italy. They do exist in the Japanese market, but are relatively uncommon.

e) Pension products offered by Life insurance companies

This type of Life insurance product refers to retirement related pension products (in the form of pension plans) that Life insurance companies issue in some markets, and which are similar to those managed by pension plan management companies, but incorporating the managed assets into the balance sheet of the insurance companies.

The benchmark market in this respect is the United Kingdom, where there is an obligation for companies to enroll employees in a company group pension plan (automatic enrollment). Contributions to this type of plan are often known as "quasi-mandatory," a term which reflects that it is mandatory for companies to register a workplace plan but that the worker may opt out. These workplace plans receive contributions from the company, the worker and, indirectly, the State, through the granting of a tax benefit, and a total contribution of at least 8% of the computable salary must be achieved, with a minimum contribution by the worker of 3%. These occupational pension plans can be implemented through contracts with insurance companies (contract-based pensions) or through pension plan managers (trust-based pensions). Most contributions are managed through contracts with insurance companies, hence the large size of the Life insurance market in that country, one of the largest in the world in both absolute and relative terms. However, given the general obligation for all companies to offer a workplace pension plan, for small businesses that do not have their own plan, the State has created a Plan called the National Employment Savings Trust (NEST), which is taking over the management of some of the funds derived from the aforementioned plans and aims to charge reduced management fees as part of its objectives. In addition, multi-company managers ("Master Trusts") are emerging and beginning to gain market share from the insurance companies, which is raising the level of competition in this market.

In the United States, the redistributive bias of its public pension system means that the supplementary system is also highly developed. At the end of 2018, the sum of funds accumulated in retirement savings products amounted to 28.5 trillion dollars (139% of GDP), of which 3.6 trillion dollars were funds accumulated in savings products issued by Life insurance companies (12.6% of total funds). More flexible specific insurance products for employers have emerged in this market, such as the so-called deposit-type contracts or immediate participation guarantee contracts (IPG), which have a significant share of total managed savings, around 9% of the aggregate provisions for Life insurance.

In Brazil, the main mechanism that acts as a supplement to the public pension system is the survivorship annuity product called "*Vida Gerador de Benefício Livre*" (Life Free Benefit Generator) (VGBL). Moreover, the private pension system, which is voluntary and supplementary to the public pension system, is supplemented by the "*Planes de Previsión Privada Abierta" (Open Private Pension Plans)*, marketed by insurance companies or by "Entidades Abiertas de Previsión Privada" (Open Private Pension Companies - EAPP). Most open private pension plans are sold by insurance companies, who by law are allowed to manage these products within their balance sheet. Practically all products of this type belong to the so-called "*Plano Gerador de Benefício Livre*" (PGBL) (Free Benefit Generator Plan) modality, as described in the part of the study analyzing the Brazilian Life insurance market.

In both VGBL and PGBL, the participant has flexibility in the availability of the funds at the end of the accumulation period, being able to choose between a monthly Life annuity, a monthly temporary annuity, a monthly annuity with guaranteed minimum term, a reversible monthly annuity for the indicated beneficiary, a reversible monthly annuity for the spouse with continuity for children, or a lump-sum payment. The biometric tables, technical interest and the mechanism for updating the annuity are set out in the plan regulations and the right to demand the calculation of the chosen annuity in accordance with these parameters is lost only in the event of switching to another plan. There are also so-called "*Planes de Previsión Privada Cerrada*" (Closed Private Pension Plans), which are plans created by companies and aimed exclusively at their workers. Unlike open plans, closed plans are not marketed by insurance companies. Those responsible for managing these plans are the "Entidades Cerradas de Previsión Complementaria" (Closed Supplementary Pension Companies - EFPC), accessible to the employees of a company or group of companies, to the public employees of the Union, the States, the Federal District, the Municipalities (sponsors), and the associates or members of legal entities of a professional, associative or sector-based nature (institutors). EFPCs are organized in the form of a non-profit foundation or organization, and the supervisory body is the "Superintendencia Nacional de Previsión Complementaria" (Previc) (National Superintendency of Supplementary Pensions).

The mandatory pension system in Mexico provides for mandatory contributions by workers, employers and the federal government into individual employee-owned accounts, in order to accumulate resources that will form a pension at the time of retirement. Alongside these compulsory contributions, the worker can make additional voluntary contributions to improve their pension status. One mechanism is through voluntary contributions that would directly feed their individual account, and another is through the contracting of so-called personal retirement plans that can be administered, among other financial institutions, by insurance companies. The fact that not only the Retirement Funds Managers (AFORES), who are the managers of mandatory pension funds, but also other financial institutions such as the banks, insurance companies and mutual fund managers, can manage these voluntary contributions options, results in a wide range of possibilities for this type of saving and, consequently, in a high level of competition in the market.

In Spain, insurance companies can manage private pension funds. There is also a pension savings insurance product, called the *insured pension plan* (PPA for its Spanish initials), which can be marketed by insurance companies and forms part of their balance sheet. This type of product enjoys the same tax breaks as (non-cumulative) pension plans and its main difference is that it offers a guaranteed minimum return. However, its weight is relatively small in relation to the savings managed by Life insurance companies in the Spanish market. There is also another collective social protection instrument, the so-called *company savings plans* (PPSE for its Spanish initials), which companies can promote for their workers, guaranteeing a financial

return. It cannot be offered within a company in combination with a workplace pension plan but can be offered in combination with a group insurance plan for the implementation of pension obligations, enjoying the same tax breaks as the employment system plans. Currently, they have little impact in the Spanish market where workplace pension plans prevail as an instrument to channel the pension obligations of companies to their workers.

In Italy, the comprehensive coverage of the mandatory pension system means that the degree of development of supplementary pension systems is lower than in other markets, such as the United Kingdom or the United States. However, there is an additional voluntary and supplementary occupational system, which is basically coordinated through workplace and individual pension funds, with tax breaks within certain contribution limits. Insurance companies can be managers of open, workplace and individual pension funds, so it is not common for them to sell pension insurance products managed within their balance sheets. These account for a very small share of Life insurance provisions, around 2.2% at the end of 2018 (16 billion euros), compared to the assets managed through pension funds, which amounted to 167 billion euros at the end of that year. All of this is without prejudice to savings products not linked to the pension system, which are widely available in the Italian Life insurance market.

In Japan, the annuity insurance market is well developed, as a direct result of the aging population and the need for protection systems in addition to those provided by the public pension system. Thus, complex products of the variable annuity type can be found. However, the weight of the latter products is not significant when compared to fixed income products (fixed annuities), which are the most prevalent, alongside other risk products with a certain savings element, such as whole Life insurance. With regard to retirement-related pension products, a large percentage of workers in Japan are members of employer pension plans, which are coordinated through workplace pension funds. As a result, the pension products marketed by Life insurance companies are of lesser importance.

In Hong Kong, the mandatory system (Mandatory Pension Fund (MPF) System) was designed as the second pillar of the multi-pillar retirement protection model: a mandatory, privately managed and fully financed contribution system which is coordinated through trusts. Employees and employers who are covered by the MPF are required to make regular mandatory contributions of 5% of the employee's relevant income, subject to the relevant minimum and maximum income levels.

4.3 Key elements in the development of Life insurance markets

a) Level of market development

From the analysis of international experience considered in this report, it can be seen that the most dynamic markets are usually those that start from lower relative levels of development, so that the income elasticity of the demand for insurance is higher. Unlike emerging markets, we see that mature markets have shown little growth over the period 2008-2018. Thus, the penetration of Life insurance in the economy (ratio of Life insurance premiums to GDP) in the large Life insurance markets of Western Europe and Japan has fallen, while in the US market it is unchanged and in the emerging markets this indicator is growing.

In general, it can be argued that the demand for insurance increases when individuals or companies enjoy a sufficiently stable environment in which they can plan their future and feel that it is important to have coverage that protects them. Thus, in the early stages of a country's development, insurance is virtually non-existent. As economic development advances, the insurance industry begins to grow until it reaches a point of stability. In developed

markets, the average penetration of Life insurance was around 4.3% of GDP at the end of 2018, although with a certain downward trend in the low interest rate environment that is generally affecting them.

b) Economic environment

The behavior of the economic cycle is another key determinant of the development of Life insurance, so GDP growth encourages growth in Life insurance premiums (through increased personal disposable income) and vice versa. This phenomenon is especially important for Life protection products and also has an influence on Life savings and investment insurance products, although the latter business lines are also influenced by other factors of great importance such as the level of risk-free interest rates, the risk spreads for fixed income bonds (sovereign and corporate) and, in some markets, the performance of equity markets (*e.g.*, in the United States).

As has been seen in the analysis of the different Life insurance markets included in this report, these latter factors can sometimes even cause Life markets to behave in an anti-cyclical way. The volatility of these factors is also an important element, often damaging them when there is turbulence in the markets that keeps this volatility at a high level. In terms of interest rates, short-term risk-free rates tend to have the greatest impact on the performance of the insurance markets, but sometimes it is the difference between short- and long-term rates (term premium) that sets the pattern for their performance, as seen in the Italian market.

c) Existence of tax incentives

The use of tax incentives to encourage saving is a widespread practice in the markets analyzed in this study. In general terms, the scale of the tax incentives offered depends largely on the level of coverage of the public pension system and where each country is in the process of demographic transition to a more elderly population, which causes tension in the sustainability of public pensions and which will also have an impact on health and long-term care spending for older people. However, these incentives are often limited as a result of the budget deficit pressure affecting most economies.

The most common method for establishing this incentive system is through the use of direct taxes, applying this to products whose contributions fall under the management of insurance companies, pension fund management companies or a combination of the two. Sometimes this also extends to banking products, seeking some neutrality in tax incentives for savings products. In this way, incentives that exempt the income used to make contributions from taxation are often combined with other incentives that defer and/or apply reduced or zero tax rates to the returns generated by the financial assets in which the accumulated funds are invested, or establish deductions on the amount to be paid on the income tax of a certain percentage of the amounts contributed. In cases where the income used to make contributions is tax-free, the exemption is not absolute but is transferred to the moment when the accumulated funds from these products are withdrawn, a moment when the applicable tax rates will normally be lower due to the progressive nature of personal income tax. Some systems also apply mechanisms that additionally reduce or remove taxation on the income received at the time of withdrawal from retirement funds, within limits.

However, the analysis reveals that the tax regulations establishing savings incentives do not remain stable over time, and the annual limits on the contributions that qualify for the aforementioned incentives tend to be reduced when they are most needed, because the very process of population aging generates budgetary tensions in the public accounts of the countries that establish them. These limits on contributions mean that, in many cases, in practice they are not fit for purpose, as significant volumes of savings are required if they are to act as a supplement that can

increase the replacement rates for people when they retire. Regulatory changes in the requirements for products to qualify for tax benefits, moreover, also make them difficult to understand, which makes them more complicated to market, as potential savers are not familiar with them. This is important when the aim is to generate a savings habit.

d) Role of insurance as part of job packages

The Life insurance market is more developed in those markets where it is usually negotiated as part of the working conditions of the employees. This, in turn, depends on the country's degree of economic development. The United Kingdom, for example, is characterized by the strong position of group Life insurance policies, which are used by companies as an additional tool to meet the pension commitments to their workers.

In Life protection insurance, incentives to pay premiums on behalf of workers are common, and these are tax deductible for the companies when the benefits of these insurance policies cover the death, invalidity or disability of the worker. Moreover, in the event of the occurrence of the covered contingency, the amounts received by the insured persons or beneficiaries are often exempt from personal income tax. Sometimes there is an obligation for companies to provide this type of Life protection insurance for their employees, something which arises from collective bargaining.

e) Role of Life insurance in supplementary pension systems

From the analysis of the markets in this report, it can be concluded that there are three main formulas or mechanisms through which Life insurance companies play a supplementary role in pension systems. The first is *survivorship annuity products* offered in the market, in all the forms described in the conceptual framework and in the analysis of the different countries. The second is *retirement-related pension products*, issued by insurance companies and managed within their respective balance sheets, either in the general account or in separate accounts. The third of these mechanisms is *products linked to pension plans*, in which insurance companies act as one more element in the complex legal framework in which employers' commitments to their workers are coordinated, or individual pension plans (trusts), assuming the role of management companies for the plan without incorporating the assets into their respective balance sheets. Almost always, the characteristics of these products are marked by tax regulations that usually grant, to a greater or lesser degree, tax incentives for their use. This regulation also usually introduces minimum duration requirements for the products and rules regarding possible switching to other types of products, in order to not lose the tax benefits they offer.

The importance of each of these three mechanisms varies considerably between the different markets, this being a determining factor in their development and, consequently, in their respective size. For example, in those markets where trust-type products prevail, Life insurance companies are substantially smaller in size, measured both in terms of technical provisions and Life insurance premiums.

f) Other factors that may influence the development of Life insurance markets

There are other factors of a structural nature that may influence the degree of development of a country's insurance industry. Firstly, stable and sustained economic growth can undoubtedly contribute to its development, as can a more equitable income distribution structure that allows the development of a large middle class with improvements in its disposable income and savings and consumption capacity. Secondly, the promotion of financial education and inclusion schemes is an element that can also raise awareness about the need for access to mechanisms for protection and savings in society through the use of financial instruments and products.

Thirdly, it is important for the guidelines framework not to be a barrier to innovation, with excessive regulatory requirements that limit or delay the launch of new products onto the market. In this sense, factors such as the implementation of risk-based regulatory systems can improve the pro-competitive environment in insurance markets, provided that a suitable infrastructure is developed in the companies and supervisors for the implementation of these systems.

With regard to this latter aspect, the markets analyzed have introduced, or are in the process of introducing, quantitative requirements with capital risk weights according to the particular risk profile of each company, creating a pro-competitive incentive to the extent that better risk management results in lower capital requirements and, consequently, a better competitive position in the market. All of them have taken steps to establish requirements aimed at strengthening the governance of the insurance companies, resulting in the identification, measurement, monitoring and management of risks, as well as a greater transparency in the disclosure of information to the market.

Moreover, the regulatory framework must move forward to adapt to the new challenges and risks presented by digitization and the technological advances applied to financial services, such as authorizations to operate the new technology companies, the use of cloud services, personal data protection in macro data analytics, control of algorithms, digital identification, removal of paper usage requirements, and cybersecurity, among others.

4.4 Conclusions

As has been shown throughout this study, the Life insurance market offers a wide variety of products that are an efficient mechanism to boost medium- and long-term savings and, to that extent, contribute by providing a stimulus to economic activity and stability to social life.

Taking into account the importance of explicitly considering the development of the insurance activity in the Life segment in the design and implementation of public policies aimed at strengthening the creation of internal savings, the analysis carried out in this report reveals a series of public policy elements that can be taken into consideration when designing strategies to boost savings in an economy. These public policy elements have been structured into three groups: (i) measures associated with the definition of aspects relating to the prudential regulations governing insurance activity; (ii) measures linked to the role of Life insurance in the framework of supplementary pension systems, and (iii) measures relating to the application of tax incentives.

a) Prudential regulations

Market access

- As a guiding principle, prudential regulations on market access for new entrants should stimulate competition. However, considering the specific features of the Life business model compared to other insurance lines, the separate management of the Life business through independent legal entities is appropriate, preferably with an exclusive corporate purpose, allowing the development of complementary businesses to Life under the same authorization.

- Given the greater technical and financial complexity of certain Life products (e.g., annuity products), market participants with a high level of specialization are also required. Therefore, it seems appropriate for the regulation to require an additional authorization to operate in these specific business segments.

Regulatory stability for long-term business

- The Life segment is, due to the characteristics of its business model, a highly specialized activity that matures and develops in the medium- and long-term. To

that extent, its proper development entails, among other aspects, the existence of a regulatory framework that is technically appropriate, stable and as uniform as possible. This implies the convenience of avoiding regulatory fragmentation (different systems in different countries and geographic areas), seeking alignment through standardized international frameworks such as those developed by the International Association of Insurance Supervisors (IAIS).

- In terms of the main principles to be taken into account, we firstly have the fact that prudential regulation involves mechanisms to correct the possible pro-cyclical effects of a pure market valuation of assets and liabilities ("mark-to-market"), taking into account the medium- and long-term investor nature of insurance companies, when they acquire the investments necessary to cover the commitments assumed in long-term Life savings insurance with financial guarantees.

- Second, in the extension of the solvency regulatory framework to accounting standards, and in response to the degree of development of the risk management function within the corporate governance of companies, it is appropriate to include provision valuation regulations that reflect modern techniques based on flow forecasts, avoiding the incorporation of maximum interest rates and overstated biometric tables as a minimum prudential valuation standard. These prudential margins in the accounting valuations of the technical provisions make it difficult to price products launched onto the market at competitive prices, especially annuity products, to the detriment of consumers. In any case, these prudential margins must be positioned within the concepts involved in the estimation of solvency capital requirements.

- In addition, in implementing risk-based regulations and modern accounting valuations, the public policies adopted should allow for the proper development of asset and liability management techniques, essential within the Life insurance business model. It is therefore appropriate for prudential regulations to consider the possibility of the use of hedging programs that may involve the use of certain derivative instruments, depending on the guarantees assumed with policyholders. These programs may include dynamic hedging strategies for those companies that have sufficient infrastructure and financial strength to be able to deal with this type of hedge and the underlying risk they assume with it. The more advanced markets only partially recognize the risk reduction provided by these dynamic programs, as they are also partial hedges (*e.g.*, delta or delta-gamma hedges, among others).

- Finally, from the perspective of the overall market infrastructure, it is equally important for public policies to stimulate the development of the financial markets so that they are in a position to offer these hedging mechanisms to the Life insurance business and, to that extent, make the healthy development and expansion of this activity possible.

Innovation incentives

- A key aspect for the development of the Life insurance segment is for the prudential regulation systems to allow and encourage innovation in the design of products, within confidence levels that are considered appropriate for the protection of policyholders. In this way, the guidelines framework must facilitate the timely launch of competitively priced products on the market.

- Taking into account the current development of each market based on the degree of progress in the risk management that forms part of the corporate governance system of insurance companies, the guidelines framework should minimize prior controls on policies, technical terms and conditions and/or prices, as well as limits on the investments of the insurance companies

beyond the capital risk weights themselves, according to the assumed risk and the level of confidence established. That is why, from a public policy point of view, it is important to strengthen the mechanisms to make progress in the risk management of insurance companies and their groups through mechanisms such as the so-called Own Risk Solvency Assessment (ORSA) or Enterprise Risk Management (ERM).

Elements of market conduct

Finally, given the characteristics of Life products (especially Life savings and Life investment insurance), it is appropriate for public policies to consider adopting a framework of market conduct and policyholder protection standards, with requirements to ensure that the products they acquire are appropriate to their circumstances and risk profile, and transparent in terms of the commission received by the intermediaries of the operation. In the specific case of Life investment insurance products, modern regulatory frameworks seek to match or approximate the regulations applicable to the retail investment products marketed by other financial institutions, in order to avoid possible regulatory arbitrage, considering the specific features of the products that incorporate some insurance component into their structuring, if relevant.

b) Supplementary social protection

Mandatory employment (occupational) pension systems

One area of public policy that fits well with the above premise is the establishment of "quasi-mandatory" social protection systems that supplement pensions. The best example of this type of policy can be found in the United Kingdom. In this country, the authorities have established the obligation for companies to register employees in a group company pension plan (automatic enrollment), with contributions made by the company, the worker and, indirectly, the State through the granting of tax benefits. This is open to insurance companies and supplemented with additional elements that increase the level of competition in this market, in order to guarantee competitive prices in management fees.

Voluntary pension plans

A second public policy system in this area concerns the implementation of measures to boost supplementary pension plans, both occupational and individual of the contribution type, as a supplement to the pensions in the first pillar of pension systems. This type of system could involve the three main formulas or mechanisms through which Life insurance companies play a role in supplementary pension systems, that is: (i) survivorship annuity products; (ii) retirement-related pension products issued by insurance companies and managed within their respective balance sheets, and (iii) products linked to pension plans in which the insurance companies act as plan management companies.

c) Tax incentives

Tax incentives for savings and investment products

The establishment of tax incentives for savings and investment products whose contributions are managed by insurance companies, pension fund management companies or a combination of the two is a widely implemented public policy in the markets analyzed. In general, these incentives take various forms:

- Exemption from income tax on contributions. In cases where the taxation is moved to the time when the funds accumulated in these products are withdrawn, the system guarantees taxation at reduced tax rates, offsetting the progressive nature of personal income tax with mechanisms that reduce or exempt from taxation the income received at the time of withdrawal from retirement funds, within limits that are compatible with a savings stimulus fit for purpose.

- Deferment and/or reduced or zero tax rates on the returns generated by the financial assets in which the accumulated funds are invested.

- Reductions in the amount of income tax payable on a certain percentage of the sums contributed.

- Ability to combine products under the various tax incentives established.

- Stability in the tax regulations that introduce the requirements that products must meet in order to be eligible for the application of tax benefits, in the rules for switching between funds, in the annual limits on contributions and in the circumstances in which the tax benefits acquired are lost.

- Establishment of additional savings incentives to try to reach the entire population, including specific incentives for lower-income workers, such as bonuses.

Tax incentives for Life protection insurance products

The application of tax incentives to Life protection products is also a public policy line used in the markets analyzed in this report. Incentives for this type of product generally apply to Life insurance premiums paid on behalf of workers, with tax deductibility for companies when the benefits of these insurance policies cover the death, invalidity or disability of the worker, for which they are not treated as remuneration in kind. In the event that the covered contingency occurs, there is exemption from personal income tax on the amounts received by the insured persons or beneficiaries.

Avoiding disincentives created through the application of indirect taxes

Finally, as has been established above, Life insurance is ultimately, in different ways and proportions, a medium- and long-term savings mechanism. To that extent, and as is the case in general for products that individuals and families use for their saving, the creation of disincentives for the use of these types of financial instruments, by subjecting them to indirect taxation, should be avoided. Examples include value added tax or Life insurance premium taxes. The levying of this type of tax significantly limits the appeal of these products and consequently encourages individuals and families seeking to save for medium- and long-term goals to use products that may not be the most appropriate for achieving this. Therefore, the public policy generally applicable in this regard entails not levying indirect taxes (such as value added tax or insurance premium tax) on Life insurance premiums linked to savings, investment and pension systems.

References

1/ See: MAPFRE Economic Research (2017), *Economic and Industry Outlook 2017*, Madrid, Fundación MAPFRE, pp. 47-49, and MAPFRE Economic Research (2017), *Elements for insurance expansion in Latin America* (2017), Madrid, Fundación MAPFRE, pp. 35-38.

2/ See: MAPFRE Economic Research (2017), *Elements for insurance expansion in Latin America* (2017), *op.cit*, p. 79.

3/ Assuming there is no capital account or change in reserves.

4/ Family *savings* are savings in real and financial assets [deposits + direct investment + cash + Life savings insurance + group investment + pension funds], and *corporate savings* are earnings before tax not distributed by companies.

5/ For the purposes of this analysis, public savings and foreign savings are not considered, so private domestic savings are equal to gross national savings.

6/ Where: $Y_{available\ t}$ = *Gross National Product + transfers.*

7/ In the "*Demographics and Savings" analysis*, available on the MAPFRE Economics website, we can see that these savings make up the bulk of total savings and, therefore, investment.

8/ See: MAPFRE Economic Research (2020), *Economic and Industry Outlook 2020*, Madrid, Fundación MAPFRE, p. 27. Dissociations between the two exist, as, for the case of Latin America, is explained in Box 1.1-c of the aforementioned report.

9/ See the aforementioned "*Demographics and Savings" analysis*.

10/ Permanent income can be understood, in the absence of other assets, as family wealth.

11/ See the aforementioned "*Demographics and Savings" analysis*.

12/ When the public sector increases managed income less, the consumer makes up for this by increasing their consumption. When the public sector uses fiscal stimuli through the *Ricardian equivalence*, the consumer saves on the expectation that taxes will be higher in the future.

13/ See: MAPFRE Economic Research (2019), *Population aging*, Madrid, Fundación MAPFRE.

14/ This ratio is the one shown at each point in the isogram line diagram in Chart 1.1.2-d. These are the maximum consumption points for each population state, given the capital restrictions imposed by the previous savings.

15/ See: MAPFRE Economic Research (2020), *Economic and Industry Outlook 2020*, Madrid, Fundación MAPFRE, p. 27. Dissociations between the two exist, as, for the case of Latin America, is explained in Box 1.1-c. "Savings in Latin America."

16/ Although this facilitates, in some cases, the banks' maturity transformation function.

17/ Assuming that the variation (negative) in fertility and (positive) in life expectancy are the same.

18/ OECD (2016), *Life Annuity Products and Their Guarantees*, OECD Publishing, Paris, p. 106.

19/ Only includes Canada and the United States. Mexico's data are included within those corresponding to Latin America and the Caribbean.

20/ In the particular case of the Dutch insurance market, the fall is caused not only by the effect of the low interest rate environment and the very limited development of products in which the policyholder assumes the investment

risk, but also because of the impact of a court judgment on inappropriate practices in pricing and marketing, which has led to the materialization of a reputational risk for these products, the impact of which has been extended to much of the Life insurance business in that country. A reference to the case can be found at: https://www.dnb.nl/en/binaries/Vision%20for%20the%20future%20of%20the%20Dutch%20insurance%20sector_tcm47-350191.pdf

21/ MAPFRE Economics based on ACLI data, *2019 Life Insurers Fact Book*.

22/ NAIC, *CIPR Study, State of the Life Insurance Industry: Implications of Industry Trends*.

23/ NAIC, *CIPR Study, State of the Life Insurance Industry* (2013).

24/ See: https://www.banxico.org.mx/mercados/d/%7B0DE0044F-662D-09D2-C8B3-4F1A8E43655F%7D.pdf

25/ Known as "AFORE generation," in reference to the system of private management of funds accumulated through Retirement Fund Administrators.

26/ See: https://www.gob.mx/cms/uploads/attachment/file/387620/Diagno_stico_del_Sistema_de_Ahorro_para_el_Retiro_en_Me_xico_Funcionamiento_Beneficios_y_Retos.pdf

27/ See: https://www.gob.mx/cms/uploads/attachment/file/503385/1_Apuntes_SAR_Edad_de_retiro.pdf

28/ See: MAPFRE Economic Research (2019), *The Latin American insurance market in 2018*, Madrid, Fundación MAPFRE.

29/ SUSEP Circular no. 564 of December 24, 2017. In: http://www.in.gov.br/materia/-/asset_publisher/Kujrw0TZC2Mb/content/id/1493606/do1-2017-12-29-circular-n-564-de-24-de-dezembro-de-2017-1493602

30/ SUSEP Circular no. 564 of December 24, 2017.

31/ CNSP Resolution 348/17.

32/ CNSP Resolution 349/17.

33/ See: https://www.cii.co.uk/learning/knowledge-services/reference-resources/classes-of-insurance/

34/ See: https://www.cii.co.uk/learning/knowledge-services/reference-resources/classes-of-insurance/protection-insurance/

35/ See: https://www.cii.co.uk

36/ See: https://www.bancaditalia.it/pubblicazioni/rapporto-stabilita/2016-1/en-FSR-1-2016.pdf?language_id=1 (Box, pp. 50-51).

37/ See: http://www.ania.it/documents/35135/126704/Italian-Insurance-2018-2019.pdf/f65686df-3fa4-0917-9ef8-0f6279168c9a?version=1.0&t=1575554399088

38/ *Life Insurance Fact Book 2019*, The Life Insurance Association of Japan.

39/ Insurance is one of the oldest sectors in Hong Kong and has played an important role in the economic development of the city. The industry dates back to the creation of the Canton Insurance Office and the Union Insurance Society of Canton in the 19th century. After the British colonization in 1841, five chronological phases in the development of insurance in Hong Kong can be distinguished. The first runs from 1841 to the beginning of the Japanese occupation in 1941, which marks the early days of the industry (at the beginning of the 1940s there were around 100 insurers in the colony, almost all subsidiaries controlled by the British). The second phase runs from the end of World War II to the end of the 1960s, in which the manufacturing industry became the driving force behind Hong Kong's development; as the economic base evolved, so did the insurance industry, which remained dominated by British insurers. The third phase runs from the late 1960s to the early 1980s, the period of globalization and diversification in the industry. At that time Hong Kong became established as an insurance center in the Asia-Pacific region. The fourth phase runs from the decade of the 1980s to Hong Kong's return to Chinese sovereignty in 1997; as manufacturers relocated to mainland China, demand for fire insurance and employee insurance declined and Life insurance began to dominate the market. The last phase of development of the industry runs from 1997 to the present day. At the start of this period the number of insurers per capita in Hong Kong was already one of the highest in the world, but that did not stop the growth of Life insurance and banking insurance from taking off. The large margins in Life products and the huge margin

for growth paved the way for the further development of both global and local companies. From the mid-1970s, to prepare Hong Kong as an international insurance center and protect the interests of insured persons, the government began to introduce legislation and strengthen industry supervision. The legislative process culminated in the enactment and entry into force of the Insurance Companies Ordinance in 1983. In June 1990, the government officially established the Office of the Insurance Commission (OIC) to manage and amend the ordinance, which required the OIC to extend its supervision not only to insurance companies but also to intermediaries. Subsequently, in December 2015, the Insurance Authority (IA) was established under the Insurance Companies (Amendment) Ordinance 2015. The IA is a new insurance regulator independent from the government. The aims with its establishment were to modernize the regulatory infrastructure to facilitate the stable development of Hong Kong's insurance industry, provide better protection for insured persons and meet the requirement of the International Association of Insurance Supervisors that insurance regulators should be financially and operationally independent from the government and industry. In June 2017, the IA took over the regulatory functions of the Office of the Insurance Commission and began regulating insurance companies, and in September 2019 it took over the regulation of insurance intermediaries (see: Feng Bangyan and Nyaw Mee Kau, *Enriching lives: a history of insurance in Hong Kong, 1841-2010*).

40/ Financial Services Development Council (2018). *Enhancing Hong Kong's Role as a Leading Life Insurance Centre*.

41/ In the field of pensions, the *Mandatory Provident Fund Schemes Authority* (MPFA) is a statutory body established in September 1998 that regulates the operations of the mandatory provident fund plans and occupational retirement plans.

42/ NAIC, *CIPR Study: State of the Life Insurance Industry* (2013)

43/ An analysis of this can be found at: Economic Research (2018), *Insurance solvency regulation systems*, Madrid, Fundación MAPFRE.

44/ OECD, *Life Annuity Products and their guarantees.*

45/ See: MAPFRE Economic Research (2017), *Elements for insurance expansion in Latin America*, Madrid, Fundación MAPFRE, pp. 97-98.

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Other reports from MAPFRE Economics

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MAPFRE Economic Research (2019), *Growth forecasts for insurance markets: Non-Life*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2019), *MAPFRE GIP 2019*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2019), *The Latin American insurance market in 2018*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2019), *The Spanish insurance market in 2018*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2019), *Ranking of insurance groups in Latin America 2018*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2019), *Ranking of the largest European insurance groups in 2018*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2019), *Population aging*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2018), *Global insurance potential index*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2018), *Health systems: a global analysis*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2018), *Insurance industry Investments*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2018), *The Latin American insurance market in 2017*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2018), *The Spanish insurance market in 2017*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2018), *Insurance solvency regulation systems*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2017), *Pension systems*, Madrid, Fundación MAPFRE.

MAPFRE Economic Research (2017), *Elements for insurance expansion in Latin America*, Madrid, Fundación MAPFRE.

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