Fundación MAPFRE

INSURANCE INDUSTRY INVESTMENT

MAPFRE Economics

Insurance industry investment

Update of the comparative analysis of insurance industry investment portfolios

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Presentation

Fundación MAPFRE presents the third edition of the *Insurance industry investment* report, a study prepared annually by MAPFRE Economics that shows the distribution and evolution of investments by insurance companies by type of assets in a selection of markets, both developed and emerging, as well as an analysis of the investment portfolios of a selection of large European insurance groups based on the information extracted from their consolidated accounts referring to the end of 2019.

In 2019, the insurance markets considered in this report presented total investments amounting to 20.91 trillion euros. Furthermore, when analyzed individually, the investments of the insurance industries in each country represented significant portions of the respective gross domestic products, from 5% in the case of Mexico to 99% in the case of the United Kingdom.

This publication is part of Fundación MAPFRE's objective to advance the education of society on issues related to finance and insurance, with the purpose of expanding the knowledge required for better decision-making in these matters. In this sense, the studies carried out by MAPFRE Economics contribute to the dissemination of such knowledge, by bringing the reader closer to a series of relevant topics on insurance and its role in the economy, as in this case, where the contributions of the insurance industry as an institutional investor in the stability and growth of the economy stand out.

Fundación MAPFRE

Introduction

As in previous editions, in this report MAPFRE Economics offers an overview of the evolution, distribution and risk profile of the assets of the investment portfolios of insurance companies in a selection of developed and emerging markets globally. In this respect, the analysis includes markets in the eurozone, the United States, Japan, the United Kingdom, Spain, Brazil and Mexico. In addition, the report incorporates an analysis of the investment portfolios of a selection of large European insurance groups, which considers information on the credit rating of the portfolios in which these groups invest.

As highlighted in the reports prepared by MAPFRE Economics on the operational characteristics of the insurance industry, and especially when analyzing the investments it makes, the insurance sector is recognized as one of the main institutional investors worldwide. Unlike other financial institutions, the insurance business model calls for the implementation of liability-driven investment strategies, with the objective of achieving an adequate match in terms of maturity, currency and interest rates between the liabilities assumed and the investment instruments that promote them. In this way, the insurance industry at a global level contributes to the formation of capital through a stable flow of resources for the long-term financing of projects that promote economic growth, also supporting the stability of the financial system by providing the economy with a mechanism that reduces pro-cyclicality in times of crisis.

MAPFRE Economics

Executive summary

As in previous editions[1], this report provides a comparative view of the distribution and evolution of investments of insurance companies, by type of assets, in a selection of markets, including both developed (United States, the eurozone, Japan, the United Kingdom and Spain) and emerging markets (Brazil and Mexico). As can be seen in Table S-1, this is a set of markets that offer a different level of relative development. It focuses on the cases of the United Kingdom and Japan, in which the weight of the investments managed in relation to their gross domestic product is higher (98.7% and 76.5%, respectively), together with the eurozone and United States markets, which are the ones with the highest volume of investments managed in absolute values (8.17 and 6.21 trillion euros, respectively).

Where possible, information on investments in these markets is presented by distinguishing the traditional investment portfolio (in which the investment risk is retained in the balance sheet of insurance companies) from the portfolio that supports products in which the policyholder is responsible for the investment risk, which we have called the unit-linked business portfolio (which includes both strict unit-linked products, and other variable annuity products, where there is also an assumption of investment risk by the insurance policyholder, they are managed in separate accounts and investments are realized in mutual fund units).

This distinction in the markets is shown in Table S-2. In general, except in the case of the United Kingdom, investments that back Investment Life insurance in which the policyholders assume the financial risk of the portfolios assigned to their policies represent a substantially lower percentage than traditional business. However, in 2019 it can be seen that this type of investment gained weight both in the eurozone (and particularly in Spain) and in the United States, where products called "variable annuities" are common, and where the policyholder assumes financial risks in the accumulation phase, to a greater or lesser extent, depending on the guarantees they include[2]. In the United Kingdom, the percentage has fallen slightly, although it continues to be the market with the highest proportion of unit-linked products.

In investment life insurance portfolios of the "unit-linked" or similar type (including "variable annuities" products), the risk and investment decisions do not fall on the insurance company, but are influenced by the decisions that insurance policyholders take. Thus, once the traditional investment portfolio has been defined, the proportions corresponding to each category of assets are then calculated. This method of presenting the information is based

Table S-1
Selected markets: investments managed by the insurance industry, 2019
(millions of euros)

Market	Investments	GDP	% of GDP
United Kingdom	2,475,082	2,506,983	98.7%
Japan	3,439,639	4,498,879	76.5%
Eurozone	8,170,654	11,934,006	68.5%
United States	6,209,183	18,981,707	32.7%
Spain	306,281	1,245,331	24.6%
Brazil	249,868	1,628,725	15.3%
Mexico	60,248	1,114,293	5.4%

Source: MAPFRE Economics (with data from EIOPA, NAIC, SUSEP, CNSF, LIAJ, GIAJ and FMI)

Table S-2
Selected markets: structure of investment portfolios by type of insurance business, 2019
(%)

Type of business	Eurozone	United States	United Kingdom	Spain
Traditional business portfolio	83.6%	71.0%	47.3%	92.6%
Unit-linked business portfolio	16.4%	29.0%	52.7%	7.4%

Source: MAPFRE Economics (with data from EIOPA and NAIC)

on the idea that in traditional (i.e. not unit-linked or variable annuity) portfolios, it is appropriate to distinguish the investment typology, with a view to defining the nature of the risk taken on by the insurance companies.

In this sense, the highest level of breakdown of the portfolios for comparative purposes (with a breakdown of corporate fixed income investments) has been achieved for the markets in the eurozone, the United States, the United Kingdom, Japan and Spain (see Table S-3). This information focuses on the United States insurance market, due to the predominant weight that investments in corporate fixed income continue to have, well above the other insurance markets of developed economies, although at the end of 2019 (51.1%) they represented a somewhat lower weight than at the end of the previous fiscal year (51.5%). The depth and breadth of the capital market in this country offers more opportunities to find this type of issues to invest in, with a wide variety in terms of duration and credit quality level.

The Japanese insurance market, meanwhile, continues to have a high percentage of foreign currency investments (included in the "other investments" category which accounts for 25.3% of its total portfolio, having experienced an increase of 11.6 percentage points over the 2009–2019 decade). Insurance companies in this country have traditionally been an important source of investment for Japanese sovereign bonds and, in particular, "super-long-term government bonds" (JGBs). However, the low interest rate environment has made it very difficult to maintain the return on investment while aligning the duration of assets and liabilities, keeping in mind that old portfolios with high guaranteed rates still remain. The reaction from insurance companies in this environment has been to increase their investments overseas, mainly in US bonds, in search of higher yields to meet their guaranteed interest obligations. This has caused insurers to be more exposed to international markets and to the risk of exchange rate fluctuations.

In the context of the aforementioned developed insurance markets, the Spanish insurance market represents the highest proportion of fixed income in its investment portfolio, and also has the largest concentration of sovereign fixed income. However, if the Brazilian and Mexican insurance markets are considered, they have higher percentages of investments in fixed income securities than the Spanish

Table S-3
Selected markets: a structural breakdown of traditional business investment portfolios, 2018–2019
(%)

Asset type	Eurozone		United States		Japan		United Kingdom		Spain	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
Corporate fixed income	31.4%	31.4%	51.5%	51.1%	7.1%	7.4%	36.5%	36.0%	21.8%	20.7%
Sovereign fixed income	34.5%	34.4%	13.6%	13.3%	39.1%	39.1%	20.9%	19.2%	56.9%	58.6%
Equity	13.9%	13.8%	13.1%	13.2%	6.8%	5.7%	12.9%	12.9%	6.0%	5.7%
Loans	5.2%	5.0%	10.6%	10.6%	7.9%	7.5%	9.1%	10.4%	1.0%	0.8%
Cash and deposits	4.6%	4.8%	3.9%	4.1%	3.1%	3.6%	10.1%	10.8%	7.8%	7.7%
Real estate	2.3%	2.1%	0.6%	0.6%	1.7%	1.7%	2.7%	2.3%	2.5%	2.4%
Other investments	8.2%	8.6%	6.7%	7.2%	34.3%	35.0%	7.7%	8.5%	4.0%	4.0%

Source: MAPFRE Economics (with data from EIOPA, NAIC, LIAJ and GIAJ)

Table S-4
Selected markets: summary of the investment portfolio structure by asset type, 2018–2019
(%)

Asset type	Eurozone		United States		Japan		United Kingdom		Spain		Brazil		Mexico	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
Fixed income	65.9%	65.7%	65.1%	64.4%	46.2%	46.5%	57.4%	55.2%	78.7%	79.3%	92.7%	91.7%	81.5%	79.9%
Equity	13.9%	13.8%	13.1%	13.2%	6.8%	5.7%	12.9%	12.9%	6.0%	5.7%	6.5%	7.4%	13.7%	15.7%
Loans	5.2%	5.0%	10.6%	10.6%	7.9%	7.5%	9.1%	10.4%	1.0%	0.8%	0.0%	0.0%	2.5%	2.1%
Cash and deposits	4.6%	4.8%	3.9%	4.1%	3.1%	3.6%	10.1%	10.8%	7.8%	7.7%	0.2%	0.3%	0.5%	0.8%
Real estate	2.3%	2.1%	0.6%	0.6%	1.7%	1.7%	2.7%	2.3%	2.5%	2.4%	0.2%	0.1%	1.5%	1.4%
Other investments	8.2%	8.6%	6.7%	7.2%	34.3%	35.0%	7.7%	8.5%	4.0%	4.0%	0.4%	0.5%	0.2%	0.1%

Source: MAPFRE Economics (with data from EIOPA, NAIC, SUSEP and CNSF)

market. Thus it is observed that in insurance markets with a lower relative level of development, the percentage of investments in fixed income securities tends to be higher.

Finally, Table S-4 illustrates the summary of the investment portfolio structure by asset type for all the markets analyzed in this report. This information highlights the high level of concentration of fixed income investments (both corporate and sovereign) throughout the sample that made up the analysis. This predominance can be explained to a large extent by the fact that the insurance business model involves the need to implement liability-driven investment strategies in order to achieve an appropriate match in terms of maturity and interest rates between recognized liabilities and the investment instruments that back them up.

Finally, in order to complement the analysis offered in this report, the third section includes an analysis of the investment portfolios of a selection of European insurance groups with an international presence, based on the information extracted from their consolidated accounts referring to the close of 2019. This analysis also offers comparative information about the rating of fixed income assets and the changes compared to the previous year, in order to provide a more in-depth view when comparing their risk profiles.

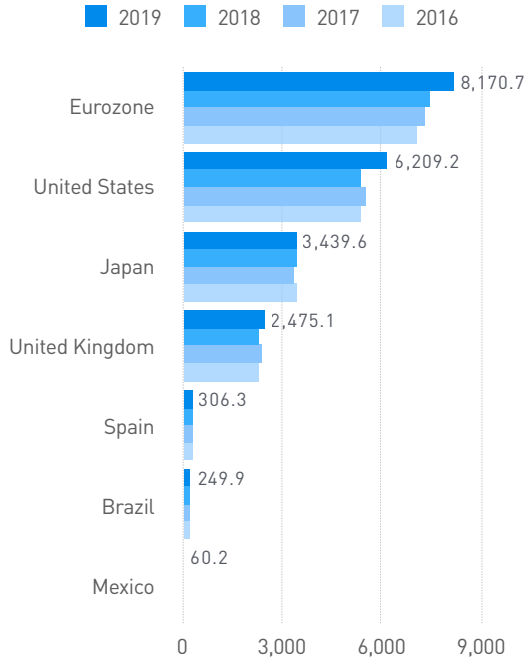
1. An analysis of the insurance markets

As can be seen from the information presented in Chart 1-a, the insurance markets considered for the purposes of the analysis of this report (the eurozone, the United States, Japan, the United Kingdom, Spain, Brazil and Mexico) represented in 2019, when combined, total investments for an amount of 20.91 trillion euros. In general, this shows a growing trend with respect to their amount throughout the period 2016–2019 and highlights, due to their size, those markets of the eurozone, the United States and Japan (8.17, 6.21 and 3.44 trillion euros, respectively, in 2019).

Likewise, when analyzed individually, the investments made during that year by the insurance industry in these countries represented significant proportions of their respective gross domestic product (GDP), ranging from 99% in the case of the United Kingdom to just over 5% in the case of Mexico (see Chart 1-b).

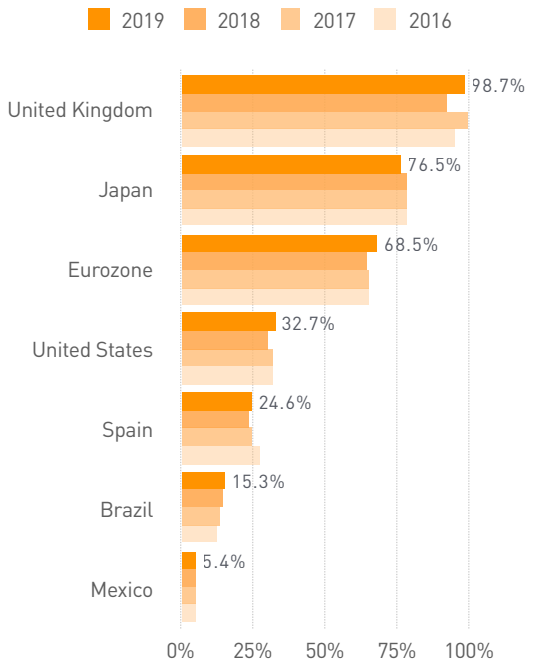
The information that was used as a basis for the analysis was provided directly by the relevant national or regional supervisory agencies. In the case of information concerning the eurozone market, the United Kingdom and Spain, the source was the European Insurance and Occupational Pensions Authority (EIOPA). In Spain, ICEA has been used as an additional source in the analysis of changes in the structure of the aggregate portfolio over the 2009–2019 period. In the case of the United States insurance market, the information was taken from that published by the National

Chart 1-a
Selected markets: investments managed by the insurance industry, 2016–2019
(billions of euros)



Source: MAPFRE Economics (with data from EIOPA, NAIC, LIAJ, GIAJ, SUSEP and CNSF)

Chart 1-b
Selected markets: investments managed by the insurance industry with respect to GDP, 2016–2019
(% of GDP)



Source: MAPFRE Economics (with data from EIOPA, NAIC, LIAJ, GIAJ, SUSEP, CNSF and FMI)

Association of Insurance Commissioners (NAIC). In the case of Japan, information from the Life insurance association (*The Life Insurance Association of Japan*, LIAJ) and Non-Life association (*The General Insurance Association of Japan*, GIAJ) have been used. In the case of Brazil, the source of the data was the Superintendence of Private Insurance (SUSEP) and, finally, for the Mexican insurance market, the National Insurance and Bonding Commission (CNSF).

2. The structure of investment portfolios in the selected markets

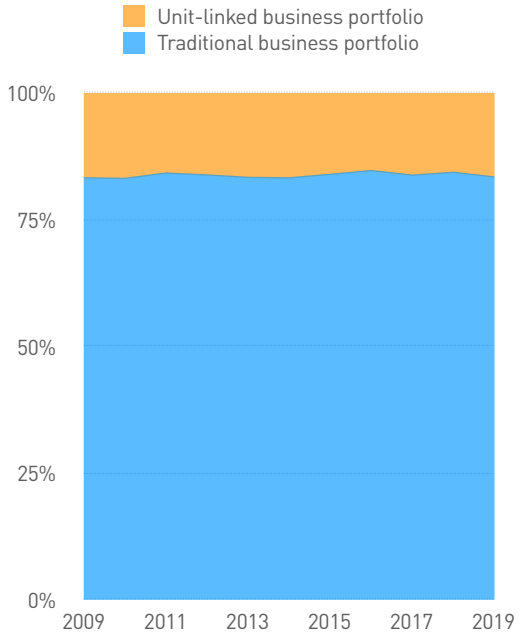
Information describing the evolution of investment portfolios in the insurance markets of the eurozone, the United States, Japan, the United Kingdom, Spain, Brazil and Mexico, corresponding to the last available decade, is provided in the following sections of this report. In the case of the markets of the eurozone, the United Kingdom and Spain, they also show a breakdown of the evolution of investment portfolios in terms of both traditional and unit-linked business over the same decade.

2.1 Eurozone

Table 2.1-a and Chart 2.1-a illustrate the evolution of the investment portfolio by type of insurance business (distinguishing between traditional business and unit-linked business) throughout the decade 2009–2019, for the group of insurance markets that make up the eurozone (Germany, Austria, Belgium, Cyprus, Slovakia, Slovenia, Spain, Estonia, Finland, France, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands and Portugal).

Throughout the period 2009–2019, the proportion of the unit-linked business portfolio in the total portfolio decreased by 0.2 percentage points (pp). However, there was a slight rebound in the weight of this type of product in 2019 of 0.9 pp, with an increase of 200 billion euros in absolute values. The prolonged environment of low interest rates that is affecting eurozone countries, together with the good performance of equity markets in recent years, is increasing the demand for products in which the policyholder assumes the investment risk. However, this business faces competition in the market from investment products issued by other financial institutions, such as banks or mutual fund and pension fund managers.

Chart 2.1-a
Eurozone: structure of investment portfolios by type of insurance business, 2009–2019
(%)



Source: MAPFRE Economics (with data from EIOPA)

Table 2.1-a
Eurozone: structure of investment portfolios by type of insurance business, 2009–2019
(%)

Type of business	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Traditional business portfolio	83.4%	83.3%	84.3%	84.0%	83.5%	83.4%	84.1%	84.8%	83.9%	84.5%	83.6%
Unit-linked business portfolio	16.6%	16.7%	15.7%	16.0%	16.5%	16.6%	15.9%	15.2%	16.1%	15.5%	16.4%

Source: MAPFRE Economics (with data from EIOPA)

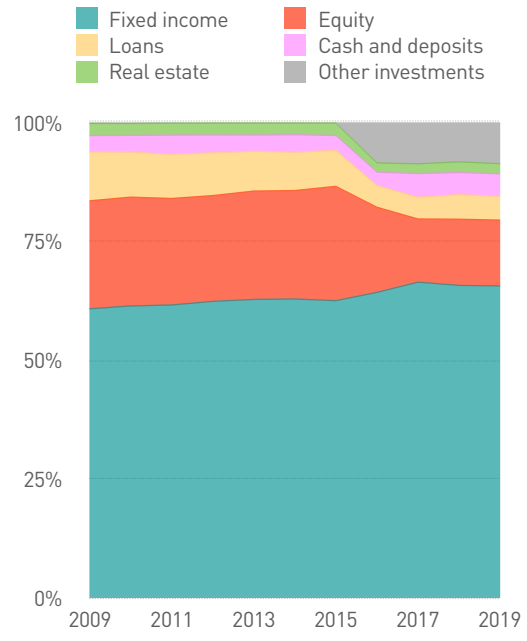
Table 2.1-b
Eurozone: structure of traditional business investment portfolio by asset type, 2009–2019
(%)

Asset type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed income	60.9%	61.5%	61.7%	62.5%	62.9%	63.0%	62.6%	64.4%	66.5%	65.9%	65.7%
Equity	22.7%	22.9%	22.4%	22.2%	22.8%	22.8%	24.0%	17.9%	13.3%	13.9%	13.8%
Loans	10.3%	9.5%	9.3%	9.0%	8.4%	8.1%	7.6%	4.6%	4.6%	5.2%	5.0%
Cash and deposits	3.5%	3.5%	4.1%	3.7%	3.4%	3.7%	3.1%	2.8%	5.0%	4.6%	4.8%
Real estate	2.5%	2.5%	2.5%	2.5%	2.5%	2.4%	2.6%	1.9%	2.0%	2.3%	2.1%
Other investments	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	8.4%	8.6%	8.2%	8.6%

Source: MAPFRE Economics (with data from EIOPA)

Regarding the evolution of the structure of the traditional investment portfolio by asset type, it is worth highlighting the 4.8 pp increase in fixed income investments throughout the decade, as well as the 8.9 pp drop in the percentage of equity investments. It should be noted that in the eurozone (and, in general, in all insurance markets), fixed income investments continue to hold a preeminent position within portfolios, to the extent that the insurance business model entails the need to implement liability-driven investment strategies in order to achieve an adequate match in terms of maturity and interest rates between the liabilities assumed and the investment instruments that support them.

Chart 2.1-b
Eurozone: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)

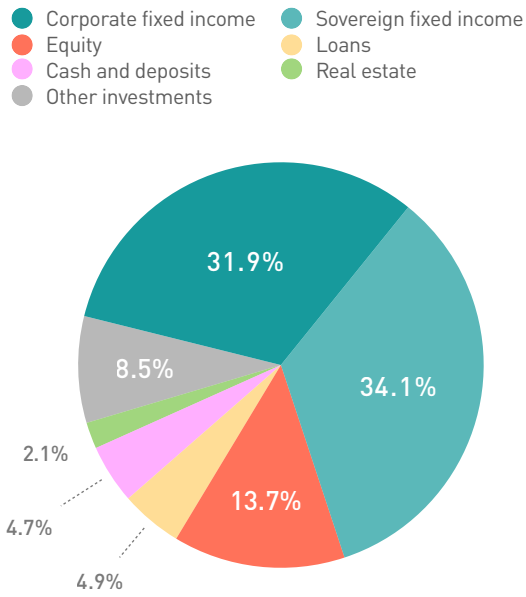


Source: MAPFRE Economics (with data from EIOPA)

In addition, as has been commented in previous reports, in 2016 there was a break in the series in terms of the percentages of equities within the aggregate investment portfolio of the eurozone market. These decreased with a correlative increase in the heading of "other investments," influenced by the entry into force of the Solvency II regulatory regime (in 2016) and the new capital risk weights associated with the different asset types, which inevitably led to a reallocation of investments, reducing the percentage of equities. However, it should also be noted that until 2016 the category of "other investments" was used in a very residual way, so that the variation may be partly due to accounting reclassification movements of portfolio investments. Similarly, the drop in the percentage of real estate investments in 2016 was related to the new classification system under Solvency II, which excluded real estate for own use (see Table 2.1-b and Chart 2.1-b).

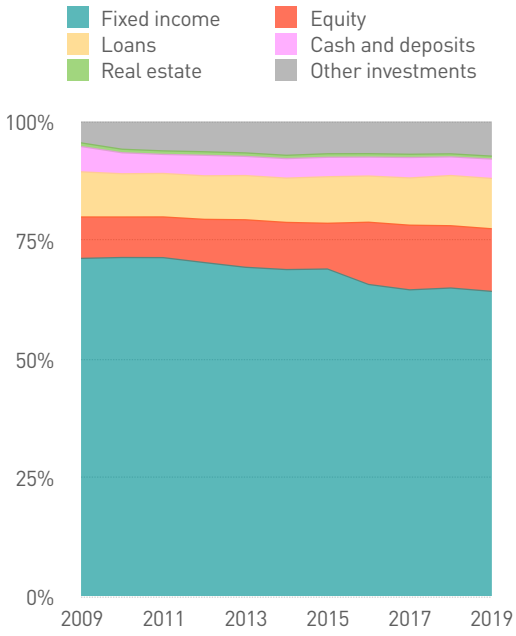
Finally, Chart 2.1-c illustrates the structural breakdown of the traditional business

Chart 2.1-c
Eurozone: structural breakdown of the traditional business investment portfolio by asset type, 2019
(%)



Source: MAPFRE Economics (with data from EIOPA)

Chart 2.2-a
United States: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)



Source: MAPFRE Economics (with data from NAIC)

investment portfolio in the eurozone by asset type. The investments corresponding to mutual funds are presented while taking into account the placement of the investments carried out by these funds (the look-through approach). This information adds the details of the breakdown of the fixed income investments, specifying that 31.9% of the total investment portfolio represented corporate fixed income investments, while 34.1% of the total took the form of sovereign fixed income investments.

2.2 United States

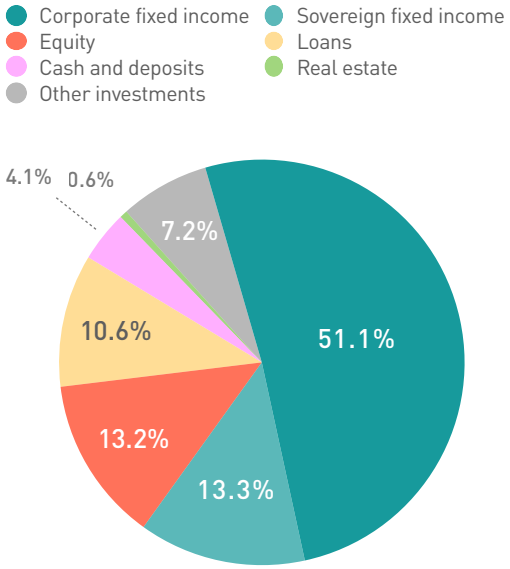
The evolution of the structure of the traditional business investment portfolio by asset type, throughout the decade 2009–2019 for the insurance market in the United States, is illustrated in Table 2.2 and in Chart 2.2-a.

Table 2.2
United States: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)

Asset type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed income	71.4%	71.5%	71.5%	70.5%	69.5%	69.0%	69.1%	65.9%	64.7%	65.1%	64.4%
Equity	8.7%	8.5%	8.6%	9.1%	10.0%	9.9%	9.6%	13.1%	13.6%	13.1%	13.2%
Loans	9.5%	9.1%	9.1%	9.2%	9.3%	9.3%	9.8%	9.7%	9.9%	10.6%	10.6%
Cash and deposits	5.3%	4.4%	4.0%	4.3%	4.0%	4.1%	4.1%	4.0%	4.3%	3.9%	4.1%
Real estate	0.8%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.6%	0.6%
Other investments	4.4%	5.7%	6.0%	6.2%	6.5%	7.0%	6.7%	6.6%	6.8%	6.7%	7.2%

Source: MAPFRE Economics (with data from NAIC)

Chart 2.2-b
United States: structural breakdown of the traditional business investment portfolio by asset type, 2019
(%)



Source: MAPFRE Economics (with data from NAIC)

According to this information, unlike the trend observed in the insurance markets of the eurozone, it is observed that in the case of the US market, fixed income investments fell by -7 pp throughout the period of analysis (2009–2019), and were essentially concentrated in corporate fixed income securities. As illustrated in Chart 2.2-b, using data from 2019, 51.1% of the total portfolio was in corporate fixed income investments, while sovereign fixed income investments represented 13.3% of the total portfolio. Equity accounted for 13.2% of the total portfolio, and the fact that its weight increased by 4.5 pp throughout the decade is worth noting.

2.3 Japan

In the case of the insurance market in Japan, the evolution of the investment portfolio structure throughout the decade 2009–2019 is illustrated in Table 2.3 and Chart 2.3-a. It should be noted that an important characteristic of the investment portfolio in this market consists of the high percentage of foreign investments held by Japanese insurance companies in the aggregate portfolio (25.3% of the portfolio at the end of 2019); an investment class that also increased by 11.6 pp throughout the decade, representing an increase of 123% with respect to the volume of foreign investments registered in 2009.

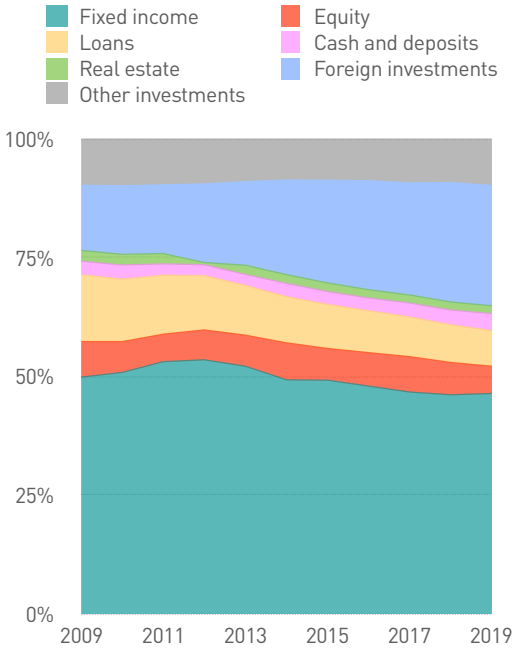
As can be seen in Chart 2.3-b, Japanese insurance companies are an important source of investment for Japanese sovereign bonds and, in particular, for "super-long-term government bonds" (JGBs)[3]. However, the current low interest rate environment has made it very difficult to maintain the return on investment while aligning the duration of assets and liabilities, keeping in mind that old portfolios with high guaranteed rates still remain. As has been noted in previous reports,

Table 2.3
Japan: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)

Asset type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed income	50.0%	51.0%	53.2%	53.6%	52.2%	49.4%	49.3%	48.1%	46.8%	46.2%	46.5%
Equity	7.5%	6.5%	5.8%	6.3%	6.5%	7.8%	6.7%	7.0%	7.4%	6.8%	5.7%
Loans	14.1%	13.1%	12.4%	11.4%	10.5%	9.7%	9.3%	8.8%	8.3%	7.9%	7.5%
Cash and deposits	2.8%	3.0%	2.4%	2.3%	2.3%	2.8%	2.7%	2.7%	2.9%	3.1%	3.6%
Real estate	2.3%	2.2%	2.2%	0.5%	1.9%	1.8%	1.8%	1.7%	1.7%	1.7%	1.7%
Overseas investments	13.7%	14.4%	14.4%	16.5%	17.6%	19.9%	21.6%	22.9%	23.6%	25.1%	25.3%
Other investments	9.7%	9.8%	9.6%	9.4%	8.9%	8.6%	8.6%	8.7%	9.2%	9.1%	9.8%

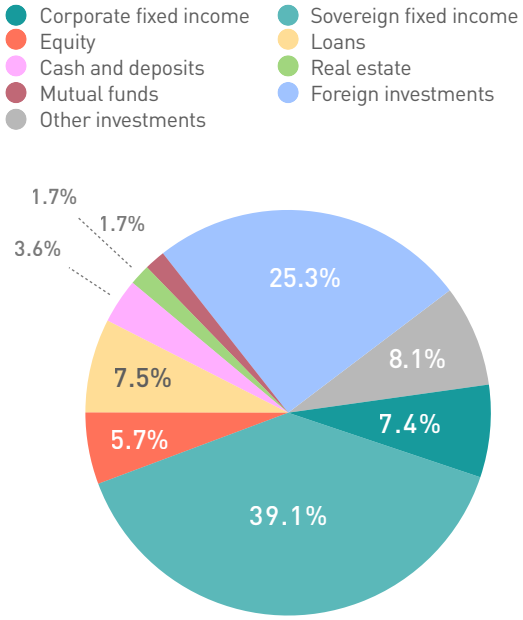
Source: MAPFRE Economics (with data from LIAJ and GIAJ)

Chart 2.3-a
Japan: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)



Source: MAPFRE Economics (with data from LIAJ and GIAJ)

Chart 2.3-b
Japan: structural breakdown of the traditional business investment portfolio by asset type, 2019
(%)



Source: MAPFRE Economics (with data from LIAJ and GIAJ)

the reaction from insurance companies in this environment has been to increase their investments overseas, mainly in US bonds, but also from the United Kingdom and emerging Asia, in search of higher yields to meet their guaranteed interest obligations. This has caused insurers to be more exposed to international markets and, consequently, to the risk of exchange rate fluctuations.

2.4 United Kingdom

The evolution of the investment portfolio by type of insurance business (distinguishing between traditional and unit-linked business) for the UK insurance market throughout the decade 2009–2019 is presented in Table 2.4-a and Chart 2.4-a.

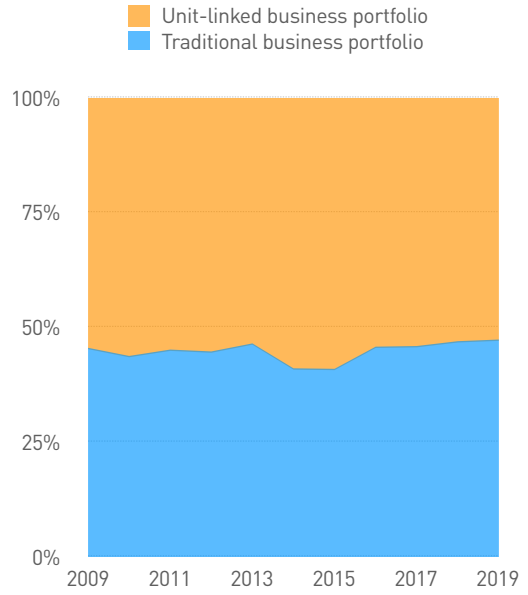
In contrast with the data for the combined eurozone markets, in the case of the United Kingdom there is a trend toward an increase in the proportion of the unit-linked investment portfolio compared to the traditional business portfolio, an idiosyncratic element of this

Table 2.4-a
United Kingdom: structure of investment portfolios by type of insurance business, 2009–2019
(%)

Type of business	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Traditional business portfolio	45.5%	43.7%	45.1%	44.7%	46.5%	41.0%	40.9%	45.8%	45.9%	47.0%	47.3%
Unit-linked business portfolio	54.5%	56.3%	54.9%	55.3%	53.5%	59.0%	59.1%	54.2%	54.1%	53.0%	52.7%

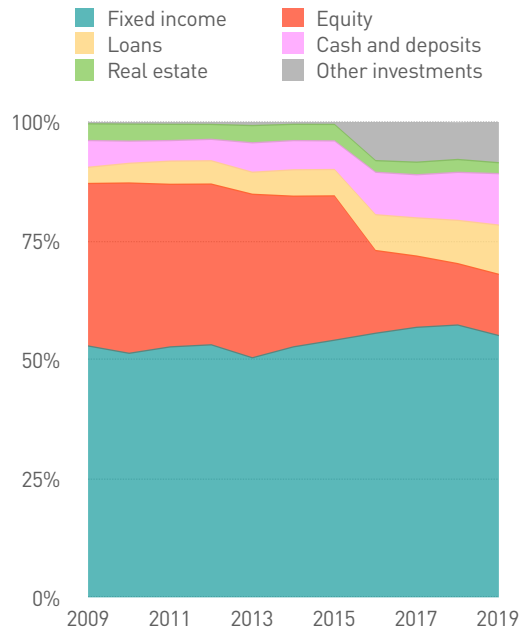
Source: MAPFRE Economics (with data from EIOPA)

Chart 2.4-a
United Kingdom: structure of investment portfolios by type of insurance business, 2009–2019
(%)



Source: MAPFRE Economics (with data from EIOPA)

Chart 2.4-b
United Kingdom: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)



Source: MAPFRE Economics (with data from EIOPA)

market. However, its weight in the total portfolio seems to have stabilized, showing a slight fall in the 2009–2019 period, from 54.5% to 52.7%. In any case it registered the highest relative proportion among the markets analyzed in this report.

Regarding the evolution of the structure of the traditional investment portfolio by asset type in the United Kingdom over the period 2009–2019, it can be seen that the percentage of fixed income bonds has experienced a slight decline, standing at 55.2%, compared to 57.4% in the previous year (see Table 2.4-b and Chart 2.4-b). In addition, the 7.0 pp increase in the weight of loans throughout the decade (10.4% in 2019 compared to 3.4% in 2009) really stands out, representing an increase of 397% with respect to the volume of this type of investment at the beginning of the decade.

Finally, it should be noted that, as is the case with the eurozone, the entry into force of the prudential Solvency II regulation regime led to certain investments being reallocated, reducing the percentage of equity. However, it should also be noted that the category of "other investments" (which until then was used in a very residual manner) increased significantly, so the variation may therefore be due in part to accounting reclassification movements of portfolio investments.

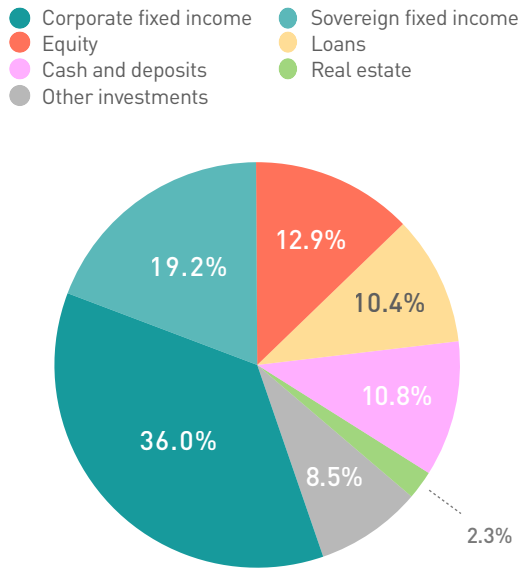
Finally, Chart 2.4-c illustrates the structural breakdown of the traditional business investment portfolio by asset type in the United Kingdom market in 2019. This information allows for the identification of the relative breakdown of fixed income investments, specifying that 36.0% of the total investment portfolio represented corporate fixed income investments, while 19.2% of the total portfolio took the form of sovereign fixed income investments. This structure contrasted with the predominant trend in the eurozone, and was closer to the behavior of the United States insurance market.

Table 2.4-b
United Kingdom: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)

Asset type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed income	53.0%	51.5%	52.8%	53.2%	50.5%	52.8%	54.2%	55.7%	56.9%	57.4%	55.2%
Equity	34.2%	35.8%	34.2%	33.8%	34.4%	31.7%	30.3%	17.4%	15.0%	12.9%	12.9%
Loans	3.4%	4.1%	4.9%	4.9%	4.6%	5.5%	5.5%	7.5%	8.0%	9.1%	10.4%
Cash and deposits	5.6%	4.7%	4.3%	4.5%	6.2%	6.1%	6.0%	8.9%	9.1%	10.1%	10.8%
Real estate	3.5%	3.6%	3.4%	3.1%	3.6%	3.4%	3.5%	2.4%	2.6%	2.8%	2.3%
Other investments	0.3%	0.4%	0.4%	0.4%	0.7%	0.4%	0.4%	8.0%	8.4%	7.7%	8.5%

Source: MAPFRE Economics (with data from EIOPA)

Chart 2.4-c
United Kingdom: structural breakdown of the traditional business investment portfolio by asset type, 2019
(%)



Source: MAPFRE Economics (with data from EIOPA)

2.5 Spain

As has been emphasized in previous versions of this report, the Spanish insurance market continues to be one of the markets with the lowest proportion of unit-linked investment portfolios in the eurozone (the lowest in the sample analyzed) with 7.4% in 2019. However, this type of investment experienced a significant growth of 1.1 pp compared to the previous year in terms of its weight over total investments, and of 26.6% compared to the volume of this type of investment in the previous fiscal year (see Table 2.5-a and Chart 2.5-a). Despite this, the percentage of this type of investment is still lower than it was at the beginning of the decade. 2009–2019, but it continues on the path of recovery that began in 2016, although the percentage continues to be significantly below the eurozone average, where it represented 16.4% of total investments in 2019.

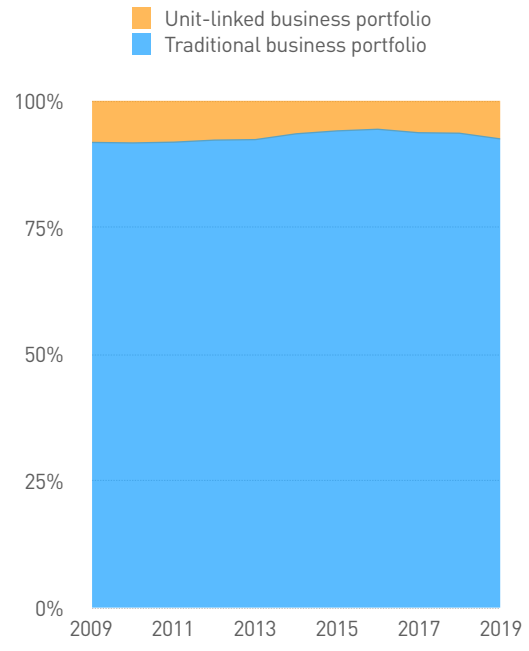
In terms of the changes shown in the structure of traditional business investment portfolios by asset type in Spain throughout 2009–2019, while fixed income investments accounted for 63.6% of the total in 2009, this percentage had

Table 2.5-a
Spain: structure of investment portfolios by type of insurance business, 2009–2019
(%)

Type of business	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Traditional business portfolio	91.9%	91.8%	92.0%	92.4%	92.5%	93.6%	94.2%	94.5%	93.8%	93.7%	92.6%
Unit-linked business portfolio	8.1%	8.2%	8.0%	7.6%	7.5%	6.4%	5.8%	5.5%	6.2%	6.3%	7.4%

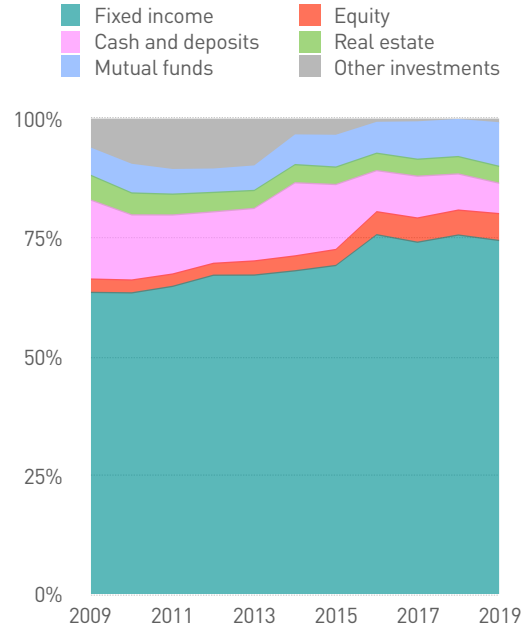
Source: MAPFRE Economics (with data from EIOPA)

Chart 2.5-a
Spain: structure of investment portfolios by type of insurance business, 2009–2019
(%)



Source: MAPFRE Economics (with data from EIOPA)

Chart 2.5-b
Spain: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)



Source: MAPFRE Economics (with data from ICEA)

risen to 75.3% (+11.7 pp) by 2019, while the amount of deposits and cash in that period decreased (-10 pp). This reallocation of the aggregate portfolio highlights the 2016 movement in which fixed income investments increased by 6.5% while deposits and cash were reduced by -5% (see Table 2.5-b and Chart 2.5-b). This movement was influenced not only by the entry into force of Solvency II, but also by the monetary policy adopted by the European Central Bank, which reduced the deposit facility to -40 basis points in that year (-50 bps at present). This sharply penalized cash holdings by economic agents, the weight of which decreased again in 2019.

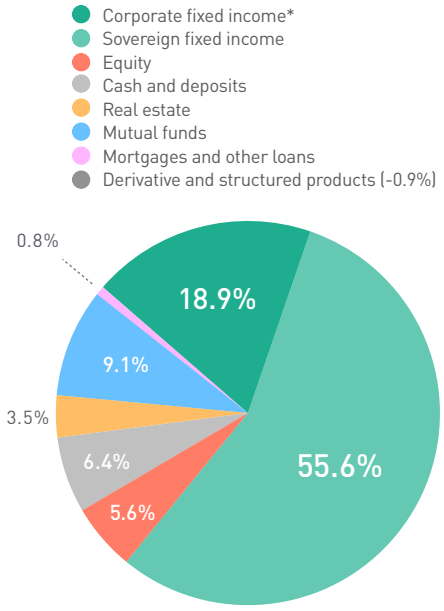
Finally, the breakdown of investments for 2019 that is illustrated in Chart 2.5-c (applying the transparency or look-through approach to investments through mutual funds) shows the

Table 2.5-b
Spain: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)

Asset type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed income	63.6%	63.5%	64.9%	67.2%	67.2%	68.1%	69.3%	75.7%	74.1%	75.7%	74.5%
Equity	2.8%	2.7%	2.6%	2.5%	3.0%	3.1%	3.4%	4.8%	5.1%	5.2%	5.6%
Cash and deposits	16.6%	13.7%	12.4%	10.8%	11.1%	15.4%	13.7%	8.6%	8.8%	7.6%	6.4%
Real estate	5.2%	4.6%	4.4%	4.1%	3.8%	3.8%	3.7%	3.7%	3.6%	3.6%	3.5%
Mutual funds	5.7%	6.0%	5.2%	4.9%	5.1%	6.2%	6.7%	6.5%	7.8%	7.8%	9.1%
Other investments	6.1%	9.5%	10.6%	10.5%	9.8%	3.3%	3.4%	0.7%	0.6%	0.1%	0.8%

Source: MAPFRE Economics (with data from ICEA)

Chart 2.5-c
Spain: structural breakdown of the traditional business investment portfolio by asset type, 2019 (%)



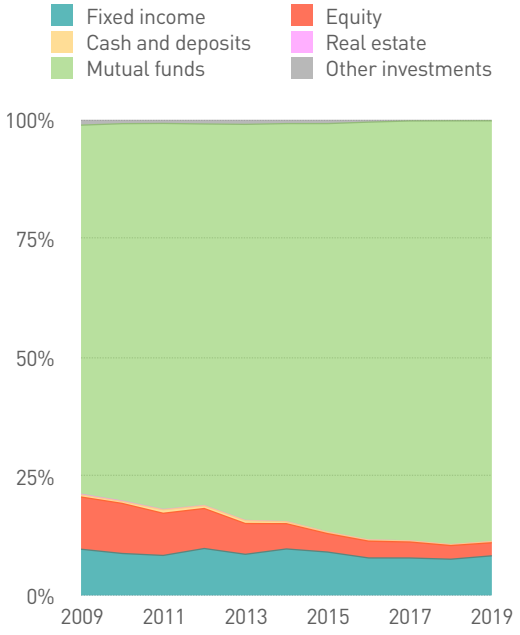
Source: MAPFRE Economics (with data from ICEA)
* Net value after deducting the effect of the valuation on derivative and structured products (-0.9%).

predominance of sovereign fixed income, which represented 55.6% of the total investment portfolio, while corporate fixed income represented 18.9% of the total investments. Thus, the high percentage of investments in sovereign bonds in Spain, as well as the lower percentage of investments in equities compared to the eurozone average, must be noted.

2.6 Brazil

Unlike in other countries, the Brazilian insurance market is characterized by a high percentage of investments managed through mutual funds. As illustrated in Table 2.6 and Chart 2.6-a, investment in mutual funds accounted for 88.4% of the portfolio in 2019, with an increase of 10.8 pp over the 2009–2019 period.

Chart 2.6-a
Brazil: structure of the traditional business investment portfolio by asset type, 2009–2019 (%)



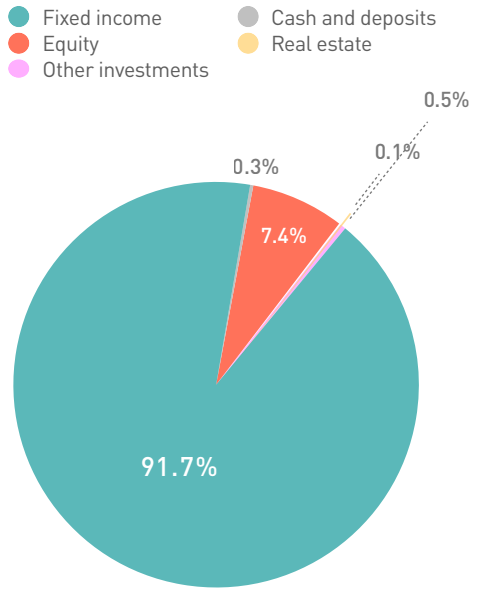
Source: MAPFRE Economics (with data from SUSEP)

Table 2.6
Brazil: structure of the traditional business investment portfolio by asset type, 2009–2019 (%)

Asset type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed income	9.8%	9.0%	8.5%	10.0%	8.8%	9.9%	9.3%	8.0%	8.0%	7.8%	8.5%
Equity	11.0%	10.5%	8.9%	8.4%	6.5%	5.3%	3.9%	3.5%	3.4%	2.9%	2.7%
Cash and deposits	0.4%	0.4%	0.7%	0.6%	0.6%	0.4%	0.3%	0.2%	0.2%	0.2%	0.3%
Real estate	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mutual funds	77.6%	79.3%	81.2%	80.2%	83.3%	83.7%	85.9%	87.8%	88.3%	89.1%	88.4%
Other investments	1.0%	0.7%	0.6%	0.8%	0.8%	0.7%	0.7%	0.4%	0.1%	0.1%	0.1%

Source: MAPFRE Economics (with data from SUSEP)

Chart 2.6-b
Brazil: structural breakdown of the traditional business investment portfolio by asset type, 2019
(%)



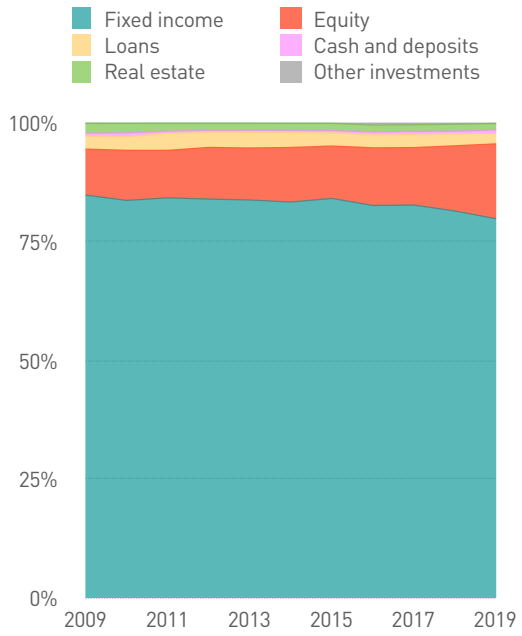
Source: MAPFRE Economics (with data from SUSEP)

According to information from the Superintendence of Private Insurance (SUSEP), most of the assets invested through mutual funds are fixed income securities. In this way, as shown in Chart 2.6-b using data for 2019, fixed income investments in the Brazilian insurance market would have represented 91.7% of the total investment portfolio while equities represented 7.4%; this heading has increased its relative weight in the portfolio by 0.9 pp over the past decade[4].

2.7 Mexico

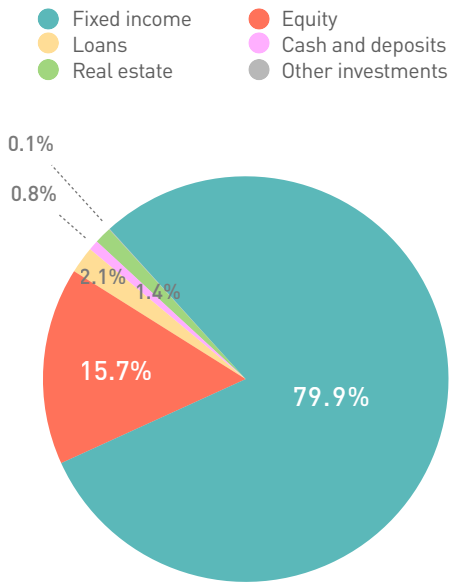
As is the case with the vast majority of insurance markets, in Mexico there is also a strong predominance of fixed income investments within the investment portfolio throughout the 2009–2019 period (see Table 2.7, and Charts 2.7-a and 2.7-b). However, during this period, the proportion of fixed income investment was reduced from 84.9% to 79.9% (a fall of -5 pp), while the proportion of equity investment grew by 6.1 pp, rising from 9.7% in 2006 to 15.7% in 2019. In addition, it is worth highlighting the significant growth of

Chart 2.7-a
Mexico: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)



Source: MAPFRE Economics (with data from CNSF)

Chart 2.7-b
Mexico: structural breakdown of the traditional business investment portfolio by asset type, 2019
(%)



Source: MAPFRE Economics (with data from CNSF)

Table 2.7
Mexico: structure of the traditional business investment portfolio by asset type, 2009–2019
(%)

Asset type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed income	84.9%	83.8%	84.3%	84.0%	83.9%	83.4%	84.2%	82.7%	82.8%	81.5%	79.9%
Equity	9.7%	10.5%	10.0%	10.9%	10.9%	11.5%	11.0%	12.1%	12.1%	13.7%	15.7%
Loans	2.7%	2.9%	3.6%	3.2%	3.3%	3.2%	2.8%	2.7%	2.7%	2.5%	2.1%
Cash and deposits	0.6%	0.8%	0.5%	0.4%	0.4%	0.4%	0.4%	0.6%	0.7%	0.5%	0.8%
Real estate	2.1%	2.0%	1.7%	1.5%	1.5%	1.5%	1.5%	1.5%	1.4%	1.5%	1.4%
Other investments	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.2%	0.1%

Source: MAPFRE Economics (with data from CNSF)

equity compared to 2018, with its relative weight in the total portfolio increasing by 2 pp, with a 25.8% increase in volume.

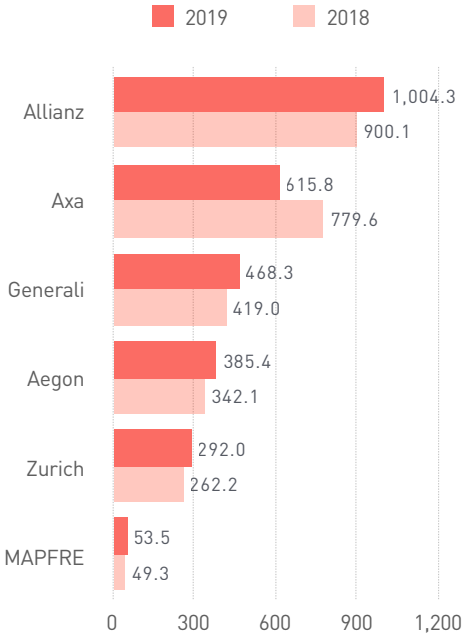
3. The structure of investment portfolios of large European groups

In order to complement the analysis of the distribution of insurance company investments, an analysis of the investment portfolios of a selected set of European insurance groups (defined as their parent company being located in this territory) which can be considered global companies is shown below. These are internationally active groups with a high cross-border business volume. The group selected (which includes Allianz, Axa, Generali, Aegon, Zurich and MAPFRE) is characterized by having sufficiently homogeneous information to make a comparison of their investment portfolios, including the ordinary portfolio, loans granted, cash and investments related to unit-linked products.

In this way, the information analyzed in Chart 3-a shows that the two largest European groups under this analysis criterion are Allianz and Axa, at a significant distance from the rest, although in 2019 the Generali group closed the gap with respect to Axa, which experienced a significant reduction in the volume of investments managed compared to the previous year.

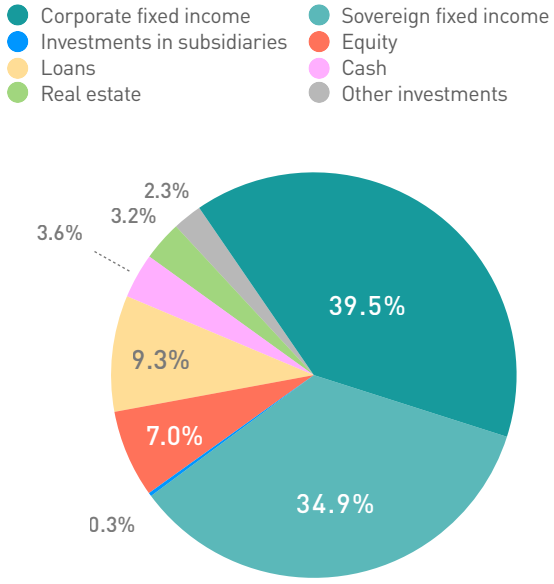
The combined analysis of the traditional business investment portfolios of these groups (excluding the unit-linked business), which is illustrated in Chart 3-b, highlights the predominance of corporate fixed income, which represents 39.5% of investments, although in 2019 it experienced a slight reduction of 0.83 percentage points (pp) compared to the previous year. Meanwhile, sovereign fixed income at the

Chart 3-a
Selected insurance groups: aggregate investment portfolio, 2018–2019
(billions of euros)



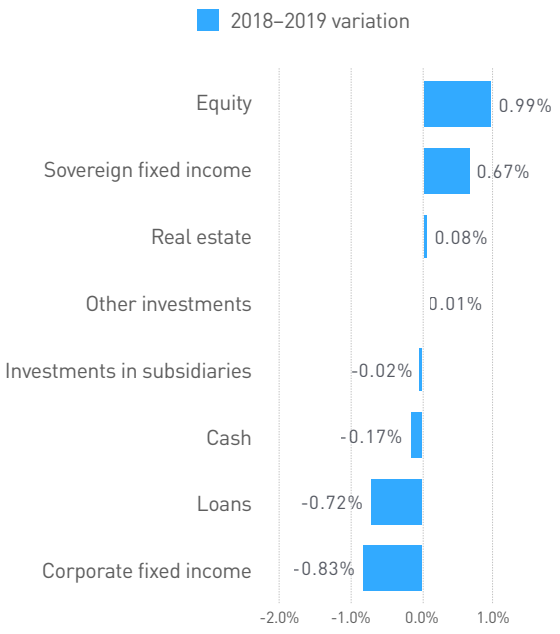
Source: MAPFRE Economics (with data from the consolidated financial statements of the aforementioned insurance groups)

Chart 3-b
Selected insurance groups: distribution by aggregate investment portfolio asset type, 2019
(%)



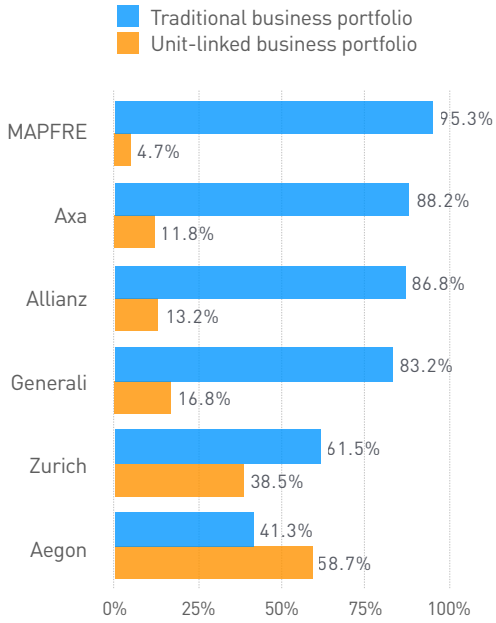
Source: MAPFRE Economics (with data from the consolidated financial statements of the aforementioned insurance groups)

Chart 3-c
Selected insurance groups: variation by aggregate investment portfolio asset type, 2018–2019
(%)



Source: MAPFRE Economics (with data from the consolidated financial statements of the aforementioned insurance groups)

Chart 3-d
Selected insurance groups: distribution by investment portfolio asset type, 2019
(%)



Source: MAPFRE Economics (with data from the consolidated financial statements of the aforementioned insurance groups)

close of 2019 represented 34.9% of the portfolio, seeing its proportion increased by 0.67 percentage points compared to its level at the close of the previous year (see Chart 3-c).

In addition, Table 3-a and Chart 3-d show the distribution of the investment portfolios between traditional business and business in which the policyholder assumes the investment risk (i.e. unit-linked and similar), in the case of all the insurance groups included in the sample analyzed. The case of Aegon stands out, in which the portfolio of the unit-linked and similar business has a majority percentage (58.7%), which is strongly influenced by its Life business in the United States, a market in which variable annuity products predominate. The MAPFRE Group can be found at the other end of the scale, a company where investments associated with traditional business represent 95.3% of the total portfolio. In the other insurance groups there are different intermediate combinations in which, in general, portfolios linked to traditional business predominate.

Table 3-a
Selected insurance groups: weight of investments by type of business, 2018–2019
(%)

Type of business	Allianz		Axa		Generali		Aegon		Zurich		MAPFRE	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Traditional business portfolio	86.8%	87.2%	88.2%	78.4%	83.2%	84.3%	41.3%	43.2%	61.5%	63.6%	95.3%	95.4%
Unit-linked business portfolio	13.2%	12.8%	11.8%	21.6%	16.8%	15.7%	58.7%	56.8%	38.5%	36.4%	4.7%	4.6%

Source: MAPFRE Economics (with data from the consolidated financial statements of the aforementioned insurance groups)

Table 3-b
Selected insurance groups: distribution by investment portfolio asset type, 2018–2019
(%)

Asset type	Allianz		Axa		Generali		Aegon		Zurich		MAPFRE	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Corporate fixed income	46.5%	47.0%	34.1%	36.0%	35.9%	37.6%	37.4%	36.5%	37.7%	39.6%	18.3%	19.0%
Sovereign fixed income	27.3%	27.0%	42.6%	39.8%	45.2%	45.1%	17.2%	18.5%	35.6%	33.5%	59.0%	58.7%
Equity	9.0%	8.1%	5.6%	4.5%	7.0%	6.0%	2.9%	2.9%	9.1%	8.5%	5.4%	5.1%
Loans	12.9%	13.8%	3.7%	5.8%	3.3%	3.0%	28.5%	29.1%	7.1%	7.4%	0.0%	0.0%
Cash	2.4%	2.2%	4.0%	5.4%	3.6%	3.1%	7.7%	5.9%	3.9%	4.5%	5.0%	4.7%
Real estate	1.5%	1.6%	4.3%	3.6%	4.1%	4.3%	1.8%	1.8%	6.6%	6.5%	4.8%	4.5%
Other investments	0.4%	0.4%	5.7%	4.9%	0.9%	0.8%	5.9%	6.7%	0.0%	0.0%	7.5%	8.1%

Source: MAPFRE Economics (with data from the consolidated financial statements of the aforementioned insurance groups)

Furthermore, Table 3-b shows the relative proportion at the close of 2019 of the different categories of assets for each of the insurance groups analyzed, and their comparison with the previous year. As mentioned previously, in general terms, the relevant weight of fixed income investments, both corporate and sovereign, is noted. Allianz is a significant example of the former, with corporate fixed income investments representing 46.5% of its total portfolio, while MAPFRE is an example of the latter, with sovereign fixed income investments at 59.0% of its portfolio.

Finally, Table 3-c summarizes the credit profiles of the investment portfolios with the highest level of diversification shown in the consolidated financial statements of the insurance groups analyzed for 2019, while Table 3-d presents the changes in the credit profile of the portfolios'

Table 3-c
Selected insurance groups: investment portfolio credit profile, 2019
(%)

Credit rating	Allianz		Axa	Generali		Aegon		Zurich	MAPFRE
	Sovereign	Corporate	Total	Sovereign	Corporate	Sovereign	Corporate	Total	Total
Grade 0 (AAA or equivalent)	19.5%	19.2%	20.0%	4.9%	8.4%	74.7%	17.9%	24.5%	13.7%
Grade 1 (AA or equivalent)	44.1%	13.3%	31.0%	31.3%	10.4%	18.7%	7.4%	25.1%	8.7%
Grade 2 (A or equivalent)	15.5%	25.9%	22.0%	20.3%	26.6%	1.1%	35.9%	15.5%	53.1%
Grade 3 (BBB or equivalent)	15.7%	33.8%	22.0%	42.9%	48.2%	4.1%	31.4%	30.5%	21.4%
Grade < 3	4.4%	2.7%	2.0%	0.6%	5.8%	1.4%	7.3%	3.6%	1.1%
No credit rating (non-rated)	0.8%	5.1%	3.0%	0.1%	0.5%	0.0%	0.2%	0.9%	2.0%

Source: MAPFRE Economics (with data from the consolidated financial statements of the aforementioned insurance groups)

Table 3-d
Selected insurance groups: changes in investment portfolio credit profile, 2018–2019
(%)

Credit rating	Allianz		Axa	Generali		Aegon		Zurich	MAPFRE
	Sovereign	Corporate	Total	Sovereign	Corporate	Sovereign	Corporate	Total	Total
Grade 0 (AAA or equivalent)	-1.2%	-1.7%	0.0%	-0.7%	-0.5%	-0.1%	2.8%	-0.8%	2.0%
Grade 1 (AA or equivalent)	-0.3%	-1.9%	4.0%	-1.6%	-0.2%	0.6%	-0.9%	-1.6%	-5.1%
Grade 2 (A or equivalent)	1.3%	3.2%	-2.0%	1.4%	1.2%	-1.2%	-2.7%	0.5%	1.6%
Grade 3 (BBB or equivalent)	-0.2%	0.1%	-2.0%	1.1%	0.3%	0.6%	3.0%	2.2%	1.9%
Grade < 3	0.5%	0.1%	0.0%	-0.3%	-0.5%	0.2%	-0.5%	-0.2%	-1.2%
No credit rating (non-rated)	0.0%	0.3%	0.0%	0.0%	-0.3%	0.0%	2.2%	-0.1%	0.8%

Source: MAPFRE Economics (with data from the consolidated financial statements of the aforementioned insurance groups)

investments in relation to 2018. This information shows that, in general terms, more than 50% of the investments are within the first three credit rating levels (in the range between 0 and 2, i.e. between AAA and A or equivalent).

4. Capital risk weights applicable in the European Union

As a general reference for the analysis regarding investments presented in this report, this section contains a comparison of the different gross regulatory capital risk weights. These are applicable to the most representative categories within the insurance companies' investment portfolios for European insurance companies that apply the Solvency II standard formula, which have some influence on the composition of insurance group investment portfolios in this region of the world.

4.1 Investment in fixed income bonds

Investments in fixed income bonds have specific capital risk weights arising from differential risk (spread) and concentration risk. Risk weights for differential risks and concentration risks depend on: (i) type of asset; (ii) their credit risk rating; (iii) the residual maturity of the bond weighted by the amount of future flows (with modified duration); and (iv) concentration with the same counterparty. Furthermore, additional capital risk weights may be decided in the event of defective management of the risk of unbundling of cash flows and/or currency provisions between assets and liabilities.

Capital risk weights by differential risk (spread)

Table 4 shows a comparative study of the gross capital risk weights applicable to different bond types per year of duration. To calculate the total gross risk weight for a specific bond, its modified duration (weighted by the amount of flows) must be multiplied by the percentages appearing in Table 4. For durations higher than five years, the percentages applicable for excessive duration are somewhat lower, with the objective of not penalizing excessively long-term investments[5].

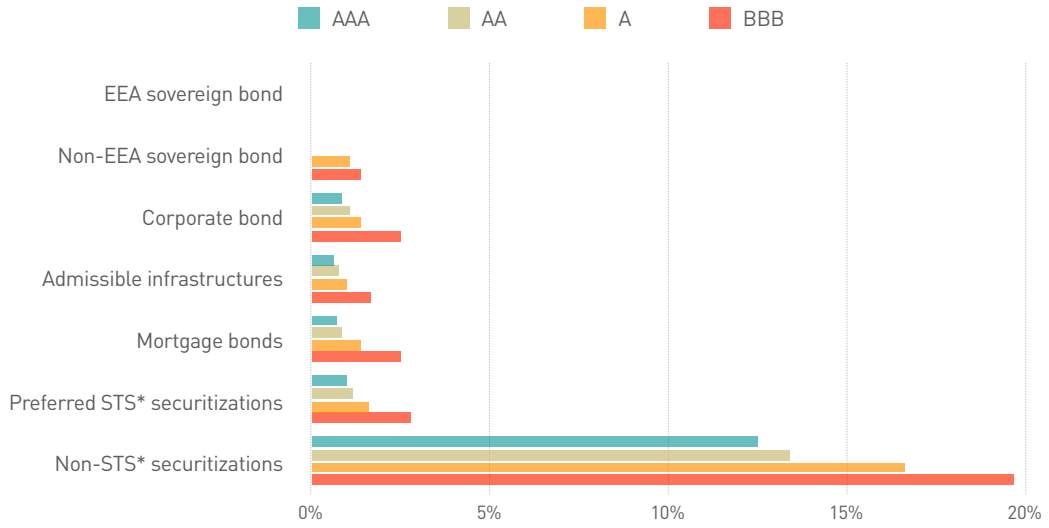
Meanwhile, Chart 4 illustrates the pattern of capital risk weights, comparing the gross

Table 4
Gross capital risk weights applicable to bonds per year of duration
(%)

Credit rating***	EEA sovereign bond*	Non-EEA sovereign bond	Corporate bond	Admissible infrastructures	Mortgage bonds	Preferred STS** securitizations	Non-STS** securitizations
Grade 0 (AAA or equivalent)	0,0%	0,0%	0,9%	0,6%	0,7%	1,0%	12,5%
Grade 1 (AA or equivalent)	0,0%	0,0%	1,1%	0,8%	0,9%	1,2%	13,4%
Grade 2 (A or equivalent)	0,0%	1,1%	1,4%	1,0%	1,4%	1,6%	16,6%
Grade 3 (BBB or equivalent)	0,0%	1,4%	2,5%	1,7%	2,5%	2,8%	19,7%
Grade 4 (BB or equivalent)	0,0%	2,5%	4,5%	4,5%	4,5%	5,6%	82,0%
Grade 5 (B or equivalent)	0,0%	4,5%	7,5%	7,5%	7,5%	9,4%	100,0%
Grade 6 (less than B or equivalent)	0,0%	4,5%	7,5%	7,5%	7,5%	9,4%	100,0%

Source: MAPFRE Economics (based on Delegated Regulation (EU) 2015/35)
* European Economic Area (EEA)
** Simple, transparent and standardized (STS) securitizations
*** See link to table of equivalence of credit ratings from EIOPA (see reference 4/ of this report).

Chart 4
Capital risk weights per year of duration: investment-grade bonds
(%)



Source: MAPFRE Economics (with data from EIOPA)

* Simple, transparent and standardized (STS) securitizations

charges per year of duration for bonds situated in the investment grade range. It can be seen that investments in sovereign bonds from countries in the European Economic Area (EEA) do not have capital risk weights for spread risk, provided that they are denominated and financed in their own currency. Nevertheless, if currencies and durations are not correctly managed, this could give rise to a capital risk weight as a result of fluctuations in risk-free interest rates and/or exchange rates, in the event of the unbundling of cash flows and/or currency provisions between assets and liabilities. In addition, an increase in market spreads would affect eligible own funds to cover capital requirements, in the event of a fall in the market value of the sovereign bonds concerned. If sovereign debt investments from countries other than Member States with a credit rating of AAA or AA (or equivalent[6]) are involved, they do not have a differential capital risk weight either. For lower credit ratings, the capital charge will depend on the rating and the modified duration of the bond concerned.

For example, a sovereign debt bond from countries other than EU Member States with a credit rating of A and a duration of five years would have a gross capital risk weight of 5.5%. If its duration is ten years, the risk weight would be 8.4%. If the bond had a rating of BBB, the risk weights would be 7% and 10.5%, respectively. Bonds with no rating have specific capital risk weights that fluctuate in a range somewhere between the risk weights applicable to BBB and BB ordinary corporate bonds.

It is important to point out that these percentages are applied both to direct investments and to investments implemented through mutual funds, to which the look-through approach is applied.

Capital risk weights by concentration risk

Furthermore, if there are risk concentrations with a specific counterparty over and above a specific threshold, an additional capital charge is applied. In general, insurance companies do not usually exceed such thresholds, which are normally above those specified in their risk management policies and within limit control parameters. Nevertheless, the capital risk weights arising from non-compliance strongly penalize concentration risk. As an example of the above, an investment in an AA bond belonging to a counterparty whose exposure

exceeds 3% of the company's total assets would have an additional risk weight 12% above the excess exposure. If a BBB bond is involved, the capital surcharge would be 27% above excess exposure greater than 1.5% above the company's total assets. However, investments in sovereign bonds from countries in the EEA do not have capital risk weights for concentration risk, provided that they are denominated and financed in their own currency.

4.2 Investment in shares

The gross capital risk weight applicable to investments in shares listed on regulated markets within Organization for Economic Cooperation and Development (OECD) countries is 39% of the value of the shares concerned. This risk weight must in its turn be adjusted by the "symmetrical adjustment," which has countercyclical effects within limits of between -10% and +10%. Nevertheless, there currently continues to be a transitory regime that allows for the application of lower charges until 2022, inclusive, increasing progressively by 2.5% until reaching 39% by 2023 (plus/minus the countercyclical adjustment).

For variable income instruments for investment in infrastructures and which comply with the admissibility requirements for receiving preferential treatment, the gross capital risk weight is 30%, plus 77% of the symmetrical adjustment foreseen for investment in shares. For non-listed shares, the capital risk weight is 49% plus symmetrical adjustment. Likewise, there are special cases in which capital risk weights can end up being lower, as in the case of strategic acquisitions.

4.3 Capital risk weights for real estate investments

In addition, the gross capital risk weight for market risk for real estate investments is 25% of the value of the property. As in the case of other assets, this percentage is applied both to direct investments and to investments implemented through real estate investment funds, to which the look-through transparency approach is applied. There is an additional capital risk weight in the event of excess exposure in the case of a single property. The excess threshold is 10% of the value of all the assets of the insurance company, excluding from this calculation certain assets such as those corresponding to Life insurance contracts in which the policyholder fully assumes the investment risk (unit-linked). The additional capital risk weight would be 12% above the excess. Properties located in the same building are considered as a single property.

4.4 Diversification benefits and loss absorption capacity

Finally, it is important to point out that exposed capital risk weights are gross risk weights. Profits from diversification, the capacity to absorb losses for deferred taxation and the fact that investments may be assigned to portfolios of products with participation in discretionary profits mean that capital risk weight in terms of shareholders' equity requirements may be lower, depending on the risk profile of the insurance company concerned. The capacity to absorb losses for deferred taxation may reduce the capital risk weight to a percentage equivalent to the rate of corporation tax. Likewise, the capacity to absorb losses through technical provisions will depend on the products that the company has in its portfolio of participation in discretionary profits.

References

1/ MAPFRE Economics (2020), *Insurance industry investment*, Madrid, Fundación MAPFRE.

2/ See: MAPFRE Economics (2020), *Elements for the development of Life insurance*, Madrid, Fundación MAPFRE.

3/ See: https://www.mof.go.jp/english/jgbs/publication/debt_management_report/2019/index.html
https://www.moodys.com/research/Moodys-Japanese-life-insurers-post-profits-for-more-than-20--PR_385153

4/ See: MAPFRE (2020), *The Latin American insurance market in 2019*, Madrid, Fundación MAPFRE. Table 3.2.3-c, p. 201.

5/ These reduced percentages can be found in Article 176 of Delegated Regulation (EU) 2015/35 (Solvency II).

6/ Table of equivalence of credit ratings from EIOPA:
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02016R1800-20180515

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