

MAPFRE GIP 2020

Fundación **MAPFRE**

MAPFRE GIP 2020:
GLOBAL INSURANCE
POTENTIAL INDEX

MAPFRE  Economics



MAPFRE GIP 2020

**Global insurance
potential index**

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Introduction

As in previous editions, this update of the *Global Insurance Potential Index* (MAPFRE GIP 2020) analyzes a total of 96 insurance markets—both developed and emerging—the economic and demographic factors that determine the growth of the Insurance Protection Gap, as well as measuring the ability to close the insurance gap in each market (speed of convergence at penetration levels and density of developed markets).

Based on an analysis of the economic and demographic factors that determine the growth of the Insurance Protection Gap, and the measurement of the ability to close the insurance gap in each market, the MAPFRE GIP measures the insurance potential based on countries' ability to create an insurance gap and use it to effectively expand the insurance market. The MAPFRE GIP therefore allows the markets to be ranked according to their potential contribution to closing the global insurance gap, offering a comparative view of the global potential for expanding the insurance industry in the future.

MAPFRE is confident that this new version of the MAPFRE GIP report will contribute to a better understanding of the factors that determine the dynamics of the expansion of insurance activity and that they will support the development of the insurance industry globally.

MAPFRE Economics

1. The MAPFRE GIP: General aspects

In the global economy and, in general, in the process of international economic development, there are asymmetries that have various effects on financial stability, growth and reducing inequality at the country level. To determine the aspects of these differences from the perspective of the insurance market¹, this report by MAPFRE Economics links this margin of improvement in stability, economic development and equity with the development potential of the insurance industry, quantified through the MAPFRE GIP (Global Insurance Potential Index), whose methodological construction has been outlined in the inaugural report of this series² and is summarized in this section.

1.1 The insurance gap and insurance potential

As explained in our previous report³, the Insurance Protection Gap (IPG) is used to monitor and compare the development of the insurance industry between countries. This gap quantifies the deficit between a fully developed level of insurance and the level that actually exists in any given country. In other words, the IPG in a region or country represents the difference between the insurance coverage that is economically necessary and beneficial to society and the amount of coverage that is actually acquired.

Thus, it is the difference between the level of insurance coverage in an ideal situation (defined by a theoretical reference or benchmark) and the level actually reported in each market. Calculating the IPG helps to determine the potential market for insurance, which is the attainable market size should the gap disappear. In this way, the IPG is not a static concept, but rather it evolves in accordance not only with the growth of a country's economy and population,

but also with the emergence of new risks inherent to continuing economic and social development.

Here, *insurance potential* means the ability of a country not only to generate new scope for insurance in the course of its socioeconomic development (i.e. creating an insurance gap), but also its ability to then reduce this gap thanks to an increasing level of insurance penetration in its market and, as a result, help to narrow the global IPG. In general, a greater ability to create and close the global IPG reflects a greater insurance potential in a country and, therefore, potential gains in terms of growth, financial stability and well-being, as previously mentioned.

The insurance gap can be measured through two approaches. The first, in an *ex-post* approach, is based on observed losses. In this case, the IPG is the difference between recorded economic losses in a specific period and the portion of said losses that were covered through the mechanism of insurance compensation.

The second way to obtain this measurement is an *ex-ante* approach, which involves analyzing the optimal protection levels, estimated as the difference between the level of coverage socially and economically appropriate to cover risk compared to the actual level of protection. For the fiscal year examined in this report, and in keeping with the methodology followed in other reports prepared by MAPFRE Economics, we applied the latter of the two approaches, i.e. using the market penetration differential (premiums compared to GDP) between the market concerned and a theoretical benchmark.

1.2 Elements of the MAPFRE GIP

Updates to this report monitor the dynamics of the insurance gap in a sample of 96 markets (two-thirds emerging and one-third developed), as well as the underlying variables that are considered determining factors of IPG dynamics. It should be noted that these factors may take the form of *initial conditions* or *differentials* in the growth of certain explanatory variables compared to a benchmark⁴, and that they may positively or negatively relate to the insurance gap. These variables are (i) the existing IPG in each country; (ii) the relative penetration (insurance premiums/GDP); (iii) the elasticity of insurance demand in the economic cycle; (iv) the relative GDP per capita; (v) the population level; (vi) the population growth gap, and (vii) the GDP growth gap⁵.

As explained in the Appendix to this report with regard to the methodological aspects of the MAPFRE GIP, the level and evolution of said variables will determine the evolution of the *insurance potential*, which is reflected in the market values, the GAI (Gap Absorption Index) and the MAPFRE GIP (Global Insurance Potential Index)⁶, so these aspects can change depending on the situation of the variables under analysis.

a) The benchmark

As in the previous year's report, the parametric reference values against which each country's data has been compared in order to quantify and rank the MAPFRE GIP score (the benchmark), are those of the countries whose insurance gap, both for the total market and for the Life and Non-Life segments, is in the 90th percentile of the sample. In other words, the values of countries whose IPG stands at that percentile are used as reference⁷. This is a purely statistical criterion and is not intended to draw any conclusions on the insurance importance of the countries that serve as benchmark, nor on the particular structure and characteristics of those markets.

MAPFRE GIP

The MAPFRE GIP (Global Insurance Potential Index) provides a scoring system designed to rank each market based on its potential contribution to closing the global insurance gap (measured in basis points of the global GDP or as a percentage of the total insurance market), thus making it an understandable way of measuring the "market size."

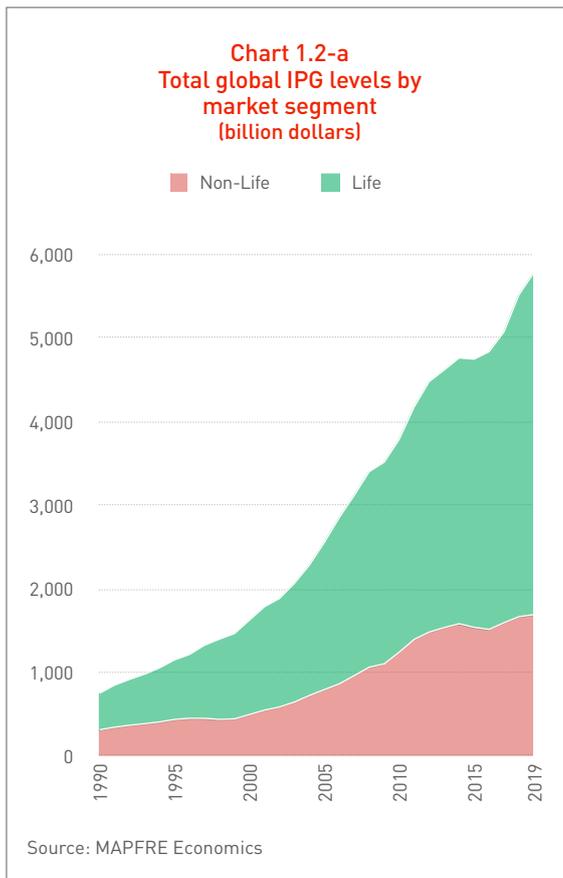
GAI

The GAI (Gap Absorption Index) is an intermediate measure that provides a scoring system and a *ranking* based on each market's potential to close its insurance gap, which can indicate the rhythm at which the market can converge with the levels of penetration and density of the benchmark selected.

b) The Insurance Protection Gap

The global insurance gap for the total market (Life and Non-Life) calculated using 2019 data was 5.78 trillion dollars, or 658 basis points (bps) of global GDP (see Charts 1.2-a and 1.2-b). This is distributed as 70.8% for the IPG in the Life segment and the remaining 29.2% for the Non-Life segment (4.09 and 1.7 trillion dollars, and 466 and 193 basis points of global GDP, respectively)⁸. Compared to the predominant situation in 1990, IPG composition has changed significantly, as the Life segment's IPG gained 12.6 percentage points (pp) in its share of the total gap between 1990 and 2019 (see Chart 1.2-c).

This situation is confirmed in IPG dynamics between 2018 and 2019, which, as shown in Chart 1.2-d, grew by 4.8% in this period, with a higher increase in the Life segment (6.2%) than in the Non-Life segment (1.4%). In the same period, IPG increased by 20.3 bps of global GDP, essentially as a result of Life segment performance (with an increase of 20.5 bps), while the IPG for the Non-Life insurance segment remained virtually unchanged (-0.2 bps).



When analyzing IPG performance from the perspective of the world's various economic regions, two facts are evident. First, most of the insurance gap comes from the emerging world and, second, the IPG of the Life segment grew faster than that of the Non-Life segment.

Therefore, in 2019, 73.2% of the IPG in the Life segment came from emerging markets (35.8% from the BRICS⁹ and 37.4% from other emerging markets); i.e. -5.2 pp less than in 1990, indicating progress in the convergence process of emerging insurance markets in this

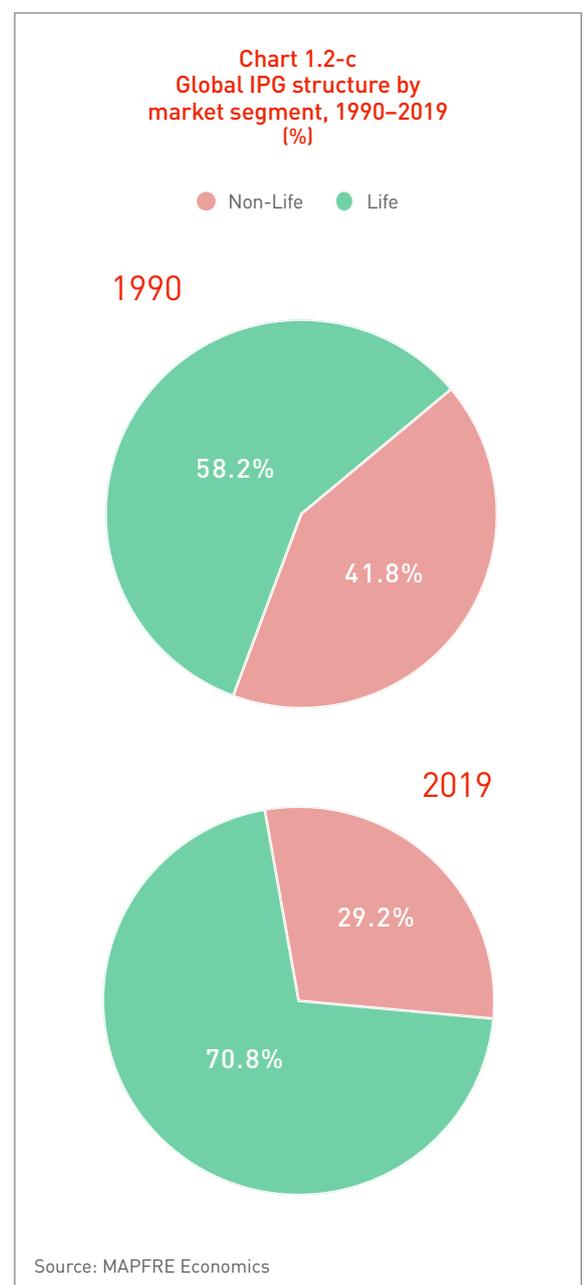
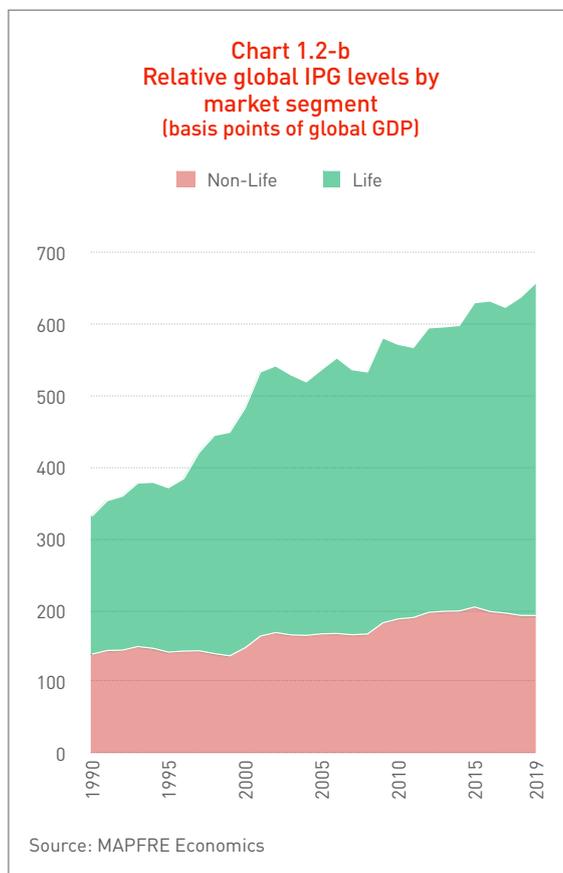
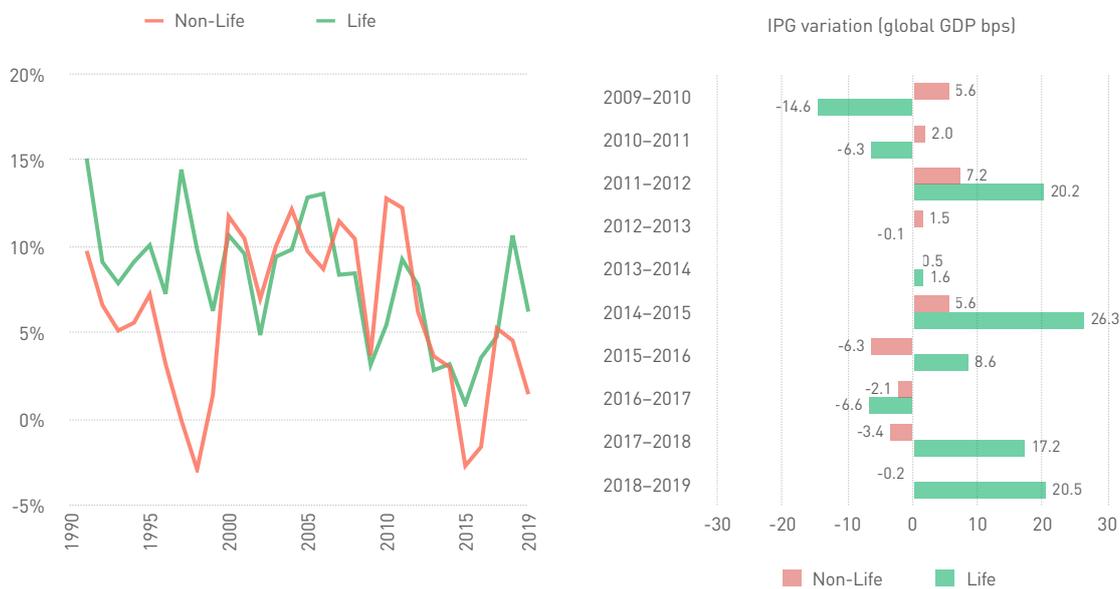
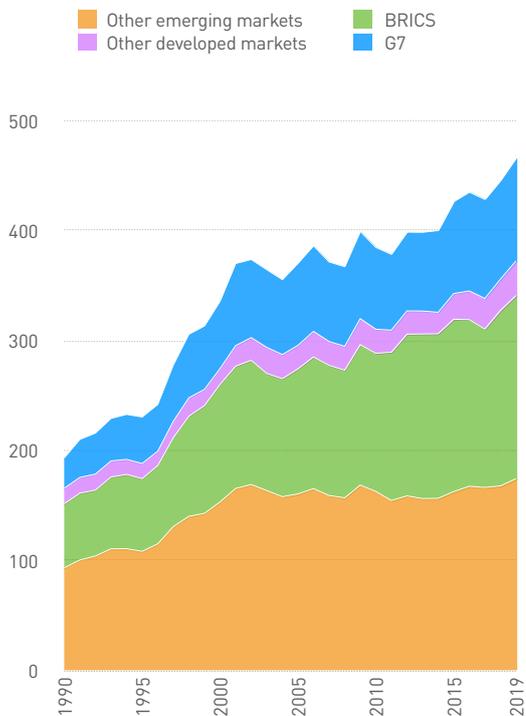


Chart 1.2-d
Global IPG growth by market segment
 (Annual growth rate, %; variation, basis points of global GDP)



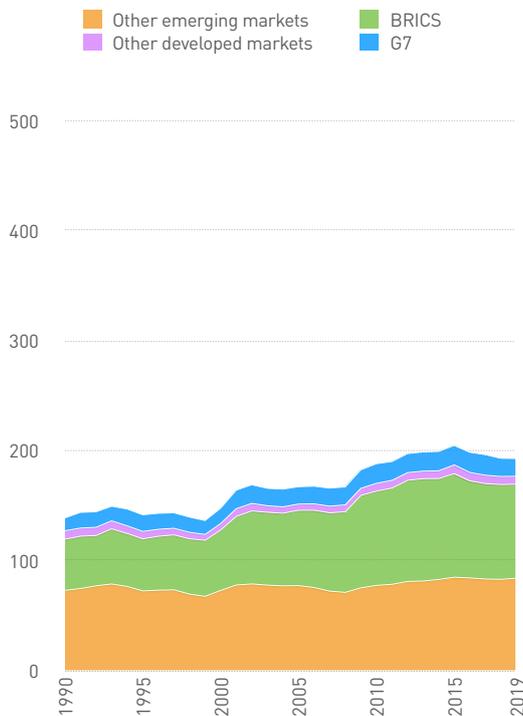
Source: MAPFRE Economics

Chart 1.2-e
Global IPG levels in the Life segment
 by economic region
 (basis points of global GDP)



Source: MAPFRE Economics

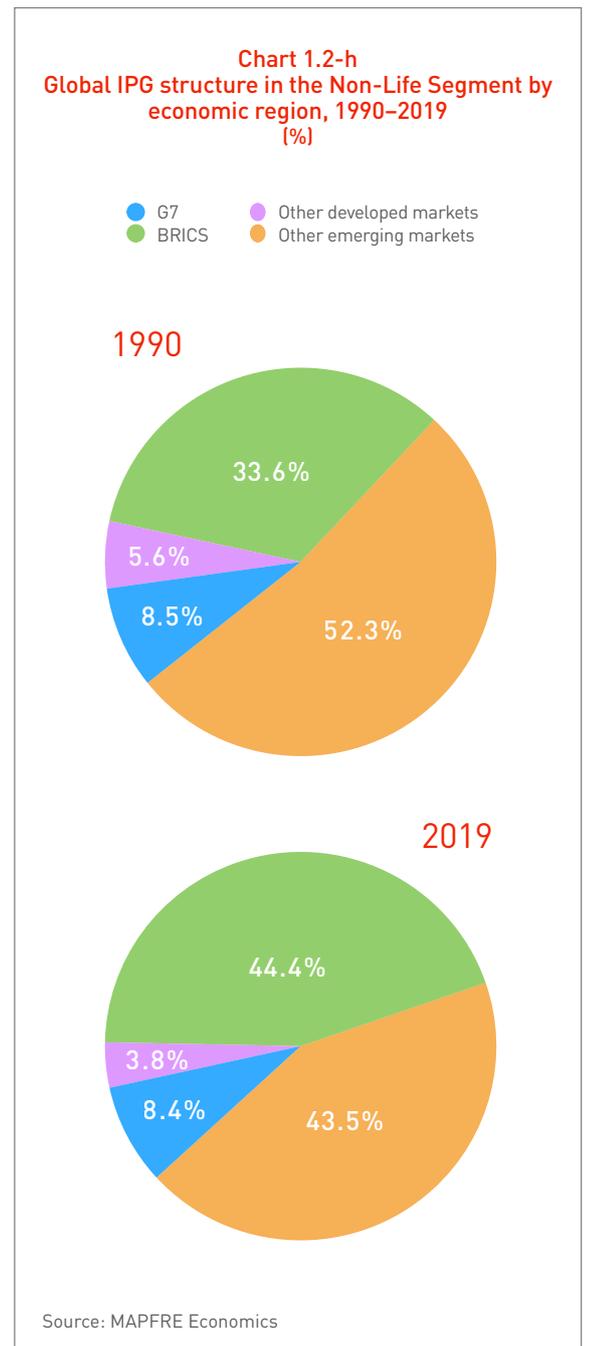
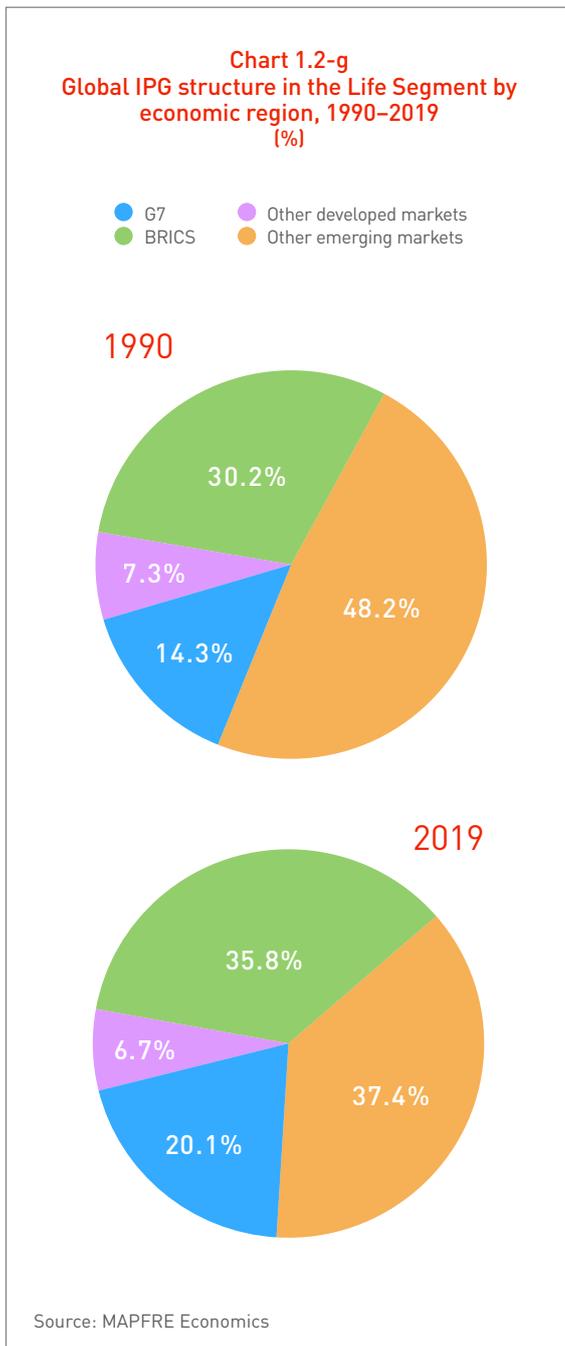
Chart 1.2-f
Global IPG levels in the Non-Life segment
 by economic region
 (basis points of global GDP)



Source: MAPFRE Economics

segment. Overall, between 2018 and 2019, the Life insurance gap grew by 4.4% in the BRICS and by 3.9% in other emerging markets, while growth in the G7¹⁰ markets was 4.5% and in the other developed markets was 10.5%, the latter strongly affected by the low interest rate environment (see Charts 1.2-e and 1.2-g).

In terms of the Non-Life segment, in 2019, 87.9% of the insurance gap came from emerging markets (44.4% from the BRICS and 43.5% from other emerging markets), which is 2.0 pp higher than in 1990. Overall, in 2018–2019 the Non-Life IPG decreased by -0.9% in the BRICS and grew by 1.3% in other emerging markets. Meanwhile, the G7 recorded a decrease of -2.6% during said period and other developed markets recorded a decrease of -1.3% (see Charts 1.2-f and 1.2-h).



Measured in terms of the size of the existing insurance business, in 2019, the Life segment IPG accounts for between 3.0 (BRICS) and 4.9 (other emerging markets) times the insurance business, while in developed countries, this indicator is 0.8 times the insurance business and 0.5 times for the G7 market group. In terms of the Non-Life segment, in 2019, the IPG of the BRICS and other emerging markets represented a factor of 2.0 and 2.8 respectively, while for the G7 and other developed insurance markets, the multiple was 0.1 and 0.2 pp respectively.

As a multiple of the existing market for the Life segment, the IPG has increased in all markets during its evolution between 2018 and 2019: by 2.9 basis points (bps) in the BRICS; 14.8 bps in other emerging markets; 2.2 bps in the G7, and 11.9 bps in other developed markets. In terms of the Non-Life segment, performance between 2018 and 2019 was mixed: the indicator increased only in other emerging markets (+5.1 bps), while it declined in the

BRICS (-14.3 bps), the G7 (-0.3 bps), and other developed markets (-0.2 bps).

c) Relative penetration

Relative penetration levels (the benchmark) continue to show clear differences between the Life and Non-Life segments, and between developed and emerging markets¹¹. In this sense, the relative penetration compared to the benchmark in the Life business is, on average, 86% for G7 insurance markets, 53% for other developed markets, 63% for the BRICS, and 27% for other emerging markets. In terms of the Non-Life segment, the relative penetration compared to the benchmark is 110%, 74%, 48%, and 45%, respectively, for the four previously analyzed market groups.

It should be noted that, compared to last year, the Life segment shows an average increase in relative penetration compared to the benchmark of the BRICS (+0.7 pp) and other emerging markets (+0.8 pp), which is offset by



a contraction in relative penetration compared to the benchmark of G7 markets (-1.1 pp) and other developed markets (-1.4 pp). In the Non-Life segment, no substantial changes in relative penetration compared to the previous year were recorded.

d) Elasticity of insurance demand in terms of the economic cycle

For the purposes of this version of the report, it has been assumed that there have been no changes in the elasticity of insurance demand in relation to the economic cycle between the two consecutive years.

e) Relative GDP per capita

In 2019, the average GDP per capita in developed countries represents approximately 129.4% of the GDP per capita of the benchmark used for the total market, while the average of emerging countries represents just 28.6% of said benchmark. It is worth noting that the relative GDP per capita of developed countries contracted by 5.9 pp compared to the previous year, when it represented 135.3% of the benchmark, while the GDP per capita of emerging countries only contracted by 1 pp (from 29.6% in 2018).

f) Population size

For the purposes of this report, the overall population in 2019 (which corresponds to the sample composed of the 96 countries included in this analysis) is 6.46 billion people, according to estimates by the United Nations (UN)¹². The population for the list of developed countries has grown by 0.39% since 2018 to 948.6 million people (+3.6 million). Whereas the population of all emerging countries has grown by 51.5 million (to 5.51 billion), up by 0.94% from the previous year. It should be noted that the average size of an emerging country (78.7 million inhabitants) more than doubles the average size of the developed countries (36.5 million people).

g) The growth gap in terms of population

Fertility and life expectancy do not change from year to year, so the population growth gap is therefore assumed to remain constant in general. Despite this, it is worth noting that emerging countries have higher population growth than developed countries and higher than the benchmark, although they have been converging for centuries.

h) The growth gap in terms of GDP

The GDP growth gap with respect to the benchmark is close to zero for the developed countries, and approximately 250 bps for the emerging countries. In this sense, these measurements remained unchanged in the period up to 2019.

However, initial conditions and growth differentials indicate that insurance potential has expanded predominantly, but not exclusively, in emerging markets, even though the level of insurance has grown among the BRICS. This means we can expect both the Life and Non-Life rankings to be increasingly dominated by emerging insurance markets, especially large ones that are not part of the BRICS group, those that have capacity to converge in terms of income and still maintain high levels of underwriting.

1.3 Scores, rankings and levels

First, the GAI (Gap Absorption Index) scores and the scaling of these scores as part of the global contribution under the MAPFRE GIP (Global Insurance Potential Index) are used to categorize and rank the countries according to their insurance potential. The MAPFRE GIP sets the order by taking into account the size of the market and, therefore, its contribution to closing the global insurance gap.

Based on these elements, this report therefore presents the 2020 ranking of the MAPFRE GIP Index using figures from both the insurance industry and economic sector from 2019. This index comprises a total of 96 emerging and

developed insurance markets in both the Life and Non-Life segments, ranked according to their potential contribution to closing the global insurance gap. In this sense, it is worth noting that, by adding information from 2019, revisions and additions are made to the figures reported in previous years. This is especially the case for premiums and, although these revisions do not alter the conclusions made in previous publications, they may lead to minor changes in the ranking positions reported in the previous edition once it is recalculated with updated data¹³.

Based on the above, the MAPFRE GIP ranking identifies two categories or lists of markets with high insurance potential. The first (Tier 2) includes insurance markets that are placed above the 75th percentile in terms of their

insurance potential, and which together represent over 80% of global insurance potential. The second category (Tier 1) is more restrictive. This is a sub-group of Tier 2 and comprises countries whose potential is placed above the 95th percentile, and which together account for over 50% of global insurance potential. In order to place highly in the ranking, markets therefore need to be large in size (measured in terms of their GDP) and also need to have adequate capacity to close their own IPG. This means that there are countries with ample capacity to close their own gap, but which nevertheless have relatively little economic weight, which places them in a low ranking position. However, this report also focuses on this group of countries, since thanks to their converging importance they represent a future source of insurance potential.

2. Results: Life ranking

2.1 A glance at the Top 10

Table 2.1-a and Chart 2.1-a show the top-ten markets in the Life ranking according to their insurance potential measured through the MAPFRE GIP Index. Of these, five countries are in Tier 1 (China, the United States, India, Russia, and Indonesia), accompanied by the five Tier 2 countries (Germany, Japan, Brazil, Turkey and Mexico). Except for Russia and Indonesia, which switched positions, no other countries changed positions from the previous year.

The relative *insurance potential* of each market is practically the same as the potential recorded for these ten countries in 2018¹⁴. It is important to note that half of this potential is attributable to Tier 1 markets, although the importance of the changes in potential for Tier 2 markets should not be undermined, even more so for those situated at the top of this ranking. The top-ten countries in the 2019 ranking account for 66% of the global insurance potential measured through the MAPFRE GIP

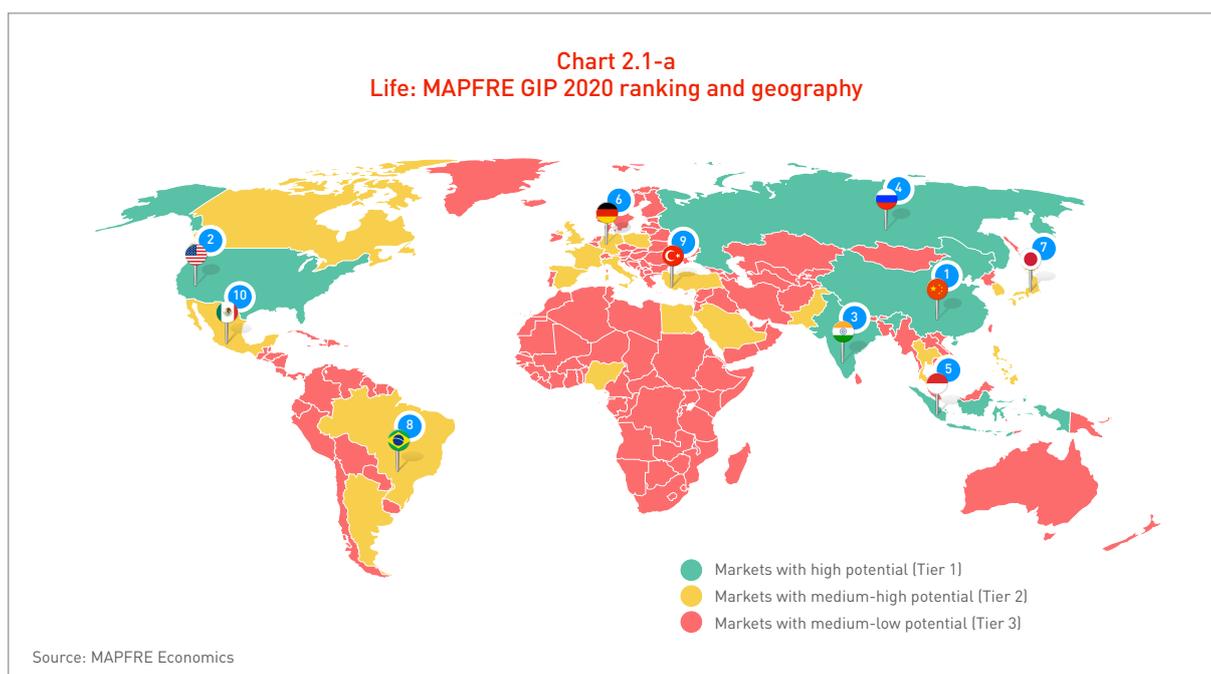


Table 2.1-a
Life: MAPFRE GIP ranking (75+ percentile of 96 countries)

Country	MAPFRE GIP	Ranking			GAI	Years to close the 2019 IPG
		2019	Δ2019-2018*	Δ2019-2009*		
Tier 1						
China	9.22	1	0	0	53.33	25
United States	5.83	2	0	1	36.94	1
India	4.38	3	0	-1	61.85	26
Russia	1.52	4	0	0	48.07	21
Indonesia	1.28	5	0	1	52.20	29
Tier 2						
Germany	1.18	6	0	8	34.48	6
Japan	1.18	7	0	21	29.43	0
Brazil	0.92	8	1	-3	38.66	19
Turkey	0.91	9	-1	3	53.04	25
Mexico	0.84	10	0	3	43.77	20
France	0.70	11	1	15	28.66	0
United Kingdom	0.69	12	-1	48	28.85	0
Saudi Arabia	0.63	13	0	-6	50.62	29
Egypt	0.58	14	0	-5	63.71	29
Italy	0.55	15	0	16	28.12	11
Spain	0.52	16	2	2	35.79	10
Pakistan	0.50	17	0	-7	64.52	31
South Korea	0.48	18	-2	21	29.43	0
Canada	0.47	19	0	8	33.37	6
Poland	0.43	20	1	1	44.40	21
Nigeria	0.42	21	-1	-10	53.01	34
Thailand	0.39	22	0	-6	39.66	23
Philippines	0.37	23	1	-3	50.02	24
Argentina	0.35	24	2	-9	46.64	18

Source: MAPFRE Economics

Tier 1: A sub-group of Tier 2 with a MAPFRE GIP score that places them in the 95+ percentile
Tier 2: Countries in the ranking with a MAPFRE GIP score that places them in the highest quartile of the list

* Variation in the 2019 ranking compared to previous years may differ from that published in previous versions of this report, due to recalculations made in 2019 with updated information from previous years for some of the variables included in the calculation.

Index, of which 54% are Tier 1 countries and 12% are Tier 2 countries (see Table 2.1-b). The concentration of Tier 1 fell by 1 pp from the previous year, while the other quantities showed data very similar to that obtained in 2018 (recalculated with data available in 2019). The complete list of Life markets considered is included in Table A-1 in the Appendix to this report.

Although there have been no major year-on-year changes in the MAPFRE GIP ranking, it is interesting to note that in the last ten years, Japan, Germany and, to a lesser extent, the

United States, gained relative positions on the Top-10 list, which is closely linked to the demographic development of these countries. Among the emerging countries, only Turkey, Indonesia and Mexico gained positions, while Brazil and India lost their positions despite maintaining high thresholds. It is worth noting that, as indicated in previous versions of this report, the secular vision offered by this decade is biased because it refers to a cycle starting with the downturn of the 2008 Lehman recession and finishing at the global cyclical peak recorded in 2018.

Table 2.1-b
Life: Concentration in the MAPFRE GIP ranking

Variable	MAPFRE GIP Life		
	2019	2018	2009
Maximum annual rise	3	17	12
Maximum annual fall	-4	-7	-39
Threshold to Tier 2	0.35	0.32	0.18
Concentration up to Tier 2	83.6%	84.0%	84.8%
Threshold to Tier 1	1.21	1.05	1.05
Concentration up to Tier 1	54.1%	55.4%	56.0%

Source: MAPFRE Economics

The Tier 1 and Tier 2 lists, and more specifically the Top 10, are strongly conditioned by the potential contribution of these markets to closing the global IPG, as they are weighted by their relative weight in terms of GDP. This makes it difficult to establish which of these markets show broad potential in terms of closing their own gap. In this sense, some of these countries have a high local potential (GAI) and are relatively large, although they do not qualify as high as Tier 1 (see Chart 2.1-b).

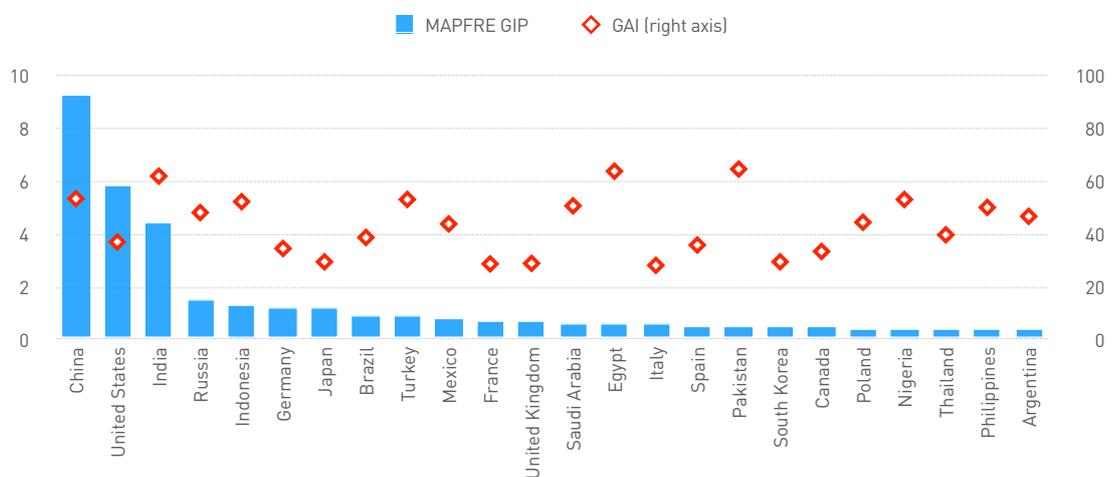


2.2 Other promising markets

As a complementary analysis perspective, the GAI has been used to rank the 10 countries with the greatest capacity to close the local gap, filtering only those in Tier 2 (excluding Tier 1 and Tier 3). These countries have extensive capacity to join the Top-10 list in the future, and they should therefore remain on the radar.

As such, the countries on the Life segment radar in 2019 are Pakistan, Egypt and Nigeria, the three countries at the bottom of the Tier 2 list. In the long-term, these insurance markets could be in a position to challenge the Top-10

Chart 2.1-b
Life: MAPFRE GIP vs. GAI (Tier 1 and 2)



Source: MAPFRE Economics

positions currently held by emerging countries with a lower GAI.

2.3 Years to close the IPG in the Life segment

Finally, considering the insurance potential calculated using the MAPFRE GIP, the time needed to close the estimated domestic insurance gap for 2019 in the Life segment is an average of 6 years for developed markets and 22 years for emerging markets. Table A-3 in the Appendix to this report presents the information for each of the insurance markets analyzed.

3. Results: Non-Life ranking

3.1 A glance at the Top 10

Based on the information in Table 3.1-a and Chart 3.1-a, the top-ten insurance markets in the Non-Life ranking in terms of their insurance potential as measured through the MAPFRE GIP Index are the five Tier 1 countries (China, the United States, India, Russia, and Indonesia) and the five countries leading the Tier 2 list (Japan, Germany, Brazil, Turkey and Mexico). In relation to the information provided in last year's report, Russia, now in Tier 1, switched positions with Japan, now in the Tier 2 list. However, both insurance markets are very close to each other. Using the same approach, the United States and India insurance markets also switched positions, Russia gained two positions, while Indonesia lost one.

As shown in Table 3.1-b, the Tier 1 insurance market group concentrates 55% of insurance potential, 3 pp less than the previous year, while the next five countries concentrate approximately 12% of insurance potential, a

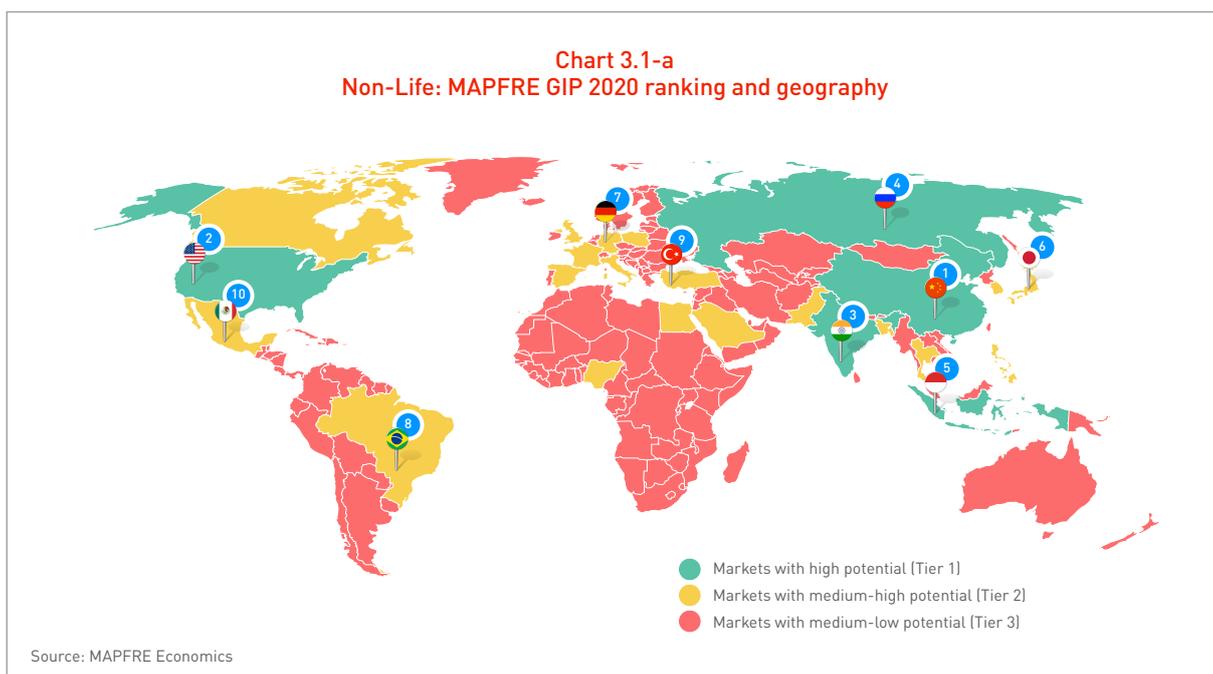
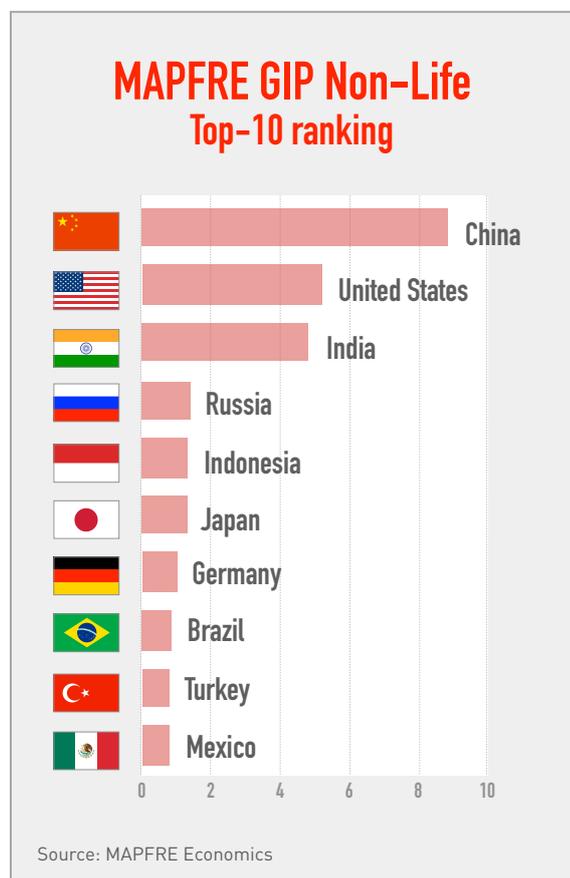


Table 3.1-a
Non-Life: MAPFRE GIP ranking (75+ percentile of 96 countries)

Country	MAPFRE GIP	Ranking			GAI	Years to close the 2019 IPG
		2019	Δ2019-2018*	Δ2019-2009*		
Tier 1						
China	8.87	1	0	0	51.28	20
United States	5.22	2	0	1	33.03	1
India	4.85	3	0	-1	68.51	24
Russia	1.40	4	1	0	44.41	17
Indonesia	1.35	5	-1	0	55.16	25
Tier 2						
Japan	1.30	6	0	6	32.39	0
Germany	1.01	7	0	12	29.31	0
Brazil	0.88	8	0	-2	37.28	9
Turkey	0.82	9	1	4	47.71	19
Mexico	0.80	10	-1	4	41.43	15
United Kingdom	0.77	11	0	30	32.03	0
France	0.72	12	0	8	29.33	0
Italy	0.63	13	0	9	32.19	1
Egypt	0.58	14	0	-5	63.75	24
Pakistan	0.52	15	1	-5	67.14	27
Saudi Arabia	0.52	16	-1	-8	41.93	23
South Korea	0.48	17	0	18	29.43	0
Spain	0.45	18	0	5	30.85	0
Nigeria	0.43	19	0	-8	53.73	28
Canada	0.42	20	2	12	29.27	0
Thailand	0.41	21	-1	-6	41.53	16
Philippines	0.39	22	-1	-6	52.13	19
Bangladesh	0.35	23	0	1	59.16	21
Poland	0.35	24	0	-3	36.63	11

Source: MAPFRE Economics

Tier 1: A sub-group of Tier 2 with a MAPFRE GIP score that places them in the 95+ percentile
 Tier 2: Countries in the ranking with a MAPFRE GIP score that places them in the highest quartile of the list

* Variation in the 2019 ranking compared to previous years may differ from that published in previous versions of this report, due to recalculations made in 2019 with updated information from previous years for some of the variables included in the calculation.

figure that does not appear to have changed substantially compared to 2018. According to this information, annual net variation in Tier 1 was neutral, as it is offset by the movements of Russia and Indonesia between 2018 and 2019. Looking further back in time, Turkey and Mexico have progressed the most over the last decade when it comes to emerging insurance markets, as have Japan, Germany, the United Kingdom, and France when it comes to developed markets. Brazil and India lost their positions over the same period of time. The complete list of Non-Life markets considered is

included in Table A-2 in the Appendix to this document.

3.2 Other promising markets

By conducting the same exercise performed for the Life segment, namely ranking the Non-Life markets according to the GAI and selecting only those that are in the Top 10 but which are not in Tier 1 or Tier 3, we can identify the markets with a high capacity to close the insurance gap and their relevant size.

Table 3.1-b
Non-Life: Concentration in the MAPFRE GIP ranking

Variable	MAPFRE GIP Non-Life		
	2019	2018	2009
Maximum annual rise	3	2	12
Maximum annual fall	-4	-4	-24
Threshold to Tier 2	0.33	0.28	0.17
Concentration up to Tier 2	84.2%	85.2%	85.6%
Threshold to Tier 1	1.32	1.02	1.03
Concentration up to Tier 1	54.5%	57.9%	58.8%

Source: MAPFRE Economics

The ranking of these promising markets is therefore Pakistan, Egypt, Bangladesh, Nigeria, and the Philippines. These countries have enormous abilities to bridge the domestic gap and grow in size, and, in the medium-term, may even overtake other emerging markets currently in the Top-10 MAPFRE GIP ranking.

Non-Life: On the radar

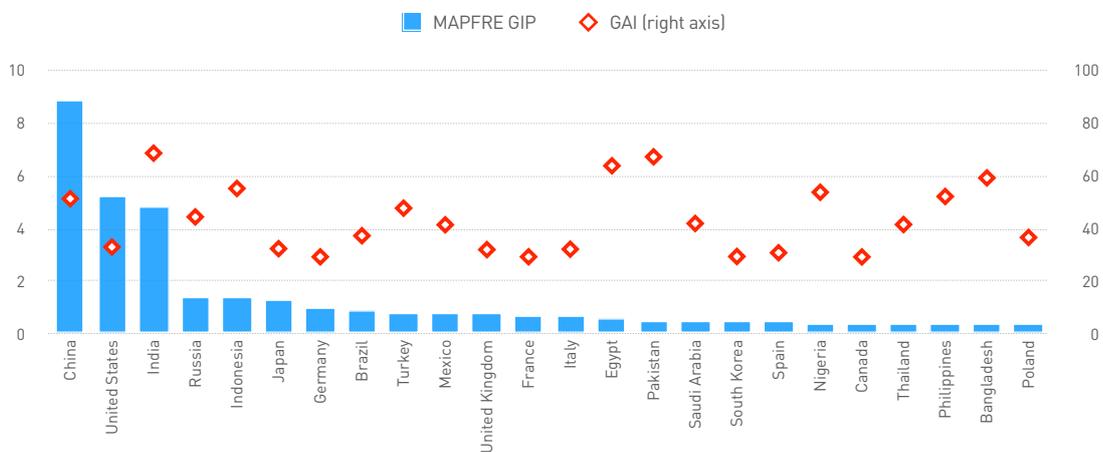
- Pakistan
- Egypt
- Bangladesh
- Nigeria
- Philippines

These five markets could stand out over the next decade due to their ability to absorb the insurance gap in the **Non-Life** segment.

3.3 Years to close the IPG in the Non-Life segment

Finally, this trend is also reflected in the number of years required for these markets to close the domestic IPG determined in 2019 in the Non-Life segment. In this regard, the time required to close the estimated 2019 domestic insurance gap in the Non-Life segment is 3 years on average for developed markets, and 16 years for emerging markets (see Table A-4 in the Appendix to this document).

Chart 3.1-b
Non-Life: MAPFRE GIP vs. GAI (Tier 1 and 2)



Source: MAPFRE Economics

4. Summary of conclusions

The following general conclusions can be drawn from the analysis conducted in this report:

- At the global level, the Insurance Protection Gap increased by 4.8% between 2018 and 2019. This increase is essentially explained by the very early development of the Life business in emerging markets. Similarly, the Life segment is generally more relatively developed than the Non-Life segment.
- As stated in the previous MAPFRE GIP report, the initial conditions and convergence elements asymmetrically favor the development of insurance potential in emerging markets, especially large ones.
- The 10 markets with the highest insurance potential in the Life and Non-Life business, with the exception of Russia's rise (compared to the information reported in the previous report), have barely changed from the previous year's ranking, with the most important being those of greater economic and demographic size.
- Despite not ranking highly in the MAPFRE GIP ranking, there are insurance markets, predominantly in Asia and Africa, that have high potential for national insurance and significant relative weight.
- Based on the insurance potential and IPG calculated for 2019, it would be expected that the IPG in the Life segment would close (*ceteris paribus*) within 6 years and 22 years in developed and emerging markets respectively. In the Non-Life segment, the insurance gap would close within 3 years and 16 years in these markets respectively. However, given the economic effects of lockdown and social distancing measures implemented by countries in tackling the COVID-19 pandemic, said parameters are likely to change significantly for calculations based on 2020 information.

Methodological aspects of the MAPFRE GIP

The development of the Global Insurance Potential Index (MAPFRE GIP) follows an analysis of the dynamics of the Insurance Protection Gap (IPG). The IPG in a region or country represents the difference between the insurance coverage that is economically necessary and beneficial to society and the amount of coverage that is actually acquired. Calculating the IPG helps to determine the potential market for insurance, which is the attainable market size should the gap disappear. In this way, the IPG is not a static concept, but rather it evolves in accordance not only with the growth of a country's economy and population, but also with the emergence of new risks inherent to continuing economic and social development.

The IPG can generally be measured using two approaches. The first, in an ex post approach, is based on observed losses. In this case, the IPG is the difference between recorded economic losses in a specific period and the portion of said losses that were covered through the mechanism of insurance compensation. The second is an ex-ante approach that analyzes optimal protection levels, estimated as the difference between the level of coverage socially and economically appropriate to cover risk compared to the actual level of protection. For the fiscal year examined in this report, and in keeping with the methodology followed in other reports prepared by MAPFRE Economics, we applied the latter of the two approaches, i.e. using the market penetration differential (premiums compared to GDP) between the market concerned and a theoretical benchmark.

For the purposes of calculating the MAPFRE GIP, the benchmark for density and penetration corresponds to the 90th percentile in the distribution of a sample of 96 insurance markets. The 90th percentile ensures that there are at least 9 countries above the benchmark,

and that said benchmark is not an atypically high figure resulting from measurement errors. The benchmark density and penetration measurements therefore show stable levels over time, ensuring that the IPG and its evolution over time are genuine.

Once the parameters dictated by the IPG were defined, a simulation method was derived based on initial conditions and growth differentials relating to income levels, population levels and the elasticity of insurance premiums to the economic cycle. As such, by comparing the results of the simulation with those of the initial definition, we can measure the effectiveness of the projections and their predictive ability. This process has enabled us to identify the most significant variables for calculating the insurance gap, which have been selected to comprise the MAPFRE GIP. Specifically, seven re-scaled and standardized variables between 0 and 1 were selected, where 0 indicates a low impact on market potential and 1 indicates the maximum potential. These variables are: (i) the initial IPG; (ii) the relative penetration compared to the benchmark; (iii) the relative elasticity of premiums in relation to the level of income, compared to the benchmark; (iv) the relative GDP per capita; (v) the GDP growth gap; (vi) the population growth gap, and (vii) the size of the population.

Using these variables allows two measures to be generated, which offer complementary aspects to the analysis. First, the GAI (Gap Absorption Index), which provides a scoring system and a ranking based on each market's potential to close its insurance gap, which can indicate the rhythm at which the market can converge with the levels of penetration and density of the benchmark selected. And second, the MAPFRE GIP (Global Insurance Potential Index) provides a scoring system and ranking that aim to rank each market according to its potential

contribution to closing the global insurance gap (measured in basis points of the global GDP or as a percentage of the total insurance market), thus making it an understandable way of measuring "market size." As such, the MAPFRE GIP provides forecasts consistent with the actual performance observed; i.e. where the indicator scores broad insurance potential, the greatest contributions toward closing the global IPG have effectively occurred.

The corresponding methodological details can be found in the report: MAPFRE Economics (2018), *Global insurance potential index*, Madrid, Fundación MAPFRE.

Appendix: Table A-1
Life: MAPFRE GIP global ranking and GAI values, 2019

Country	MAPFRE GIP	Ranking			GAI	Country	MAPFRE GIP	Ranking			GAI
		2019	Δ2019 -2018*	Δ2019 -2009*				2019	Δ2019 -2018*	Δ2019 -2009*	
China	9.22	1	0	0	53.33	Ireland	0.10	49	-1	31	31.49
United States	5.83	2	0	1	36.94	Israel	0.10	50	0	7	35.26
India	4.38	3	0	-1	61.85	Angola	0.10	51	2	-13	59.58
Russia	1.52	4	0	0	48.07	Morocco	0.10	52	0	-6	45.13
Indonesia	1.28	5	0	1	52.20	Greece	0.09	53	2	-6	37.68
Germany	1.18	6	0	8	34.48	Portugal	0.09	54	2	16	33.51
Japan	1.18	7	0	21	29.43	Kenya	0.09	55	-4	-4	52.73
Brazil	0.92	8	1	-3	38.66	Qatar	0.09	56	-2	-22	45.56
Turkey	0.91	9	-1	3	53.04	Norway	0.08	57	0	-3	31.12
Mexico	0.84	10	0	3	43.77	Democratic Rep.	0.07	58	0	-8	48.97
France	0.70	11	1	15	28.66	Denmark	0.07	59	0	17	28.49
United Kingdom	0.69	12	-1	48	28.85	Kuwait	0.07	60	1	-25	43.11
Saudi Arabia	0.63	13	0	-6	50.62	Ecuador	0.07	61	-1	-12	45.04
Egypt	0.58	14	0	-5	63.71	Bulgaria	0.06	62	0	-9	47.90
Italy	0.55	15	0	16	28.12	New Zealand	0.06	63	0	8	36.87
Spain	0.52	16	2	2	35.79	Finland	0.06	64	0	14	28.11
Pakistan	0.50	17	0	-7	64.52	Slovakia	0.06	65	1	-1	40.49
South Korea	0.48	18	-2	21	29.43	Tunisia	0.05	66	2	-7	53.96
Canada	0.47	19	0	8	33.37	Guatemala	0.05	67	-2	-9	47.33
Poland	0.43	20	1	1	44.40	Oman	0.05	68	-1	-23	46.92
Nigeria	0.42	21	-1	-10	53.01	Panama	0.05	69	0	5	46.11
Thailand	0.39	22	0	-6	39.66	Serbia	0.05	70	0	-8	47.49
Philippines	0.37	23	1	-3	50.02	Jordan	0.04	71	0	-8	50.84
Argentina	0.35	24	2	-9	46.64	Croatia	0.04	72	1	-3	41.56
Australia	0.35	25	3	7	35.05	Lebanon	0.03	73	-1	-7	44.18
Bangladesh	0.34	26	-1	3	57.03	Lithuania	0.03	74	1	-1	42.72
Iran	0.31	27	-4	-19	35.99	Costa Rica	0.03	75	-1	-3	42.86
Vietnam	0.31	28	-1	-5	52.17	Bahrain	0.03	76	0	-11	47.72
Malaysia	0.27	29	0	4	38.97	Slovenia	0.02	77	0	5	37.91
Netherlands	0.27	30	0	10	35.25	Uruguay	0.02	78	1	-11	37.25
Colombia	0.27	31	0	-6	46.02	El Salvador	0.02	79	1	4	45.41
Ukraine	0.25	32	0	-10	59.75	Latvia	0.02	80	1	-1	42.25
Romania	0.22	33	0	-3	48.54	Luxembourg	0.02	81	1	5	34.57
UAE	0.21	34	0	-15	40.77	Macau	0.02	82	-4	-5	29.95
Kazakhstan	0.19	35	0	-11	50.85	Estonia	0.02	83	1	2	41.36
South Africa	0.17	36	0	12	30.92	Zimbabwe	0.02	84	-1	0	49.09
Belgium	0.15	37	0	24	32.25	Botswana	0.01	85	0	3	42.63
Peru	0.14	38	0	-1	43.89	Cyprus	0.01	86	0	1	37.35
Czech Republic	0.14	39	0	3	41.63	Trinidad and	0.01	87	0	-6	34.44
Austria	0.14	40	0	12	35.87	Jamaica	0.01	88	0	1	39.36
Switzerland	0.14	41	0	14	30.51	Mauritius	0.01	89	0	1	38.10
Algeria	0.13	42	1	-6	35.97	Malta	0.01	90	1	2	36.92
Chile	0.13	43	1	0	36.93	Iceland	0.01	91	-1	0	38.80
Singapore	0.13	44	-2	0	29.63	Namibia	0.01	92	0	1	30.97
Sweden	0.12	45	1	30	29.28	Bahamas	0.00	93	0	1	36.27
Sri Lanka	0.12	46	-1	-5	55.98	Barbados	0.00	94	0	1	31.22
Hong Kong	0.10	47	0	21	29.91	Liechtenstein	0.00	95	0	1	24.02
Hungary	0.10	48	1	8	42.03	Venezuela	0.00	96	0	-79	31.35

Source: MAPFRE Economics

* Variation in the 2019 ranking compared to previous years may differ from that published in previous versions of this report, due to recalculations made in 2019 with updated information from previous years for some of the variables included in the calculation.

Appendix: Table A-2
Non-Life: MAPFRE GIP global ranking and GAI values, 2019

Country	MAPFRE GIP	Ranking			GAI	Country	MAPFRE GIP	Ranking			GAI
		2019	Δ2019 -2018*	Δ2019 -2009*				2019	Δ2019 -2018*	Δ2019 -2009*	
China	8.87	1	0	0	51.28	Hungary	0.10	49	1	8	39.30
United States	5.22	2	0	1	33.03	Israel	0.10	50	-1	8	34.11
India	4.85	3	0	-1	68.51	Greece	0.09	51	3	-3	35.98
Russia	1.40	4	1	0	44.41	Portugal	0.09	52	1	9	31.97
Indonesia	1.35	5	-1	0	55.16	Kenya	0.09	53	-2	-1	49.22
Japan	1.30	6	0	6	32.39	Morocco	0.08	54	-2	-4	39.46
Germany	1.01	7	0	12	29.31	Norway	0.08	55	1	-4	31.36
Brazil	0.88	8	0	-2	37.28	Qatar	0.08	56	-1	-23	40.12
Turkey	0.82	9	1	4	47.71	Angola	0.08	57	0	-15	48.06
Mexico	0.80	10	-1	4	41.43	Denmark	0.08	58	0	12	30.28
United Kingdom	0.77	11	0	30	32.03	Finland	0.07	59	1	9	32.14
France	0.72	12	0	8	29.33	Democratic Rep.	0.07	60	-1	-7	43.16
Italy	0.63	13	0	9	32.19	Kuwait	0.06	61	1	-25	40.03
Egypt	0.58	14	0	-5	63.75	Ecuador	0.06	62	-1	-7	40.99
Pakistan	0.52	15	1	-5	67.14	Slovakia	0.05	63	1	2	37.36
Saudi Arabia	0.52	16	-1	-8	41.93	Guatemala	0.05	64	-1	-1	44.19
South Korea	0.48	17	0	18	29.43	New Zealand	0.05	65	0	17	29.81
Spain	0.45	18	0	5	30.85	Bulgaria	0.05	66	0	-6	36.96
Nigeria	0.43	19	0	-8	53.73	Oman	0.05	67	0	-20	42.52
Canada	0.42	20	2	12	29.27	Tunisia	0.04	68	1	-2	45.36
Thailand	0.41	21	-1	-6	41.53	Panama	0.04	69	-1	9	40.02
Philippines	0.39	22	-1	-6	52.13	Serbia	0.04	70	0	-6	40.92
Bangladesh	0.35	23	0	1	59.16	Jordan	0.03	71	0	-4	43.15
Poland	0.35	24	0	-3	36.63	Lithuania	0.03	72	1	1	41.06
Vietnam	0.32	25	0	-7	53.61	Croatia	0.03	73	1	2	35.49
Malaysia	0.30	26	0	1	43.30	Lebanon	0.03	74	-2	0	37.74
Australia	0.29	27	2	7	29.47	Costa Rica	0.03	75	0	2	36.54
Argentina	0.29	28	-1	-11	38.46	Macau	0.02	76	0	-4	39.97
Iran	0.23	29	-1	-22	26.31	Bahrain	0.02	77	0	-6	41.59
Colombia	0.23	30	1	-1	38.92	Uruguay	0.02	78	0	-9	34.61
Netherlands	0.22	31	-1	15	28.76	Luxembourg	0.02	79	0	5	34.83
Romania	0.20	32	0	-2	44.33	Slovenia	0.02	80	1	3	28.77
Ukraine	0.20	33	1	-2	48.98	El Salvador	0.02	81	-1	0	41.25
South Africa	0.20	34	-1	9	35.04	Latvia	0.02	82	0	-3	36.33
Kazakhstan	0.19	35	1	-7	49.51	Zimbabwe	0.01	83	0	-3	47.02
UAE	0.17	36	-1	-11	33.23	Botswana	0.01	84	0	3	46.48
Singapore	0.16	37	0	2	36.57	Estonia	0.01	85	0	0	35.28
Belgium	0.14	38	0	16	31.19	Cyprus	0.01	86	0	2	33.35
Sweden	0.14	39	2	20	32.89	Trinidad and	0.01	87	1	-1	29.68
Peru	0.14	40	-1	-3	42.79	Mauritius	0.01	88	-1	1	36.98
Switzerland	0.13	41	2	15	28.75	Jamaica	0.01	89	1	3	31.31
Chile	0.13	42	0	2	36.44	Namibia	0.01	90	-1	0	37.38
Algeria	0.13	43	2	-5	33.88	Malta	0.01	91	0	0	40.22
Hong Kong	0.12	44	-4	5	36.00	Iceland	0.01	92	0	1	34.04
Czech Republic	0.12	45	1	0	36.17	Bahamas	0.00	93	0	2	29.77
Sri Lanka	0.12	46	1	-6	54.21	Barbados	0.00	94	0	0	28.81
Austria	0.12	47	1	15	30.00	Liechtenstein	0.00	95	0	1	33.76
Ireland	0.11	48	-4	28	35.74	Venezuela	0.00	96	0	-70	19.39

Source: MAPFRE Economics

* Variation in the 2019 ranking compared to previous years may differ from that published in previous versions of this report, due to recalculations made in 2019 with updated information from previous years for some of the variables included in the calculation.

Appendix: Table A-3
Life: Years to close the domestic IPG, 2019

Country	Years	Country	Years
China	25	Ireland	0
United States	1	Israel	8
India	26	Angola	29
Russia	21	Morocco	22
Indonesia	29	Greece	16
Germany	6	Portugal	12
Japan	0	Kenya	27
Brazil	19	Qatar	0
Turkey	25	Norway	6
Mexico	20	Democratic Rep.	23
France	0	Denmark	0
United Kingdom	0	Kuwait	27
Saudi Arabia	29	Ecuador	23
Egypt	29	Bulgaria	29
Italy	11	New Zealand	11
Spain	10	Finland	0
Pakistan	31	Slovakia	20
South Korea	0	Tunisia	23
Canada	6	Guatemala	24
Poland	21	Oman	29
Nigeria	34	Panama	20
Thailand	23	Serbia	17
Philippines	24	Jordan	27
Argentina	18	Croatia	20
Australia	0	Lebanon	20
Bangladesh	25	Lithuania	24
Iran	32	Costa Rica	22
Vietnam	31	Bahrain	26
Malaysia	19	Slovenia	17
Netherlands	0	Uruguay	17
Colombia	23	El Salvador	23
Ukraine	27	Latvia	24
Romania	28	Luxembourg	11
UAE	25	Macau	15
Kazakhstan	30	Estonia	22
South Africa	28	Zimbabwe	17
Belgium	5	Botswana	23
Peru	22	Cyprus	11
Czech Republic	22	Trinidad and Tobago	12
Austria	9	Jamaica	17
Switzerland	0	Mauritius	16
Algeria	30	Malta	17
Chile	13	Iceland	14
Singapore	2	Namibia	19
Sweden	1	Bahamas	---
Sri Lanka	29	Barbados	11
Hong Kong	7	Liechtenstein	---
Hungary	21	Venezuela	---

Source: MAPFRE Economics

Appendix: Table A-4
Non-Life: Years to close the domestic IPG, 2019

Country	Years	Country	Years
China	20	Hungary	12
United States	1	Israel	0
India	24	Greece	11
Russia	17	Portugal	19
Indonesia	25	Kenya	16
Japan	0	Morocco	12
Germany	0	Norway	3
Brazil	9	Qatar	0
Turkey	19	Angola	26
Mexico	15	Denmark	0
United Kingdom	0	Finland	1
France	0	Democratic Rep.	15
Italy	1	Kuwait	21
Egypt	24	Ecuador	18
Pakistan	27	Slovakia	10
Saudi Arabia	23	Guatemala	19
South Korea	0	New Zealand	0
Spain	0	Bulgaria	22
Nigeria	28	Oman	24
Canada	0	Tunisia	14
Thailand	16	Panama	5
Philippines	19	Serbia	21
Bangladesh	21	Jordan	18
Poland	11	Lithuania	19
Vietnam	26	Croatia	6
Malaysia	10	Lebanon	6
Australia	0	Costa Rica	11
Argentina	11	Macau	15
Iran	26	Bahrain	17
Colombia	14	Uruguay	8
Netherlands	0	Luxembourg	19
Romania	22	Slovenia	0
Ukraine	22	El Salvador	17
South Africa	19	Latvia	16
Kazakhstan	26	Zimbabwe	14
UAE	19	Botswana	17
Singapore	10	Estonia	13
Belgium	0	Cyprus	5
Sweden	1	Trinidad and Tobago	10
Peru	16	Mauritius	8
Switzerland	0	Jamaica	5
Chile	11	Namibia	11
Algeria	24	Malta	2
Hong Kong	6	Iceland	--
Czech Republic	12	Bahamas	--
Sri Lanka	24	Barbados	--
Austria	0	Liechtenstein	--
Ireland	0	Venezuela	--

Source: MAPFRE Economics

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References

1/ As indicated in previous versions of this report, appropriate development of the insurance industry contributes to the stabilization of private-sector balance sheets throughout the economic cycle, promotes long-term savings and investment and increased productivity, and helps to free up resources so that they can be allocated to production activities.

2/ See: MAPFRE Economics (2018), *Global insurance potential index*, Madrid, Fundación MAPFRE.

3/ See: MAPFRE Economics (2019), *MAPFRE GIP 2019*, Madrid, Fundación MAPFRE.

4/ The benchmark is statistically represented by the insurance market values in the 90th percentile of penetration distribution for Life and Non-Life premiums. For data from the 2019 fiscal year, the benchmark would be Japan for the total market, while in Non-Life and in Life, this would be Australia and South Korea respectively.

5/ The first five variables are *initial conditions*, of which the first and fifth refer to initial absolute size. The second, third and fourth variables relate to the comparison with the ideal level of insurance represented here by the benchmark, thus offering an insight into the margin of convergence toward its values in each market. Furthermore, six of the variables are dynamic and express the ability to converge (in terms of income and, implicitly, insurance demand) toward the benchmark over time. All these variables have a positive effect on potential except for the second and fourth factors. See: MAPFRE Economics (2018), *Global insurance potential index*, Madrid, Fundación MAPFRE, pg. 15–17.

6/ The GAI (Gap Absorption Index) is the index that indicates the ability to close the medium- and long-term insurance gap in a given country. It is obtained from the weighted sum of each variable used and is therefore very sensitive to the underlying macroeconomic and sectoral conditions and may vary from one year to the next. This indicator provides information about each country's insurance potential with respect to its own market and not as a proportion of global potential. Meanwhile, the MAPFRE GIP (Global Insurance Potential Index) provides a scoring system and ranking that aim to rank each market according to its potential contribution to closing the global insurance gap (measured in basis points of the global GDP or as a percentage of the total insurance market), thus making it an understandable way of measuring "market size." The MAPFRE GIP is calculated by scaling the GAI score by the relative size of each market. Thus, the local insurance potential obtained by the GAI, weighted by the size of each market on the global market, provides a measure of each market's contribution to the global insurance potential.

7/ For analysis with 2019 data, the IPG benchmark is Japan for the total market, while in Non-Life and in Life, this is Australia and South Korea respectively. In analysis with 2018 data in our previous report, the benchmark in all cases was the insurance market of the Netherlands.

8/ It should be noted that the IPG calculation from previous years has been modified from that reported in previous reports, due to updates to both GDP and premium values for previous years. This has implications when calculating the *insurance potential* of some countries and, therefore, changes their position in the global ranking.

9/ BRICS: Brazil, Russia, India, China, and South Africa.

10/ G7: Germany, Canada, the United States, France, Italy, Japan and the United Kingdom.

11/ As in previous reports related to MAPFRE GIP, when calculating regional averages, data from some countries has been excluded because it distorted the sample, either due to the country's size or particular situation: San Marino, Liechtenstein, Barbados, Bahrain and Qatar.

12/ This report does not account for the 7.67 billion people who, according to United Nations data, make up the world's population in 2019, since it includes only a sample of 96 countries and not the entire world.

13/ The revision of premium volumes in the different markets analyzed produces slight changes in the MAPFRE GIP scoring and, therefore, in the representation of the potential and ranking of each country, as well as in the respective year-on-year variations.

14/ It must be noted that using revised premium data for 2019 to calculate the MAPFRE GIP for 2018 shows slight changes in the potential of some countries such as Japan and Russia, resulting in the two countries switching positions. This happens in very few cases in the Tier 2 list for both the Life and Non-Life segments, and does not affect the comparative reading of the 2019 ranking.

Other MAPFRE Economics reports

- MAPFRE Economics (2020), *The Latin American insurance market in 2019*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2020), *2019 Ranking of insurance groups in Latin America*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2020), *The Spanish insurance market in 2019*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2020), *2019 ranking of the largest European insurance groups*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2020), *Elements for the development of Life insurance*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2020), *Financial inclusion in insurance*, Madrid, MAPFRE Economics.
- MAPFRE Economics (2020), *Insurance industry investment*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2019), *The Latin American insurance market in 2018*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2019), *The Spanish insurance market in 2018*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2019), *Population aging*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2018), *Global insurance potential index*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2018), *Health systems: A global analysis*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2018), *Insurance solvency regulation systems*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2017), *Pension systems*, Madrid, Fundación MAPFRE.
- MAPFRE Economics (2017), *Elements for insurance expansion in Latin America*, Madrid, Fundación MAPFRE.

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MAPFRE GIP 2020

On the basis of an analysis of the economic and demographic factors that determine the growth of the Insurance Protection Gap, and the measurement of the capacity to close said insurance gap in each market, the MAPFRE GIP Index (Global Insurance Potential Index) provides a scoring system and ranking that places insurance markets in order according to their potential contribution to closing the global insurance gap.

This report, prepared by MAPFRE Economics, updates the MAPFRE GIP calculation for 96 insurance markets, providing a comparative view of the global potential to expand the insurance industry in the coming years.