



Fundación **MAPFRE**

**ELEMENTS FOR INSURANCE
EXPANSION
IN LATIN AMERICA**

MAPFRE Economic Research

Elements for insurance expansion in Latin America

**An analysis of the determining
factors of insurance
penetration levels**

Report prepared by MAPFRE Economic Research,
under the auspices of the Inter-American Federation of Insurance Companies.



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Contents

Introduction	11
Preface	13
First section	
General aspects	
1. Summary of structural trends of the Latin American insurance market	17
1.1. Economic context	17
1.2. The Latin American insurance market and its structural trends	19
1.3. dynamics of Latin America with regard to emerging markets	28
2. Determining factors of insurance penetration levels: conceptual framework	35
2.1. Insurance and economic activity	35
2.2. Analysis of supply and demand	37
Second section	
Determining factors on the supply side	
3. Prudential regulations	41
3.1. Regulation and its effects on the market	41
3.2. Regulatory systems in the insurance sector	41
3.3. Analysis of the regulatory progress in the region	42
3.4. Considerations	45
4. Access to the market and capital	49
4.1. Access to the market and its influence on the supply of insurance services	49
4.2. Quantitative analysis of the elements for entering the market	56
4.3. Access to capital	58
4.4. Considerations	58
5. Distribution channels	59
5.1. General aspects	59
5.2. Distribution and commission channels	59
5.3. Considerations	67

6.	Expense efficiency	69
6.1.	General aspects	69
6.2.	Analysis of relative efficiency in expenses in the region	69
6.3.	Considerations	71
7.	Innovation	73
7.1.	Product approval and innovation in insurance	73
7.2.	Regulatory mechanisms for issuing new insurance products.	73
7.3.	Considerations	75

Third section

Determining factors on the demand side

8.	Structural factors (1): economic growth and income distribution	79
8.1.	General aspects	79
8.2.	The peculiarities of Latin America	79
8.3.	Penetration, growth of economic activity and income distribution	81
8.4.	Considerations	83
9.	Structural factors (2): financial education	85
9.1.	General aspects	85
9.2.	Influence of the financial culture on insurance development	86
9.3.	Considerations	88
10.	Public Policies (1): mandatory insurance	89
10.1.	General aspects	89
10.2.	Mandatory Automobile Insurance	89
10.3.	Considerations	95
11.	Public Policies (2): tax incentives	97
11.1.	General aspects	97
11.2.	Regional balance and considerations	98
12.	Public Policies (3): participation in new activity areas	101
12.1.	Insurance in new activity areas	101
12.2.	Quantitative analysis of impact	103
12.3.	Considerations	106

13. Public Policies (4):	
financial inclusion in insurance	109
13.1. Financial inclusion and penetration of insurance	109
13.2. Microinsurance and long term social effects	110
13.3. Microinsurance as an element of financial inclusion	111

Fourth part

Synthesis and conclusions

14. General guidelines to expand penetration in the Latin American insurance markets	119
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References	125
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Index of charts, tables, and boxes	127
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Introduction

The insurance penetration index, beyond the quantitative relationship that associates insurance premiums with the gross domestic product of a country, is an indicator of the way in which a company uses insurance as a mechanism to give stability to economic and social activity through the protection and compensation of risks and as a tool to manage savings and promote of medium- and long-term investments. Therefore, the penetration index should not be seen only as an indicator of the relative size of the insurance industry in an economy, but also, and more importantly, as the degree of intensity in which insurance contributes to creating wealth in a society.

The main goal of this report, promoted by the Inter-American Federation of Insurance Companies and prepared by MAPFRE Economic Research, is to analyze the main determinants of insurance penetration levels in Latin America, in order to outline general guidelines that can be considered when designing public policies aimed at increasing its penetration in the regional economies. In order to do this, the conceptual framework used in the preparation of this report has focused on the analysis of the main factors that can promote an increase in penetration levels from the point of view both of supply (those that affect the creation of insurance services) and demand (those that explain the intensity of consumption of those services).

From this perspective, based on an analysis of the main experiences of the insurance markets in Latin America, this report analyzes the influence that the prudential regulatory framework, market and capital access mechanisms, distribution channels, expense efficiency level and facilities for innovation, have on the process of creating the supply of insurance services. And, in addition, it addresses the role of economic growth, income distribution structure, financial education, mandatory insurance, tax incentives, the insurance industry's chances to participate in new areas, and financial inclusion policies in the behavior and expansion of insurance demand. Reviewing this group of factors facilitates not only a better understanding of the economic landscape in which the insurance activities are embedded, but also identification of the practices that have had the most positive effects on raising insurance penetration levels in the region. Consequently, they should be taken into account when designing and implementing public policies that seek to promote better use of insurance mechanisms in society.

With the publication of this report, we would like to continue contributing to the analysis of Latin American insurance markets and, therefore, to expand the scope of this activity in the society, increasing its contribution to wealth creation and increased quality of life in the region.

Antonio Huertas Mejías
Chairman and CEO of MAPFRE

Preface

This analysis is so packed with important information that, to do it justice, we would have to write a prologue almost as long as the report just to summarize it. As this is not the job of an introduction, I must force myself to remain within the limits of what I believe is of utmost importance in this report.

I think it is immensely important to defend an idea that, despite being fairly obvious for those of us working within the insurance industry, is often overlooked among laypersons: as a logical consequence of being the insurer of an activity subject to supervision and public management, its promotion and growth goes through an adequate combination between private agents, their regulators and their supervisors.

In economics, we almost never find good markets that are poorly regulated, but in the case of insurance, the correlation is perfect. There is no good supply of badly regulated or poorly supervised insurance, because the influence of these areas on the industry is so high that, in practice, an inefficient legal practice an inefficient supply.

The appeal in this publication for a gradual application of risk-based regulatory standards is extremely accurate. Dynamic regulatory systems, based therefore on the risk profile of each market actor, have the great advantage of rewarding solvent growth strategies and penalizing, even indirectly, reckless growth, poor technical work, or rash financial strategies. Static solvency systems, on the other hand, are susceptible to treating inequalities equally, which, implicitly, is a deterrent of good practice. Regulatory excellence, in this regard, can only assume, in the medium- and long-term, a strong propensity for insurance growth, which by these standards of quality will be increasingly capable and demanding with itself at the same time.

Along with the appeal in favor of good rules that are added to good companies, this report shows us another equally important defense, which is the defense of flexibility. The variety in insurance: variety of products, variety of solutions, variety of marketing methods; all this has a reason to exist: the client. Insurance is not expressed in certain ways for fun, but by the need to reach different clients who wish to be approached in different ways. To conclude that only one of many solutions that have been developed is good, or that one is better than the others, would be to give into an analysis both rushed and false. The variety of supply is a consequence of the wealth of demand, as we can see very clearly nowadays, we believed that all types of insurance marketing were already consolidated. However, the reality of microinsurance has come to show us that there are clients who need even new types of relationships.

The client is always right, and it is the market's responsibility to meet their needs. Consequently, whoever supervises this market must do so by respecting at all times the premise that this wealth of approaches must be respected. This book argues that having multiple channels is an element of insurance development, and that statement is completely true, because having multiple channels is nothing but an expression of wealth of approaches which insurance clients want to count on.

The call for innovation and its role in rationalizing the sector's costs is also important. Certainly, technologies are coming to the aid of insurance providers precisely as highly efficient tools for cost rationalization; although they have other consequences that are probably much more important, such as customer empowerment, they are increasingly able to contact their insurer and let them know what they think. There are many other things that can be said in this analysis on the topic, but I

would like to add just one more, the implementation of sector files. Much of the future of insurance relies on projects based on environments with shared information, given that in this way we can approach the knowledge of risks and the market with the globality that the market really has.

We are also told in this publication, and this is the most obvious part, that insurance correlates with economic growth and income. However, if this statement is true, we not lose sight of the fact that the observation of any sufficiently large set of markets shows us that, on the basis of this general principle, there are very sharp differences among different economies and societies, based on cultural elements, financial education, related to regulatory developments and other circumstances. Therefore, things are not so simple so as to demand growth from political governments, because the same growth has different consequences in different countries. It is important to delve deeper into the characteristics of each market in order to seek a path towards that growth. This requires enormous amounts of effort and capacity for dialogue between private operators and public actors.

Finally, I would like to emphasize the importance that this report gives to public-private collaboration. This is a message of great depth that we will have to repeat over and over again, now and in the future. One of the biggest lessons that we have received in the last decades of the 1900s, as well as in recent years, lies in the concept that the division between public and the private, the building of airtight walls between both spheres, is the worst possible solution. If something characterizes the socioeconomic challenges of our century, it is that they are of such a magnitude that they cannot be faced without cooperation between the public and private spheres. Demographic aging, labor force productivity, new types of economic relationships, financial inclusion of the underprivileged, are such complicated subjects that it is recklessly inefficient not to have all the tools possible to attack them together. That, and nothing else, is public-private cooperation.

Shortly, a report to calmly review and to revisit frequently the search for data, ideas and approaches. A necessary undertaking that must help the insurers build a convincing narrative with which we can try to make agreements and provide support, always for the benefit of our community.

Pilar González de Frutos
Chairman of the
Inter-American Federation of Insurance Companies

First section

General aspects

1. Synthesis of the structural trends in the Latin American insurance market

1.1 Economic Context¹

Economic environment

Globally, 2016 represented a turning point for the economic outlook, marked by a nascent pick up in the global economy. Global economic activity grew this year by around 3.1 percent, slightly above the previous year.

Developed economies grew by 1.9 percent, while emerging economies expanded by 4.6 percent. These developments testify to the change of cycle in both regions of the world, against a backdrop of an economic policy stance which is gradually shifting away from easy monetary policy toward a looser fiscal policy stance. The pace of global activity was uneven not only in terms of developed and emerging economies, but also between the different regions, with stronger momentum in south-east Asia relative to Latin America and emerging Europe.

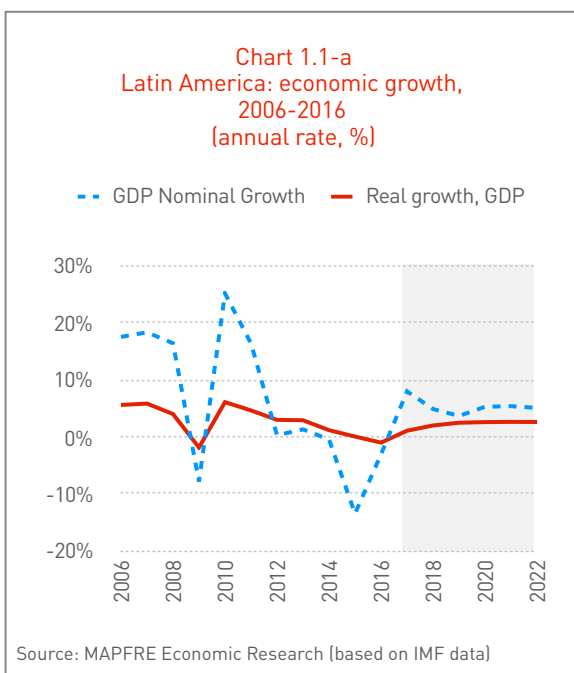
In Latin America, although confidence indicators began to recover in the second half of the year, especially for consumption and employment, leading indicators nonetheless remained sluggish at the end of 2016, foreshadowing a negative out-turn for the region as a whole. The Latin American economy contracted by -1.2 percent over 2016 (-2.9 percent including Venezuela); strongly affected by recessions in Brazil and Argentina.

In the south of the region, 2016 represented a turning point after a four year downturn. However, in Mexico, uncertainty surrounding business negotiations with its North American partners, coupled with a more restrictive monetary normalization aligned to the U.S. Federal Reserve's monetary policy stance and a slowdown in consumption related to a spike in inflation spurred by peso depreciation, likely hampered investment projects. For its part, the external sector was unable to compensate for domestic demand weakness in the region,

affected by doubts about growth in China and commodity price volatility.

However, the region looks to have gained momentum as of 2017, fueled by two factors (see Chart 1.1-a). Firstly, a renewed impulse from external demand, thanks to stronger global growth and exchange rate depreciation, and, secondly, support from public investment which will help sustain private demand, particularly thanks to the cyclical recovery in large markets against a backdrop in which the downside risks for certain countries no longer look likely to materialize in 2017.

Meanwhile, exchange rate divergences between north and south of Latin America will enable inflation rates to continue easing toward central bank targets. The diverging path of inflation in Mexico and South America will also be reflected in the tone of monetary policy.



In this general context, there are two fundamental risks for the region. The first relating to a more pronounced slowdown of China's economy and the second associated with a more aggressive normalization of the U.S. Federal Reserve's monetary policy.

In the case of the former, a more pronounced slowdown in China (linked to new episodes of financial volatility) could impact the region through a fall in commodity prices and an increase in risk aversion. This would come at a time of limited scope for monetary policy to cushion the shock with counter-cyclical policies and potential further loss of confidence, which is already at very low levels. In the latter scenario, faster than anticipated normalization of the monetary policy by the Federal Reserve could provoke a financial overreaction across the interest yield curve of the United States, with contagion to funding costs for many Latin American countries which finance themselves in dollars and whose currency would further depreciate on the back of outflows of portfolio investment accompanying such a move.

Impact on insurance demand

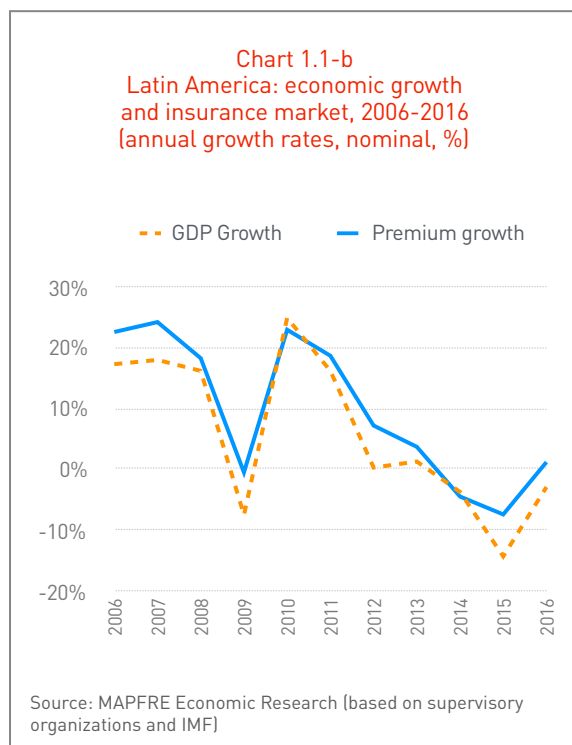
Estimates of the global insurance market grew by 2.9 percent in 2016 in nominal terms, reaching a value of around 4.7 billion dollars. Global premium volume is set to continue growing in both nominal and real terms over the coming years, driven by strong growth in emerging markets.

The global volume of Non-Life insurance premiums, which account for 43 percent of total premiums, increased by 3.7 percent in 2016 in real terms, with emerging market growth of around 9.6 percent, driven by emerging Asia and especially China. Meanwhile, the global Life insurance segment, which accounts for some 57 percent of total premiums, grew by around 2.5 percent in real terms. This was a slightly slower pace of growth than for Non-Life premiums, despite a significant increase in savings insurance premiums in emerging economies, especially Asia.

The economic contraction in Latin America in 2016, with still weak domestic demand, affected the performance of the insurance market, which is strongly associated with overall economic growth, as can be seen by comparing developments in insurance premiums over the last ten years with changes in real GDP over the same period (see Chart 1.1-b).

However, despite the inability of the region to leave behind the challenging economic environment of 2015, the performance of economic activity pointed to an improvement which was also reflected in the performance of insurance market demand. In this regard, at an aggregate level insurance premiums in the region saw modest growth of 1.2 percent, primarily due to an improved performance of the Life insurance segment.

It is important to note that this growth in insurance demand in 2016 (1.2 percent) is the first since 2013 (3.7 percent), and seems to indicate the beginning of a new upward cycle in the demand for insurance fed by the economic recovery in the region.



1.2 The Latin American insurance market and its structural trends²

Overall performance of the insurance industry in the region

Growth

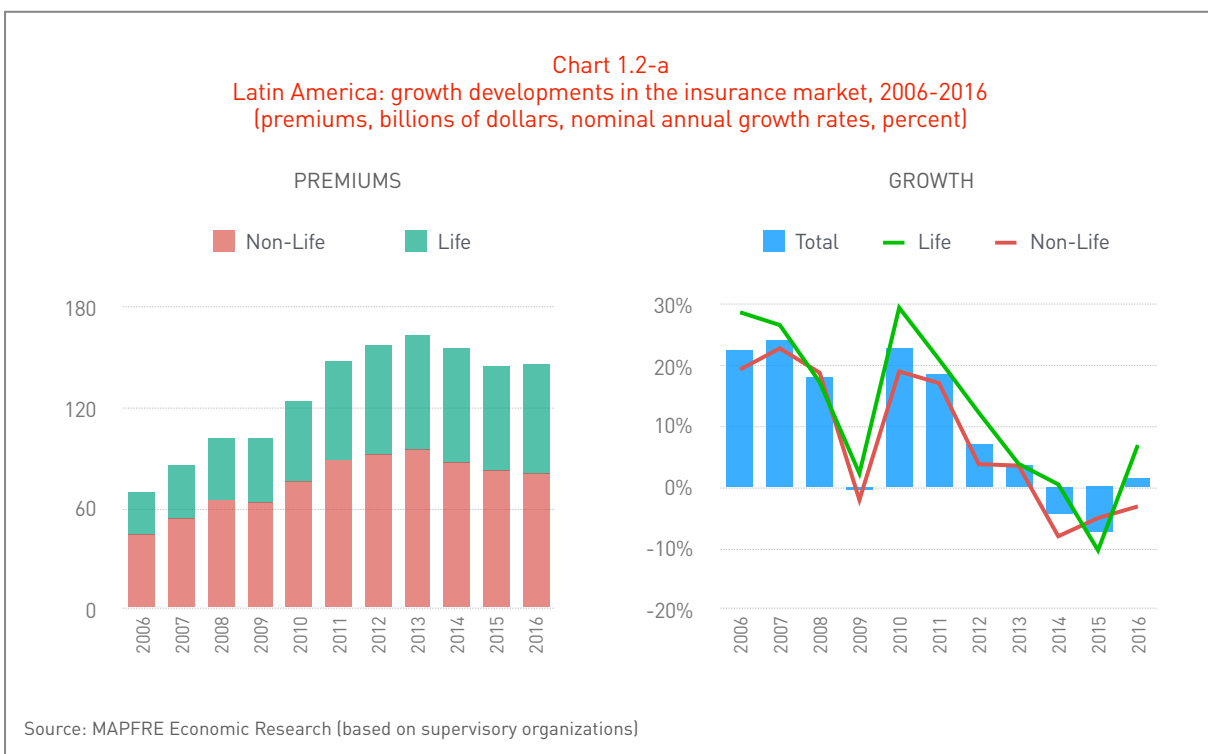
Insurance premiums in Latin America reached 146.7 billion dollars, of which 54.8 percent related to Non-Life insurance and the remaining 45.2 percent to Life insurance (see Chart 1.2-a).

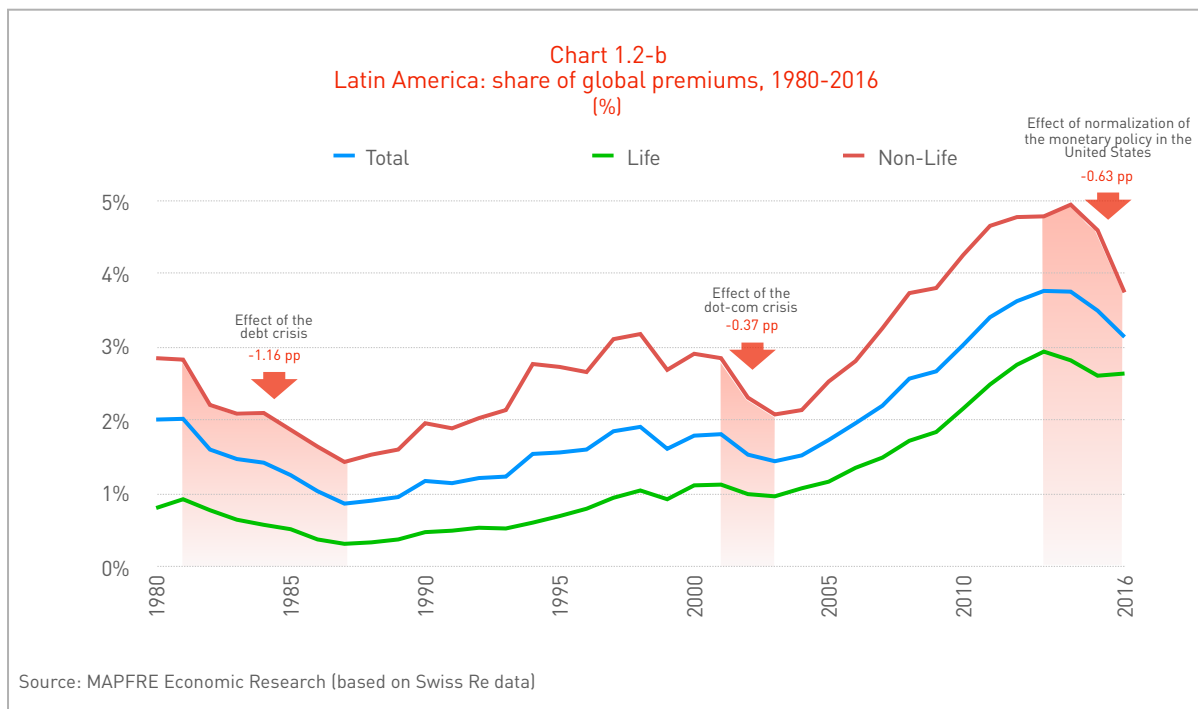
In a medium-term perspective, it is also worth highlighting that the Latin American insurance market has seen a sustained increase in its presence in the global market over time, both in the Life and Non-Life segments. As showed in Chart 1.2-b, this share rose from only 2 percent in 1980 to 3.1 percent in 2016. However, the trend towards a rise in the share on the global market has slowed down during periods of economic and financial crisis affecting the region (the debt crisis of the 1980s, the volatility period at the start of the first decade of the century associated with technological enterprises and the delayed effect of the global economic crisis through the normalization of monetary policy of the United States), and amplified by the effect of the

currency devaluations that these cyclical events are often linked to.

The economic contraction in the region in 2016, which saw a weakening of domestic demand, affected the development of the insurance market, and especially the Non-Life insurance business, which is strongly dependent on economic growth and household and corporate consumption capacity. In this regard, the Non-Life business contracted by an aggregate -3.1 percent in 2016 in dollar terms. As a result, in 2016 the region remained unable to leave behind the challenging economic backdrop of recession seen in 2015 from which the many economies in the area are still recovering.

Despite the difficult economic environment, the smallest decline in terms of GDP in 2016 has been reflected in the performance of the Life business, which grew by 6.9 percent in 2016, measured in dollars, strongly influenced by development of the life insurance business in Brazil, whose insurance companies account for more than one third of the premium volume in the region.





As noted above, in aggregate dollar terms, the Latin American insurance industry registered growth of 1.2 percent during 2016. The Life insurance made a positive contribution of 3 percentage points, while Non-Life insurance contributed negatively to growth by -1.8 percentage points. Chart 1.2-c highlights how the Non-Life insurance segment has not contributed positively to overall market growth since 2013.

However, this perspective changes when growth is measured in local currency terms for each of the insurance markets of the region. An analysis on this basis confirms that in 2016, most Latin American insurance markets have registered growth in real terms, once adjusted for inflation (see Chart 1.2-d).

On the other hand, analyzed by business lines, in 2016, Non-Life insurance premiums in the region decreased by -3.1 percent, while Life insurance premiums grew almost 7 percent compared to 2015. In Non-Life, all lines fell except Health. The most important line, Automobiles, which accounts for 19.2 percent of total premiums, shrunk by -4.9 percent. However, the Life insurance segment saw premiums rise both in individual as well as group Life insurance such as Welfare and Pension insurance (see Chart 2.1-e).

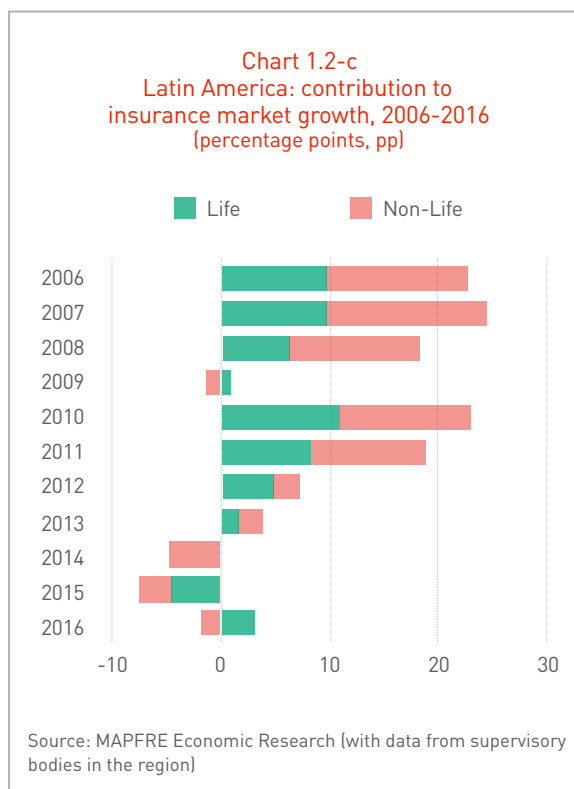
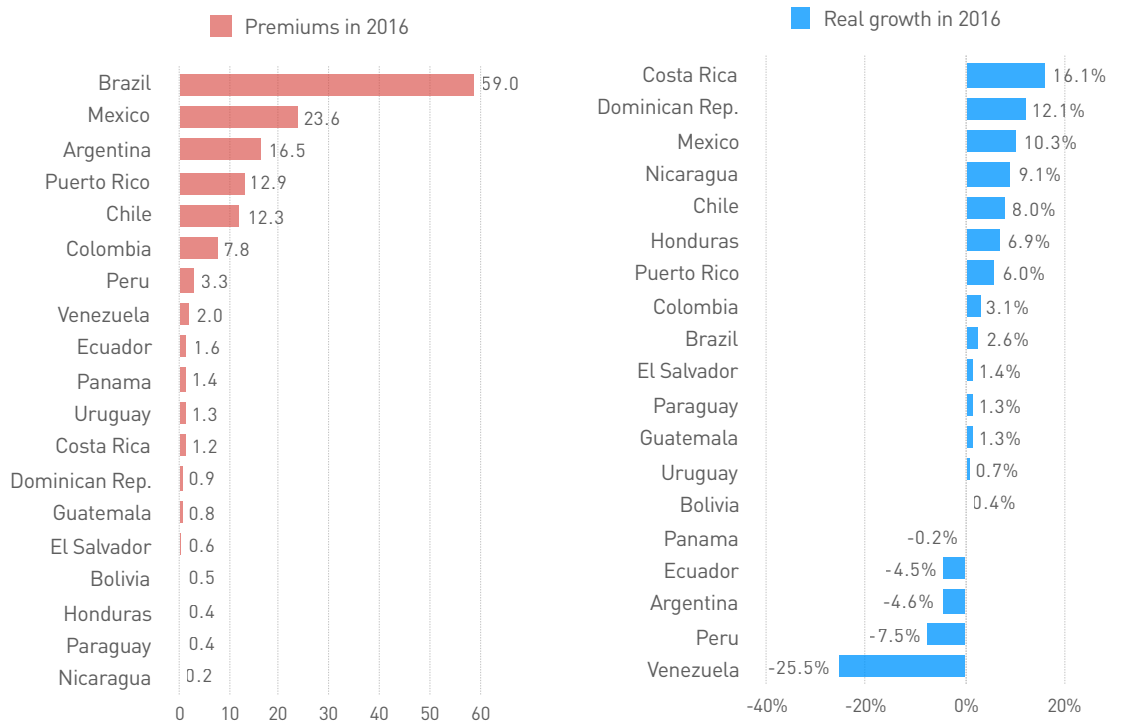
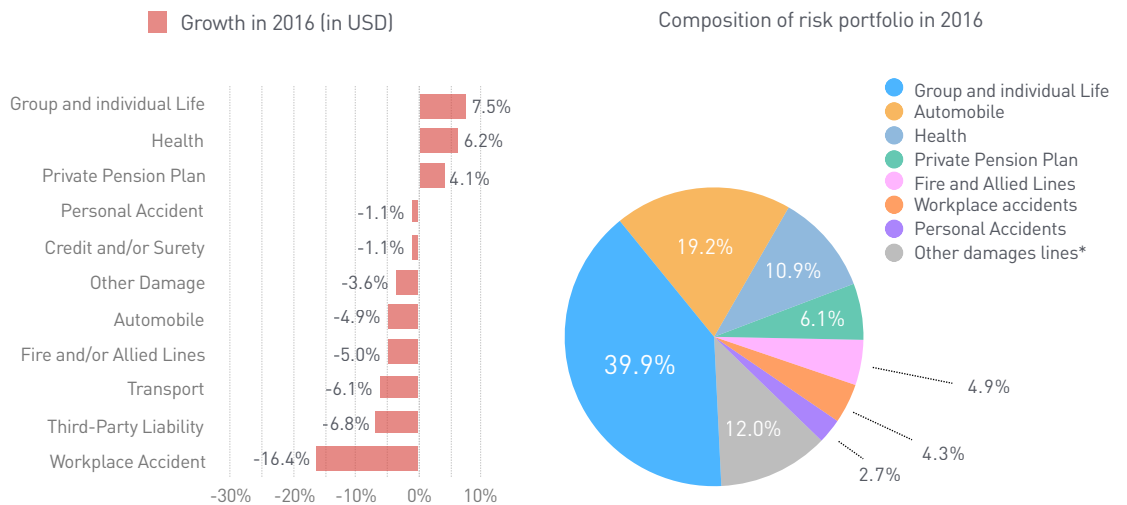


Chart 1.2-d
Latin America: premiums and real insurance market growth, 2016
 (billions of dollars; real growth in local currency, percent)



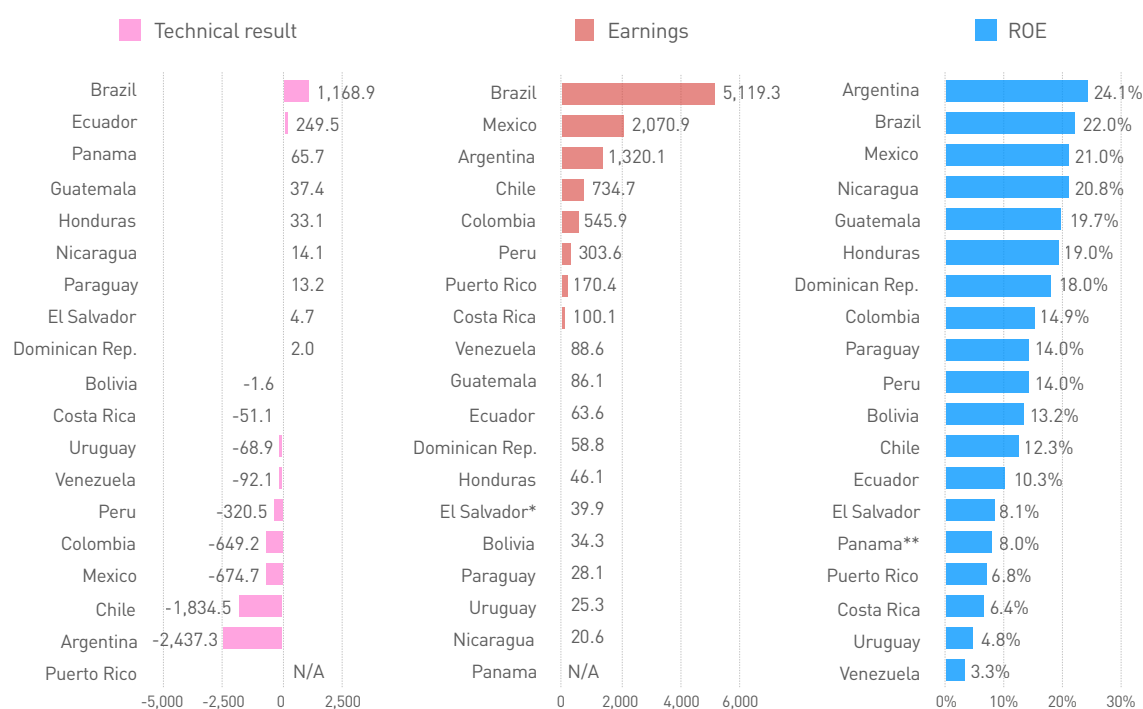
Source: MAPFRE Economic Research (with data from supervisory bodies in the region)

Chart 1.2-e
Latin America: premium volume by insurance line, 2016
 (annual growth rates in USD, %, share, %)



Source: MAPFRE Economic Research (based on supervisory organizations)
 *Includes: Transportation, third-party liability credit and surety, and other damages.

Chart 1.2-f
Latin America: results and profitability, 2016
(technical and financial result, millions of USD, ROE, %)



Source: MAPFRE Economic Research (with data from supervisory bodies in the region)

* Data for El Salvador reflect the result before taxes

** Data for Panama's ROE relate to 2015, latest available data

Results and profitability

Chart 1.2.-f shows a summary of the technical and net results, as well as the profitability, of the insurance markets in Latin America in 2016. As can be seen from this information, although in almost half of the markets insurers presented loss-making technical results, all countries posted positive aggregate net results.

The consolidated net result of the Latin American insurance market amounted to 10.855 billion dollars in 2016, representing a decline of 3.6 percent on the 11.261 billion dollars reported in 2015. This contraction is largely due to the unfavorable performance of local currency exchange rates against the dollar in effect throughout 2016.

As for return on equity (ROE), it was positive in all markets in the region. Argentina (24.1 percent), Brazil (22 percent), Mexico (21 percent), Nicaragua (20.8 percent) and Guatemala (19.7 percent) had the best indexes. By contrast, insurance markets in Puerto Rico (6.8 percent), Costa Rica (6.4 percent), Uruguay

(4.8 percent) and Venezuela (3.3 percent) recorded the lowest levels of profitability.

Capital levels

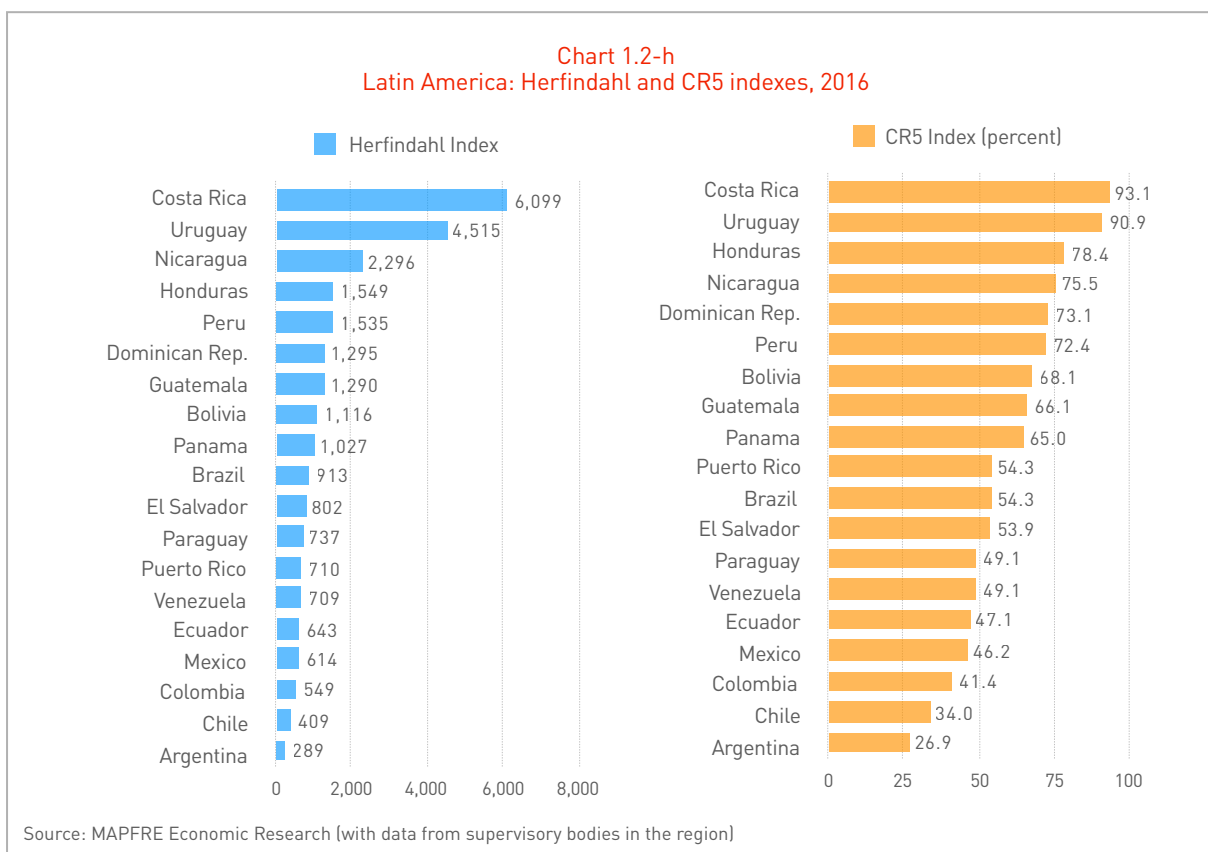
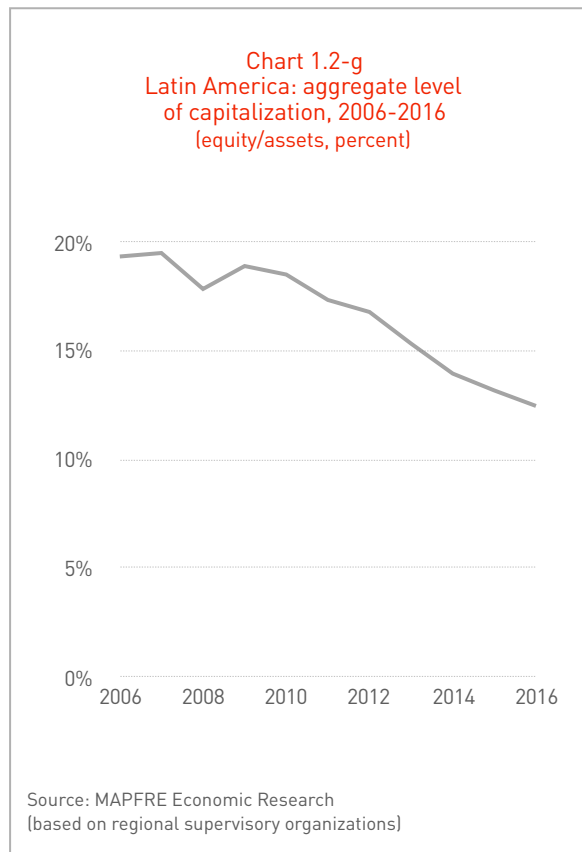
On the other hand, the change of the aggregate capitalization level of the Latin American insurance industry (measured as the ratio of shareholders' equity over total assets of the region's insurance market as a whole) is illustrated in Chart 1.2.-g (and in detail in Chart 4.1-b in Chapter 4 of this report).

Overall, there are two aspects to highlight. Firstly, there is a clear downward trend in the aggregate capitalization level (Chart 1.2.-g) and, secondly, relatively smaller markets report higher levels of capital, while capital levels are lower in the relatively more developed markets in the region (Mexico, Chile and Brazil) (Chart 4.1-b). It is worth noting that in Venezuela (the market with the highest capitalization on this metric), a large part of equity corresponds to unrealized gains on property investments and other financial assets, boosted by an average inflation rate of 254.9 percent in 2016.

Market concentration

The degree of concentration in an industry provides an insight into the level of competition in a market. In general, the lower the concentration, the greater the competitive stimulus, which is an added spur to market development.

Costa Rica, Uruguay and Nicaragua had the most highly concentrated markets in Latin American in 2016, with a Herfindahl index significantly above the threshold associated with a highly concentrated industry (HHI>1800). Meanwhile, Honduras, Peru, Dominican Republic, Guatemala, Bolivia and Panama achieved values equating to markets with a moderate level of concentration (1000<HHI<1800). The remaining Latin American markets reported indexes below 1000 points, i.e. below the threshold associated with moderate levels of concentration (see Chart 1.2-h).



The conclusions are underpinned by an analysis of concentration based on the market share of the five biggest insurance companies (CR5), which confirms the existence of the concentration levels described based on the Herfindahl Index, with the Costa Rica, Uruguay, Honduras and Panama markets recording concentration values above 75 percent.

Structural trends

Penetration, density and depth

In 2016, the penetration index (premiums/GDP) in Latin America stood at slightly over 3 percent, 0.12 percentage points above the 2015 value and 0.9 percentage points higher than in 2006. This continues the growth trend of the last ten years, seen both in the development of the Life insurance segment and to a lesser degree in Non-Life insurance (see Chart 1.2-i).

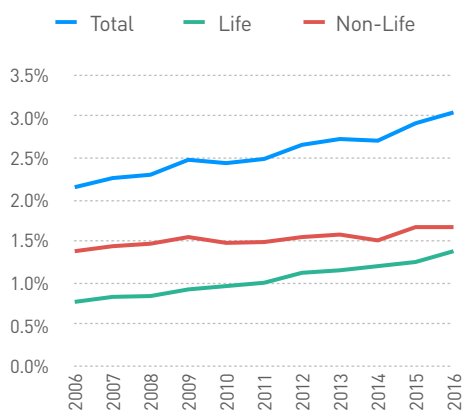
As in previous years, Puerto Rico continued to have the highest penetration (premiums/GDP) and density (premiums per capita) indexes in the region, reaching 12.7 percent and 3,496 dollars respectively in 2016. This is because Puerto Rican premium volume includes Health insurance for the poorest populations, which are managed by a private sector insurer and borne by the government's budget (see Chart 1.2-l).

After Puerto Rico, Chile (5 percent), Brazil (3.3 percent), Venezuela (3.1 percent) and Argentina (3 percent) achieved the highest values for penetration indexes in 2016. Excluding Argentina and Venezuela, the others saw an increase in penetration relative to 2015. The lowest levels of penetration were recorded in Guatemala and the Dominican Republic with a penetration index of 1.2 percent.

The increase in penetration index between 2015 and 2016 was focused in the Life insurance segment, which accounted for the total increase in penetration. On an aggregate basis over the last ten years, total penetration in the region has risen by 41.8 percent. The cumulative increase in penetration in the Life insurance segment amounted to 78.9 percent, while the cumulative increase in Non-Life insurance was 21.1 percent.

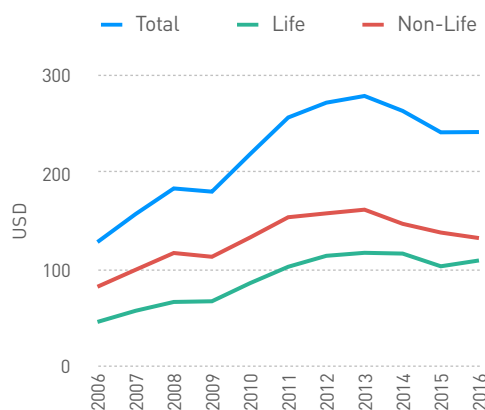
Meanwhile, density (premiums per capita in dollars) recovered slightly in 2016 after being affected by the loss in value of most Latin American currencies in 2015. It was also driven by performance of the Life insurance segment (see Chart 1.2-j). In this last year, the average density on the regional level was \$241.9, 0.1 percent above the level recorded the previous year. The bulk of insurance spending per person remains focused on the Non-Life segment (132.5 dollars) with a fall of 4.1 percent relative to the previous year. Life insurance density amounted to 109.4 dollars, up 5.8 percent on 2015, underscoring the continued dynamism in this

Chart 1.2-i
Latin America: penetration, 2006-2016
(premiums / GDP, percent)



Source: MAPFRE Economic Research
(with data from supervisory bodies)

Chart 1.2-j
Latin America: density, 2006-2016
(premiums per capita, USD)



Source: MAPFRE Economic Research
(with data from supervisory bodies)

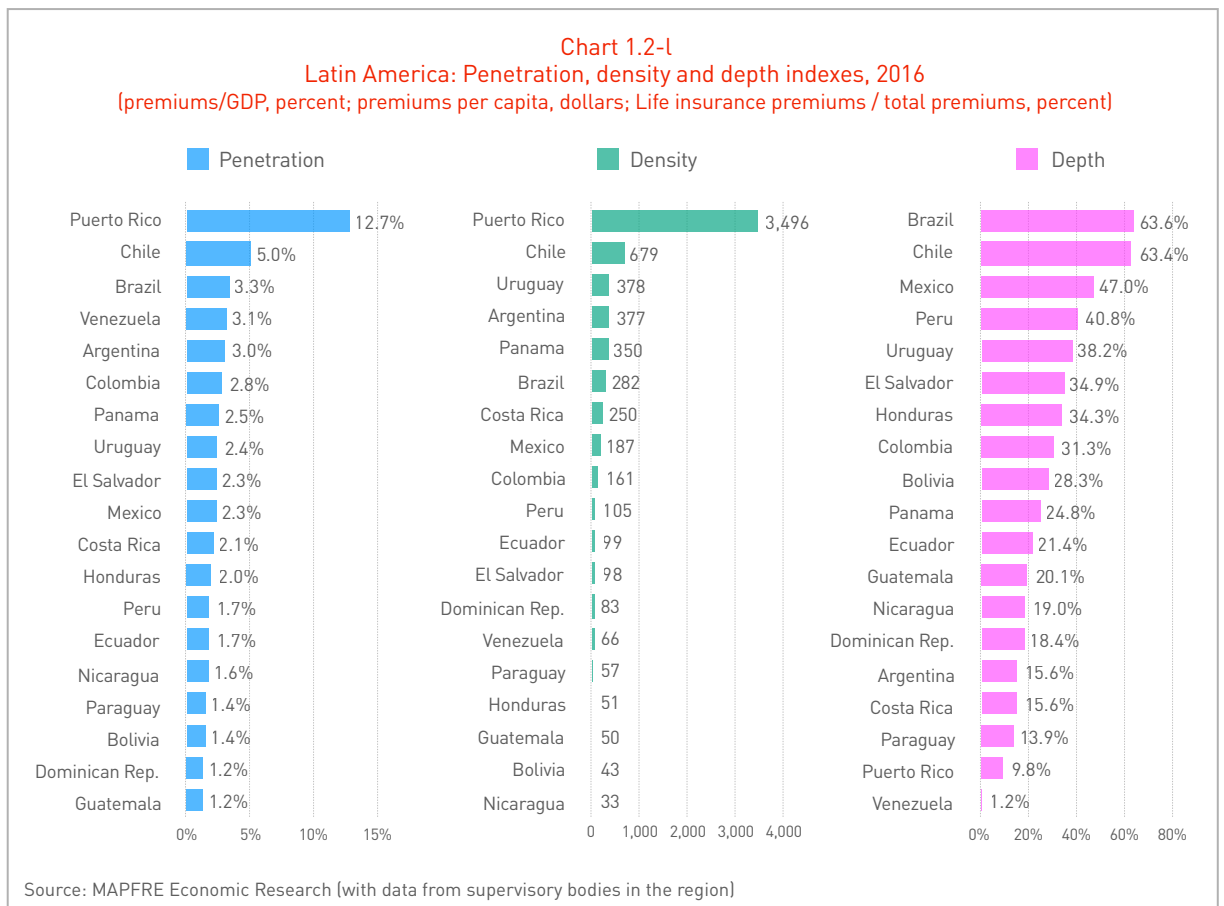
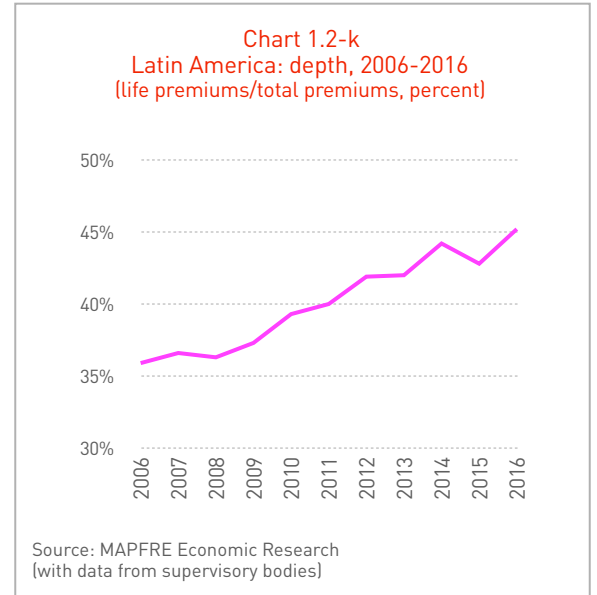
underscoring the continued dynamism in this sector of the market.

Density has been on an upward path over the medium-term in the region. The overall indicator grew by 88.4 percent between 2006 and 2016. The cumulative increase in the Life insurance market over the period amounted to 137.7 percent (increasing from 36.1 to 103.3 dollars), while cumulative growth in the Non-Life insurance segment was 60.9 percent.

The overall trend in density is in line with the individual analysis of each of the markets in the region, which points to a trend toward increasing density over recent years when measured on a local currency basis.

Lastly, the insurance depth index (the ratio of Life insurance premiums to total premiums) stood at 45.2 percent, 2.4 percentage points more than in 2015, recovering from the retraction observed in 2015 (see Chart 1.2-k). In the medium-term analysis (2006-2016), the indicator shows an improvement, with a cumulative in-

crease of 11.1 percentage points and cumulative growth of 26.1 percent in that period.



Insurance Protection Gap

The Insurance Protection Gap (IPG) represents the difference between the insurance coverage that is economically necessary and beneficial to society and the amount of coverage which is actually acquired. Estimating the IPG not only helps to determine the gap in terms of societal under-insurance but also the potential market for insurance, which is the market size that could be achieved if the gap were to disappear.

Due to its nature IPG is not a static concept. The potential insurance coverage gap is constantly changing in accordance with the economic growth of each country and the emergence of new risks to cover which are inherent to the economic and social development of nations. Similarly, the IPG bears a strong relation to market growth. The gap narrows quantitatively as the penetration index increases, and it also tends to narrow qualitatively as markets become more sophisticated and mature.

Additionally, as discussed later in this report, factors such as sustained economic growth, control of inflation, increases in personal disposable income, the development of the financial system, an efficient regulatory framework and the application of public policies aimed at increasing financial inclusion and education, are all elements which reduce the IPG.

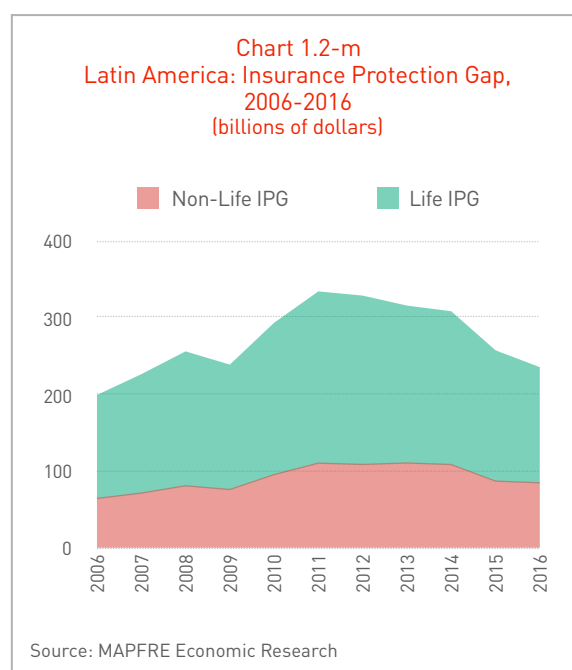
For methodological purposes, the IPG can be estimated in two ways. The first is an ex-post approach, based on observed losses. In this case, the IPG would be the difference between recorded economic losses over a certain period and the portion of those losses that was covered by the insurance compensation mechanism. And the second is an ex-ante approach, analyzing the optimum level of protection, estimated as the difference between the socially and economically appropriate level of risk coverage and the real level of protection. In the Latin American insurance market the second approach has been used, identifying the difference between the optimum level and the actual level of protection as the difference in the penetration indexes of each Latin American insurance market in relation to the average for advanced markets (United States, Canada, Japan and 27 countries of the European Union).

In this regard, the IPG estimate for the Latin American market in 2016 is estimated at 235.5 billion dollars, 8.5 percent less than estimated the previous year (see Chart 1.2-m). In contrast to the reduction seen between 2014 and 2015, which was primarily explained by the devaluation of Latin American currencies over that period, the decline in the IPG in 2016 reflected a mixed performance across different markets. In some markets the decline in the IPG was explained by a revival of the insurance market with a subsequent increase in penetration levels.

There have been no major changes in the structure of the IPG in 2016 compared to the previous year, confirming that the bulk of the gap is in Life insurance. In 2016, 63.7 percent of the IPG related to Life insurance (149.9 billion dollars), while Non-Life insurance accounted for 36.3 percent of the gap, amounting to 85.6 billion dollars.

Accordingly, as illustrated in Chart 1.2-n, the potential insurance market in Latin American in 2016 (the sum of the actual insurance market and the IPG) stood at 382.2 billion dollars i.e. the potential market is 1.6 times larger than the current regional market (146.7 billion dollars).

For its part, Chart 1.2-o shows a comparison of the IPG as a multiple of the real market between 2006 and 2016. As can be seen, the region's insurance protection gap has been on a clear downward path, both at an aggregate level and



in terms of Life and Non-Life segments. Thus, while in 2006 the IPG was 2.9 times the actual insurance market in the region, by 2016, it had narrowed to 1.6 times. Similarly, in the Life insurance segment the multiple fell from 5.4 to 2.3, while the Non-Life insurance multiple declined from 1.5 to 1.1 over the period.

Finally, Chart 1.2-p shows both the structure of the IPG for each of the insurance markets in the region and the size of the insurance protection gap relative to the total current market in each of them. It is evident that, except in the case of Puerto Rico, Chile and Brazil, the indicator for the other markets is above average for the region.

It is important to note that, in general, the development of insurance markets - alongside structural dynamics - can be associated with the IPG, which is used to identify areas of under-development. Likewise, the degree of progress in market development is linked to the ratio of the insurance gap to the current market.

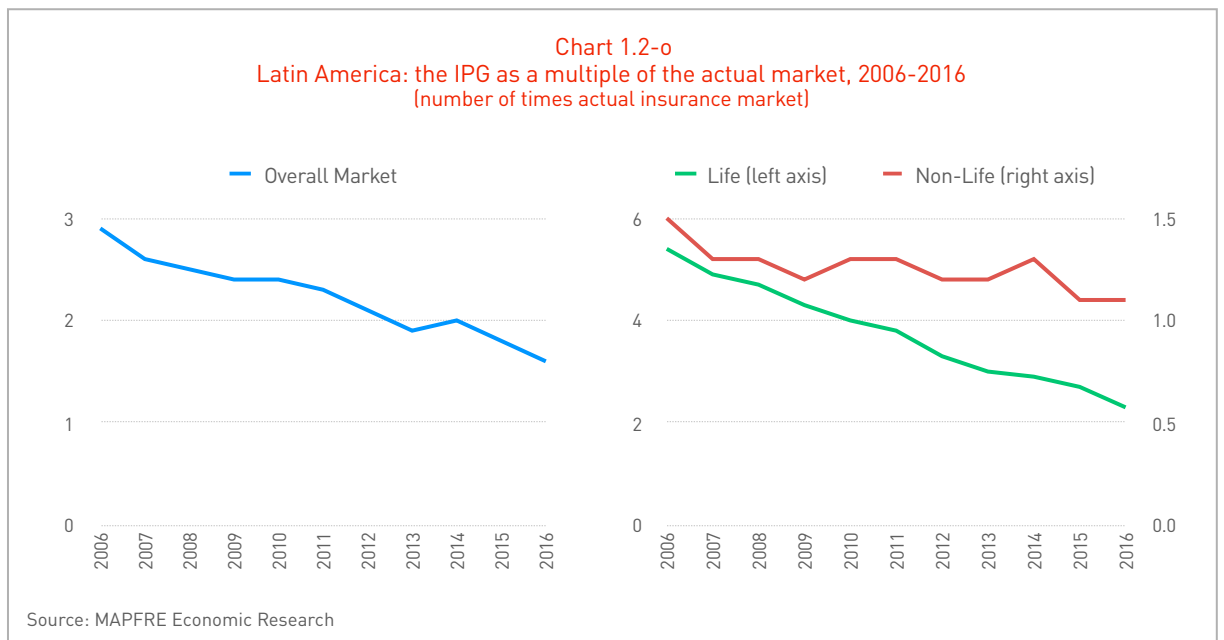
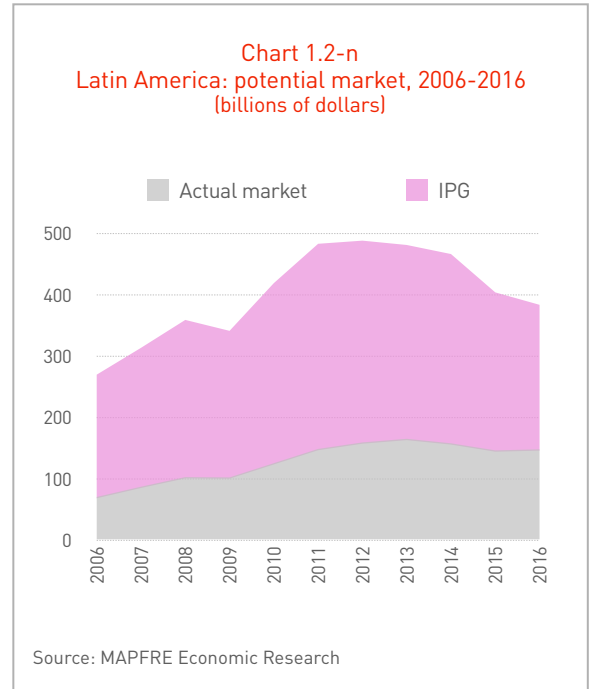
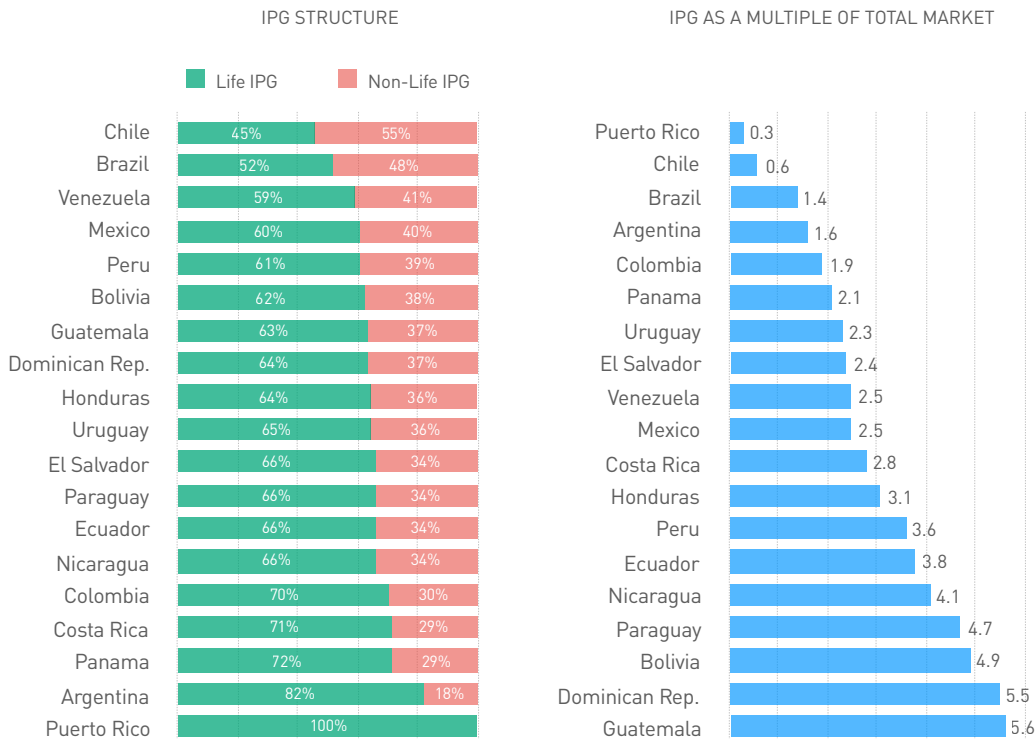


Chart 1.2-p
Latin America: structure and relative size
of the Insurance Protection Gap, 2016
(structure, percent; IPG as a proportion of the total market, number of times)



Source: MAPFRE Economic Research (with data from supervisory bodies in the region)

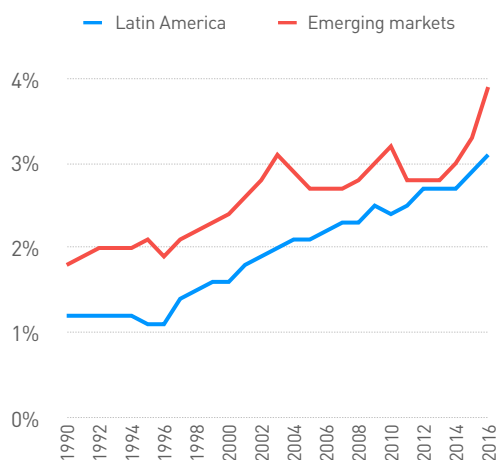
1.3 The dynamic in Latin American compared to emerging markets

Divergence in penetration trends

During the last decades, the penetration of the insurance sector in Latin America has grown steadily and in general, in line with what has occurred with all emerging markets (see Chart 1.3-a). However, this performance has shown particularities that differentiate the development of its Life and Non-Life segments with respect to development in other emerging markets.

Latin America in the 1990s saw a much higher IPG (measured as a multiple of the market) than that of the emerging markets as a whole (equivalent to 5.6 in Latin America vs. 3.2 in all emerging markets). However, this gap had been closing until 2016, the IPG was at 1.6 times the market in Latin America, compared to 1.0 in the case of emerging markets (see Chart 1.3-b).

Chart 1.3-a
Latin America: penetration vs.
emerging markets, 1990-2016
(premiums / GDP, percent)

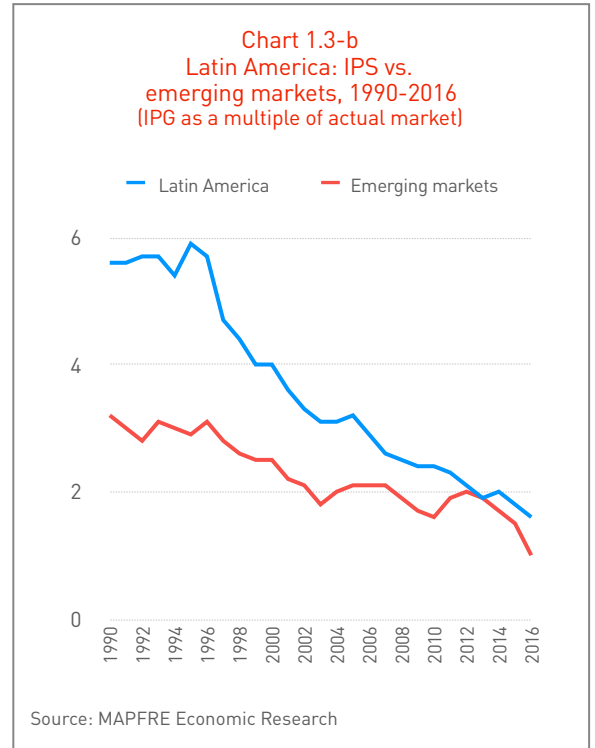


Source: MAPFRE Economic Research

However, if GDP growth and insurance premiums are considered to be similar in both regions since 2000 (see Chart 1.3-c), it can be said that Latin America's premium growth should have been higher given its fundamentals and that, in any case, the strong growth recorded during the previous period is explained by the inflation process that the region experienced during the 1990s.

Looking at Chart 1.3-d, it can be seen that the IPG of Latin American markets declined very sharply during the 2006-2016 decade (especially in Paraguay, Peru, Mexico, Brazil, Uruguay, Ecuador, Nicaragua, Colombia and Chile). It is also noteworthy that there has been no change in the dynamics of premium growth and penetration before and after the financial crisis of 2008 (see Charts 1.3-e and 1.3-f).

As shown in Charts 1.3-g, 1.3-h, 1.3-i and 1.3-j, there has been little convergence in insurance penetration toward developed market levels in Latin America. Only Puerto Rico (due to the participation of the insurance industry in the health system), Brazil (through health insurance incentives and savings) and Chile (thanks to its pension system) increased their penetration levels during the last decade by more than one percentage point.



Additionally, the secular slowdown of premium growth and its result in the “medium” dynamic of the insurance markets in Latin America can be seen in Chart 1.3-k. As can be seen in this chart, more than half of the countries in the region share a dynamic of slowdown in premium growth to a greater or lesser degree between both businesses (Life and Non-Life).

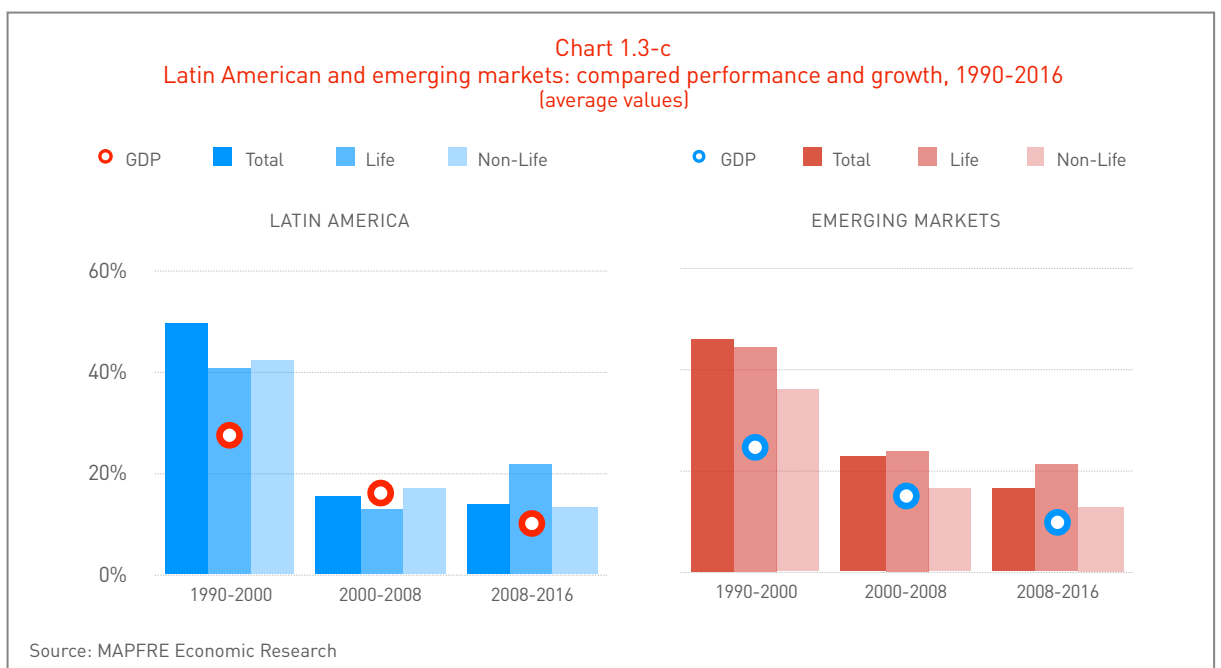
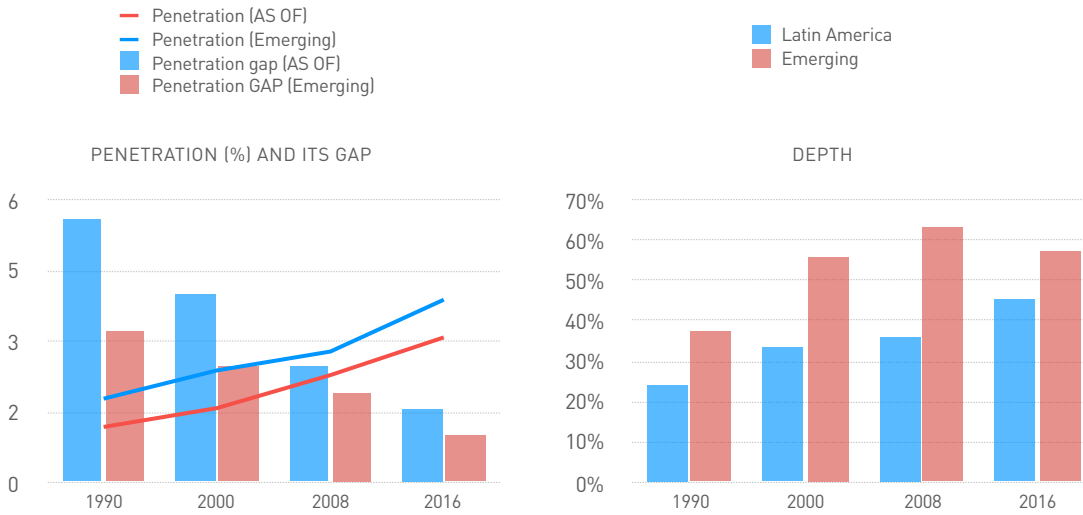


Chart 1.3-d
Latin America: trending growth of premium convergence, 2006-2016



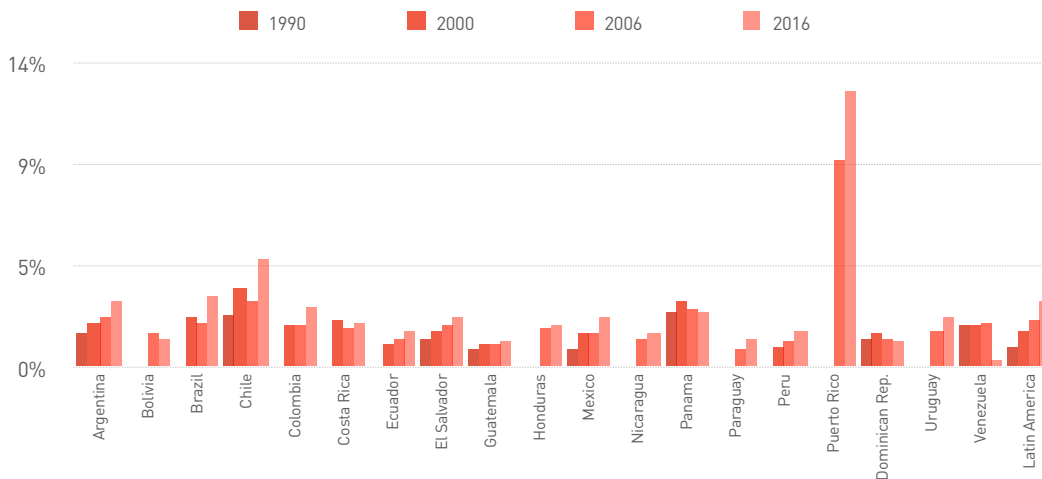
Source: MAPFRE Economic Research

Divergence by Life and Non-Life segments

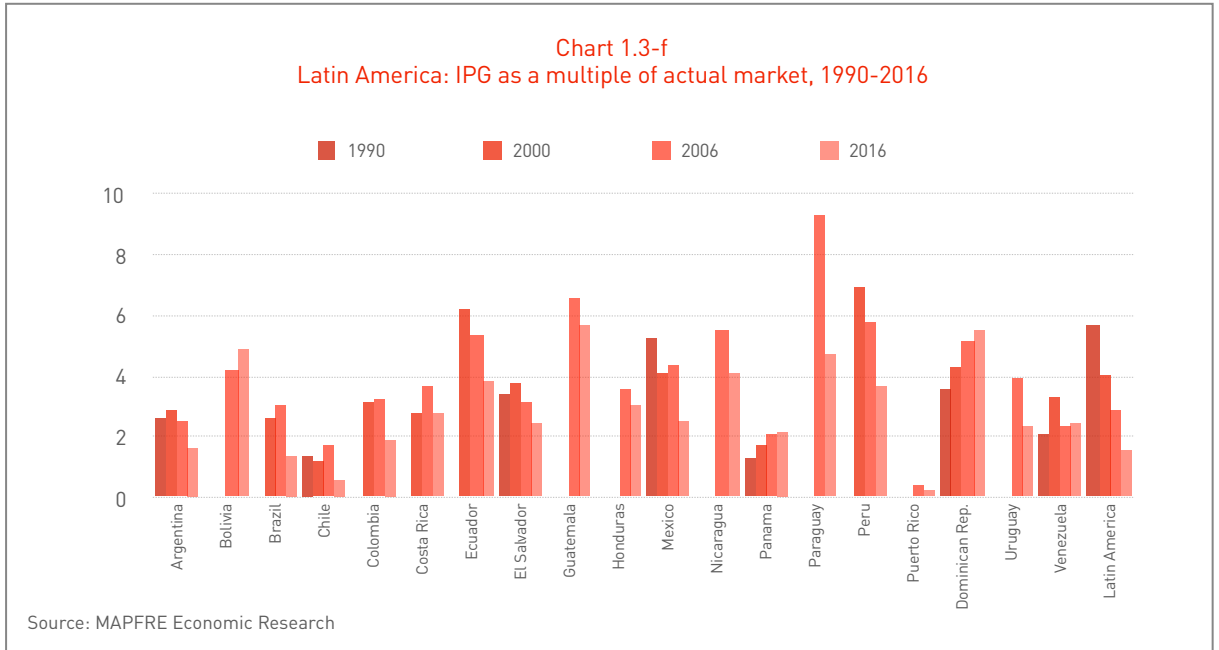
It is interesting to note that isolating the dynamics of each segment of the Latin American insurance market, we can see that since 2000 there has been a change in composition in insurance intensity and that this change is differential with respect to emerging markets in general.

Looking at the aforementioned Chart 1.3-c, it is confirmed that emerging markets maintain a steady growth differential between the Life and Non-Life segments, i.e., they both slow down at the same rate. However, this pattern does not replicate in Latin America, where growth in the Life segment slows significantly less than growth in the Non-Life segment, especially since 2008, which allowed it to recover its depth levels (Life insurance premiums compared to total

Chart 1.3-e
Latin America: penetration levels, 1990-2016



Source: MAPFRE Economic Research



market premiums) recorded before the recession (+8.9 pp to reach 45.2 percent in 2016), while in the other emerging markets the depth was reduced (-6.3 pp to reach 57.1 percent in 2016). This differential resilience of the Life insurance segment in Latin America seems to be explained by the need to converge to the levels of the other emerging markets that exceed the depth rate by more than 12 pp.

From the above, it can be concluded that the lower differential development (Life vs. Non-Life) of the insurance business in the region is the

result, among other factors, of a differential deceleration in the Non-Life segment compared to Life. This joint dynamic produces a total deceleration. The deceleration of the Non-Life segment is higher than that experienced in other emerging markets, while the Life segment decelerates less in the Latin American region than in emerging markets in general.

Therefore, there is a divergence in its magnitude and composition in Latin America with respect to the total of emerging markets. The convergence of insurance penetration in Latin America

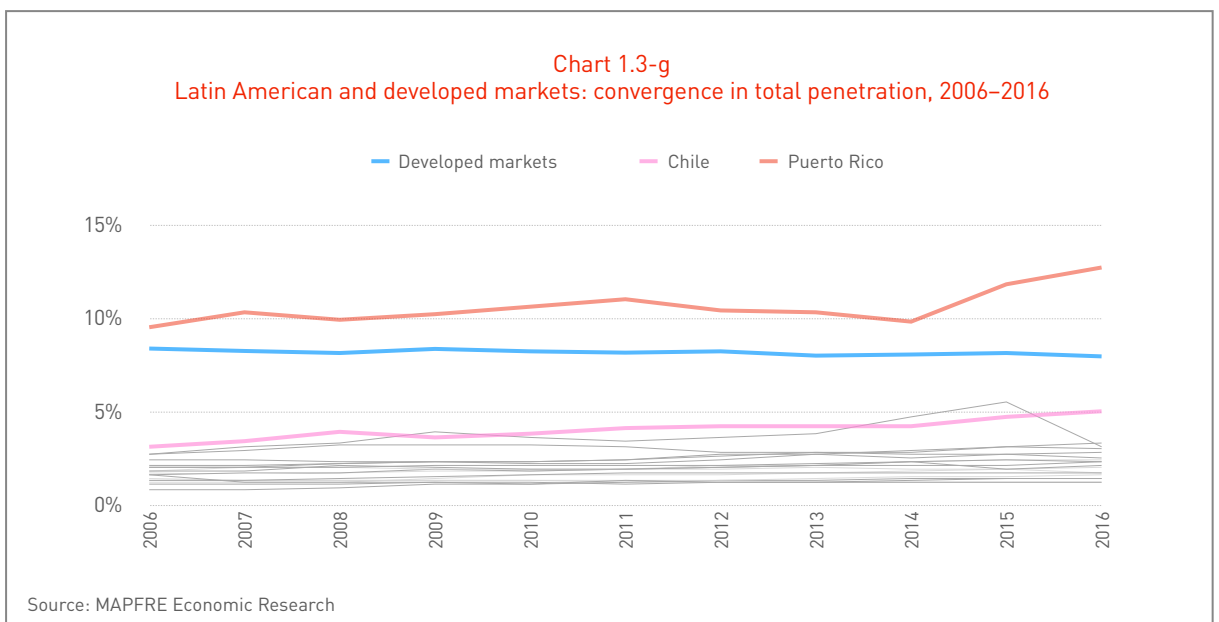
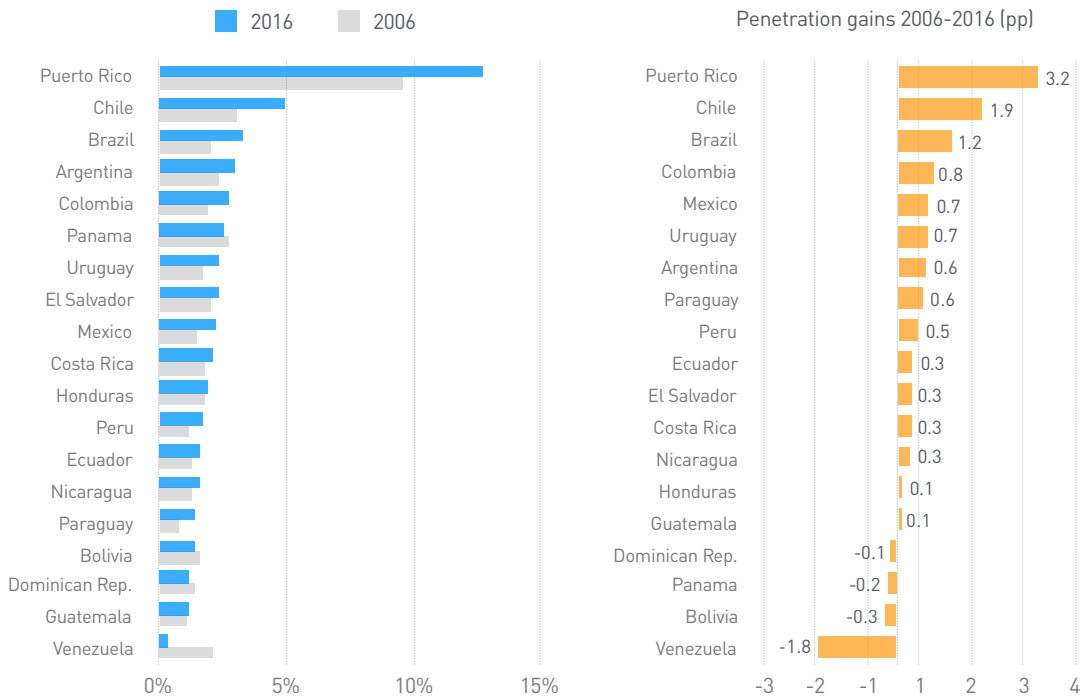
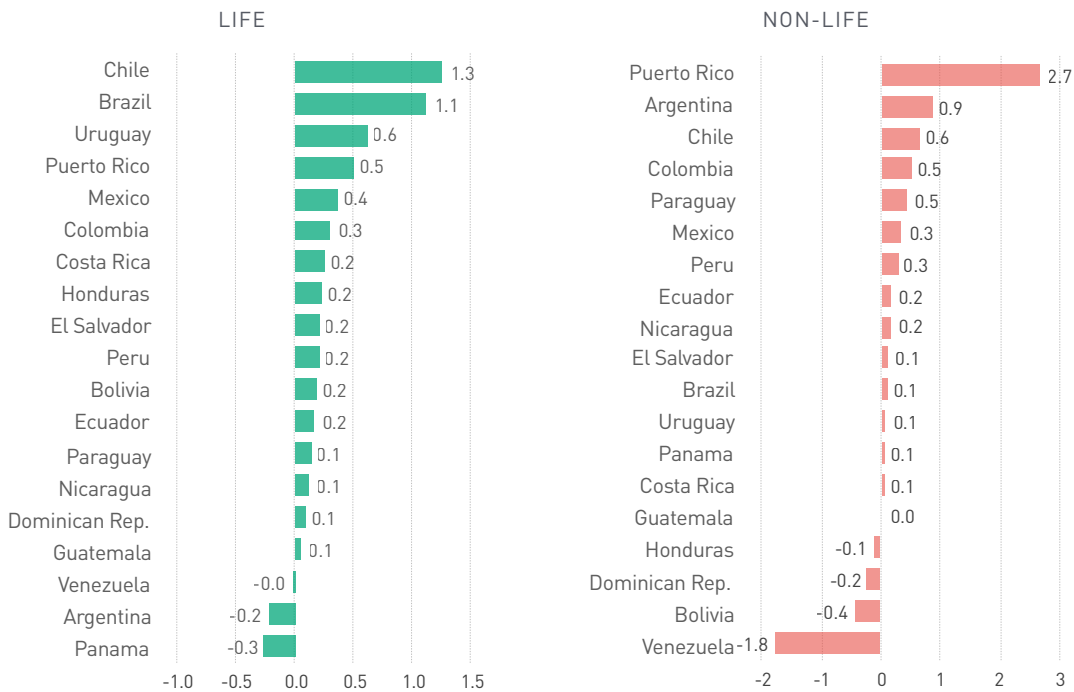


Chart 1.3-h
Latin America: penetration gains, 2006-2016
 (premiums / GDP, percentage; penetration gains, pp)



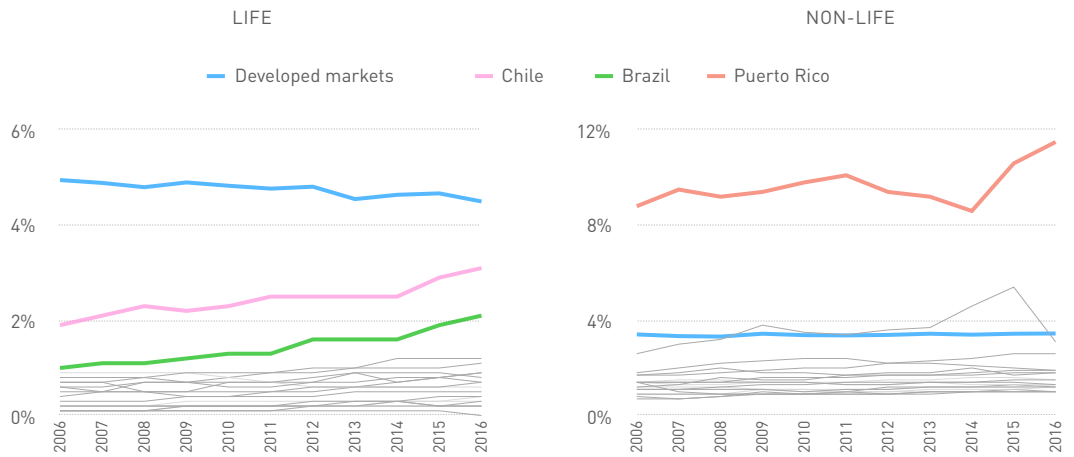
Source: MAPFRE Economic Research (with data from supervisory bodies)

Chart 1.3-i
Latin America: penetration gains, Life and Non-Life, 2006-2016
 (penetration gains, pp)



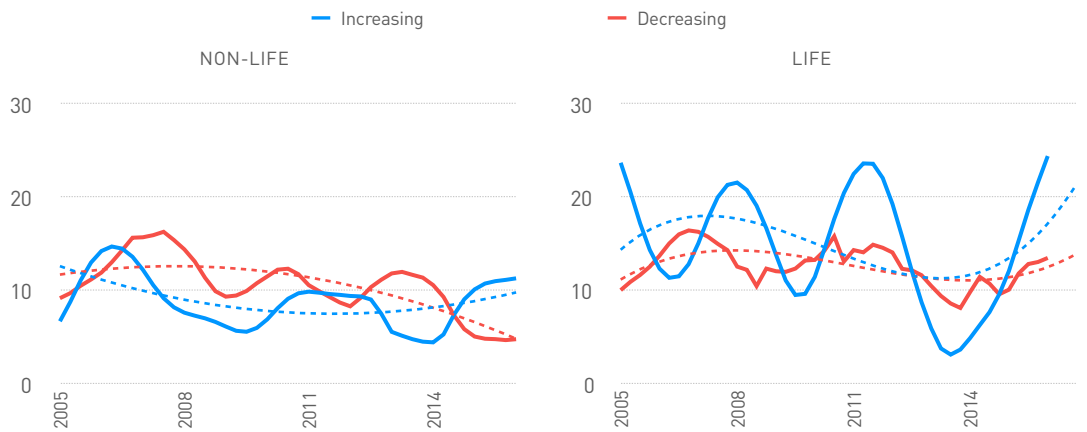
Source: MAPFRE Economic Research (with data from supervisory bodies)

Chart 1.3-j
Latin American and developed markets: convergence in total penetration, Life and Non-Life, 2006-2016



Source: MAPFRE Economic Research

Chart 1.3-k
Latin America: trending growth of premium convergence, 2006-2016



Non-Life growth: Argentina, El Salvador, Guatemala, Mexico, Dominican Republic

Life growth: Costa Rica, Dominican Republic

Non-Life declines: Brazil, Chile, Colombia, Ecuador, Panama, Peru, Uruguay

Life decline: Argentina, Brazil, Chile, Colombia, Ecuador, El Salvador, Guatemala, Mexico, Panama, Peru, Uruguay

Source: MAPFRE Economic Research

toward developed market levels is still weak (with the exception of Puerto Rico, Chile and Brazil). As indicated, this occurs, from a structural point of view, because premiums decelerate at different rates. On the one hand, total premiums are decelerating because of the differential of loss of dynamism in the Non-Life segment compared to Life, resulting in a total contraction. And on the other, the deceleration differential between the Non-Life and Life segments does not occur at the same rate in the total of emerging markets.

The different factors, both from the point of view of supply and of demand, which are addressed in this report, can help to explain this phenomenon and by identifying positive experiences and good practices, they can also support the process of market convergence for insurance in Latin America to parameters of higher relative development.

2. Determining factors of insurance penetration levels: conceptual framework

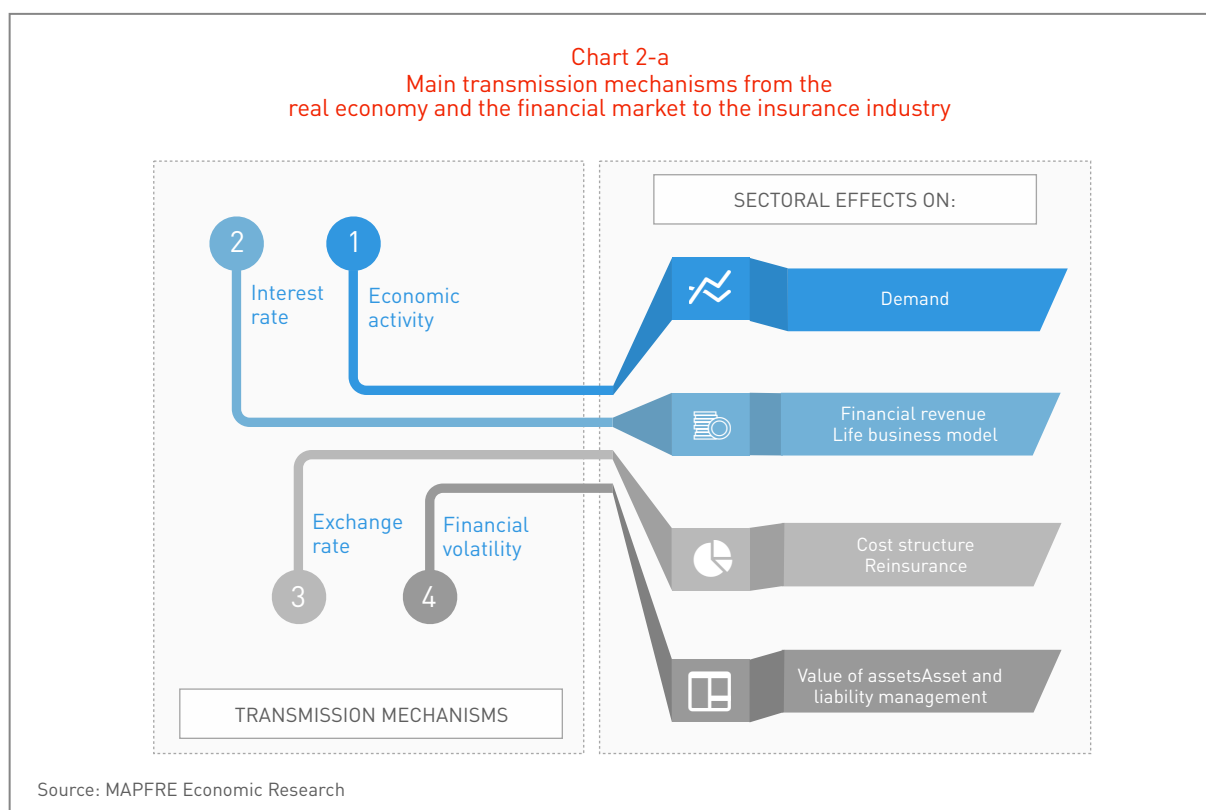
2.1 Insurance and economic activity

When analyzing the degree to which insurance activity intervenes in the economic and social functioning of a country, the penetration indicator (insurance premiums / GDP) is a generally accepted metric that reasonably reflects this relevance.

Gross domestic product (GDP) represents the monetary value of final goods and services produced in an economy throughout a year; i.e., the volume of wealth that a society generates annually. Therefore, the fact that premiums represent a higher proportion of this magnitude means, at least indirectly, that insurance, as a mechanism of risks protection and compensation and a savings channel, participates and contributes to a greater extent to the process of creating wealth.

In this regard, the penetration index should not only be a measurement of the relative size of the insurance industry in a country, but also, and more broadly, of the degree in which insurance is contributing to creating wealth in a society.

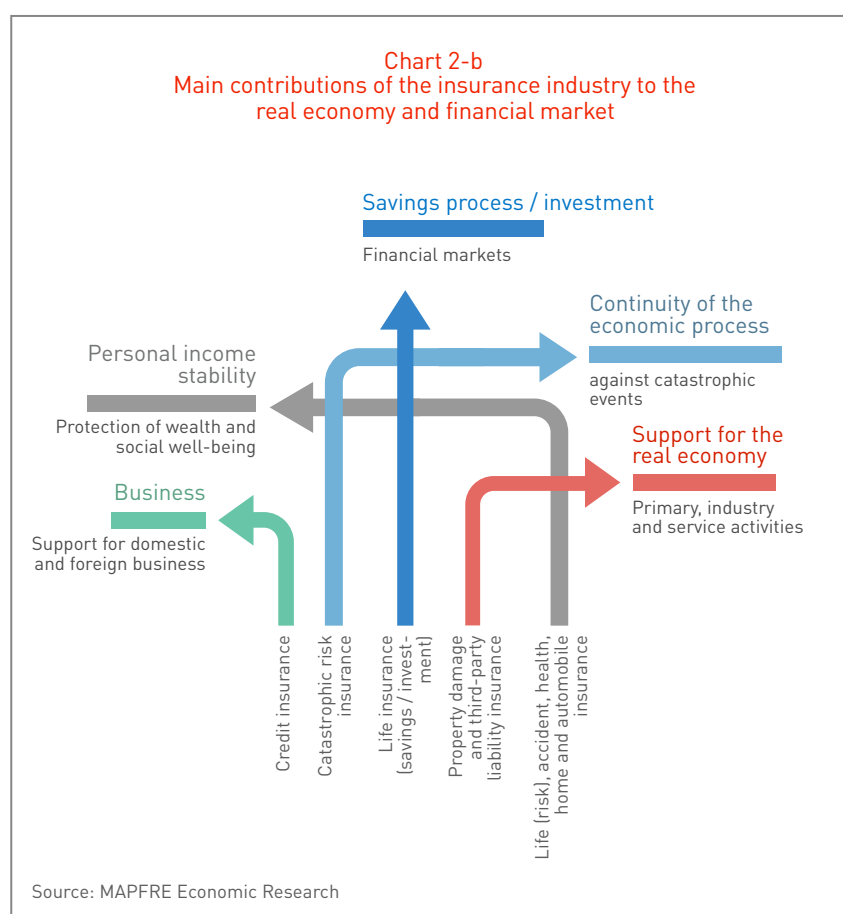
It has been argued that various macroeconomic factors have an impact and, to some extent, condition the activity and dynamics of the insurance industry³ (see Chart 2-a). Aspects such as the pace of economic activity, the level and trajectory of interest rates, the behavior of exchange rates and the degree of financial volatility have an impact on the level of demand for insurance products, on income and the cost structure, on the value of the assets, and on the ability to manage those assets in relation to their liabilities. Moreover, factors such as the behavior and level of interest rates may have a determining influence on the viability of certain part of the business model in Life insurance, as has been demonstrated in those regions of the world that have faced prolonged periods of low interest rates.



The level of conditioning of the insurance industry with respect to the main economic and financial variables can be explained by the close ties that the insurance activities maintain with practically all areas of economic operation.

On the one hand, the process of protection and compensation of risks carried out by the insurance industry supports the functioning of the different industries of the real economy (primary activities, industry and services) through the wide variety of third-party liability insurance and against damages. Similarly, insurance provides stability and continuity to the economic process in the face of the occurrence of catastrophic events, helping the economy to normalize its operation in relatively short periods. Insurance also stimulates and makes it possible to carry out multiple activities and commercial transactions, both domestic and foreign trade, through the protection provided by credit insurance. From the point of view of families, the insurance activities provide stability to personal and family income through the protection and compensation offered by life risk, accident, health, home and automobile insurance (see Chart 2-b).

Additionally, in the performance of one of the fundamental functions of insurance in the economy, this industry supports the process of savings/investment. Through life insurance with a savings component, the insurance industry contributes to the creation of internal savings in the economy and thus to the process of generating capital. In this regard, the insurance industry is one of the main institutional investors on a global level; a function which not only allows savings to be channeled toward financing productive activities, but also (due to the characteristics of its business model and its implicit investment function) provides the



economic system with an element of non-cyclical stabilization.⁴

Therefore, to speak of the need to raise insurance penetration levels in an economy implies identifying public policy mechanisms that allow the benefits of risk protection and compensation to be extended to a greater number of economic activities, thereby increasing the capacity to create wealth and, consequently, the well-being of society.

2.2. Analysis of supply and demand

The main objective of the analysis in this report is to identify the elements of public policy that could support a process of raising penetration levels (insurance premiums / GDP) in Latin American insurance markets. A conceptual framework has been adopted for this purpose to identify the main factors driving this process from the point of view of supply and from the perspective of demand.

As shown in Figure 2-c, for the purposes of this study, both supply-side and demand-side factors have been identified in order to help explain insurance penetration levels in the region and, at the same time, delineate public policies to drive that process in a balanced way.

Five factors were analyzed on the supply side. First, insurance activities (as well as the financial system as a whole) is subject to a prudential regulatory framework to preserve its solvency, which is a key aspect to explain the operation and performance of insurance entities and, to that extent, their capacity in generating the supply of insurance services.

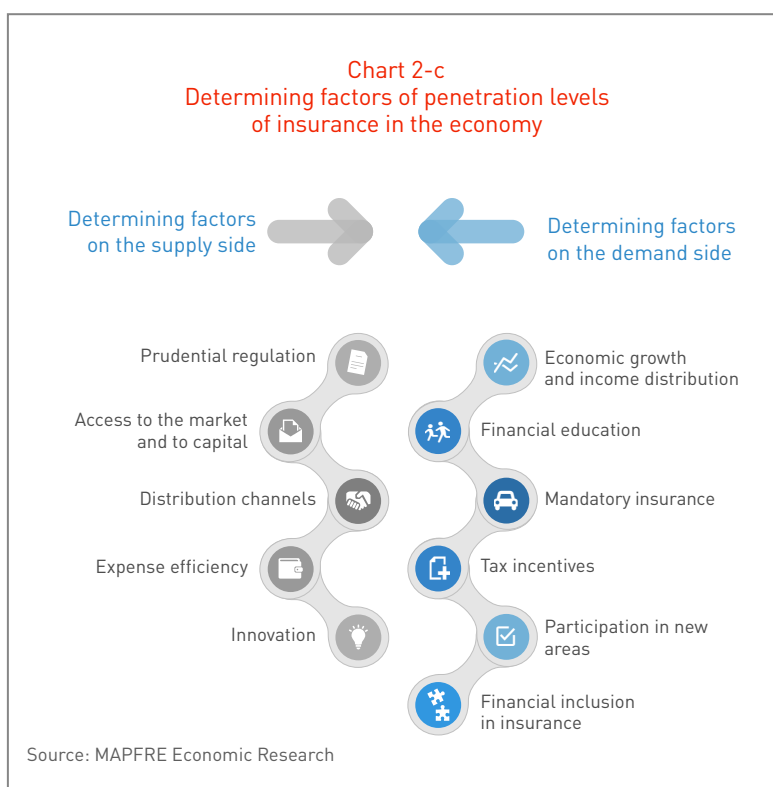
A second factor has to do with the possibilities for new participants to access to the market, as well as additional capital for the expansion of insurance companies. This dimension is an indicator not only of the environment and competition trends (and, therefore, of incentives to increase efficiency), but also influences the possibility of expanding the supply of insurance in the medium- and long-term. Likewise, the possibilities each market offers insurance entities to access new sources of capital are indicative of the entities' ability to count on additional resources to finance their growth and, with it, expand their services.

A third factor refers to the existence and use of channels to distribute insurance. Due to the characteristics of this type of products, the expansion of the insurance coverage is strongly

influenced by the possibility to access new channels, beyond the traditional brokerage mechanisms.

Fourthly, the need for insurers to raise expense efficiency (administrative and acquisition) as a precondition for not only increasing the supply of these services, but also making them available to consumers at competitive and affordable prices.

Lastly, in a qualitative dimension, a fifth factor on the supply side has to do with the facilities that



the market, in general, and the regulatory framework, specifically, offer to innovation, i.e., the possibility for the entities to design and bring new products to the market that best fit the needs of the insured.

On the demand side, the study analyzes six factors considered to be essential in explaining the phenomenon. First, within the scope of structural factors, is the dynamics of economic growth and the structure of income distribution. In general terms, a more dynamic economy, and its consequential increase of available personal income, raises the demand for insurance, especially when the penetration levels are relatively

low. Likewise, the structure of income distribution is a factor that affects the way in which personal disposable income raises the capacity for consumption in growing economies.

Second, and also from the perspective of structural explanation of the demand for insurance, is the analysis of financial education levels. In general, ignoring variations in the levels of personal income available, a society with higher levels of financial education will show a greater tendency to demand financial products, including insurance.

A third factor that is analyzed (from the perspective of the effect of public policies on the demand for insurance) is that which refers to the implementation of measures to encourage the insurance industry to penetrate new areas of economic and social activity, such as pension systems or the provision of health services, in a complementary way to public systems.

Fourthly, also from the perspective of public policy implementation, the effect of the implementation of mandatory insurance is studied as a mechanism to protect different aspects of public interest that simultaneously increase the participation of insurance in social and economic activities of a country.

A fifth area of analysis on the demand side refers to the application of tax incentives as a way to stimulate the use of insurance, both to promote better risk management and to encourage the increase of medium- and long-term savings in the economy.

Finally, the study addresses the effect of financial inclusion policies on increased insurance demand, insofar as it allows for a greater proportion of the population (especially the lower income group) to access protection and risk compensation mechanisms that allow them to raise their levels of well-being.

Based on the analysis of this set of factors, both from the supply side and the demand side, we seek to explain the levels of insurance penetration in the economy. This study presents a synthesis of the best practices that emerge from the analysis of the situation existing in Latin American insurance markets.

Second section

**Determining factors
on the supply side**

3. Prudential regulation

3.1 Regulation and its effects on the market

Financial activities, in general, and insurance activities, specifically, are subject to international regulatory and supervisory frameworks, which are intended to ensure that these entities preserve their solvency and, to that extent, can honor their commitments to the public. Through these prudent mechanisms, the regulation seeks to correct two market errors: first, the problem of asymmetric information (which occurs when the financial users' information is deficient, incomplete and imprecise) and second, the so-called negative external effects (which implies, in situations of bankruptcy of an entity, imposing costs on consumers who are not compensated with respective services).

Although prudential regulation of financial activities serves the purpose of protecting public interest in the dimension of compensation of these market failures (and more recently also contributing to global financial stability), the application of the regulatory measures implies a certain degree of "interference" with the operation of the market, and consequently can have an effect on the behavior of the participants and, ultimately, on creating a supply of financial services. This is why, over the last decades, the prudential regulations in the financial system (and those applicable to the insurance industry) have undergone a transformation process, the common denominator being the progress towards schemes that, preserving the original purpose, are able to align the incentives of participants in a pro-competitive environment.

The insurance industry has seen significant progress in the last decade regarding regulatory systems that tend to converge on three basic principles. First, the establishment of capital charges according to the individual risk profile of each entity, creating the aforementioned pro-competitive incentive to the extent that better risk management translates into lower capital requirements and, consequently, a competitive position in the market. Second, a strong push for

more rigorous governing that equally emphasizes risk identification, measurement and management. And thirdly, greater transparency and disclosure of information to the market, in order to expand the mechanisms that allow a more effective operation of the so-called "market discipline"; i.e., the process by which the market rewards the best managed entities.

It is now accepted that a regulatory framework that converges on these principles can offer not only greater certainty that market participants will preserve their solvency and fulfill their commitments to the public, but will also create the basis so that the supply of financial services can be expanded more quickly and on a more solid basis.

3.2 Regulatory systems in the insurance sector

In particular, regarding insurance, risk-based solvency capital systems aim to adapt the capital requirements to the risk profile of each entity. An efficient allocation of capital is therefore sought, within confidence levels considered adequate for the protection of policyholders. Treating all insurers equally, regardless of their risk profile, may not only pose a potential barrier to entry for certain businesses, but above all an inefficient allocation of resources, which may have an impact on the supply of insurance coverage and, ultimately, in the penetration levels of the respective markets.

However, in this process of regulatory progress, we must also take into account the possible difficulties associated with both insurance companies' and supervisory authorities' compliance with the respective prudential regulations when, due to the characteristics of their markets, it is difficult for them to have an adequate and suitable infrastructure in the short-term for the implementation of these systems at the highest level of development.

Therefore, the process of convergence towards risk-based regulations tends to be gradual and parallel to the development of capacities in both the industry and the regulators, as well as the creation of the necessary market infrastructure for its implementation.

3.3. Analysis of the regulatory progress in the region

In order to have a uniform metric to compare the status of the progress of regulatory frameworks in the region towards systems based primarily on risk, an ad hoc index has been constructed (see Box 3.3).

The proximity to a risk-based regulation (I-RBR) index seeks to identify the degree of progress of the different regulatory frameworks in the region in terms of their transition from a basic risk-based regulation (Solvency I-style) to a regulation focused on the more precise management and measurement of risks, strengthening the governance of entities and the existence of a more transparent system with disclosure of information to the market (Solvency II-style). The I-RBR goes from 0 to 10 according to the progress in the referenced transition process.

It is important to note that the I-RBR does not seek to rate the effectiveness or quality of market regulation or supervision, but rather to measure the transition process from regulatory frameworks to risk-based regulations, both for purposes of establishing capital charges and to consolidate better management of capital.

Chart 3.3-a illustrates the result of the evaluation performed using the I-RBR, while Chart 3.3-b shows, for each insurance market in the region taken individually, the evaluation of each of the three components that are considered when creating the index: a) the evaluation of elements of the regulation that are based on basic risks (type Solvency I); b) the elements of transition to a risk-based scheme, and c) regulatory elements that have already been implemented and which correspond to risk-based regulation (type Solvency II).

This analysis shows that, in general, progress in the region is uneven and there is still progress to be made on the regional level for the

implementation of risk-based regulatory solvency capital calculation models, especially with regard to the pillar of quantitative requirements. Under the criterion of formally implemented regulatory measures, the insurance markets in the region can be classified into three groups.

The first group would consist of three insurance markets in the region (Argentina, Dominican Republic and Venezuela), which have regulatory systems that essentially maintain the characteristics of the Solvency I-style systems, although no implanted measures have been identified that suggest a transition to risk-based systems.

The second group would consist of ten markets (Costa Rica, Uruguay, Ecuador, Guatemala, Paraguay, El Salvador, Panama, Nicaragua, Bolivia and Honduras). Although they maintain a regulation based on a Solvency I model, they have progressed gradually and with different levels of depth, in the implementation of measures of transition towards risk-based regulation.

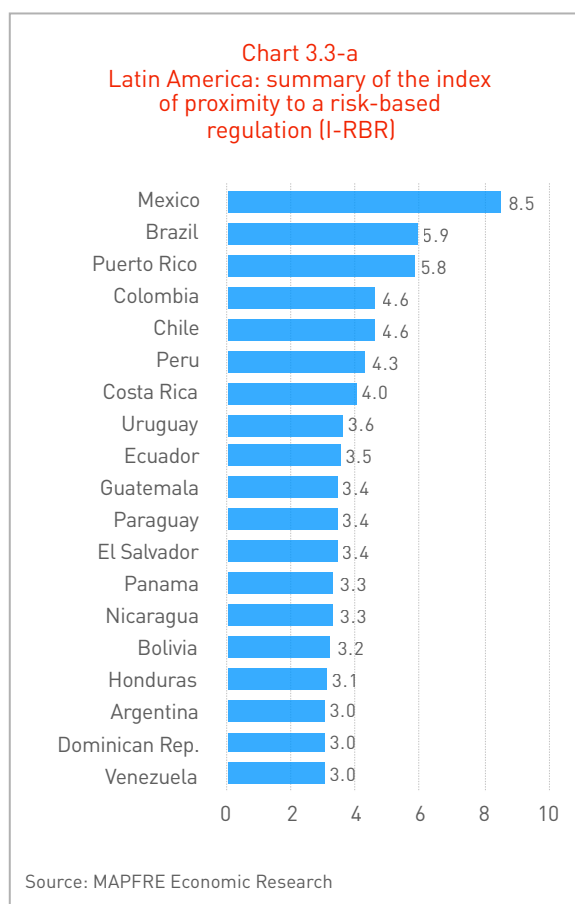


Chart 3.3-b
Latin America: index of proximity to a risk-based regulation (I-RBR)

- Regulation based on pure risk (Solvency II-style)
- Transition regulation toward pure risk
- Regulation based on basic risk (Solvency I-style)

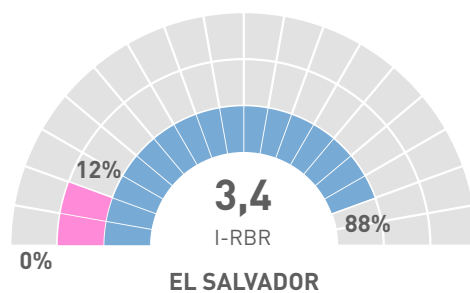
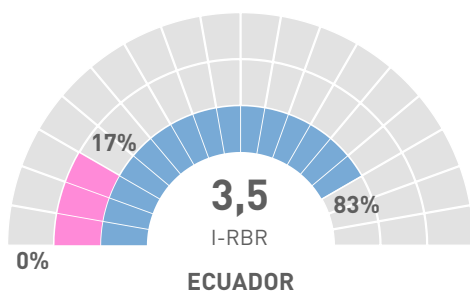
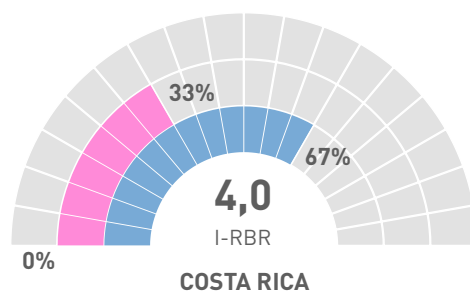
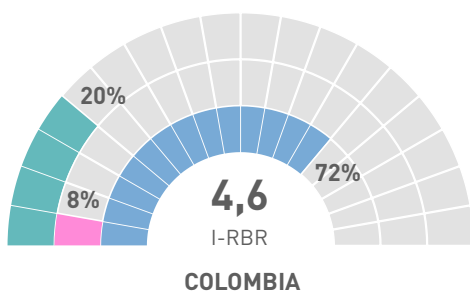
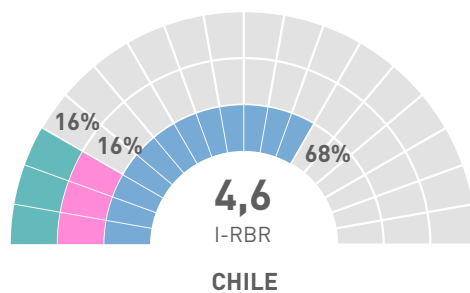
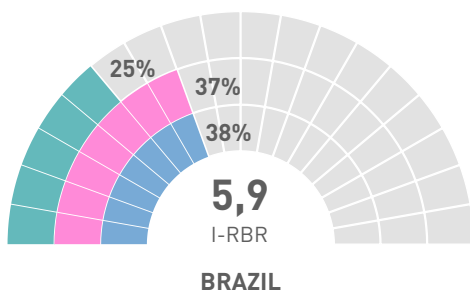
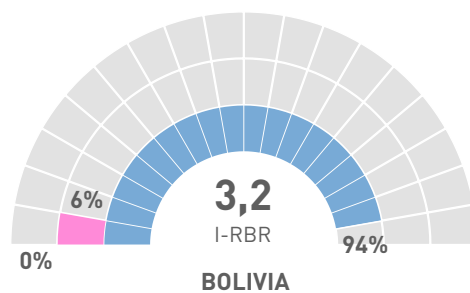
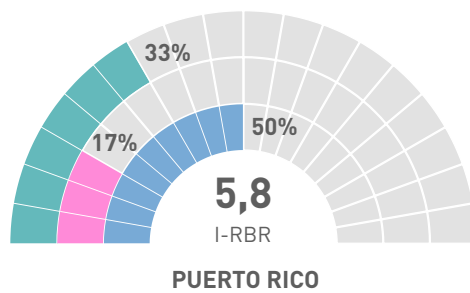
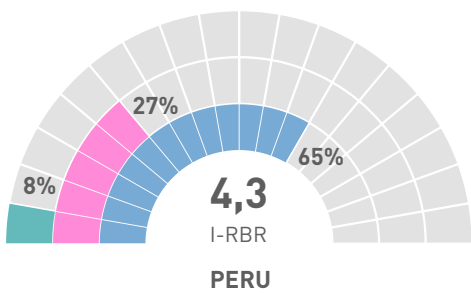
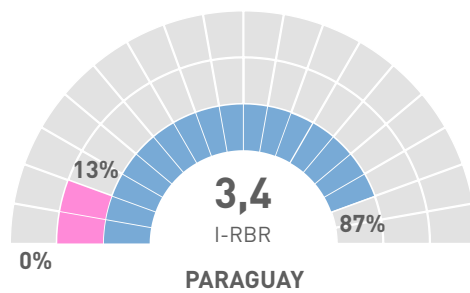
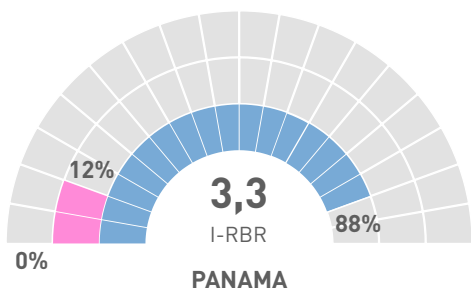
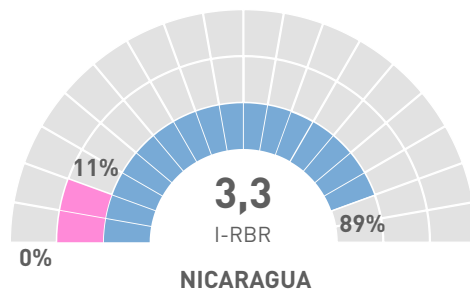
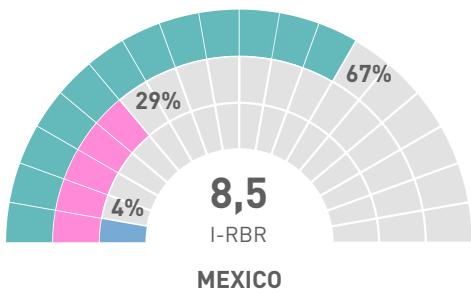
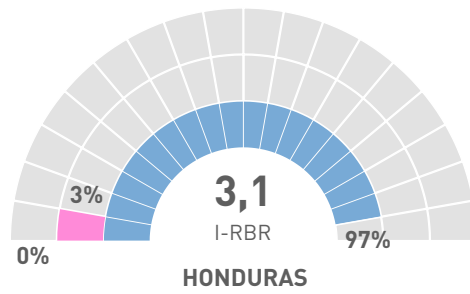
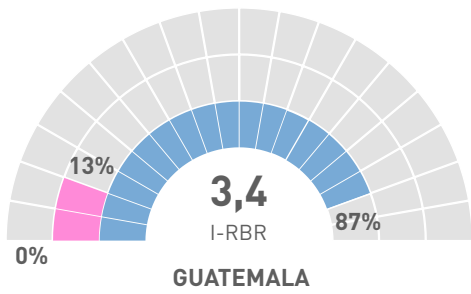
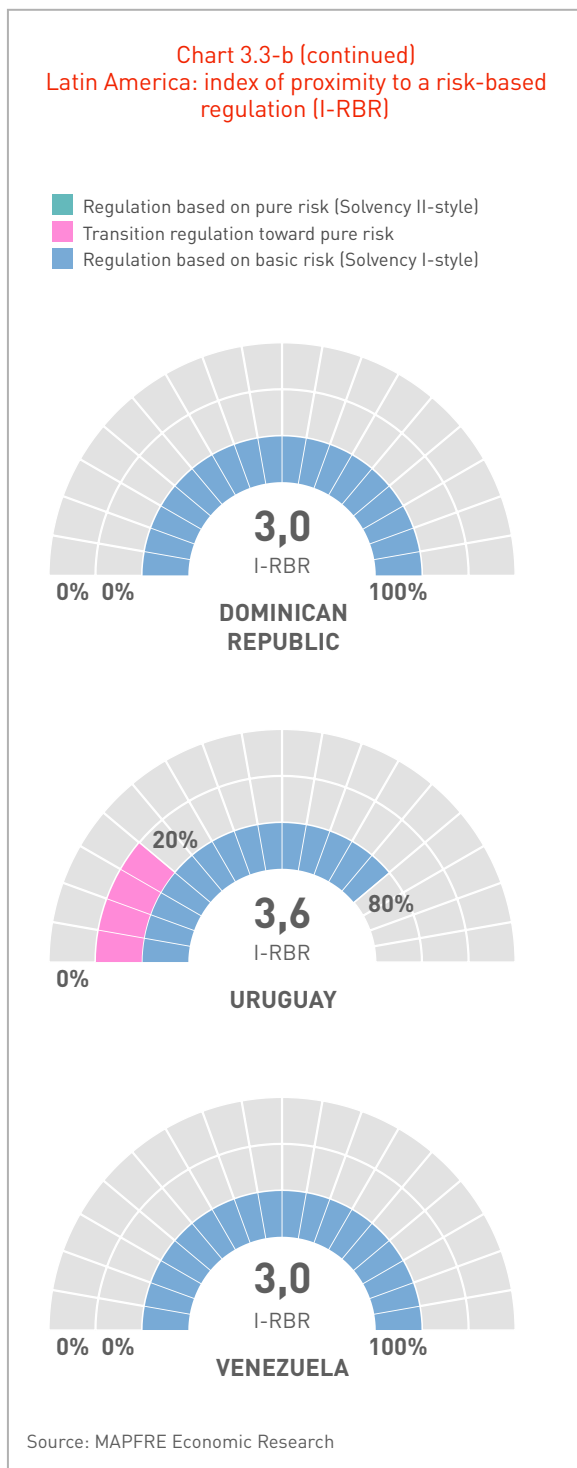


Chart 3.3-b (continued)
Latin America: index of proximity to a risk-based regulation (I-RBR)

- Regulation based on pure risk (Solvency II-style)
- Transition regulation toward pure risk
- Regulation based on basic risk (Solvency I-style)





Lastly, a third group would be made up of six markets (Mexico, Brazil, Puerto Rico, Colombia, Chile and Peru), which, in addition to different degrees of progress in transitional measures towards risk-based regulation, have already

implemented (also at different degrees of depth) measures that are fully consistent with Solvency II-style regulations.

As shown in Chart 3.3-c, markets that maintain Solvency I-style regulation (Group 1) accounted for 13.5 percent of total insurance premiums in the region in 2016. On the other hand, the markets that, with Solvency I-style systems, have introduced transitional regulatory measures (Group 2) had 5.5 percent of regional premiums that year. And finally, the markets that have made the most progress in the regulatory transition process (Group 3) accounted for 81 percent of insurance premiums in Latin America in 2016.

In addition, there seems to be a relationship between the degree of progress of the regulatory transition process described, and the gain in terms of penetration of those markets. Analyzed for the last decade, the six insurance markets that have progressed the most in the regulatory transition process are also among those with the highest penetration gains in that period (see Chart 3.3-d).

3.4 Considerations

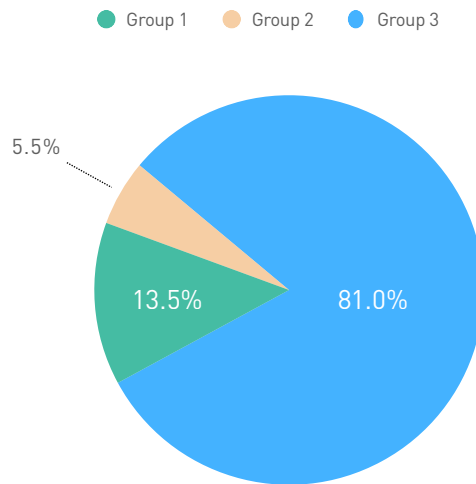
Without a direct functional relationship between the progress in the regulatory transition process and the increase in insurance penetration, the analysis seems to confirm that the progress in the design and implementation of regulatory frameworks that are more risk-adjusted and, therefore, in line with a pro-competitive market view, is one of the factors that can contribute, from the supply side, to the increase of insurance penetration in the region.

From this perspective, the progress towards risk-based regulations is an element that can stimulate the growth of the supply and, therefore, increase the participation of insurance in the economy, in that it allows for a more efficient allocation of the capital, and creates incentives for more professional management of insurance entities based on considerations and parameters of a technical nature.

However, it is also important to note that the evidence seems to confirm that this progress can greatly contribute to the goal, when it is carried out gradually and in parallel to the development of technical capacities of both the industry and regulators, as well as to the creation of the necessary market infrastructure for its proper implementation.

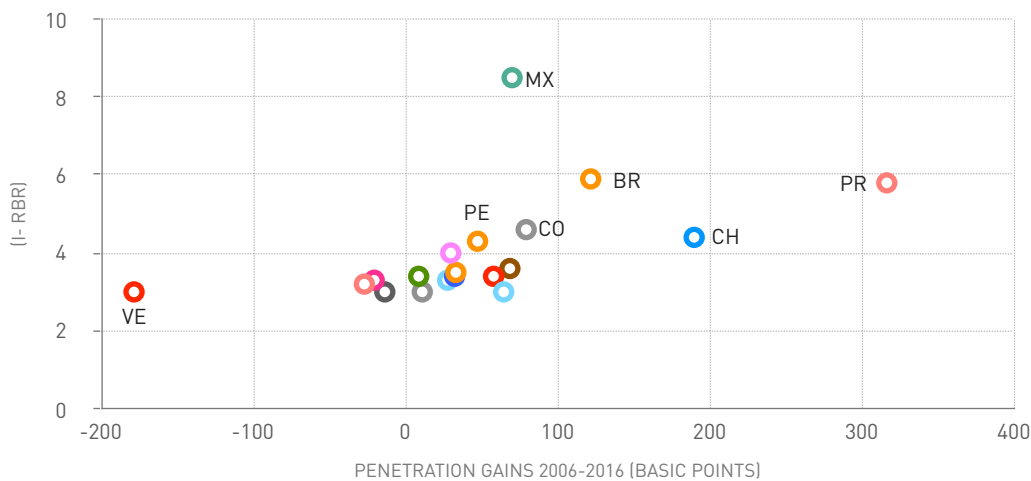
Otherwise, regulatory progress (which would be difficult to comply with) could lead to unwanted consequences, such as the establishment of barriers to entry for certain business lines, or an inefficient allocation of resources, which ultimately would negatively impact the penetration levels of the respective insurance markets.

Chart 3.3-c
Latin America: participation in regional insurance premiums by market groups according to progress in the regulatory transition process, 2016



Source: MAPFRE Economic Research

Chart 3.3-d
Latin America: index of proximity to a risk-based regulation (I-RBR) and penetration gains, 2006-2016



Source: MAPFRE Economic Research

Box 3.3
Proximity index toward a risk-based regulation (I-RBR):
Methodological aspects

In order to have a comparative instrument of the current state of regulatory frameworks in the different Latin American markets, a proximity index has been proposed toward a risk-based regulation (I-RBR).

The I-RBR is not intended to assess the quality of the regulation in each market (nor the effectiveness of supervisory tasks in the markets). Rather, it is intended to identify the degree of progress in terms of passing from Solvency I-style basic risk-based regulations toward prudent frameworks focused on more precise management and measurement of the risks (Solvency II-style).

In creating this index, a series of elements have been defined that characterize a system of prudential regulation, which have been valued in a particular way for each one of the analyzed markets.

Generally speaking, in basic risk-based systems (Solvency I-style), the determinant factor of solvency capital requirement is determined by the risk of underwriting, with a system based on one or several factors applied on figures that are believed to be representative of the level of exposure to insurance risk, such as premiums, claims ratio or mathematical provisions in the case of Life insurance. In this type of systems, the requirement is accompanied by a set of additional rules on governance and investments to limit market and credit risks, introducing specific regulatory limits for diversification and dispersion, as well as a typology of assets (closed list mode) that are considered fit to cover the obligations derived from the insurance contracts. Likewise, these systems are characterized by introducing prudential elements in measuring insurance assets and liabilities.

For their part, the systems that have progressed in the process of change towards a purely risk-based prudential regulation system (Solvency II-style) are characterized by introducing more complex scenario simulation techniques for calculating specific capital charges due to underwriting, market and credit risks, and considering the dependen-

cies between risks, the use of internal models and the calculation of regulatory solvency capital at group level, among other aspects. These systems also extend risk analysis not only to the estimate of quantitative requirements, but also to functions related to governance and market transparency.

Group	Regulatory evaluation elements
A	1 Limits on investments: list of suitable assets
A	2 Limits on investments: percentage of diversification
A	3 Life and Non-Life Underwriting Risks, not disaggregated
A	4 Prudential interest rate in mathematical provisions
A	5 Authorization / prior registration of policies or technical bases
B	6 Market valuation of assets
B	7 Valuation of technical provisions: best estimate and risk margin
B	8 Reinsurance regulation - counterparty risk
B	9 Underwriting risk by homogenous groups
B	10 Financial Risk
B	11 Risk of mismatch (<i>mismatching</i>)
B	12 Operational risk
B	13 Market transparency - risk profile
B	14 Governance requirements: key functions/risks
B	15 Risk analysis of specific operations at group level (without capital requirement)
C	16 Explicit risk measures and dependencies between risks
C	17 Internal Risk Models
C	18 Stress tests - Dynamic solvency - ORSA
C	19 Market valuation without asset exceptions
C	20 Discount of provisions with risk-free rates without adjustments
C	21 Governance requirements: full integration of risk functions
C	22 Market transparency - complete breakdown of risk components
C	23 Risk-based regulatory capital at group level (with group capital requirement)

Box 3.3 (continued)
Proximity index toward a risk-based regulation (I-RBR):
Methodological aspects

Finally, between these two types, there are regulatory systems that, although they are based on Solvency I-style standards, have incorporated transit measures to move toward a system based essentially on risk assessment and measurement, more rigorous governance and higher levels of disclosure of information to the market.

Thus, for the purposes of evaluating the regulatory framework in each insurance market analyzed, 23 elements have been considered, which have been classified into three groups (see Table).

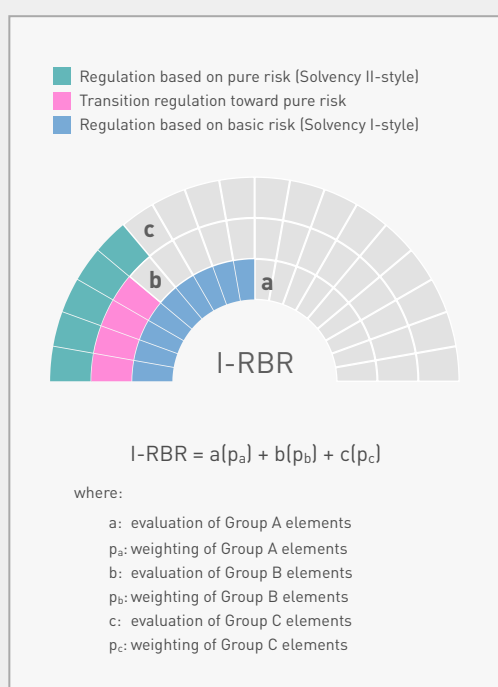
In the first group (Group A), those elements are included which are typically closer to a prudential regulation, less sensitive to the particular risk profile of each insuring entity (Solvency I-style). The second group (Group B), contains regulatory elements that introduced a higher complexity and closeness to capital models based on risks that represent movement toward that type of prudential regulation model. And in the third group (Group C), the regulatory elements of greater technical complexity are included, such as internal risk modeling, dependencies between risks and stress tests, which require a high computational load and a high degree of technical specialization-characteristic of a more sophisticated solvency capital risk-based system. When analyzing the framework of each market's prudential regulation, these elements were evaluated on a scale of 0 to 10, depending on their characteristics and the degree of implementation in their respective regulations.

Thus, for the purpose of constructing the I-RBR, a specific weight has been assigned to the joint evaluation of each group of elements. First, Solvency I systems were considered to incorporate basic elements of prudential regulation that, to a certain extent, try to limit different sources of risk, so that the elements of Group A have been assigned a weight of 0.3. Then, a weight of 0.6 has been assigned to the evaluation of the elements moving towards regulations based on Solvency II-style risk (Group B). Lastly, the weight is 1 for those factors that are considered determinants of

the proximity to a Solvency II-style system or a pure RBC (Group C).

In this way, the I-RBR is constructed as the weighted sum of the valuation of that set of elements, and adopts a value of 10 when it is a regulatory system that is perfectly aligned to the measurement of pure risks.

Chart 2.2-a shows the total value of the I-RBR for the insurer markets analyzed, while Chart 2.2-b illustrates the formation of the index for each of these markets based on its three parts.



Source: MAPFRE Economic Research

4. Access to the market and capital

4.1 Access to the market and its influence on the supply of insurance services

Firstly, market access by new participants, and secondly, sources of capital to finance the expansion of the market, are indicators that influence the possibility of expanding the supply of insurance in the medium- and long-term.

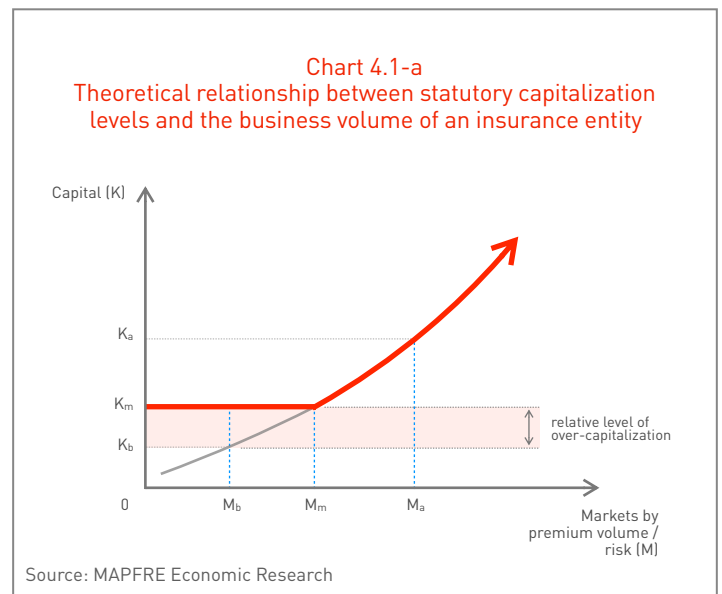
International insurance activities are subject to a regulatory framework that regulates them in the phases of access, operation and exit from the market. From the point of view of market entry, the regulations seek, in addition to the general standards of suitability and capacity of firms and their managers, that the new participating entities ensure a certain scale of operation that constitutes a primary protective barrier of the interests of consumers and integrity in the operation of the market as a whole, by ensuring an appropriate minimum size for the management of the risks they endorse with their policies.

Thus, from a purely financial perspective, the regulatory element used for this purpose is the establishment of minimum capital. However, the formal and minimum capital requirements to establish a new insurance entity managed inappropriately are factors that can create an access barrier, resulting in lower levels of competition and insurance penetration in the economy.

Unlike prudential solvency requirements, which establish capital charges according to the entity's volume of operations and the level of risks assumed by the entity, minimum capital is independent of those considerations and establishes only one size of entity, which

requires the minimum necessary for appropriate management of the risks in which it will specialize.

As shown in Chart 4.1-a, for aggregate levels of capital in the market, solvency regulations establish a direct relationship between capital charges and the volume of operations and risks managed; the higher they are, the higher the capital requirements. The establishment of minimum capital, however, breaks this link as it imposes a minimum level of capital (K_m), which, from a predetermined level of operation (M_m) is the same, regardless of whether the volume of operations and risks decrease. Therefore, at an aggregate level in the market, to the extent that a larger number of participating entities operate



below that level M_m , the relative levels of over-capitalization will be higher; that is to say, entities that, due to their low level of scale (in terms of business and risks) require a capital charge higher than they would require if the measurement were made exclusively under prudential parameters.

The data on the capitalization levels of the Latin American insurance markets, which show a high dispersion, seem to confirm this analysis. Chart 4.1-b, which illustrates that parameter measured as the ratio between equity and total assets, shows data for 2016. According to this information, Venezuela was the market with the highest level of capitalization in Latin America, although it is important to point out that this measurement is strongly influenced by the fact that a large part of the shareholders' equity computed in the estimation corresponds to unrealized gains on property investments and other financial instruments. A large group of relatively small markets (El Salvador, Panama, Costa Rica, Paraguay, Honduras and Guatemala, among others) follow the Venezuelan market, with high capitalization levels, while the largest Latin American markets (Brazil, Mexico, Chile, Peru, Colombia, Argentina) are among those with lower relative capitalization levels.

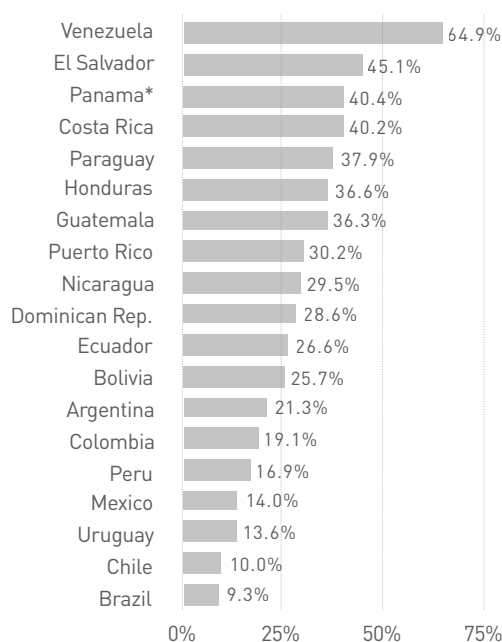
The relative market over-capitalization is an element that can have a negative impact on the growth of the insurance offering and, ultimately, on the prices paid by consumers. This is a feature that seems to predominate in relatively smaller markets and should be corrected in the medium-term as size increases (which would address the scale problem), or through consolidation processes (although they would reduce the average capitalization level, they could generate other problems related to levels of concentration and competition).

To go deeper into this analysis, Chart 4.1-c illustrates, on the one hand, the capitalization levels for each of the Latin American markets analyzed during the last decade (2006-2016) and, on the other hand, the changes in the trend against the average observed in the Latin American market considered as a whole.

The analysis presented in Chart 4.1-c highlights that there are markets that show a clear convergent trend with that of the aggregate Latin American market, while others diverge from this regional trend, and others that maintain a parallel trend. In the first group (convergent markets) most of the largest markets in the region are located (Brazil, Chile, Mexico, Peru, Puerto Rico and Uruguay). The second group (divergent markets) contains generally smaller markets (Bolivia, Costa Rica, Guatemala, Nicaragua, Panama and Paraguay, as well as Argentina and Venezuela) that seem to be accentuating the scale problem described above. And lastly, the third group (markets with a parallel trend) includes those markets that are gradually reducing the scale effect indicated earlier (Colombia, Ecuador, El Salvador, Honduras and the Dominican Republic).

It is important to note that the problems of scale that lead to the application of minimum capital for the authorization and operation of insurance entities not only have the effect of the relative increase of capitalization levels, but also affect profitability levels.

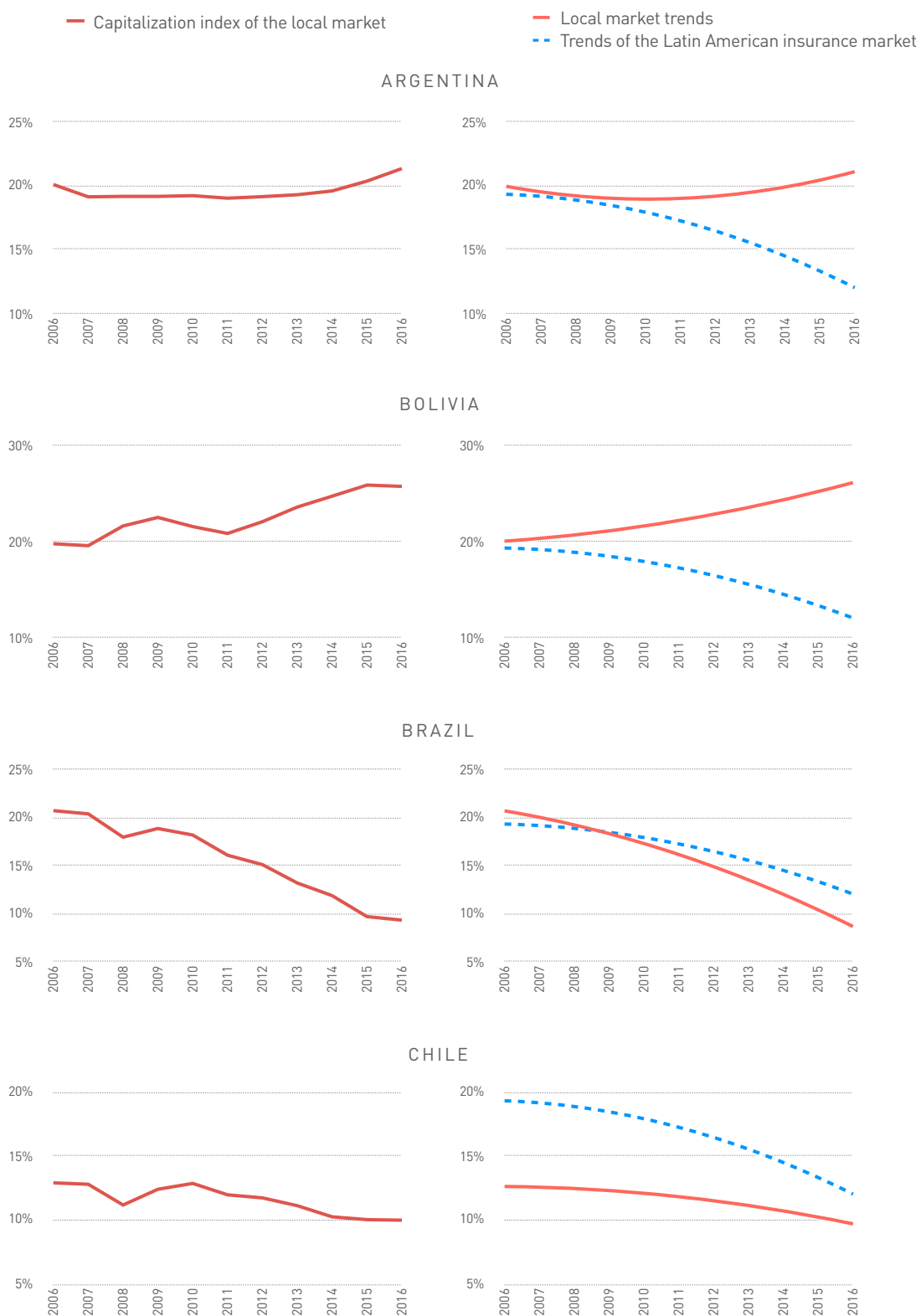
Chart 4.1-b
Latin America: capitalization index
by market, 2016
(equity/assets, percent)



Source: MAPFRE Economic Research (with data from supervisory bodies in the region)

* Data for Panama relate to 2015, latest available data.

Chart 4.1-c
Latin America: trend of the market capitalization levels, 2006-2016
(equity/assets, percent)



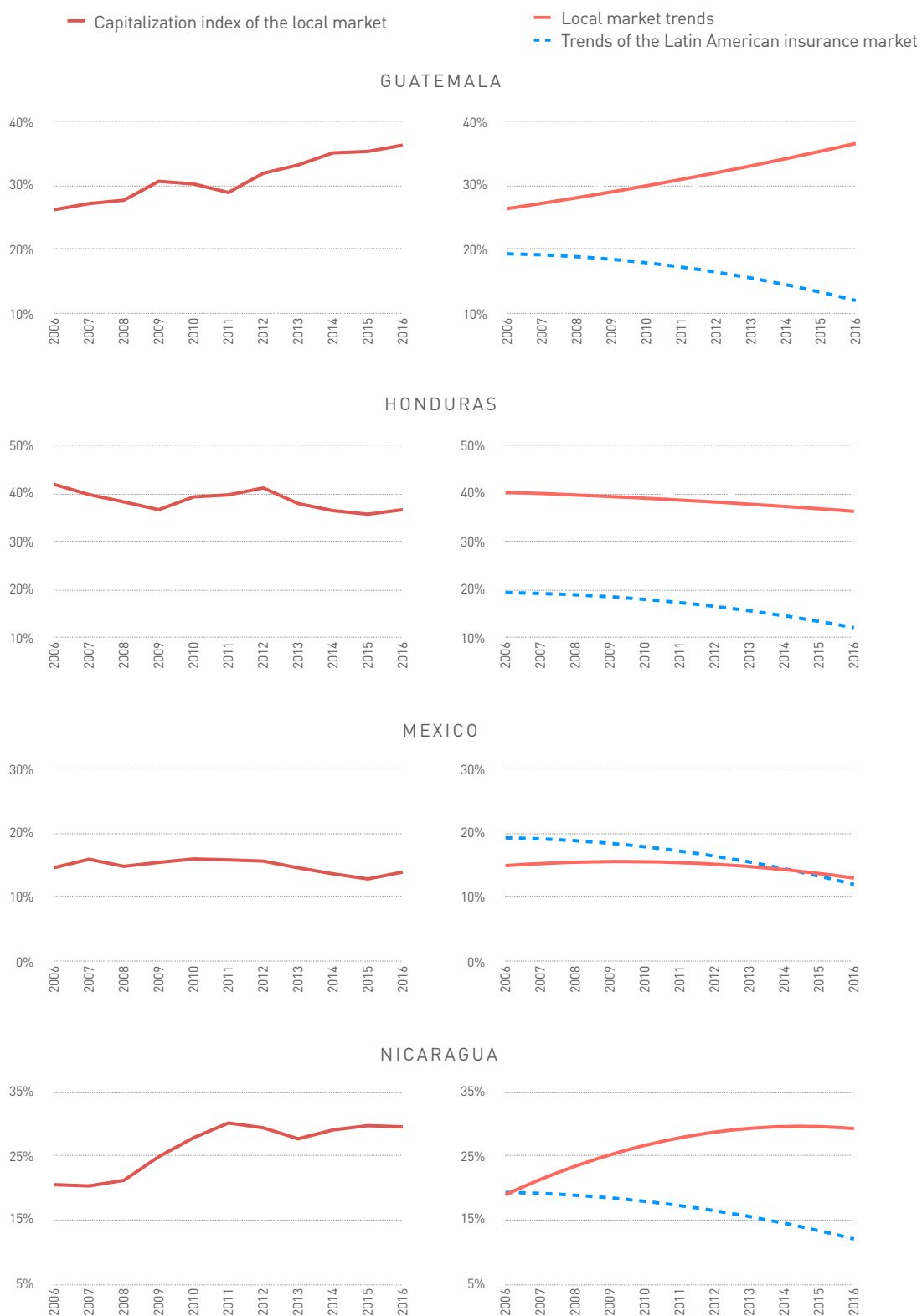
Source: MAPFRE Economic Research (with data from supervisory bodies)

Chart 4.1-c (continued)
 Latin America: trend of the market capitalization levels, 2006-2016
 (equity/assets, percent)



Source: MAPFRE Economic Research (with data from supervisory bodies)

Chart 4.1-c (continued)
Latin America: trend of the market capitalization levels, 2006-2016
(equity/assets, percent)



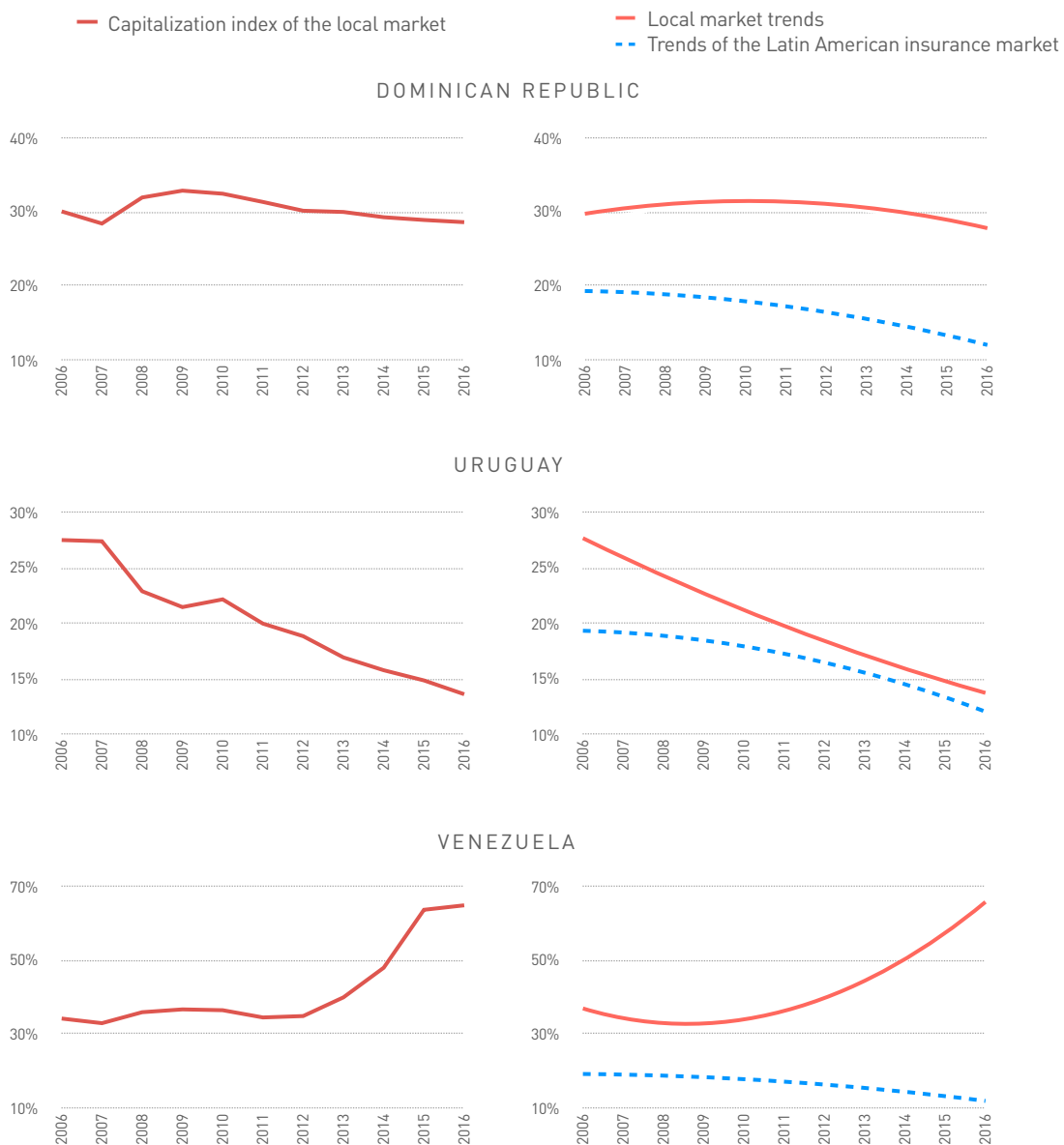
Source: MAPFRE Economic Research (with data from supervisory bodies)

Chart 4.1-c (continued)
 Latin America: trend of the market capitalization levels, 2006-2016
 (equity/assets, percent)



Source: MAPFRE Economic Research (with data from supervisory bodies)

Chart 4.1-c (continued)
Latin America: trend of the market capitalization levels, 2006-2016
(equity/assets, percent)



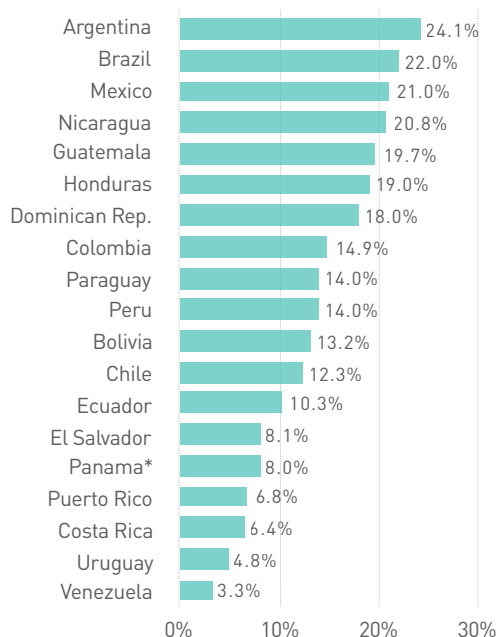
Source: MAPFRE Economic Research (with data from supervisory bodies)

In general, from a theoretical point of view, the higher degrees of capitalization have a negative effect on profitability (measurement of the equity that sustains the entity's operation).

Chart 4.1-d illustrates this parameter for each of the Latin American markets analyzed. Although it is true that profitability is determined not only by the capitalization of the entities but also by

other factors linked to demand and market competition, in general it is possible to appreciate the above mentioned relationship, in which the largest markets in the region (with lower levels of relative capitalization) tend to present higher profitability indicators.

Chart 4.1-d
Latin America: market profitability, 2016
(ROE, %)



Source: MAPFRE Economic Research (with data from supervisory bodies in the region)

* Data for Panama relate to 2015, latest available data.

4.2 Quantitative analysis of the elements for market entry

The analysis of the regulations applicable to the operation of the insurance sector in different Latin American countries presents quite a few analogies regarding the formal requirements for authorizing a new insurer. The same is not true with regard to the amount of minimum capital, which differs in both the amount and the level of disaggregation by lines that are applied in authorizations.

The amount of minimum capital is undoubtedly important when explaining the more or less ease of entry into a market. However, a greater disaggregation in the lines that allow requesting the respective authorization also plays a positive role in allowing lower capital by operating only in those lines of business that, due to their risk profile, do not require the same capital as other higher risk lines.

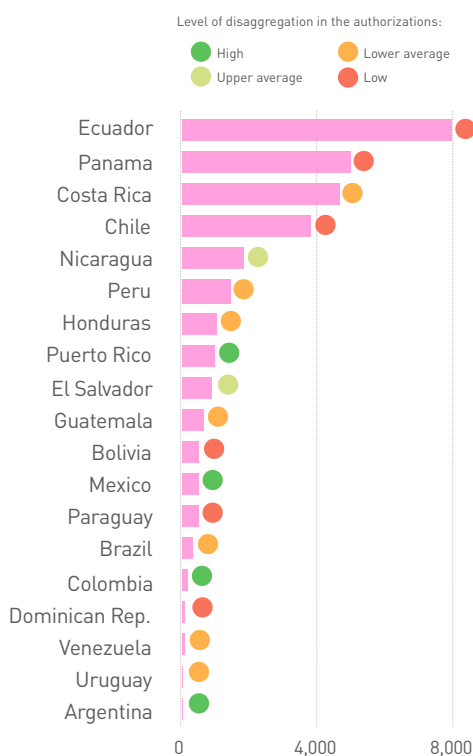
Chart 4.2-a shows a synthesis of the valuation of both elements, presenting, first, the minimum capital required to obtain the

simplest authorization provided for in the respective regulation and, second, the degree of disaggregation by lines applied in those authorizations.

From this information, it can be deduced that some countries with relatively small market sizes have levels of minimum basic capital requirements above average for the region, as well as a low level of disaggregation by lines in authorizations. This situation may lead to the requirement of high levels of capitalization (not sensitive to business parameters such as premiums, claims ratio and/or technical provisions) for potential participants, making it difficult for the market to reach an aggregate level that allows capital requirements based on these solvency parameters to come into play.

In addition to the absolute levels of capital required and the level of disaggregation by line that is applied for the granting of authorizations,

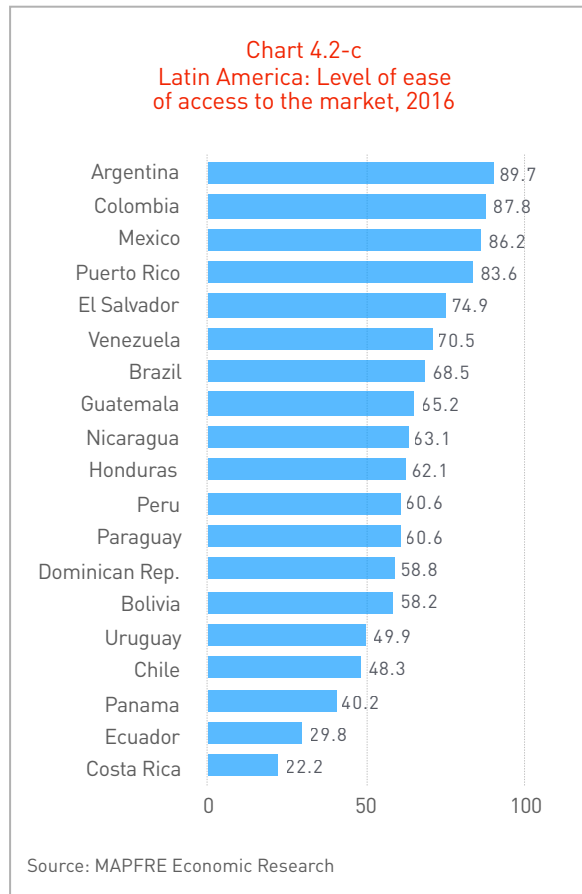
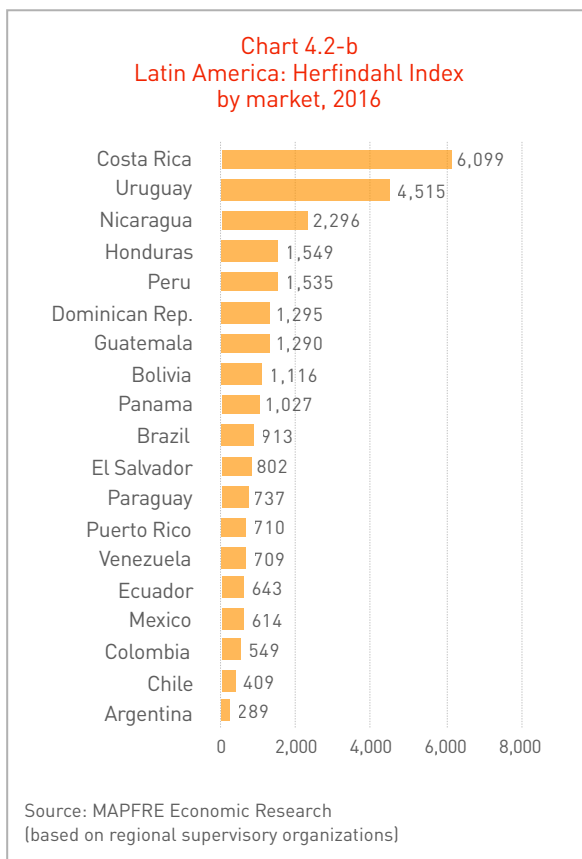
Chart 4.2-a
Latin America: capital required for minimum authorization (thousands USD) and degree of disaggregation in the operation authorizations, 2016



Source: MAPFRE Economic Research
(based on regional supervisory organizations)

the level of competition in the market is also a decisive factor (of a structural nature) in explaining whether it is more or less easy to access the market. In this regard, although it is true that the Latin American insurance market as a whole shows relatively low levels of concentration, this is not the case when analyzing each market individually.

As shown in Chart 4.2-b, ten of the Latin American markets (Argentina, Chile, Colombia, Mexico, Ecuador, Venezuela, Puerto Rico, Paraguay, El Salvador and Brazil) have a Herfindahl index below 1,000 points, which is indicative of a low concentration, high competition and, therefore, possibilities of access to compete in the market. A second group of six countries (Panama, Bolivia, Guatemala, Dominican Republic, Peru and Honduras) show Herfindahl indices of between 1,000 and 1,800 points, where the latter value constitutes the limit to be considered a competitive market. Lastly, a group of three markets (Nicaragua, Uruguay and Costa Rica) shows indicators above 1,800 points, indicating



the presence of oligopolistic structures that could hinder competition and, consequently, the entry of new market participants.

From these three indicators (absolute levels of capital required for basic authorizations, level of disaggregation by line that applies for granting new authorizations and concentration levels of the industry), Chart 4.2-c presents the result of the index that has been constructed (as a composite index that considers equivalent weights for each of the three elements indicated, whereby the higher the indicator, the greater is the ease of access to the market) to illustrate comparatively the degree of ease of access to each of the insurance markets analyzed.

4.3 Access to capital

Likewise, the possibilities each market and its regulations offer for insurance entities to access new sources of capital are indicative of the entities' possibilities of accessing resources (in addition to new capital contributions from their shareholders) that allow them to finance their growth and, with it, expand their offering of insurance. In conceptual terms, establishing prohibitions or limits to access in addition to capital can be a barrier to the growth of the industry and, in short, an obstacle to improving the level of insurance penetration.

From the analysis carried out, it is observed that, in general, practically all the countries of the region allow mechanisms to access additional forms of capital to finance their growth. These alternative sources are, in essence, three: traditional reinsurance (which operates as a temporary substitute for capital), the use of non-traditional reinsurance mechanisms (such as financial reinsurance, which functions as a form of short- and medium-term financing), or the assumption of financial liabilities through credit or issuing of securities. In some cases, debt possibilities are subject to certain limits. With regard to the regulation of financial reinsurance, only one regulation has been found that expressly prohibits it. For the rest, there are either no regulations that regulate it or rules have been established to avoid an inappropriate use of this form of financing without meeting minimum guarantees regarding risk transfer.

4.4 Considerations

The analysis carried out reveals that the case of formulas used to establish requirements for new insurers to enter the market is broad, without there necessarily being a single solution or one that is better than the others.

However, considering the concentration and competition structure in each insurance market, some countries seem to have achieved an adequate balance between the levels of disaggregation by line for new authorizations and the quantitative minimum capital requirements associated with them.

In general, the most appropriate formula seems to be based upon two elements. First, elevate the level of disaggregation in the authorizations granted to access the market, allowing for new entities to be established that are not necessarily oriented at a complete operation, but rather at certain specific lines or sub-lines and particular market niches. And secondly, to allocate equally differentiated minimum capital, associated with the broad spectrum of possible authorizations, which, without reducing the prudential purpose of regulating minimum capital for entry, can better adjust that requirement to the profile of different lines of business and thus avoid a level of relative over-capitalization beyond what is strictly necessary to fulfill the prudential purpose.

An adequate formula for market access will contribute to increased competition, increased market efficiency and, ultimately, greater supply and better insurance conditions for consumers of these financial services.

Additionally, it can be seen that the most modern solvency regulation systems in the region are more advanced in terms of regulating access to capital, allowing insurance entities to resort to borrowing and even to strengthen their solvency position by issuing debt instruments eligible as capital, within certain eligibility limits. Moreover, under the prudential parameters necessary to avoid levels of leveraging that jeopardize their financial stability and solvency position, establishing the possibility of access to additional sources of financing for the growth of entities, seems to be a necessary condition to give sustainability of supply growth, especially in periods of market expansion.

5. Distribution channels

5.1 General aspects

Unlike other financial products, the insurance industry is highly dependent on independent distribution channels from insurers to bring their products to market. Insurance products are marketed through different mechanisms. In addition to the entities' direct sales, these means range from insurance agents and brokers, passing through new channels that have emerged in recent years such as banking insurance and the establishment of alliances with commercial distributors, to the emerging media of digital distribution.

The use of alternative channels that complement traditional distribution methods offers several advantages. First, the possibility for consumers to find more points through which they can access insurance products. Secondly, they do so by reducing transaction costs, which will reach segments of the population that have not been able to access insurance services until now. And third, the expansion of the distribution channels increases the efficiency of the brokerage process, prompting an overall increase in the efficiency of the insurance activities to the benefit of the industry and its consumers.

Thus, from the point of view of insurance penetration in the economy, more diversity of channels for the distribution of products can lead to an increase in penetration from the supply perspective, insofar as the access to insurance by the different groups of society increases. From that point of view, those markets that develop greater flexibility with regard to distribution channels for their products anticipate greater possibilities to expand the supply of products that will reach consumers and, to that extent, greater possibilities that insurance penetration will increase.

In addition, the commissions that insurance entities must pay to these channels as part of the distribution process of their products, are an essential element in the dynamic of the insurance industry. In this regard, an adequate balance between different channels and improvements in their efficiency can also contribute to market development, positively affecting the penetration level of insurance.

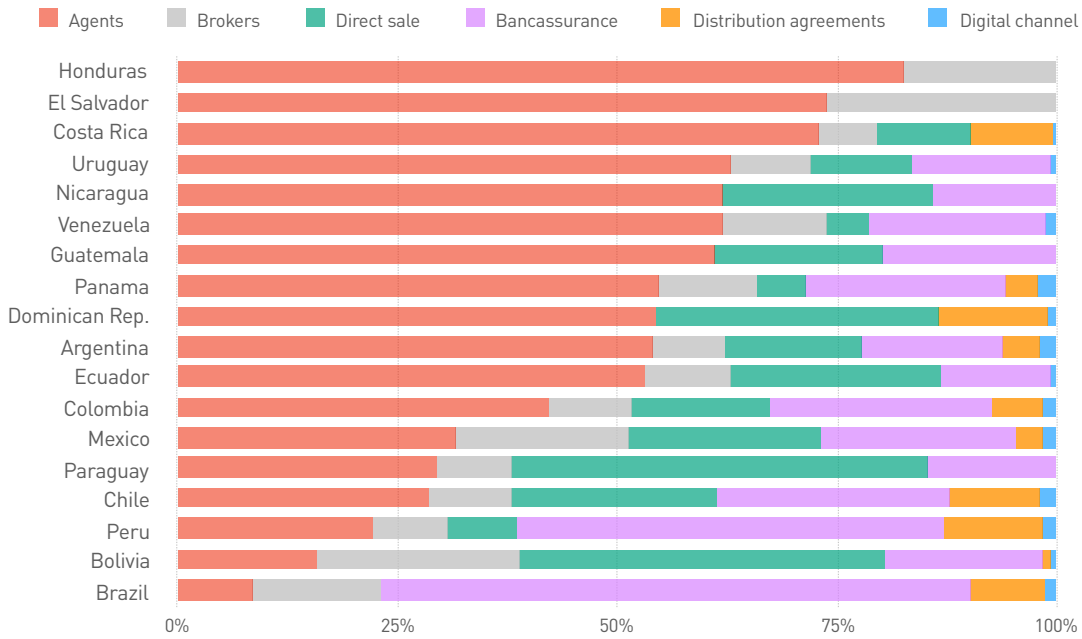
5.2 Distribution and commission channels

With the information available regarding the weight of the different distribution channels of the countries included in this study and a representative sample of other mature insurance markets,⁵ it can be observed that the composition of the channels in the Latin American insurance markets is very heterogeneous (see Chart 5.2-a). This heterogeneity extends to both Life and Non-Life insurance segments (see Chart 5.2-b).

On the one hand, there is a large group of markets in which there is a clear predominance of traditional channels (agents and insurance brokers). On the other hand, there is the group of markets (basically the larger and relatively more developed in the region) in which the growth of new channels (banking insurance, distribution agreements and digital channels) has resulted in a better balanced structure of ways to bring insurance products to consumers.

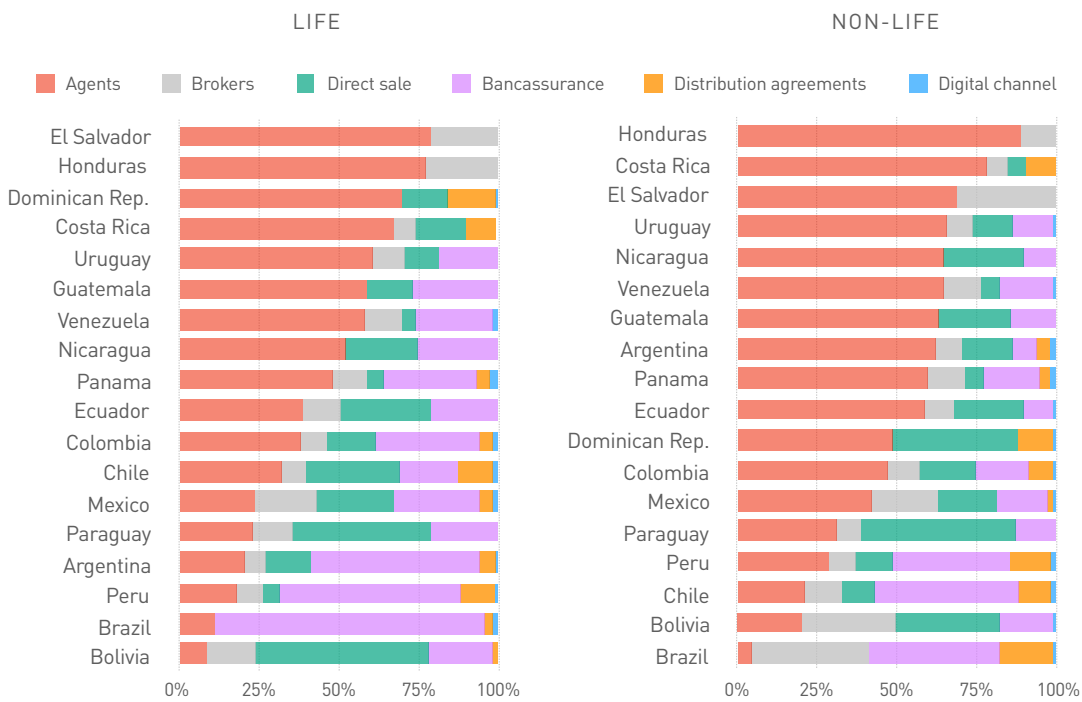
Based on information on the structure of the distribution channels in the different Latin American insurance markets, a dispersion index has been created for the distribution channels, calculated as the inverse of its Herfindahl index (the greater the dispersion of channels, the greater the value of the indicator). The result of this exercise is illustrated in Chart 5.2-c. The analysis seems to confirm that the highest

Chart 5.2-a
Latin America: distribution channel structure
by total insurance market, 2017



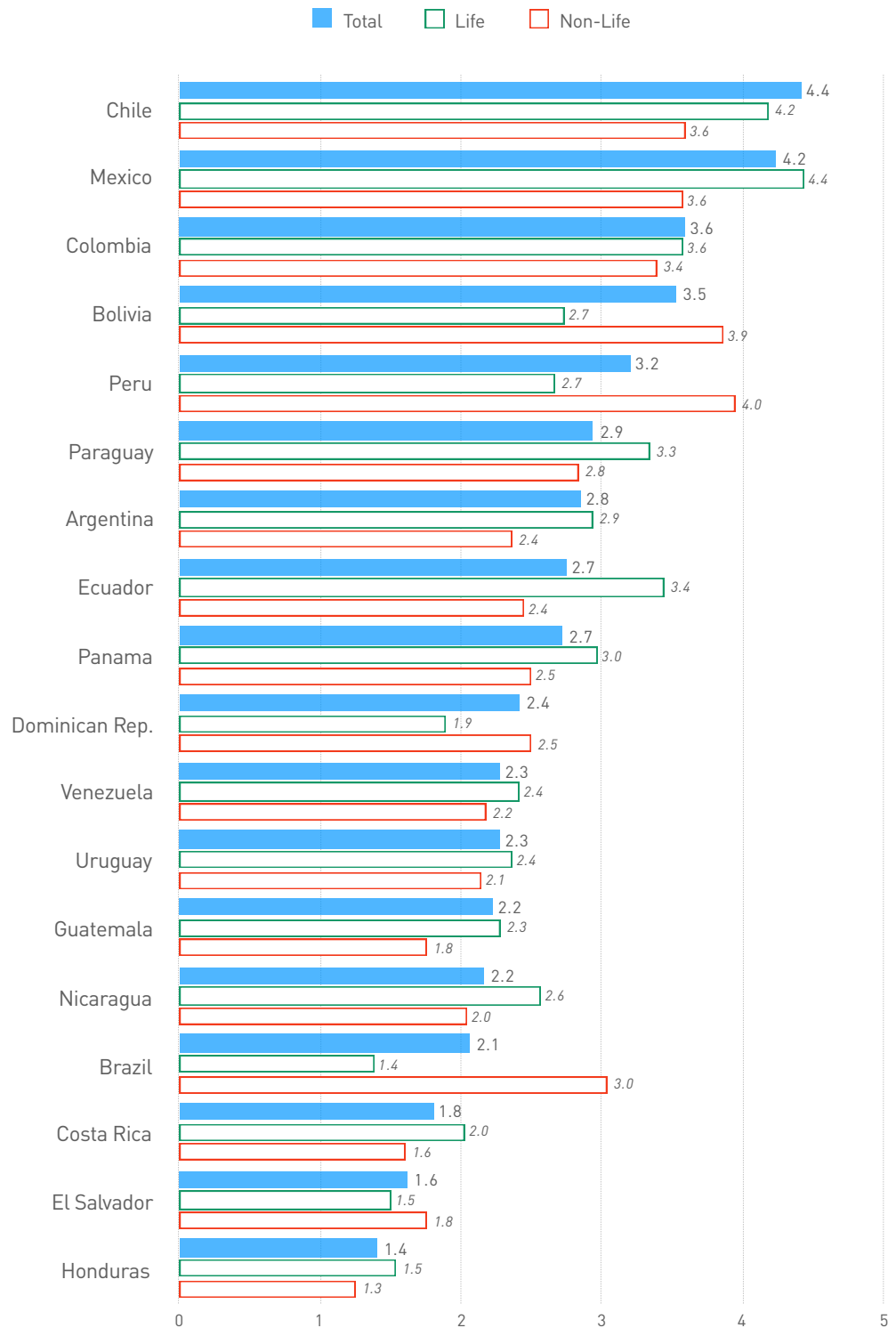
Source: MAPFRE Economic Research (based on BSLatAm information)

Chart 5.2-b
Latin America: distribution channel structure
by Life and Non-Life insurance market, 2017



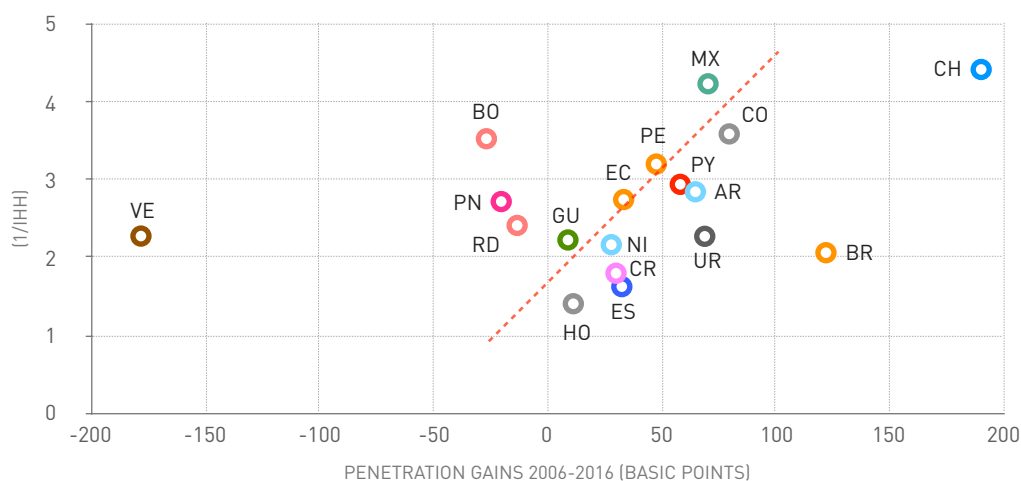
Source: MAPFRE Economic Research (based on BSLatAm information)

Chart 5.2-c
Latin America: dispersion index (1/IHH) of the distribution channels
by insurance market and type of insurance, 2017



Source: MAPFRE Economic Research

Chart 5.2-d
Latin America: Dispersion index of the distribution channels (2017)
and penetration gains, 2006-2016



Source: MAPFRE Economic Research

degree of dispersion in the development of the channels is found in the markets with the highest relative development, both in analyzing the indicator for the total market and in doing so for its Life and Non-Life segments. The only notable case is Brazil, where the indicator is low compared to that of the largest markets in the region, basically due to the extraordinary weight of the bancassurance channel within the Life segment, as well as the brokers channel and the bancassurance segment in the Non-Life segment.

A complementary analysis that points to the relevance of the development of new distribution channels in addition to the traditional ways to get products to society as a factor that supports the increase of penetration is shown in Chart 5.2-d. This analysis seems to indicate that there is a direct relationship between the degree of dispersion in the development of the distribution channels and the penetration gains throughout the last decade.

With regard to the levels of commissions that the distribution process for insurance products in the Latin American markets entails, Charts 5.2-e, 5.2-f, 5.2-g, 5.2-h, 5.2-i and 5.2-j show a comparative analysis between the Latin American markets and a set of mature reference markets for different lines of Non-Life insurance,

while Charts 5.2-k, 5.2-l and 5.2-m show the corresponding Life insurance analysis.

From this examination it can be concluded that, in the case of the Non-life segment, with the exception of the health line, despite a certain level of dispersion between markets in the region, commissions do not differ significantly from that observed for the range in which these are placed in the basket of reference markets. In the case of the Life insurance segment, on the other hand, it is observed that in general, commissions (both first-year and renewal) tend to be higher in Latin American markets than the reference markets.

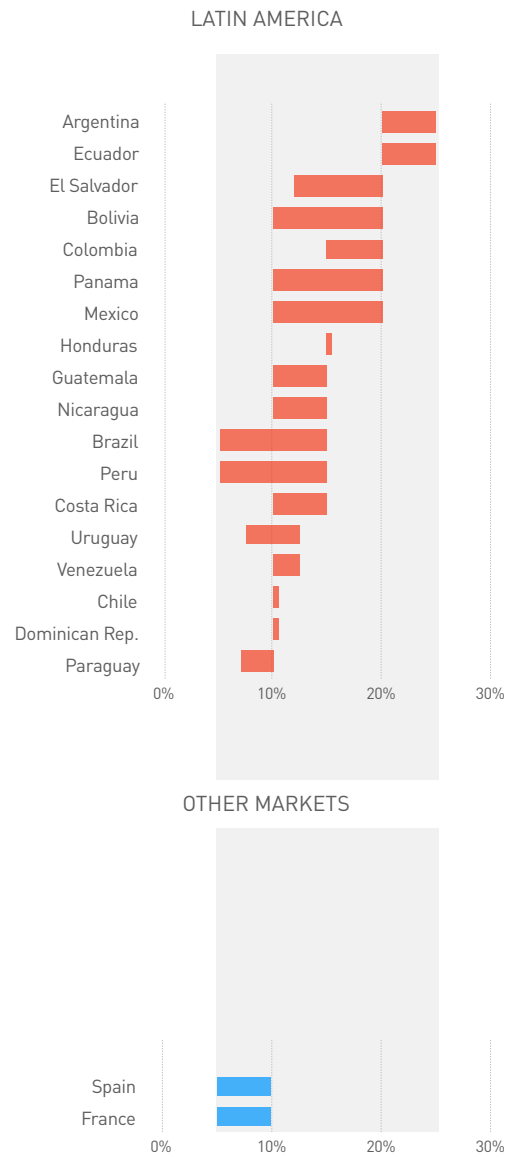
However, with the information available, it has not been possible to derive conclusive results in the sense that a model with more distribution dispersion necessarily leads to more competitive levels of commissions, for which it would have been necessary to analyze the change in commission and penetration level in the medium-term, in order to identify the trend associated with development of new distribution channels.

Chart 5.2-e
Latin America: range of commissions vs. other automobile insurance markets



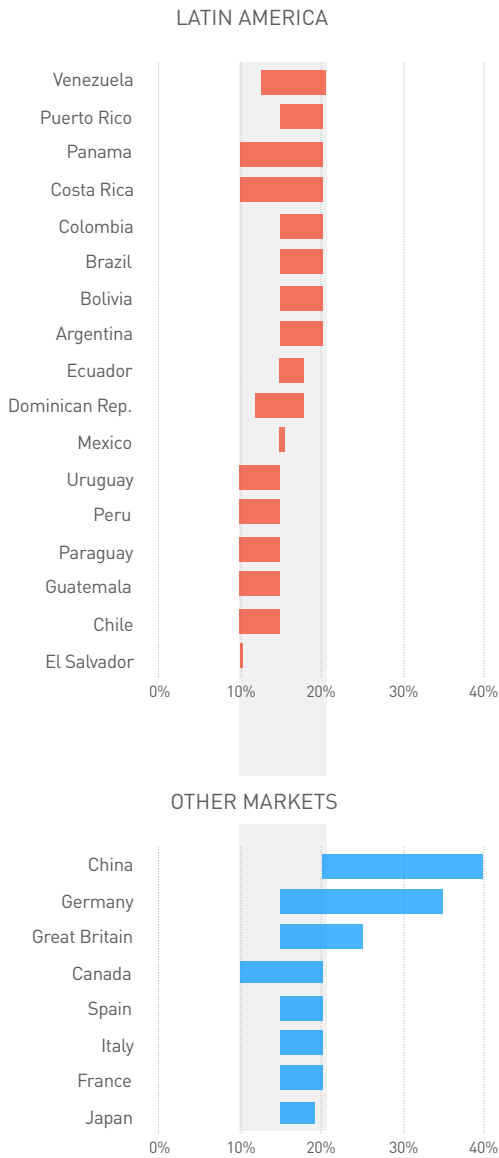
Source: MAPFRE Economic Research
(based on Axco information)

Chart 5.2-f
Latin America: range of commissions vs. other health insurance markets



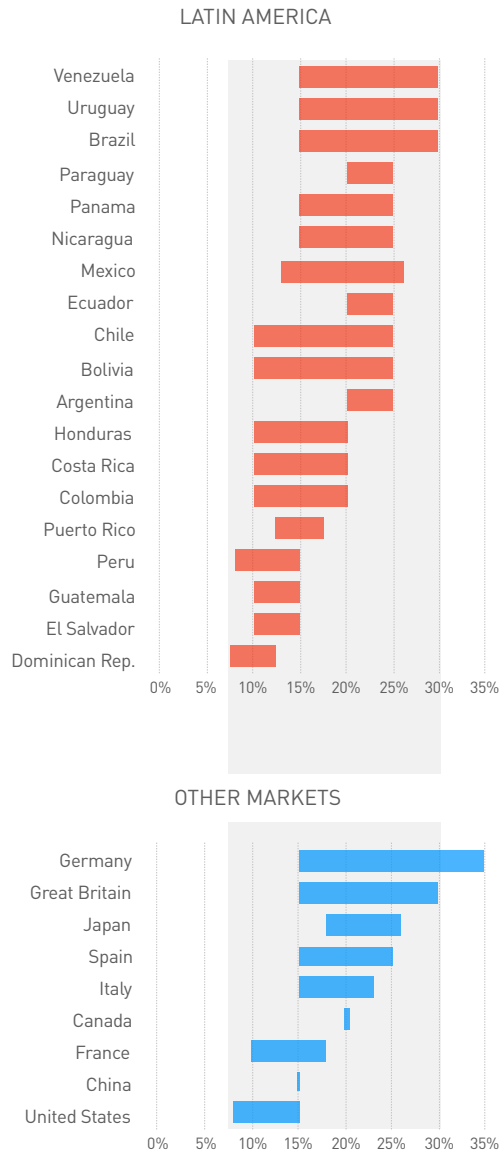
Source: MAPFRE Economic Research
(based on Axco information)

Chart 5.2-g
Latin America: range of commissions vs. other
third-party liability insurance markets



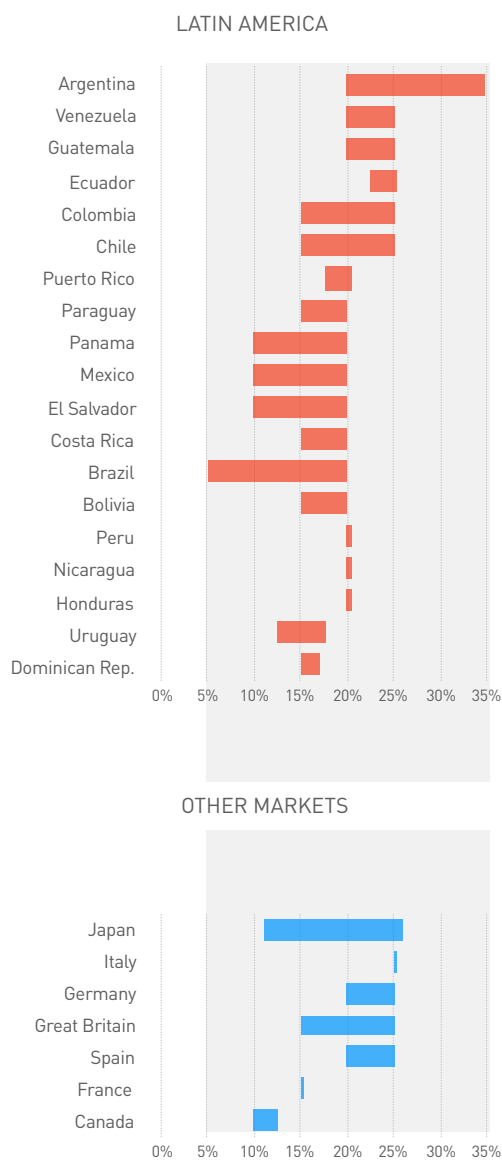
Source: MAPFRE Economic Research
(based on Axco information)

Chart 5.2-h
Latin America: range of commissions vs. other
damages insurance markets



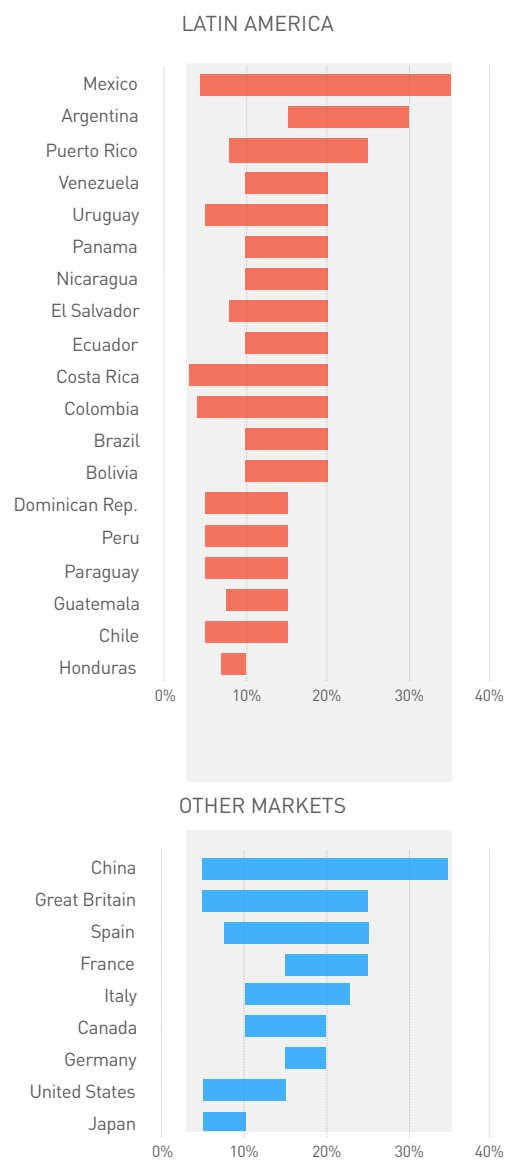
Source: MAPFRE Economic Research
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Chart 5.2-i
Latin America: range of commissions vs. other personal accident insurance markets



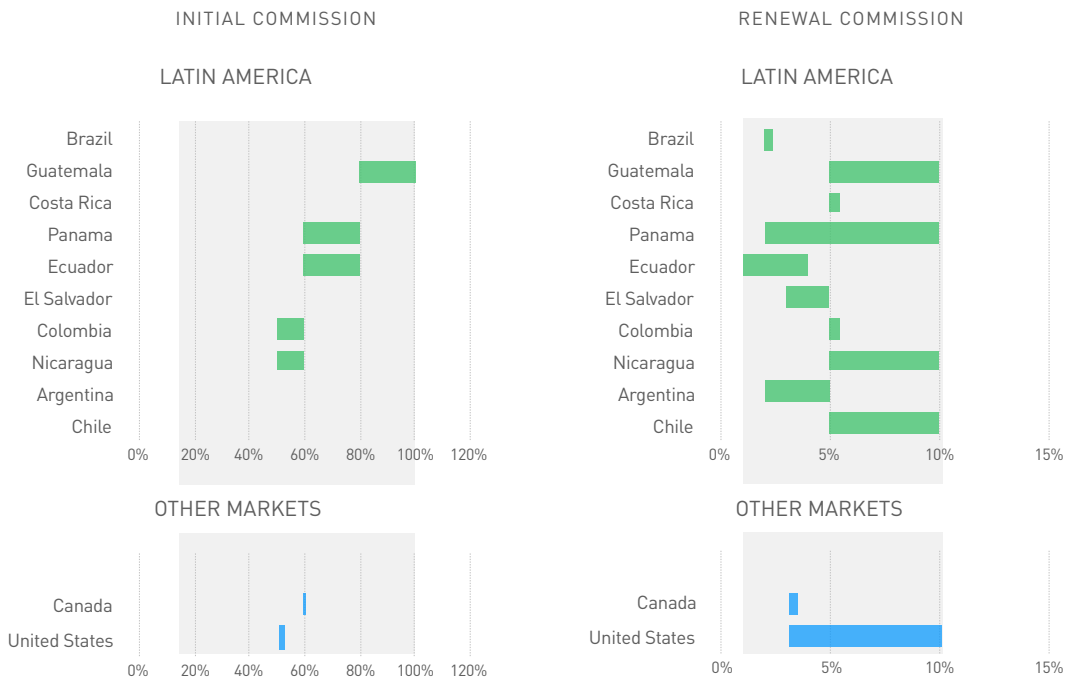
Source: MAPFRE Economic Research (based on Axco information)

Chart 5.2-j
Latin America: range of commissions vs. other insurance markets for other lines Non-Life



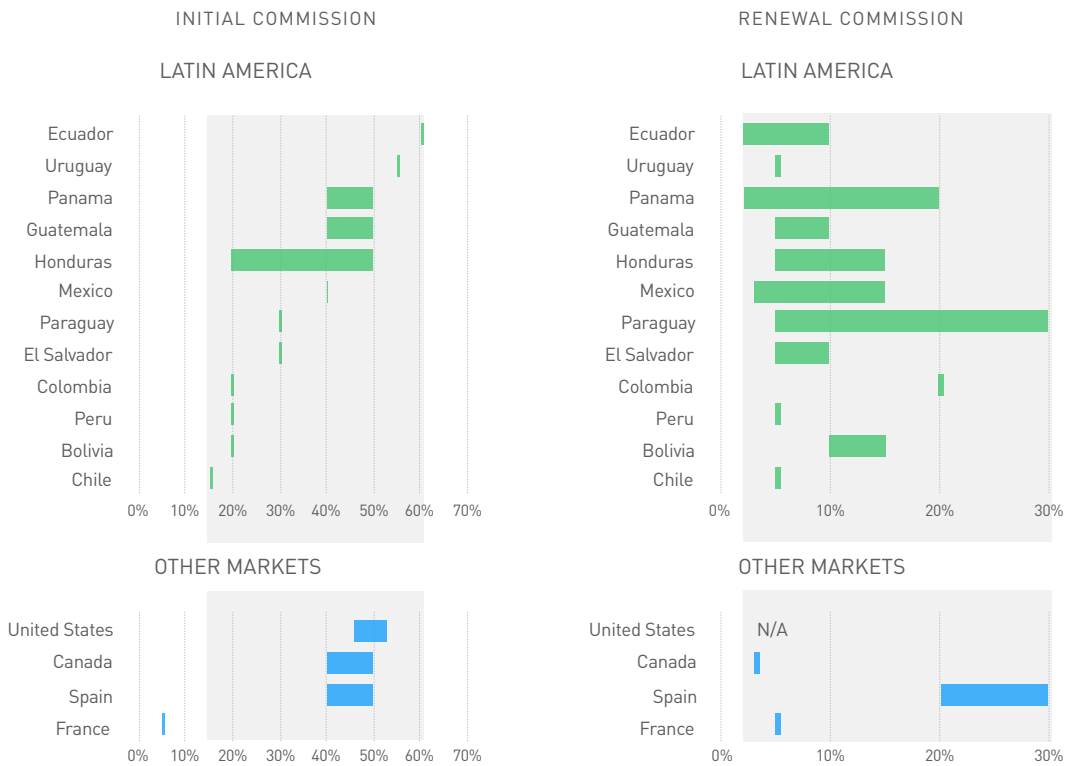
Source: MAPFRE Economic Research (based on Axco information)

Chart 5.2-k
 Latin America: range of commissions vs. other markets
 in individual / Universal Life insurance (initial and renewal fees)



Source: MAPFRE Economic Research (based on Axco information)

Chart 5.2-l
 Latin America: range of commissions vs. other markets
 in temporary Life insurance (initial and renewal fees)

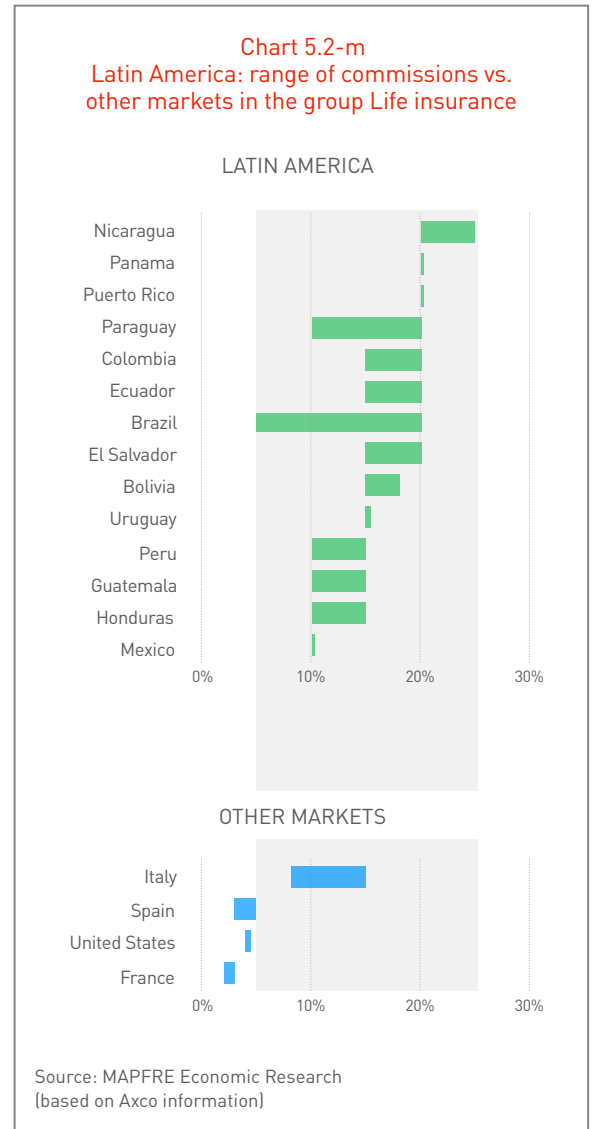


Source: MAPFRE Economic Research (based on Axco information)

5.3 Considerations

While the analysis carried out does not allow us to fully confirm the rational in the sense that a greater variety of channels contributes to more competitive levels of commissions, it does appear to be so in the sense that a greater dispersion in the development of these distribution channels is associated with higher penetration gains in the medium- and long-term for the analyzed markets.

In this way, advancing the development of multi-channel schemes seems to be a precondition to stimulate not only a greater supply of insurance services, but above all to create more agile and efficient means to bring that offer to consumers, in the extent to which multichannel does not mean the growth of one distribution channel at the expense of another, but the creation of complementary channels to serve new segments of the population.



6. Expense efficiency

6.1 General aspects

From the perspective of the creation of a supply of insurance services, efficient management of the insurance entities seems to be a key factor not only on the level of the individual entities but also a predominant condition in each market. Efficient management that translates into reduced costs, can increase the supply of insurance products at better prices for consumers (making products at competitive prices and affordable), and increase levels of competition in the insurance market, contributing together to improve the level of penetration in the respective insurance markets.

At the market level, management based on lower operating costs (management and acquisition) is a reflection, on the one hand, of the efficiency of each of the participating entities and, on the other, of the levels of development of the infrastructure that must exist in a market to promote more efficient operation. The individual dimension (efficiency of each entity) is determined by the individual capacity of each firm, while the aggregate dimension of the market is related to the existence of a set of public goods necessary for the development and improvement of the business (information specific to insurance activity) and industry agreements that allow for the use of these public goods efficiently and at lower aggregate costs.

6.2 Analysis of relative efficiency of regional expenses

The information available does not allow for a totally comparative homogeneous analysis. The year 2016 has been taken as a reference and the ratios shown have been calculated with the premiums and total expenses, as it does not allow a greater disaggregation by branches for all the countries from the sample. For Germany,

figures from 2015 were taken, the most recent available. In the case of more mature markets, the expense ratios for the Non-Life segment have been considered, since it is the only segment that can be calculated in some cases and the one that (by the comparative structure of the risk portfolios) is most closely aligned to the predominant profile in the markets of the Latin American countries analyzed, with some exceptions such as Brazil, Mexico or Chile.

Firstly, the analysis of the combined ratios of the Latin American insurance markets shows that half of them have combined ratios below the unit, which are also in the range of combined ratios from the sample of selected developed markets that were analyzed (see Chart 6.2-a).

In general, the degree of dispersion of the combined ratios between markets in any international comparison tends to be relatively small. This is due to the fact that the profitability of the insurance activities depends on the fact that the premium charged for the products is sufficient to cover the set of costs that the insurance company faces (claims ratio, management and acquisition).

In any case, the degree of dispersion observed is often due to market-specific characteristics, such as the present interest rate environment (insofar as financial products allow to partially offset the technical losses derived from a combined index higher than the unit), more participation from Life businesses (in global measures of the indicator, as is the case of the Chilean market in the sample analyzed), or to the existence of certain rules of accounting that distort the comparison of the index.

However, this is not the case when analyzing the claims ratios and operating expenses of Latin American markets with respect to the sample of developed countries. This analysis reveals

opposite behavior for these indices. In the first case, the claims ratio of the region's markets tends to be significantly lower than that of developed markets. Therefore, with the exception of Chile (because of the preeminence of the Life segment in the market risk portfolio), practically all Latin American markets present claims ratios that are located in the lower part of the developed markets band (see Chart 6.2-b).

In the second case, the operating expense ratio (which includes management and acquisition

costs as a proportion of the year's premiums) reveals opposite behavior. With the exception of four cases, most markets in the region have indicators that significantly exceed the maximum band of the developed markets analyzed, almost doubling the average values of the sample in some cases (see Chart 6.2-c).

This is evidence that, unlike in more mature markets, in most Latin American markets a higher portion of the premium is being devoted to covering operating costs.

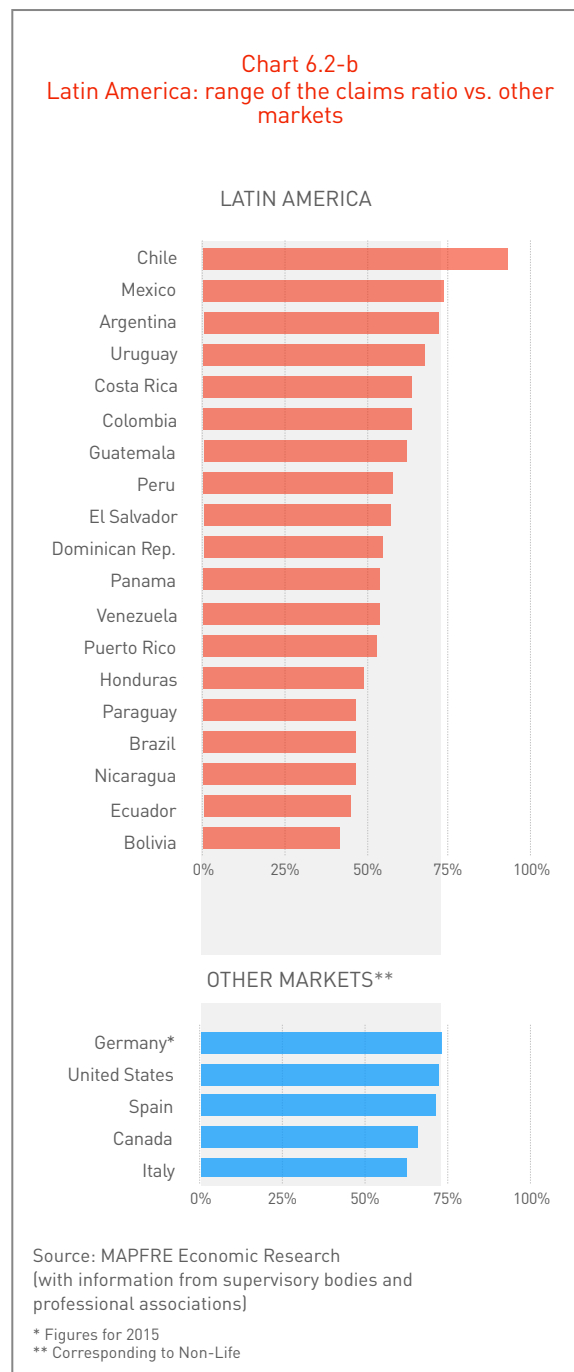
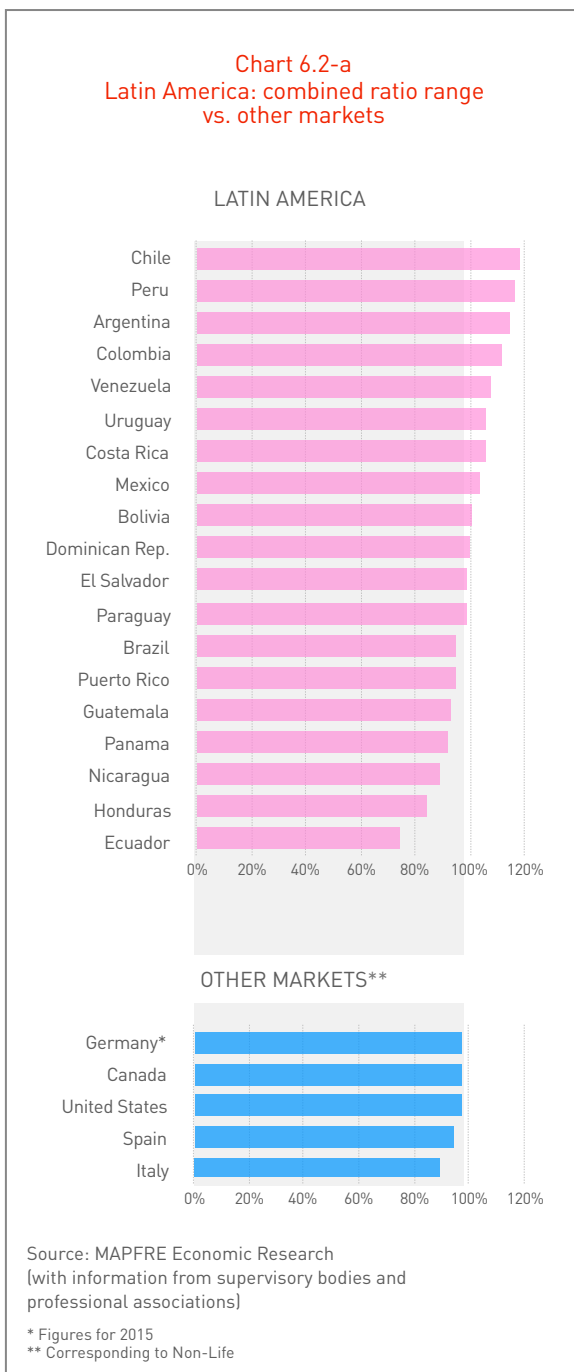
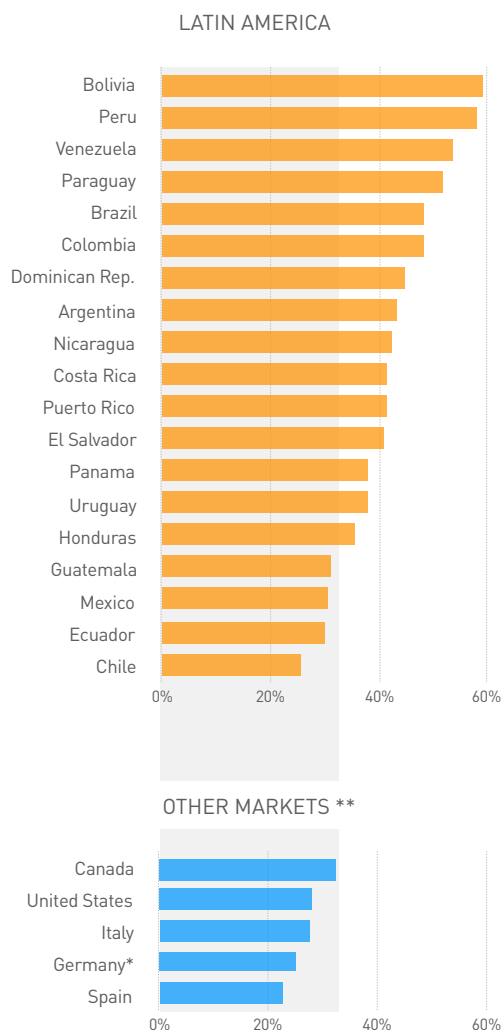


Chart 6.2-c
Latin America: range of the expense ratio
(administration and acquisition) vs. other
markets



Source: MAPFRE Economic Research
 (with information from supervisory bodies and professional associations)

* Figures for 2015

** Corresponding to Non-Life

6.3 Considerations

As indicated, in most of the Latin American markets analyzed, there is a wide range of measures to help reduce the operating expenses of insurance companies in their different components. The increase of the efficiency in expenses, therefore, could increase the relative share of the premiums used to pay compensation, which would contribute not only to insurance fulfilling its social function of risk pooling better, but also to improving the public's general perception of insurance companies in the region.

This effort implies moving forward from the two perspectives analyzed in the initial part of this section. On the one hand, it entails an increase in expense efficiency on the level of the entities for individuals, through organizational improvements and increasing use of technology as part of risk management. And on the other hand, it also means advancing at the level of the industry in each country to identify and consolidate the public goods necessary for the insurance operation, as well as the market infrastructure that can allow them to be managed to make the operation as efficient as possible for the entities themselves and their consumers.

In this regard, as in the more mature markets, trade and professional associations in each market can progress in forms of collaboration that contribute, among other things, to designing mechanisms for the use of information (which can be useful when improving pricing of products or for the underwriting of some types of risk), standardizing basic contractual contents that reduce the margins of interpretation regarding the scope of coverage (reducing legal costs at the market level), collaboration systems for managing claims (for example, in the case of the automobile line), as well as the standardization of computer protocols for information that insurance companies must exchange as part of the insurance operation in the markets.

7. Innovation

7.1 Product approval and innovation in insurance

In general, regulatory frameworks at the international level have been incorporating different variants of approval mechanisms for the products that insurance entities intend to bring to market. The source of this forecast is in the possibility that the regulatory bodies have a tool ex-ante to control the solvency position of insurance entities.

Unlike most financial products, insurance products invest the production cycle by collecting a premium in advance intended to cover a benefit in the future. This implies, from a solvency perspective, that the premium that is collected must be sufficient to cover future costs inherent to the insurance policy, not only that related to the benefit itself (claims ratio), but also those related to the sale and product management (acquisition and administration). An inadequate premium estimate, or the inconsistency between the premium calculation and the commitments assumed by the entity in insurance contracts, can lead to significant losses as claims occur and benefits become due. This situation is more serious in the case of insurance products involving a longer term. Therefore, a control ex-ante of the technical bases and their correspondence with the insurance contracts has been considered a powerful tool for the supervisory bodies to monitor the insurance entities' solvency on an international level.

However, the existence of regulatory requirements related to issuing new products, insofar as they are less flexible and efficient, can be a barrier that reduces dynamism of innovation in the insurance markets, by making it difficult to issue new products that adapt to the specific circumstances of the moment and to the new needs of consumers. This may result in a limitation on the expansion of the insurance offering and the loss of business opportunities, negatively affecting the insurance penetration level and, ultimately, consumer interest.

7.2 Regulatory mechanisms for issuing new insurance products

There is a variety of mechanisms included in regulatory frameworks on an international level to fulfill the aforementioned purpose. From a purely analytical point of view, these systems can be characterized into four types:

- **Free-use model**, in which entities can issue a new product without prior authorization or registration by the supervisory body. This is a typical model of the European Solvency II system in which there is a higher level of development of the risk management culture as part of the governance of the entities, which allows this to be the basis for replacing prior approval of the supervisor.
- **“File & use” model**, in which prior registration with the supervisory body is required before beginning to market the product.
- **Prior authorization model**, in which the insurance company must obtain the authorization of the insurance product from the supervisor prior to starting the sale.
- **Rate Authorization Model**, which requires not only some form of approval of the product in question, but also requires an authorization from the supervisory entity regarding the rate that the insurer will charge for the product.

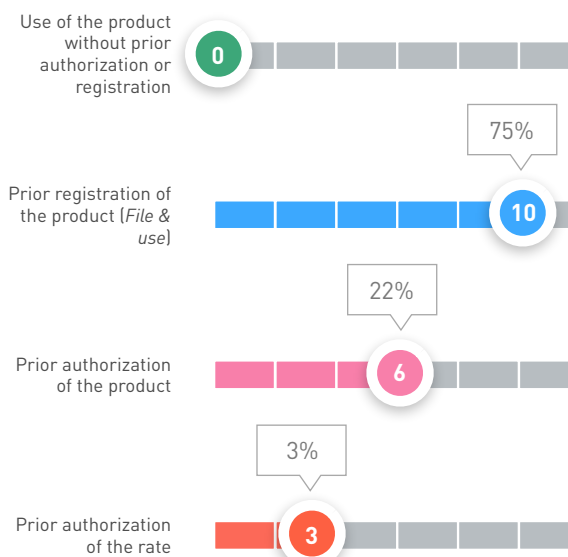
From the analysis carried out in the case of Latin American markets, it is clear that there is a great diversity of formulas when dealing with the initiatives of insurance companies to issue new products. The requirements range from the requirement of prior authorization by the supervisors of the rates to be applied, of the technical bases to be used for the calculation of the rates, of the general and/or specific conditions of the insurance policies, or a combination of all of the above. In certain systems, prior authorization is not required, but the referral for registration by the supervisor is

required, their use being allowed once the respective code has been obtained (File & use).

Chart 7.2 illustrates a synthesis of this analysis. From this information, it appears that some type of authorization is required for product rates in only three of the Latin American insurance markets (Ecuador, Dominican Republic and Venezuela), which represented 3.1 percent of the region's total premiums in 2016. On the other hand, in 6 markets (Guatemala, Nicaragua, Panama, Puerto Rico, Bolivia and Argentina), which accounted for 22 percent of Latin American insurance premiums in 2016, mechanisms are used that imply prior approval by the supervisor before the entities can bring a new product to market. In addition, ten markets (Mexico, Chile, Brazil, Colombia, Peru, Uruguay, Honduras, El Salvador, Costa Rica and Paraguay) accounting for 74.9 percent of the total regional market in 2016, were characterized by using "file & use" models, in which companies can start marketing a new product as soon as they have registered it with the supervisor. There are no models in the region where entities can market new products without having to comply with some type of prerequisite before the supervisory body.

Two entries are important in this analysis. Firstly, beyond the analytical simplification that has been done, each model used has particularities which, regardless of the category in which it has been placed for analytical purposes, may imply more or less practical complexity for a new product to be brought to market. Secondly, although there are no models in the region in which insurance companies can bring their products to market without requiring some registration or approval process, the regulatory change occurring in some markets towards Solvency II-style models could be the basis for progress towards such models in the future, as long as risk management is strengthened as an integral part of entities' governance systems.

Chart 7.2
Latin America: regulatory models for introducing new products to the market (number of countries and percentage of the regional insurance market that they represent)



Source: MAPFRE Economic Research (with data from supervisory bodies in the region)

Finally, it is important to note that with the information available it is difficult to make a strict assessment of the level of innovation that exists in Latin American insurance markets at this time. The presumption is necessarily indirect, and it associates the possibilities of increased innovation with a more flexible regulatory system to bring new products to the market. However, there has been a recent study carried out by the Inter-American Development Bank⁶ on technological innovation and its relationship with "fintech" which indirectly touches on the issue of innovation of products traded through electronic channels by insurance companies, which seems to confirm the main conclusions of the analysis carried out, noting that the most advanced countries in this regard in Latin America are Brazil, Mexico, Argentina and Chile.

7.3 Considerations

More modern regulatory systems, as they progress in strengthening the risk management function as an integral part of the insurance companies' governance systems, tend to suppress the requirements of prior registrations or approvals of products or rates by the supervisory body (notwithstanding possible controls that supervisors may carry out subsequently as part of their supervisory tasks).

In general terms, the experience analyzed in Latin American markets seems to indicate that there is still a long way to go before, without affecting the regulatory purpose that has motivated them, more efficient and flexible mechanisms are found to reduce the time and cost involved in bringing new products to market. The positive effects of those would not only expand the insurance offering, but also offer the population new products that better fit their protection needs.

A key issue is that this is an aspect that should be explicitly incorporated in the regulatory modernization processes of the region, so that the progress that has already been made in various regulatory frameworks in terms of risk management and transfer of responsibilities in this area to entities' management bodies, correspond to correlated adjustments so as to guarantee that the new products that are brought to the market provide technical and contractual bases that do not affect the solvency of entities, the integrity of the market or consumer confidence.

Third section

**Determining factors
on the demand side**

8. Structural factors (1): economic growth and income distribution

8.1 General aspects

Conceptually, to the extent that the demand for insurance is the demand for a service, and that it is intended to mitigate financial risk of economic agents on present and future income, its dynamics respond to various fundamental theories that affect the demand from the side of income, risk, consumption and savings.

On the one hand, the demand for insurance is essentially consumption, and as such, it is acceptable to think that it is governed by the theory of permanent income (Milton Friedman, 1957). The theory of permanent income establishes that people's consumption is determined in a stable relationship proportional to the value of discounted future income flow (salary and non-salary). The agent plans consumption and savings according to this. For this reason, a relationship of consumption (of insurance services) with income, capital cost (interest rates) and inflation, among other variables, is always expected to be conditional on the existing initial endowment of such consumption (the penetration index in the case of insurance demand).

Since the consumption of insurance services aims to reduce contingencies on income and wealth, it is conditioned by two additional paradigms. First, the demand for insurance seeks completeness of equilibrium of the agents, i.e. that they have assets that can cover them in the event of any contingent risk (Arrow/Debreau, 1959). The agents will be more likely to incorporate more of these protection services according to the degree of risk aversion they have (Arrow/Pratt, 1964), which is intrinsically related to the level of income and relative wealth of each of them. Thus, risk aversion grows with income and wealth levels. According to these two laws, insurance demand will also be affected

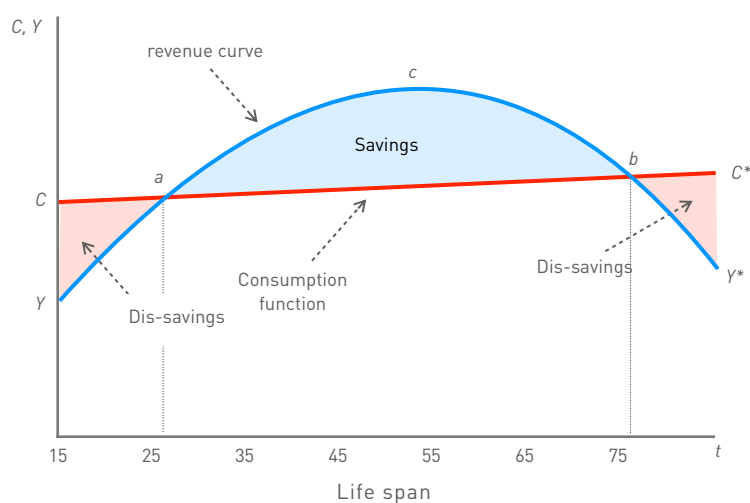
by risk aversion per se, because of the equity in income and wealth distribution, because of the relative prices of insurance compared to the rest of the products, and because of the savings rate, among other factors.

In general, these two theories influence the demand for insurance as an element for risk coverage and as a component of consumption, affecting the risk-oriented insurance business (Life and Non-Life) and purely savings-oriented insurance (assimilated herein in the Life business) with different intensity. The latter, in addition, being an instrument that tries to dilute uncertainty, is also understood subject to another fundamental theory: the life-cycle theory (Modigliani, Miller 1966, and more recently Blanchard 1985), closely related to Friedman's theory of permanent income, and according to which the agent tries to structure consumption and savings throughout his life: he depends on credit when he is young when he has no income, depends on income when he is older as he is active, and depends on savings when he is elderly. Therefore, the demand for insurance is linked to income, credit, age structure, financial costs and savings rate (see Chart 8.1-a).

8.2 The peculiarities of Latin America

In order to perform a detailed and comparative analysis of the dynamics of demand (Life and Non-Life) in the insurance market of Latin America and its countries in comparison with other emerging markets, a framework of empirical analysis developed by MAPFRE Economic Research has been used.⁷ This analytical framework is based on two elements: first, the use of a global database, and second, a model based on panel data estimation for dynamic variables (Panel VAR).

Chart 8.1-a
Income, consumption and savings level in the life cycle hypothesis



Source: Modigliani, (1966).

The results of the estimation were analyzed by abstracting them from their temporary dynamics to verify the net result of the estimated elasticity of the premiums to different macroeconomic variables. The risk-oriented model (assimilated to Non-Life) shows positive elasticity of premium growth facing changes in income (GDP) and savings (savings rate), and negative elasticity facing financing costs (interest rates). The relationship between premiums and these three explanatory variables is consistent with the equilibrium relationship proposed by the theory of permanent income. In addition, the premiums show the expected negative elasticity to variable such as: risk (premium risk); external changes in income (oil price) as expected from risk aversion; levels of inequality in wealth distribution (Gini coefficient), and penetration levels, the first being consistent with what was stated about propensity to consume, and the second what accounts for the expected negative relationship between premiums and penetration specific to the convergence of the sector. On the other hand, the model takes positive account of employment and urbanization rate. It is notable that it does not capture the relationship with the education variable but, as in Dragos 2014, this is attributable to an over-specification problem, since education has a close positive correlation with urbanization and income, so, in that sense, is redundant.

For its part, the savings-oriented model (assimilated to Life) checks to see if, while many of the abovementioned relationships have stronger elasticities (with the same sign), others change. It is the same with elasticity of growth of premiums and the savings rate. This can be expected because, in this dimension, the model is one of the savings component model, and it is complementary to precautionary-monetary savings. As mentioned above, it is notable that the model is less sensitive to income per se, and more so to employment, which hints to its connection to the life cycle theory. The elasticity sign for interest rates is also not

defined, as the sign varies between different regions. This makes sense as it is not (such as the Non-Life model) a model supported by the law of consumption/permanent income.

Specifically, in the case of the Non-Life insurance segment, elasticity of premiums to income is close to 90 percent in the Latin American market (see Chart 8.2), approximately double than in the rest of emerging markets. The relationship with exchange rates is statistically insignificant, proving the scant role of banking services in that region compared to Asia or emerging Europe. The relationship with the savings rate is positive, with the credit rate it is negative; more evidence to support the abovementioned point. On the other hand, inequality (Gini coefficient) has a large negative effect on premium growth, which is comparable to emerging Asia and China.

In the case of the Life insurance segment in Latin America, sensitivity of premiums to income is less than in the other emerging markets, and, therefore, less sensitive than in the Non-Life segment. The model is, however, much more sensitive (and positive) to the employment level, and negative to inflation, therefore this erodes non-monetary savings.

Table 8.2
Model: elasticities of the Latin American insurance market vs. other markets
for Life and Non-Life segments

	Non-Life Premiums					Life premiums				
	Emerging markets	Latin America	Europe	Asia	China	Emerging markets	Latin America	Europe	Asia	China
Constant	0.31					0.42				
GDP YoY		0.91	0.55	0.44	0.42		0.50	0.69	0.47	1.09
Inflation YoY	0.00					-0.01				
Interest rates		-0.02	-0.10	-0.06	-0.03		-0.03	0.01	0.03	-0.04
Risk premium	-0.03					-0.24				
Oil price	-0.01					-0.01				
Savings rate		0.06	0.16	0.00	-0.15		-0.37	-0.37	-0.21	-0.62
Private credit	-0.02									
Gini coefficient		-0.12	-0.03	-0.12	-0.12		-0.26	-0.27	-0.18	-0.24
Penetration rate	-0.07					-0.09				
Urbanization rate	0.11					0.06				
Employment YoY	0.02					0.22				

Source: MAPFRE Economic Research

Unlike the Non-Life segment, Life insurance premiums are strongly sensitive (and negative) to the monetary saving rate. This aspect is related to the effect of inflation and the choice of pension savings systems. The Life segment in Latin America is also very sensitive to the lack of equity in wealth distribution, which negatively affects the demand for insurance.

8.3 Penetration, the growth of economic activity and income distribution

In general, growth in insurance premiums (demand for insurance services) has a very high correlation with both developed and emerging countries' income and wealth growth (see Chart 8.3). The analysis shows that total insurance penetration in Latin America is lagging compared to other emerging markets, because pre-

mium growth, which has been slowing in both, is increasing in the Latin American region.

Therefore, although the correlation between premiums and nominal GDP growth are statistically equal in Latin America and the rest of the world, the former shows a higher deceleration in the economic activity's growth trend, therefore the slowdown of its insurance market also tends to be greater.

On the other hand, the differential deceleration of premium growth between Latin America and the rest of the emerging markets is explained by the fact that in Latin America there is a more pronounced deceleration in the Non-Life segment, which dominates the dynamics of the Life segment, resulting in a net deceleration. This is not the case in general in emerging markets and, therefore, their penetration increases in relative terms with greater speed.

Table 8.3
Model: correlations between the insurance premiums and the GDP in selected regions, 1990-2016

	Latin America	Emerging Asia	Emerging Europe	Emerging markets	Developed markets	Global Market
1990-2000	97.99%	98.58%	98.62%	98.03%	97.77%	98.00%
2000-2008	98.52%	92.52%	97.06%	98.20%	93.46%	96.90%
2008-2016	98.69%	98.40%	98.16%	98.55%	71.65%	97.19%

Source: MAPFRE Economic Research

Sensitivity of insurance demand to income level

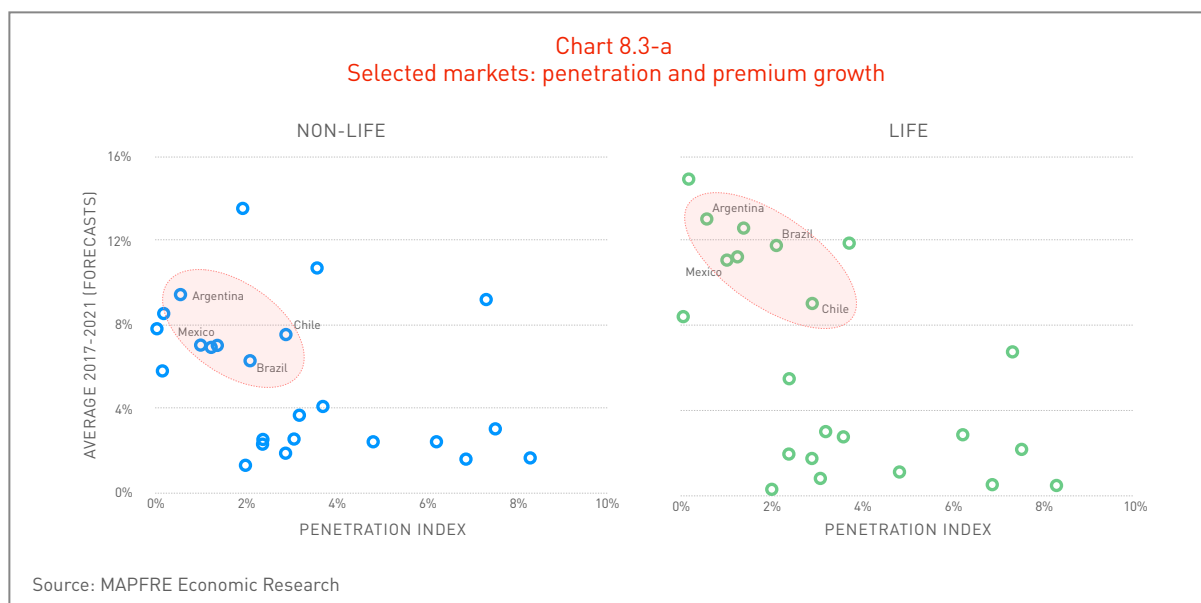
As regards the sensitivity of the insurance sector to income, in the case of the Non-Life insurance segment, this sensitivity to GDP is more than double that of the Life segment. Likewise, sensitivity of the Non-Life business to GDP is much higher in Latin America than in other emerging markets. Consequently, in the Latin American region similar slowdowns in economic activity growth produce more pronounced slowdowns in Non-Life than in Life, which does not occur in the other emerging markets.

The degree of relative penetration and sensitivity of premiums to changes in penetration

The difference in penetration rates (higher in Non-Life than in Life in Latin America, and vice

versa in the rest of the emerging markets), and the difference in elasticities (slightly less sensitive in the Non-Life segment in general), creates a lower convergence margin and lower elasticity in the Non-Life segment than in Life insurance. For this reason, due to the same growth in penetration in both insurance segments, the net effect is dominated by the lower relative contribution in the case of Non-Life versus Life. This is in the case of Latin America and explains in part that the growth of premiums is less dynamic than in the rest of the emerging markets.

This conclusion is more clearly analyzed in Chart 8.3-a, which shows that the growth of life premiums is higher than similar penetration levels in Non-Life, and that this is especially true when comparing the Latin American market with the rest of emerging markets.



Sensitivity of insurance demand to the inequality in income distribution

As shown in Chart 8.2, the elasticity of insurance demand to reductions in inequality (reductions in the Gini coefficient⁸) observed in the Non-Life segment is lower than in the Life segment. In other words, the demand for Life insurance is more sensitive to improvements in income distribution than the demand for Non-Life insurance. In this way, similar reductions in inequality have a differential effect on the Life business and promote growth.

Charts 8.3-b and 8.3-c, illustrate the effect of an increase in inequality on the growth of Life and Non-Life premiums in Latin America. In this case, 10 pp of inequality differential can produce a negative growth differential of slightly more than two points in the Non-Life segment. This effect is much higher in Latin America than in emerging markets in general, where the loss is close to half a percentage point.

Therefore, it can be affirmed that there is a differential effect of inequality on the demand for insurance in Latin America compared to the rest of emerging countries, which is only revealed in its final effect, since when observing the premiums/Gini there is hardly any difference between what is observed between this region and the median of emerging markets. What is

seen is that the elasticity in the Life segment is twice that of elasticity in the Non-Life segment (-0.12 in Non-Life and -0.26 in Life), which would explain the better relative behavior of this business as it reduces inequality in the Latin American region.

8.4 Considerations

Understanding the dynamics of the insurance sector is important in order to anticipate its performance and be able to enact economic policy actions. The insurance industry has crucial contributions to the social welfare function; is an inherent part of economic growth, a channel that transmits savings and is a key element in mitigating income volatility. The insurance sector also completes the financial balance of the system by supporting diversification that mitigates global risk.

The analysis carried out confirms that insurance demand is highly dependent on the performance of large structural factors such as income growth and distribution. The correlation levels that insurance activity has with respect to GDP, both in Latin America and in different regions around the world, are very high and indicate that to the extent that the economy shows dynamism in its growth, penetration levels will rise .

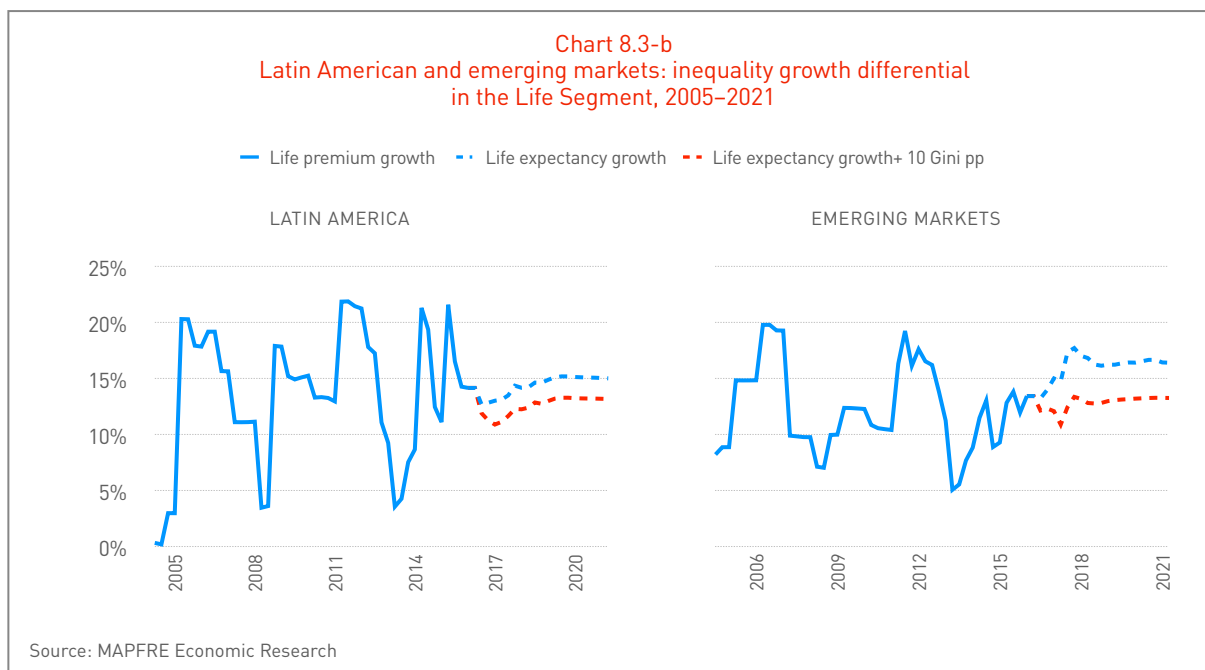
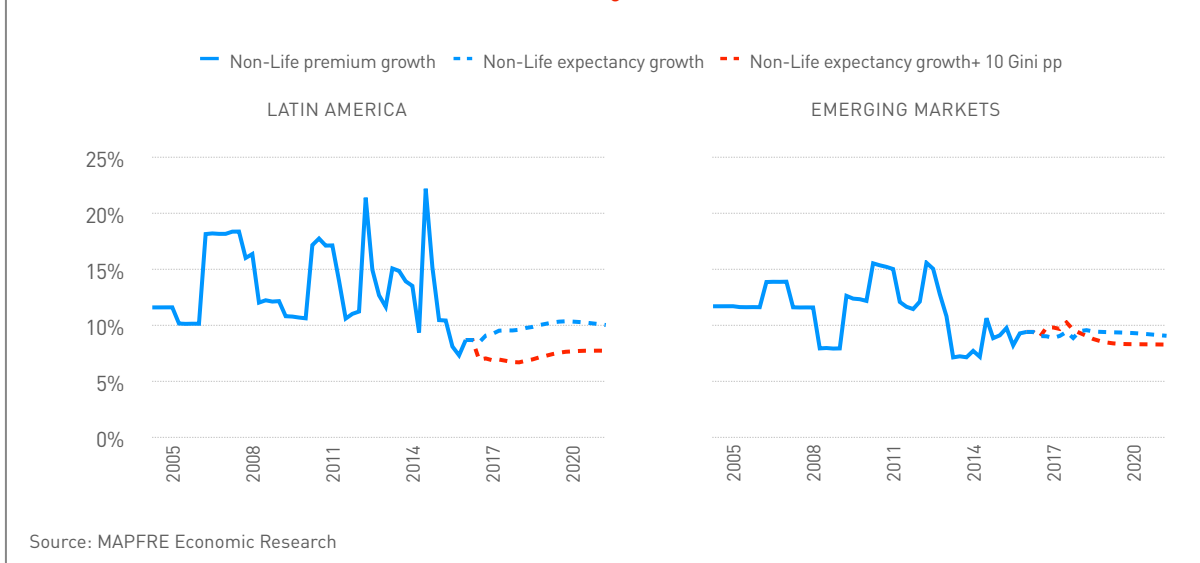


Chart 8.3-c
Latin American and emerging markets: inequality growth differential
in the Non-Life Segment, 2005–2021



An important aspect that the analysis also confirms has to do with the negative effect of the concentration of income on the growth of the demand for insurance services. This structural aspect, being a determinant of the dynamics of economies themselves, is also a determinant for insurance demand.

Thus, the intention of raising insurance penetration levels in Latin America necessarily involves governments maintaining economic policies (fiscal, monetary and financial, among others) that provide adequate incentives for economic activity and financial stability.

9. Structural factors (2): financial education

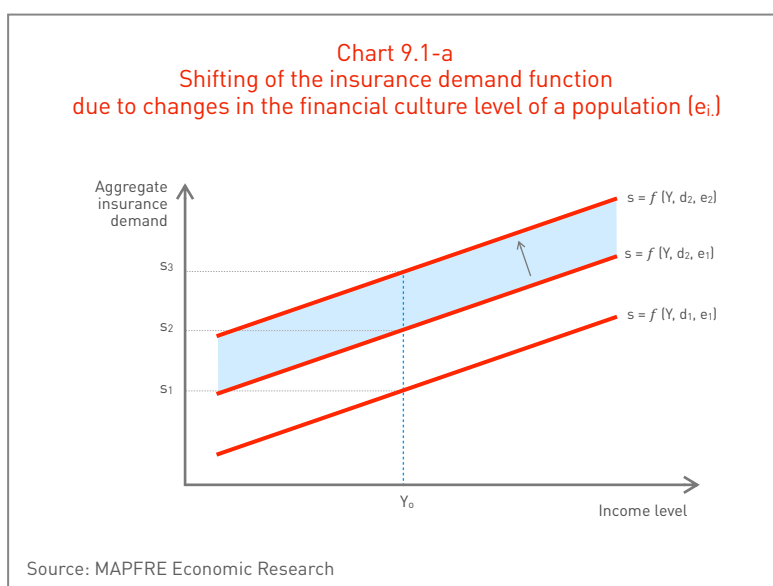
9.1 General aspects

As previously established, aggregate insurance demand is highly sensitive to the pace of economic growth, as well as to the best distribution of disposable income. However, in addition to the above, there is another factor of a structural nature that is important in explaining the growth of aggregate insurance demand in the medium- and long-term: the level of financial education. As illustrated in Chart 9.1-a, conceptually, other things equal, an increase in the level of financial literacy (e_i) should increase the level of aggregate demand for insurance services (s_i) and with this, the penetration level of insurance in the economy.

Organization for Economic Co-operation and Development (OECD) has defined financial education as the process by which consumers and financial investors improve their understanding of financial products, concepts and risks and, through information, instruction and objective consulting, develop the skills and confidence to be more aware of financial risks and opportunities, make informed decisions, know where to go for help, and take any effective action to improve their economic well-being.

According to the criteria selected by Keppler, et. al. (2015), someone is considered financially literate when they respond correctly to at least three of the following four basic concepts: risk diversification, interest-related arithmetic, inflation, and compound interest. According to the aforementioned study, the global average is that 33 percent of the adult population is financially literate, with Latin America showing a weak positioning, since the countries of the region outline 25 percent to 34 percent (see Chart 9.1b).

Moreover, Chart 9.1-c shows a comparative parameterization of the financial culture of two of the main financial markets of Latin America (Chile and Mexico), compared to two of the main advanced economies (United States and Japan), using four factors to measure. First, the educational level, understood as the highest level of education completed by the population aged 25-64 as a percentage of the population of the same age. Second, the degree of financial culture according to the knowledge survey on subjects such as interest rates, compound interest, inflation, risk diversification, mortgages and bond prices. Third, the degree of financial intervention, estimated as the percentage of respondents with an account (by themselves or together with



another person) in a bank or other type of financial institution. And lastly, public spending on education, which includes direct spending on educational institutions, as well as public subsidies related to education that are given to households and administered by educational institutions. As can be seen in Chart 9.1-c, there is still a wide gap in this regard between Latin America and the developed world.

9.2 Influence of the financial culture on insurance development

There are several channels through which financial education can determine a greater demand for risk and savings insurance products. Firstly, financial culture has an impact on the knowledge of the risks that can potentially affect individuals. This knowledge of risk motivates the need to complete the balance sheets of individuals with financial products that cover them against any contingency. This coverage frees up resources to diversify the productive environment (expanding crop selection, developing complementary economic activities, etc.). The increase in financial culture also helps to understand the concepts of temporary discount, capitalization of assets, etc., which produces greater savings and investment, which in aggregate terms leads to greater economic growth, consumption of services and, therefore, of insurance products.

Although the relationship between financial education and the increase in insurance demand is qualitatively evident, there has been no significant progress in research to quantitatively estimate this relationship. Curak, Dzaja & Pepur (2013) have determined that education raises risk aversion and, therefore, raises the demand for Life insurance, although this relationship seems not to be found yet in emerging markets (Dragos 2014).

Chart 9.1-b
Latin America: Variations in the financial literacy (percent of financially literate adults)

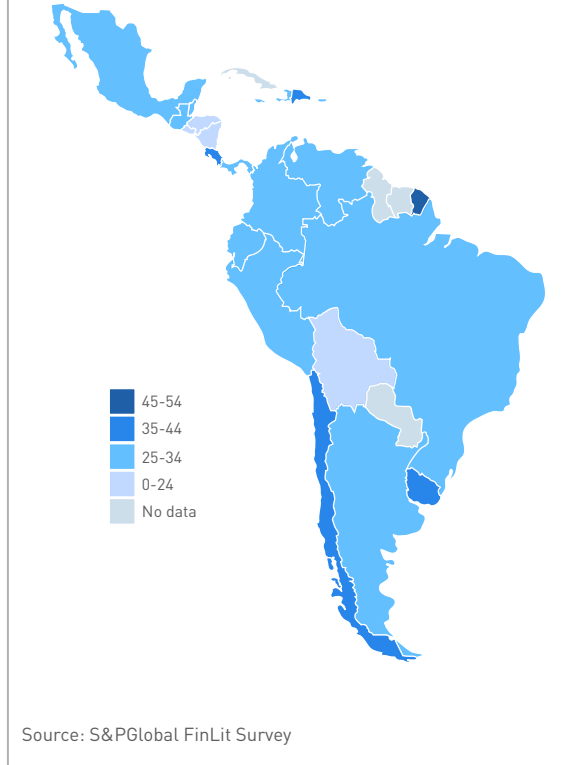
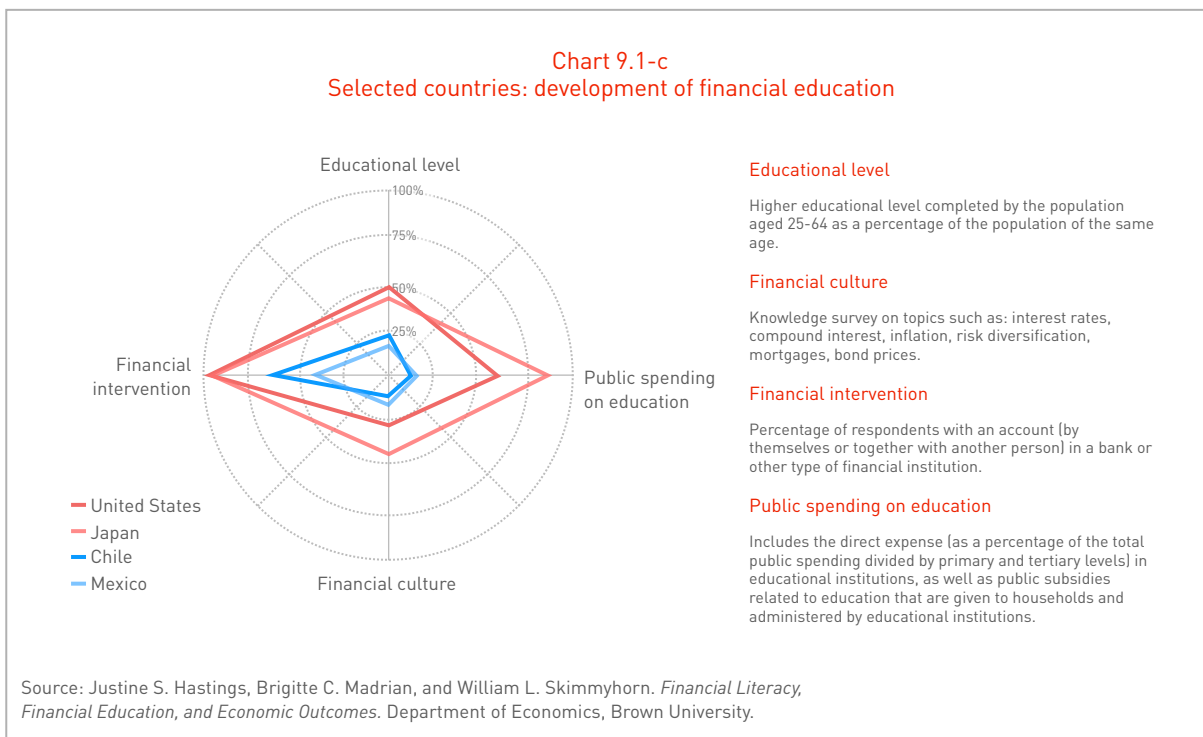


Chart 9.1-c
Selected countries: development of financial education



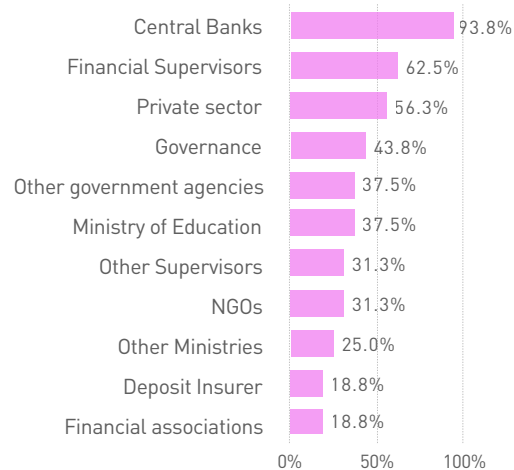
Ofoghi and Farsangi (2013) tested the relationship between auto insurance demand and risk aversion; higher education about insurance implies a greater aversion. But again, the quantitative results were not conclusive. It may, however, be assumed that the reason why the sign of this relationship is weak lies in the fact that it is already accounted for in the different levels of income, risk aversion and wealth, and cannot be represented additionally without falling into the issue of over specification.

From the point of view of public policies, there is currently no unified policy for the promotion of financial education for Latin America as a whole. However, the recommendations from international bodies (specifically the OECD, which has positioned itself as a leader in the development of recommendations in this field), and the results of experiences in other regions of the world have encouraged Latin American countries (heterogeneously in terms of time and type of policies) to develop incentives to improve the level of financial education of its population, as well as its usefulness as an instrument to achieve higher levels of financial inclusion.

A taxonomy of the efforts made in this regard in the Latin American region can be seen in Charts 9.2-a and 9.2-b. As can be seen in Chart 9.1-b, the level of financial literacy in adults in Latin America is below the global median (35-44 percent globally vs. 24-35 percent in Latin America).

Specifically analyzing the efforts in financial education in the region, it can be observed that it is the public sector that dominates the implementation of initiatives in this area. First, as illustrated in Chart 9.2-a, in terms of the entities promoting financial education efforts in the region, countries' central banks are responsible in 94 percent of the countries, Superintendencies in charge of financial supervisory matters are responsible in 63 percent, and in 56 percent of countries, these educational efforts come from private sector entities.

Chart 9.2-a
Latin America: institutions promoters of financial education
(percent of countries in which the mentioned entities promote programs)



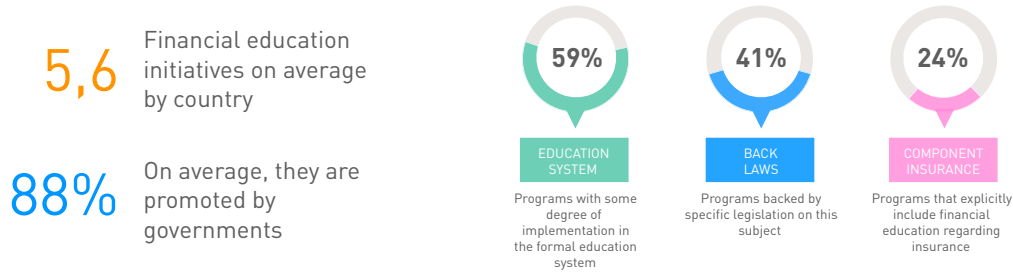
Source: MAPFRE Economic Research
(with data from García, N., Grifoni, A., López, J. C. and Mejía, D. (2013) "Financial Education in Latin America and the Caribbean: Rationale, Overview and Way Forward", OECD.

Finally, Chart 9.2-b presents a synthesis of the main characteristics of financial education strategies in the region. This information demonstrates that 88 percent of the initiatives are from governmental entities, while the proportion of public policies that are part of the formal system and which are backed by a law are relatively low.

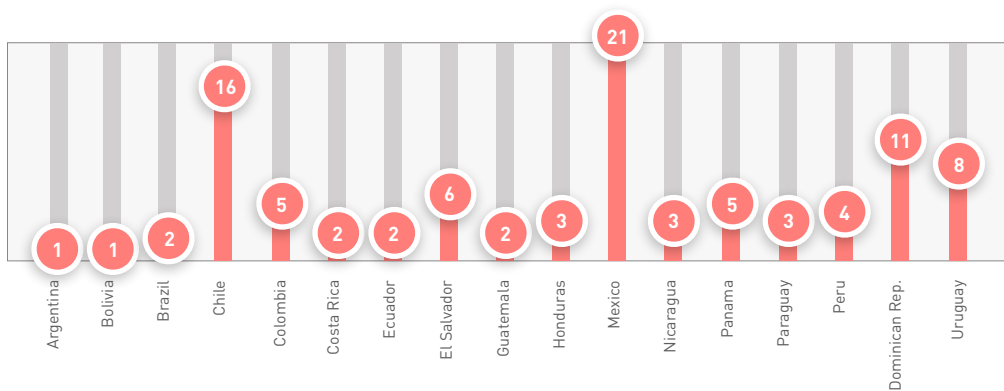
In summary, on average, there are 6 financial education initiatives in each country in Latin America. Of these, 5 are public, 3 are taught through mechanisms associated with formal education, 2 are supported by some legal system, and only 1 or 2 have specific contents in terms of risk prevention (insurance).

From this, it is concluded that there are still very few financial education initiatives regarding insurance in the formal education system, which are supported by a Law. There is an equally low representation of this type of training offered through initiatives promoted by private sector entities.

Chart 9.2-b
Latin America: outline of financial education efforts



FINANCIAL EDUCATION INITIATIVES BY COUNTRY



Source: MAPFRE Economic Research

9.3 Considerations

Financial education is a structural factor that can contribute significantly to stimulating the growth of aggregate insurance demand in the medium- and long-term and, with this, to the increase of insurance penetration levels in the economy. However, initiatives in this area are

still very limited, and merit the design and implementation of better public policies.

From the evidence analyzed in Latin American countries, it appears that there is still significant advancements to be made in this area. There are three key aspects. First, expand the participation

of the insurance industry, in coordination with the public sector, to design and implement financial education projects with specific contents regarding insurance. Second, the basis for the development of these efforts must be expressed in legal and regulatory systems that provide certainty, permanence and effectiveness in the medium-term. And lastly, these efforts, in order to have a significant effect on training individuals, must be implemented (at least partially) through formal educational systems in each country.

10. Public Policies (1): mandatory insurance

10.1 General aspects

Mandatory insurance is a factor that, from the demand side, can raise insurance penetration levels in the economy. This type of insurance has several positive effects on society and the insurance industry. First, they protect public interest in various situations, mainly those associated with third-party liability. In this dimension, insurance becomes the source of resources which, through mutualization, allows for compensation of losses caused by citizens in the performance of various economic or social activities. Second, mandatory insurance, by associating with third-party liability derived from a range of the company's activities, allows the areas of insurance participation to be expanded in economic and social activity. And third, insurance obligations are instruments used to heighten awareness regarding prevention, and in this way, they are a powerful tool in the financial education process regarding insurance. The approach to insurance through the obligatory nature of certain coverages, allows the citizen to become aware of the ability of this financial instrument to compensate losses and, consequently, give financial stability to individuals, families and businesses. In addition to the short-term effects on insurance demand, mandatory insurance is an important basis for the growth of insurance in the medium- and long-term.

To analyze the effect of the existence of mandatory insurance on insurance penetration in Latin America, this section describes how the different countries of the region address the protection of traffic accident victims through mandatory automobile insurance, the most representative and extensive mandatory insurance.

Regarding the existence of other mandatory insurance, given the dispersion that exists when gathering information on the subject, and with hardly any statistical data that allow us to measure its size, we have chosen to list the questions that the legislator or regulator should

consider when establishing the obligation to take out a policy at the end of this section.

10.2 Mandatory automobile insurance

Most Latin American countries have passed legislation requiring all owners of motor vehicles to take out a third-party liability policy covering any personal and material damages caused to third parties (see Chart 10.2). In some countries, the insurance also protects the driver of the vehicle causing the accident, provided that the conditions for exclusion from the policy are not met. In addition, some laws establish that insurers authorized to operate in this line cannot refuse to insure a vehicle if it meets the requirements of the legislation to drive in the country.

The inclusion of this insurance in the region dates back to 1974 in Brazil, and 1986 in Chile and Colombia, but in the majority of Latin American countries, the regulation came into effect in the nineties (Argentina, Bolivia, Costa Rica, Ecuador, Peru, Puerto Rico and Venezuela), the most recent being the Dominican Republic (2002), Nicaragua (2003), Uruguay (2009), Honduras (2015), and Panama (2016).

In Mexico, third-party liability insurance is mandatory for automobiles in several states of the Republic, in Mexico City, and in September 2014, Article 63 Bis of the Law of Roads, Bridges and Federal Autotransport came into effect that establishes that all vehicles that drive on federal roads and bridges must have a mandatory third-party liability insurance. However, of all countries that have this insurance, Mexico is the only one that has not implemented it nationally.

The circumstance may arise that some countries have legislated on mandatory insurance, but the regulations established by law have not been approved. This is the case in Guatemala, where there has been a regulation on this matter since 1996, and the Traffic Law Regulation (Governmental Agreement 273-98) refers to a

specific regulation on the insurance that has not come to fruition. In some cases, however, the legislation is very recent and said regulation is being prepared, such as in Honduras, where the Honduran Institute of Land Transportation (Instituto Hondureño de Transporte Terrestre, IHTT), the body in charge of implementing the Transportation Law, has created a Commission that is working on drafting the special regulations derived from the new Law, including vehicular third-party liability. In Panama, the Law regulating Basic Mandatory Traffic Accident Insurance was approved at the end of 2016 and the Executive Branch, through the Superintendence of Insurance and Reinsurance, is in charge of regulating said Law.

In the case of Ecuador, as a result of the Reform to the Organic Law of Land Transportation and Traffic Safety, as of January 2015, the Public System for Payment of Traffic Accidents (Sistema Público para Pago de Accidentes de Tránsito, SPPAT) has replaced the Mandatory Traffic Accident Insurance (Seguro Obligatorio de Accidentes de Tránsito, SOAT) with the same conditions of protection that existed. It is an institution that is supervised by the Ministry of Transportation and Public Works that provides economic protection to any citizen, be it a driver, passenger or pedestrian, who suffers injuries or dies due to a vehicular accident. The SPPAT rate is collected through the National Transit Agency (Agencia Nacional de Tránsito, ANT) through the registration payment made by the vehicles owners that drive in Ecuador. Although the new system is not managed by private insurers, it has been taken into account in this study as a system for financial compensation and protection for victims of traffic accidents.

Finally, there are other countries where the regulations that create mandatory auto insurance have been repealed or declared unconstitutional, as in El Salvador and Paraguay.

Mandatory insurance coverage

With regard to coverage, mandatory insurance covers personal injuries, including compensation for death or disability, medical, surgical, pharmaceutical and hospital expenses in all countries. Another very extended coverage is that of burial expenses and, to a lesser extent, that of legal defense. In some countries, such as Mexico, Nicaragua, Panama, the Dominican Republic

and Venezuela, material damages of injured third parties are also covered. In Puerto Rico, the so-called “mandatory” insurance responds to damages caused to third-party motor vehicles as a result of a traffic accident.

Apart from these coverages, there are countries where this insurance develops a more social function and, in addition to covering the damages to third parties, its objectives include serving all victims of traffic accidents, including those caused by uninsured or unidentified vehicles, including the driver of the vehicle causing the accident, with some exceptions: responsibility of automobiles or other motorized vehicles, which are the result of wars and earthquakes, suicide or self-inflicted injuries, etc.

In Bolivia, the Mandatory Traffic Accident Insurance (Seguro Obligatorio de Accidentes de Tránsito, SOAT) provides uniform and single coverage of medical expenses for accidents, and compensation for death or total and permanent disability to any individual who is in an accident caused by a motor vehicle. The injured individual can be the driver, the passengers in the vehicle or the pedestrians.

In Brazil, the Mandatory Insurance for Personal Damages Caused by Roadway Motor Vehicles (Danos Personales Causados por Vehículos Automotores de Vías Terrestres, DPVAT), covers all persons, whether transported or not, who were victims of traffic accidents caused by motor vehicles on land roads, or by their cargo. The DPVAT compensations are paid to all the victims or their beneficiaries, even if the vehicle causing the accident has stopped paying insurance.

Mandatory Personal Accident Insurance (Seguro Obligatorio de Accidentes Personales, SOAP) in Chile, Mandatory Traffic Accident Insurance (Seguro Obligatorio de Accidentes de Tránsito, SOAT) in Colombia and Peru, and Mandatory Automobile Insurance (Seguro Obligatorio de Automóviles, SOA) in Costa Rica, cover the injury and death of traffic accident victims, whether or not there is fault on the part of the driver. The SOAP (Chile) does not work like a third-party liability insurance, but rather as accident insurance. In Uruguay there is special coverage when a person has suffered personal injuries as a result of an incident and one of the following situations occurs: uninsured vehicle, hit-and-run or stolen vehicle.

Table 10.2
Latin America: synthesis of the regulations on mandatory third-party liability insurance for automobiles.

Country	Mandatory insurance regulations for automobiles (third-party liability for automobiles)	Coverage
Argentina	Traffic Law 24,449, of 1995	Article 68 of Traffic Law 24,449 of 1995, provides that all automobiles, trailers or semi-trailers, must be covered by insurance covering any damage caused to third parties, whether or not transported.
Bolivia	Law no. 1,883 of June 25, 1998, on Insurance	The SOAT Policy covers traffic accidents involving insured vehicles or unidentified vehicles. The action attributable to the driver is not enforceable against affected passengers or pedestrians.
Brazil	Law no. 6,194/74, amended by Law 8,441/92, 11,482 / 07 and 11,945/09	All persons, whether transported or not, who were victims of traffic accidents caused by motor vehicles on land roads, or by their cargo are covered by the insurance. The coverage even includes personal injuries caused to the owners and drivers of the vehicles, their beneficiaries and dependents.
Chile	Law No. 18,490, of 1986, establishes the Mandatory Insurance for Accidents Caused by Motor Vehicles, amended by Law no. 19,887 on traffic accident insurance	The Mandatory Personal Accident Insurance, (Seguro Obligatorio de Accidentes Personales, SOAP), consists of a personal accident insurance coverage that must be contracted by the owner of any motorized vehicle, trailer or cargo with an insurance company. This insurance is intended to cover the risks of death and personal injury that are a direct consequence of accidents suffered by people in which the insured vehicle is involved.
Colombia	It was created by Law 33 of 1986 and regulated by decree 2544 of 1987. It is currently governed by articles 192 et seq. of the Organic Statute of the Financial System and Decree 3990 of 2007.	The SOAT protects the personal injuries caused to people in traffic accidents. It is universal coverage, i.e., it covers all victims of traffic accidents.
Costa Rica	Traffic Law No. 7331 of 1993 and its reforms: Law 9078 of Land Traffic	The SOA covers the injury and death of victims of traffic accidents, whether or not there is fault on the part of the driver.
Ecuador	The Public System for Payment of Traffic Accidents (Sistema Público para Pago de Accidentes de Tránsito, SPPAT) replaced the SOAT, according to the Amending Organic Law to the Organic Law of Land Transportation, Traffic and Road Safety (December 29, 2014).	Every victim of traffic accidents that took place in the national territory has full rights to access the service provided through the Public System for Payment of Traffic Accidents. Exclusions of any nature are not permitted, except those expressly indicated in its Regulation. Likewise, the State, through the System, will assume the expenses of the victims of traffic accidents, according to the conditions and limits established for the regulations.
El Salvador	The Law of Land Transport, Traffic and Road Safety, enacted by Legislative Decree No. 477 of 1995, established mandatory insurance for automotive vehicles in articles 110 through 115. Some articles of this Law were declared unconstitutional	

Table 10.2 (continued)
Latin America: synthesis of the regulations on mandatory third-party liability insurance for automobiles.

Country	Mandatory insurance regulations for automobiles (third-party liability for automobiles)	Coverage
Guatemala	Decree 132, of 1996, Traffic Law. Article 29 establishes the obligatory nature of any vehicle authorized to travel on public roads to take out third-party liability insurance against third parties and occupants in accordance with the regulations set forth in the Law. The Regulation of the Law (Government Agreement 273-98) in turn refers to a specific regulation on the subject that has not been carried out.	
Honduras	Decree no. 155 of 2015, which approves the Law on Land Transportation of Honduras. The Honduran Institute of Land Transportation (IHTT), body in charge of the execution of this Law, has created a Commission that is working on drafting the Special Regulations derived from the new Law on Transportation, among them vehicular third-party liability.	Your coverage allows you to pay hospitalization or medical care, surgical, pharmaceutical and dental care, or rehabilitation expenses of an occupant or non-occupant of a vehicle involved in a traffic accident, in which an insured vehicle is also involved
Mexico	Law on Roads, Bridges and Federal Automobile Transportation New Traffic Regulations of the Federal District (08/17/2015) and other federal laws.	Third-party liability coverage with different characteristics depending on the particular legislation in question.
Nicaragua	Law No. 431 of 2003, for the Regime of Vehicle Movement and Traffic Violations	The objective of third-party liability insurance is to provide the driver of any motor vehicle driving in the country, the protection and coverage against legal third-party liability of the owner or driver of the motor vehicle, to cover possible personal injury, including death, that may be cause to third parties, as well as damages to private or public property.
Panama	Law 68 – 12/13/2016, which Regulations Mandatory Basic Insurance for Traffic Accidents	The basic mandatory insurance policy for traffic accidents must grant a minimum uniform coverage of damage to property and personal injury within the limits, coverage and validity.
Paraguay	Law 4,950/13 created the Mandatory Insurance for Traffic Accidents (SOAT), repealed in February 2014	
Peru	In 1999, the General Law on Land Transportation and Traffic was published, which included the SOAT. Its Regulation was issued in 2000. It came into effect on July 1, 2002.	The SOAT covers all persons who are victims of a traffic accident (driver, vehicle occupants and pedestrians)

Table 10.2 (continued)
Latin America: synthesis of the regulations on mandatory third-party liability insurance for automobiles.

Country	Mandatory insurance regulations for automobiles (third-party liability for automobiles)	Coverage
Puerto Rico	Law 253 of 1995 established mandatory third-party liability insurance for vehicles	This insurance compensates for the damages caused to third party vehicles, resulting from a traffic accident occurred in Puerto Rico for which the owner of the insured car is legally responsible.
Dominican Republic	Chapter VI of Law No. 146-02, on Insurance and Sureties	Mandatory motor vehicle insurance covers the civil liability of the underwriter or insured party of the policy, the owner of the vehicle, and the person who has, with its authorization, the custody or was driving that vehicle. The policies must always contain the following minimum coverage: damage to third-party property and bodily injury to third parties.
Uruguay	Created by Law No. 18,412 that came into force on August 19, 2009 and is regulated by Decree E/ 2267.	There is special coverage when a person has suffered personal injuries as a result of an incident and one of the following situations occurs: uninsured vehicle, hit-and-run or stolen vehicle
Venezuela	Article 35, of the Land Traffic Law of 1996	Every vehicle must be covered by a third-party liability policy to cover damages caused to the State or individuals.

Source: MAPFRE Economic Research

Mandatory insurance rates

Due to it being a mandatory insurance contract with the objective of protecting of the injured in a traffic accident, the authorities of some countries intervene in setting rates, to a greater or lesser extent. From the group of 16 Latin American countries that have a compensation system for traffic victims, in 7 of them the insurance rates are not free or have some limit established (see Chart 10.2).

The analysis of DPVAT premium rates in Brazil is carried out annually by SUSEP. In Colombia, the SOAT is a type of insurance that is part of the country's General Health and Social Security System and both rates and coverage are regulated by the government. In Costa Rica, rates are determined by the insurers and authorized by the General Insurance

Superintendency (Superintendencia General de Seguros, SUGESE), but requests for authorization of rates with profit margins exceeding 6 percent are not processed. The SPPAT, in Ecuador, is a rate that is calculated according to the class of vehicle, if it is for private or public use, the cylinder capacity and the age of the vehicle. In Puerto Rico, the cost of the policy and the maximum amount of compensation is stipulated by law. The average cost of the SOA (mandatory commercial premium for each vehicle category) in Uruguay is reported by the Superintendency of Financial Services, and has a one-year validity period. In December 2003, the Venezuelan Superintendency of Insurance approved the new general and standard Vehicle Third-Party Liability Policy, which means that insurance companies must apply the content of said policy and its rate.

Monitoring the use of mandatory insurance

One very important factor to ensure the correct application of the regulations on mandatory automobile insurance is the way in which the contracting and validity of said insurance is monitored by the governing bodies. From the study of the current legislation in each of these countries, the interest of the different governments in improving these systems is observed in order to check that all the vehicles that are required to be insured, in fact are. This is done so by applying different formulas, but the requirement that the driver or owner of the vehicle possesses the corresponding insurance certificate or verification is the most common and in many cases they must meet certain established specifications. Additionally, failure to comply with the rule always entails a penalty, which is usually a fine or loss of driver's license.

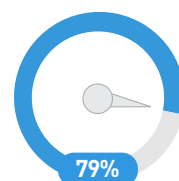
In some countries the aforementioned verification or certificate is sufficient proof of the validity of the mandatory insurance, but in other countries this is not the case. Therefore, in the analysis that has been carried out on the different existing systems, the results of which are summarized in Chart 10.2, a formal inspection mechanism is considered to be in place when there is a register with updated information where it can be verified that the vehicle complies with current regulations. They have this type of system in Bolivia, Colombia, Costa Rica, Ecuador, Nicaragua and Peru. In Puerto Rico, to ensure compliance and to guarantee the mandatory nature of the acquisition of third-party insurance of this nature, Law 253-1995 designed a system to collect insurance along with the payment of the rights of issuance or renewal of the vehicle license, i.e., at the time of purchase of the vehicle's tag.

Compensation mechanisms

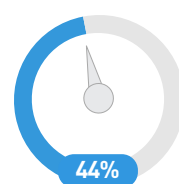
Another important aspect to evaluate in the study of mandatory automobile third-party liability insurance is the existence of a compensation system that guarantees coverage to all victims involved in a traffic accident, thus creating universal coverage. As can be seen in Chart 10.2, more than half of the countries analyzed have a fund of this type.

To cover the claims in which the vehicle is not identified, Bolivia has created the SOAT-FISO Compensation Fund, which is made up of

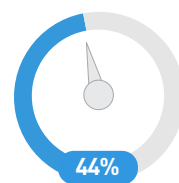
Chart 10.2
Latin America: main features of the mandatory insurance system for automobiles
(percentage of countries, %)



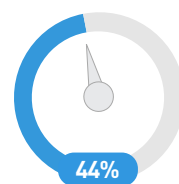
There is mandatory TPL insurance for automobiles on a national level



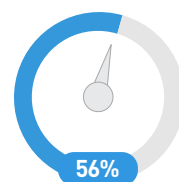
Mandatory insurance includes other coverage in addition to the TPL



There is rate control for mandatory insurance



There are formal inspection mechanisms that imply some kind of registration



There is some kind of guarantee fund to create universal coverage

Source: MAPFRE Economic Research

mandatory contributions from the insurance entities that have been authorized to grant the SOAT.

To operate in the DPVAT in Brazil, the insurers have to adhere simultaneously to the two specific consortiums, each encompassing certain categories of vehicles. DPVAT resources are financed by vehicle owners, through an annual payment. Of the total collected, 45 percent is transferred to the Ministry of Health (SUS), for medical/hospital care costs for victims of traffic accidents throughout the country. Five percent is transferred to the Ministry of Cities (DENATRAN), for its exclusive application in programs aimed at the prevention of traffic accidents. The remaining 50 percent is directed toward payment of compensations and reserves.

In Colombia, in cases where there is no insurance or the vehicle is not identified, the Solidarity and Guarantee Fund of the health sector, through the sub-account of Catastrophic Events and Traffic Accidents (Eventos Catastróficos y Accidentes de Tránsito, ECAT), covers the victims. All insurance entities that offer mandatory insurance in Costa Rica, in proportion to their participation in the total premiums issued for said insurance, will be jointly responsible for up to the limit of coverage in cases of unidentified, uninsured, or stolen vehicles, and in the event the insurer of the vehicle causing the accident has been dissolved or is in insolvency. The purpose of the Compensation Fund in Peru is to cover the damages to victims of traffic accidents caused by vehicles that have not been identified and that were hit and runs. The Automobile Accident Compensation Administration (Administración de Compensaciones por Accidentes de Automóviles, ACAA) in Puerto Rico is a public corporation that administers health insurance and compensation insurance for victims of automobile accidents and their dependents. Finally, the Compensation Fund for Special Coverage in Uruguay, administered by the National Road Safety Unit (Unidad Nacional de Seguridad Vial, UNASEV), is responsible for the special coverages: uninsured vehicle, hit-and-run or stolen vehicle.

10.3 Considerations

In general, there is a series of general conditions that should be taken into consideration in the markets so that mandatory insurance can be introduced successfully?. In this respect, the following aspects are key for this purpose:

- a) Existence of a solid insurance market.
- b) Evaluation of the need to foresee the obligation for the insurance in question depending on whether this mechanism solves a problem that could not be met by voluntary insurance.
- c) Evaluation as to whether the risk in question is insurable, i.e., if it has a random component, if there is enough information to measure it (estimate its costs and frequency of claims), and if it is possible to evaluate its consequences economically.
- d) Establishment of mechanisms for the pricing of these insurance policies with adherence to technical calculations and pertinent statistical bases.
- e) Accurate delineation of the insured's liability, insurance coverage and limits of compensation, which will be reflected in the respective insurance policy.
- f) Implementation of mechanisms to establish effective control over the use of mandatory insurance by citizens required to have it.
- g) Definition of a mechanism that stimulates competition among insurance entities, so that, without affecting the technical principles that define the sustainability of this activity, affordable and competitive prices for consumers are achieved.
- h) Establishment of compensation and guarantee mechanisms that allow coverage to be created that addresses, universally in society, the problems that gave rise to the establishment of mandatory insurance.
- i) Existence of adequate reinsurance products so that direct insurance entities can diversify and support the risks they cover.

As mentioned above, in its dimension as a public policy instrument, the use of mandatory insurance can not only help to stimulate the growth of insurance demand (and thereby increase insurance penetration in the economy), but also to protect public interest by employing a risk dispersal and loss compensation mechanism as a way to efficiently deal with situations that would otherwise be complex to address and, ultimately, help raise the general well-being of the population.

11. Public Policies (2): tax incentives

11.1 General aspects

Within the framework of public policies, the use of tax incentives is another instrument that has demonstrated its capacity to stimulate the growth of insurance demand in the short- and medium-term.

From a conceptual point of view, the public sector seeks to maximize social welfare by using a combination of different economic policy instruments and public policies. The insurance industry can be valuable in pursuing this objective, since it is an instrument that manages risk, savings and spending.

In this way, the public sector can incentivize the demand for insurance through a prudential risk management mechanism (such as the establishment of mandatory insurance), a strategy that encourages complementary action to the public sector itself in certain activities of general interest (such as participation in the systems linked to social security), or through the use of a tax mechanism.

In general terms, the tax instruments available to the public sector for this purpose are mainly focused on two purposes:

1. **Create incentives to promote savings or consumption.** From this perspective, these instruments are aimed at:
 - Supporting co-financing of the pension system by stimulating savings (v.gr., supplements to pensions).
 - Finance investment in the economy and support growth, employment and income growth.

- Reduction of the external vulnerability of the economy, strengthening the checking account and incentivizing deleveraging.
- Release savings to generate demand in cyclical slowdowns.

2. **Create incentives to manage risk.** In this case, these mechanisms allow:

- Reduction of uncertainty regarding the present and future income of individuals.
- Support of diversification and mitigation of risks to the income and wealth of families.

Thus, the public sector articulates tax policies that seek to generate, in the first case (savings/ consumption incentives) a change of preferences that create certain incentives for saving over consumption and, therefore, increase national savings or reduce aggregate demand (or vice versa). And in the second case (risk management incentives), they aim to generate a change within consumption preferences that stimulate the demand for insurance in search of coverage that completes the balance of economic agents (i.e., to have assets that allow them to cover any contingent status) and mitigate the total risk on their balance and that of other agents, but that do not alter the total size of aggregate demand or savings.

In this way, tax instruments in the hands of the public sector have different degrees of effectiveness in their influence on economic performance:

a) In the first case (savings/consumption incentives), tax instruments can be very effective, insofar as they are capable of altering the composition of demand and national savings. The most effective taxes for this purpose are those that are applied to people's income, business profits and wealth or equity. Income tax is paradigmatic as it is personal, direct and progressive. In this case, facing tax changes, economic agents react by modifying their decisions regarding participation in employment, savings and consumption, consequently affecting the income generation process.

b) And in the second case (risk management incentives) the instruments may be less effective from a tax point of view, in that they slightly alter the quantity but they do alter the composition of national savings or aggregate demand. The value added tax on goods and services that are sold is a good example. This tax is indirect (since it does not tax the income) and slightly distorting (since it does not change the amount of intertemporal

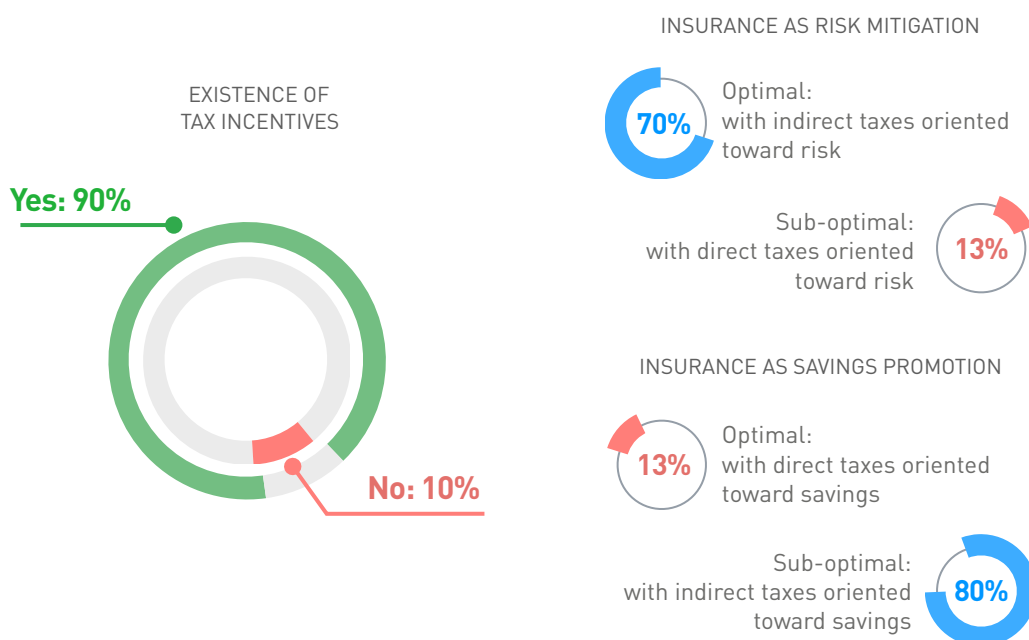
consumption of individuals thanks to the existence of substitutes at different prices).

In this way, according to the intensity and the nature of the tax instruments used by the public sector, it can be understood if the objective of public policies is more focused on risk mitigation or savings management. It is important to note that government decisions on this matter are always related to the balance-growth duality of the countries.

11.2 Regional balance and considerations

In general terms, in Latin America the objective of mitigating the risk in the equilibrium of the economic agents is represented and used through reductions of the value-added tax, as is the case in Argentina (occupational risk, life risk insurance), Brazil (insurance against credit risk), Chile (life risk and health), Colombia (life risk and health), Mexico (life), El Salvador (insurance and reinsurance, in general).

Chart 11.2
Latin America: countries with tax incentives oriented toward promoting insurance demand (percentage of countries)



Source: MAPFRE Economic Research (with KPMG data, *Latin America Indirect Tax Country Guide*, 2017)

While the objective of incentivizing savings is mainly reflected in exemptions or reductions in income tax or income, as in the case of Argentina (life savings), Brazil (savings reduction insurance in non-profit entities), Chile (life savings for the pension system), Mexico (deductions in life insurance with long-term savings components), El Salvador (lower tax on compensations). In addition, we found cases (Argentina and Mexico) where risk insurance is promoted with savings promotion instruments (in Mexico) and savings insurance with instruments aimed at reducing risk (Argentina, VAT reduction in life insurance savings).

The various tax policy efforts to promote insurance in Latin America are summarized in the contents of Chart 11.2. As a reprimand for this information, 90 percent of the countries in the region have implemented some kind of tax incentive to stimulate the demand for insurance (both in the form of savings / consumption incentives and incentives to manage risk).

In general, it is observed that in the case of incentives aimed at stimulating demand with the purpose of mitigating risks and reducing income volatility, there is a more appropriate tax treatment (70 percent countries use reductions on VAT to incentivize taking out insurance, especially in the case of health, agricultural and life risk insurance).

However, the situation in terms of incentives aimed at increasing the demand for insurance for the promotion of medium- and long-term savings is still improving. In this case, most of the effort (80 percent of countries) is channeled through sub-optimal instruments (VAT) to increase national savings, and only in 13 percent of cases is said effort articulated through reductions of the direct tax burden (income taxes). In this case, it would make sense to transfer part of the tax effort made through VAT to equivalent efforts made through income tax. With this, it would be possible to increase the contracting of life insurance as a mechanism for channeling savings and, therefore, progress would be made in the objective of promoting national savings. There is still ample tax space to do so.

The information available does not allow us to carry out a general analysis of the quantitative impact that the implementation of the mentioned tax incentives has had on the insurance demand and, consequently, on the penetration levels in the region. However, in some cases, such as Brazil where such a distinction is possible, a profound effect is observed. Charts 12.2-a, 12.2-b and 12.2-c (of the following section) illustrate this cumulative impact in 2016, in which almost 2.2 percentage points of the penetration in that country are derived from the effect of the application of the aforementioned tax incentives.

In general, the tax incentive policies are oriented correctly, but the effort seems biased towards the objective of stability and risk mitigation, while the generation of savings still has room to improve, emphasizing more in the use of direct tax instruments (income tax). The promotion of more complementary medium- and long-term savings is undoubtedly an element that could support the strengthening of pension systems (under heavy financial pressure in most of the countries of the region), also contributing to the financing of productive activities with long maturation and, thereby, stimulating the economic growth of the region.

12. Public Policies (3): participation in new activity areas

12.1 Insurance in new activity areas

One of the factors that can have a short-term influence on the increase of insurance penetration from the demand side is the implementation of public policies that allow the insurance industry to participate in specific areas of economic and social activity, as in pension systems (insurance for work, disability and life risks, and annuities), or in the provision of health services as a substitute or complementary to public social security systems.

In order to make a general assessment of the effect that this factor has had on the performance of the Latin American insurance industry during the last decades, an analysis has been carried out on these types of policies that have been implemented in each of the countries of the region, to later estimate to what extent these policies have been beneficial to increase the level of insurance penetration in the respective markets.

Of the 19 Latin American countries analyzed, in 10 of them the respective governments have implemented one or several public policies that have made it possible for the private sector, and specifically the insurance industry, to participate in new areas of activity in order to contribute to attending problems of an economic and social nature.

Most of the cases observed are based on the reforms of the Social Security systems that were carried out first in Chile, in 1980, and later in other Latin American countries in the nineties. In general, these reforms have partially or totally transformed the existing distribution systems with other savings and individual capitalization systems, in which "the State has been stripped of the operational powers of the social security networks, transferring them through various modalities to the private administration of concessioned pension services (...) seeking, possibly, to increase efficiency in the execution of the public policies corresponding to the subject.

Thus, the State, through the assistance of regulation, control and supervision of the services provided, seeks to preserve the effectiveness of the aforementioned policies..."¹⁰

Based on these reforms, the insurance industry participates in the social security pension systems, mainly granting two types of coverage: a collective disability and survival insurance that pension fund administrators must take out for their members, and life annuity insurance taken out by retirees or beneficiaries who have chosen this type of insurance to receive their pension.

In some countries, such as Nicaragua, the reform has not been implemented, and in the case of Argentina, in November 2008, the Argentine Congress approved the Social Security Reform that eliminated the system of individual capitalization managed by private administrators, and transferred it to a single integrated system of distribution and public administration. In Bolivia, for its part, until November 2006, the risks of disability and death were transferred from the pension fund administrators to insurance companies through the underwriting of a policy. However, as of the indicated date, the management of both risks has been under the responsibility of the fund administrators.

The other relevant public policies observed in the analysis carried out refer to another one of the key social security benefits: health insurance: As a result of the implementation of these policies, insurers participate by managing the healthcare assistance, monetary and preventive benefits provided by the mandatory occupational accident insurance and that in some countries have also been implemented with the pension system reforms, creating specific companies to offer this coverage (Occupational Risk Insurers in Argentina and Occupational Risk Administrators in Colombia). In Costa Rica, the employer's obligation to insure its workers is regulated by the Labor Code of 1943 and is provided by the National Insurance Institute, which is state-owned.

Puerto Rico is a noteworthy case regarding the participation of private insurance in the provision of health services. In 1993, the Government of Puerto Rico approved a Health Reform, the main objective of which was to manage, negotiate and contract with insurers and healthcare providers, quality medical-hospital care to provide for its beneficiaries, particularly those in need of medical care. Currently, according to data from the Office of the Insurance Commissioner of Puerto Rico, 65 percent of the insured lives in the health line are protected by some type of coverage that draws from federal funds: 39 percent of Medicaid ("Mi Salud" health insurance system that provides medical-hospital coverage and medication to all individuals or families in need in Puerto Rico), and 26 percent of Medicare (that provides coverage mainly to retirees).

The case of Brazil is different from the policies analyzed above, since it is not an explicit government policy that favors the participation of the insurance industry in new business areas, but rather the development of insurance lines that have been favored due to tax incentives. This is the case with the insurance called Vida Gerador de Benefício Livre (VGBL) and private health insurance. The analysis of these lines has been included in this section because of its importance in the performance of the Brazilian insurance market and because its quantitative effect on the total insurance industry in that country can be easily isolated.

The VGBL insurance is an insurance for people who, after a period of accumulation of resources, provide investors (insured parties and participants) with a monthly income (which may be for life or for a certain period) or a single payment. This product has tax exemptions on income tax that only takes effect at the time of redemption or receipt of income, and focuses only on the profitability obtained. This line began to be sold in 2003 and in 2016 reached a premium volume of 104.970 billion reais (30.123 billion dollars), which represents 51 percent of the insurance sector.

With regard to health insurance, it should be noted that the Brazilian health system has two main components: the public system, regulated by Law 8,080 of 1990, which instituted the Unified Health System and established universal access to health services for all Brazilians, and the private sector, made up of the Supplementary

Health Sector (insurers are included among its operators) and direct private assistance.

The Brazilian private health sector as a whole banked 164.036 billion reais (47.072 billion dollars) in 2016, of which the premiums collected by insurance companies totaled 35.481 billion reais (10.182 billion dollars), which represents a growth of 8.3 percent compared to 2015 and an cumulative nominal increase of 557 percent between 2001 and 2016, highlighting the remarkable performance of private health insurance in Brazil.

According to several authors, the great framework of change in the performance of insurers in the line of health in Brazil occurred at the end of the 1980s, when the Superintendence of Private Insurance instituted group insurance (Circular no. 5 of SUSEP, of 1989) and allowed insurers to become connected to health services. The legislation in effect up to that date (Decree-Law 73/66 and its regulations) prevented the connection of service providers with insurers. From then on, insurers expanded their activities to the administration of self-managed plans. Through outsourcing management functions, they also captured clients of companies with their own plans¹¹. Other authors argue that another cause of the growth of private health insurance has to do with the fall in the quality of public health services as a result of allowing universal access to a network of services that was originally sized to serve only the members of the formal labor market¹².

Notwithstanding the foregoing, an important aspect that has contributed to the growth of private health insurance in Brazil is the tax incentives for hiring private health plans. Since 1982, companies have been able to classify expenses for healthcare plans for their employees as operational costs, decreasing the quantity to pay in the tax. Individuals have been able to deduct these expenses from their income tax since 1991.

A summary of the main public policies implemented in the countries of the region that have expanded the areas of insurance participation is shown in Chart 12.2.

12.2 Analysis of the quantitative impact

Charts 12.2-a, 12.2-b and 12.2-c illustrate the analysis carried out to quantify the cumulative effect of the main public policies implemented by the governments of the countries in the region, which have allowed the insurance industry to participate in new areas.

The quantification exercises on penetration levels (Chart 12.2-a), density (Chart 12.2-b) and depth (12.2-c) clearly show the significant impact that the application of this type of public policy can have on the insurance industry and, in a broader sense, on the importance of insurance in a country's economy.

As can be seen from Chart 12.2-a, in the case of Puerto Rico, almost 68 percent of the penetration in 2016 is explained by the public policy described above related to the participation of the insurance industry in the provision of medical-hospital services. This means that, in the absence of this set of

measures, market penetration would have reached only 4.1 percent, instead of the 12.7 percent currently registered.

A similar situation occurs in the case of Brazil, where public policies on tax benefits for the development of VGBL insurance and private health insurance explain more than 58 percent of the current penetration, which would be 1.6 percent (instead of 3.3 percent) if such policies had not been implemented.

In the case of Chile, the application of pension reforms that allowed Life insurers to participate in the granting of group insurance for disability and survival insurance and in the granting of life annuities, explains more than 43 percent of the penetration current market, which would have been only 2.8 percent (instead of the current 5 percent) in the absence of the implementation of the aforementioned public policies.

It is worth mentioning that penetration levels in other markets have also been favored, although on a smaller scale, by the implementation of various public policies: Argentina (where 28.1

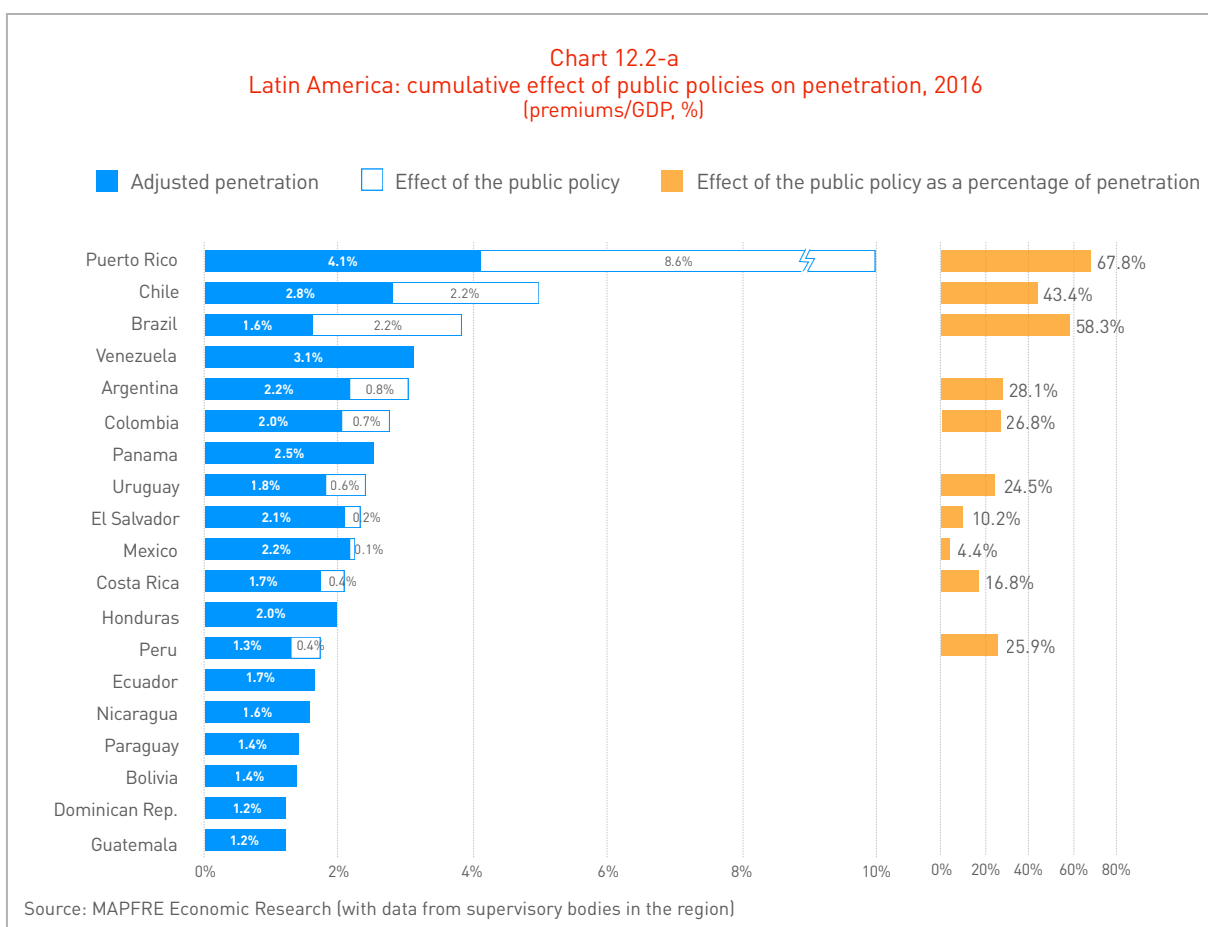
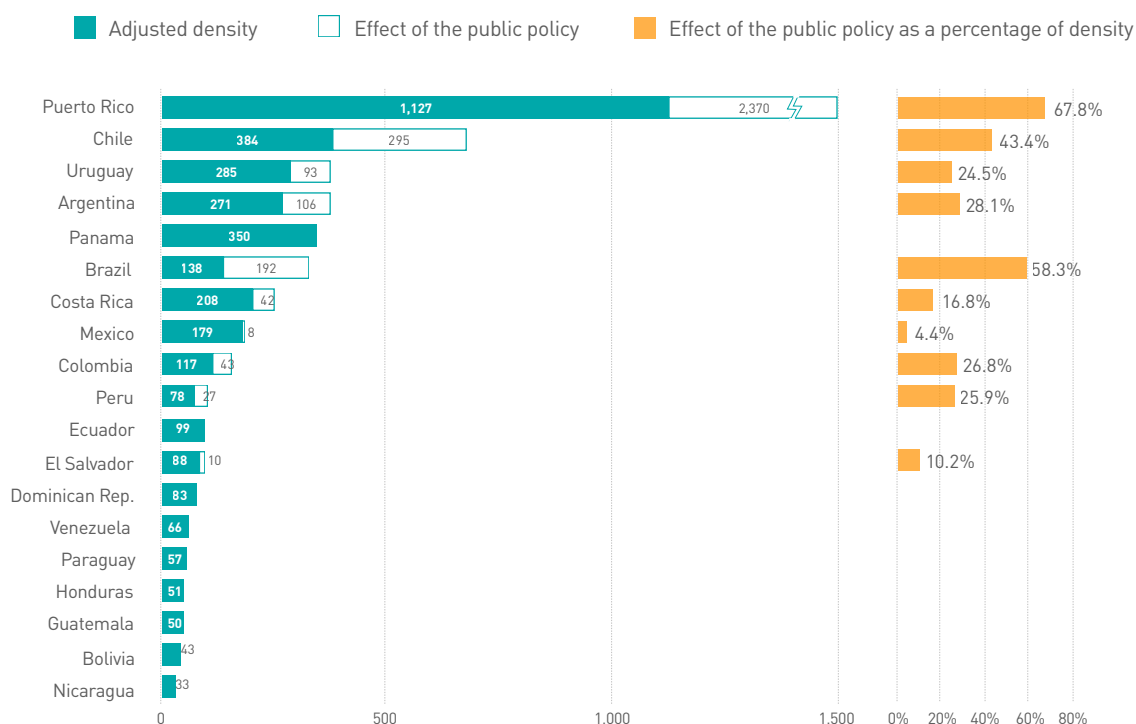
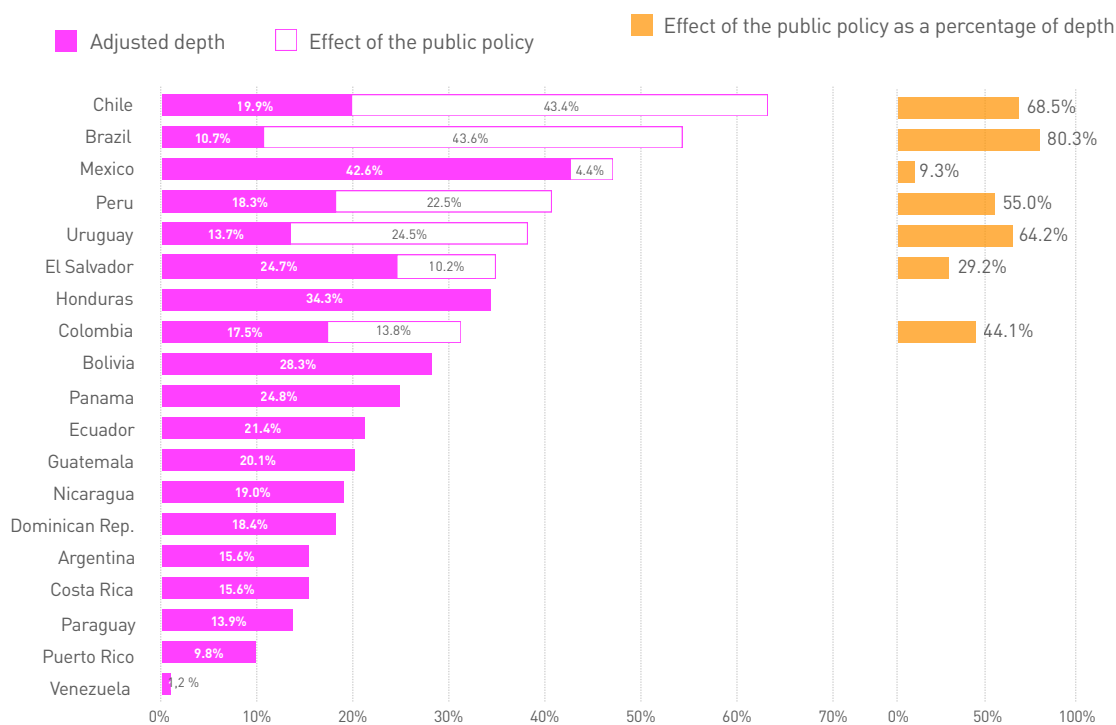


Chart 12.2-b
Latin America: cumulative effect of public policies on density, 2016
(premiums per capita, USD)



Source: MAPFRE Economic Research (with data from supervisory bodies in the region)

Chart 12.2-c
Latin America: cumulative effect of public policies on depth, 2016
(life premiums/total premiums, percent)



Source: MAPFRE Economic Research (with data from supervisory bodies in the region)

Table 12.2
Latin America: synthesis of main public policies implemented in the countries in the region that have expanded the areas of insurance participation

Country	Legislation	Participation of insurance
Argentina	Law 24,557 on Occupational Risks of 1995	Workplace accidents and diseases
Brazil	Law no. 9,656 of 1998, which regulates private healthcare plans and insurance Law No. 10,406 of 2002, Civil Code	Health Insurance Vida Gerador de Beneficio Livre (VGBL)
Chile	Decree Law 3500 of 1980 that amends the Social Security system	Disability and survival insurance Life Annuities
Colombia	Law 100 of 1993, which created the Comprehensive Social Security System Decree Law 1295 of 1994, General System of Professional Risks Article 41 of Law 550 of 1999 and Law 1116 of 2006	Disability and survivor's pension insurance Pension insurance Law 100 Occupational risk insurance Pension line with pension commutation
Costa Rica	Title IV of the Labor Code, Article 193	Workplace accidents and disease
El Salvador	Law of the Pension Savings System (Legislative Decree No. 927 of December 1996)	Disability and Survivor Insurance
Mexico	Social Security Law of 1995 Law of the Institute of Security and Social Services for State Workers of 2007	Life annuities
Peru	Private Pension System. Decree Law 25897 of 1992 Law No. 26790 of 1997, of Modernization of Social Security in Health Legislative Decree 688 of 1991 on Consolidation of Social Benefits (modified by Law No. 29549 of 2010)	Disability, survival and burial expenses insurance Life annuities Complementary Occupational Risk Insurance Life Insurance Law and Ex-Worker Law
Puerto Rico	Law No. 72 of 7 of September 1993: "Puerto Rico Health Insurance Administration Law" Insurance Code of Puerto Rico (Art. 19,020 et seq.)	Health Insurance (Medicare and Medicaid)
Uruguay	Law 16713 of 1995, of the Pension System	Life annuities

Source: MAPFRE Economic Research

percent of the penetration of 2016 is explained by its application); Colombia (26.8 percent); Peru (25.9 percent); Uruguay (24.5 percent); Costa Rica (16.8 percent); El Salvador (10.2 percent), and Mexico (4.4 percent).

A similar situation arises when analyzing the density and depth of insurance. These parameters would reach very different levels from the current ones in several countries if it weren't for the public policies that have allowed the participation of insurance in new areas. In terms of depth in insurance (Life insurance premiums/total premiums), for example, Brazil and Chile, which are the markets in which this indicator has higher levels in Latin America (63.6 percent and 63.4 percent, respectively), they would have been ranked at 11th and 17th in the corresponding ranking in 2016.

12.3 Considerations

As previously mentioned, when the State transfers part of its authority to private management, it seeks to increase efficiency and, with that, explore new ways in which it can increase overall social well-being. The fact that countries that have implemented a social security system based on individual capitalization have chosen insurers to manage one of the modalities to receive the pension (life annuities) and have taken out an insurance policy that guarantees the necessary additional contributions to finance disability and survivor pensions, indicates the existing confidence on the part of these governments in the technical capacity and experience of the insurance industry in the management of long-term savings and risks (financial and demographic) that this type of products involves.

As we already know, the insurance industry plays a fundamental role in the economic growth and sustainable development of the countries, providing stability to the markets and to economic agents. For centuries insurance has helped to mitigate the damage caused by accidental events to people and property, and has also become a very useful tool to channel

long-term savings to the financing of productive activities; savings that individuals and families create in order to create equity that covers their needs in old age, managing the risks with a prudent management of assets and liabilities.

Although in the eighties, when the new pension system was launched in Chile, there was not much experience in the country in annuity insurance, this product's popularity has grown over the years to represent 52 percent of Life insurance premiums. Therefore, the insurance sector has also benefited from these public policies, gaining experience in the management of said risks and, at the same time, by increasing the number of policyholders, the risk of longevity is shared among a greater number of policyholders.

Additionally, the growth of the Life line as a result of disability and survival insurance and the offering of annuities, has made the countries of the region constantly review their regulation to adapt it to the new market circumstances and, in this way, guarantee the correct functioning of the market and preserve the solvency of insurance companies.

In turn, the increase in premium volume has fostered the increase of technical provisions. As a consequence, the investment portfolio has also grown, strengthening the relevance of the sector as one of the main institutional investors.

Additionally, the participation of insurance in the provision of health services has allowed governments to provide more citizens with access to quality medical care, either by equating services to the lower income populations with those of the private sector, or helping the citizens gain access to a larger network of services when universal insurance systems are created. In the area of health of the working population, occupational risk private insurance has helped to create a culture of prevention of occupational risks that was not so widespread in the previous systems, reducing the rates of occupational accidents.

In summary, from the experience analyzed in the region, it can be established that the application of public policies that have made it possible for the insurance industry to participate in new areas of economic and social activity has proven to have positive effects. These effects have come to fruition not only in terms of the growth of the insurance industry and the increase in insurance penetration (with the positive external effects that imply its stabilizing function in offsetting risks, and institutional investment when channeling long-term savings toward financing productive activities), but also, and more importantly, by demonstrating that insurance is capable of contributing to greater efficiency in the implementation of public policies aimed at addressing the large-scale economic and social problems of the countries.

13. Public Policies (4): financial inclusion in insurance

13.1 Financial inclusion and insurance penetration

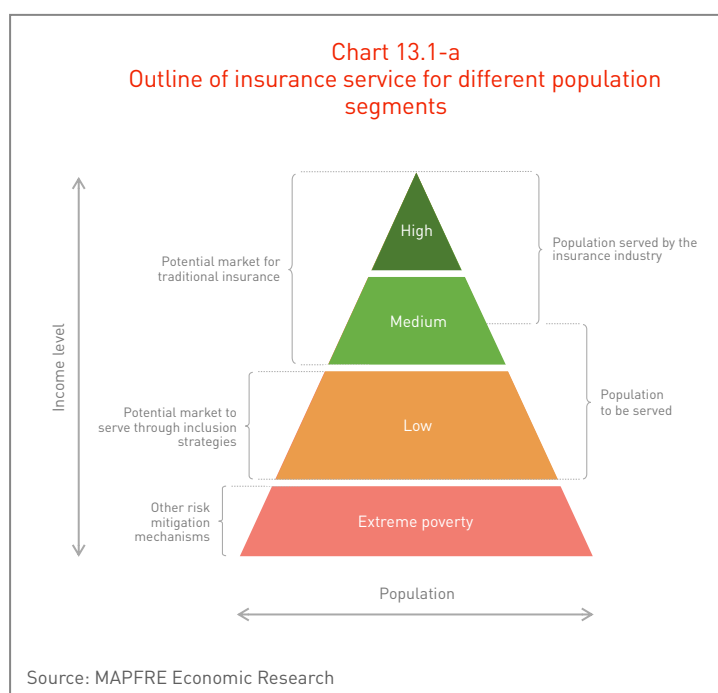
Increasing the penetration of insurance in the economy represents not only the quantitative fact that premiums represent a greater portion of the wealth that a society generates annually, but also, in a qualitative dimension, that a growing number of people have access to benefits of protection, compensation and risk diversification represented by insurance. In this regard, public policies aimed at financial inclusion, and in particular those related to insurance, can be a powerful tool to increase the penetration of insurance from the perspective of both dimensions.

In general, it is accepted that the concept of financial inclusion covers the process through which society has access to different financial services (credit, savings, insurance, payment system and pensions), as well as financial education mechanisms, with the aim of improving their conditions of material well-being. In the specific case of insurance activities, financial inclusion focuses on giving access to specific groups of society to those products that allow the protection of life, health and equity through the processes of saving and compensation of implicit damages in insurance products.

In Latin American societies (as is generally the case in emerging economies) the challenge of expanding financial inclusion (i.e., for this tool to become an element to increase insurance penetration in the economy) is intimately associated with patterns of economic and social inequality that characterize them. Therefore, the means through which said inclusion process can be carried out also have to do with the ways of accessing the segments of the population that are at the base of the

population pyramid, i.e., the lower income groups.

As shown in Chart 13.1-a, in Latin American societies the potential market for traditional insurance typically covers a large part of the lower-middle, middle and upper class populations. At the other end of the pyramid, there is the population in conditions of extreme poverty, which may have access to insurance products as a way to compensate for losses only insofar as they raise their income levels and that, for now, they are served through other risk mitigation mechanisms associated with the implementation of social policies.



Between these two segments, there is a low-income market that can be served through financial inclusion strategies that, separate from traditional business models, can provide insurance products to these with substantially lower transaction costs: basically standardized mass sale insurance and so-called microinsurance.

13.2 Microinsurance and long term social effects

As indicated above, financial inclusion strategies in insurance, by increasing the demand for this type of product, can have a positive short-term effect on penetration levels. However, its greatest effects, both from the social point of view and from the perspective of the increase in insurance demand, are long-term.

Insurance is a financial instrument that has the virtue of providing stability to economic activities and, with this, to the social organization. The absence of this type of mechanism causes shocks on the levels of income and equity of families and companies. This effect is especially important in the case of vulnerable social groups with lower income levels.

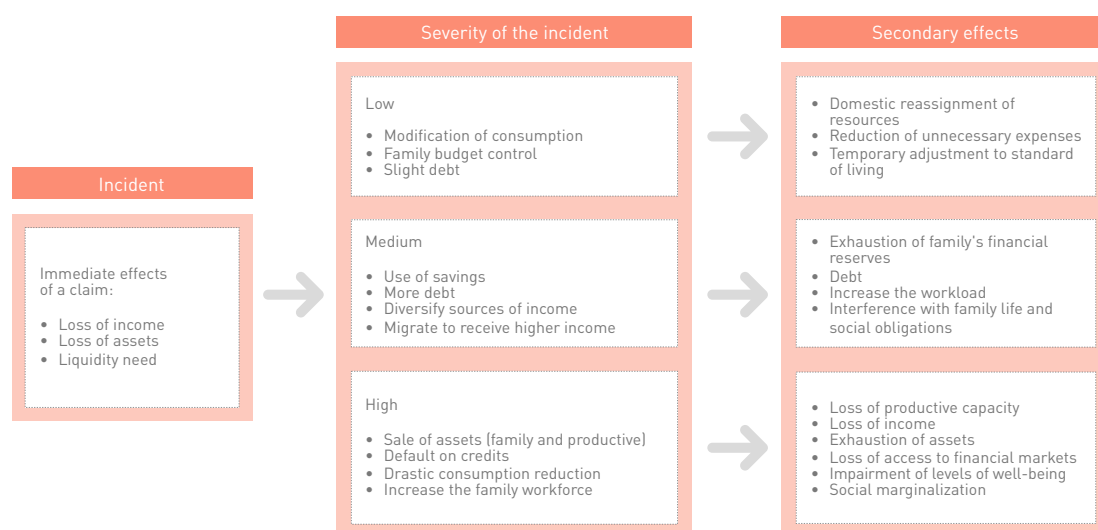
As illustrated in Chart 13.2-a, risk materialization through the occurrence of an incident has immediate and medium-term effects for families, depending on the severity of the event. An incident that, in the short-term, translates into a reduction in income and family assets, as well

as immediate need for liquidity, in the medium-term it can mean loss of family income generation capacity, depletion of assets and equity, loss of access to credit in the financial market, deterioration of family well-being and, ultimately, greater social marginalization.

Chart 13.2-b illustrates the long-term effect of the materialization of risks on levels of well-being for the most vulnerable groups in society. The diagram shows how a family that is on a path of social advancement seeking to abandon their condition of poverty and manages to place themselves above the protection network provided by government social policies, can fall back into that situation if shocks occur that affect their equity and capacity to generate income, and they do not have any mechanism such as insurance to transfer those risks and compensate for the respective losses.

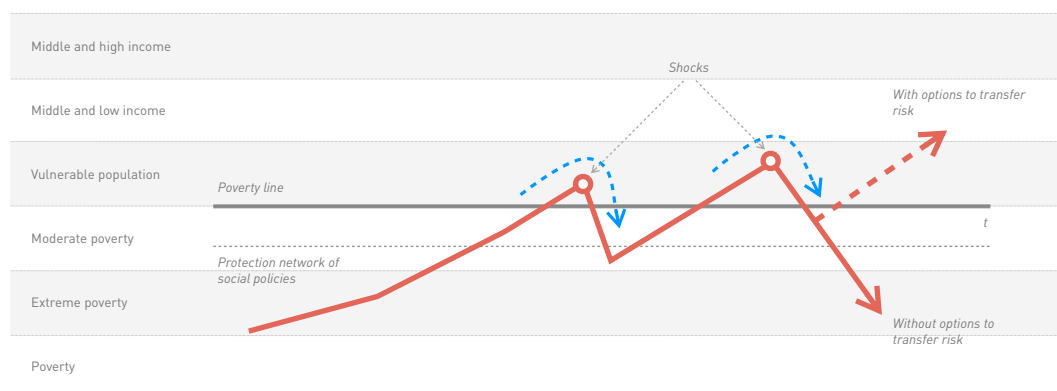
Thus, in the long term, the possibility of accessing insurance products and services may be the difference between families achieving their goal of social mobility, or remaining in conditions of economic and social vulnerability.

Chart 13.2-a
Effect of the materialization of risks on the lower income population



Source: MAPFRE Economic Research, from Monique Cohen y Jennefer Sebstad, "Reducing vulnerability: the demand for microinsurance", *Journal of International Development* (2005)

Chart 13.2-b
Effect on the path of increasing well-being
of the materialization of risks on the lower income population



Source: MAPFRE Economic Research, from Monique Cohen y Jennefer Sebstad, "Reducing vulnerability: the demand for microinsurance", *Journal of International Development* (2005)

13.3 Microinsurance as an element of financial inclusion

Advancing an inclusion strategy based on the dissemination of microinsurance in employment entails three basic aspects: a) identify the risks that may most affect the vulnerable population; b) design products in accordance with said risks and the population to which they are directed, and c) have a regulatory framework that allows these products to be effectively brought to that population under parameters of economic and social efficiency.

Identify the risks

First, it is necessary to identify the risks that, depending on the loss/cost relationship and degree of uncertainty, may affect the target group to a greater extent.

Chart 13.3-a shows a system that, in general, illustrates the area of risks that could be covered by products such as microinsurance. This is the area in which, on the one hand, there is a loss/cost relationship and a degree of uncertainty above normal events (which can be covered by the family income flow); i.e., risks

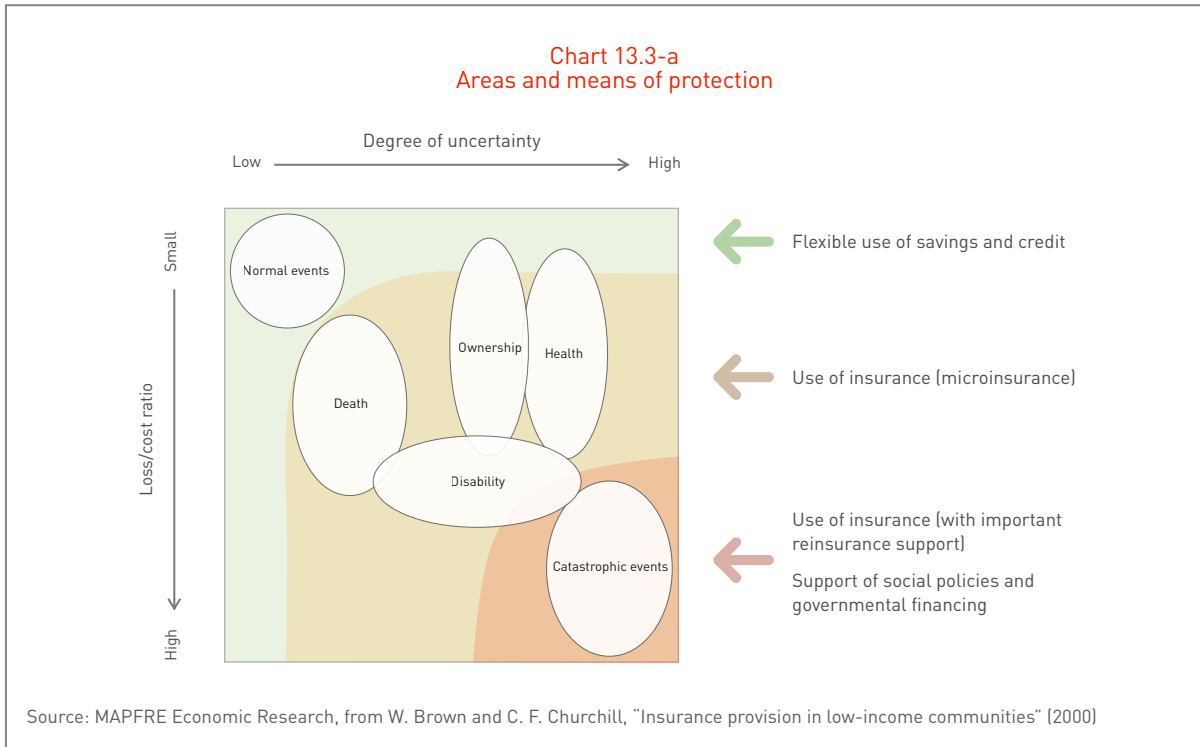
such as death, disability, damage to equity and health that, if materialized, could consume not only the normal flow of income but also a significant portion of the family equity.

It is important to note that the low-income population is especially susceptible to natural or catastrophic events (low frequency and high severity, and high degree of uncertainty and loss/cost relationship) caused by nature. For this reason, microinsurance, combined with the support of social and financial government policies, can also support these segments of the population in the occurrence of such events.

Microinsurance design

Regarding the design of microinsurance products, two aspects seem to be the most relevant. First, the selection of the type of specific products to be developed and, second, their technical and contractual characteristics.

First, taking into account the risks that it will cover, microinsurance can be for life (to cover funeral expenses, unpaid balances of microcredits or even savings components), personal accidents, automobiles (to cover third-party liability), damages (to protect property and



productive family assets, against normal or catastrophic risks), health or pension. However, as illustrated in Chart 13.3-b, each type of microinsurance offers different degrees of complexity for implementation. According to this logic, inclusion policies should begin by promoting the introduction of microinsurance that offers lower degrees of complexity, and advances in different stages, becoming increasingly complex.

And the second relevant aspect has to do with the technical and contractual characteristics. Microinsurance, in addition to being inclusion instrument, is also a tool for financial education. Insofar as it is targeted at vulnerable population groups, microinsurance should be designed taking into account a set of basic characteristics (see Chart 13.3). For example, the mechanisms for payment of the premium must consider the irregular flow of income of the policyholders, as well as a variety of means through which it can be paid. The product must have a simple technical and legal design. From the legal point of view, the policy and its conditions must be simple and its content easy to understand. And from the technical perspective, simple coverage should be considered, and insured sums and benefits should be clearly defined. The underwriting process, for its part, should be based on rates

according to the specific experience of the mutualities covered, and contain exclusions or restrictions that are minimal and general.

One key aspect in the process of underwriting microinsurance has to do with the technical safety margins that must be included in the risk

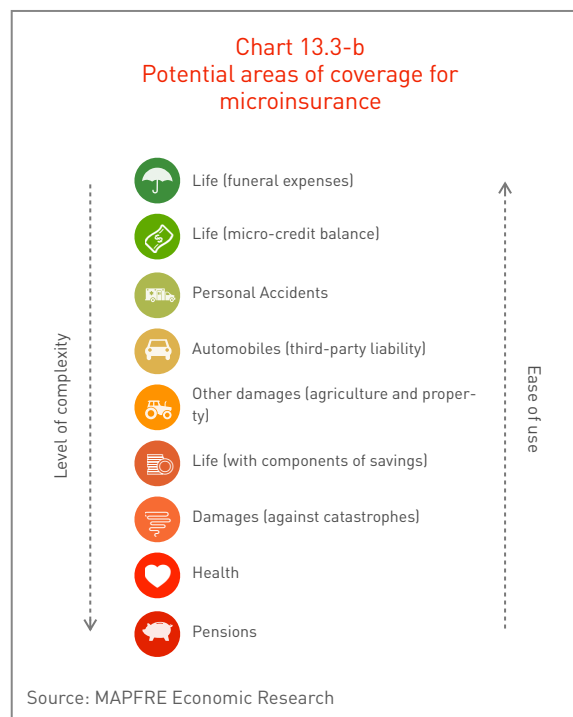


Table 13.3
Main features of microinsurance

Item	Main characteristics
Payment of the premium	<ul style="list-style-type: none"> The payment period can be divided considering the irregular flow of income of the policyholders. The premiums could be: <ul style="list-style-type: none"> Paid in cash. Deducted from payment of receivables. Deducted from bank accounts. Deducted in receipts from payments for other services. Charged through non-traditional intermediaries.
Product Design	<ul style="list-style-type: none"> Simple technical and legal design.
Contractual documentation	<ul style="list-style-type: none"> Simplified and easy to understand.
Coverage	<ul style="list-style-type: none"> Sums insured and clearly defined benefits.
Underwriting process	<ul style="list-style-type: none"> Rates set according to the experience of the mutualities covered. With minimal exclusions or restrictions. In line with technical safety margins inasmuch as information is gathered regarding specifics of the risk covered.
Distribution channels	<ul style="list-style-type: none"> Use of non-traditional distribution channels that reduce transaction costs: <ul style="list-style-type: none"> Bank and microfinance networks. Sales Networks. Utility receipts. New distribution networks through non-traditional intermediaries.
Product Management	<ul style="list-style-type: none"> Use of technology to reduce costs in: <ul style="list-style-type: none"> Contracting the product and paying the premium. Management and renewal of the product. Payment of compensation.
Payment of compensation	<ul style="list-style-type: none"> Practically immediate. With specific and minimal documentary requirements.

Source: MAPFRE Economic Research

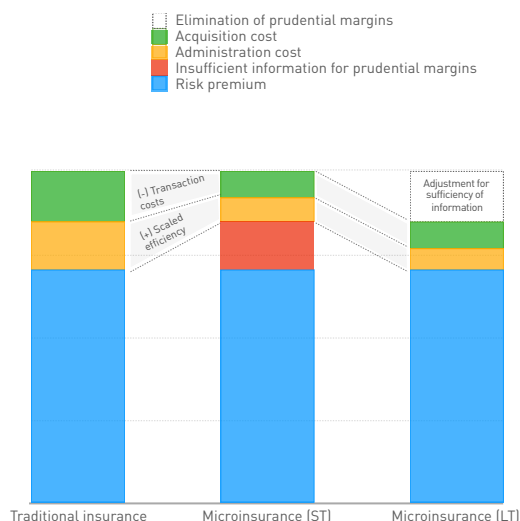
premium. In the short-term and facing a lack of sufficient information regarding behavior of frequency and severity of the risks to cover, these margins may gravitate negatively toward the price of these products. However, in any case, it is necessary to adjust them as much as possible to the information that is gathered about the particularities of the risks covered, in order to make the price accessible to the groups of the society to which they are aimed (see Chart 13.3-c).

Additionally, an additional aspect in the aim of transforming microinsurance into products that are accessible to vulnerable population groups, is contingent upon reducing transaction costs. This implies the need to complement traditional distribution channels, with non-

traditional channels, such as banking and microfinance networks, commercial networks, public service receipts and new distribution networks based on non-traditional intermediaries. Likewise, the use of technology is essential to reduce costs not only in the contracting of the product and payment of the premium, but also in its management and renewal, and in the payment of the respective compensations.

And finally, since they are aimed at a vulnerable population to face the short-term effect of shocks caused by risk materialization, microinsurance should be designed in such a way that the payment of compensation is made almost immediately and by meeting precise, minimum documentary requirements.

Chart 13.3-c
Expected medium-term change in the pricing of microinsurance



Source: MAPFRE Economic Research

As seen, making microinsurance an effective and efficient instrument for financial inclusion necessarily implies adapting the insurance business model to properly serve this segment of the population.

Microinsurance and regulation

The possibility of expanding financial inclusion strategies based on spreading the use of microinsurance also involves the fact that the prudential regulation framework offers mechanisms for its development.

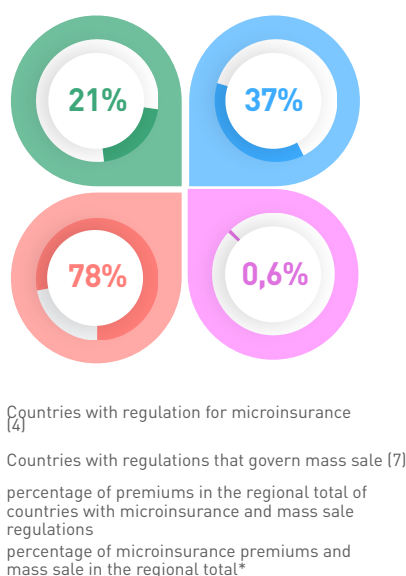
There is a consensus that regulation should not base these stimuli on the artificial reduction of safety margins that guarantee that insurers remain solvent, but rather on elements that, without affecting this essential purpose of the guidelines framework, allow the reduction of transaction costs, a key aspect for microinsurance to be, on the one hand, affordable for the population and, on the other, able to offer the necessary profitability that makes its business possible.

The analysis of this aspect shows that, until now, the efforts in this sense are still very limited. In general terms, only 4 countries in the region have an explicit regulation on microinsurance (see Chart 13.3-d). Most of them focus their design on the reduction of regulatory burdens for the use of distribution channels for products that meet the basic conditions of microinsurance.

However, 7 countries have regulations on the mass sale of insurance, which although they constitute a significant advance especially in the establishment of distribution channels that can reduce transaction costs, they do not necessarily address all the aspects related to the operation of microinsurance.

However, despite the fact that countries that have one of these two types of regulations accounted for almost 78 percent of total insurance premiums in the region in 2016, microinsurance premiums still represent a tiny fraction of the market.

Chart 13.3-d
Latin America: participation of elements of financial inclusion in insurance, 2017



Source: MAPFRE Economic Research

* Estimates from the Inter-American Development Bank, *The panorama of microinsurance in Latin America and the Caribbean* (2012)

This seems to be evidence that progress still needs to be made, both from the industry and from the regulators, in order to shape business models that specifically address these groups in Latin American society.

Fourth part

Synthesis and conclusions

14. General guidelines to expand penetration in the Latin American insurance markets

From the analysis carried out, and as a synthesis, a set of general guidelines emerge that could be considered when evaluating alternatives to promote a process of raising the level of insurance penetration in the Latin American economy:

Prudential regulation

1. The advance in the design and implementation of risk-adjusted regulatory frameworks in line with a pro-competitive view of the market, is one of the factors that can support, from the supply side, the increase in insurance penetration in the region. In this regard, the progress towards risk-based regulations is an element that can stimulate the growth of the supply and, therefore, increase the participation of insurance in the economy, in that it allows for a more efficient allocation of the capital, and creates incentives for more professional management of insurance entities based on considerations and parameters of a technical nature.

2. It is equally important to note that the evidence seems to confirm that this progress in regulatory modernization can greatly contribute to the goal of increasing insurance penetration in the economy, when it is carried out gradually and in parallel to the development of technical capacities of both the industry and regulators, as well as to the creation of the necessary market infrastructure for its proper implementation. Otherwise, regulatory progress (which, among other aspects, would be difficult to comply with) could lead to unwanted consequences, such as the establishment of barriers to entry for certain business lines, or an inefficient allocation of resources, which ultimately would negatively impact the penetration levels of the insurance markets.

Access to the market and capital

3. The variety of formulas used to establish requirements for new insurers in the region to enter the market is broad, without there necessarily being a single solution or one that is better than the others. However, considering the concentration and competition structure in each insurance market, some countries seem to have achieved an adequate balance between the levels of disaggregation by line for new authorizations and the quantitative minimum capital requirements associated with them.

4. In general, the best practices in this matter seem to be based on two elements. First, elevate the level of disaggregation in the authorizations granted to access the market, allowing new entities to be established that do not necessarily have to be directed toward a complete operation, but toward certain specific lines or sub-lines and particular niches of the market. And secondly, to allocate equally differentiated minimum capital, associated with the broad spectrum of possible authorizations, which, without reducing the prudential purpose of regulating minimum capital for entry, can better adjust that requirement to the profile of different lines of business and thus avoid a level of relative over-capitalization beyond what is strictly necessary to fulfill the prudential purpose.

5. The most modern solvency regulation systems in the region are also more advanced in terms of regulating access to capital, allowing insurance entities access to loans (access to borrowing possibilities) and even to strengthen their solvency position by issuing debt instruments eligible as capital, within certain eligibility limits. In this way, under the prudential parameters necessary to avoid levels of leverage that jeopardize their financial stability and solvency position, establishing the possibility of

access to additional sources of financing for the growth of entities, seems to be a necessary condition to give sustainability of supply growth, especially in periods of market expansion.

Distribution channels

6. In general terms, a greater dispersion in the development of distribution channels to reach consumers with insurance services seems to be associated with greater penetration gains in the medium- and long-term in the analyzed markets.

7. Therefore, advancing the development of multichannel schemes seems to be a precondition to stimulate a greater supply of insurance services, and to create more agile and efficient means to bring that offer to consumers, in the extent to which multichannel does not mean the growth of one distribution channel at the expense of another, but the creation of complementary channels to serve new segments of the population.

Expense efficiency

8. In general, there is a wide range of measures to help reduce the operating expenses of insurance companies in their different components in Latin American insurance markets. This increase of the efficiency in expenses could increase the relative share of the premiums used to pay compensation, which would contribute not only to insurance fulfilling its social function of risk pooling better, but also to improving the public's general perception of insurance companies in the region.

9. This effort implies progress from two perspectives. First, it entails an increase in expense efficiency on the level of the entities for individuals, through organizational improvements and increasing use of technology as part of risk management. And on the other hand, it also means advancing at the level of the industry in each country to identify and consolidate the public goods necessary for the insurance operation, as well as the market

infrastructure that can allow them to be managed to make the operation as efficient as possible for the entities themselves and their consumers.

10. In the second dimension, in line with what happens in the more mature markets, trade and professional associations can progress in forms of collaboration that contribute, among other things, to designing mechanisms for the use of information (which can be useful when improving pricing of products or for the underwriting of some types of risk), standardizing basic contractual contents that reduce the margins of interpretation regarding the scope of coverage (reducing legal costs at the market level), collaboration systems for managing claims (for example, in the case of the automobile line), as well as the standardization of computer protocols for information that insurance companies must exchange as part of the insurance operation in the markets.

Innovation

11. The experience analyzed in Latin American markets seems to indicate that there is still a long way to go before, without affecting the regulatory purpose that has motivated them, more efficient and flexible mechanisms are found to reduce the time and cost involved in bringing new products to market. The positive effects of those would not only stimulate innovation and expand the insurance offering, but also offer the population new products in a timely manner that better fit their protection needs.

12. To the extent that the strengthening of the risk management function as an integral part of the governance systems of insurers also implies that the new products brought to market provide technical and contractual bases that do not affect the solvency of the entities, the regulatory mechanisms designed for that purpose, should be adjusted in a similar manner. Therefore, this is an aspect that should be explicitly incorporated into the regulatory modernization processes of the region.

Economic growth and income distribution

13. Understanding the dynamics of the insurance industry is important in order to anticipate its performance and be able to enact economic policy actions.

14. The insurance industry has crucial contributions to the social welfare function; is an inherent part of economic growth process, an important channel that transmits savings and is a key factor in mitigating income volatility. The insurance sector also completes the financial balance of the system by supporting diversification that mitigates global risk.

15. The analysis carried out in this document confirms that insurance demand is highly dependent on the performance of large structural factors such as growth of the economy and income distribution. The correlation levels that insurance activity has with respect to GDP, both in Latin America and in different regions around the world, are very high and indicate that to the extent that the economy shows dynamism in its growth, penetration levels will rise .

16. An important aspect that the analysis carried out confirms has to do with the negative effect of the concentration of income on the growth of the demand for insurance services. This structural aspect, being a determinant of the dynamics of economies themselves, is also a determinant for insurance demand.

17. Thus, the intention of raising insurance penetration levels in Latin America necessarily involves governments maintaining economic policies (fiscal, monetary and financial, among others) that provide adequate incentives for economic activity performance and stability of the financial system.

Financial education

18. Financial education is a structural factor that can stimulate the growth of aggregate insurance demand in the medium- and long-term and, with this, to the increase of insurance penetration levels in the economy. In Latin America, however, initiatives in this area are still very limited, and

merit the design and implementation of better public policies.

19. There is still significant advancements to be made in Latin American countries. There are three key aspects in this regard. First, expand the participation of the insurance industry, in coordination with the public sector, to design and implement financial education projects with specific contents regarding insurance. Second, the basis for the development of these efforts must be expressed in legal and regulatory systems that provide certainty, permanence and effectiveness in the medium-term. And third, these efforts, in order to have a significant effect on training individuals, must be implemented (at least partially) through formal educational systems in each country.

Mandatory insurance

20. Mandatory insurance has several positive effects on society. First, they protect public interest in various situations, mainly those associated with third-party liability. Second, by associating with third-party liability derived from a wide range of the company's activities, it allows the areas of insurance participation to be expanded in economic and social activity. And third, insurance obligations are instruments used to heighten awareness regarding prevention, and in this way, they are a powerful tool in the financial education process regarding insurance.

21. In general, there is a series of general conditions that should be taken into consideration so that mandatory insurance can be introduced successfully^{12/}. In this respect, the following aspects seem to be key for this purpose:

- a) Existence of a solid insurance market.
- b) Evaluation of the need to foresee the obligation for the insurance in question depending on whether this mechanism solves a problem that could not be met by voluntary insurance.
- c) Evaluation as to whether the risk in question is insurable, i.e., if it has a random component, if there is enough information to measure it (estimate its costs and frequency of claims), and if it is possible to evaluate its consequences economically.

- d) Establishment of mechanisms for the pricing of these insurance policies with adherence to technical calculations and pertinent statistical bases.
- e) Accurate delineation of the insured's liability, insurance coverage and limits of compensation, which will be reflected in the respective insurance policy.
- f) Implementation of mechanisms to establish effective control over the use of mandatory insurance by citizens required to have it.
- g) Definition of a mechanism that stimulates competition among insurance entities, so that, without affecting the technical principles that define the sustainability of this activity, affordable and competitive prices for consumers are achieved.
- h) Establishment of compensation and guarantee mechanisms that allow coverage to be created that addresses, universally in society, the problems that gave rise to the establishment of mandatory insurance.
- i) Existence of adequate reinsurance products so that direct insurance entities can diversify and support the risks they cover.

Tax incentives

22. When it is possible to carry out an analysis of the quantitative impact that the implementation of the mentioned tax incentives has had on the insurance demand and, consequently, on the penetration levels in the region, a very important effect is observed, which can materialize in the short- and medium-term.

23. In general, although the tax incentive policies in the region are oriented correctly, until now the effort seems biased towards the objective of stability and risk mitigation, more than the creation of savings.

24. The promotion of more complementary medium- and long-term savings is undoubtedly

an element that could support the strengthening of pension systems (under heavy financial pressure in most of the countries of the region), also contributing to the financing of productive activities with long maturation and, thereby, stimulating the economic growth of the region.

Participation in new activity areas

25. When the State transfers part of its authority to private management, it seeks to increase efficiency in executing public policies and, with that, explores new ways in which it can increase overall social well-being. In the case of the insurance sector, this transfer has been carried out based on the government's existing confidence in the technical capacity and experience of the insurance industry in the management of long-term savings and the risks involved in insurance products.

26. A notable example is the incorporation of the insurance industry into pension systems linked to social security. The growth of the Life insurance business as a result of the insurance of disability and survival risk, and the offer of life annuities, has generated a significant increase in premium volume (with the corresponding increase in penetration rates), also fostering the increase in technical provisions and, consequently, the investment portfolio of insurance entities, strengthening the relevance of the sector as one of the main institutional investors in the region.

27. Similarly, the participation of insurance in the provision of health services has allowed governments to provide more citizens with access to quality medical care, either by equating services to the lower income populations with those of the private sector, or helping the citizens gain access to a larger network of services when universal insurance systems are created.

28. In summary, from the experience analyzed in the region, it can be established that the application of public policies that have made it

possible for the insurance industry to participate in new areas of economic and social activity has proven to have positive effects from two perspectives. Firstly, in terms of the growth of the insurance industry and the increase in insurance penetration (with the positive external effects implied by its stabilizing function in offsetting risks, and institutional investment by channeling long-term savings to the financing of productive activities). And secondly, by demonstrating that insurance is capable of contributing to greater efficiency in the implementation of public policies aimed at addressing major economic and social problems.

Financial inclusion in insurance

29. Increasing penetration levels of insurance in the economy represents not only the quantitative fact that premiums represent a greater portion of the wealth that a society generates annually, but also, in a qualitative dimension, that a growing number of people have access to the benefits of protection, compensation and risks diversification represented by insurance. Public policies aimed at financial inclusion, and in particular those related to insurance, can be a powerful tool to increase the penetration of insurance from the perspective of both dimensions.

30. Advancing a financial inclusion strategy in insurance based on the dissemination of microinsurance in employment entails three basic aspects: (i) identify the risks that may most affect the vulnerable population; (ii) design products in accordance with said risks and the population to which they are directed, and (iii) have a regulatory framework that allows these products to be effectively brought to that population under parameters of economic and social efficiency. As a whole, this means the adoption of an insurance businessmodel to properly cover this specific population segment.

31. The risks that microinsurance is intended to address seem to be those that offer a loss/cost ratio and a degree of uncertainty above normal events; i.e., risks such as death, disability,

damage to equity and health that, if materialized, could consume not only the normal flow of income but also a significant portion of the family equity.

32. However, the low-income population is especially susceptible to catastrophic natural events (low frequency and high severity, and high degree of uncertainty and loss/cost relationship). In this case, microinsurance, combined with the support of social and financial government policies, can also support these segments of the population in the occurrence of such events.

33. Additionally, as regards the design of microinsurance products, both the selection of the type of specific products to be developed and the technical and contractual characteristics thereof, seem to be the key aspects. Considering their degree of complexity (within the spectrum of objective risks), inclusion policies should begin by promoting the introduction of microinsurance that offers lower degrees of complexity, and advances in different stages, becoming increasingly complex. And in terms of its technical and contractual characteristics, microinsurance should offer, among others: mechanisms for premium payments that consider the irregular flow of income of the policyholders, as well as a variety of means through which payments can be made; a simple technical and legal design, with simplified conditions and content that is easy to understand, simple coverage, insured sums and clearly defined benefits; and an underwriting process based on rates according to the specific experience of the mutualities covered, with exclusions or minimum restrictions of a general nature.

34. A key aspect in the aim of transforming microinsurance into products that are accessible to vulnerable population groups, is contingent upon reducing transaction costs. This implies the need to use non-traditional distribution channels, as well as technology to reduce costs not only in the contracting of the product and payment of the premium, but also in its management and renewal, and in the payment of the respective compensations.

35. Lastly, the possibility of expanding financial inclusion strategies based on spreading the use of microinsurance also involves the fact that the prudential regulation framework offers mechanisms for its development. Prudential regulation should base these stimuli on elements that allow the reduction of transaction costs, a key aspect for microinsurance to be, on the one hand, affordable for the population and, on the other, to offer the necessary profitability to make this business possible.

References

1/ Taken from chapter "Contexto económico y demográfico" [Economic Content and Demographics] from the Latin America insurance market report of 2016, prepared by MAPFRE Economic Research. See: MAPFRE Economic Research, *The Latin American insurance market in 2016*, Madrid, Fundación MAPFRE, August 2017, p. 15-19.

2/ Taken from chapter "El mercado asegurador latinoamericano en 2016" [The Latin American Insurance Market in 2016] from the insurance market report of Latin America from 2016, prepared by MAPFRE Economic Research. See: MAPFRE Economic Research, *The Latin American insurance market in 2016, op.cit.*, p. 21-35.

3/ See: MAPFRE Economic Research, *Economic and industry outlook 2017*, Madrid, Fundación MAPFRE, January 2017, p. 47-49.

4/ See: MAPFRE Economic Research, *Economic and industry outlook 2017: updated to the first quarter*, Madrid, Fundación MAPFRE, April 2017, p. 51-53.

5/ See: <https://www.insuranceeurope.eu/statistics/life-distribution-channels>

<https://www.iii.org/fact-statistic/facts-statistics-distribution-channels>

6/ See: <https://publications.iadb.org/handle/11319/8265?locale-attribute=es&>

7/ An empirical framework analysis was used, developed by MAPFRE Economic Research. This analytical framework is based on two elements: a) a global database, and b), a model based on panel data estimation for dynamic variables (Panel VAR). The database used reflects the dynamics of insurance demand through the growth rate of premiums in the Life and Non-Life segments for the period from Q1 1980 to Q4 2016. The data for each line of business has been extracted from different sources (Axco, SwissRe and directly from the information produced by the supervisory bodies), have been quarterly, and have been validated with the data provided by the supervisory bodies of the region. The database collects data from 38 markets (12 Developed and 26 Emerging). In the case of Latin America, the information focuses on 14 of its 19 markets (Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Panama, Peru, Dominican Republic, Uruguay and Venezuela).

The framework used in the analysis of the dynamics of the industry in Latin America is fully consistent with the fundamental economic laws affecting the insurance industry (see section 8.1 of this document). It tries to capture the interaction of insurance premiums with income and wealth using gross domestic product (GDP), inflation and long-term interest rates, as well as idiosyncratic sources of variations in income such as the price of the oil. To capture the differential effects printed by the starting point, the model also considers the penetration level. The approach is not unrelated to the perception of risk and, therefore, its differential effect is introduced through the country risk premium in emerging markets. Given that risk aversion and propensity to save and consume are linked to the distribution of income, the model also uses the Gini indexes of wealth concentration to measure inequality. The savings rate, employment and credit are key to sustaining the life cycle theory, and also have been included. In addition, other structural variables are used to capture particular dynamics. In this case, the education level, population and urbanization rate has also been included.

The model used is estimated using panel data with fixed effects for dynamic variables (VAR Panel). This methodology has been necessary because geographical and dynamic particularities of different countries and regions need to be captured, and only this methodology allows it. In this sense, the model is an extension and improvement of the one found in Dragos (2014), "*Life and Non-life insurance demand: the different effects of influence factors in emerging countries from Europe and Asia*" who uses a panel data model to show the relationship between both insurance businesses and the growth of income, the level of urbanization, education and financial inclusion. In addition, the metrics and forecasting results outside the sample of the model used support the robustness of its specification. The model captures differential dynamics of different geographical areas through *dummies*. The *dummies* employees segment the database by groups of developed and emerging markets, and within the latter distinguish among China, the rest of Emerging Asia, Emerging Europe and Latin America. In the analysis presented in this document, only the results of Latin America are compared with those of the rest of the emerging regions, obliterating the results from the developed markets. The model has been estimated with similar regressors for the Non-Life and Life model, although it is expected that the parametric results will be different according to the laws that govern consumption, risk and savings.

8 / The Gini index is a measure of income concentration among individuals in a region, in a given period. It is used as an economic measure to calculate the income inequality that exists between the citizens of a territory, usually a country. It is valued between 0 and 1, zero being the maximum equality (all citizens have the same level of income) and 1 being the maximum inequality (all incomes are held by only one citizen). This same concept of inequality can be understood graphically through the Lorenz curve.

9 / The following has been taken as reference: UNESPA, *Guide of UNESPA recommendations for the establishment of an obligation of insurance* (2011), and the European Insurance Committee (Comité Europeo de Aseguradores, CEA), *Compulsory liability insurance: requires the right preconditions and market factors* (2010).

10/ Sorto Rivas, Francisco (2015). *Annuities linked to systems of individual pension capitalization*. San Salvador: Higher Institute of Economics and Business Administration.

11/ Leal, Rodrigo Mendes (2014). *O mercado de saúde suplementar no Brasil: regulação e resultados econômicos dos planos privados de saúde*. Tese (doutorado) – Universidade Federal do Rio de Janeiro

12/ Barros, Maria Elizabeth Diniz y Piola, Sérgio Francisco (2016). O financiamento dos serviços de saúde no Brasil. In: *Health System in Brazil: organization and financing*. Rio de Janeiro.

Index of charts, tables, and boxes

Charts

Chart 1.1-a	Latin America: economic growth, 2006-2016	17
Chart 1.1-b	Latin America: economic growth and the insurance market, 2006-16	18
Chart 1.2-a	Latin America: evolution of growth of the insurance market, 2006-16	19
Chart 1.2-b	Latin America: share of global premiums, 1980-2016	20
Chart 1.2-c	Latin America: contribution to growth of the insurance market, 2006-16	20
Chart 1.2-d	Latin America: premiums and actual growth of insurance markets, 2016	21
Chart 1.2-e	Latin America: premium volume by insurance line, 2016	21
Chart 1.2-f	Latin America: results and profitability, 2016	22
Chart 1.2-g	Latin America: aggregate capital level, 2006-2016	23
Chart 1.2-h	Latin America: Herfindahl and CR5 indexes, 2016	23
Chart 1.2-i	Latin America: penetration, 2006-2016	24
Chart 1.2-j	Latin America: density, 2006-2016	24
Chart 1.2-k	Latin America: depth, 2006-2016	25
Chart 1.2-l	Latin America: penetration, density and depth indexes, 2016	25
Chart 1.2-m	Latin America: Insurance Protection Gap, 2006-2016	26
Chart 1.2-n	Latin America: potential market, 2006-16	27
Chart 1.2-o	Latin America: the IPG as a multiple of the real market, 2006-2016	27
Chart 1.2-p	Latin America: structure and relative size of the Insurance Protection Gap, 2016	28
Chart 1.3-a	Latin America: penetration vs. emerging markets, 1990-2016	28
Chart 1.3-b	Latin America: IPG vs. emerging markets, 1990-2016	29
Chart 1.3-c	Latin American and emerging markets: performance compared and growth, 1990-2016	29
Chart 1.3-d	Latin America: trending growth of premium convergence, 2006-2016	30
Chart 1.3-e	Latin America: penetration levels, 1990-2016	30
Chart 1.3-f	Latin America: IPG as a multiple of actual market, 1990-2016	31
Chart 1.3-g	Latin American and developed markets: convergence in total penetration, 2006-2016	31
Chart 1.3-h	Latin America: penetration gains, 2006-2016	32
Chart 1.3-i	Latin America: penetration gains, Life and Non-Life, 2006-2016	32
Chart 1.3-j	Latin American and developed markets: convergence in penetration gains, Life and Non-Life, 2006-2016	33
Chart 1.3-k	Latin America: trending growth of premium convergence, 2006-2016	33
Chart 2-a	Main transmission mechanisms from the real economy and the financial market to the insurance industry	35
Chart 2-b	Main contributions of the insurance industry to the real economy and the financial market	36
Chart 2-c	Determining factors of insurance penetration levels in the economy	37
Chart 3.3-a	Latin America: summary of proximity index to a risk-based regulation (I-RBR)	42
Chart 3.3-b	Latin America: proximity index to a regulation (I-RBR)	43

Chart 3.3-c	Latin America: participation in regional insurance premiums by market groups according to the progress in the regulatory transition process, 2016	46
Chart 3.3-d	Latin America: Proximity index to a risk-based regulation (I-RBR) and penetrations gains, 2006-2016	46
Chart 4.1-a	Theoretical relationship between statutory capitalization levels and the business volume of an insurance entity	49
Chart 4.1-b	Latin America: capitalization index by market, 2016	50
Chart 4.1-c	Latin America: trends in capitalization levels by market, 2006-2016	51
Chart 4.1-d	Latin America: market profitability, 2016	56
Chart 4.2-a	Latin America: capital required for minimum authorization (thousands USD) and level of disaggregation in the authorizations to operate, 2016	56
Chart 4.2-b	Latin America: Herfindahl index by market, 2016	57
Chart 4.2-c	Latin America: ease of access to the market, 2016	57
Chart 5.2-a	Latin America: distribution channel structure by total insurance market, 2017	60
Chart 5.2-b	Latin America: distribution channel structure by Life and Non-Life insurance market, 2017	60
Chart 5.2-c	Latin America: dispersion index (1/IHH) of the distribution channels by insurance market and type of insurance, 2017	61
Chart 5.2-d	Latin America: Dispersion index of the distribution distribution (2017) and penetrations gains, 2006-2016	62
Chart 5.2-e	Latin America: range of commissions vs. other markets in automobile insurance	63
Chart 5.2-f	Latin America: range of commissions vs. other markets in health insurance	63
Chart 5.2-g	Latin America: range of commissions vs. other markets in third-party liability insurance	64
Chart 5.2-h	Latin America: range of commissions vs. other markets in damages insurance	64
Chart 5.2-i	Latin America: range of commissions vs. other markets in personal accident insurance	65
Chart 5.2-j	Latin America: range of commissions vs. other markets in other Non-Life lines insurance	65
Chart 5.2-k	Latin America: range of commissions vs. other markets in individual / Universal Life insurance (initial and renewal fees)	66
Chart 5.2-l	Latin America: range of commissions vs. other markets in temporary Life insurance (initial and renewal fees)	66
Chart 5.2-m	Latin America: range of commissions vs. other markets in the Life insurance group	67
Chart 6.2-a	Latin America: range of the combined ratio vs. other markets	70
Chart 6.2-b	Latin America: range of the claims ratio vs. other markets	70
Chart 6.2-c	Latin America: range of expense ratio (administration and acquisition) vs. other markets	71
Chart 7.2	Latin America: regulatory models for the introduction of new products to the market	74
Chart 8.1-a	Income, consumption and savings level in the life cycle hypothesis	80
Chart 8.3-a	Selected markets: penetration and premium growth	82
Chart 8.3-b	Latin American and emerging markets: differential growth for inequality in the Life Segment, 2005-2021	83
Chart 8.3-c	Latin American and emerging markets: differential growth for inequality in the Non-Life Segment, 2005-2021	84
Chart 9.1-a	Shifting of the insurance demand function due to changes in the financial culture level of a population (e_i)	85

Chart 9.1-b	Latin America: variations in financial literacy	86
Chart 9.1-c	Selected countries: developed on financial education	86
Chart 9.2-a	Latin America: institutions promoting financial education	87
Chart 9.2-b	Latin America: system of efforts regarding financial education	88
Chart 10.2	Latin America: Main features of the mandatory insurance system for automobiles	94
Chart 11.2	Latin America: countries with tax incentives oriented toward promoting insurance demand	98
Chart 12.2-a	Latin America: cumulative effect of public policies on penetration, 2016	103
Chart 12.2-b	Latin America: cumulative effect of public policies on density, 2016	104
Chart 12.2-c	Latin America: cumulative effect of public policies on depth, 2016	104
Chart 13.1-a	Outline of insurance service for different population segments	109
Chart 13.2-a	Effect of the materialization of risks on the lower income population	110
Chart 13.2-b	Effect on the path of increasing well-being of the materialization of risks on the lower income population	111
Chart 13.3-a	Areas of protection and means to do so	112
Chart 13.3-b	Potential areas of coverage for microinsurance	112
Chart 13.3-c	Expected medium-term change in the pricing of microinsurance	114
Chart 13.3-d	Latin America: participation of elements of financial inclusion in insurance, 2017	114

Tables

Table 8.2	Model: elasticities of the Latin American insurance market vs. other markets for Life and Non-Life segments	81
Table 8.3	Model: correlations between insurance premium and GDP in selected regions, 1990-2016	82
Table 10.2	Latin America: synthesis of the regulations on mandatory third-party liability insurance for automobiles	91
Table 12.2	Latin America: synthesis of main public policies implemented in the countries in the region that have expanded the areas of insurance participation	105
Table 13.3	Main features of microinsurance	113

Boxes

Box 3.3	Proximity index toward a risk-based regulation (I-RBR): methodological aspects	47
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