

Study of competition and free market access in insurance of medical expenses



Mexican Federal Economic Competition Commission

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Abbreviations, acronyms and symbols

AFM	Dutch Authority for the Financial Markets
AIM	Insurtech Association Mexico
API	Application Programming Interface
A&E	Claims and Diseases Insurance
Banxico	Bank of Mexico
CFC	Federal Competition Commission (extinct)
Single Circular	Insurance and Finance Single Circular
CNBV	National Banking and Securities Commission
CNSF	National Insurance and Bonding Commission
Cofece	Federal Economic Competition Commission
Condusef	National Commission for the Protection and Defense of Financial Services Users
CPEUM	Political Constitution of the United Mexican States
CR4	Concentration of the four largest agents in the market
CSG	General Health Council
DOF	Federal Official Gazette
USA	United States of America
ENIF	National Financial Inclusion Survey
GPC	Clinic Practice Guide referred to by article 32 of the General Health Law
IHH	Herfindahl-Hirschman Index
IMCO	Mexican Institute for Competitiveness
IMSS	Mexican Institute of Social Security
Inegi	National Institute of Statistics and Geography
ISES	Instituciones de Seguros Especializadas en Salud
ISSSTE	Institute of Social Security and Services of State Workers
LFCE	Federal Economic Competition Law
LFPC	Federal Consumer Protection Law
LFIF	Federal Law of Bonding Institutions (repealed on April 4, 2015)

LGISMS	General Law of Insurance Institutions and Mutual Insurance Companies (repealed on April 4, 2015)
LGS	General Health Law
LISF	Finance and Insurance Institutions Law
LITF	Law to Regulate Fintech Institutions
LPDUSF	Law for the Protection and Defense of Financial Services Users
LSCS	Law on the Contracting of Insurance
NCC	Norway Consumer Council
OECD	Organization for Economic Cooperation and Development
GDP	Gross Domestic Product
Profeco	Office of the Federal Consumer Attorney
RASF	Insurance and Bond Agents Regulation
Salud	Ministry of Health
SGM	Medical Expenses Insurance
SHCP	Ministry of Finance and Public Credit
TMCA	Average annual growth rate
ZMVM	Metropolitan Zone of the Valley of Mexico

Legal attribution

Section XXI of article 12 of the LFCE empowers Cofece to promote the study, dissemination and application of the principles of free market access and economic competition.

This study is aligned to the 2018-2021 Strategic Plan and the 2022-2025 Strategic Plan of Cofece, which establish the realization of market studies that identify restrictions to competition in priority sectors and, if it is the case, the monitoring of the compliance of the recommendations issued.

In both Plans, the Commission, with the purpose of guiding its efforts towards sectors in which there can be a greater impact on economic growth and the welfare of people, has established the health and financial sectors as a priority. Based on these, the Commission conducted the present study, without this implying stop addressing competition problems in other sectors. The conduction and publication of this study does not prejudice on possible infringements to the LFCE.

Executive Summary

The present study on the market of Insurance of Medical Expenses (SGM for its initials in Spanish) identifies problems of competition and free market access and proposes a set of recommendations to mitigate them.

The SGM are financial instruments that allow to transfer negative economic results caused by damages or health risks, so that the economic loss faced by an individual is shared among a group of people who resist such damages or risks collectively.

The analysis of the SGM market is justified for several reasons, among them:

- Out-of-pocket spending in Mexico is one of the highest in the world. SGM prevent families from having to pay large sums for care, which can be catastrophic.
- 13 million people in our country are covered by SGM.
- The Mexican population is aging and will demand more health services. This phenomenon implies carrying out actions to finance the prevention and care of chronic degenerative diseases.
- Digital platforms are driving technological innovation in the insurance sector internationally, through the use of Big Data, machine learning, artificial intelligence and blockchain.

Diagnosis

The SGM market is characterized by having few large competitors.

- The four largest insurers account for 75% of SGM premiums. This concentration in a few competitors is observed in both individual and group insurance.
- In Mexico, SGM is the most concentrated line of insurance with the exception of health insurance.

The SGM market does not function efficiently.

- The dispersion of premiums or policy prices among insurers is high, even in standardized basic insurance, which is a homogeneous product. This is an indication that the market is not functioning properly, since microeconomic theory predicts that in a market with perfect competition and homogeneous goods there can be no price discrimination.
- Premiums also vary considerably by state. Premiums are higher in the states that have the hospitals with the most beds and the highest GDP per capita.

Neither does the related market for hospital care services function efficiently.

- The premiums of SGM policies have an upward trend, which is directly related to the increase in costs experienced by insurers due, to a greater extent, to claims paid to hospitals.
- The large hospital groups, which have the largest hospitals, are critical in providing services to insured persons. Although many small hospitals participate in the market, they generally do not have the specialists and infrastructure to handle complex and costly illnesses and emergencies. Hospitals need to be certified by the General Health Council (CSG for its initials in Spanish) in order for insurers to pay claims directly.
- Mexico City, Jalisco, Nuevo León and the State of Mexico concentrate 79% of hospitals with more than 100 beds and 70% of insurance payments. The prices of hospital services are significantly higher in these entities, even for common conditions whose care should be standard. This may indicate that insurers have little bargaining power relative to larger hospitals.
- The econometric results show that the premiums of individual SGM policies are 12% more expensive in states with private hospitals with more than 100 beds. In addition, the concentration of insurers has an imperceptible effect on premiums. This suggests that when the costs of hospital services are higher, insurers pass part of these costs on to consumers through higher premiums.
- Other econometric results show that hospitalization costs tend to decrease when insurer concentration rises, however, they rise when

hospital concentration strengthens. However, this effect occurs mainly in markets that do not have large hospitals, since in the presence of the latter, hospital care costs increase by 34%.

Consumers face high costs for switching insurers.

- The costs of switching insurers cause many people to be tied to their first choice of insurer (lock-in). Consumers who already have insurance cannot move to insurers with more attractive plans in terms of price or quality, which harms competition.
- Insurers are not obliged to recognize the seniority of customers coming from other insurers, so consumers prefer to stay with the same insurer. In addition, insurers do not cover pre-existing conditions and waiting periods for the care for some conditions are back to square one. Finally, in some cases policyholders pay penalties for early cancellations, even when they do not use the policy.

The purchase decisions of the insured are made difficult by the offer of different, poorly differentiated options, lack of information and uncertainty about the consequences of a future illness.

- Consumers face uncertainty about the future of their health. Illnesses that will require costly treatments are unpredictable and the quality of care cannot be known in advance. Added to this is uncertainty about the impact that the illness will have on the individual's overall health conditions, family income, and recovery. Uncertainty makes it difficult to make the best decision to contract an SGM.
- SGMs are complex products where consumers find it difficult to correctly assess their value for money. According to the National Survey on Financial Inclusion (ENIF for its initials in Spanish) (2018), 20% of Mexican users did not know the cost of the SGM premium they purchased. This leads to markets not functioning properly, as insurers do not have sufficient incentives to offer products with adequate value for money.
- Consumers' cognitive capacity to analyze all the options for complex products has a limit (bounded rationality). This difficulty increases when insurers offer different plans with differences that are not very noticeable to consumers. Each insurer offers, on average, seven different individual SGM plans. At the extreme, one insurer offers as many as 33 seemingly different options.

The distribution and commercialization of insurance through agents and the way they are remunerated discourages entry.

- Agents are the main sales channel for SGM, as eight out of ten individual or group products are commercialized through them. Due to the wide variety of products on the market, insurance agents play the role of resolving the doubts of interested parties and offering the option that would best suit their needs.
- Insurers that want to enter the SGM market, in addition to having a medical and service network, also need access to a network of sales agents. Incoming insurers could market their products through existing agent networks, persuading them to include their products in their portfolio; however, agents have incentives to work harder to sell products for which they receive higher commissions and bonuses. Larger insurers pay higher direct commissions to agents, which is an indication that commissions would be deterring new entrants.
- Agents can sell insurance from a single company or from several companies. Some insurers have a strategy of paying commissions conditional on reaching certain sales goals, so they are called contingent, which consist of bonuses or annual trips. As a result, agents have an incentive to work harder to sell the products with which they will reach the goal that will earn them the contingent commissions. This strategy prevents incoming insurers from incorporating their products into the portfolios of registered agents, which constitutes a barrier to entry.
- At the international level, the European Commission recommended prohibiting the linking of commissions received by agents to sales targets, as this creates a conflict of interest. Agents focus on selling a specific plan or a particular insurer, without fully considering the characteristics of their clients.

Legal uncertainty affects the entry of new companies and innovation through new models.

- Insurtech technology companies have the potential to increase the variety, quantity and quality of insurance and make its commercialization more efficient. The novel models' scheme is a way to drive innovation and facilitate the entry of new players. Although the National Insurance and Bonding Commission (CNSF, for its initials in Spanish) has already published provisions to regulate the opera-

tion of innovative insurance models and to record them in a public registry, it has not received applications to authorize them.

- The regulation regarding the interconnection and sharing of insurers' data through Application Programming Interface (API) (open finance) has not been issued. This regulation could facilitate the exchange of data from established companies with entrants, upon payment by the applicant. This would lead to both the entry of companies dedicated to offering services based on user data (data brokers), as well as insurtech technology companies. The absence of this regulation would reduce the legal certainty needed to invest.

Recommendations

In order to promote competition and free market access, as well as to make the SGM market more efficient, this study proposes eleven recommendations that are grouped under four areas:

- I. Promotion of transparency in the related hospital services market.
- II. Improvement of consumer mobility.
- III. Decrease of search costs for consumers.
- IV. Reduction of barriers to entry.

Introduction

The present study on competition in the SGM market identifies obstacles to the processes of free market access and economic competition and proposes recommendations to achieve greater efficiency in this market and, in consequence, for consumers to have higher quality products at lower prices. This based on section XXI of article 12 of the LFCE.

This study is aligned with the 2018-2021 Strategic Plan and the 2022-2025 Strategic Plan of Cofece, which establish the elaboration of market studies that identify restrictions to competition in priority sectors, in this case, the financial and health sector.

SGM have an annual market value of 92 billion Mexican pesos and provide coverage to 13 million people. 71% of SGMs are acquired through companies and organizations as a compensation for their employees. One benefit of SGM is that private health services free up resources from public services, which can be channeled to the population in greater need.

This study identified that there are competition problems and obstacles to free market access in the SGM market, as well as in the market related with the hospital care services. The study concludes that it is necessary to modify the regulation and instrument other public policy measures to introduce greater competition, improve efficiency in these markets and promote innovation.

To analyze these aspects, the study provides an economic overview of the market; statistically analyzes the prices, including the estimation of two econometric models; identifies the main economic and regulatory obstacles to free market access and economic competition; analyzes the context in which consumers make contracting decisions and the costs for switching insurers. It also presents a compendium of recommendations.

The contribution of this study is addressing, from a competition perspective, the interrelation of the structure of the markets of insurers and hospitals in Mexico, as well as its impact on the prices of policies and hospital care services. Under no circumstances or assumption, the findings of this study imply a prejudgment regarding possible infringements to the LFCE.

1. Overview of the insurance sector

1.1. Background

Insurance are “financial instruments that allow to transfer, partially or totally, negative economic results caused by incidents or risks, in such way that the value of the damages or loses faced by an individual or company is shared between a group of people or companies that resist said damages or loses in an aggregated manner, in order to have a much lesser effect in case the case that the event is presented individually”.¹

A claim is any result (positive or negative) that produces effects over the insurance policy.² The latter is the group of documents that establish the rights and obligations between insurer and policyholder, as well as the specific terms and conditions.³

The price of the insurance is known as premium, whose payment guarantees that the policy is valid during the agreed period, generally a year. Premiums paid by insured persons who did not suffer damage or loss contribute to repairing the damage or loss of those who were affected. The role of insurers is to manage the funds of policyholders to indemnify those affected by an incident.⁴

1. Cofece (2014a, p. 884).

2. Single Circular, Annex 5.4.2-b.2.

3. CNSF (2021a, p. 4).

4. Cofece (2014a, p. 884).

The fundamental factor that explains the demand for insurance is the risk aversion of the policyholder from suffering a financial loss result of an incident. This implies that the insurance does not cover the risk of the claim itself – an illness in this case- but rather the loss of wealth derived from the costs involved in restoring health or its treatment.⁵

Insurance markets exhibit market failures, which imply that efficient allocations are not always achieved.⁶ In these markets, the problem of asymmetric information known as adverse selection is usually present, which refers to an individual having personal information that is unknown to the insurer beforehand to the purchase and sale of the insurance, but which could explain the interest in purchasing insurance by individuals more likely to have an claim.⁷ For example, a sick person would seek to hide their true state of health and acquire an insurance.

Another problem of asymmetric information is the moral risk which appears when a person has incentives to take risks that they would not face if they were not insured, while the insurer ignores the behavior of the policyholder.⁸ For example, an insured person would take more dangerous actions or would make less effort to take care of their health.

Uncertainty about future health state is what makes medical expenses insurance possible. If individuals and insurers had certainty about the claims that would occur in the future, only those people most prone to suffer them would want to contract an insurance and, at the same time, insurers would not want to cover them since they would mean higher outlays.⁹

Insurance markets were previously analyzed by this Commission (Cofece, 2014). The main findings of this study were:

5. Ferreiro, Saavedra and Zuleta (2004).

6. Pauly (1968).

7. Rothschild and Stiglitz (1976); De Meza and Webb (2001).

8. Blomqvist (1997).

9. Arrow (1963, p. 945).

- Low insurance penetration measured as direct premium as a percentage of GDP (1.8% for 2013).¹⁰ Only 4.5% of households had taken out insurance.
- Low transparency from the suppliers to the consumers regarding prices and conditions of the policies.
- Complex insurance products, as a consequence of the tendency of the industry to design personalized or customized products. For this reason, insurance agents certified by the CNSF become essential for their sale.
- Information failures, specifically, that related with risk history of policyholders.

To address said problem, Cofece recommended, among other measures:

- Design information platforms for insurance consumers.
- Create a risk bureau managed by agents different from insurers or insurance institutions associations, that offer value-added products for both consumers and insurers.¹¹
- Encourage adhesion contracts, which are policies previously established with a high degree of standardization, whose granting and renewal do not require the participation of an insurance agent.¹²

In 2020, the Commission considered it necessary to deepen the analysis of SGM. The reasons for this are: First, the prevalence of the out-of-pocket spending on health care. This concept refers to the payments assumed by patients when the insurance – public or private- does not fully cover the costs of health care; this includes co-insurance, self-medication and other expenses paid directly by households.¹³ In Mexico, out-of-pocket spending represents 41% of the spending in health care, which is one the highest percentages in the world (Graph 1).

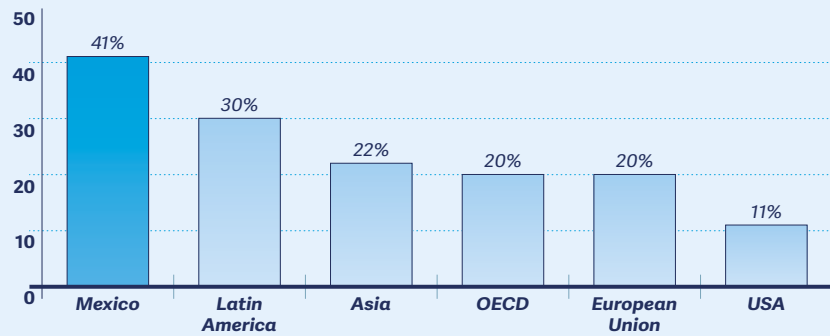
10. The average in OECD countries between 2003 and 2010 ranged between 8% and 10% (Cofece, 2014a)

11. In the 2014 study, Cofece pointed out that risk bureaus managed by agents different to insurers or insurance institutions associations are a global practice already present in Australia, USA and Great Britain (Cofece, 2014b, p.917).

12. Cofece (2014b, pp. 924-925).

13. OECD (2009, p. 146).

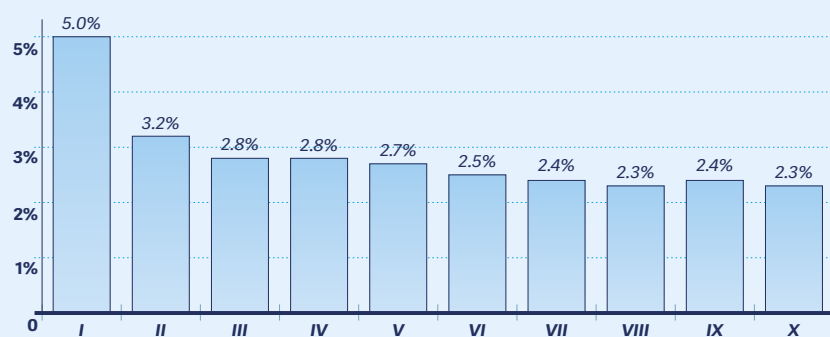
Graph 1. Out-of-pocket spending in health in Mexico and the world, 2018 (Percentage of the total spending in health)



Source: Cofece based on OECD (2019).

Out-of-pocket spending represents a greater proportion of the income of lower-income households (Graph 2). When such expenses are so high that other family expenses have to be reduced to the level where basic consumption needs are no longer met, these expenditures are said to be catastrophic.¹⁴

Graph 2. Out-of-pocket spending in health in relation with income by income decile, 2020 (Percentage)



Out-of-pocket spending: Includes primary or ambulatory attention, hospital attention and medicines without prescription.

Source: Cofece based on Inegi (2020c).

The SGM protects the finances of families in case of disease, at least until certain level of spending, thus limiting their exposure to catastrophic expenses. Using data from India, Joglekar (2008) concludes that

14. Pal (2012).

the probability that expenses in health are catastrophic decreases 10% when the head of the household is insured. This study found no evidence of a similar investigation for Mexico.

Secondly, private health services serve a significant part of the population. In 2020, outpatient consultation in private establishments amounted to more than 12 million per year (12% of total consultations);¹⁵ 1.9 million people are discharged annually from private hospitals¹⁶ (340 thousand more than in IMSS hospitals),¹⁷ and the value of the market of medicines purchased in pharmacies amounts to 44,500 million Mexican pesos a year (36% of the market).¹⁸ Between 2019 and 2020, probably because of the effect of the confinement due to Covid-19, consultations and discharges from private hospitals decreased by 14% and 2%, respectively.¹⁹

The demand of private health services is generated, on the one side, by people without access to a public service: 26% of the population declared not being affiliated to any health institution in the 2020 Population and Household Census.²⁰ On the other side, some families complement the access to public services with private services: in 2018, 10% of families affiliated to the IMSS, ISSSTE, the Ministry of National Defense, the Ministry of the Navy or *Petróleos Mexicanos* also had a SGM.²¹ According to González, Aldape, Cahuana, Díaz and Gutiérrez (2018):

15. Inegi (2020b). The data of outpatient consultations include the sum of first-time outpatient consultations and subsequent ones. From 2016 to 2019, outpatient consultations grew at an average rate of 3%.

16. Inegi (2020b).

17. IMSS (2020) Medical services provided in hospitalization, absolute and percentage variation 2020. Figure at the end of 2020.

18. Inegi (2019a). Figure at the end of 2019.

19. Inegi (2020b). Consultations went from 14.0 million in 2019 to 12.0 million in 2020; expenses went from 1.94 million in 2019 to 1.91 million in 2020.

20. Inegi (2020a).

21. Estimation of Cofece with microdata of the ENIF 2018 (Inegi,2018).

*“On the one hand, Mexicans seek convenient and quality health services, as well as affordable prices to cope with growing family demands in a complicated urban environment. On the other hand, the use of private services is also due to the fact that health services provided by government institutions, to which most Mexicans are affiliated, are insufficient, difficult to access and unsatisfactory”.*²²

Thirdly, Mexican population is aging: between 2010 and 2020, population aged 65 and older grew at a 4.1% TMCA, which contrasts with the 1.3% TMCA of the total population for the same period.²³ The change in the demographic pyramid must lead to reflect about the public policies necessary to prevent and address chronic-degenerative diseases, as well as the mechanisms to finance their care.

Finally, internationally, the insurance sector is experiencing a process of technological innovation driven by digital platforms that use new technologies. These technologies are expected to bring forth substantial changes in the efficiency of these markets and introduce greater competitive pressure.

1.2. Regulation separates medical expenses insurance from health insurance

Article 25 of the LISF divides A&E into three branches: health, personal accidents and medical expenses (Figure 1).

Figure 1. Branches of accidents and diseases insurance

	HEALTH	PERSONAL ACCIDENTS	MEDICAL EXPENSES
Accidents and diseases =	They cover services directed at preventing diseases or restoring health.	+	They cover injuries or disability that affect the personal integrity or health of the policyholder, as a consequence of an external, violent, sudden or incidental event.
		+	They cover medical, hospital and other expenses that are necessary for recovering health.

Source: Single Circular, Annex 5.4.2-b.2.

22. González Block *et al.* (2018, p.30) The Health Institute for the Welfare, which in in 2020 substituted the Popular Insurance (*Seguro Popular*), did not request affiliation or fees to receive medical care and medicines, although the user had to present identification documents (birth certificate or Single Population Registry Key and I.D. from the National Electoral Institute).

23. Conapo (2021, p. 93).

The coverage that may be included in insurance contracts in the medical expenses line of business are established in article 27 of the LISF (section IV):

“IV. For the branch of medical expenses, insurance contracts whose purpose is to cover medical, hospital and other expenses that are necessary for the recovery of the health or vital vigor of the policyholder, when they have been affected by an accident or disease. The Insurance Institutions and Mutual Insurance Companies authorized to operate this line of business, may offer as an additional benefit within their policies, coverage of preventive medicine services, only in for compensation nature.”²⁴

And for the health branch (section V):

“V. For the health branch, insurance contracts whose purpose is the provision of services aimed at preventing diseases or restoring health, through actions that are made for the benefit of the policyholder”.

Regulation separates SGM, operated by insurers, from health ones, operated by ISES. The 1999 reform to the LGISM created the ISES.²⁵ The objective of this reform was to regulate and homogenize a market, outside the insurance sector, in which the so-called health services administrators provided “pre-paid medicine” for the medical services of bank employees and employees of federal and state decentralized public agencies that had the “scheme of reversal of fees with subrogation of services” by the IMSS.²⁶ In fact, the reform allowed to expand or extend the agreements for fee reversal and subrogation of services with the IMSS, in such way that the ISES are dedicated to commercialize health insurance aimed at preventing diseases and restoring health, with the possibility of offering SGM. In contrast, insurers can only offer health insurance if they create an ISES.²⁷

24. EThe compensatory nature of the insurer refers to the payment they make to the policyholder for services that were necessary to diagnose a condition that is covered by the policy (e.g. consultations or lab studies).

25. Statement of the Decree that reforms the LGISM.

26. See Leal Leal (2005, pp. 46-48), Lara di Lauro (2005, pp. 2-3) and Fernández (1999, p.16).

27. For example, AXA Seguros created an ISES to offer health insurance.

This study did not find a similar separation between SGM and health insurance in other countries. In countries with private health systems (Chile, Colombia, USA) a single health insurance covers the benefits that in Mexico are separated in these two.²⁸ In countries of the European Union where public and private health systems coexist -such as Germany, Spain, France and the United Kingdom- people contract a voluntary insurance, which includes both preventive and reactive care to cover any service that is not contemplated by the public system, cover claims that imply a higher expense, have faster access to a treatment or choose a better health care provider.²⁹

Even though more than 20 years have passed since the reform that created the ISES, the business model of health insurance has not consolidated. The ISES have little participation in the insurance of health expenses. In 2020, the sale of health insurance was of 3.2 billion Mexican pesos (3% of the A&E branch) providing insurance to 1.3 million people (1% of the population); in contrast, the income for the sale of SGM amounted to almost 94 billion Mexican pesos (94% of the A&E branch) and provided insurance to 13.4 million people (10% of the population).³⁰

This study focuses on SGM due to the notable differences in both penetration in the market and business models between insurers and ISES.

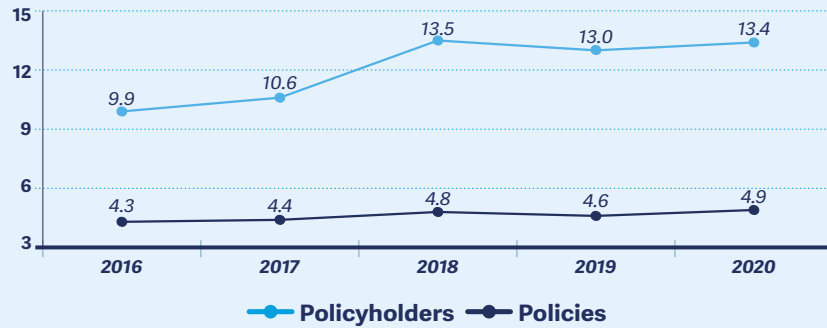
1.3. Markets are concentrated

From 2016 to 2020, persons covered by a SGM increased from 9.9 to 13.4 million and the number of policies went from 4.3 to 4.9 million (Graph 3), which meant an average annual growth of 7.9% and 3.3% in the number of policyholders and policies issued, respectively.

28. Sagan and Thomson (2016) and Mathauer and Kutzin (2018).

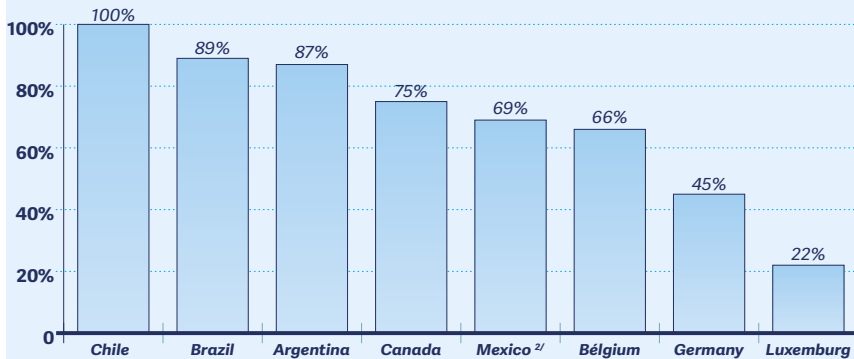
29. Voluntary health insurance can cover both preventive and reactive care of patients, so it can be classified as substitute, complementary or supplementary products of the public health system services. See Sagan and Thomson (2016) and Mathaue and Kutzon (2018).

30. CNSF (2020a) and CNSF (2020b).

Graph 3. Policyholders and SGM policies, 2016-202 (Millions)

Source: Cofece based on CNSF (2020a).

The health systems of the different countries have elements – coverage, management, organization, regulation, financing, or provision of services- that determine the relative importance of public and private services, as well as the market structure. The characteristics of the Mexican health system resemble that of countries in which the State delegates a part of health care to private service providers. In contrast with the market structure of European countries with similar health systems, the Mexican market of SGM is more concentrated, less so than in other countries in the Americas (Graph 4).

Graph 4. CR4 in health insurance of selected countries, 2018^{1/} (Percentage of the value of the premiums)

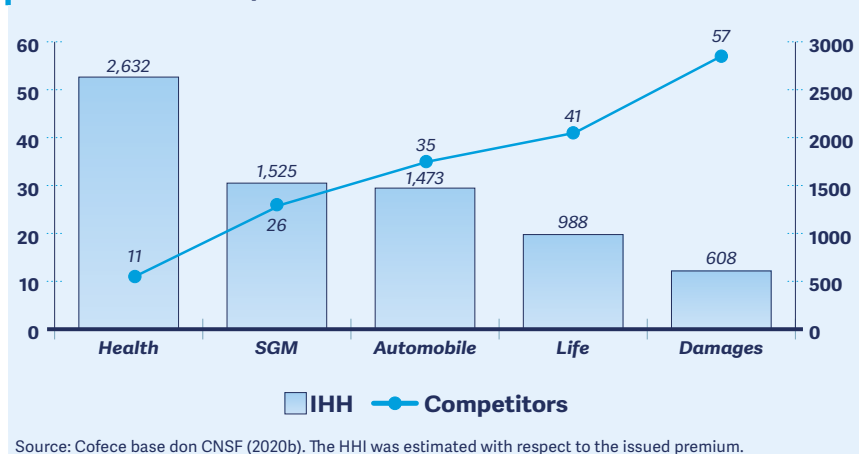
^{1/} The information for Canada and Chile is from 2020.

^{2/} The information for Mexico is of SGM (individual and collective).

Fuente: Cofece with information from CNSF (2020b) and reports from countries available at: Insurance Association of Chile (2021), Private Insurance Superintendency (2021), Fraser Group (2021) and Insurance Europe (2021).

When compared with other insurance branches, only the market of health insurance is more concentrated than that of SGM (Graph 5). The four insurers with the largest participation in SGM concentrate 75% of the issued premiums. There are fewer competitors in the market of SGM than in the car, life and damages insurance markets. Although each branch of insurance requires specialization, in principle, the existence of insurers operating in other branches and not in SGM would be indicative of less competitive pressure. The existence of few suppliers in the market makes it easier for insurers to access economies of scale in administration and increases their bargaining power vis-à-vis health care providers; however, it can also reduce competition in the market.³¹

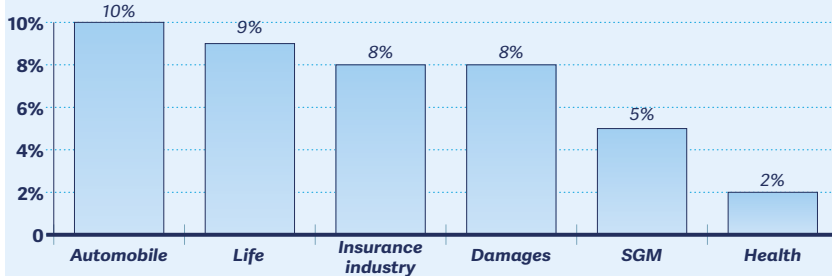
Graph 5. Number of competitors and HHI in insurance branches, 2020 (Number and points)



Even though the SGM market is relatively concentrated, it is the least profitable insurance branch, with the exception of health (Graph 6).

31. Schut, Sorbe and Hoj (2013).

Graph 6. Average profitability by insurance branch, 2016-2020 (Average percentage)

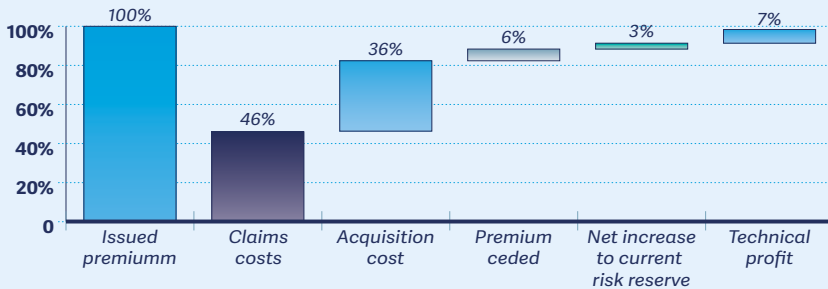


Profitability = Profit of the exercise / Income per premiums
 Source: Cofece based on CNSF (2020b).

The profits of the insurers are in function of their costs, whose main items are: i) costs of claims, which derive from covering incidents that occur to users; ii) acquisition costs, which are commissions, bonuses and awards that insurers offer to sales agents; iii) premium ceded, which refers to the amount over the percentage of the sales per premiums that insurers share with reinsurers, and iv) net increase in the current risk reserve, which refers to the part of the premium that must be used to meet future claims obligations, also called unearned premium.

The costs of claims are the main components of the costs of SGM insurers (Graph 7). The differential between the premium and the aforementioned costs is the technical profit.

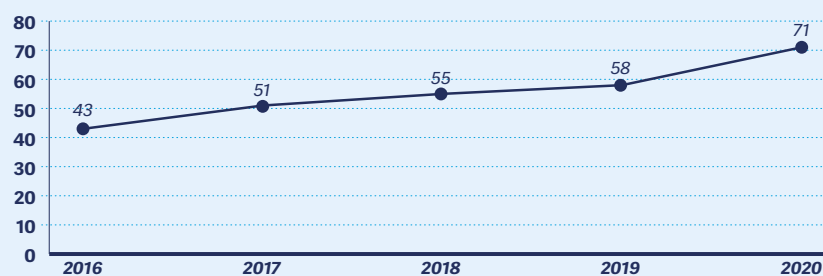
Graph 7. Issued premium, costs and technical profit, 2016-2020 (Percentage of the accumulated issued premium)



Source: Cofece based on CNSF (2020b).

In the period from 2016 to 2019, the cost of claims – approximate with the average amount per claim – had an upward trend with a significant rise in 2020 as a consequence of the Covid-19 pandemic (Graph 8).

Graph 8. Amount per claim paid, 2016 to 2020
(Thousands of 2020 Mexican Pesos)



Source: Cofece with data from CNSF (2021b) and Inegi (2021a).

The increase in the average amount per claim can occur, on the one side, due to an increase in the average age of policyholders, who have a higher probability of suffering more frequent and expensive claims; on the other side, due to the inflation of hospital services, medical fees and supplies. An important element in the rise of health care prices is technological innovation, which is leading to increasingly effective treatments, but also more expensive ones. Another element is the negotiations that insurers conduct with providers of hospital services. Bargaining power between insurers and hospitals and its effects on policies paid by consumers are analyzed in the next chapter.

1.4. Individual and collective insurance

Insurers can commercialize individual and collective SGM. The former provide coverage to an individual and her family; while the latter cover employees, members of associations or groups, as companies and government entities. Employers collectively contract SGM to offer it to their employees as a benefit, who generally have the option of expanding coverage or adding family members through additional fees. In 2020, 71% of the persons with SGM got the products collectively.³² In that year, 18 insurers offered both

32. CNSF (2020a). This calculation omits 1.7 million policyholders of *Patrimonial Inbursa* whose product is contracted with a charge to telephone service and only covers telephone medical assistance and ambulance transfers.

individual and collective SGM.³³ According to the products registered before the CNSF in 2021, 32 insurers offered 290 SGM plans from both segments.³⁴ The largest scale of collective insurance, by insuring many people at the same time under the same plan, allows insurers to reduce their average cost. In addition, their design does not usually take into account the background and risk factors of the members to determine the premium of the policy, because risk is distributed among the whole group. As a result, the average premium of collective insurance is about a third lower than that of individual insurance (Table1).

Table 1. Proportion of policyholders and annual average price by SGM subtype, 2020^{1/} (Percentage and Mexican pesos)

Insurance subtype	Collective		Individual	
	PolicyHolders ^{2/}	Average price	Policyholders ^{2/}	Average price
Extended plan ^{3/}	78%	\$4,926	45%	\$19,629
Limited plan ^{4/}	11%	\$5,912	27%	\$17,314
International plan ^{5/}	6%	\$7,941	7%	\$31,552
Compensation plan ^{6/}	0%	\$760	8%	\$1,648
Standardized basic product ^{7/}	0%	\$3,498	0%	\$3,498
Others ^{8/}	5%	\$7,836	13%	\$9,730
Total	100%	5,418	100%	17,379

^{1/} To omit insurance with minimum coverage from the analysis, only insurance with a premium greater than the minimum registered for the standardized basic product (\$445) was considered.

^{2/} Values in 0% represented less than 0.1% of policyholders.

^{3/} Plans that include all hospitals.

^{4/} Plans that exclude highest cost hospitals. The higher average price of limited plans could be due to the volume of policyholders, since, on average, limited plans provide insurance to 22 persons and extended plans to 79 persons.

^{5/} Plans with complete national and abroad coverage, including the highest cost hospitals.

^{6/} Plans in which a compensation or fixed amount is paid in the case of accident or disease or a daily rent for hospitalization and which are standardized basic.

^{7/} Plans that cover risks faced by population, which can be homologated by their common characteristics and that have as a purpose to satisfy the concrete protection needs of the population in Chapter 4.7.1 in force of the Single Circular. Price based on the average of the basic insurance registry of Condusef.

^{8/} Plans that are not within the previous subtypes, except for microinsurance.

Source: Cofece with information from CNSF (2020a) and Condusef (2021a).

The segment of collective insurance is less concentrated compared to that of the individuals (Table 2). Between 2016 and 2020, only two insurers that offer SGM entered the market and two exited.³⁵

33. Condusef (2021d).

34. File REC-004-2022 (Number 218).

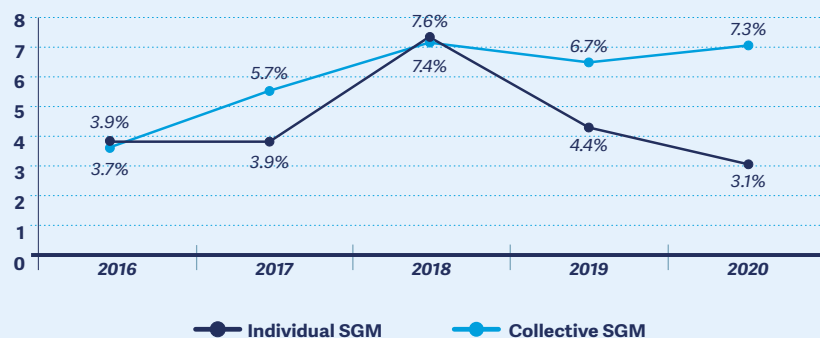
35. In 2018 and 2020, *Chubb* and *Aserta Seguros* entered respectively; while *Assurant* and *ACE* exited in 2017. *ACE* was acquired by *Chubb*.

Table 2. Concentration of issued premiums in the SGM market, 2016 and 2020 (Percentage, points and number)

	Individual		Collective	
	2016	2020	2016	2020
CR4 (%)	74	74	69	72
IHH (points)	1,772	1,752	1,460	1,586
Insurers (number)	25	26	19	18

Source: Cofece based on CNSF (2020b).

In general, the collective insurance segment was less profitable than that of the individual insurance from 2016 to 2020 (Graph 9). One hypothesis is that collective insurance, being contracted by organizations with greater bargaining power than individual policyholders, could be getting better conditions. However, this study does not explore the business relationship between insurers and employers.

Graph 9. Profitability in SGM, 2016-2020 (Percentages)

Profitability= Profit for the year / Income per premiums.

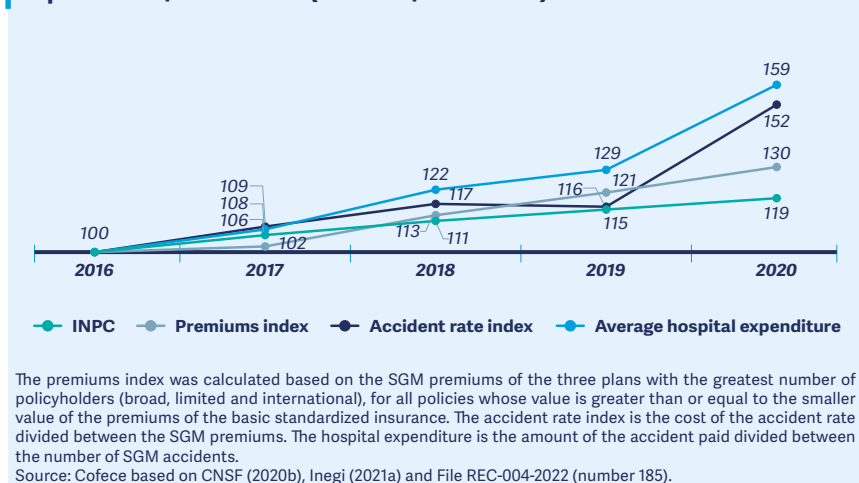
Source: Cofece based on CNSF (2020b).

2. Price Analysis

2.1. Rising trend in premiums

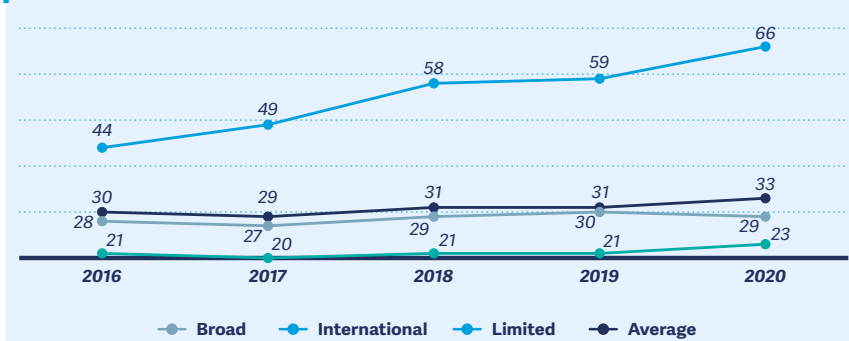
Between 2016 and 2020, premiums of SGM policies increased 2.8% at an annual real average rate, more than the INPC, although less than the claims rate and the hospital expenses associated to this claims rate (Graph 10). The increase in the claims rate and average hospital expenses are pressuring the rise in the SGM premiums. As previously seen (see Graph 8), the average amount per claim paid by insurers increased 13% per year in the same period.

Graph 10. Average premiums, accident rate and hospital expenditure, 2016-2020 (Indexes, 2016=100)



The increase in premiums is greater for international and limited plans, which were 10.6% and 2.4%, respectively (Graph 11).

Graph 11. Average premium for individual SGM plans, 2016- 2020^{1/}
(Thousands of Mexican pesos, at 2020 prices)



^{1/} Rate of the issued premium to the number of policyholders. The average premium considers only the three plans with the most policyholders (broad, limited, and international). It included only policies with a premium higher or equal to the smaller value of the premiums of the basic standardized basic insurances. It included all policyholders regardless of their age.

Source: Cofece based on CNSF (2020b).

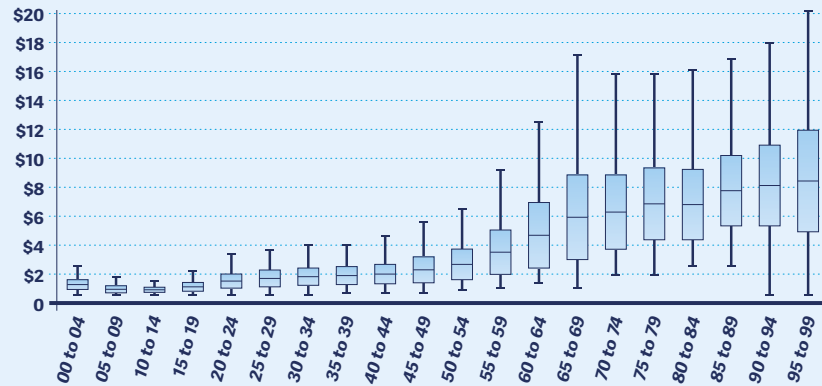
2.2. High variations in premiums

Comparing prices between suppliers is useful as an indicator of the competitive conditions in a market. The starting hypothesis is that, if the variance between the prices of products that are relatively homogenous is high, then some suppliers have greater market power and, therefore, competition is not as intense. This hypothesis assumes that there are no major capacity constraints (each insurer can sell any amount of insurance that is demanded to it) and the costs between each insurer are similar.

There is great diversity among the plans of the different insurers, but they are obliged to offer a standardized basic product, which is why it is the only homogenous policy between the different insurers. This product is not designed to adapt to specific clients, so insurers do not modify the characteristics of this product to the need of the clients, but rather, when they demand it, they must accept said characteristics. Graph 12 shows that the dispersion of the premiums of the basic standardized product is high, mainly in the premiums paid by population aged 50 and

over. This dispersion in a homogenous product is an indication that the market is not functioning properly.³⁶

Graph 12. Dispersion of premiums of the SGM basic standardized product, 2020^{1/} (Thousands of Mexican pesos)



^{1/} The variation is illustrated through a box graph in which; the bottom of the box is the first quartile; the middle bar is the median or second quartile; the top is the third quartile; and the extremes are the minimum and maximum values within 1.5 times the interquartile range (difference between the third and the fourth quartiles) with respect to the nearest quartile.

Source: Cofece based on Condusef (2021a).

The coefficient of variation of the premiums of other subtypes of plans also increases as the coverage of the insurance (more expensive plans) increases, except for compensation plans (Graph 13). Unlike the standardized product, these policies are not homogenous, but have different characteristics and quality between each insurer.

36. Microeconomic theory predicts that in a market with perfect competition there is no price dispersion, since companies, by being price takers, cannot discriminate prices (Varian, 1989). There is consensus in the literature that price discrimination is only feasible under certain conditions: a) companies have market power in the short-term; b) consumers can be segmented directly or indirectly, and c) arbitrage among goods with different prices is not feasible (Stole, 2007). Thus, to the extent that there are similar prices for homogenous goods, the market would be more efficient. Although there are situations in which there is no price dispersion and the market does not work, such as when there is a collusion.

Graph 13. Average premium and coefficient of variation^{1/} by subtype of SGM plans, 2020^{2/} (Thousands of Mexican pesos and coefficients)



^{1/} Variation coefficient = Standard deviation / Average.

^{2/} Individual insurance for policyholders aged less than 55 years in 2020.

Source: Cofece based on CNSF (2020b) and Conducef (2021a).

Average premiums also vary considerably by state (Table 3). The greater the hospital infrastructure and the average income in a state, the higher the premiums. This effect occurs mainly in insurance plans that cover services in hospitals with higher prices.

Table 3. Average premium by state, 2020^{1/} (Percentage and thousands of Mexican pesos)

Insurance subtype ^{2/}	Policyholders	Mexico City	State of Mexico	Jalisco	Nuevo León	Rest of the country
Broad	23%	18.4	18.2	16.5	18.7	13.5
Limited	14%	14.8	14.0	13.6	15.3	11.3
International	10%	36.7	38.2	40.3	36.9	35.8
Compensation	9%	1.8	2.2	2.0	2.0	2.0
Basic Standardized	0%	2.5	1.7	0.0	0.0	8.1
Others	44%	8.3	8.6	6.2	8.1	5.6

^{1/} Price of the individual insurance for policyholders aged under 55 years in 2020.

^{2/} ■ State with the highest premium. ■ State with the lowest premium.

Source: Cofece with information from CNSF (2020a).

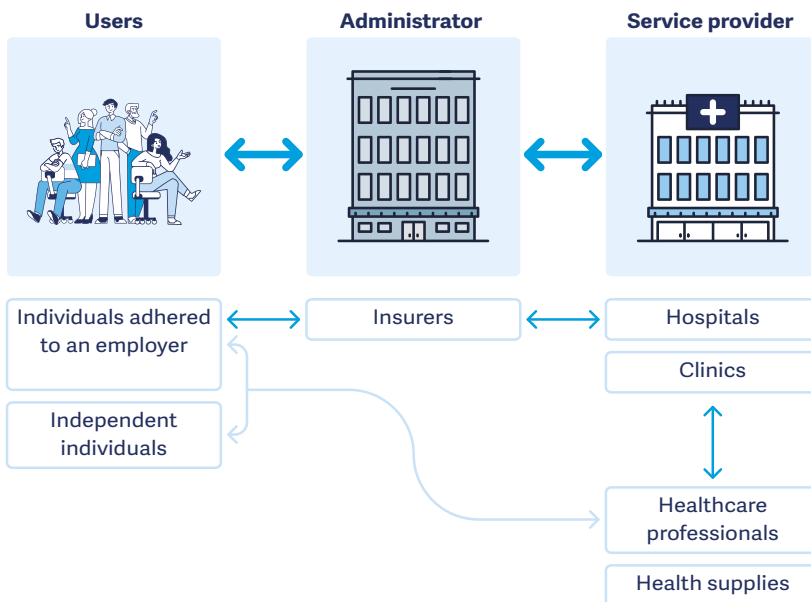
The characteristics of individuals (age, sex, comorbidities, etc.), their environment (place of residence, occupation, etc.), the market structure and the costs of hospital services are variables that directly influence premiums. Therefore, it is necessary to investigate its determinants.

2.3. Determinants of premiums

Contracting a SGM means that users can resort to the network of health

services and professionals offered by their insurer without the need to negotiate directly with medical services providers. Insurers sign service provision agreements with hospitals, in order to guarantee the care of policyholders with claims. Healthcare professionals, who care for the ailments of the policyholders, may use the facilities and supplies of the hospitals thanks to the establishment of these contractual relationships (Figure 2).

Figure 2. Private health sector



Source: Cofece with information from CIEP (2018, P.5) and Cruz and Olivares (2016, p.23)

Insurers seek to incorporate the most prestigious chains into their hospital network, along with other less prestigious hospitals, as long as the latter meet a minimum level quality care. Thus, insurers require private hospitals to be certified by the CSG to make direct payments.³⁷ This since policyholders, when contracting a SGM, consider the perceived quality of the hospitals included in the network as a variable to make their decision, at least of the hospital whose brand they recognize.³⁸

37. CSG (2015).

38. González Block *et al.* (2018, p. 199).

In the market of hospital care services, the market related to the SGM, hospitals have incentives to establish commercial agreements with the insurers that can provide them with more clients, but they can only do so if they comply with the certification. For this reason, hospitals have incentives to attract healthcare professionals and providers with recognition or good reputation, in order to maintain their prestige or level of care.

The relationship between users, insurers, hospitals, and healthcare professionals is fundamental in determining the characteristics of the policy and its price. Therefore, the analysis of the characteristics of the insurance industry must take into account the structure of private healthcare services and the way in which users take an insurance decision. Greater competition both in the medical insurance market and in the markets related with hospital care services leads to, on the one side, reducing out-of-pocket expenses and, on the other side, reducing the price of policies.³⁹

The private hospital system is formed by many small hospitals and few chains with large hospitals: 65% of private hospitals has fewer than ten beds, 32% are within the range of 10 to 49 beds, and only 3% have at least 50 beds.⁴⁰

40% of censable beds is concentrated in four states in which the large metropolitan zones are located: Mexico City (13%), State of Mexico (12%), Jalisco (9%) and Nuevo León (6%). 57% of hospitals with 50 beds or more are in these same states.⁴¹ These hospitals have specialists and infrastructure to care for complex and costly diseases and emergencies.⁴² Thus, payment claims are also concentrated in Mexico City (34%), Nuevo León (12%), Jalisco (9%) and the State of Mexico (7%) (Graph 14).

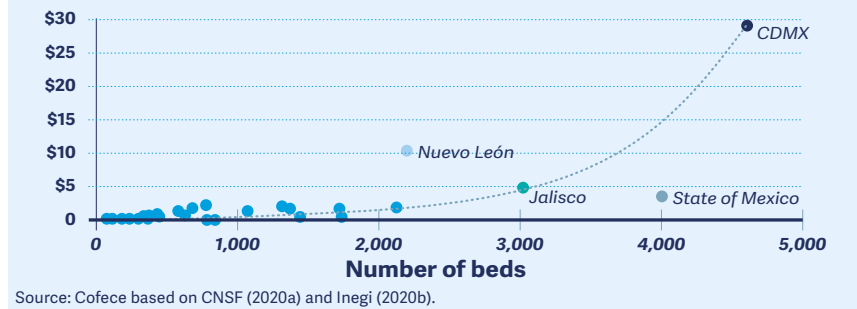
39. Gaynor, Mostashari and Ginsburg (2017), Ryan (2021) and Sheingold, Nguyen and Chappel (2015).

40. Inegi (2020b).

41. *Idem*.

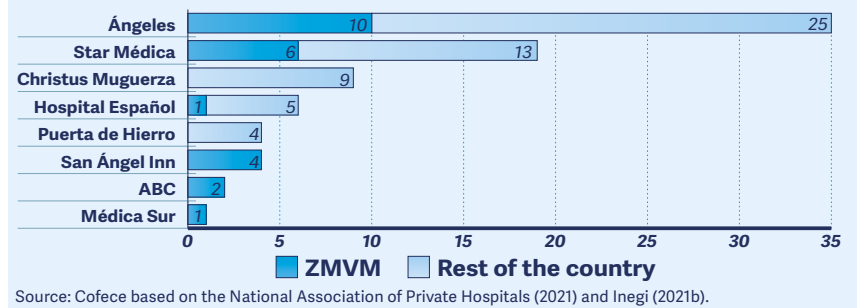
42. González Block *et al.* (2018, pp.14-15)

Graph 14. Censable beds and amounts paid per claims per state, 2020 (Billions of Mexican pesos and number of beds)



The attention to policyholders is concentrated in eight hospital groups who care for 52% of the claims covered by SGM.⁴³ Hospital chains with greater infrastructure are located, mainly, in the ZMVM (Graph 15).

Graph 15. Larger hospital chains, 2020 (Number of hospitals)



Prices of hospital services are higher in the four aforementioned states. Firstly, this would be justified due to the presence of large hospitals, capable of caring for complex diseases and offering better quality services. However, rates are significantly higher even for similar ailments, whose care should be standardized (Table 4). This could also be an indication that these hospitals exercise bargaining power to increase their income.

43. González Block et al. (2018, p. 68).

Table 4. Hospitalization costs of the most frequent claims 2020^{1/} (Thousands of Mexican pesos)

Accident ^{2/}	Mexico City	State of Mexico	Jalisco	Nuevo León	Rest of the country
Acute appendicitis	119	76	76	81	55
Kidney and ureter stones	266	154	116	125	84
Cholelithiasis	137	81	112	98	64
Fracture of the leg, including the ankle	21	45	71	25	35
Forearm fracture	29	35	47	22	24
Gastritis and duodenitis	26	32	23	24	15
Dislocation, sprain and strain of joints and ligaments of the knee	84	74	103	21	77
Other disorders of the nose and paranasal sinuses	69	61	71	66	34
Internal derangement of the knee	128	82	123	123	75
U07 (Identified COVID-19 virus)	1,360	445	463	721	231

^{1/} Median of the amounts claimed for the ten conditions with the higher frequency in 2020. The median was used to avoid the effect of diseases with complications.

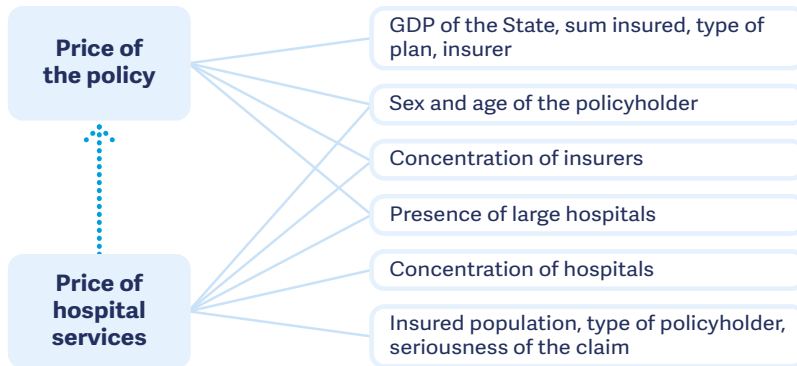
^{2/} ■ Entity with the highest costs. ■ Entity with the lowest costs.

Source: Cofece with information from CNSF (2020a).

This situation could be due to the presence of asymmetric information: Patients are unaware of the quality and true cost of hospitals for the same treatment, so they can only infer that renowned hospitals offer better quality services. This moral hazard problem causes policyholders to channel the purchase of policies based on plans that allow them access to large hospitals, which makes their premiums more expensive. The subscription of policies is also subject to the problem that policyholders are the only ones that know their health state, which means that insurers must allocate resources to learn about the risks of their potential clients (adverse selection).

This study presents the results of the two econometric models that analyzed the relationship between the premiums paid by policyholders and the market structure of the providers, both insurers and hospitals, and whose relationships between variables are shown in Figure 3.

Figure 3. Relationship of the variables of the econometric models



Source: Cofece with data from Moriva et al. (2010), Melnick et al. (2011), Trish and Herring (2015) and Dauda (2017).

Model 1 establishes that the premiums of the policies are in function of the presence of large hospitals, the concentration of the insurers market and several socioeconomical characteristics. In this model, insurers interact with individual policyholders.

Model 2, whose results are presented in the following section, complements the first model. This model establishes that the price of hospital services paid by insurers depends on the presence of large hospitals, the number and type of policyholders, as well as the levels of concentration in the markets of insurers and hospitals. This model considers that insurers act as a consumer of hospital services.

The dotted line in Figure 3 establishes that the price of hospital services influences in the prices of policies. In this study it was not possible to adjust a system of equations, since data come from different sources and the units of analysis are not homologated. On the one side, the base of prices of the policies does not have information on the claims and, on the other side, the base of claims does not have information on the price of policies. Also, the number of unknowns exceeds the number of equations.

The relationship between the premiums of SGM and the concentration in the markets of both insurers and hospitals has been analyzed in other countries. Trish and Herring (2015), with data for the USA, found that premiums are higher in markets with a higher concentration of hospitals. This result matches the previous findings of Holahan and Blumberg (2008), who observed that insurers are not capable to negotiate aggres-

sively with elite hospitals, regardless of their market share, transferring hospital costs onto consumers through high premiums; however, they are capable of imposing conditions on small hospitals.⁴⁴

Model 1 is an adaptation of the Trish and Herring analysis to the Mexican case to determine if there is low bargaining power of insurers with hospitals. The limited bargaining power of insurers *vis-à-vis* hospitals would exist if a positive and significant relationship is found between the value of premiums and the presence of large hospitals in the states, under the assumption that insurers are not capable of negotiating with large hospitals and only transfer their costs to the premiums of their policyholders.

Thus, an econometric model was estimated using the premiums paid for policies with a single policyholder, with annual data by state between 2018 and 2020. The reason for not using policies with more than one policyholder obeys the fact that we do not have disaggregated information to calculate the premium of a policy per policyholder.

The hypothesis is that the presence of large hospitals in a state derives in higher premiums. To test this hypothesis, the following logarithmical transformed exponential model was specified:

$$\begin{aligned} \ln(Prima_{imt}) = & \beta_0 + \beta_1 Tama\tilde{n}oHosp_{mt} + \beta_2 PIBperc\acute{a}pita_{mt} \\ & + \beta_3 IHH_Aseg_{mt} + \beta_4 Sexo_{imt} + \beta_5 Edad_{imt} + \beta_6 SA_{imt} \\ & + \beta_7 Plan_{imt} + \beta_8 Seg_{imt} + \nu_t + \varepsilon_{imt} \end{aligned} \quad (1)$$

Where:

$Prima_{imt}$ = Premium paid by the policyholder i in the state m in year t .

$Tama\tilde{n}oHosp_{mt}$ = Dummy variable for the presence of hospitals with 100 or more beds (100 or more beds = 1; less than 100 beds = 0).

$PIBperc\acute{a}pita_{mt}$ = GDP *per cápita* in the state m in the year t (Millions of Mexican pesos).

IHH_Aseg_{mt} = HHI of insurers (based on sales) in the state m in the year t .

44. Holahan and Blumberg (2008).

$Sexo_{imt}$ = Dummy variable of the sex of the policyholder (female=1; male=0).

$Edad_{imt}$ = Age of the policyholder i (years).

SA_{imt} = Amount of the maximum limit of liability of the policyholder i (sum insured) (Millions of Mexican pesos).

$Plan_{imt}$ = Fixed effects of the type of plan ("Broad", "Compensation", "International" or "Limited").

Seg_{imt} = Fixed effects by insurance company that issues the insurance.

v_t = Fixed effects for each year (2018, 2019 and 2020).

$100 * \beta_1, \dots, 100 * \beta_7$ are the semi-elasticities of the premiums with respect to the independent variables.

ε_{imt} = Error term.

The results of model 1 suggest that the presence of hospitals with more than 100 beds increases the prices of premiums of individual insurance by 12% (Table 5).⁴⁵ On the other hand, the effect of the concentration of insurers over premiums is imperceptible and has the opposite sign to that expected. This suggests that, considering that the increase in the prices of policies is due to the presence of large hospitals, it is important to promote greater competition in hospital services. Since the effect of the greater concentration of insurers over prices is imperceptible, it cannot be concluded that increasing the bargaining power of insurers over hospitals through a greater concentration in the SGM market is an adequate policy.

The rest of the estimators of the model have the expected sign: To the extent that the insured person is a woman, is older or contracts a policy with a higher insured sum the premium will increase. The model also demonstrated that premiums are higher in states with the highest GDP per capita, which is where the largest hospital infrastructure is concentrated. Detailed calculations and results are in Annex 1.

45. Since the variable is a dummy, the effect of large hospitals is defined as $[(e^{(0.1233)} - 1) * 100] = 12\%$, which means that prices are 12% higher in the presence of large hospitals.

Table 5. Results of model 1

Variable	Estimator	Standard error
Intercept	5.4478	(0.2797)***
TamañoHosp ^{1/}	0.1133	(0.0034)***
PIB <i>per cápita</i>	0.2904	(0.0149)***
IHH_Aseguradoras	-0.0000	(0.000002)***
Suma asegurada	0.0003	(0.00001)***
Edad (años)	0.0334	(0.0001)***
Sexo (F=1; M=0)	0.0551	(0.0029)***
EF (tipo de plan) ^{2/}	✓	
EF (aseguradora)	✓	
EF (año)	✓	
R ²	0.7837	
Observaciones	172,109	

(***) P<0.01, (**) P<0.05, (*) P<0.1.

^{1/} Hospitals with 100 or more beds. The estimator for hospitals with 50 and 70 beds is 0.0549 and 0.0855, respectively.

^{2/} Type of plan (broad, international, limited or compensation).

Source: Cofece based on CNSF (2020a), Inegi (020b) and File REC-004-2022 (number 6).

2.4. Relationship between market structure and prices of hospital services

This section shows that both the concentration of the insurance market and the hospital markets affect the price that hospitals charge to insurers. The relationship between the market structure, bargaining power of insurers and hospitals, as well as the impact of both factors in containing hospital costs has been analyzed in the USA. Robinson (2004) found that, in most of the states of that country, the concentration of insurers was not able to control hospital inflation that took place between 2000 and 2003. For their part, Moriya, Vogt and Gaynor (2010), Melnick, Shen and Wu (2011), and Dauda (2017)⁴⁶ demonstrated that a higher concentration of hospitals, in the different geographic markets of the USA, influenced the increase in prices of healthcare. These authors conclude that the alleged efficiencies achieved with the concentration of hospitals do not transfer to users of medical services.

46. EThe author defines different markets based on the times of travel Fixed-Travel-Time Herfindahl-Hirschman Index with data from 2005 to 2008 at county and metropolitan statistical area level.

To determine if the concentration of insurers, on the one side, and hospitals, on the other, influences the prices of hospital services paid by insurers, model 2 was estimated based on Moriya *et al.* (2010), Dauda (2007) and Melnick *et al.* (2011). For this, information on the claims covered by SGM reported by the insurers to the CNSF between 2018 and 2020 is used, in which the claimed amounts, the state in which the claim was cared for, and the characteristics of the policyholder (sex and age) are specified.⁴⁷

The specified model is:

$$\ln(Ph_{imt}) = \beta_0 + \beta_1 IHH_Aseg_{mt} + \beta_2 IHH_Hos_{mt} + \beta_3 Tama\~{n}oHosp_{mt} + \beta_4 PobAseg_{mt} + \beta_5 Sexo_{imt} + \beta_6 Edad_{imt} + \beta_7 TipoSeg_{imt} + \beta_8 CBD_{imt} + v_t + \eta_i + \varepsilon_{mt} \quad (2)$$

Where:

Ph_{imt} = Price paid by insurers for hospital costs per claim i in the state m in year t .

IHH_Aseg_{mt} = HHI of the insurers (issued premium) in the state m in the year t .

IHH_Hos_{mt} = IHHI of hospitals (number of beds) in the state m in the year t .

$Tama\~{n}oHosp_{mt}$ = Dummy variable of presence in hospitals with 100 or more beds (100 or more beds = 1; less than 100 beds = 0).

$PobAseg_{mt}$ = Percentage of insured population in the state m in the year t .

$Sexo_{imt}$ = Dummy variable of the sex of the policyholder (female=1; male=0).

$Edad_{imt}$ = Age of the policyholder I (years).

$TipoSeg_{imt}$ = Dummy variable of the type of policyholder (individual=1; collective=0).

CBD_{imt} = Dummy variable that captures the seriousness of the claim (1= claim is the basic cause of decease; 0 otherwise).

v_t = Fixed effects by year (2018, 2019 and 2020).

η_i = Fixed effects per classification group of the disease or condition of claim i .

47. The claimed amounts are detailed in hospitalization, medical fees, medicines, auxiliary studies and other expenses.

$100 * \beta_1, \dots, 100 * \beta_8$ are the semi-elasticities of the premiums with regards to the independent variables.

ε_{mt} = Error term.

Results of model 2 show that a 1% increase in the HHI of insurers decreases hospitalization costs by 0.4%, while an equal increase of 1% in the HHI for hospitals increases these costs by 0.3% (Table 6).⁴⁸ That is, a greater concentration of insurers produces a decrease in hospital prices in a greater proportion than the increase produced by a greater concentration of hospitals. The prices of hospital services paid by insurers are 34% higher in markets where hospitals with more than 100 beds are present.⁴⁹ This fact could be due to the quality of services and to the level of hospital technology in these markets, also to a greater bargaining power of large hospitals; however, the study does not have information to corroborate these hypotheses. Detailed calculations and results are found in Annex 1.

Table 6. Results of model 2

Variable	Estimator	Standard error
Intercept	10.5509	(0.0360)***
IHH_Aseguradoras	-0.0002	(0.00001)***
IHH_Hospitales	0.0001	(0.00002)***
TamañoHosp (1 = presencia hospitales)	0.2914	(0.0095)***
Población asegurada	0.0015	(0.0002)***
Edad	0.0036	(0.0002)***

(***) P<0.01, (**) P<0.05, (*) P<0.1.

¹ 30 most frequent claims between 2018 and 2020 were considered (30% of the total claims). Estimators do not significantly change as the number of claims increases (less frequent or rare).

Source: Cofece based on CNSF (2020a), Inegi (2020b) and Inegi (2021b).

Results in Table 6 suggest that only in highly concentrated markets of insurance, insurers have some capacity to contain the prices they paid to large hospitals. These results also consistent with the findings of Robinson (2004), Moriya *et al.* (2010), Melnick *et al.* (2011) and Dauda (2017), for the case of the USA.

48. The percentage change in costs due to a 1% increase in HHI is $\frac{\partial y}{\partial IHH_Aseg} \frac{IHH_Aseg}{y} = [exp(\beta_1 \Delta IHH_aseg) - 1] 100 = [exp(-0.0002 * 19.2) - 1] 100 = -0.38\%$, cconsidering the medium value of IHH_Aseg in the sample. That is, a 1% increase in IHH_Hosp is $[exp(\beta_2 \Delta IHH_Hosp) - 1] 100 = [exp(0.0001 * 5.26) - 1] 100 = 0.03\%$.

49. The variable is a dummy thus the effect of large hospitals is defined as $[(exp(0.2914) - 1) * 100] = 33.8\%$ (that is, prices are 33.8% higher in the presence of large hospitals).

These results should not be interpreted in the sense that greater concentration in the insurance sector should be encouraged in order to lower premiums paid by consumers. In fact, model 1 shows that there is no econometric evidence to support that a greater concentration of insurers decreases the prices of premiums paid by users. Promoting greater concentration in the SGM market could create additional competition problems, in addition to not considering that there are other ways to increase bargaining power other than increasing the market shares of the largest insurers. This study concludes that the challenge is **simultaneously** introduce competition into the insurance and hospital services market, so that the benefits of greater competition are translated into cheaper premiums and higher quality services for consumers that contract policies.

The following two chapters show that in the SGM market there are obstacles to competition and free market access, as well as problems that affect consumers decision-making.

One way to promote greater competition in the market of hospital services is by introducing greater transparency regarding the quality-price ratio in said services. In the USA, for example, several states adopted a hospital price transparency policy, which resulted in a 3-9% and 4.7% decrease in the prices of medical and hospitalization services, respectively.⁵⁰

In Mexico, since 2001, the federal government has published annual reports about performance indicators in the system, state, institutional and hospital levels of the services provided by public sector hospitals.⁵¹ However, there is no exercise with the same scope for private services. The IMCO (2021) noted that there is not enough transparency to determine the reasons for price variability in the treatment of a disease between hospitals. Particularly, it concluded that hospital chains contribute in a greater proportion to the variability of the expenditure of independent private hospitals. For this reason, it noted the need to empower and inform patients, as well as to promote transparency in private health services.⁵²

Due to the foregoing, this study recommends that Profeco develops and publishes indicators that measure the price-quality ratio of hospital

50. Liden and Siebert (2021).

51. Frenk, González-Pier, Gómez-Dantés, Lezama and Knaut (2007, p. 27).

52. See the recommendations of the IMCO (2021, pp. 28-36).

services, similar to the indicators of the quality of care, of the “Best Private Hospitals in Mexico” classification conducted by Blutitude, Funsalud and the Expasion magazine,⁵³ as well as the Comprehensive System for the Measurement of User Satisfaction of the IMSS.⁵⁴ This measure would help to empower the consumer and, consequently, insurers, since policyholders would have more elements to base their choice of hospital services on price-quality and not on the brand of the hospital, which would help limit the bargaining power of large hospital chains *vis-à-vis* insurers.

This study also recommends that the Ministry of Health promotes the the obligation for private hospitals to use the GPC made and published by the Ministry of Health in the Master Catalogue of GPC, for the care of the most common conditions or diseases.⁵⁵ This would help users to have updated information about the treatment of several conditions and anticipate the costs of private hospital services.

Unlike what happens in other countries, the price-quality relationship in hospital services has not been sufficiently analyzed in Mexico; this analysis would be an input that would help to understand to what extent higher fees reflect quality or merely reputation.⁵⁶

2.5. Technological innovation and new business models

Innovation is an indicator of the intensity of competition in a market. The lack of innovation suggests that companies do not experience competitive pressures or there are barriers to innovation in the market.

In the international stage, the insurance sector is experiencing an accelerated process of technological innovation driven by digital platforms that use new technologies such as big data, artificial intelligence and

53. Blutitude (2021).

54. Section IV of article 25 of the LFPC establishes that Profeco has the power to “Collect, elaborate, process and promote objective information to facilitate to the consumer a better knowledge of the goods and services that are offered in the market”. For more detail of the Comprehensive System for the Measurement of User Satisfaction of the IMSS see IMSS (2021).

55. See article 32 of the LGS.

56. Jamalabadi, Winter and Schreyögg (2020) reviewed research in various countries on the price-quality and cost-quality relationship in healthcare, without finding a general relationship in these variables. The authors suggest that public policymakers should be prudent with the actions instrumented to reduce hospital costs in order to not compromise the quality of services.

blockchain.⁵⁷ The OECD defines insurtech as “the new technologies with the potential to bring innovation to the insurance sector and impact the regulatory practices of insurance markets”.⁵⁸ These technologies can be adopted by both traditional companies and companies with innovative business models.

Insurtech technologies have the potential to drive market efficiencies through the use of information. The use of big data decreases moral hazard, since insurers can collect data about policyholders to monitor their behavior and improve the prediction of accidents. The analysis of information makes it possible for insurers to offer personalized products, in accordance with the health state and habits of each person, with the potential of lower premiums for segments of the population that currently cannot contract insurance.⁵⁹ This also generates indirect benefits, since users would have more incentives to suppress risky conducts and bad habits to obtain better premiums. Also, the use of personalized information from external sources, such as social media, search engines or smart devices facilitates the process of claim verification.⁶⁰

Notwithstanding, the use of big data has its risks. First, it can hinder the access to insurance for people at high risk. Second, this technology can lead to an oligopolistic market structure, due to its network effects; also, large technology companies that use big data could extend their good position, in the markets where they are established to the insurance markets. Finally, insurers could extract more surplus of users through abusive prices. Considering that most big data is related to personal information, a major concern is privacy and data protection.⁶¹ Cofece has already stated that users must own their data and give express consent for its use.⁶²

57. According to Oracle (2021) big data refers to the “data that contains a greater variety and that is presented in increasing volumes and in at a higher speed”; artificial intelligence refers to systems or machines that mimic human intelligence to perform tasks and iteratively improve based on the information they collect; blockchain is a securely shared ledger of transactional data that is shared in a safe way.

58. OECD (2017, p. 5).

59. Meyers (2018) and Ricci and Battaglia (2021).

60. OECD (2020a, p. 13).

61. OECD (2020a, pp. 7, 15 y 17).

62. Cofece (2017, p. 9) In OPN-007-2017, the Board of Commissioners of Cofece noted that users are owners of their transaction data, which can be transmitted as long as they have their express consent and the confidentiality and security of the information is guaranteed.

Artificial intelligence simplifies and adapts the characteristics of the policies to match the needs and financial situation of policyholders and improves the possibilities of being advised in an automated way (robo-advisors).⁶³ However, artificial intelligence may also facilitate collusion since companies in the market could use similar algorithms to set their prices, so they could anticipate their strategies reciprocally. This technology can also facilitate coordinated results when it detects and responds to deviations in the behavior of agents, in such way that it leads them to take actions that can be anticipated.⁶⁴

The use of blockchain can simplify contracts and claims, as well as to facilitate fraud detection.⁶⁵ Blockchain helps to automatically collect records from different databases regarding transactions or agreements and then link them in order to make decisions. Also, it helps to determine when the information provided in claims is false, which reduces costs for the insurer.⁶⁶ However, blockchain can facilitate collusion between participants of the system when the exchange of sensitive information in the recorded transactions is not properly encrypted. This risk of coordination between competitors can also occur when companies gather to establish technical standards in blockchain, which are important for the interoperability and provision of services. Another risk is that a company that has blockchain technology is the only provider of any pertinent service, becoming a dominant player with incentives to foreclose other competitors.⁶⁷

Insurtech technologies can also increase competition, by making it easier for entrants to collect information from the policyholders through collaborative models in which the consumers themselves provide their data.⁶⁸

Technological innovation transforms production and distribution processes to turn them cheaper and more accessible to a broader group of the population. Digital companies can reduce the price of policies by eliminating the commissions paid to insurance agents and achieve savings

63. OECD (2017, p. 26).

64. Rab (2019).

65. OECD (2017, p. 19).

66. Deloitte (2016).

67. Simpson y Cooke (2016, pp. 23-24).

68. Pérez (2016).

derived from automation.⁶⁹ Thanks to these efficiencies, entrant companies that adopt insurtech technologies can be disruptive, by entering the market targeting segments of the population that are not served by traditional companies and, afterwards, generating some competitive pressure for them.⁷⁰

New technologies also create new services, processes and ways of operation that provide greater transparency, simpler and faster procedures, flexible and personalized products, as well as better attention to the need of the policyholders.⁷¹ For example, policy comparison companies and marketplaces reduce the costs of being informed and facilitate consumer mobility.⁷²

Distribution is changing with new business models such as peer-to-peer. This model consists of grouping people with the same type of policy. A portion of the premiums is destined to a pooled reimbursement fund from which claims are paid. If there are no claims, the members of the group get a refund by the end of the year.⁷³

Companies that use insurtech technology are classified by the role they play in:

1. Full carrier or full stack. They offer the complete insurance service. In Mexico, at the time of writing this study, *Sofia* and *Sisnova* were the only digital platforms that operate under a direct sales model in the branch of health and medical expenses insurance.
2. Distributors. Marketplaces, digital agents or brokers that connect consumers with traditional insurers. For example, *MangoLife* is a platform that functions as a digital broker of life and health insurance, by allying with insurers to offer specific products to segments of the population that were not covered.

69. CNMC (2018, pp. 79-80).

70. The term "disruption" describes a process by which a smaller company with less resources successfully defies established companies. To the extent that established companies focus on improving their products and services for their more demanding clients (and often more profitable), they ignore the needs of other groups. Disruptive entrants start by successfully targeting these segments and are strengthened by offering a more adequate functionality, often at a lower price. Source: Christensen, Raynor and McDonald (2015).

71. Nicoletti (2021, pp. 231-232).

72. Platforms that group services from different providers in a single place and allow contracting in the same platform.

73. OECD (2017, pp. 16-20).

3. Enablers. They offer technological solutions for some part of the value chain, such as the prevention of fraud in claims, customer service, policy management or support. In Mexico, *Shift Technology* offers claims automation, fraud identification, and automated decision-making services based on artificial intelligence. *Pagomed* connects physicians with insurers through a platform that facilitates the processing of payments of medical fees.

In the international level, the benefits of insurtech technologies are visible in countries with the most investments in this type of technology.⁷⁴ For example, in China, around 28% of internet users has an online insurance policy.⁷⁵ In the USA, during the pandemic, the number of policyholders who switched to insurance provided by companies such as BigTech or other companies with insurtech technologies grew by 11%.⁷⁶ In the United Kingdom, investment in companies with insurtech technologies grew 60% between 2019 and 2020.⁷⁷

In contrast, in Mexico, the use of new technologies is incipient: 9% of financial technology startups correspond to the insurance sector.⁷⁸ Of the 80 companies identified, 19 are in the medical expenses branch and 15 in the prevention and conservation of health (primary care).⁷⁹ Some traditional insurers have implemented insurtech technologies through the collaboration with startups mainly dedicated to distribution.⁸⁰

Given the benefits of insurtech technologies it is important that regulation is such that it does not obstruct its expansion and development. The relevance of the current regulation is analyzed in a future chapter.

Despite its benefits, the adoption of insurtech is not exempt from risks to the processes of competition and free market access. While these risks are of medium or long-term for our country, the entry of large technological companies into the insurance market has raised concerns in other competition authorities. Regarding concentrations, there are

74. Fischer *et al.* (2020).

75. Mordor Intelligence (2021).

76. Capgemini Research Institute (2021, p. 7).

77. Insurance Business (2021).

78. Finnovista (2020).

79. Endeavor (2021).

80. *Mapfre*, *AXA*, *BBVA*, *Genera*, *Chubb*, *General de Salud* and *Thona Seguros* have specific products that are distributed by new companies with insurtech technologies.

some cases that have been exhaustively analyzed in other jurisdictions.⁸¹

Annex 2 presents the relationship between the market failures identified in health and medical expenses insurance and how insurtech would help to mitigate them.

81. The acquisition of Fitbit by Google was analyzed by various competition authorities. Fitbit is a company that develops, manufactures, and distributes wearable devices, software and services in the area of health and wellness associated with other institutions such as insurers. The identified risk to competition was that Google could monetize the data of Fitbit users through services such as SGM and, at the same time, give power to Google to deny or discriminate against its competitors access to said data. The transaction was finally approved in several jurisdictions (ACCC, 2021).

3. Obstacles to competition and free market access

The entry or possibility of new companies entering encourages competition. Competitive pressure decreases with the presence of obstacles to enter a market or for small companies to grow. This study identified three important obstacles to competition and free market access: the costs of switching insurance company, the way of paying insurance agents and the legal uncertainty from the entry of novel models, which are analyzed below.

3.1. Costs of switching insurers

Switching costs prevent consumers from switching insurers to obtain better prices or services. When consumers cannot react to changes in the supply -such as variations in prices, quality of the products or the entry of new suppliers- competition innovation and free market access are discouraged.

Consumers face high costs of switching insurers. High switching costs make that the most economically feasible option is to stay with the original insurers, even though the premium increases with each policy renewal. Thus, when the consumer decides for the first time to contract a SGM, she is practically tied to that first decision. This effect is known in literature as blocked or locked-in user (lock-in).⁸² This leads to low intensity of competition, in prices and quality, due to policyholders that already have a policy.

82. Atal (2015, p. 2).

One part of the switching costs of policyholders is given by the loss of benefits that comes with losing seniority when changing insurers. SGM policies commonly have “waiting period” clauses, which refer to a time in which the insurers do not cover the expenses derived from some diseases, which vary depending on the disease. Waiting periods are freely determined by insurers, whose justification is adequately select the risks and eliminate possible preexistence cases.⁸³ However, the lack of regulation is taken advantage of by some insurers to establish longer waiting periods, up to five years for some conditions (Table 7).⁸⁴

Table 7. Examples of waiting periods for some conditions (Months)

Time	Conditions
60	Astigmatism, hyperopia, acquired immunodeficiency syndrome or myopia.
24	Acid-peptic, adenoids, tonsils, circumcision, spine, hemorrhoids, hernias, nose or sinuses, mammary glands or knee.

Source: Cofece with information from the General Conditions of Insurers.

Waiting periods begin again when users change insurers, so it is necessary to wait months or years again for the new insurers to cover some conditions. Consequently, waiting periods reduce the attractiveness of switching to another insurers that offers better conditions.

The portability of seniority is mandatory in some countries, so consumers do not lose seniority when changing insurers. Neither they lose the so-called “unclaimed bonus”, which are monetary awards that some insurers grant their clients for the time elapsed without using their policy.⁸⁵ It is unknown that in Mexico said bonus exists.

In some European countries, portability of seniority is guaranteed when the termination of the policy in force is requested between one and three months in advance.⁸⁶ In India, the policyholder can transfer its policy to any insurers with the waiting times for preexisting diseases restarting.⁸⁷ In Australia, the USA and Ireland, authorities have enacted portability provisions to allow consumers to switch insurer without

83. Single Circular, item 4.5.12.

84. MetLife (2010).

85. Acko (2021).

86. Sagan and Thomson (2016, p. 74).

87. Acko (2021).

being penalized.⁸⁸ In Germany, portability implies both recognizing seniority and transferring the aging reserve to the new insurer. This monetary reserve is financed with a 10% overprice on the premiums when policyholders are young, for later applying it when the cost of the policy increases due to age.⁸⁹

Mexican regulation mandates insurers to respect seniority in individual insurance only when users change policies within the same insurer, as long as the new policy contemplates the benefits they had with the previous one. However, there is no obligation to recognize seniority when the policyholder switches insurer.⁹⁰ Some insurers do recognize seniority for purposes of reducing waiting periods, although not for all conditions and imposing some restrictions.⁹¹

The history of claims of policyholders could favor the decision of the insurers to reduce waiting periods for some conditions, as it provides certainty about the health conditions of policyholders. Risk bureaus are instances that help insurers to evaluate the risks they face, since they concentrate information about the claims history of their clients. In addition to being an important input for new players that decide to enter the market, the figure of risk bureau exists in other countries and, normally, it is subject to some regulation. For example, in Great Britain, there is the Claims and Underwriting Exchange, a database about car, domestic and personal accidents that allows subscribed insurers to consult the claims history of individuals.⁹² This database is regulated by the General Data Protection Regulation.⁹³

In 2014, considering the international experience, Cofece recommended creating an independent risk bureau owned and operated by insurers, to which they are obliged to provide information and which will serve as a mechanism that will allow insurers to make more accurate actuarial

88. Sagan and Thomson (2016, p-74) and the Health Insurance Authority (2021).

89. Buse and Blumel (2014, p. 250) and Germany Visa (2021).

90. Single Circular (item 4.5.6).

91. The cases are *MetLife*, *AXA* and *GNP*. *MetLife* recognizes seniority, but only of conditions that do not exclude the general conditions of their products (*MetLife*,2010); *AXA* recognizes seniority as long as it is expressly stipulated when contracting an insurance, also it only applies for conditions considered in its basic coverage. (*AXA*, 2013); *GNP* foresees the benefit, but only for some conditions described on its basic coverage. See *Conduf* (2021d).

92. Experian Limited (2022).

93. The National Archives (2022).

calculations of the policies they offer to users considering their risk profiles.⁹⁴ In Mexico the Office of Information Exchange (OII per its acronym in Spanish) operates as a civil association, without profit, that functions to concentrate information about the risks in matters of insurance usually covered by its associates, among these insurers.⁹⁵ The services of the OII are important for the efficiency in the SGM market and can be used to advance towards portability of seniority. However, the success of this mechanism resides in guaranteeing the access to the information it concentrates under non-discriminatory conditions.

Due to the foregoing, it is recommended to establish seniority portability, which is the recognition of the period that the policyholder has been covered by a policy (Reform to the LISF). This, as long as the policyholder do not request an increase to the insured sum regarding the previous policy, in order to avoid some type of opportunist behavior from the policyholder.

This recommendation would remove an important switching cost for policyholders since they could switch insurer without having to incur in waiting periods again for some conditions.

To favor portability, it is also recommended to modify the legal framework to establish a risk bureau that is operated by an independent agent of insurers or, also, that any insurer that enters the market can take part in its administration board. In this way, access to the claims history of policyholders would occur under non-discriminatory conditions for all market participants. The objective is to have a more solid institutional arrangement than the current OII.⁹⁶

The regulation of the risk bureau would favor portability by guaranteeing that insurers know the claims history of policyholders.

Insurers also establish exclusion clauses, through which they can render without coverage some preexisting conditions or impose waiting periods

94. Cofece (2014b, pp. 924-925).

95. Priego (2019) and *Seguros Monterrey* (2020, p.20).

96. Information of the risk bureau could lead to price discrimination that hinders the access of high risk users, as it would happen with big data. A difference between the information obtained by the bureau and by big data is that the risk bureau must provide it to competitors in a non-discriminatory way, as it is proposed in this study, while that obtained by big data can be used exclusively by the one who generates or acquires it, as long as it has the authorization of users.

to treat some conditions of people who had continuous coverage with other insurers.⁹⁷

In other countries, exclusion clauses are regulated: In Australia, the USA and Ireland the duration of preexisting condition exclusions is limited, and, in Germany, there are limits to the type of exclusions that can be considered.⁹⁸ For example, in Ireland the maximum duration of the waiting periods that insurers can set to new policyholders is 26 weeks for any conditions and up to five years for preexisting conditions.⁹⁹

Due to the foregoing, it is recommended that the SHCP promotes the establishment of standards on the type and duration of exclusions that insurers may establish in the clauses of their policies, as well as for the recognition of preexisting conditions when, after a period of time, the policyholder has not presented symptoms or received treatment. These measures have the objective of reducing the costs of switching insurers for users and eliminate the blocked or locked-in user effect. Therefore, insurers will have more incentives to attract users from their rivals by offering better plans.

The cancelation of the policy is also a switching cost for users. Insurers commonly penalize early termination, even if the policy has not been used. The penalty is usually a percentage of the net premium for the unearned time of the policy term (unearned premium).

This study found that at least three insurers return 60% of the unearned premium, without including policy issuance expenses, when the policyholder decides to terminate her contract after 30 days of the entry into force of the policy, as long as there is not an open claim.¹⁰⁰ Other insurers only apply a partial refund when it is the company who rescinds the policy, either for omissions or false or inaccurate declarations from the policyholder or due to changes in residence or occupation of the policyholder.¹⁰¹

97. Colombo and Tapay (2004,p.45). The study identified that AXA does cover preexisting conditions, as long as the policyholder declares it and two years elapse without the latter not receiving treatment, presenting symptoms or having incurred in expenses for their care (or that five years elapse for some non-declared conditions). AXA (2013, p.24).

98. Colombo and Tapay (2004, p. 45).

99. The Health Insurance Authority (2026).

100. AXA, MetLife and GNP. AXA (2014) and Metlife (2010). See also Condusef (2021d).

101. Seguros Bx+ (2014).

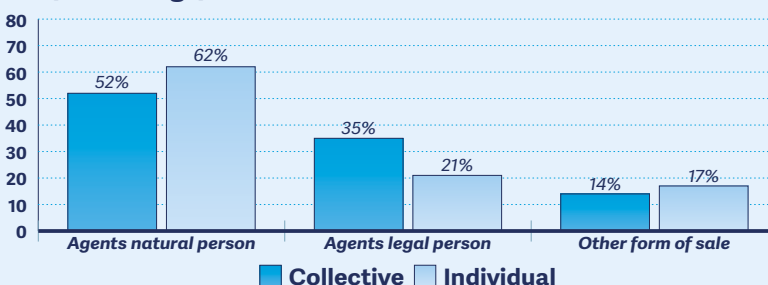
The penalty discourages policyholders from canceling their policy in the moment they want to do so, which limits the mobility of users between insurers.

This study recommends establishing the possibility for policyholders to cancel their policies in advance at any time, without a penalty, in such way that all insurers are obliged to return the totality of the unearned premium, excluding issuance costs; this obligation will also apply for revocation causes of the insurers. This would require reforming the General Provisions in matters of healthy practices, transparency and advertising applicable to insurance institutions.¹⁰² This recommendation will increase the mobility on policyholders and, with that, competition among insurers.

3.2. The way sales agents are remunerated discourages entry

The LISF establishes that insurers must diversify their product placement channels to avoid depending on a sole intermediary.¹⁰³ However, eight out of ten individual or collective insurances are sold through agents, therefore these are the most important sales channel (Graph 16). The service of insurance agents is justified due to the great variety of products available in the national market. Agents solve doubts from those interested and evaluate new clients to offer the option that would best suit their needs.

Graph 16. Commercialization of SGM per distribution channel, 2020^{1/} (Percentage)



^{1/} Other form of sale: includes car dealers, payroll discounts, commercial companies, telemarketing and Internet. Source: Cofece with information from CNSF (2020a).

102. Available in Spanish at:

http://dof.gob.mx/nota_detalle.php?codigo=5421233&fecha=23/12/2015#gsc.tab=0

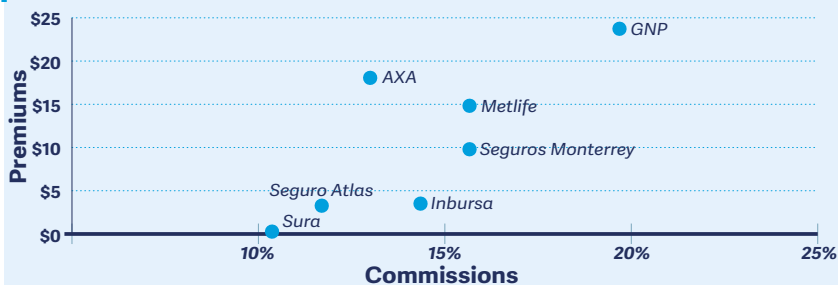
103. Articles 91, 93, 101 and 102 of the LISF.

Agents can offer consumers products from more than one insurer, so entrant insurers could commercialize their products through agents already operating, without the need to invest in building their own sales force. Entrants would have to pay commissions that are less attractive than those already paid by the established insurers to agents, in order to incentivize the sale of their products.¹⁰⁴ Agents have incentives to try harder to sell products for which they receive higher commissions and bonuses, so their advice may be biased in favor of insurers that pay higher commissions.¹⁰⁵

Some insurers grant contingent awards or commissions linked to reaching a sales objective, in addition to the commission per policy sold.¹⁰⁶ Contingent commissions constitute an incentive for agents to try to place the largest number of policies from the same insurer, instead of diversifying their sales. In this way, when larger insurers pay contingent commissions, they create a barrier for new companies to enter the market.¹⁰⁷

Larger insurers are the ones that pay higher direct commission to agents, which is an indication that commissions discourage the entry of new competitors (Graph 17).

Graph 17. Premiums Issued and commissions paid in SGM, 2020 (Billions of Mexican pesos and percentages)



Source: Cofece with information from CNSF (2020b).

One way to promote competition is for the authorities to establish measures to clarify and expedite online hiring of SGM, with the purpose of

104. In SGM of a sample of 17 insurers, it was found that the average of paid commissions is 15%. Cofece, with data from CNSF (2020b).

105. *ING Seguros* (2005, p. 1).

106. *Plan Seguro* (2016, p. 8).

107. European Commission (2013a) and European Commission (2013b).

reducing dependence on sales agents. Likewise, technological innovation causes face to face advice to lose importance in the insurance activity. With insurtech technology, for example, platforms arise in which the user introduces their data and the desired coverage, so that the platform, automatically offers a menu of suitable products to the user.

This conflict of interest of sales agents can hardly be eliminated, but it is necessary that consumers are aware that it exists. In Mexico, regulation establishes that the policyholder can request its insurers information about the amount of the commission or compensation received by the intermediary for the sale of the insurance, after the transaction was agreed upon, and the information must be received within a period of no more than ten business days.¹⁰⁸ This request can be made before the policyholders pay their policy, as they have 30 calendar days to pay for it;¹⁰⁹ however, this information is not available in the period when the consumers are analyzing their options.

The European Commission considers that disclosing the commissions and financial incentives of agents is useful to alert consumers about possible conflicts of interest.¹¹⁰ Also, it is of the opinion of said Commission that it must be required to sales agents to justify orally and in written why they choose to recommend a product that pays them higher commissions or rewards, even when there is another similar product that would fulfill the same purpose.¹¹¹ It also recommends that some contingent commissions are prohibited, for example, the ones linked to a threshold to be reached by the intermediary, since they induce that agents focus on selling a specific product.¹¹²

In other countries some measures have been proposed to reduce or make transparent the conflict of interest of sales agents. For example, the competition authority of Ireland recommended that the consumer receives the quotes made by the agent with all the insurers and the commission it receives from each one. With this, consumers, before acquiring the product, are aware of the conflict of interest of the agent and the alternatives it did not consult.¹¹³

108. Single Circular, item 4.5.2.

109. Article 40 of the LSCS.

110. European Commission (2013a).

111. European Commission (2013a) and European Commission (2013b, p.11).

112. *Idem*.

113. Ireland's Competition Authority (2005).

Therefore, it is recommended to establish the obligation of agents to, at the time of providing their advisory services and before consumers make a decision, show to the latter the information about the commissions and bonuses they receive from each insurer whose products they promote. The delivery of this information must be done before the user chooses her products, regardless of whether the policyholder requests it (Single Circular). This recommendation will make consumers aware of the conflict of interest of agents.

Finally, the way in which insurance agents are remunerated must be analyzed. Specifically, it is necessary to avoid that contingent awards, bonuses or commissions are linked to reaching a specific sales goal of a same plan or a same company, since these bonuses may induce agents to try to sell a specific plan, to the detriment of other more suitable plans for the policyholder. This recommendation decreases the cost of entry for new insurers, by removing an incentive that agents have to place the products of a sole insurer.

3.3. Legal uncertainty hinders innovation

Most of the 19 Mexican companies that operate with insurtech technology in medical expenses or health prevention act as distributors or enablers, thus they have constituted as insurance agents before the CNSF to operate. The only two that provide traditional insurance services, *Sisnova* and *Sofia*, are constituted as ISES.

Companies with insurtech technology do not have a specific regulation, but the LIFT and the LISF apply to them depending on the business model. The LISF is applicable to companies with insurtech technology that provide services such as full carrier and to some distributors such as digital agents and brokers; the LITF is applicable to novel models and APIs to enable connectivity between insurance providers.

The exchange of data through API can facilitate that the insurance market adopts innovation based on data, the creation of innovative products for consumers and the increase of efficiency and interaction with third parties. It would also facilitate the emergence of greater competition within the value chain as new players and commercial models emerge, which would possibly lower some costs. Using APIs implies considering new regulatory and supervision tools.¹¹⁴

114. EIOPA (2021, pp. 12-13).

Section XVII of article 4 of the LITF established that a Novel Model is one that uses technological tools or means to provide financial services with modalities other than those existing in the market at the time of its authorization. The LITF allows the development of novelty models without the need for new companies to assume all the regulatory cost of a traditional model.

The LITF indicates the obligation of the CNSF to issue general provisions regarding insurance;¹¹⁵ in particular, regulation of novel models and on the establishment of API that enable connectivity and access of other interfaces developed or managed by its supervisees, as well as to publish the authorizations of novel models in a public registry, which will disseminate on its website.¹¹⁶ On March, 2019, the CNSF published Title 41 of the CUSF with the “General Provisions related to authorized societies to operate Novel Models referred to by the LITF”, which establish the registration in a public registry of companies authorized to operate novel models.¹¹⁷ At the time of writing this study, the CNSF has not registered societies in this public registry since it has not received any request.

Societies participating in the sector, both insurance institutions and companies with insurtech technologies as well as those registered as novel models require clear regulation for the interconnection and sharing of data through API. Article 76 of the LITF establishes that:

“Financial Entities, money transmitters, credit information companies, clearing houses referred to by the Law for the Transparency and Order of Financial Services, the ITFs and the societies authorized to operate with Novel Models will be obliged to establish programming interfaces of standardized software applications that enable connectivity and access of other interfaces developed or managed by the same subjects referred to by this article and third ones specialized in

115. See article 76 and the Fifth Transitory Provision of the LITF. The latter established a maximum term of two year after the entry into force of the LITF to issue said provisions.

116. Article 83 of the LITF. The last paragraph of article 83 of the LITF establishes that: “Each Financial Authority may establish, through general provisions, the bases of the organization and functioning [of the registry of authorized societies to operate a Novel Model], as well as the additional writings that must be incorporated”.

117. Available at: https://lisfcusf.cnsf.gob.mx/CUSF/CUSF41_1

information technologies, with the purpose of sharing data and information (...)”.

However, the general provisions corresponding to insurance, referred to by the LITF, have not been issued yet by the CNSF, which would discourage the entry of companies dedicated to data intermediation, as well as of new competitors that require interconnection to obtain data from users, given that the absence of said provisions could be generating uncertainty among entrepreneurs. The CNBV published general provisions related to APIs, although they are useless for insurance activity.¹¹⁸

Therefore, it is recommended for the CNSF to issue the general provisions referred to in article 76 of the LITF on interconnection and transactional data sharing, prior authorization from users, which would facilitate the entry of novel models.

118. General provisions related to programming interfaces of standardized software applications referred to by the Law to Regulate Financial Technology Institutions, published in the DOF on June 4, 2020.

4. Consumer behavior and decision architecture

In insurance markets, the lack of information and the complexity of the products cause that consumers have difficulties to decide about the most suitable insurance for their needs. Thus, regulators usually seek to help consumers with a decision architecture that simplifies complex problems, since efficiency and competition in the markets depends on consumers making informed decisions.¹¹⁹ The concept of decision architecture was coined by Thaler and Sunstein (2008) to point out that the purchase decision of consumers depends on how the alternatives are presented to them. The following sections examine the information problems and the characteristics of the products and some reforms to improve decision architecture in the purchase of SGM are proposed.

4.1. Consumers do not know enough about the insurance they purchase

Under the assumption that the contracting of collective insurance is conducted by trained personnel, this chapter focuses on the individual consumer.

When consumers are not capable of properly comparing the differences in prices and quality of the products they acquire, the intensity of competition decreases or is transferred to other variable such as advertising or the sales force, which do not necessarily improve

119. Ericson and Starc (2013).

social welfare.¹²⁰ To the extent that consumers do not have the necessary information to properly choose their insurance plans, insurers lack of sufficient incentives to improve their efficiency and adapt to consumers preferences.¹²¹

Evidence shows that sometimes consumers are not aware enough of the characteristics of the insurance plans they acquire. According to the 2018 ENIF, 20% of the users did not know the cost of the SGM premium they acquired.¹²² Of the 1,070 reclamations filed before Condusef for unconformities derived from the service received in 2020, 58% were due to refusals in the payment of the compensation and reclamations for excluded claims (Graph 18). Only 15% of the claims were solved favorably for users, which is a level lower than the observed in credit information companies (82%), multiple object financial societies (Sofome) (65%), retirement savings administrators (Afore) (54%) or banks (41%).¹²³ EThe low number of resolutions in favor of users could be explained by their poor perception of the contracted products, due to their irreal attention expectation and the reach of the coverage of the contracted policies, as well as for the complexity and lack of clarity of the insurance contracts, which gives rise to subjective interpretations.

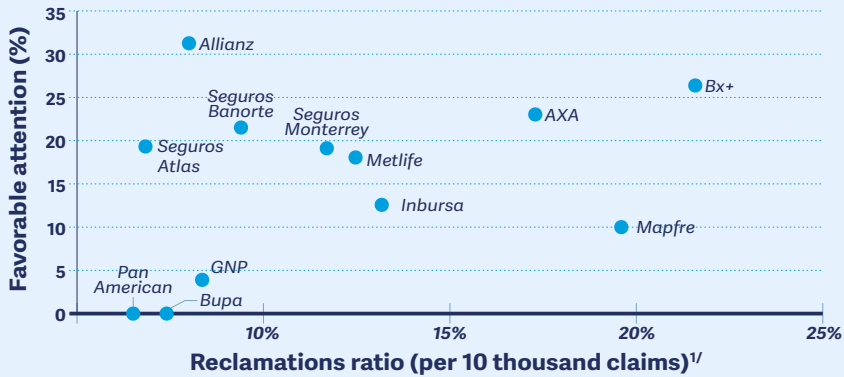
120. Erta *et al.* (2013, p. 59).

121. Boonen, Laske-Aldershof and Schut (2016).

122. Inegi (2018). The ENIF does not specifies if the interviewee has an individual or collective SGM. This question was not included in the 2021 ENIF.

123. Condusef (2021e). Data of resolution of reclamations in favor of the consumer in 2020.

Graph 18. SGM reclamations before Condusef, 2020 (Percentages of the issued premium)



¹ The reclamations ratio is the quotient between the total number of reclamations and the number of insured per 10,000 claims.

Source: Cofece with data from Condusef (2021e).

Consumers face several difficulties when deciding to contract a SGM, the first is the high degree of uncertainty that this purchase undertakes. Diseases that require costly interventions are unpredictable. Added to this is uncertainty about the impact that the disease will have over the general health conditions of the individual, the family income, and the recovery of the patient, as well as the uncertainty about costs and quality of medical care.¹²⁴

The second is that consumers have a limited knowledge and computing capacity, which affects their purchasing decisions. These limitations are known in literature as “bounded rationality”.¹²⁵ This concept does not necessarily imply that consumers are irrational or do not learn, but rather that they have a limited and scarce predisposition to commit in decisions that are extraordinarily complex and costly, such as the acquisition of a SGM.¹²⁶ The problem of bounded rationality is aggravated in the analyzed market since people normally do not have many opportunities to learn about SGM. Once the consumer acquires a policy, the characteristics of the product and the switching costs make it difficult to change provider, as seen in previous chapters. The cognitive biases

124. Arrow (1963).

125. Concept coined by Simon (1947).

126. The use of the bounded rationality concept is the one followed by Bowles (2004, p.97).

of consumers also affect purchase decisions. This concept refers to the “systematic deviation (that is, not random and, therefore, predictable) from the rationality in the judgment or decision-making”.¹²⁷ For example, there is evidence that the way in which prices are presented affects the purchase decision of life insurances.¹²⁸ Bounded rationality and cognitive biases impede that quality of insurances are completely evaluated by consumers at the time of contracting them.

The third is the complexity and broad variety of insurance plans and, finally, the lack of objective information about different options. Both situations will be analyzed in the following section.

4.2. Insurers register many poorly differentiated plans

Each insurer offers, on average, seven individual SGM plans; also, the ten insurers that offer most plans average fourteen. The range of offered plans by each insurer varies from only one option to a maximum of 33 plans (Table 8). Moreover, the plans of some insurers are flexible, or custom made, since the policyholder can personalize its product by adding coverages (dental services, care, abroad funeral expenses, etc.), as well as choosing the insured amount, co-insurance, deductible, hospital care levels, among others. The foregoing makes the number of options to choose even greater.

Table 8. SGM Plans, 2021 (Number)

Number of plans	Collective	Individual	Totals
Average per insurer	3	7	9
Range	from 1 to 19	from 1 to 33	from 1 to 34

^{1/} The universe is 32 insurers (see Annex 3). Data, according to the source, could be underestimated since the number of plans registered before the CNSF is higher.

Source: Cofece with data from File REC-004-2022 (number 218).

The similarity in the characteristics of the plans of some insurers is so high that the degree of differentiation is sometimes imperceptible to consumers. Likewise, the difference in products between insurers is minimal, particularly in the sum insured, deductible and co-insurance (Chapter 9). Annex 3 presents more details.

127. Blanco (2017, p. 1).

128. Huber, Gatzert and Schmeiser (2015).

Table 9. Options in the individual SGM plans for selected insurers^{1/}

Characteristics	BX+ Multiva	Prevem	GNP	Plan Seguro
Coverage	Not available	National	National	4 states
Number of options of sum insured	6	4	41	Free choice
Range of the sum insured (millions of Mexican pesos)	2-125	3.5-15	530 thousand-138	545 thousand - unlimited
Deductible (options)	10	10	30	Free choice
Range of deductible (thousands)	10-100	10-109	9.5-175.2	8.1-109
Co-insurance (options)	5	Not available	3	4
Range of co-insurance (percentage)	10-30%	Not available	10-20%	10-30%
Hospital levels	3	Not available	6	4
Hospital networks	Not available	197	Unrestricted	Not available

^{1/} Insurers with information available to make the comparison.

Source: Cofece with data from *Asegurate México* (2021a)

The number of plans with different characteristics that insurers offer does not seem to seek to address the diversity of consumer preferences. Even more so if it is considered, *a priori*, that the policyholder does not know the quality of the service of the insurers at the time of acquiring a product, only because they trust its observable characteristics, or the information provided by agents.

The theory points out that insurers have the incentive to flood the market with too many plans and dominate the “shelf space” of websites.¹²⁹ The objective would be to elevate search costs of consumers in such way that they lose interest in committing to a comprehensive search of options of products that are complex, taking advantage of bounded rationality of consumers. This practice has the effect of reducing price competition and, thus, harming the consumer.¹³⁰

Frank and Lamiraud (2008), using data for Switzerland, show that the willingness of people to switch plan decreases when the number of

129. Frank and Lamiraud (2008, p. 2).

130. Genadri (2015).

options they have increases, which confirms the hypothesis of bounded rationality: consumers are less willing to commit to the finding the best option when the cost of searching is higher. Likewise, these authors found that the greater number of plans make that significant price differences persists for products that are relatively homogenous.

For the USA, Chandra, Handel and Schwartzstein (2018) conclude that a greater number of plans affects the pocket of policyholders, since choosing between seven or eight plans increases their costs between 400 and 500 dollars, with respect to the alternative of choosing between two or three plans. No similar investigations were found for Mexico.

A public policy solution is to limit the number of SGM plans that an insurer can offer, with the purpose of facilitating the choice of consumers and promoting greater price competition. This measure has been broadly debated in other countries. Insurers believe that free choice achieves greater flexibility, emphasizing innovation and diversity of consumer preferences. On the contrary, some organizations favor adopting a more manageable number of easily comparable options, citing investigations on behavioral economics that show that having too many options affects decision making.¹³¹ Due to the foregoing, this Commission considers that public policymakers must weigh the trade-off between enhancing consumer choice or maintaining the freedom of insurers to commercialize all the plans they consider.¹³²

Some jurisdictions have opted to limit the number of plans that insurers can offer, which has resulted in benefits for consumers. By the end of 2013, plan options were simplified in eleven states of the USA and the District of Columbia.¹³³ Actions taken included limiting the number of plans or the designs of benefits that insurers offer to a maximum of between three and five plans per coverage level, as well as standardized benefits and the adoption of a "significant difference" standard. The latter implies that the characteristics of a plan must be substantially different from those plans offered by the same insurer. Standardization of the attributes of the plans faces a dilemma, since, although in the short-term it helps in the choice of consumers, in

131. Monahan (2013).

132. Colombo and Tapay (2004, p.31).

133. Genadri (2015).

the long-term it could also limit product innovation.¹³⁴ A natural experiment of SGM in Massachusetts, USA found that reducing and standardizing plans had a positive effect on consumer welfare, since they improved their choice by being able to differentiate plans more accurately; however, companies also captured part of the surplus since consumers chose more expensive plans.¹³⁵

Article 208 of the LISF establishes that insurance institutions are obliged to offer, for SGM and other coverages, standardized basic products that cover risks of the population, to have a standard contract model with easily understandable clauses and that include aspects such as covered risks, exclusions, sum insured, deductibles, duration of the contract, periodicity of the payment of the premium, procedure for the charge of the compensation, among others. The basic standardized products were created to strengthen insurance culture and extend the benefits of its protection to a larger part of the population, but given their characteristics, they should also contribute to facilitating consumer choice in the extent that their presence in the market is extended. However, basic standardized products are rarely purchased: In 2020, only 25 basic standardized products of individual SGM and 35 collective ones were sold.¹³⁶

Due to the foregoing, the SHCP should evaluate the consequences of narrowing the registry of SGM products that insurers offer to consumers only to those with perceptibly different characteristics. In its case, this regulation would require reforming the LISF. This will prevent insurers from flooding the market with essentially the same plans, thus facilitating consumer choice.

4.3. Consumers do not have enough information to make the best decision

Some public policies that seek that consumers to make better informed decisions may contribute to greater competition in the markets. Price comparators encourage competition when they help consumers find best prices and products, besides being an option to distribute

134. Ericson and Starc (2016).

135. Ericson and Starc (2013).

136. Cofece with data from the CNSF (2020a).

insurance.¹³⁷ They also achieve boosting competition and innovation by facilitating the entry of new economic agents.¹³⁸

In 2019, Condusef evaluated the quality and transparency of SGM information, reviewing the application, the frontpage of the policy, general conditions, website and advertising of insurers.¹³⁹ The evaluation consisted of two stages. In the first evaluation, the average rating for the individual and collective SGM was 5.6 and 5.1 out of 10, respectively. The second evaluation was after the insurers responded to the observations of the first evaluation, in such a way that the averages of individual and collective SGM increased to 9.2 and 8.4, respectively.¹⁴⁰ Condusef observed that the frontpages of the policies did not indicate the meaning of the abbreviations used; the websites did not indicate the requirements and modalities for contracting, and advertising could be misleading or leading to error, among other observations.

The websites of insurers and comparators have become an important means to empower consumers and efficiently buying insurance. However, this situation has not been transferred to SGM in Mexico. Insurers may present information on their websites in such a way that they lead consumers towards a specific plan, thus affecting their ability to assess all the available options.

The Mexican regulation does not impose criteria or conditions for insurers to improve their websites and facilitate consumer choice or present standardized information that facilitates comparison and understanding. In particular:

1. The market presents little information to compare insurance plans.
2. Insurers seem to be committed to a face-to-face insurance sale model, so their websites are not well designed to improve the consumer information.
3. Two out of three websites of insurers do not allow consumers to quote a policy online, since after requesting personal information to that interested, they are informed that an agent will contact them to advise them. (Table 10).

137. Compagnucci and Empoli (2018, p. 53).

138. Financial Conduct Authority (2016).

139. Information available in Condusef (2021e).

140. In this last stage, *Metlife* failed (4.4) for individual SGM; and for collective SGM *Mapfre* (4.3) and *Zurich* (4.0) failed.

Table 10. Quality attributes of the information observed on the SGM websites (Percentage)

The website:	Complies with the condition ^{1/}
Only allows contracting a plan through an agent (by telephone or in person)	100%
Requests name, phone and email	93%
Requires the age of the applicant	86%
Includes a directory of suppliers (hospitals)	64%
Requests applicants' data and immediately redirects them to an advisor without showing them quotes	64%
Offers additional information (explicative/educative) and/or suggestions	57%
Requests the gender of the applicant	50%
Shows the applicant a quote, but sends her to an advisor for personalized consultations	36%
Offers online help	36%
Requests postal code and/or entity	36%
Allows to make a consultation with filters (deductible, co-insurance-coverages, among others)	14%

^{1/} Percentage of the websites that comply with the attribution based on the review of 14 websites, following the Taylor et al. (2016, p.34) methodology.

Source: Cofece with data from Allianz (2021), AXA (2021), BUPA (2021), CHUBB (2021), GNP (2021), La Latino Seguros (2021), MAPFRE (2021), Metlife (2021), PANAMERICAN LIFE (2021), Plan Seguro (2021), Prevem Seguros (2021), Seguros Atlas (2021), Seguros Banorte (2021), Seguros Bx+ (2021) and Seguros Monterrey (2021).

In international practice, particularly in the USA, employers and some public entities recommend that websites adopt various standards to help consumers understand the differences in the plan options available. Some of these standards aim at websites to:

1. Provide consumers an estimate of the out-of-pocket expenses depending on the plan;
2. Organize results to present, firstly, the most suitable plans for the individual consumer and, afterwards, allow the consumer to classify and filter among the various options;
3. Have consumers take shortcuts based on how quickly they want to select a plan and how many different attributes they want to consider;
4. Provide information that highlights the attributions considered most important to consumers (for example, costs and whether a doctor is included in the plan) and,

5. Incorporate a directory of suppliers so consumers can see the plans in which their doctors participate.¹⁴¹

In 2014, Cofece found that in the insurance markets there was a considerable lack of platforms to disseminate pre-information on prices and characteristics of the products.¹⁴² Seven years later, there are still few price comparators for SGM. The main impediment for comparators is that insurers are not willing to share the prices of their policies, even when some comparators have managed to enter the market by developing their own methodology to estimate the premiums of the plans of the insurers.

The information offered by existing comparators is limited. This study identified that comparators request personal information such as name, sex, entity, postal code, email, and telephone, in addition to the product of interest. Once the personal data has been entered, most comparators do not show quotes, but rather indicate that they will send the information by email or that an agent will contact the interested party.¹⁴³ Comparators that do present information do not include all insurers (Table 11).

Insurers	YoSeguro	Asegurate Mexico	Condusef	Sicuro	Kalmy	Traditz	Medical Mex	Kayum	SGM.mx
Mapfre	✓	✓	✓	✓	✓	✓	✓	✓	✓
GNP	✓	✓	✓	✓		✓	✓	✓	
AXA		✓	✓	✓		✓	✓	✓	
Bupa México	✓	✓		✓		✓			
Plan Seguro	✓	✓	✓	✓					✓
Pan-American	✓	✓		✓					
Prevem Seguros	✓	✓		✓					
Atlas	✓				✓				
Banorte	✓	✓							
Chubb Seguros	✓				✓				
Monterrey NYL			✓		✓		✓		
Seguros Sura	✓	✓							
BBVA Bancomer			✓						

Source: Cofece with information from price comparators of Asegurate México (2021b), Condusef (2021c), Kalmy (2021), KAYUM (2021), Medicalmex (2021), Sicuro (2021), Seguro de Gastos Médicos Mayores.mx (2021), Traditz (2021) and YoSeguro (2021).

141. Taylor et al. (2016, p. 24).

142. Cofece (2014a, p. 913).

143. Among the comparators that operate like this are Traditz, teo.mx, Sicuro, Seguridad Planificada or Cotizador.

Table 11. SGM Comparators, 2021

Insurers	YoSeguro	Asegurate México	Condusef	Sicuro	Kalmy	Traditz	Medical Mex	Kayum	SGM.mx
Inbursa			✓						
Allianz			✓						
AIG Seguros	✓								
Medi Access		✓							
MetLife					✓				
Thona Seguros	✓								
Zurich Santander	✓								

Source: Cofece with information from price comparators of Asegurate México (2021b), Condusef (2021c), Kalmy (2021), KAYUM (2021), Medicalmex (2021), Sicuro (2021), Seguro de Gastos Médicos Mayores.mx (2021), Traditz (2021) and YoSeguro (2021).

Condusef has a simulator in which consumers can compare products of eight insurers that offer SGM.¹⁴⁴ However, this comparator does not admit modifications to the insured sum, additional coverage, co-insurance or state; therefore, users still have to search for the information of the insurers. The comparator warns that the results shown could be modified at the time of contracting.

The simulator of Condusef has areas of opportunity compared to those developed by governments of other countries. For example, in 2008 the NCC – Norway’s consumer protection agency- implemented *Finansportalen*, an Internet-based price comparison service. Consumers introduce their data in a calculator of the *Finansportalen* and the application, in real time, requests information of all companies that offer the service. The application collects prices submitted by the companies and presents them to the consumer, along with the important characteristics of the products.¹⁴⁵ Due to the reluctance of the insurers to provide their information, in 2013 the NCC amended the regulation to force all companies offering non-life insurance to have the available information to feed the *Finansportalen*. The Australian government also has an electronic comparator that has facilitated the comparison of prices and coverages to contract health insurance.¹⁴⁶

In the USA, as of this year most of the health plans and the issuers of collective or individual health insurance must publish price information for the covered products and services, so that consumers know the cost

144. Condusef (2021c) In the consultation made in September 2021 products from BBVA Bancomer, Plan Seguro, Inbursa, GNP, AXA, Mapfre, Allianz and Monterrey NYL could be compared.

145. EIOPA (2014, pp. 23-24).

146. Private Health (2021).

of the services before receiving care, in addition to the fact that price information can be used by app developers.¹⁴⁷

Condusef also offers some means of consultation of insurers plans, as well as their performance, which would also improve to the extent that they offer complete and updated information (Table 12).

Table 12. Means of consultation of insurance plans operated by Condusef

Mean	Description	Problems
Insurance Adhesion Contracts Registry (Recas, per its acronym in Spanish)	Information on the coverage and formats of the products (frontpage of the policy, application, general conditions, and brochure of basic rights of the policyholder).	Do not allow to compare insurance plans as it does not include premiums, co-insurance level or deductible, among others. ^{1/}
National Catalogue of Financial Products and Services	Made up by 219 products, each one described in a technical datasheet with the name of the product, characteristics, requirements, commissions, contracting costs, complementary services and restrictions.	The datasheets do not show the premiums, deductible level or co-insurance in addition to having empty spaces for some products. Condusef does not guarantee that the information is correct and warns that the detail and veracity is responsibility of the insurers.
Basic Insurance Registry (RESBA, per its acronym in Spanish)	Allows to consult the premiums of basic standardized insurance, medical expenses, and health, of all insurers by age, sex and entity.	The information of the products of some insurers is not updated. It warns that the cost may change for the premium of the right to policy. In 2020 only 25 basic insurances were commercialized in the market. ¹⁴⁸

^{1/} The deductible is the sum of money paid by the policyholder in case of using the insurance; co-insurance is a percentage of the total expenditure covered by insurance, after the deductible, which is also paid by the policyholder. Source: Cofece with information from Condusef (2021a), Condusef (2021b), Condusef (2021d), Condusef (2021e) and Condusef (2021f).

147. According to the Coverage Transparency Rule health insurers and health plan providers must have a comparison tool that includes prices, payment fees negotiated within the network and historical charges outside the network, which must be updated monthly. Deloitte (2021) and Center for Medicare & Medicaid (2022).

148. Cofece with data from CNSF (2020b).

Table 12. Means of consultation of insurance plans operated by Condusef

Mean	Description	Problems
Financial Entities Bureau	Shows reclamations of users before Condusef, sanctions to insurers, rankings obtained by insurers in 2019 on the quality of their information; operative quality of attention and service of the insurers regarding .	Does not provide information on premiums.

¹⁴⁹ The deductible is the sum of money paid by the policyholder in case of using the insurance; co-insurance is a percentage of the total expenditure covered by insurance, after the deductible, which is also paid by the policyholder. Source: Cofece with information from Condusef (2021a), Condusef (2021b), Condusef (2021d), Condusef (2021e) and Condusef (2021f).

In the international stage, there are problems in insurance price comparison websites. In 2011, for example, the Netherland's financial markets regulator (the AFM) noted that many sites were not transparent regarding their independence from insurers, besides not displaying the products of all suppliers of the markets, thus their results could be biased.¹⁴⁹

The AFM also found that the way that the information was displayed led to the assumption that the results of the sites reflected all the available supply.¹⁵⁰ According to the European Commission, in the United Kingdom and Italy, websites do not provide clear and consistent information for consumers to take informed decisions; often, these sites do not disclose that they are owned by the insurers.¹⁵¹

In Mexico, most comparators do not show results for all insurers in the market. Also, at least one SGM comparator could exhibit conflicts of interest by biasing the decision of consumers in favor of certain plans or determined insurers.¹⁵² Neither there is a specific legal figure for comparators, which is why they are constituted as insurance intermediaries (brokers or agents), following the requirements of this figure and not as if they were a new form of digital intermediation.¹⁵³ This implies that there are no rules for the promotion or provision of insurance interme-

149. EIOPA (2014, pp. 21-22).

150. *Ídem*.

151. European Commission (2017, p. 103).

152. Medicalmex (2021). The *MedicalMex* website could bias the decision of consumers with the purpose of highlighting the plans of GNP.

153. OECD (2020b, pp. 24-25). Some examples in Mexico are *Kayum* and *Ahorraseguros*, which are registered as legal person agents. Other countries in which this legal figure does not exist are France, Italy and the United Kingdom.

diation services through digital channels. In the jurisdiction where they operate, as noted by the OECD (2020b), these rules must consider the confidentiality of data, marketing, security requirements, disclosure of information and technical and human capacities adapted for the use of digital channels.

The “Insurance distribution directive” of the European Union establishes directives for the distribution of insurance that includes comparators. Among these directives are: applying norms on the disclosure of consumer information; make prices and the costs of the products transparent, and online insurance distributors must provide consumers with proper information about the sale process and comply with the needed advice.¹⁵⁴

In France and Italy, in addition to the measures indicated in the European Union regulation, there are also specific rules for commercializing insurance through digital channels. In France, the insurance regulator issued a guide with recommendations on content and dissemination, as well as for the storage of data and information. In Italy there are rules for avoiding discrimination, the commercialization of non-requested contracts, in addition to the registry of Internet domain, among other things.¹⁵⁵

Due to the foregoing, in order for consumers to have access to more reliable information to choose from and, with this, to improve the intensity of competition between insurers, it is recommended that the Condusef and the SCHP promote the establishment in the LPDUSF of the minimum standards that websites of insurers and purchases must comply with, based on the international best practices. These standards must provide up to date information and inform about potential conflicts of interest.

It is also recommended that the CNSF establishes rules to promote or provide insurance intermediation services to be followed by comparators and other intermediaries that commercialize SGM through digital channels. Likewise, insurers must share information on prices, coverages, exclusion clauses and contracting requirements of all their plans to those interested in offering the service of SGM comparators that comply with the aforementioned rules. This provision should be extended to Condusef, so that it provides complete and updated information. This

154. European Commission (2016). The “Insurance Distribution Directive” began to apply on members of the European Union in 2018.

155. OECD (2020b, pp. 31-34)

recommendation will facilitate the emergence of independent agents willing to offer consumers information about the plans available in the market.

5. Recommendations compendium

Promote transparency in the related market to hospital services

R.1 That Profeco develops and publishes indicators that measure the price-quality ratio of hospital services, similar to the healthcare quality indicators of the “The best private hospitals in Mexico” classification and the Comprehensive System for the Measurement of User Satisfaction of the IMSS.

This measure will help to empower consumers and insurers, since policyholders will have more elements to choose hospital services based on the price-quality ratio and not on the hospital brand, which would help to limit the bargaining power of large hospital chains vis-à-vis insurers. (Section III.4).

R.2 That the Ministry of Health encourages the establishment of the obligation for private hospitals to use the Clinical Practice Guides made and published by the same Ministry of Health in the Master Catalogue of Clinical Practice Guides for the care of the most common illnesses or diseases (Reform to the LGS).

This recommendation will help consumers to have up to date information about the treatment of various conditions and anticipate the costs of private hospital services (Section III.4).

Improve consumer mobility

R.3 That the SHCP promotes the establishment of seniority portability, which is the recognition by all insurers of the period that a person has been covered by a policy. This as long as the new policy does not imply an increase to the insured sum with respect to the previous policy (Reform to the LISF).

The recognition of the portability will remove a significant switching cost for policyholders, since they will be able to change insurer without having to incur in waiting periods for some conditions (Section IV.1).

It is also recommended that the SHCP promotes the modification of the legal framework to establish a risk bureau that is operated by an independent agent from the insurers or that any insurer that enters the market could take part in its administration board. Thus, access to the claims history of policyholder will occur under non-discriminatory conditions for all market participants. The objective is to have a more solid institutional arrangement than the current Office of Exchange of Information.

The regulation of the risk bureau will favor portability by guaranteeing that insurers know the claim history of policyholders.

R.4 That the SHCP promotes the establishment of standards on the type and duration of the exclusions that insurers can establish in the clauses of their policies, as well as for the recognition of preexistence when, after a period of time, the policyholder has not presented symptoms or received treatment (Reform to the LSCS and the LISF).

These measures have the objective of reducing switching costs and, with that, increase the mobility of users between insurers and eliminate the lock-in user effect. Therefore, insurers will have more incentives to attract users from their rivals by offering better plans. (Section IV.1).

R.5 That Condusef establishes the possibility for policyholders to cancel their policies in advance at any time, without being penalized, in such way that all insurers will be obliged to refund the totality of the unearned premium, excluding the issuance expenditure; this obligation will also apply for revocation causes of the insurer (Reform to the General Provisions in matters of healthy practices, transparency and advertising applicable to insurance institutions).

This recommendation will increase insurers mobility and, with that, competition between insurers (Section IV.1).

Reduce search costs

R.6 That the SHCP evaluates the consequences of limiting the registration of SGM plans that insurers offer to consumers to only those with significantly different characteristics. If applicable, the SHCP must request the Congress of the Union to make the necessary reforms (Section V.2).

R.7 That the SHCP and Condusef promote the establishment of minimum standards that the websites of insurers and comparators must comply with, based on the best international practices. These standards must provide up to date information and inform about possible conflicts of interest (Reform to the LPDUSF) (Section V.3).

R.8 The CNSF must establish rules for the promotion or provision of insurance intermediation services to be followed by comparators and other intermediaries that commercialize SGM through digital channels. Likewise, insurers must share information on prices, coverages, exclusion clauses and contracting requirements of all their plans to those interested in offering the service of SGM comparators that comply with the previous rules (Reform to the Single Circular). The latter provision must be extensive to Condusef, so that it has full and up to date information.

This recommendation will facilitate the emergence of independent agents willing to offer consumers comparative information on the available plans in the market (Section V.3).

Reduce barriers to entry

R.9 That the CNSF establishes the obligation of insurance agents to show consumers the information about the commissions and bonuses they receive from each insurer whose products they promote. The delivery of this information must be made before the user chooses their products, regardless of whether the policyholder requests it (Reform to the Single Circular).

This recommendation will reduce the conflict of interest that arises from the incentive for sales agents to place products from a sole insurer (Section IV.2).

R.10 That the SHCP and the CNSF prohibits that contingent awards, bonuses or commissions received by agents are linked to meeting of a

specific sales goal of a same plan or a same company, since these bonuses may induce agents to try to sell a specific plan, in detriment of other more suitable plans for the policyholder (Reform to the Single Circular and the RASF).

If implemented, this recommendation would lower the cost of entry of new insurers, by eliminating the incentive that agents have to place products from a same insurer (Section IV.2).

R.11 That the CNSF issues the general provisions referred to by article 76 of the LITF regarding interconnection and transactional data sharing, prior authorization from users, that will facilitate the entry into the market of data intermediaries, insurtech companies and novel models by facilitating the exchange of data with established companies, upon payment of the applicant (Section IV.3).

6. Final comments

This study identified that the SGM markets are more concentrated than other insurance branches, except for health.

The study presents econometric evidence about the interaction between insurers and hospitals, mainly large ones. The presence of hospitals with more than 100 beds increases prices of the premiums of policies by 12%. Also, an increase in the concentration of insurers gives rise to a decrease of hospital prices proportionally greater in these prices by a greater concentration of hospitals. However, this effect happens mostly in markets where large hospitals are not present, since econometric evidence shows that prices of the hospital services paid by insurers are 34% higher in markets where hospitals with more than 100 beds are present. Mainly, these hospitals are in Mexico City, Jalisco, Nuevo León and the State of Mexico.

The evidence found could be consequence of differences in quality of hospital services. It could also be that the policyholder does not have information on the quality of hospital services, and therefore presume that the most expensive hospital is the best. Consequently, a good part of consumers seeks for the largest hospitals to be included in their policy. This means that large hospitals have less incentives to control their costs.

Due the interaction between insurers and hospitals, the challenge is to promote competition simultaneously in the SGM and hospital services markets to increase the welfare of policyholders. In the hospital servi-

ces market, introducing greater transparency about the quality of their services would promote greater competition. In other countries, the price-quality relationship in the hospital services has been more analyzed, which has helped to understand to what extent higher rates reflect quality and not only reputation.

Greater competition both in the SGM markets and in the related markets for hospital care services should be reflected by, on the one side, in reducing out-of-pocket expenditure, at least for families with the resources to acquire insurance; and, on the other, reducing the prices of policies. The latter would, in turn, have an impact on more companies and families being able to acquire a SGM.

This study identified other problems that prevent competition from being sufficiently intense:

1. Consumers face high costs for switching insurers, so they remain tied to the first insurer with which they contracted a product, although the premium increases with each policy renewal. In particular, insurers often do not recognize seniority when they contract with clients from other insurers, some preexisting conditions are left without coverage and the waiting periods for care for some conditions must start over. Likewise, consumers are subject to penalties for early cancelations, even when the policy was not used.
2. The way insurance agents are remunerated is a factor that hinders the entry of new companies. Some insurers grant contingent awards or commissions linked to reaching a sales objective, in addition to the commission per policy sold. Entrant insurers could commercialize their products through existing agent networks, rather than investing in building their own sales forces; however, agents have incentives to put more effort into selling products for which they receive higher commissions or bonuses. Larger insurers pay higher direct commissions to agents, which is an indication that the commissions would be discouraging the entry of new competitors. Also, this situation creates a risk of conflict of interest not noticed by consumers, since the advice of some agents could be partial or biased in favor of the insurers that pay higher commissions.
3. The CNSF has not yet received applications for authorization of novel models, even though the provisions referred to by the LITF have been published. Interconnection and data sharing regulation

through API (open finance) regulation has not been issued, which would reduce legal certainty. This regulation would promote the entry of competitors with services based on data of users and insurtech, since it would facilitate the exchange of data between established and entrant companies.

4. Consumers face information problems and have limited computing capacity in the insurance market, affecting their purchasing decisions. In Mexico, insurers offer poorly differentiated plans, aggravating this situation.

Due to the foregoing, this study proposes recommendations in four aspects in order to promote competition and free market access:

1. Encourage transparency in the related market with hospital services.
2. Improving consumer mobility.
3. Reducing search costs for consumers.
4. Reduce barriers to entry.

The expected effect of these measures would be to intensify competition, the impact of which will be reflected in lower premiums and new products that respond to the need for more comprehensive healthcare. These consequences will result in less out-of-pocket expenses for families with the resources to acquire a SGM.¹⁵⁶

156. Annex 4 presents the matrix of recommendations in accordance with the OECD methodology (2018a) and OECD (2018b).

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Annex I. Econometric models

This annex provides technical details of the two econometric models presented in chapter III of this study. Particularly, it delves into the characteristics and use of the data, as well as the assumptions of the information for the adjustment of the models.

Model 1

Description of the model

This model studies the relation between premiums of the policies of SGM and the market structure of insurers and hospitals. It is an exponential logarithmically transformed model which includes various independent variables (such as age, sex, type of plan, among others) which explain the level of the premiums of the insurance policies, using information from the policies contracted between 2018 and 2020. The model also includes variables for the level of concentration of the insurers and the presence of larger hospitals.

The model is based on Trish and Herring (2015), but with some adjustments to capture particularities of the Mexican market. The specification of the model is:

$$\ln(\text{Prima}_{imt}) = \beta_0 + \beta_1 \text{TamañoHosp}_{mt} + \beta_2 \text{PIBper cápita}_{mt} + \beta_3 \text{IHH_Aseg}_{mt} + \beta_4 \text{Sexo}_{imt} + \beta_5 \text{Edad}_{imt} + \beta_6 \text{SA}_{imt} + \beta_7 \text{Plan}_{imt} + \beta_8 \text{Seg}_{imt} + v_t + \varepsilon_{imt} \quad (1)$$

Where:

Prima_{imt} = Premium paid by the policyholder i in the state m in year t .

TamañoHosp_{mt} = Presence of larger hospitals (with 50, 75 or 100 beds).

$\text{PIBper cápita}_{mt}$ = GDP *per capita* in the state m in the year t .

IHH_Aseg_{mt} = HHI of insurers (based on sales) in the state m in the year t .

Sexo_{imt} = Dummy variable of the sex of the policyholder (female=1; male=0).

Edad_{imt} = Age of the policyholder i (years).

SA_{imt} = Amount of the maximum limit of liability of the policyholder i (sum insured).

$Plan_{imt}$ = Subtype of insurance contracted by the insured i (“Broad”, “Compensation”, “International” or “Limited”).

Seg_{imt} = Insurer issuing the insurance.

ν_t = Fixed effects for each year (2018, 2019 and 2020).

$100 * \beta_1, \dots, 100 * \beta_8$ are the semi-elasticities of the premiums with respect to the independent variables.

ε_{imt} = Error term.

Data

The database used has information on the premiums of SGM policies, between 2018 and 2020, which was provided by the CNSF. The data handling criteria were:

- i. Use of the individual insurance premiums with one policyholder. This allows knowing the value of the premium and the characteristics of the individuals associated with the risk (age and sex), which are important to determine the value of the policy.
- ii. Exclusion of observations of collective insurance. The problem of including these observations is that there is no detailed information of the characteristics of policyholders included in a collective SGM policy which may affect its cost, such as the risk of work activity or age and sex distributors. The level of coverage contracted by employers is also unknown.
- iii. Use only observations with plausible policy premiums for an SGM product. In particular, based on the information from Condusef, observations whose value of the policy was less than the minimum cost of standardized basic insurance plan, in accordance with the sex, age and state of the contracting party were not considered.¹⁵⁷
- iv. Inclusion of policies with beneficiaries aged between zero and 99 years. Observations of contracting parties with 100 years or more were less than 0.1% of the total.
- v. Only use insurance observations in the modalities of compensation, limited, broad and international plans, which represent 81% of the contracted insurance. Other insurance – such as microinsurance and standardized basic insurance- constitutes a small sample that does not contribute to the significance of the estimation, in addition

157. Condusef (2021a).

to the fact that these insurances do not necessarily offer comprehensive coverage for the policy holder.

Concentration in the insurers market was calculated with information of the issued SGM premium, at the state level, respectively. Each insurer was taken as an independent economic interest group, except for *Seguros Inbursa* and *Patrimonial Inbursa*. Estimates are at the state level since the exact location of the policyholder is unknown beyond that geographical level.

The explanatory variable of interest – presence of larger hospitals- is a dummy variable that indicates the existence of at least one hospital with a certain number of census beds in each state.¹⁵⁸ Based on a classification from Inegi which identifies large hospitals as those with at least 50 beds, it was decided to use thresholds of 50, 75 and 100 census beds to analyze the effect on prices as the size of hospitals increases.¹⁵⁹ The information was obtained from the health statistics in private establishments registry between 2018 and 2020 of Inegi.¹⁶⁰

Results

Table 13 shows the results of model 1 for the thresholds of presence of at least one hospital with 50, 75 and 100 census beds. The study opted to present the criterion of 100 census beds because the larger the hospital is, the more likely it is that it will have greater infrastructure (operating rooms, labs, general medical equipment, among others). The estimators suggest that the presence of large hospitals favors an increase in the premiums of individual insurance policies. These results are consistent with the idea that insurers are not capable of bargaining with large hospitals, therefore they only transfer the cost to consumers. Particularly, the premiums are 12% $[(e^{0.1133}-1)*100]$ higher in markets with the presence of hospitals with more than 100 beds, being this effect greater to the extent in which pre-

158. A census bed is the bed in service installed in the hospitalization area for the regular use of internal patients; it must have the indispensable space resources, as well as material and staff resources for the medical care of the patient. The admission service assigns the patient at the time of admission to the hospital to be subject to observation, diagnosis, care or treatment. It is the only one that produces hospital discharges on which statistical information on occupancy and days of stay is generated. It includes census beds of the four main branches of medicine: surgery, obstetrics-gynecology; internal medicine: pediatrics and other census beds.

159. Inegi (2019b, p. 2).

160. Inegi (2020b).

sent hospitals are larger (5.6% $[(e^{0.1133}-1)*100]$ and 8.9% $[(e^{0.0855}-1)*100]$ for hospitals with more than 50 and 75 beds, respectively).

Table 13. Results of model 1

Variable	E1 (100 beds)		E2 (75 beds)		E3 (50 beds)	
	Estimator	Standard Error	Estimator	Standard Error	Estimator	Standard Error
Intercept	5.4478	(0.2797)***	5.4547	(0.2880)***	5.4836	(0.2977)***
Tamaño_Hosp_100	0.1133	(0.0034)***	-	NA	-	NA
Tamaño_Hosp_75	-	NA	0.0855	(0.0031)***	-	NA
Tamaño_Hosp_50	-	NA	-	NA	0.0549	(0.0032)***
PIB per cápita	0.2904	(0.0149)***	0.3399	(0.0147)***	0.3916	(0.0146)***
IHH_Aseguradoras	-0.00002	(0.000002)***	-0.00004	(0.000002)***	-0.00004	(0.000002)***
Suma asegurada	0.0003	(0.00001)***	0.0003	(0.00001)***	0.0003	(0.00001)***
Edad	0.0334	(0.0001)***	0.0334	(0.0001)***	0.0334	(0.0001)***
Sexo (F)	0.0551	(0.0029)***	0.0555	(0.0029)***	0.0554	(0.0029)***
EF (Subtipo)	✓		✓		✓	
EF (Compañía)	✓		✓		✓	
EF (Año)	✓		✓		✓	
R ²	0.7837		0.7833		0.7827	
Observations	172,109		172,109		172,109	

(***) P<0.01, (**) P<0.05, (*) P<0.1, NA: Not applicable. Robust errors to test for heteroscedasticity. Source: Cofece based on CNSF (2020a), Inegi (2020b) and File REC-004-2022 (number 6).

The coefficient of the concentration level of insurers is significant, but with the opposite sign to that expected. Possible reasons for this sign to be counterintuitive are:

- i. Poor definition of the relevant market for insurers. The definition of the relevant market was due to the availability of information and not to market conditions, particularly in its geographic dimension (local or regional market).
- ii. States with less population have fewer providers of hospital services for all specialties, therefore premiums of policies charged by insurers are cheaper; that is, a high concentration with lower premiums.
- iii. High non-observable variability in the cost of the premiums due to “additional coverages” (custom-made suits), in addition to the fact that a same policy could mean a different product due to the hospital offer in some states (for example, Mexico City with respect to a state in the south of the country).

For this reason, the study avoids making inferences about the estimator the insurers’ concentration on policy premiums, focusing only on the effect of the presence of large hospitals on the cost of premiums.

The rest of the estimators of the model has the expected sign. To the extent that a policyholder is female, older or contracts a policy with a higher insured sum, the value of her policy premium will increase. This model also suggests that premiums are higher in markets where population has greater purchasing power. The latter is so because these markets are also where the largest hospital infrastructure is concentrated.

Model 2

Description of the model

This model studies how the structure of the hospitals and insurers markets determines hospital costs, which are paid by insurers. Model 2 is a linear regression model between the cost of hospitalization and the levels of market concentration, both for insurers and hospitals, using information from claims occurred between 2018 and 2020. The model also includes information on the presence of larger hospitals, characteristic variables of the policyholder (age and sex), as well as variables on the characteristics of the claims (severity, type of claim, among others). The model is based on Moriya *et al.* (2020), Melnick *et al.* (2011) and Dauda (2017), with some adjustments to capture particularities observed in Mexico. The functional form of the model is:

$$\ln(Ph_{imt}) = \beta_0 + \beta_1 IHH_Aseg_{mt} + \beta_2 IHH_Hos_{mt} + \beta_3 Tama\~{n}oHosp_{mt} + \beta_4 PobAseg_{mt} + \beta_5 Sexo_{imt} + \beta_6 Edad_{imt} + \beta_7 TipoSeg_{imt} + \beta_7 CBD_{imt} + v_t + \eta_i \quad (2)$$

Where:

- Ph_{imt} = Price paid by insurers for hospital costs per claim i in the state m in year t .
- IHH_Aseg_{mt} = HHI of the insurers (issued premium) in the state m in the year t .
- IHH_Hos_{mt} = HHI of hospitals (number of beds) in the state m in the year t .
- $Tama\~{n}oHosp_{mt}$ = Presence of hospitals with at least 100 beds.
- $PobAseg_{mt}$ = Percentage of insured population in the state m in the year t .
- $Sexo_{imt}$ = Dummy variable of the sex of the policyholder (female=1; male=0).
- $Edad_{imt}$ = Age of the policyholder i (years).
- $TipoSeg_{imt}$ = Dummy variable of the type of policyholder (individual=1; collective=0).
- CBD_{imt} = Dummy variable that captures the seriousness of the claim (1=claim is basic cause of decease; 0 otherwise).
- v_t = Fixed effects per year (2018, 2019 and 2020).

$\eta_i =$ Fixed effects by disease group i .

$100 * \beta_1, \dots, 100 * \beta_j$, are the semi-elasticities of the premiums with regards to the independent variables.

$\varepsilon_{imt} =$ Error term.

The specification of the model is consistent with the structure-conduct-performance paradigm, which postulates that the structure of an industry determines its conduct, which in turn, determines the performance of the industry and companies.¹⁶¹ The structure of an industry or market can be described by its level of concentration, the number of participating suppliers, the cost structure, the degree of product differentiation or the degree of vertical integration with suppliers, among other aspects. The conduct of companies includes, among other things, their pricing policies, the way they position their products or services, or the resources they use in advertising. Performance refers to the levels of competition and efficiency in the industry or market.

The inclusion of HHI of insurance and hospitals as independent variables in the model implies adopting the assumption that companies compete in quantities or *a la Cournot*. The HHI is calculated based on the quantity of the supply or a proxy variable. Also, its use is consistent with the existence of a causal link between structure and performance, since it theoretically supports that, since companies compete in quantities, the higher the concentration, the higher market power (structure-performance hypothesis).¹⁶²

Data

The database used contains information of the SGM accidents reported by insurers to the CNSF, between 2018 and 2020. The database has information on the cost of the claims, name and type of claim, insurer that paid the claim by state, as well as the characteristics of the patient (age and sex). There is no information on the place and hospital in which the claim was taken care of, so it is not possible to exactly delimit the relevant market for the estimation of the concentration indexes.

Insurers reported information for more than 7,000 different claims, but most of these are rare or less frequent events (50% of reclamations

161. Tirole (1988).

162. Motta (2018, pp.161-163) shows that, based on a Nash quantity equilibrium model, the HHI establishes the existence of a direct relationship between the degree of concentration and the average degree of market power.

correspond to 74 claims). The risk of including all claims in the model is that the rarest events are only cared for in the largest cities (with the greatest hospital infrastructure), which affects the results since:

- i. Increases the variance of the cost of the claim. In general, the rarest claims are also those that represent a higher outlay for insurers. These high costs are not necessarily due to a greater concentration of insurers and hospitals in the market, but rather to the circumstances specific to the event. Increased variability in the cost of claims affects the estimation of the estimators of interest, since the model would be detecting the variations of the indexes of concentration over the cost of the claim.
- ii. States with less hospital infrastructure do not handle rare claims. Care for certain conditions only occurs in the states with the largest hospital infrastructure; therefore, including less rare conditions will only increase the variability of claim costs in the larger states. The latter, due to the greater hospital supply, are also those with the lowest concentration indexes; that is, the risk of including all conditions is that the largest states will have, both the higher claim costs and the lowest concentration indexes. Consequently, the smallest entities, having little hospital infrastructure will have lower claims costs with higher concentration indexes.

With the purpose of identifying the effect of the cost of the claim with regards to the variation in the concentration indexes, the model was adjusted with a restricted sample of observations, which does not include all claims. This allowed to analyze claims that occur and are taken care of in all states. The criteria were:

- i. Use of the claims with greater frequency, which together represent 30%, 40% and 50% of claims.¹⁶³ It was not possible to use any test based on the goodness of fit of the model to choose the best model, since the size of the sample varies with number of claims included; however, later on it will be observed that the results of the estimates do not change, regardless of the proportion of the sample. The

163. CNSF (2020c) Amount of hospitalization: The total amount claimed is reported (with two decimal places) without subtracting the deductible or co-insurance for hospitalization expenses. In the case of records whose amount does not cover the disbursement of such expenses, such as standardized basic and compensation plans, this field is reported as zero.

determination coefficient (R²) also does not change significantly with the number of claims.

- ii. Exclusion of the first and last percentile of the hospitalization costs of each claim, to eliminate atypical values.

The payment of the claim reported by insurers might not be the full cost of the claim since insurers do not necessarily absorb all the payment received by hospitals. This depends on the coverage of the policy of the policyholder which is why the policyholder often must cover part of the medical care, regardless of the cost of the co-insurance and deductible. Instead, the “cost of hospitalization” was used, which would be a good proxy variable since this definition of costs is highly correlated with the total cost of the claim (correlation coefficient of 0.89).

The HHI of insurers was calculated based on sales (issued premiums) at the state level, while the HHI of hospitals was calculated with the number of beds (census and non-census) at the state level.

One limitation of the model is that the measurement of the concentration of the hospital market would not be adequate. This is because there is no information available on the occurrence of the claim (place and hospital), so it is not possible to make a more suitable delimitation with the size of the relevant market. In other words, it was not possible to identify the hospitals that cared for people with SGM. For this reason, the product dimension considers both large and small hospitals (state inequality makes it impossible to generate a criterion based on the number of beds) and with a geographical dimension at the state level. However, in any case, the effect of the concentration of hospitals would be underestimated, since the HHI values incorporated in the model would be lower to real data, so our conclusions would be conservative.

A deficiency of the model is that it does not include information on the quality of hospital services.

Finally, information on the severity of the claim was included through a dummy variable that identifies claims that are frequently a cause of death.

Results

Estimated coefficients were significant and with the expected sign (Table 14). The results suggest that a 1% increase in the concentration index of insurers decreases hospitalization costs by 0.38%, while an increase in

1% points in the concentration index of hospitals increases the price of claims by 0.03% (column 1 of Table 14).¹⁶⁴ That is, a greater concentration of insurers produces a decrease in hospital costs proportionately greater than the increase in these costs caused by a greater concentration of hospitals.

Table 14. Results of model 2

Variable	E1 (30% claims)		E2 (40% claims)		E3 (50% claims)	
	Estimator	Standard error	Estimator	Standard error	Estimator	Standard error
Intercepto	10.5509	(0.0360)***	10.5694	(0.0325)***	10.2932	(0.0471)***
IHH_Aseguradoras	-0.0002	(0.00001)***	-0.0002	(0.00001)***	-0.0002	(0.00001)***
IHH_Hospitales	0.00006	(0.00002)***	0.00002	(0.00001)	0.00001	(0.00001)
Población asegurada	0.0015	(0.0002)***	0.0023	(0.0002)***	0.0022	(0.0001)***
TamañoHosp	0.2914	(0.0095)***	0.2938	(0.0084)***	0.2839	(0.0075)***
Edad	0.0036	(0.0002)***	0.0033	(0.0002)***	0.0028	(0.0002)***
Sexo (1=F)	0.1785	(0.0074)***	0.1567	(0.0064)***	0.1706	(0.0058)***
Tipo (1=Individual)	-0.3237	(0.0073)***	-0.2862	(0.0064)***	-0.2745	(0.0057)***
Causa básica de defunción (1=Sí)	0.3043	(0.0296)***	0.2488	(0.0265)***	0.2095	(0.0242)***
EF (padecimientos)	✓		✓		✓	
EF (año)	✓		✓		✓	
R ²	0.2194		0.2016		0.2045	
Observations	204,061		271,677		342,248	

*** p<0.01, ** p<0.05, * p<0.1. Robust errors to test for heteroscedasticity.

Source: Cofece based on CNSF (2020a), Inegi (2020b) and Inegi (2021b).

However, this effect occurs mostly in markets where large hospitals are not present, since in presence of the latter (variable “TamañoHosp”) the costs of health care increase 33.8% $[(e^{0.2914}-1)*100]$. That is, the premiums of hospital services are 33.8% higher in markets where large hospitals are present, compared to the markets where they are not. These results are consistent with the idea that insurers are not capable to negotiate with large hospitals, limiting themselves to transferring the costs to consumers.

164. The percentage change of costs due to a 1% increase in the HHI is $\frac{\partial y}{\partial IHH_Aseg} \frac{IHH_Aseg}{y} = [exp(\beta_{-1} * \Delta IHH_aseg) - 1] 100 = [exp(-0.0002 * 19.2) - 1] 100 = -0.38\%$, considering the mean value of the sample. That is, a 1% increase in the HHI reduces costs in -0.38%. Similarly, the change regarding IHH_Hosp is $[exp(\beta_{-2} * \Delta IHH_Hosp) - 1] 100 = [exp(0.00006 * 5.26) - 1] 100 = 0.03\%$ (0.01% y 0.005% for scenarios E2 and E3, respectively). For more details on the interpretations of the values see Wooldridge (2010, P.45) and https://cscu.cornell.edu/wp-content/uploads/83_logv.pdf.

The rest of the estimators have the expected signs. For example, to the extent that a claim is reclaimed by a female policyholder, older or that the type of claim is a probable cause of death of the policyholder, the value of the cost of the claim will increase. The model also suggests that premiums are higher in markets where there is a greater insured population, precisely where users have greater purchasing power. In these markets is where the largest hospital infrastructure concentrates.

Annex II. Market failures that insurtech solves

Table 15. Relationship between SGM market failures and insurtech efficiencies		
Technology	Efficiencies	Market failures it solves
Big data	<ul style="list-style-type: none"> • Development of new products • Improves prices of policies • Improves prediction of claim and verification of reclamations • Reduces moral hazard • Provides signs to the policyholder about its risks • Facilitates the user verification process and reclamations • Reduces waiting times 	<ul style="list-style-type: none"> • Asymmetric information • Intertemporal inconsistency • Externalities in policy prices • Lock-in effect
Blockchain	<ul style="list-style-type: none"> • Reduces distribution costs • Reduces waiting times • Automatizes subscriptions and reclamations • Reduces fraud • Improves exchange of information in a safe way • Greater transparency • Systematizes clinical information 	<ul style="list-style-type: none"> • Need for distribution networks • Lock-in effect • Asymmetric information
Artificial intelligence	<ul style="list-style-type: none"> • Reduces distribution costs • Simplifies and adapts policies to meet client needs • Optimizes decisions and provides robotic advice 	<ul style="list-style-type: none"> • Need of distribution networks • Cognitive biases • Decision architecture

Source: Cofece with data from CNMC (2018), Deloitte (2016), Meyers (2018), OECD (2017), OECD (2020a), Ricci and Battaglia (2021).

Annex III. Number and characteristics of SGM plans

Table 16. SGM products or plans commercialized by insurers, 2021

Insurer	Collective	Individual	Total supply
1	1	33	34
2	1	25	26
3	19		19
4	10	6	16
5	1	14	15
6	5	10	15
7	2	12	14
8	3	9	12
9	1	11	12
10	5	6	11
11	2	8	10
12		10	10
13	2	8	10
14	2	7	9
15	2	7	9
16	5	3	8
17		8	8
18	2	5	7
19		7	7
20	6		6
21	1	4	5
22	2	3	5
23		5	5
24	3	2	5
25		2	2
26	1	1	2
27	1	1	2
28	1	1	2
29		1	1
30		1	1
31		1	1
32		1	1
Total	78	212	290

^{1/} Corresponds to products that at the end of the 2021 financial year, had some amount in their risk reserve, which indicates that during the last year they could have been commercialized.

Source: Cofece with data from File REC-004-2022 (number 218).

Table 17. Characteristics of individual SGM plans for selected GNP products

Product	Age	Medical circle	Insured sum (millions of Mexican pesos)	Deductible	Co-insurance	Co-insurance cap	Use of higher-level hospitals	Coverage
Línea Azul Premium	0-70 years (those oldest than 65 years are subject to a medical examination)	Novus, Excelsis, Tempus, Omnia, Decus and Certum	0.63; 1.14; 1.47; 1.78; 2.12; 3.5; 5.3; 6.9; 8.75; 10; 17.6; 25.3; 33.5; 41; 50.5; 64; 75.5; 138.	15,000; 18,500; 27,000; 32,500; 40,000; 49,500; 69,500; 86,500; 109,000; 128,500; 150,000; 172,500	5%, 10%, 15% and 20%	71,000 pesos for 5% and 10%; 106,000 pesos for 15% and 20%.	Penalty of 15% over the hospitalization costs	Basic and additional with cost
Línea Azul Platino								
Línea Azul Flexible								
Línea Azul Versátil		Novus, Excelsis, Tempus y Omnia	0.53; 1.05; 1.6; 2.95; 5.8; 8.7; 14.25; 25; 30.85; 63.6	From 9500 up to 84,000 in accordance with the hospital level		109,000 82,000 54,000 27,500	Not defined	
Línea Azul Esencial		Omnia	4.1	16,000 and 27,000		10%	Not Defined	Penalty of 20% over the hospitalization costs

Source: Cofece with data from Asegúrate México (2021a).

Annex IV. Recommendations matrix in accordance with the OECD Competition Assessment Toolkit

Increase transparency in the related market of hospital services								
No.	Title of the regulation or law	Thematic category / keyword	Brief description of the potential barrier	Relevant authority	Section of the Toolkit ¹	Objective	Harm to competition	Recommendation
1	There is no regulation that covers this matter	Transparency in the market of health care services	Lack of transparency in the hospital sector contributes to a low negotiation in the prices of healthcare services. This translates into a higher spending for consumers	Profeco	D	The development of price-quality indicators of hospital services aims at empowering consumers and insurers, since policyholders would have more elements to choose hospital services based on price-quality ratio and not on the hospital brand, which would help to limit the bargaining power of large hospital chains vis-à-vis insurers	Lack of transparency of hospital services limits the negotiation between insurers and hospitals, which reflects in higher prices paid by consumers for the services	That Profeco develops and publishes indicators that measure the price-quality ratio of hospital services, similar to the indicators of the "The best private hospitals in Mexico" classification and the Comprehensive System for the Measurement of User Satisfaction of the IMSS.
2	LGS	Transparency in the market of healthcare services	Lack of transparency in the hospital sector contributes to a low negotiation in the prices of healthcare services. This translates into a greater spending for consumers	Ministry of Health	D	The use of the clinical practice guides (GFC) aims at helping consumers to have up to date information on the care of several conditions and anticipate costs of private hospital services.	Lack of transparency of hospital services limits the negotiation between insurers and hospitals, which reflects in higher prices paid by consumers for the services	That the Ministry of Health encourages the establishment of the obligation for private hospitals to use the Clinical Practice Guides made and published by the Ministry of Health in the Master Catalogue of Clinical Practice Guides, for the care of most common illnesses or diseases.

1 D: Limits the choices and information available for customers.
Source: Cofece with information from OECD (2018a) and OECD (2018b).

Improve consumer mobility								
No.	Title of the regulation or law	Thematic category / keyword	Brief description of the potential obstacle	Relevant authority	Section of the Toolkit ¹	Objective	Harm to competition	Recommendation
3	LISF	Portability of policy of seniority between insurers	The regulation obliges insurers to guarantee benefit of seniority for changes of plan within the same insurer, but not when switching insurer. This limits the mobility of policyholders since some insurers do not recognize their insurance history, obliging them to incur in waiting periods.	SHCP	D2	The purpose of this measure is to remove an important switching cost for policyholders since they could switch insurers without having to incur again in waiting periods for some conditions. Likewise, regulation of the risk bureau would reduce the risk of fraud or mislead from policyholders with claims towards insurers	Restrictions to the mobility of users limit consumers from switching insurer for a better service. This limits competitive pressure in the market as insurers have less incentives to offer a better service.	That the SHCP promotes the establishment of seniority portability which is the recognition by insurers of the period that a person has been covered by a policy. This, as long as the new policy does not imply an increase in the insured sum with respect to the previous policy. It is also recommended to the SHCP to encourage the modification of the legal framework to establish a risk bureau that is operated by an independent agent from insurers or that any insurer that enters the market can take part on its management board.
4	LSCS and LISF	Exclusions and recognition of preexistences	The regulation allows insurers to freely establish their waiting periods, as long as they have as a sole objective the proper selection of risks and the elimination of possible cases of preexistence. Also, it does not oblige insurers to recognize preexisting conditions. Long waiting periods and the non-recognition of preexistence limit the mobility of policyholders.	SHCP	D2	Establish standards on the type and duration of exclusions has the purpose of reducing switching costs and, with that, increase user mobility between insurers, as well as to eliminate the lock-in user. Therefore, insurers will have more incentives to attract users from the rivals by offering better plans.	Among the switching costs that limit the mobility are the exclusion clauses imposed by insurers in which they can stipulate long waiting periods to cover some conditions. Long waiting periods limit the mobility, which in time decreases the intensity of competition between insurers.	That the SHCP promotes the establishment of standards on the type and duration of exclusions that insurers can set upon clauses of their policies, as well as for the recognition of preexistences when, after a time has elapsed, the policyholder has not presented symptoms or received treatment.

¹ D2: Reduces the mobility of customers between suppliers of goods or services by increasing the explicit or implicit costs of changing suppliers.
Source: Cofece with information from OECD (2018a) and OECD (2018b).

Improve consumer mobility								
No.	Title of the regulation or law	Thematic category / keyword	Brief description of the potential obstacle	Relevant authority	Section of the Toolkit ¹	Objective	Harm to competition	Recommendation
5	General provision on matters of healthy practices, transparency and advertising applicable to insurance institutions	Cancellation of policies without a penalty	Regulation does not clearly establish if policyholders can cancel their policies in advance, thus some insurers use to penalize early cancellation with 40% of the net premium for the time that has not passed from the validity of the policy (unearned premium). This discourages policyholders from changing from insurers when they want to.	Condusef	D2	This measure has the objective of increasing insurer mobility and, with that, competition between insurers.	Economic penalty for early cancellation of policies limits the mobility between insurers since policyholders cannot change from insurers when they want to.	That Condusef establishes the possibility for policyholders to cancel in advance their policies at any time, without a penalty, in such way that all insurers would be obliged to refund the totality of the unearned premium, - excluding the issuance expenditure, - this obligation will also apply for revocation causes.

1 D2: Reduces the mobility of customers between suppliers of goods or services by increasing the explicit or implicit costs of changing suppliers.
Source: Cofece with information from OECD (2018a) and OECD (2018b).

Reduce switching costs								
No.	Title of the regulation or law	Thematic category / keyword	Brief description of the potential obstacle	Relevant authority	Section of the Toolkit ¹	Objective	Harm to competition	Recommendation
6	LISF	Overflow of SGM plans or least differentiated products	There are many SGM plans in the market which are poorly differentiated, which limits consumer choice. The great number of plans can trick consumers and prevent them from choosing the plan that best suits their needs.	SHCP	D1	The objective of evaluating and regulating the supply of SGM is to facilitate consumer choice, as well as to increase competition among insurers.	The great number of poorly differentiated products and little information means to compare limits the choice and it seems that these do not seek to address the diversity of consumer preferences. The low choice capacity reduces competitive pressure in the market as insurers do not compete for offering innovative products.	That SHCP evaluates the consequences of limiting the registration of SGM plans that insurers may offer consumers to only those with significantly different characteristics. If applicable, the SHCP should request the Congress of the Union to make the necessary reforms.

1 D1: Limits the choices and information available to customers. D1: Limits the ability of consumers to decide from whom they purchase.
Source: Cofece with information from OECD (2018a) and OECD (2018).

Reduce switching costs								
No.	Title of the regulation or law	Thematic category / keyword	Brief description of the potential obstacle	Relevant authority	Section of the Toolkit ¹	Objective	Harm to competition	Recommendation
7	LPDUSF	Standards on the websites of insurers	Regulation does not impose criteria or conditions to insurers to improve their websites. Consequently, said sites are not a proper consultation tool for the consumer to be informed and make a better choice without the need of recurring to an insurance agent.	Condusef SHCP	D1	The objective of establishing minimum standards on the websites of insurers and comparators is to facilitate the choice of consumers.	Online consultation sites (websites of insurers and price comparators) do not provide enough information to inform the consumer, who has to approach an insurance agent. Also, sites are not obliged to inform about their possible conflicts of interest with insurers.	That Condusef and the SHCP promote the establishment of minimum standards that the websites of insurers and comparators must comply with based on best international practices. These standards must provide up to date information and inform about their possible conflicts of interest.
8	Single Circular	Price comparators with unreliable and insufficient information.	Insurers are not obliged to share information with comparators so these have problems to enter the market, in addition to providing a service with limited information.	CNSF	D	The purpose of this measure is to facilitate the emergence of independent agents willing to offer consumers information about the available plans in the market.	To the extent in which price comparators do not have information to offer their services, consumers will not be able to have tools that help them to make a better informed decision, and that can also limit the intensity of competition.	That the CNSF modifies the Single Circular so it establishes rules for the promotion or provision of insurance intermediation services to be followed by comparators and other intermediaries that commercialize SGM through digital channels, and, obligate insurers to share information about prices, coverages, exclusion clauses and contracting requirements of all their plans to those interested in offering the service of SGM comparators, that comply with the previous rules. The latter provision must be extended to Condusef so that it has full and up to date information.

1 D: Limits the choices and information available to customers. D1: Limits the ability of consumers to decide from whom they purchase.

Source: Cofece with information from OECD (2018a) and OECD (2018).

Reduce entry barriers									
No.	Title of the regulation or law	Thematic category / keyword	Brief description of the potential obstacle	Relevant authority	Section of the Toolkit ¹	Objective	Harm to competition	Recommendation	
9	Single Circular	Information about commissions and bonuses of agents	There are conflicts of interest of agents with the insurers from which they receive higher commissions or bonuses since they can promote only their products. Even though regulation establishes that the policyholder can require the insurers information about the amount of the commission that agents receive, this information is not available in the period in which consumers analyze their options and it is also likely that they do not know they have the right to request it.	CNSF	D	The purpose of obliging agents to show information about commissions and bonuses is to reduce the conflict of interest that emerges from the incentive of sales agents to place products from a sole insurer.	Sales agents by promoting only the products for which they receive a higher commission or compensation limit the options and information of consumers, in addition to competition between insurers. Therefore, consumer can choose between more expensive products or plans or amongst those that best suit their needs.	That the CNSF establishes in the Single Circular the obligation of agents to show consumers the information about the commissions and bonuses they receive from each insurer whose products they promote. The delivery of this information must be done before the user chooses their products regardless of whether the policyholder is requesting it.	
10	RASF and Single Circular	Commissions or bonuses of agents	Contingent commissions or "bonuses" that are granted to some specific products could bias the advice and commercialization of agents, since these could guide the consumer to acquire products that do not necessarily maximize their benefits.	SHCP CNSF	D1	The purpose of this measure is to reduce the conflict of interest that derives from the incentive of sales agents to place products from a sole insurer.	Selling products from a sole insurer due to the bonuses it offers to agents limits competition or plans, both within the supply of an insurer as well as amongst insurers, since the election of plans do not obey the characteristics and benefits of products.	That the SHCP and the CNSF establish in the RASF and Single Circular a prohibition for the contingent awards, bonuses and commissions received by agents are linked to the meeting of a specific sales goal of a same plan or a same company, since these bonuses can induce agents to try to sell a specific plan, to the detriment of other more suitable plans for the policyholder.	
11	There is no regulation yet on this matter	Interconnection and data sharing	Novel models require clear regulatory provisions for the interconnection and data sharing through programming interfaces of computer applications but said provisions have not been issued yet by the corresponding authority.	CNSF	A3	The objective is to facilitate the entry into the market of companies with novel models, issuing the provisions for interconnection and data sharing.	The lack of these provisions can impede the entry of new competitors that require interconnection to obtain data from users.	That the CNSF issues the general provisions referred to by article 76 of the LTF, on interconnection and transactional data sharing, prior authorization from users, which would facilitate the entry into the market of data intermediaries, insurtech and novel models by facilitating the exchange of data with established companies, upon payment from the applicant.	

1 A3: Limits the ability of some suppliers to provide a good or service; D1: Limits the ability of consumers to decide from whom they purchase.

Source: Cofece with information from OECD (2018a) and OECD (2018)

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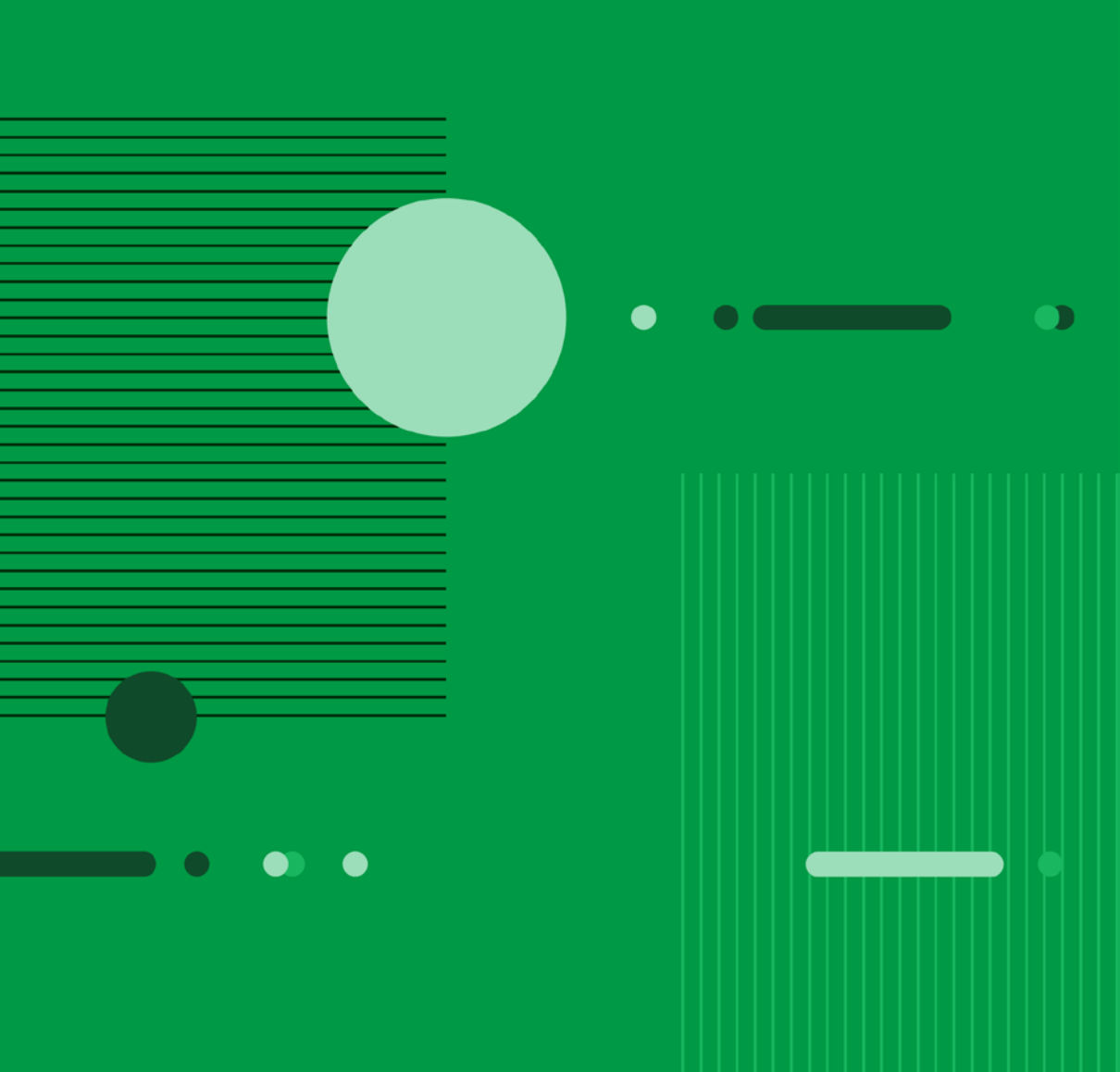
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