


October

2018



RISK BASED SUPERVISION
METHODOLOGY

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Introduction

The National Commission of the Retirement Savings System (Comisión Nacional del Sistema de Ahorro para el Retiro, CONSAR), in accordance with the Retirement Savings Systems Law¹, is responsible for the coordination, regulation, supervision and surveillance of Retirement Savings Systems (SAR) in Mexico.

The inspection and surveillance carried out by CONSAR on a daily basis aims to assess the risks to which participants are subject (the AFOREs), the control systems they have and the quality of the administration and Corporate Governance of each of these in order to ensure that they comply with the legal framework, as well as the uses and good practices of the financial markets.²

In this regard, the supervision carried out by the CONSAR on the Pension Funds Administrators (AFORE) and the Specialized Retirement Fund Investment Companies (SIEFORE) is the pillar on which the savings security of Mexican workers rests, and the institution's main mission. CONSAR had 319 workers at the end of September 2018.

This is why, in line with best international practices, CONSAR has adopted the methodology known as "Risk Based Supervision" (RBS) for some years now. This supervision methodology includes, among other objectives, the following:

1. Identifying, in a timely manner, the most relevant risks of the System and effective mitigation controls that need to be implemented by AFOREs and system-wide.
2. Encouraging the adoption of best practices in risk mitigation and governance at AFOREs so as to reduce the level of risk.
3. Having specialized tools to adequately monitor AFOREs and assess risk levels so as to proactively respond to risks to workers and public trust in the system.
4. Using the CONSAR's human and budgetary resources in the most efficient manner for supervisory activities.

A main element in the RBS methodology is Corporate Governance, since it has an important role in mitigating risks in the system. Good Corporate Governance contributes to the development of better management practices, better risk identification, greater controls within the processes and greater fiduciary responsibility of the members of AFORE's board. All these elements of corporate governance collaborate in risk mitigation not only for a specific process, but for a series of activities that are related to each other. It is important to emphasize that this document should be viewed together with "The principles of good Corporate Governance in the SAR", a document recently published by the CONSAR.

In order to strengthen the implementation of this methodology, for the last two years the CONSAR has had the services of the best global consultant on the subject, John Ashcroft of the United Kingdom.

This document aims to explain step by step how supervision's areas of CONSAR are applying RBS methodology, and how they are allocating their supervision's resources to the major risks. This

¹ Article 2 of the Retirement Savings Systems Law.

² Article 89 of the Retirement Savings Systems Law.

methodology is published in order to give a recommendation of the best practices in the subject and to grant greater transparency to the participants of the SAR (and to savers in general) regarding the procedures followed by the CONSAR to supervise the AFORE.

Chapter I. Risk Based Supervision

Risk Based Supervision is a supervisory approach that focuses on: 1) identifying the risks to which the entities in the market in which they operate are exposed (in this case, AFOREs and SIEFOREs) and 2) evaluating the way in which these entities manage and mitigate risks (e.g. investment risk management and operational processes).

The identification and the quantitative and qualitative assessment of risks and mitigating factors allows the CONSAR to optimize its resources to plan and focus SAR supervision on the processes that could present the greatest risk, based on their probability of materialization and level of impact.

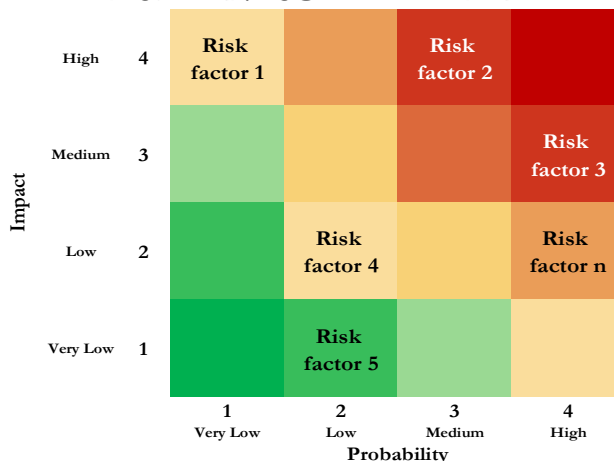
In this context, it is essential that the Board of Directors and officials of each AFORE assume with conviction their fiduciary responsibility and best governance practices, in such a way that this serves as the first risk mitigant within the Administrator. AFOREs should not be limited to compliance with regulations, manuals and regulator's rules, but adopt a culture of prevention and remediation that allows them to incorporate robust mitigants for the management of the risks inherent to the operation of a pension fund. In turn, it is crucial that the RBS methodology be fully understood and adopted by the supervisors of the CONSAR - and known by the AFORE - to provide transparency and clarity to the regulated entities regarding the regulator's mission and objectives.

I.1. Characteristics of Risk Based Supervision

To break down the RBS methodology, it is necessary to define certain concepts:

- **Risk Factor:** refers to the inherent risks within the pension system that could have an impact on workers' savings or trust in the system.
- **Risk Landscape Matrix:** the graphic representation of the rating of each of the Risk Factors, which is a function of the probability of occurrence and the level of impact determined by the supervisory authority. The rating is used to analyze the Risk Factors that are of greatest concern to the Commission.

**CHART I-1
RISK LANDSCAPE MATRIX**



- **Process:** set of activities, with associated controls, performed by the administrators on a regular basis to carry out an operation that could give a rise or mitigate inherent risk.
- **Inherent Risk:** potential events in the pension system that could cause negative impacts on worker's pensions' or trust in the system, which are inherent in the design of the system or the activities that take place in the system. This is true of all processes carried out by the AFORE. The inherent risk is the "raw" risk, which exists before implementing any corrective or mitigating action.
- **Risk Matrix:** the graphic representation where the risk factors are offset with processes. This mapping allows to obtain the "inherent risk" of the processes when adding the results.

**TABLE I-1
RISK MATRIX**

AFORE x	Risk factors				
Processes	Risk factor 1	Risk factor 2	Risk factor 3	...	Risk factor 18
Process 1				...	
Process 2				...	
Process 3				...	
⋮	⋮	⋮	⋮		
Process 34					

- **Mitigants (risk management):** the controls or processes used to inhibit the level of inherent risk.
- **Residual Risk (net risk):** The level of risk after implementing the mitigants. This allows to identify the vulnerabilities of SAR participants. The resulting level of risk will determine the prioritization of supervisory resources in order to reduce the likelihood of the risk materializing.

$$\text{Residual risk} = \text{Inherent risk} \times \text{mitigant factor}$$

where mitigant factor $\in [0, 1]$

Chapter II. Risk Based Supervision in the CONSAR

The Commission has four supervisory teams responsible for carrying out the inspection and surveillance of the processes carried out by the AFORE. These teams are specialized in various activities carried out by the Administrators, which are subject to supervision given the importance and impact they have on the resources and rights of the workers affiliated to the SAR.

The 4 supervision areas are:

- Financial Supervision
- Operational Supervision
- Supervision of Quality of Information and Services
- Money Laundering Prevention (MLP)

In recent years, CONSAR has strengthened the implementation and methodology of RBS in all areas of supervision, forming surveillance and inspection teams with an approach aimed at the timely detection of risk for its mitigation by the Administrators, as well as to the allocation of resources focused on processes that present a greater risk.

II.1. Identification of Risk Factors

To implement the risk-based approach, the first task required is to identify the risks present in the SAR, focusing on those that have the greatest impact on the System and that may affect the resources, rights and/or trust of affiliates. It should be noted that the identification of a risk does NOT imply that it has materialized in the past or will materialize in the future, but rather that when it is identified, it can be quantified and mitigated.

The various areas of the Commission, based on the experience of supervision, findings and vulnerabilities in previous supervisory events, identified the risks in the AFORE processes.

18 risk factors were determined in the SAR (*see Table II-1*), classified and arranged in five major sections: general system risks, financial risks, operational risks, service and information risks and money laundering risks.

**TABLE II-1
SAR RISK FACTORS**

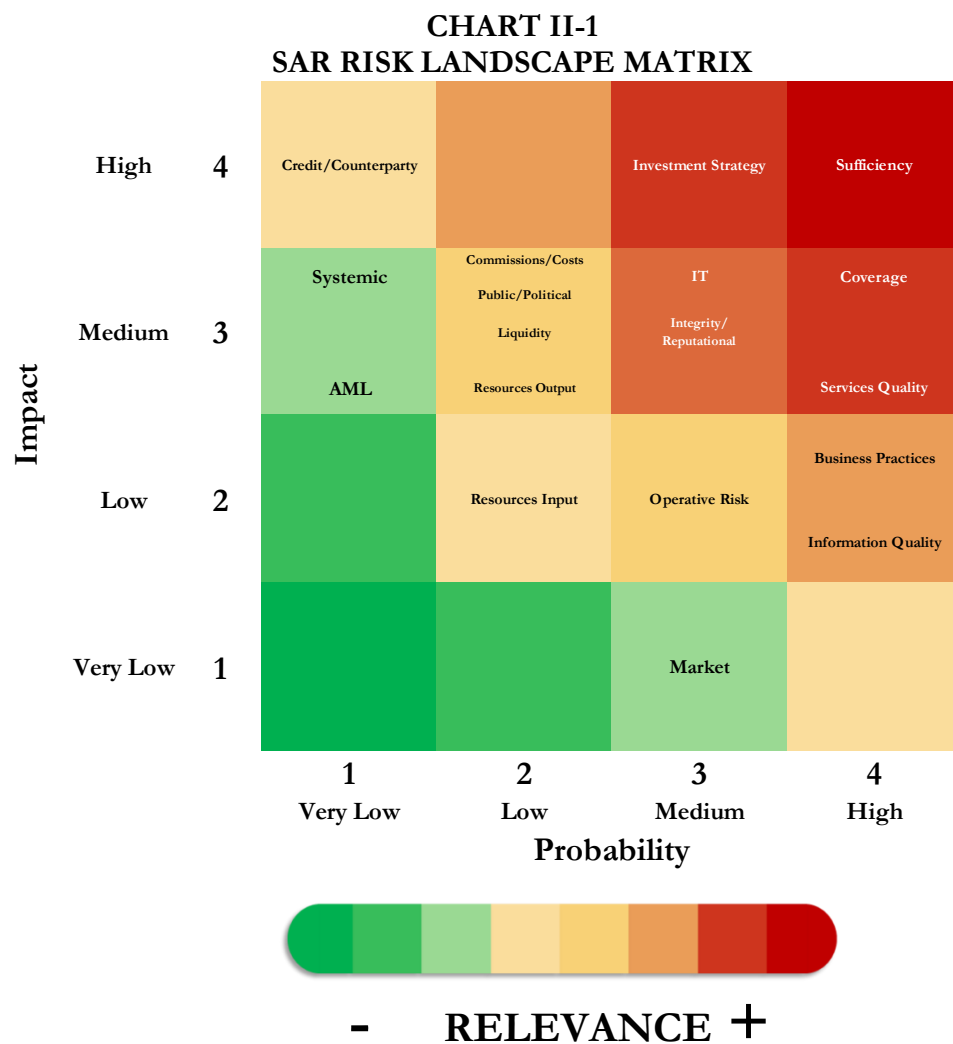
Risk	Definition
Coverage	The risk that the Pension System will not be able to incorporate a sufficient proportion of Mexican workers due to the structure of the labor market, particularly the high informality in the country.
Sufficiency	The risk that pensions will be lower than savers' expectations and, as a result, workers will not be able to satisfy their basic needs in retirement, damaging the System's reputation.
Integrity/reputation	The risk of generating a negative perception of the System due to actions done by one or more participants, which affects the trust in the System and AFOREs.
Systemic	The risk that the size of the AFORE, its interdependence and predominance in the investment in all types of assets of the Mexican financial market may result in volatility events that negatively affect workers' savings.
Information Technology	The risk that internal faults, interruptions, alteration and/or external cyber-attacks to the IT of SAR participants may cause damage to the System's operation and/or integrity, confidentiality, and availability of workers information, and as consequence, affects the System's security.
Fees/Costs	The risk that the commission charged by the AFORE to the workers will stop its downward trend, the risk that the AFORE costs will not be optimized or not properly recorded and, consequently, erode the pension savings balance in the long term.
Public/Political	The risk that public policy or political decisions that directly affect the Pension System are not aligned with a long-term vision.
Credit/Counterparties	The risk that an issuing entity in which an AFORE invests, or a counterparty with which it interacts, will be unable to comply with the previously assumed obligations, adversely affecting the SIEFORE price and/or having a reputational impact on the pension system.
Investment Strategy	The risk that the investment strategy of one or more AFORE is not properly aligned with its fiduciary responsibility and, therefore, negatively affects the long-term performance of the fund.
Liquidity	The risk that one or more AFORE will face, either due to market conditions or due to unexpected liquidity requirements; the need to sell emerging assets at less than optimal prices, which would result in a lower performance of the fund.
Market	The risk that abrupt and unexpected fluctuations in the prices of the assets in which the AFORE invest may result in (crystallize) a significant reduction in the value of the accounts of affiliates who are at or close to their retirement or who are by default switching between SIEFOREs.
Inflow of Individual Account resources	The risk that the absence of proper protection and/or security mechanisms for the entry of resources to individual accounts negatively impacts the accounts balance and/or the System's credibility.
Business Practices	The risk that the commercial performance of the AFORE and its sales agents have a negative impact on both the decision-making of savers and their perception and confidence in the System.
Outflow of Individual Account resources	The risk that the absence of proper protection and security mechanisms for the withdrawal of resources from individual accounts negatively impacts the accounts balance and/or the System's credibility.
Operational Risk	The risk that the materialization of both internal and external risks may affect the execution or development of the operational processes of the SAR's participants, making it impossible to comply with their obligations which would result in poor service and affect the System's confidence.
Information Quality	The risk that the information that the AFORE provide to the System's savers is incorrect, incomplete and insufficient, which can lead to wrong decision-making and/or to postponing critical decisions for the future welfare of workers.
Quality of Services	The risk that the attention and services provided by the AFORE to workers are deficient and insufficient, which would result in damage to the credibility and reputation of the pension system.
Prevention of Money Laundering	The risk that resources from illicit sources may enter the System, affecting its reputation.

II.2. Risk Landscape

Each of the 18 risk factors in the System has a value associated with its probability of occurrence and level of impact. This assessment is used to prioritize the risks that most concern this Commission, in order to safeguard the integrity of workers' savings and their perception of the system.

To assign this rating, the supervision areas of the CONSAR held various meetings where, in a collegial manner, they determined the degree of impact and the probability of occurrence of each risk factor based on their experience.

The results are shown in the following chart.



II.3. Identification of AFORE processes for risk mitigation assessment

As with the risk factors, the processes and sub processes carried out by the AFORE were identified, with the aim of detecting those where there are greater vulnerabilities.

The 4 supervisory areas of the Commission identified 34 processes undertaken by AFORES where risk mitigation should be assessed.

**TABLE II-2
IDENTIFICATION OF AFORE PROCESSES**

Area	Processes
Financial Supervision	16
Operational Supervision	8
Supervision of Quality of Information and Services	6
Prevention of Money Laundering	4
Total	34

II.4. Association of processes with Risk Factors

Once the processes were identified, they were related to each of the risk factors, that is, the risks are found in each of the activities carried out by the AFORE were detected. The processes can be associated with one or several risk factors.

The supervisory areas of the CONSAR identified the associations and assigned them a relevance rating according to the representativeness of each process in relation to the risk factor in question. The assigned value was "High", "Medium" and "Low".

**TABLE II-3
ASSIGNATION OF RATINGS TO THE ANALYSES***

AFORE x	Risk factors				
	Risk factor 1	Risk factor 2	Risk factor 3	...	Risk factor 18
Process 1	X	X		...	X
Process 2			X	...	
Process 3	X	X		...	X
⋮	⋮	⋮	⋮		
Process 34					X

*Hypothetical exercise. Analyses are for illustrative purposes only.

II.5. Rating the level of Inherent Risk in each process

After identifying the risk factors and processes, associating them and assigning them a rating, it is possible to obtain the inherent risk of each process. This is obtained by adding the multiplication of the value of the risk factor (obtained from the risk landscape) and the rating of the analyses.

**TABLE II-4
INHERENT RISK***

AFORE x	Risk factors											Inherent risk
Process	Risk factor 1	Risk factor 2	Risk factor 3	Risk factor 4	Risk factor 5	Risk factor 6	Risk factor 7	Risk factor 8	Risk factor 9	...	Risk factor 18	Σ
Process 1	High	Low							Low	...	Medium	Σ Process 1
Process 2			Medium		Medium	High				...		Σ Process 2
Process 3	High	High			Medium		Medium			...	Medium	Σ Process 3
Process 4		Low	Medium							...		Σ Process 4
Process 5				Low	Low					...		Σ Process 5
Process 6							High			...		Σ Process 6
Process 7			Medium			Medium			Low	...	Medium	Σ Process 7
Process 8						High	High	High		...		Σ Process 8
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	Σ ...
Process 34				Low		High		Medium	High	...	High	Σ Process 34

*Hypothetical exercise. Both the analyses and the grades serve as an example.

Note: The colors represent the rating of the risk factors.

The analyses imply the multiplication of the "High, Medium or Low" rating with the rating of each risk factor where it cross-references.

The value resulting from the inherent risk per process is scaled from 1 to 5, where 1 translates into "very low risk" while 5 is "very high risk".

II.6. The role of mitigating risk factors in the SAR

Mitigating factors play a fundamental role in determining the final or residual risk, since their presence should help to reduce risk below the inherent level. For every process there are mitigating factors that are specific to the process. Other mitigating factors are more generic and function transversally when they have implications in a series of common processes. In other words, one assessment is equally relevant to all or several processes.

This is the case of Corporate Governance and its elements (framework of risk management, internal controls, the compliance officer, technological improvements and security) where their assessments may be relevant to all AFORE's processes. There may be other common mitigating factors relevant to the assessment of specific processes; for example, the development of a procedures manual, or continuous improvement initiatives.

II.7. Determination of residual risk

Once the inherent risks of the activities carried out by AFOREs have been identified, the methodology of Risk Based Supervision suggests that the residual risk must be determined, for which the controls and mitigating factors that the Administrators have implemented must be identified in order to minimize the probability of the occurrence and/or the impact of the identified risks.

II-7.1. Methodology for determining residual risk

To determine the value of the mitigating factor, the CONSAR supervisory areas assess the processes for each AFORE. This evaluation is carried out when reviewing different sub processes associated with each process. The assessment uses the results of the supervisory acts carried out by the areas involved, both inspection and surveillance, as input. As a result of this analysis, the supervisory areas determine a value for each sub process and process, which is used to determine the value of the mitigating factor and finally the residual risk.

The following are the general steps that the supervisory areas follow to obtain the residual risk:

- 1. Determination of critical processes and sub processes.** These are identified when determining the inherent risk.
- 2. Assignment of values to the supervision results.** Each process and sub-process of each AFORE is assigned an impact and probability value, according to the incidents found in the previous supervision acts. Likewise, this process includes the review of programs, policies, controls, rules and procedures performed by the Administrators to reduce risks.
- 3. Re-scaling of supervision results.** The values defined through supervision are transformed to obtain a risk mitigation rating, where "0" means that the risk mitigation is total and "1" that the risk mitigation is zero.
- 4. Obtaining of residual risk for each Administrator.** The inherent risk is multiplied by the results obtained for each Administrator. The result is the residual risk. This measurement shows the results by Fund Administrator, by process, by risk factor, by supervisory area and/or by system.

**TABLE II-5
RESIDUAL RISK FOR THE AFORE X***

AFORE X			
Processes	Inherent risk	Mitigant	Residual risk ^{1/}
Proceso 1	2	0.4	0.8
Proceso 2	3	0.2	0.6
Proceso 3	3	0.6	1.8
Proceso 4	5	0.8	4.0
Proceso 5	4	0.9	3.6
⋮	⋮	⋮	⋮
Proceso 34	5	0.1	0.5

* The results shown are hypothetical and are for illustrative purposes only.

1/ This calculation does not include Corporate Governance.

Note: the multiplication of "process 2" and "process 34" corresponds to a value of "0.6" and "0.5" respectively, however, if the rating obtained from the residual risk is less than 1, it is assigned the value of 1.

II.8. Presenting and utilizing risk ratings using a Heat Map

After obtaining the residual risk of each process and AFORE, the ratings are grouped into a heat map, which presents a visual way to locate the Administrators that are most vulnerable and identify the processes where resources must be prioritized.

**TABLE II-6
HEAT MAP***

Residual risk										
Processes	AFORE 1	AFORE 2	AFORE 3	AFORE 4	AFORE 5	AFORE 6	AFORE 7	AFORE 8	AFORE 9	AFORE 10
Process 1	1	2	3	1	3	2	4	1	2	3
Process 2	1	2	2	3	2	5	3	5	2	5
Process 3	3	3	4	4	2	3	2	3	1	4
Process 4	3	2	5	3	1	2	3	4	2	2
Process 5	3	2	5	2	3	3	4	2	2	2
Process 6	3	4	2	1	2	2	3	5	2	4
Process 7	1	2	2	4	2	5	4	1	1	5
Process 8	1	2	3	2	1	2	1	1	2	4
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
Process 34	2	3	2	1	1	3	1	1	2	3

*Hypothetical exercise. The final ratings serve as an example.

In the event that one or more AFORE with high levels of vulnerability were located in the map, with a large proportion of its processes having high ratings, the Commission would allocate more resources and time supervising this Administrator until their ratings decreased.

This heat map serves to schedule and define the type of supervision to be carried out for each of the Fund Administrators by prioritizing the processes with high ratings. It may happen that a low residual risk given to a process several years ago does not reflect a subsequent increase in residual risk, and hence it is advisable to take into account the date of the last detailed inspection that was carried out on AFORE.

**TABLE II-7
HEAT MAP AND SUPERVISION DATE**

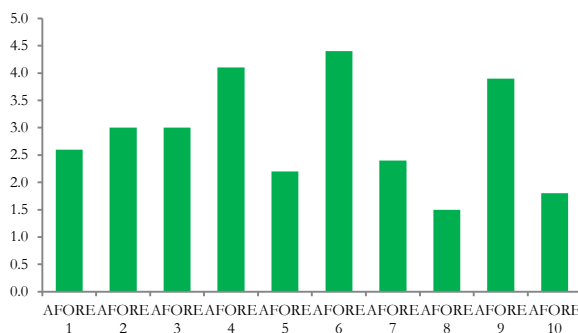
Processes	AFORE 9		AFORE 10	
	Residual risk	Last supervision	Residual risk	Last supervision
Process 1	2.0	🚩 2017	3.0	🚩 2017
Process 2	2.0	🚩 2016	5.0	🟢 2018
Process 3	1.0	🟢 2018	4.0	🟢 2018
Process 4	2.0	🚩 2015	2.0	🚩 2016
Process 5	2.0	🚩 2016	2.0	🚩 2015
Process 6	2.0	🟢 2018	4.0	🟢 2018
Process 7	1.0	🚩 2015	5.0	🟢 2018
Process 8	2.0	🚩 2015	4.0	🟢 2018
⋮	⋮	⋮	⋮	⋮
Process 34	2.0	🚩 2017	3.0	🚩 2017

*Hypothetical exercise. The final ratings serve as an example. The flags indicate the date on which the last supervision was carried out; these are green when the supervision was carried out in the current year, yellow when it was one year ago and red when it was carried out two or more years ago.

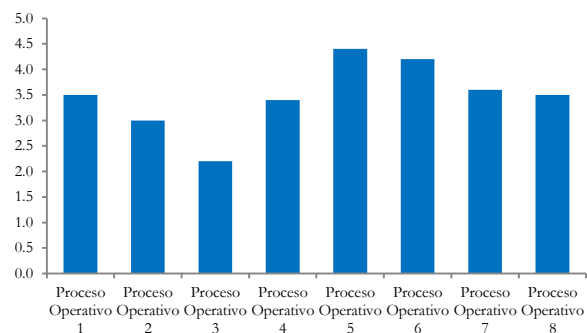
Table II-6 and II-7, as an example, show that AFORE 10 has a certain degree of vulnerability. This means that the Commission will prioritize resources in the most vulnerable processes of the Administrator to mitigate the risk. Once AFORE 10 manages to reduce its rating, the supervision carried out would return to normal.

Finally, the residual risk can be visualized in different ways, both by means of a matrix as shown in Table II-6, and by means of charts (Charts II-2 and II-3).

**CHART II-2
RESIDUAL RISK BY PROCESS***
“Financial Process 5”



**CHART II-3
RESIDUAL RISK BY AFORE***
“AFORE 1”



The results shown are hypothetical and for illustrative purposes only.

Chart II-2 shows a comparison of the residual risk obtained from the total AFORE with respect to "financial process 5", highlighting, as an example, that Administrators 4, 6 and 9 require more attention.

Chart II-3 analyzes the residual risk of all the processes of the operational area for "AFORE 1", showing that in general - again as an example - that the AFORE must have greater controls since there is a high risk, mainly in processes 5 and 6.

II.9. Corporate Governance as a mitigant

Corporate Governance has a key role in mitigating risks in the system. Good Corporate Governance can mitigate the inherent risk not only for a specific process, but also for a series of related activities. On the other hand, poor Corporate Governance can raise risk in addition to not mitigating it. It is for this reason that the supervision of the Commission seeks to encourage better Corporate Governance in the Administrators.

The regulation that until a few years prevailed in the SAR in matters of Corporate Governance was focused only on a part of the activities carried out by the Administrators. In recent years, the regulation has been strengthened by establishing the role that the various elements of Corporate Governance must play in the SAR with greater clarity and responsibility: the regulatory comptroller, the independent directors, the members of the various committees and the role that must be carried out by the board of shareholders of the Administrators. However, there are still pending elements that shall be incorporated in a future SAR reform.

For greater detail regarding the importance of Corporate Governance in the SAR, the document that will soon be published by the CONSAR on its website can be consulted.

II-9.1. Calculation methodology to include Corporate Governance as a mitigating factor

To use Corporate Governance as a mitigating factor in the SAR, each area of the Commission's supervision defined the various components of the SAR and classified them into three: full compliance of each element of Corporate Governance, partial compliance and non-compliance. An example is Table II-8.

**TABLE II-8
COMPLIANCE WITH THE ELEMENTS OF CORPORATE GOVERNANCE***

Corporate Governance Element	Full compliance	Partial compliance	Non-compliance
Organizational Structure	<ul style="list-style-type: none"> - The Organizational Structure of the AFORE is appropriately specified so as to enable effective daily operation and fulfillment of its strategic objectives. This includes a clear distinction between the strategic and oversight role of the board and the executive roles of management. - Sufficient segregation of functions is clearly established and implemented. - The delegation of responsibilities and authorizations from the board and within the organization is clearly specified and implemented. - The board, corporately and individually, has sufficient knowledge and understanding of the AFORE and their responsibilities to effectively oversee how it is being run and set the strategic direction. - All managerial and staff positions in the organization have documented profiles and job descriptions specifying the experience, knowledge and skill needed appropriately. - It is ensured that key positions are covered at all times. 	<ul style="list-style-type: none"> - A few deficiencies in the Organizational Structure hinder the achievement of the objectives and goals of the AFORE, or its daily operation, or documentation is substantially inadequate. This may include occasional blurring of strategic/oversight roles with executive roles. - Not all requisite segregation of functions is defined or implemented. - There is some significant lack of clarity regarding delegations and authorizations by the board and within the organization, although this has not had a substantial negative impact. - The board generally has sufficient knowledge and understanding of the AFORE and their responsibilities to effectively oversee how it is being run and set the strategic direction, but some members do not meet this standard or there are one or two significant gaps in knowledge and understanding. - There are a few omissions in the profiles and job descriptions as documented or implemented or it is not always clear that positions are filled by persons of sufficient experience, knowledge and skill. - There have been occasional, although short-term, vacancies in one or two key positions. 	<ul style="list-style-type: none"> - The Organizational Structure is not clearly defined and documented, or the board have not been undertaking a strategic and oversight role rather than being neglectful or micro-managing. - There is an absence of segregation of functions sufficient to put assets or benefits at actual risk. - There is no documented description of profiles and positions or the necessary experience, knowledge and skill of each position, or what is documented is ignored in practice. - There is confusion regarding what authority is delegated to whom that has negatively affected how the AFORE has been run. - There are substantial gaps in the knowledge and understanding of the governing board. - There are no responsible persons for some key activities.

* Review the forthcoming Corporate Governance document that will be published on the CONSAR website for more details.

As a result of this assessment, a Corporate Governance compliance value is obtained for each supervision area. The value derived will be subtracted or added to the residual risk equally for every process reviewed by the relevant supervisory area(s). In the event that the Corporate Governance is given a full compliance rating, a residual value will be subtracted from the residual risk, when it is partial, the value will remain the same, while in case of non-compliance the residual risk will increase.

Once the impact of Corporate Governance is incorporated, the final rating for the residual risk is obtained, which as mentioned above will be used to define the processes and Administrators that require more attention as they have the highest risk and where the most supervisory resources shall be assigned.

Conclusions

The National Commission of the Retirement Savings System's (CONSAR) central mission is to ensure the integrity of the resources of pension system savers. At the end of September, these resources exceed 3.4 trillion pesos. Throughout the 21 years of existence of the pension system, the CONSAR has been improving and enhancing its supervision processes. Never, however, had it published its "Risk-Based Supervision Methodology".

In all human activity there are natural (or "inherent") risks. The same happens in the financial system and, specifically, in pension systems where there are risks that are intrinsic and unavoidable for the AFORE operation itself. The key to addressing them lies in how these risks are handled, what kind of controls are established to reduce them and make them "tolerable" and, of course, the supervision that is carried out by the authorities; in this case, by CONSAR.

The publication of this document aims to accredit the trust and transparency of the pension system through information directed to the public and AFORES regarding the work carried out by CONSAR to monitor and mitigate the risks inherent in the pension system. In turn, with the publication of this document, it is expected to contribute to generating a greater risk and prevention culture among Administrators and their Corporate Governments.

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Appendix. Improvements to Supervision in the CONSAR

SAR is constantly changing as a result of the significant growth in the number of accounts, in the amount of resources managed, and in the sophistication of the investments and markets in which the AFORE participate, which is why the Commission is constantly working to improve the supervision process by implementing the risk-based approach.

a) Improvement to the Supervision process

Each area of the CONSAR uses a risk-based approach. Supervision is provided based on findings resulting from the evaluation of various indicators and/or incidents obtained.

The supervision process that is carried out at the AFORE uses the following elements as inputs:

- The evolution in the number of accounts, the amount of resources managed by the AFORE, as well as their SIEFORE and the composition of the portfolio.
- The evaluation of the Corporate Governance and related assurance mechanisms at each administrator.
- The reports sent by the Regulatory Comptrollers on a monthly basis.
- The policies and procedures established in the manuals provided by the regulation.
- Results of previous supervision visits
- Cyclical aspects

In addition to the exposed points, each area supervises specific elements in order to enrich the supervision and mitigate risks.

i. Operational supervision

In 2017, the first comparative of AFOREs' operation was obtained through a tool that simultaneously assesses regulatory compliance and operational risk level. This methodology allows for monitoring in a risk-based approach and leaves regulatory compliance in the background, as well as integrating the supervision carried out through surveillance and inspection, which obtains a comprehensive vision when standardize results and generate objective, comparable and adaptable measurements regarding the operation of the SAR.

The Vice-Presidency of Operations reformulated the way supervision is carried out, adopting digital tools that allow the continuous monitoring of key Administrator operating indicators, as well as integrating technological mechanisms for the optimization of processes, which provides the possibility of efficiently identifying risks.

This transformation carried out by CONSAR translates into greater effectiveness in inspection results, better monitoring of the industry's behavior, as well as the implementation of Machine Learning and Deep Learning tools, which analyze on a massive scale via algorithms, millions of records cross-referenced with each other to identify abnormal behaviors, as well as to make performance predictions based on current information.

ii. Financial supervision area

The Financial Vice-Presidency has established a supervision strategy between the surveillance and inspection areas in search of the best use of resources (human capital), either through periodic reviews of activities such as: evidence of transaction records, analysis of information reported in search of unusual operations, inspection visits, meetings with AFORE officials and those responsible for the areas, review of analysis studies used to approve investments, minutes of the Investments and Risks Committee, etc. The timely monitoring of the evolution of the remediation plans has become a precedent to ensure the correct implementation of actions to mitigate risks at the sub process level.

The following elements are currently taken into consideration:

- The degree of complexity in the use of the Investment Regime.
- Incidents detected in the area of Financial Surveillance regarding the daily monitoring of the operations carried out by Participants in the Retirement Savings Systems. These incidents consider notices of non-compliance, correction programs, and information requirements, among others.
- Conformation of the officials and the team that will participate in the investment process.
- Assessment of the aspects established in the regulation where there is a history of non-compliance.
- Assessment of the operation of the governing bodies for investment decision making, in accordance with the provisions of the applicable regulations.
- Implementation of the methodologies and measurement elements for credit assessment in addition to that provided by the rating institutions for the release of extended limits.
- Assessment of the technological infrastructure, in accordance with the provisions of the applicable regulations.
- Adherence to Reference Portfolios, in accordance with the provisions of the applicable regulations.
- Certification of officials, in accordance with the provisions of the applicable regulations.

b) Regulatory changes to strengthen the RBS

The approach based on the identification of risks goes beyond the regulatory aspect; however, it is necessary to have a legal basis to support the work carried out by the Commission in order for the Commission to have the legal powers to, if applicable, sanction the Administrators in case of a breach of the regulations.

To strengthen the supervision carried out by the CONSAR, the SAR regulations have been modified on several occasions.

The most relevant modifications are shown below:

Document	Relevant modifications
<p>Regulation in operational matters of the Retirement Savings System</p>	<ul style="list-style-type: none"> • Electronic File. • Mobile Application. • Diverse tools for switches. • Notifications to the saver of their voluntary and obligatory contributions through PROCESAR. • Switches' process strengthening. • Modification of services that require biometrics. • Gradual implementation of services through AforeMóvil. • New SIEFORE selection process. • Collection with scan lines in e-SAR. • Definition of the Single Service Code and modifications in Biometric Enrollment and the Single Biometric Seal. • Universal Window in the Portal e-SAR (pre-applications for withdrawals, control of appointments, among others). • Automatic return of resources for workers who are 65+.
<p>Financial regulation of the Retirement Savings System</p>	<ul style="list-style-type: none"> • Strengthening of the mechanisms to guarantee the best execution of the concertation of assets subject to investment. • Designation of front and back office officials by the Investment Committee. • Differentiation of requirements by type of Structured Instrument. • Strengthening of the eligibility policies of the Structured Instruments administrator (DDQ questionnaire approved by the Investment Committee). • Preparation of an analysis of characteristics and risks of each Structured Instrument. • Investment Committee attributions to invest in Structured Instruments, FIBRAs, Stock Exchange Certificates Linked to Real Projects, Debt Instruments and Derivatives. • Measures and controls at the portfolio leverage level. • The prudential framework of internal limits has been strengthened, including the development of an internal credit model. • The measurement of liquidity must consider demographic, statistical, financial, actuarial and operational factors. • The attribution, performance and risk models and reports may be carried out by Asset Class, Risk Factor or type of risk. • Risk measures to be observed by Company Agents. • The Investment Committee is empowered to invest in vehicles (ETFs and mutual funds).

	<ul style="list-style-type: none"> • Investment strategy (compliance and transparency) • IT infrastructure to support the entire investment process (capabilities and connection between modules). • Responsibilities of the Regulatory Comptroller. • Benchmark. • Code of Ethics and Best Practices. • Certification of officials. • Update of the responsibilities of the Independent Board Members.
<p>Advertising and promotion regulation of the Retirement Savings System</p>	<ul style="list-style-type: none"> • Code of ethics and self-regulatory conduct (AFORE) in the field of Advertising, Promotion and Sponsorship that encourages best practices. • Increase the principles that the Administrators must observe when doing publicity, sponsorship or promotion. • Establish CONSAR as the only valid source of information to issue comparative advertising.
<p>Regulation regarding services to users of the Retirement Savings System</p>	<ul style="list-style-type: none"> • Establish a process for handling complaints • Procedure for attention to user requests • Establish minimum service levels • Establish requirements and functions of the Service Agent • Bill of rights for users • Annual coverage program • Disseminate updated and standardized information • Establish an application service record
<p>General provisions referred to in Articles 108 Bis of the Law on Retirement Savings Systems and 91 of the Investment Companies Law</p>	<p>Supervision in the area of Prevention of Money Laundering</p> <p>The Ministry of Finance and Public Credit (Secretaría de Hacienda y Crédito Público, SHCP) is currently working specifically with the Insurance, Pensions and Social Security Unit to update the Provisions and approve them in accordance with the regulations published by the CNBV.</p> <p>The Provisions will include a chapter that will adopt a Risk Based Approach and will contain the following:</p> <ul style="list-style-type: none"> • The Administrators must have a document or manual in which they must establish a methodology to carry out a risk assessment of the Voluntary Savings.