INVESTMENT POLICIES: MORE RISK AND GOVERNANCE IN 2019

Pension Funds

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SECTORAL PLANS are bid to boost growth

Demographic dividend, a missed opportunity

Supervisor: system is solvent and stable

FIPE's pension reform proposal

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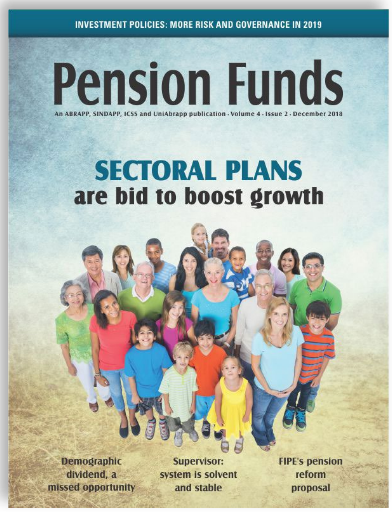

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2018 was an important year for the Brazilian occupational pension industry. The regulatory framework was updated, bringing new rules and refining existing ones in four important areas: investments, risk transfers, accounting and actuarial calculations. Key changes were implemented after a wide-ranging debate leading to the modernization of regulatory requirements in line with evolving governance practices.

The year is also marked by amendments in the statute of the Brazilian Association of Pension Funds (ABRAPP), which from now on will play the role of "institutor" of sectoral benefit schemes, giving pension plan members the possibility to include family members in occupational arrangements. It represents a huge step for the industry, with potential to double its size in the short to medium terms. All the details of the initiative are provided in the following pages.

Also aiming at industry development and growth, the Association launched PrevSonho, a new pension plan design that allows members early access to individual retirement accounts so that they can bring personal projects to life, such as buying a house, travelling or getting an education. Pension entities that wish to have ABRAPP as the pension plan institutor may use PrevSonho's by-laws model, thus ensuring a faster licensing process within the supervisory authority (PREVIC).

Looking towards the future, pension funds will be faced with a special challenge. Besides the changing economic and political scenarios, a new regulatory framework has added a good deal of innovation to investment practices, affecting, in particular, the governance of investment processes. Decreasing interest rates will likely lead to more complex investments, reducing or at least stabilizing allocations in government bonds and private equity while making room for asset classes such as hedge funds and infrastructure.

Finally, we provide an overview of the pension reform proposal elaborated by FIPE/USP, a think tank that gathers some of the most renowned economists in Brazil. The reform has been on the top of the country's political agenda, gaining even more momentum as the new president-elect takes office in January.

Best wishes for the season and a happy new year!

Flavia Silva
Editor-in-chief

Bid to boost growth

ABRAPP amends its statute to offer "instituted sectoral plans" and meet a significant demand from pension scheme members' families

MARTHA ELISABETH CORAZZA

In 2019, the Brazilian occupational pension fund system tends to grow in a sustainable manner in face of the potential dissemination of the so-called "fundos setoriais instituídos" or instituted sectoral funds, which will offer benefit plans to relatives of active members and retirees affiliated to existing pension funds. A major step to materialize this new niche market was taken by ABRAPP in November, when the Association's statute was amended so as to originate a new type of plan member denominated "associado especial previdenciário" - or special pension member

- among other adjustments. From now on, the Association will act as institutor "instituidora" of new plans offered by the EFPCs[1], thus contributing to meet a significant demand of pension fund members' relatives for complementary pension provision.

"The sectoral fund was extensively studied and is considered an important step towards industry's growth, presently stagnated in terms of new plans and members", says ABRAPP's CEO Luís Ricardo Marcondes Martins. He notes that the amendments made to the Association's statute were motivated by the need to promote growth and facilitate the establishment of instituted plans by its affiliated pension funds. "We are convinced that we are marking a new era for the industry, in accordance with ABRAPP's strategic planning, which permeates all our actions and has the premise to make the occupational pension system more flexible", argues Martins.

"We are marking a new era for the industry, in accordance with ABRAPP's strategic planning that has the premise to make the system more flexible"

The initiative not only addresses the needs of members' relatives, but also aims to secure new sources of revenue for EFPCs, which become smaller as plans reach maturity due to low turnover. "In order to avoid any legal or regulatory problems, it was necessary to have an industry institutor. We agreed that it would be more practical to change ABRAPP's statute to link all active members, retirees and their respective relatives to the Association", explains José Roberto Ferreira, Managing Partner of Rodarte Nogueira & Ferreira Consultancy.

The supervisor considers two categories of plan members: affiliated persons and direct and indirect members. Pension funds would not be able to cover all these people as affiliates because they are not associations, so experts came up with the alternative of accommodating them as direct or indirect members. However, as there was no consolidated understanding of the subject by the supervisory body, it was necessary to think of another way.

"We concluded that it would be easier to adjust the new product to the applicable regulation instead of proposing that each pension fund changed its statute in order to accommodate members' relatives, which would be complicated since they are not associations", asserts Ferreira.

1.The acronym "EFPC" stands for *Entidade Fechada de Previdência Complementar*. It is used to refer to entities that manage occupational "closed" pension schemes (as opposed to "open" or individual pension plans managed by banks and insurance companies).

Special Members

Pension plan members' families will be covered as ABRAPP's "special pension members", which is merely an associative relationship that should not be mixed up with the relationship between pension plans and direct members and retirees. Based on this model and with the statute formally amended at ABRAPP's General Assembly held in November, pension funds affiliated to the Association may offer instituted sectoral benefit plans to direct members' families.

"If each current plan member brings one relative, the number of people covered by the occupational private pension industry could double in the short term", highlights Ferreira. In this type of arrangement, the plan member keeps the relationship status with the pension fund and, if desired, he/she may become a "special pension member", thus including relatives. Their only prerogative with the Association is to access instituted (or self-sponsored) plans. They will not attend meetings, have voting rights or any other ties with Abrapp.

Some pension funds already offer family plans. So far, seven sectoral instituted plans have been licensed by the supervisor, not to mention three other plans currently under analysis, but any new plans can be established under the new model, having ABRAPP as "institutor". "Some pension funds have launched self-sponsored or "instituted" plans dedicated to family members, others have changed their statutes to offer such products, but in general this is still a small universe. The growth potential is significant because this new model is more viable", says PREVIC's Licensing Director, Carlos Marne.

The supervisory authority estimates that more than 20 or 30 instituted sectoral plans will be licensed in the next six months. According to the regulation, conventional pension plans may be extended to members' spouses and economic dependents only, so it is interesting to take advantage of the new design to increase private pension coverage.

PREVIC is making all the necessary arrangements to deal with the challenge. The authority website already offers five pre-approved plans modalities, whose licensing process is much faster and simpler. One of these plan modalities is "PrevSonho", a pension scheme designed by Abrapp (see more on page 13).

> The supervisory authority estimates that more than 20 or 30 instituted sectoral plans will be licensed in the next six months

Growth and security

The viability of the sectoral fund is a major issue for the occupational pension industry. The modality has great potential due to the size of the system and the outreach of ABRAPP itself, argues José Maurício Coelho, Chair of the Association's Governing Board and CEO of PREVI pension fund. He observes that PREVI still does not offer this plan modality for its members, but coverage expansion is one of the items of the entity's strategic planning.

"We are looking into the possibility of offering this type of plan for members' families. To this end, research and technical analysis are being carried out so as to evaluate the impact it would have on management", adds Coelho. In his opinion, the alternative may further strengthen the relationship between the pension fund and its active members and retirees. "In addition, it would contribute to the long-term financial balance of the pension entity."

New schemes may be Defined Contribution, family plans, deferred income programs or ABRAPP's "PrevSonho"

Surgical adjustments

At a webinar held on October 31, ABRAPP brought together experts to detail statutory changes and explain how the Association will act as plan institutor. At the occasion, José Roberto Ferreira noted that each associated EFPC will have the prerogative to establish its own plan and may or may not choose one of the pre-approved designs made available on the supervisor's website.

Under the new concept, the EFPC will act as "sectoral affiliate" as well as the actual manager of the pension plan whereas ABRAPP will hold the "institutor" title. "Any pension fund with sufficient technical capacity may offer such plans. The design will be freely defined by each EFPC", explains Ferreira. The new schemes may be of Defined Contribution nature, family plans, deferred income programs or ABRAPP's "PrevSonho".

The amendments made in ABRAPP's statute were "surgical", Ferreira points out. The intention was to make it clear, especially for the supervisor, that from now on the Association's statutory and social objectives include the possibility to establish complementary pension plans. This will be possible thanks to the concept of "special pension members", who are the active and retired members covered by each EFPC and plans under management, whose relatives will now be able to join.

The plans will always be established by the EFPC. Special pension members must attest family ties with the active or retired member of the pension fund as well as voluntary membership. They will not be subject to any associative fees, take part in the General Assembly of the Association nor will they be held liable for any financial obligations contracted by ABRAPP. ABRAPP's Board of Directors will be responsible for deliberating on matters related to the instituted sectoral benefit plan alongside the EFPC, as well as approving the terms of the respective by-laws and statute.

"There is a great deal of pent-up demand and a keen EFPC interest on this new modality. Pension funds already offering family plans were very important in helping us come up with this design", emphasizes Luís Ricardo Marcondes Martins. He estimates that at least 50% of ABRAPP members are expected to enter this segment in the short term. ■

Investment policies: more risk and governance in 2019

Design of investment strategies will require special attention to processes and information provided to the supervisory agency

When designing investment policies for 2019, pension funds will be faced with a special challenge. On top of the changing economic and political scenarios, a new regulatory framework has added a good deal of innovation to investment practices. Issued by the National Monetary Council (*Conselho Monetário Nacional*), CMN Resolution n. 4,661/2018 has brought about changes in the asset classes invested, although it tends to affect the

Among the most relevant changes is the need to provide detailed information on operations involving financial assets associated with the plan sponsor

governance of investment processes more strongly.

The changes are aligned with the risk-based approach to supervision and the regulatory proportionality principle, which accounts for differences in size and complexity between pension entities. Normative Instruction n.6/2018 - issued by the supervisor (PREVIC) after being subject to a public consultation - will facilitate the understanding and help consolidate the new rules.

"The Normative Instruction only brings a few formal adjustments. In practice, the norm simplifies the previous set of requirements for investment policies, suppressing some items", explains Fábio Coelho, Managing Director of PREVIC.

The new regulation represents a breakthrough for the system, an enhancement that strengthens pension funds' governance practices, notes Paula Goto, Director of Planning and Risk Management of PREVI, the largest Brazilian pension fund. At PREVI, most new requirements have already been met, such as the need to review investment policies on a yearly basis, taking into account seven-year cycles.

Another practice already in place at PREVI is the approval of the investment policy prior to the exercise-year for which it is intended. "We abide by the regulation when elaborating and reviewing documents. A significant change that we still need to incorporate concerns real estate investments, as the new legislation no longer allows direct investment in real estate assets", says Goto.

In her opinion, among the most relevant changes is also the need to provide detailed information on operations involving financial assets associated with the plan sponsor, its suppliers, customers and other companies linked to the sponsor's group. "At PREVI, for instance, meeting this requirement means that we will have to check if the pension entity is engaged in operations with customers and suppliers of *Banco do Brasil*, covering millions of people", argues the Director.

Segregation of duties

"Appointing a manager or committee exclusively responsible for risk management is the best practice in terms of investment governance", highlights Marcus Moreira, PREVI's Investment Director and Executive Secretary of ABRAPP's Collegiate of Investment Coordinators. At PREVI, there are two segregated areas: the Planning Directorate, whose current director is also the Chief Risk Officer, and the Investment Directorate.

Within the universe of Systemically Important Entities (*Entidades Sistemicamente Importantes* – ESIs), the segregation of duties is essential and different functions must be performed independently. "In the case of smaller pension entities, cost is a genuine concern. That is why they were granted greater regulatory flexibility, so they are not obliged to have an accredited risk manager or segregated areas", Moreira points out.

"Resolution CMN 4,661 brings important changes as interest rates in Brazil are falling continuously, even though long-term interest rates may occasionally move upward due to market trends", notes Guilherme Velloso Leão, ABRAPP's Executive Director. Decreasing interest rates will likely lead pension funds towards more complex investments, so the legislation aims at making investment governance and internal controls more robust as well as granting more independence for risk management functions in relation to those responsible for investment decisions.

Updated requirements

As soon as the draft Normative Instruction was subject to public consultation, ABRAPP's Collegiate of Coordinators held meetings with pension fund managers and subsequently forwarded proposals to PREVIC. "There were points that required clarification. It was also necessary to discuss mechanisms to simplify rules. Our suggestions were well-received and should help simplify processes and reduce bureaucracy", says Guilherme Leão. There will be more risk in the portfolios and the need for stronger governance mechanisms as well as higher costs for pension entities as Brazil's interest rates undergo structural changes, he adds.

The new trend in interest rates will likely reduce or at least stabilize allocations in government bonds. "This change in regulation helps create up-to-date governance standards. There will be more qualified people participating in the investment decision-making process, which tends to be longer in the case of equity funds", argues Leão. As far as private equity funds are concerned, he believes that current allocations, which have already been reduced, will probably decrease further.

At first, says Leão, pension managers will become more conservative, making room for asset classes such as hedge funds, while infrastructure investments will likely hold higher shares of investment portfolios at a slower pace. The mandatory appointment of a chartered risk management professional, which

Pension fund managers tend to become more conservative, making room for asset classes such as hedge funds and infrastructure

Direct investments in real estate assets are no longer allowed; instead, pension funds should make use of Real Estate Investment Funds

initially applies only to larger funds, tend to become the norm for all pension entities, including smaller ones. “The responsibility that falls upon the Chief Risk Officer will increase, leading to a much stricter approach to investment selection”, observes Guilherme Leão.

Apart from quantitative restrictions, procedural aspects are the most relevant change brought by the new investment regulation, points out Guilherme Benites at Aditus Consultancy. “When we compare the previous regulation with Resolution 4,661, we notice that the number of items related to investment policies increased from seven to fifteen. All items concern the decision-making process as a whole, including the selection of external asset managers.” Processes should be well parameterized and detailed. “Procedural aspects lie at the core of the new norm”, adds Benites.

Real Estate investments

The Normative Instruction clarified several aspects of the new legislation, which did not alter pension fund investment limits, except in the case of real estate, highlights Rogério Rodrigues, Senior Consultant at Mercer.

From now on, pension entities are no longer allowed to invest directly in real estate; instead, they should make use of Real Estate Investment Funds (*Fundos de Investimento em Imóveis* - FII), with a twelve-year deadline for divesting from assets currently held.

PETROS’ case

At PETROS, the second largest Brazilian pension fund, the new regulation did not come as a surprise as the entity had been working to improve its investment governance process for over two years. “PETROS views itself as a financial investor in search of the best risk-adjusted returns through higher specialization, training and accountability levels, which means that our staff in various areas are liable for their actions”, highlights Daniel Lima, CEO and Investment Director of the pension fund.

Another essential aspect according to Lima is to discuss the different needs of each benefit plan under management. “Our Defined Benefit plans are mature, thus requiring portfolio turnover, which led us to divest in real estate, for instance. Last year, we sold our stake in Itaúsa because the asset, albeit very good, was not adherent to the needs of our mature DB scheme.”

In Lima’s view, Resolution n. 4,661 allows for enough flexibility to enable all necessary adjustments. However, the situation changes when it comes to the Variable Contribution plan managed by the entity, which is young

> In order to complement the new regulatory framework, the supervisory agency opened a public consultation to tackle the issue of external manager selection by pension funds

and relies on a net inflow of resources. "One needs to understand the portfolio and communicate it effectively to the investment team through daily reports, etc. There must be a whole set of reporting rules to check if asset allocation is adherent to the investment policy."

After restructuring its Investment Directorate, PETROS managed to improve governance procedures, having been awarded the Self-Regulation Seal of Investment Governance by ABRAPP. The pension fund also established a system that reverses the relationship with its external asset managers.

At the core of all these efforts, says Petros' CEO, is the perception that greater investment complexity needs to be dealt with properly. "There needs to be a strong operational staff load so that investments reach the desired outcome given that higher complexity requires a compatible governance structure. The main driver is to recruit and retain talents in an environment of integrity."

Manager selection

In order to complement the new regulatory framework, the supervisory agency (PREVIC) opened a public consultation to tackle the issue of external asset manager selection by pension funds, a subject that is being examined in the light of regulation issued by the Brazilian Securities and Exchange Commission (*Comissão de Valores Mobiliários* - CVM).

The decision to open public consultation was due to the number of questions pertaining to the subject that was reaching the supervisor, explains PREVIC's Managing Director, Fabio Coelho. As investment policies become more complex and so does risk management practices, it is paramount that pension funds protect and organize processes in a straightforward manner.

Coelho remarks that the supervision and regulation of Brazilian pension funds follow the prudent person rule and that policymakers have sought to align norms and procedures to sectors in which Brazilian practices rank among the best in the world, such as the financial market.

"We indicate the level of risk a given pension fund is subject to and we act accordingly. At present, less than 20% of PREVIC's resources are dedicated to on-site supervision. The remaining 80% are devoted to monitoring and discussion, governance checks, etc. This is the type of supervision we envisage for the 21st century", says Coelho. ■

Pension entities may enroll in "PrevSonho"

EFPCs[1] wishing to have ABRAPP as institutor[2] may use pre-approved by-laws of Prevsonho plan, thus ensuring a faster licensing process

DÉBORA DINIZ

The by-laws of PrevSonho - a new, more flexible type of pension plan designed by ABRAPP - are already available on the website of the National Superintendence of Complementary Pensions (PREVIC). The new scheme will allow members early access to their individual retirement accounts so that they can bring personal projects to life, such

1. The acronym "EFPC" stands for *Entidade Fechada de Previdência Complementar*. It is used to refer to entities that manage occupational "closed" pension schemes (as opposed to "open" or individual pension plans managed by banks and insurance companies).

2. Insitutors – or "instituidores" in Portuguese – are normally legal entities such as trade or professional associations, unions or the like that manage industry-wide pension plans.

as buying a house, travelling or getting an education. Discussed for over a year within the Association, the product is viewed as an important growth initiative for the system, since it will likely appeal to a broader audience in comparison to traditional benefit plans.

By-laws model n.4 (CD 4) – Institutor's Plan with Retirement Monthly Income and Temporary Benefits - is intended mainly for retirement plans offered by an institutor. It is a Defined Contribution (DC) pension scheme that allows for the provision of retirement and temporary benefits, also foreseeing the possibility of lump-sum withdrawals, portability, deferred proportional benefits and self-sponsorship.

"Members who are 18 and older are entitled to the temporary benefit, which can be paid in 24 to 60 monthly installments calculated with basis on a percentage of the member's individual retirement account balance according to the accumulation period", says a presentation elaborated by the supervisor PREVIC. The EFPC must indicate in the plan licensing application that it is strictly following the provisions contained in by-laws model CD 04. "Only then will it be possible to have access to the automatic licensing modality", highlights the supervisory agency.

Pension entities that wish to have ABRAPP as the pension plan institutor may use PrevSonho's by-laws model, thus ensuring a differentiated licensing process within the authority. Both plan by-laws and adhesion agreement are available on PREVIC's website.

"The licensing process will be very fast. We believe that once the entity decides to join, the plan can be ready to operate in less than a month. However, it is important to point out that everything will depend on the pension fund's initiative. We have high expectations for this plan design", says Carlos Marne, Licensing Director of PREVIC.

PrevSonho is very similar to a traditional instituted (normally self-sponsored) plan, with the main difference being the so-called temporary benefit, that is, the possibility to interrupt the accumulation phase for a certain period (of a maximum of five years) so that the member may receive a temporary income to make a personal project or dream come true – as the word "sonho" in Portuguese suggests.

"It is similar to the family plans being offered by a few pension entities to date. The difference is that PrevSonho gives the member the opportunity to use part of the retirement assets during the accumulation phase", explains Lucas Nóbrega, Superintendent of PreviBayer pension fund and member of the working group especially dedicated to devising the product and drawing up the by-laws

PrevSonho allows early access to accumulated funds so that personal projects can be brought to life, such as buying a house, travelling or studying

One of the primary concerns of those involved in the design of the new plan was to preserve its retirement security characteristics

proposal presented to the supervisor. Another working group is now devoted to elaborating the communication plan and building a digital platform, which will be paramount for the advertisement and operationalization of the project.

Early access to the individual account is an additional perk of the plan that will likely appeal to younger generations, who have more immediate financial needs other than retirement. A greater degree of flexibility makes the product more attractive to a wider audience at a time when increased longevity is at the top of the agenda, thus requiring that conventional pension plan models be adapted so as to meet the needs of those who do not expect to retire any time soon.

To join PrevSonho, the individual must be affiliated to a pension fund or an institutor. In this sense, it is important that EFPCs take action, since making the plan available is optional. The target audience is definitely large, argue specialists. A food company sponsoring a conventional benefit plan, for instance, could increase coverage by offering the plan to its suppliers as well.

One of the primary concerns of those involved in the development of the new plan was to preserve its retirement security characteristics. "PrevSonho is not a financial product, but a pension plan. We do not want to take the focus off retirement. We want to give members who are going through financial hardship the option to access their individual accounts, have a temporary income and resume saving without financial losses", notes Nóbrega. "Members may use their retirement savings to make a dream come true, but this is not a savings account, it is a pension plan."

Plan by-laws

According to the plan by-laws submitted to PREVIC, PrevSonho is a Defined Contribution scheme that has institutors, active and retired members, as well as beneficiaries. The "institutor" shall be a legal entity of professional, class or sectoral nature that joins the plan by signing an adhesion agreement. Active and retired members shall be physical persons directly or indirectly linked to the institutor; self-sponsored members and members bound to the plan who are recipients of Deferred Proportional Benefits.

Retirement benefits will be financed by contributions from members, institutors or third-parties under the terms of the agreement signed with the EFPC as well as net investment returns. But it is in the section that deals with the so-called temporary benefit that product differentials are detailed. Members may apply for the temporary benefit calculated as a percentage of the total account balance according to the accumulation

The temporary benefit will be paid in 24 to 60 monthly installments. Up to 25% of the retirement account balance may me accessed at once, upon request

period (up to 50% after five years; 70% of the total account balance after ten years of accumulation).

The temporary benefit will be paid in installments for a minimum of 24 and a maximum of 60 months. At member's discretion, up to 25% of the retirement account balance may be paid upon request. During this period, members must keep contributing to the plan and, after the temporary benefit is granted, a new minimum accumulation period begins. In other words, it is necessary to wait another five years before applying for the temporary benefit once again.

The plan also foresees the possibilities of self-sponsorship and Deferred Proportional Benefits. The latter case is possible when the member has broken associative ties with the institutor before meeting the eligibility criteria for receiving retirement benefits as long as he/she has contributed to the scheme for at least three years. This alternative does not prevent the member from opting, at a later stage, for the portability of funds or lump sum withdrawal, although it requires the suspension of member and third-parties' mandatory contributions, which may continue on a voluntary basis.

Lump-sum withdrawals

As far as lump-sum withdrawals are concerned, the rules are similar to those applicable to traditional DC plans. The member who leaves the plan is entitled to receiving the amounts contributed (regular contributions) provided that the vesting period of 36 months - from the date of enrollment - is observed and he/she is not in receipt of monthly retirement benefits.

As for contributions made by legal entities, the vesting period is 36 months from the date each contribution was made. Therefore, the member shall be entitled to receiving such amounts gradually, as the vesting criteria is met. Plan members are also entitled to withdraw up to 20% of total "regular" contributions every two years, without the need to leave the plan.

Total withdrawal amounts correspond to 100% of individual retirement account balances to be paid in "quotas" whose values are calculated periodically. In summary, as long as vesting periods are observed, members are entitled to access the following portions of their individual account balances during the accumulation phase without leaving the plan: amounts transferred from other plans managed by closed or open pension funds; values not originated from regular contributions made by the member, such as voluntary contributions, for instance. The account balance originated from regular contributions may only the accessed when the member is disconnected from the plan. ■

Demographic dividend, a missed opportunity

Changes in Brazil's demographic profile will bring serious impact on public finances, demanding immediate structural reforms

The Brazilian population is aging. By 2060, the percentage of people 65 years and older will go from 9.2% to 25.5%, which means that 1 in every 4 residents will be a senior citizen. The phenomenon has a direct influence on the dependency ratio, which measures the ratio between the number of "dependents" and working-age individuals, with strong consequences for pay-as-you-go pension systems and public finances as a whole. Structural pension reform is therefore urgent, since Brazil has missed - or is about to miss - its window of opportunity for a demographic dividend by generating wealth and preparing for a decrease in participation rates in the workforce.

According to the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística* - IBGE), by 2039, there will be more elderly people than children living in the country. This means that Brazil is missing out on its demographic dividend, an opportunity to increase productivity when it still has a large active population in comparison to the number of "dependents", that is, children and older adults.

Fertility rate

In recent years, despite a downward trend, the fertility rate has been relatively stable. In 2018, Brazilian women had an average of 1.77 children compared to 1.8 in 2015 and 1.75 in 2010. By 2060, the average number of children per woman is expected to reach 1.66.

The state of Roraima has the highest fertility rate to date (2.31), followed by the states of Amazonas (2.28) and Acre (2.22). The lowest rates, in turn, are recorded in the states of Minas Gerais (1.62) and Rio Grande do Norte (1.65).

It is worth mentioning that Brazilian women have children at 27.2 years of age on average. By 2060, this number will increase to 28.8 years.

Declining population

With a little more than 208 million people to date, Brazil's population will continue to grow until 2047, reaching 233.2 million. From 2048 on, however, there will be a gradual decline that will last until 2060, bringing the number of Brazilians to 228.3 million individuals.

Twelve states - Alagoas, Bahia, Ceará, Maranhão, Minas Gerais, Paraíba, Paraná, Pernambuco, Piauí, Rio de Janeiro, Rio Grande do Norte and Rio Grande do Sul – will see their population shrink before 2048 due to migratory flows.

In eight states, the population is not expected to decline until 2060: Acre, Amapá, Amazonas, Goiás, Mato Grosso, Mato Grosso do Sul, Roraima and Santa Catarina.

Life expectancy

Brazilian life expectancy at birth - currently 72.74 years for men and 79.8 years for women - should reach 77.9 years for men and 84.23 years for women in 2060.

The 2018 review performed by the Brazilian Institute of Geography and Statistics also segregated population life expectancy projections by state. The study reveals that Santa Catarina state - which already has the highest life expectancy for both sexes (79.7 years) - will likely be the one with the highest life expectancy in 2060: 84.5 years.

According to the Brazilian Institute of Geography and Statistics, by 2039, there will be more senior citizens than children living in the country

Average population age

Currently, the average population age is 32.6 years against 29.2 in 2010. According to the latest IBGE projections, in 2037, the average age will be a little over 40 years, reaching 45.6 years in 2060.

Nine states still show average ages below 30 years. The youngest Brazilian state is Acre (24.9 years). On the other hand, south and southeastern states projected average population ages are above the national average.

Aging trajectory

By 2060, the percentage of people aged 65 or older will increase from 9.2% to 25.5%. That means that out of four Brazilians, one will be an older adult. According to official data, the share of people over age 65 will reach 15% of the population as early as 2034, surpassing the 20% mark in 2046. In 2010, this percentage was only 7.3%.

The study also measures population aging by comparing the number of people aged 65 years and older and those under 15. Currently, there are 43.2 individuals under the age of 14 for each group of 100 persons aged 65+. In 2022, this rate will rise to 51%, surpassing 100% in 2039, pointing to more people at retirement age than children.

Rio Grande do Sul, where the average age is now 35.9 years, is the oldest state of the federation. It will also be the first to have a larger proportion of elders as opposed to children under the age of 14 in 2029. Four years later, it will be followed by the states of Rio de Janeiro and Minas Gerais. Younger states, such as Amazonas and Roraima, will continue to have more children than older adults until the end of the reference period (2060).

By 2060, people aged 65 and older will increase from 9.2% to 25.5%, meaning that one in four Brazilians will be an older adult

At present, the population up to 14 years of age amounts to 21.3% of Brazilians, falling to 14.7% by 2060 according to IBGE. The 15-64 age group, which now accounts for 69.4% of the population, will fall to 59.8% by 2060.

Dependency ratio

The aging of Brazilian population can be explained by the fall in the total fertility rate, which reduces the number of births over time. This fall may be observed in all Brazilian states, affecting initially the south and southeastern parts of the country and later other regions.

In the long term, population reduction has a negative impact on the number of people in reproductive age. This phenomenon has strong implications on pay-as-you-go pension regimes - as in the case of Brazilian Social Security - since there is an increase in the number of individuals at retirement while the basis of these systems - or working-age individuals - shrinks.

Today, for every 100 working-age persons, there are 44 individuals under 15 or over 64 in Brazil. This is known as total dependency ratio, which measures the relationship between the number of “dependents” and working adults capable of supporting them. In 2010, the

The pension system costs almost 12% of GDP, which is high given the country's relatively young population

dependency ratio was 47.1, exceeding 50 by 2035 and reaching 67.2 in 2060.

Global perspective

According to the Organization for Economic Cooperation and Development (OECD), the country with the highest old dependency ratio - that is, the number of individuals over age 65 for every 100 people of working age (20 to 64 years) - is Japan (47). Finland, Greece and Italy come next, with ratios varying from 35 to 38.

The OECD also analyzed emerging economies, noting that China and Brazil will experience a rapid aging process in the coming decades. Current old dependency ratios will jump from 13 and 14 respectively to 62 and 66 in 2075. Over the same period, South Africa will become the youngest country globally, with an old dependency ratio of 29, followed closely by Indonesia (31).

In OECD countries, pension expenditure is expected to grow from 8.9% to 9.5% of GDP by 2050, on average, a rather small increase in view of rapid population aging. This is due to a number of pension reforms implemented, which provided for contributions raises, benefit reductions for future retirees or increased retirement ages.

Window of opportunity

Strong economic growth and social improvements in the last two decades have turned Brazil into one of the world's leading economies despite the deep recession from which the country is slowly emerging.

Macroeconomic stability, favorable demographic trends and external conditions have allowed consumption to expand in a context of strong employment and wage growth. However, while 25 million Brazilians have emerged from poverty since 2003, the country remains as one of the most unequal in the world. These are some of the conclusions taken from the OECD Economic Survey of Brazil, published in February 2018.

Growth, supported by a rising labor force over many years will slow down due to the rapid aging of the population, experts say. According to the survey, with the end of the demographic dividend, full recovery of the economy will require stronger investment, greater productivity and integration into global trade.

Without a significant reform of mandatory public spending, the fiscal deficit of 7.8% of GDP and public debt of 74% of GDP in November 2017 will likely become unsustainable, argues the OECD, adding that a comprehensive pension reform has become the most urgent element of Brazil's fiscal adjustment.

The Brazilian pension system costs almost 12% of GDP, which is high given the country's relatively young population. In this sense, the Parisian think-tank recommends the reduction of minimum benefits and establishment of statutory retirement ages. In the absence of reforms, it argues, pension expenditure will more than double, making the system clearly unsustainable. ■

A stable and solvent system

"Brazilian Pension Funds Stability Report" reveals that industry aggregate deficit has fallen from BRL 50 billion to 16 billion in 2017

The 2nd edition of the "Brazilian Pension Funds Stability Report", published biannually by the supervisor PREVIC (*Superintendência Nacional de Previdência Complementar*), brings positive results to the system. Available in mid-June with data referring to the second half of 2017, the document highlights

> The stability of the pension fund industry is defined as "the ability to maintain funding levels, soundness and the regular functioning of the system"

pension funds' aggregate positive solvency dynamics stemming from the gradual recovery of economic activity and implementation of deficit recovery plans, especially among Systemically Important Pension Entities (ESIs).

The report presents an overview of the EFPC[1] segment, its recent evolution and prospects, focusing on the main risks and measures adopted to mitigate them. In the document, the stability of the pension fund industry is defined as "the ability to maintain funding levels, soundness and the regular functioning of the system", which consists of managing pension assets and liabilities.

"One of the highlights of the past year is the reduction of the system's aggregated deficit, from BRL 50 billion[2], at the end of 2016, to approximately BRL 16 billion at the end of 2017", notes Fábio Coelho, Managing Director of supervisory agency PREVIC. The positive outcome, says Coelho, results basically from the implementation of recovery plans, which contributed to a BRL 39 billion reversal of aggregated deficit.

Domestic indicators

In the domestic sphere, GDP should continue to grow thanks to a cycle of low interest rates, controlled inflation, record crop harvest and an upturn in household consumption, as well as the slower retraction pace of annual Gross Fixed Capital Formation. There are, however, important risks related to the electoral process that should be taken into account.

The National Consumer Price Index stood at 2.76% in the 12-month period up to April 2018, below the Brazilian Central Bank target. This led to a policy of reducing the economy's nominal interest rate, at 6.5% per year[3].

In this context, says the report, real short-term interest rates are now at or below 3.0% pa, with long-term interest rates showing a different behavior. Such discrepancy, argues the supervisor, is particularly relevant for the pension fund industry.

According to the report, the fiscal framework is cause for concern due to the constraints imposed on mandatory budgetary expenditures as well as the absence of reforms in 2018. "In a scenario of greater fiscal deterioration, the trajectory of public debt can have even more adverse consequences."

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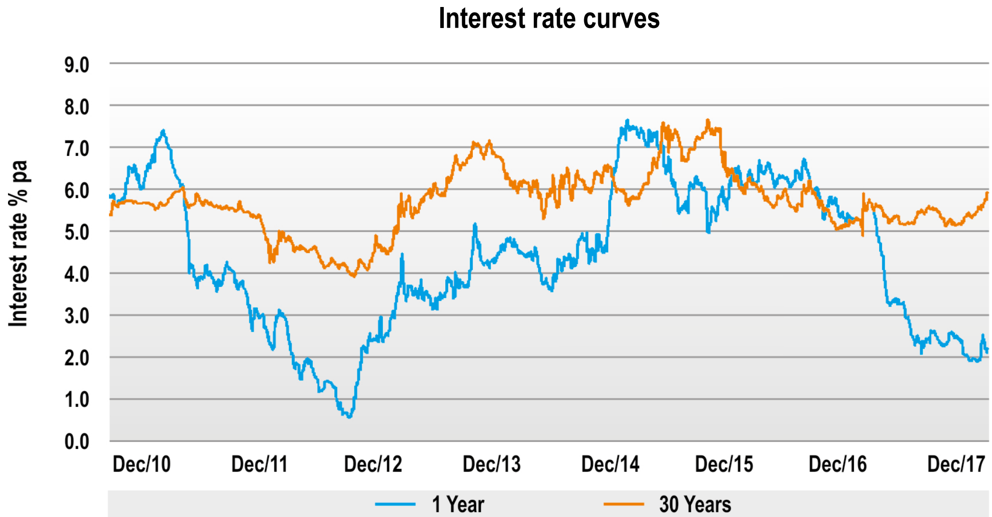
1. The acronym "EFPC" stands for *Entidade Fechada de Previdência Complementar*. It is used to refer to entities that manage occupational "closed" pension schemes (as opposed to "open" or individual pension plans managed by banks and insurance companies)

2. 1 BRL = 0.26 USD as of December 12th, 2018.

3. As of May 16th, 2018

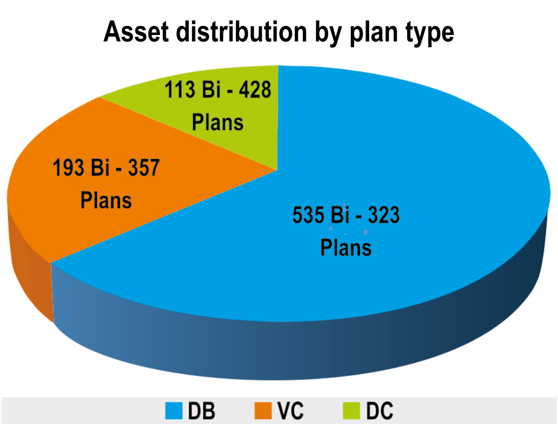


Source: PREVIC

System Growth

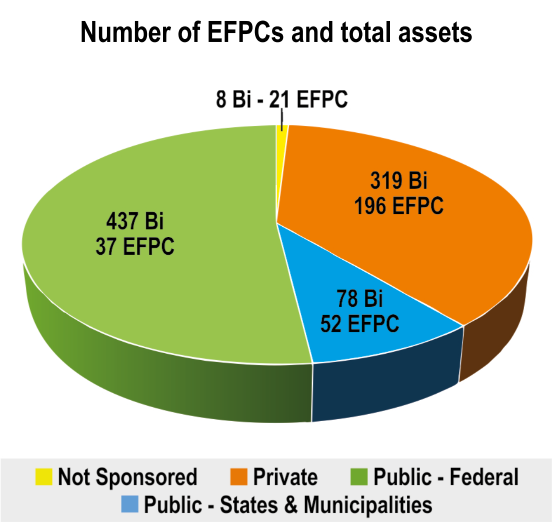
Throughout 2017, the Brazilian occupational pension fund industry grew in number of plans and total assets under management despite the decrease in the number of pension entities. In December 2017, there were 306 EFPCs managing BRL 842 billion in assets (up 5.8% compared to December 2016).

Out of a total of 1,108 benefit plans, 323 were Defined Benefit (DB), 357 Variable Contribution (VC) and 428 Defined Contribution (DC), the only plan modality to have net expansion, with six new plans.



Source: Previc

Considering the type of sponsorship, 61% of total assets are under the management of EFPCs linked to companies and institutions controlled by federal, state and municipal authorities; 38% of pension funds are sponsored by private companies and 1% is financed solely by plan members[4]. There are, in total, 17 Systemically Important Entities (ESIs), holding together 62% of industry assets.



Source: Previc

4. In Brazil, pension funds that receive contributions from members only are called *fundos instituídos* or "instituted funds"

Liquidity risk remains low, which means that the system holds, in aggregate, enough current assets to meet its obligations in the short and medium terms

The report also highlights the establishment of complementary benefit plans by Brazilian states and the substantial number of employees who have joined FUNPRESP pension funds, dedicated to civil servants from the Executive and Judiciary branches of the Federal Government.

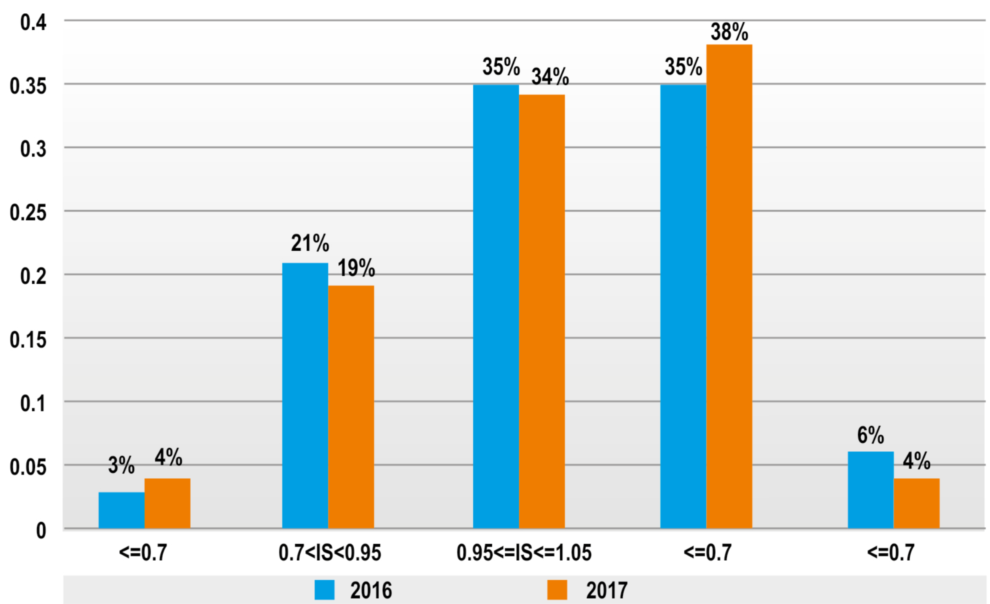
Solvency

"Aggregate solvency levels showed significant improvement due to the recovery plans implemented and returns achieved by pension plan portfolios as a consequence of falling interest rates and rising stock prices", observes Fábio Coelho. Even so, litigation involving the recovery plans implemented and market volatility have been closely monitored by the supervisory authority, adds the Managing Director.

The system's Solvency Index (SI) - which reflects the technical balance between mathematical provisions and Defined Benefit obligations (DB portion) - went from 0.96 in December 2016 to 1.0 a year later. Considering Defined Benefit plans alone, the index increased from 0.93 to 0.99 in the same period, which is considered adequate, given that an IS lower than 0.7 or higher than 1.5 indicates unfunded deficits and undistributed surpluses, respectively.

In 2017, only 11 DB plans, one of them managed by an ESI, had a Solvency Index below 0.7. In contrast, the number of plans with SIs between 1.05 and 1.5 increased, pointing to a better technical balance of the industry as a whole

Solvency Index distribution



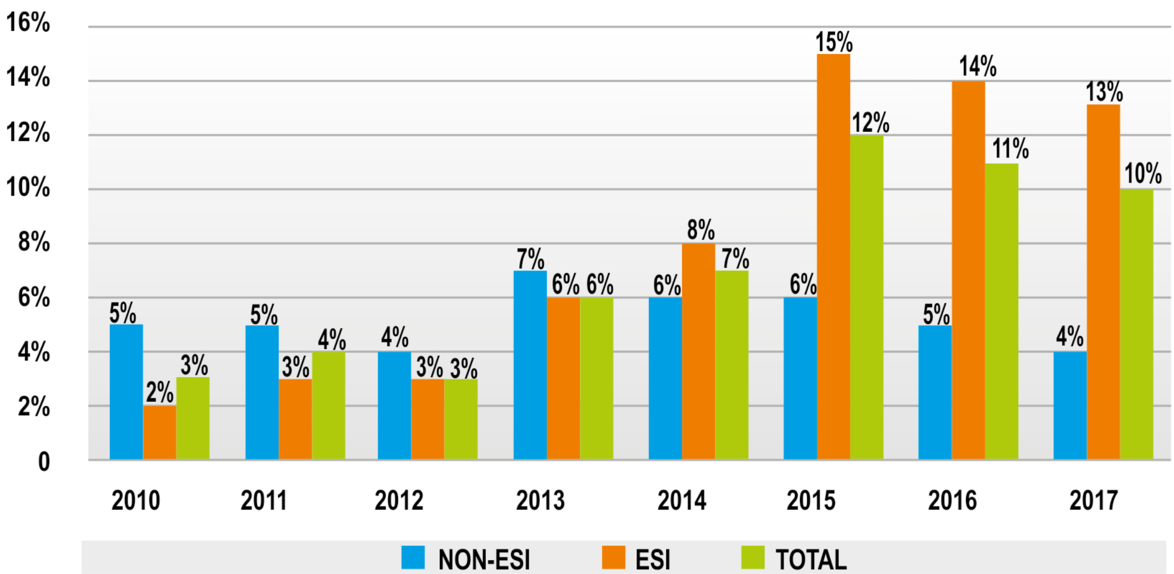
Source: PREVIC

Dependence on the plan sponsor

The dependence of Systemically Important Entities (ESIs) and non-ESIs on sponsoring companies or organizations stood at 13.2% and 4.2% of total assets. Between 2015 and December 2017, sponsors' debt to pension funds went from BRL 88 billion to BRL 84 billion.

In the supervisor's view, high dependence on the sponsor poses additional risks to pension plans due to the potentially unfavorable economic and financial situation of some employers. The supervisory authority advocates that greater dependence on the sponsor also limits the assets that pension funds actively manage.

Dependence on plan sponsor relative to total assets



Source: Previc

Liquidity Risk

Liquidity risk remains low, which means that the system holds, in aggregate, enough current assets to meet its obligations in the short and medium terms. The PREVIC report brings three different liquidity indicators: 1) Long-term Liquidity Index - ILA; 2) Short-term Liquidity Index - ILR; and 3) Duration Mismatch - DD.

The Long-term Liquidity Index (ILA) seeks to measure the availability of liquid assets - regardless of maturity or volatility - to meet plan liabilities for a projected period of five years. According to the supervisor, "on average, the volume of liquid assets more than doubles the cash requirements needed to fulfill future obligations to plan members". PREVIC also notes that plans with ILA < 1 are being subject to supervisory measures so as to implement remedial actions.

The Short-term Liquidity Index (ILR), in turn, only takes into account fixed income trading revenues in relation to actuarial obligations up to five years. In this case, improvements were observed only among non-Systemically Important Entities. The result, says the supervisory agency, "indicates the need to sell fixed income assets before they reach maturity or other assets to meet projected cash requirements for the next five years".

The mismatch between asset and liability durations, which denotes the difference between average maturities of fixed income revenues and the flow of benefit payments net of retirees' contributions, was reduced in the reference period. The number of plans with a mismatch exceeding six years decreased from 86 to 68 between June and December 2017, totaling BRL 38 billion. In the ESI group, there are seven plans in this situation, totaling BRL 22 billion in assets.

Considering a 5.32% discount rate pa, the average duration of DB aggregate liabilities was estimated at 11.46 years. In DB plans managed by Systemically Important Entities, the average duration of liabilities is 11.53 years. The figures point to mature pension plans, highlights the report.

Credit risk

Credit risk was assessed based on portfolio Expected Loss (PE) by estimating the probability of default of corporate bonds with credit rating. For the share of private securities held by the pension plans that are not rated (approximately 10%), a discretionary method was used. The sum of Expected Loss of rated bonds plus non-rated securities was called Aggravated Expected Loss (PEA).

Despite a slight deterioration in credit quality, the analysis of potential losses on financial assets indicated that credit risk is irrelevant in systemic terms. Considering the low participation of private securities in Brazilian occupational pension fund portfolios, the expected loss, even when aggravated, is close to 0.20% of the total.

Nevertheless, the study shows isolated cases of pension plans with high aggravated expected loss - representing more than 30% of private securities portfolio - suggesting poor asset selection, credit risk management issues or potential investment fraud.

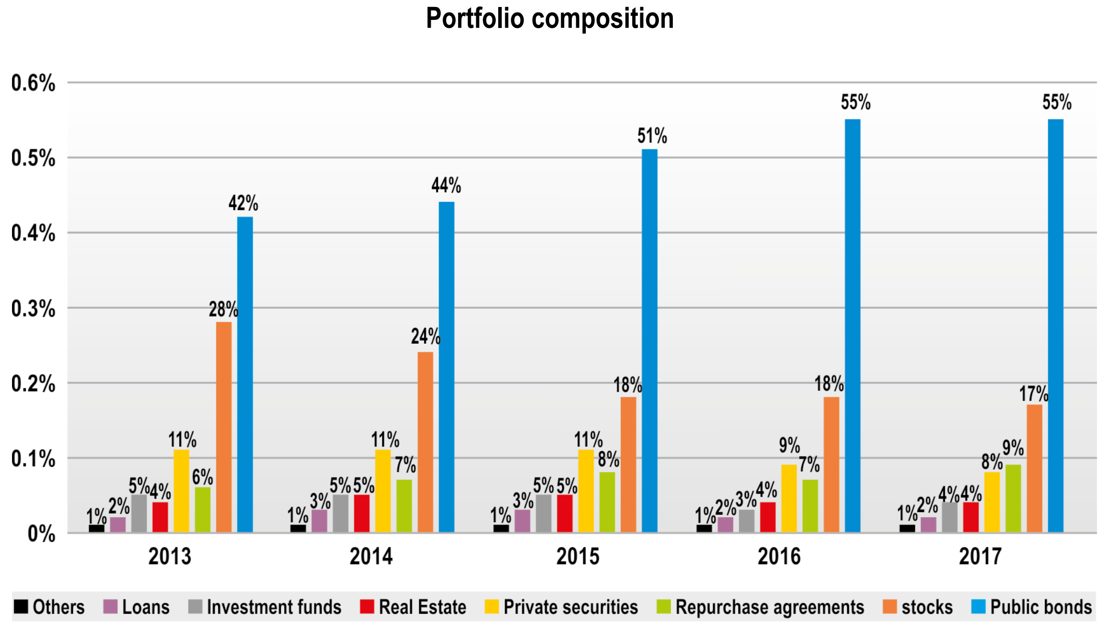
Investments

Including repurchase agreements, investments in federal government bonds over the last few years accounted for 64% of portfolios. Notwithstanding, says the report, there are significant differences between DB, DC and Variable Contribution (CV) pension plans in regards to investments in other asset classes. Allocations in private securities stand out in DC and VC schemes, for instance, representing 15% and 11% whereas stocks account for 7% and 10%, respectively.

In DB plans, excluding the portfolio of the largest Brazilian benefit plan, which is highly concentrated in shares, the average portfolio distribution is: variable income (7%); federal public bonds and repurchase agreements (67%); private securities (15%) and real estate (6%).

According to Fábio Coelho, head of the supervisory agency, one of the highlights of the stability report is the good investment performance. "Falling interest rates and stock market performance combined resulted in average returns of 11.5% per year, equivalent to inflation plus a real rate of return of more than 9% pa", he says.

In fact, the best performing asset class for Systemically Important Entities was variable income, with average returns of 18%, followed by fixed income - mainly federal government bonds (10%). Outside the ESI universe, variable and fixed income classes also recorded the highest returns: 25% and 10%, respectively.



Source: Previc

Several asset classes had their share of portfolio reduced between 2014/15 and 2017: real estate (4.6% to 4.0%); private equity (2.8% to 1.52%) and Receivables Investment Funds - FIDC (0.30% to 0.17%). The document also emphasizes the low proportion of foreign investments, totaling approximately BRL 2.5 billion or 0.3% of total assets at the end of 2017.

In general, considering the particularities of each plan, adds Coelho, falling interest rates on government securities should provide greater investment diversification in assets with risk-adjusted returns. “This is what we expect in the medium term although recent market volatility will likely allow for an increase in fixed income returns.”

Regarding foreign investments, the Managing Director notes that these are “risk diversification options as well as hedging strategies given the expectation for more domestic volatility”. Nonetheless, foreign asset prices are still high for Brazilian pension funds, he adds.

Actuarial risk and regulation

Actuarial discount rates have been reduced in line with the downward trend of the economy’s real interest rate. In 2017, in ESIs and Non-ESIs, Defined Benefit plans had average annual actuarial rates of 5.31% and 5.36%, respectively. About 125 plans have actuarial rates above 5.5%. Despite expected short-term volatility, the supervisory agency does not envisage stressful conditions for the payment of benefits.

When it comes to regulation, PREVIC says it remains committed to improving the framework applicable to pension funds. Asked about the restrictive nature of the regulatory investment model in Brazil, which could be a disincentive for further portfolio diversification, Fábio Coelho is categorical: “Resolution CMN n. 4,661 allows for investments in a wide range of assets. Restrictions seek to mitigate risks considered too high or difficult for pension funds to manage and control.” ■

Regulation sets off new governance cycle

Accounting, risk transfers and actuarial rules were reviewed in line with new investment regulation, lower interest rates and increased longevity

The year ends with a great deal of regulatory innovation for the occupational private pension system. New rules, announced in September by the supervisor PREVIC during the 39th Brazilian Congress of Closed Complementary Pensions, organized by ABRAPP in the city of Florianopolis, Brazil, apply not only to EFPCs[1] investments, but also to risk sharing mechanisms with the insurance sector as well as accounting and actuarial

1. The acronym "EFPC" stands for *Entidade Fechada de Previdência Complementar*. It is used to refer to entities that manage occupational "closed" pension schemes (as opposed to "open" or individual pension plans managed by banks and insurance companies).

Gradual implementation of the norms, with most changes becoming mandatory only in 2020, was one of the proposals made by ABRAPP and ANCEP to the supervisor PREVIC

practices of pension plans. Industry experts argue that key changes were implemented after a wide-ranging debate and that the new normative framework aims to simplify and modernize regulatory requirements in line with evolving governance practices. "There is no need to worry too much about operational details and deadlines. We are not in a race against the clock", says PREVIC's Managing Director, Fábio Coelho.

New reality

Regulatory modernization was indeed necessary after CMN Resolution n. 4,661 came into force earlier this year, thus requiring an updated accounting framework aligned with new investment rules, remarks Roque Muniz, President of ANCEP (National Association of Pension Entity Accountants).

He believes that important provisions have been introduced, adding more credibility to pension funds' financial statements. "The goal is to make pension fund accounting as transparent as possible. In this regard, the new chart of accounts will give the user a better view of investments, mathematical provisions, deficits and surpluses."

Gradual implementation of the norms, with most changes becoming mandatory only in January 2020, was one of the proposals made by ABRAPP and ANCEP to the supervisor PREVIC. The objective is to ensure that EFPCs have enough time to adjust their accounting structures. Thus, in 2019, the chart of accounts will only include new items deemed indispensable, such as the outsourcing of pension risks to insurance companies.

Christian Catunda, PREVIC's Director of Technical Guidance and Norms, points out that the chart of accounts, previously detailed by means of a Resolution issued by the regulator, should now be included in a Normative Instruction under the responsibility of the supervisor itself. "We also understand that the gradual phasing in of requirements would give pension funds more time to prepare."

Another important change was made in the formal structure of the Normative Instruction to promote a better alignment of pension accounting and CMN Resolution 4,661, explains Geraldo de Assis, National Executive Secretary of ABRAPP's Regional Technical Accounting Commissions. The new wording of the rule would once again foresee ten instead of eleven items as of today. "The new wording goes hand in hand with large asset groups defined by Resolution 4,661 (fixed income, variable income, structured investments, etc.). We believe that accounting standards must strictly reflect pension fund investment practices."

It was suggested that "Group 9" accounts be separated from management accounts. Ideally, such accounts should be segregated from the monthly balance sheet to be sent to the supervisor. "We believe it would be wise to include them in a different report to ensure greater transparency. Also, financial statements are not meant to provide managerial and non-accounting information", explain Assis.

The review also integrated all expenses in the Project Management Plan (PGA), which means that pension entities' administrative expenses are now all in the same group, ceasing to be segregated between pension administration and investment management expense groups. From now on, the data is consolidated, which was an old call from the industry.

Risk-sharing arrangements

After going through a public consultation and having procedures detailed by a Normative Instruction, risk transfers between pension funds and insurance companies should gain momentum. Analysts expect increased demand for products covering not only risks arising from disability or death of plan members and retirees, but also survival risks of retirees. As far as longevity risk insurance products are concerned, however, experts point out to difficulties for this type of contract to be offered in the short term.

The supervisory agency reinforced the need for any payments made by the insurer to the pension entity, other than as indemnities, to be included in the insurance policy and earmarked for the respective benefit plan. For the sake of operational transparency, the pension entity is also required to adequately inform active and retired members about the insurance policy, claim payments criteria and amounts to be used to pay for the premiums.

"The Normative Instruction sets forth minimum requirements for risk sharing, making pension managers more comfortable when engaging in risk transfer operations", argues Sergio Cardoso, Professor of the Federal University of Ceará and member of ABRAPP's Technical Committee of Pension Plans and PREVIC's National Commission of Actuary.

Cardoso believes that the new norm allows for enough flexibility so that the Brazilian insurance market can start offering long-awaited survival coverage, opening up new possibilities for the occupational pension system. He notes that risk sharing mechanisms rely on standards and specificities of two distinct segments – insurance and private pensions – and there are challenges that

> The new wording of the accounting rule goes hand in hand with large asset groups defined by Resolution n. 4,661, faithfully reflecting pension fund investment practices

Demand for disability and death risks coverage is expected to increase, while longevity risk sharing mechanisms will likely take longer to become available

must be addressed by market practices.

In addition, Brazilian pension funds and insurance companies still lack sufficient uniformity in their understanding of survival – and even more so – longevity risk transfers, observes Mizael Machado, Managing Partner of Apoena Brokers. Therefore, the norms will likely have a more practical effect only after all players, including reinsurance companies, engage in wide-raging discussions. “It is necessary to put together a technical panel to clear doubts that may vary from insurance market jargon to the procedures to be adopted should a claim arise”, reinforces Wesley Crespo, Managing Partner of Apoena Brokers.

While the provisions of the new Normative Instruction tend to boost the survival risk market, it is necessary to move forward and produce a new regulatory review to encourage longevity risk transfers, notes Nelson Emiliano, Actuarial Technical Director of Mongeral Aegon. “The longevity swap segment is very new, thus requiring another round of normative review, especially in terms of accounting.”

This very important type of coverage allows EFPCs to reduce liabilities. However, there are operationalization issues to be considered, which is likely to happen only when products start entering the domestic market, adds Emiliano. “Since these products are customized, it is not feasible to legislate before knowing their characteristics.”

The Mongeral Director notes that survival and longevity risks have never been a genuine concern for Brazilian pension funds, which have benefited from high interest rates. But it is about time private pension entities start considering insurance products that can help prevent future problems.

Specialists argue that survival risk transfers tend to experience a natural increase in supply and demand from now on. On the other hand, the cost of such products may become an obstacle, so it is necessary to wait and see how the market behaves, analyzes the Sérgio Cardoso.

Actuarial standards

In October, the regulator (National Board of Complementary Pensions - CNPC) issued new technical and actuarial parameters to guide the treatment of deficits and surpluses in pension plans. Previous norms were replaced by the new set rules, said to be more in line with the system’s necessities.

The actuarial regulatory framework review had been discussed by industry stakeholders since July 2017, says João Marcelo Barros Carvalho, Vice-President of the Brazilian Institute of Actuaries (IBA) and ABRAPP’s Technical Advisor. After much debate, industry stakeholders, along with PREVIC's National Actuarial Commission, agreed it was time to update the normative.

Smoothed contributions

According to Christian Catunda, PREVIC's Director of Technical Guidance and Norms, one of the most relevant changes is the incentive for pension funds to address their deficits in full. "Previous regulation (CGPC Resolution n. 26) allowed for the partial correction of deficits based on the average liability duration of each plan", he says. "The new rule provides an incentive for the underfunding to be addressed in full in exchange of longer recovery periods."

This means that pension funds will have more time to treat deficits as long as two requirements are met (in addition to full equation): the plan is closed and liquidity and solvency evaluations are carried out to substantiate this decision.

Thanks to this change, it is now possible to reduce the value of extraordinary contributions paid by active members and sponsors so as to correct any underfunding. In 2015, when solvency regulation determined that the duration of liabilities should be considered for deficit treatment purposes, the recovery period was initially set at 1x duration. In the following year, the reference period adopted was 1,5x duration of plan liabilities.

"From 2019, deficit corrections will be fairer since the plan needs to be closed, which means that new members will not be joining. The ones that remain in the plan are in fact 'responsible' for the deficit, so a lifelong amortization period in these cases is a natural solution", says João Marcelo Barros.

Another relevant aspect is that deficits being currently addressed may be adapted to the new rule as long as basic criteria is met. "This is very important because some plans have chronic underfunding with extraordinary contributions reaching 30%. In some cases, these contributions may be reduced if amortization periods are longer."

ETTJ and volatility

Equally important, believes João Marcelo Barros, is the extension of the reference period used to calculate the parameter interest rate to discount pension liabilities. Presently, this rate is based on the moving average of inflation-linked government bonds over a three-year period.

"This interval caused the parameter interest rate to vary considerably from one year to the next. From now on, a five-year interval will help reduce volatility", explains Christian Catunda. The rule is expected to smooth the adjustments made in retirement plan liabilities.

The new regulatory framework will

The reference period used to calculate the parameter interest rate to discount pension liabilities was adjusted from three to five years

Recent changes, albeit important, left out some issues that will require further debate, such as how to handle different cohorts within a pension plan

also result in operational improvement by allowing pension entities to stop using only individual mathematical reserves to address deficits. Instead, it foresees a pooled percentage to be paid by each group of active or retired members. “In practice, pension funds already do this polling since calculating individual percentages caused many operational hurdles, so the rule came to formalize the method”, says Catunda.

The review also matched the deadlines for recovery plan implementation with those of pension funds costing plans. It is a relevant measure, argue specialists, with both reference periods now converging to the month of April.

Finally, the new regulation established a deadline for EFPCs sponsored by public entities - and regulated by Complementary Law n. 108 - to submit recovery plans to the competent supervisory authorities (*Secretaria de Coordenação e Governança das Empresas Estatais* - SEST or municipal/state supervisory bodies).

Regulatory benchmark

To the President of SINDAPP (National Union of Occupational Pension Funds), Jarbas de Biagi, the consolidation of actuarial rules is a milestone for the system, having dealt with a series of long-awaited demands. “Lifelong deficit amortization periods are the best solution. If by any chance the pension plan becomes overfunded, there is the possibility of suspending extraordinary contributions.”

Recent changes, albeit important, left out some issues that will require further debate, highlights João Marcelo Barros. Among them is how to handle different cohorts within a pension plan and the best way to address deficits and surpluses in Variable Contribution (VC) schemes, since the main focus has been on Defined Benefit plans, observes the actuary. “PREVIC and CNPC have promised a new regulatory review in 2019 to deal with both subjects, something that the industry is looking forward to.”

Barros also notes that changes have been made to improve the overall format of the new actuarial regulation, with several points in Resolutions n.18 and 26 being withdrawn and disciplined by means of Normative Instruction. An example is the mortality table that must be used to calculate minimum funding requirements. “At present, the regulation mandates the use of Table AT-83 and this will not change, but it will be provisioned in a Normative Instruction instead of a Resolution. The advantage is that any future changes will be rapidly defined by PREVIC, without the need for regulator’s approval.” ■

A possible solution for the Brazilian pension problem

FLÁVIA PEREIRA DA SILVA

Proposed reform aims to strengthen the capitalization pillar by allowing the use of FGTS in the purchase of private benefit plans

President-elect Jair Bolsonaro has continuously reaffirmed the need to reform the Brazilian social security system, a requisite to balance the country's public accounts. He is right. After all, Brazil, although relatively young, spends almost the same as greyer countries to finance its public pensions. The topic was discussed during the most recent Brazilian Congress on Closed Complementary Pensions, organized by ABRAPP, at which

"One of the causes for the enormous informality in Brazil is precisely the payroll deductions to finance social security"

the FIPE /USP[1] proposal was discussed, recommending the establishment of a new capitalization pillar and the use of the FGTS[2] for pension purposes.

Hélio Zylberstajn, FIPE/USP Professor and Coordinator of the National Forum of Long-Term Savings, says that pensions and labor costs are closely related. "Pension reform proposals hardly ever touch on this point. One of the causes for the enormous informality in Brazil is precisely the payroll deductions to finance social security."

The economist notes that about ten years ago, when his team carried out the first study using microsimulation, they found that if INSS[3] had to finance only contributory benefits, it would need 17% instead of 31% or more of payroll (percentage paid by employers and employees) that it currently collects. "There is excessive taxation today because of the design of the system, since INSS has to finance non-contributory benefits as well."

Another important issue is that the Brazilian social security is "extremely ambitious" for a public pension system, explains Zylberstajn. "The INSS ceiling is almost three times average earnings. We propose a much lower ceiling so that the system can focus on the bottom of the pyramid and cost less because of that."

The expert adds that for every BRL 100 that the worker earns, there is a BRL 144 cost to finance public pensions and FGTS, excluding other costs such as occupational accident insurance. "In our proposal, the cost would go from BRL 144 to BRL 121, a drastic reduction on labor costs, with a positive impact on the labor market as a whole."

He also notes that there are inequalities in retirement conditions, with the poor retiring later than the non-poor. "When pension reform discussions are held, this fact is frequently overshadowed and even distorted", says the economist, adding that the most recent attempt to reform the Brazilian social security system, during the government of President Michel Temer, aimed precisely at equalizing retirement conditions for all. "Labor issues and public pensions need to be analyzed together. It is not possible to reform pensions without thinking about the labor market and payroll."

1. The Institute of Economic Research Foundation (FIPE) is a nonprofit private sector organization founded in 1973 to support the Economics Department of the School of Economics, Administration and Accounting of the University of Sao Paulo (USP). It has an important role in the areas of education, projects, research and development of economic and financial indicators in Brazil.

2. Created in 1967 by the Federal Government, the *Fundo de Garantia do Tempo e Serviço* (FGTS) is a severance indemnity fund for employees that can be accessed when the worker is laid off without just cause, among other situations, such as the purchase of a home.

3. The National Institute of Social Security (INSS) manages the Brazilian General Regime of Social Security.

Total imbalance

"Brazil is a young country with the same pension costs as older ones", argues Zylberstajn. Presently, 13% to 14% of GDP is used to finance social security, which is "unsustainable" according to the specialist.

There are many asymmetries in the system, beginning with the value of benefits. 99% of benefits paid by INSS are up to 5 minimum wages[4]. Among public servants, about half (47%) are above this level. In terms of cost, 98% of what INSS collects is used to finance pension benefits up to 5 minimum wages, while among civil servants, 79% of total funds are used to pay for higher value pension benefits.

"In 2015, there were about 33 million INSS beneficiaries and less than 4 million in civil servants' special regimes. But according to the Coordinator of the National Forum of Long-Term Savings, out of every BRL 100 spent, BRL 40 goes to civil servants. "It's a total imbalance", he adds.

How to make the reform?

According to FIPE's reform proposal, there would be new pensions for new entrants in the labor market. To do so, regulators could pick an initial reference year from which those who are born are covered by the new system. Whoever was born before the reference year remains in the old system, being able to migrate to the new one if he/she so wishes.

The idea is to provide a high replacement ratio for the bottom of the pyramid, while establishing minimum retirement ages of 65 or 67 for both men and women. The contribution period would be 40 years for men and 35 years for women. Benefit values would be calculated taking into account contribution periods and the minimum retirement age. Thus, if the worker reaches the minimum age after having contributed for 20 years, for instance, he/she would be entitled to half the benefit value; if contributed for 30 years, ¾ of pension value, and so on.

Four pillars

The new system is structured in four pillars: the first pillar is non-contributory and universal, financed by the National Treasury, covering the Basic Income for the Elderly (RBI). It would be a small benefit, with no link to the minimum wage, whose only eligibility criteria is reaching the minimum retirement age. The same benefit value would apply to the rich and the poor.

The second pillar, called Contributory PAYG Benefit (BCR), has a maximum universal value of BRL 1,500, including public servants and armed forces personnel. In this case, if the insured

4. 954 BRL/Month in November of 2018. 1 BRL = 0.26 USD as of Dec 12, 2018.

In 2015, there were 33 million INSS beneficiaries and about 4 million civil servants in special pension regimes. But out of every BRL 100 paid in pensions, BRL 40 went to public employees

In addition to a retirement plan, workers would purchase life and disability insurance, boosting domestic insurance and long-term savings markets

person has contributed throughout his life on BRL 2,000 monthly earnings, for example, he/she would receive BRL 500 from the first pillar plus the maximum benefit value of the second pillar, totaling BRL 2,000. "This worker would have a very generous replacement rate in relation to his/her income before retirement", explain Zylberstajn.

The third pillar comprises the Contributory Funded Benefit (BCC), dedicated to higher income workers, although it is open to everyone's participation. The idea is to allow the use of individual FGTS account balances to purchase a pension plan from pension funds, insurers or banks. Once invested in capital markets, the FGTS funds would achieve higher returns. Workers would be able to use such funds to purchase a pension plan as long as they accumulate unemployment insurance in his or her individual account, which would be linked to the CPF (Individual Taxpayers' Registry).

In addition to a retirement plan, workers would purchase life and disability insurance. "This pillar would boost the domestic life insurance and long-term savings markets since funds may only be withdrawn in case of retirement or death."

FIPE also advocates the maintenance of the 40% fine on total individual FGTS account balance - to be paid by employers upon employee's dismissal. However, instead of going to the worker who is being laid off, the amount would be allocated in a common fund so that it can be socialized and distributed to the basis of the pyramid, that is, to individual accounts with lower balances. "It would make the system collective and solidary", argues the specialist.

The fourth pillar, called the Voluntary Contributory Funded Benefit (BCVC), could be linked to the third pillar, encompassing voluntary, complementary pension plans. "We believe that the funded pillar would need 5% or 6% contribution rates for employers and workers (each). It would increase the efficiency of the labor market allocation factor", says Zylberstajn.

Transition rules

In order to discourage migration from the old to the new pension system, an equalizing contribution rate would be created during the first few years. As the two systems consolidate, this rate (applicable to the old and the new pension systems) could be gradually reduced.

It would also be interesting to have some sort of mechanism to enable the use of public sector assets to finance the transition. Therefore, aiming at a more equitable burden sharing, contributions from public servants, including retirees, would be increased. "There is no way to make this transition if we do not reduce the cost of providing these benefits a bit", notes Hélio Zylberstajn. ■

ABRAPP

Statistical Data

HIGHLIGHTS - JULY/2018

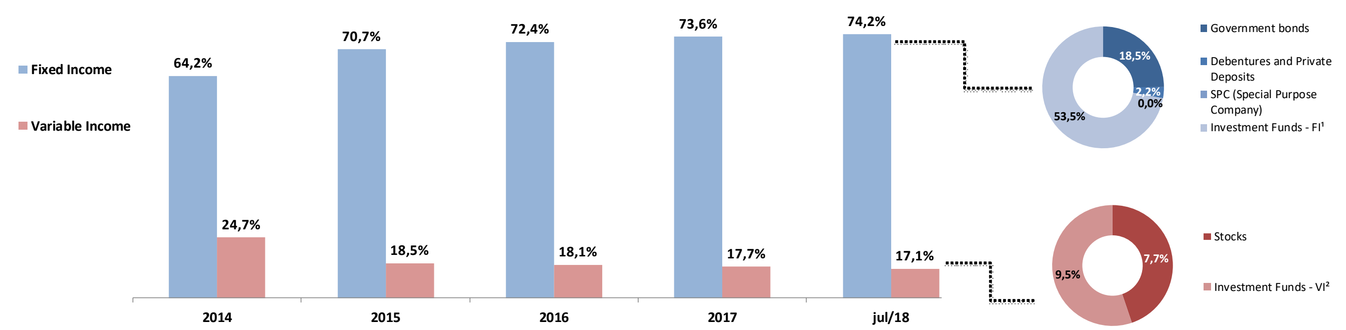
The result of aggregate pension fund portfolio was 2.06%, surpassing the TJP (parameter interest rate), that stood at 0.77% in July. This reinforces the recovery trend of the aggregate portfolio, which was equivalent to the TJP in the last twelve months. Fixed Income, representing 74.2% of assets, provided a 1,38% return whereas Variable Income, corresponding to 17.1% of total assets, yielded 5.48% in July, the best performing asset class in the period. Total industry assets reached BRL 856 billion, representing 12.8% of GDP.

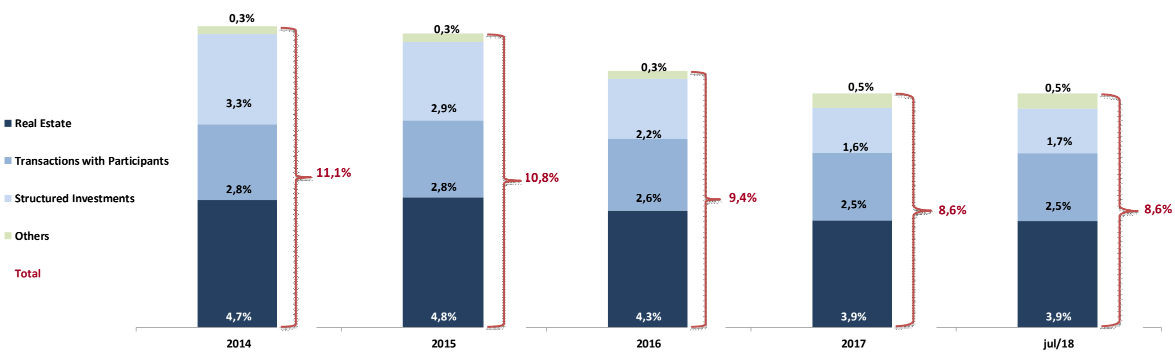
I. AGGREGATED PORTFOLIO BY TYPE OF INVESTMENT (in BRL million)

Asset classes	2011	%	2012	%	2013	%	2014	%	2015	%	2016	%	2017	%	jul/18	%
Fixed Income	349.957	61,0%	396.046	61,7%	386.773	60,4%	431.140	64,2%	483.907	70,7%	546.764	72,4%	592.735	73,6%	609.368	74,2%
Government bonds	90.442	15,8%	98.639	15,4%	67.446	10,5%	83.351	12,4%	105.949	15,5%	131.273	17,4%	142.564	17,7%	151.831	18,5%
Debentures and Private Deposits	27.508	4,8%	32.619	5,1%	26.672	4,2%	27.099	4,0%	24.473	3,6%	23.843	3,2%	21.341	2,7%	17.955	2,2%
SPC (Special Purpose Company)	193	0,0%	213	0,0%	186	0,0%	160	0,0%	142	0,0%	139	0,0%	130	0,0%	88	0,0%
Investments Funds - FI[1]	231.814	40,4%	264.575	41,2%	292.469	45,7%	320.530	47,7%	353.344	51,6%	391.508	51,8%	428.700	53,3%	439.494	53,5%
Variable Income	172.420	30,1%	183.621	28,6%	185.755	29,0%	166.267	24,7%	126.869	18,5%	137.014	18,1%	142.703	17,7%	140.670	17,1%
Stocks	80.407	14,0%	89.404	13,9%	84.213	13,2%	77.026	11,5%	58.445	8,5%	71.536	9,5%	66.706	8,3%	63.029	7,7%
Investments Funds - VI[2]	92.013	16,0%	94.217	14,7%	101.542	15,9%	89.241	13,3%	68.425	10,0%	65.478	8,7%	75.997	9,4%	77.642	9,5%
Structured Investments	13.347	2,3%	17.282	2,7%	19.355	3,0%	22.467	3,3%	19.706	2,9%	16.574	2,2%	13.116	1,6%	13.582	1,7%
Emerging Companies	360	0,1%	359	0,1%	346	0,1%	304	0,0%	258	0,0%	326	0,0%	340	0,0%	298	0,0%
Private Equity	11.875	2,1%	15.016	2,3%	16.819	2,6%	19.546	2,9%	17.422	2,5%	14.342	1,9%	10.963	1,4%	11.545	1,4%
Real State Fund	1.112	0,2%	1.908	0,3%	2.191	0,3%	2.617	0,4%	2.026	0,3%	1.906	0,3%	1.813	0,2%	1.740	0,2%
Real Estate	20.685	3,6%	25.811	4,0%	28.988	4,5%	31.450	4,7%	32.798	4,8%	32.485	4,3%	31.740	3,9%	32.003	3,9%
Transactions with Participants	14.909	2,6%	16.352	2,5%	17.291	2,7%	18.705	2,8%	19.423	2,8%	19.969	2,6%	20.105	2,5%	20.617	2,5%
Loans to Participants	12.995	2,3%	14.593	2,3%	15.685	2,4%	17.217	2,6%	17.950	2,6%	18.546	2,5%	18.746	2,3%	19.248	2,3%
Mortgage Loans	1.914	0,3%	1.760	0,3%	1.606	0,3%	1.488	0,2%	1.473	0,2%	1.424	0,2%	1.360	0,2%	1.369	0,2%
Others[3]	2.411	0,4%	2.613	0,4%	2.165	0,3%	1.901	0,3%	2.213	0,3%	2.289	0,3%	4.405	0,5%	4.501	0,5%
Total	573.729	100,0%	641.725	100,0%	640.328	100,0%	672.054	100,0%	684.916	100,0%	755.096	100,0%	804.803	100,0%	820.742	100,0%

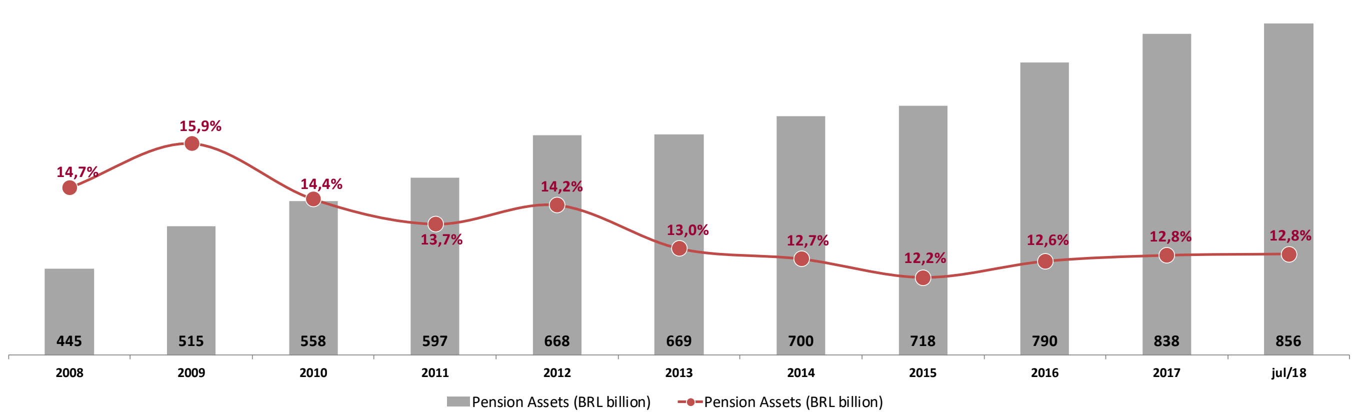
Notes: [1] Includes Short Term, Denominated, Fixed Income, Multimarket, Exchange Rate and Receivables Investment Funds ; [2] Includes Stocks and Market Indexes; [3] Includes External Debt, Stocks - Foreign Listed Companies, Other Receivables, Derivatives, Others.

II. PENSION FUND ASSET EVOLUTION BY TYPE OF INVESTMENT





III. PENSION FUND ASSET* EVOLUTION *VERSUS* GDP



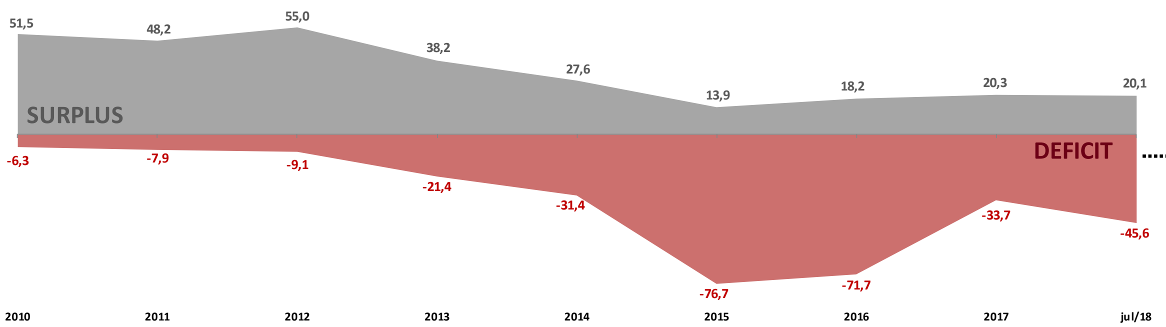
Source: IBGE/ABRAPP
Includes available assets, receivables and permanent assets
GDP refers to the third and fourth quarters of 2017 and first and second quarter of 2018
* Estimated value

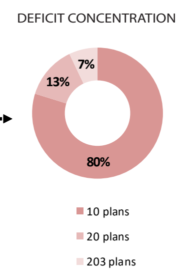
IV. EVOLUTION OF PRIVATE PENSION DEFICITS AND SURPLUSES

(in BRL billion)

Surplus									
	2010	2011	2012	2013	2014	2015	2016	2017	jul/18
Pension Funds	196	187	186	136	138	127	138	141	136
Pension Plans	580	550	516	402	417	398	438	437	425

Deficit									
	2010	2011	2012	2013	2014	2015	2016	2017	jul/18
Pension Funds	43	48	33	92	95	92	80	77	88
Pension Plans	121	153	111	257	237	239	205	193	233





V. REGIONAL COMPARATIVE DATA

Regional*	Number of Pension Funds**	%	Investments (BRL millions)	%	Active Members	%	Dependents	%	Beneficiaries	%
Center-North	34	12,7%	133.229	16,2%	630.792	23,5%	714.551	18,1%	151.184	18,0%
East	15	5,6%	33.728	4,1%	88.054	3,3%	135.150	3,4%	53.523	6,4%
Norheast	23	8,6%	23.219	2,8%	33.791	1,3%	87.823	2,2%	36.499	4,3%
Southeast	44	16,5%	372.600	45,4%	483.585	18,0%	1.260.834	32,0%	334.539	39,7%
Southwest	105	39,3%	200.353	24,4%	1.134.310	42,3%	1.257.879	31,9%	201.852	24,0%
South	46	17,2%	57.613	7,0%	310.660	11,6%	487.504	12,4%	64.411	7,6%
Total	267	100,0%	820.742	100,0%	2.681.192	100,0%	3.943.741	100,0%	842.008	100,0%

* Regional Composition: Center-North - RO, AM, RR, AP, GO, DF, AC, MA, MT, MS, PA, PI and TO. East - MG. Northeast - AL, BA, CE, PB, PE, RN and SE. Southeast - RJ and ES. Southwest - SP. South - PR, SC and RS.
** Pension Funds of the sample / Note: Number of active Pension Funds by region according to Quarterly Statistics (June/18) - PREVIC: Center-North = 37, East = 16, Northeast = 26, Southeast = 52, Southwest =116, South = 52 -> (Total = 299)

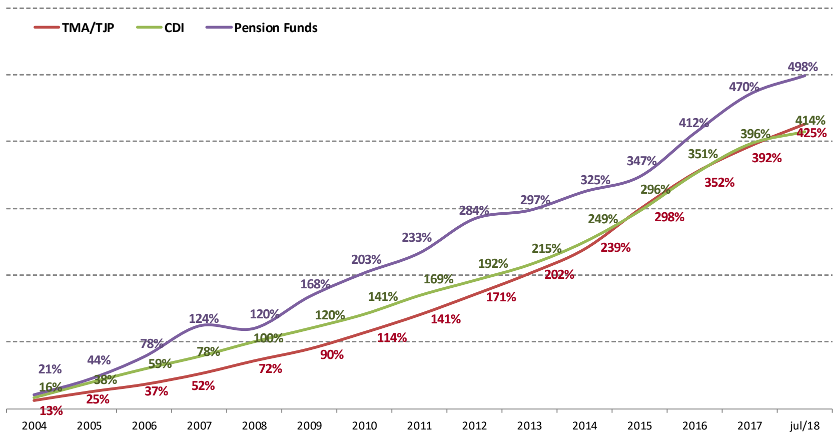
VI. COMPARATIVE DATA BY TYPE OF SPONSOR

Sponsorship	Number of Pension Funds*	%	Investments (BRL millions)	%	Active Members	%	Dependents	%	Beneficiaries	%
Industry/Professional Funds**	18	6,7%	8.239	1,0%	239.044	8,9%	455.228	11,5%	1.493	0,2%
Private	166	62,2%	321.638	39,2%	1.698.756	63,4%	2.103.946	53,3%	360.142	42,8%
Public	83	31,1%	490.865	59,8%	743.392	27,7%	1.384.567	35,1%	480.373	57,1%
Total	267	100,0%	820.742	100,0%	2.681.192	100,0%	3.943.741	100,0%	842.008	100,0%

* Pension Funds of the sample / Obs .: Number of active Pension Funds by type of Sponsorship according to Quarterly Statistics (June/18) - PREVIC: Institution = 21, Private = 189 and Public = 89 -> (Total = 299)
** Investment and population data also refer to other industry/professional pension plans managed by multi-sponsored funds

VII. RETURNS

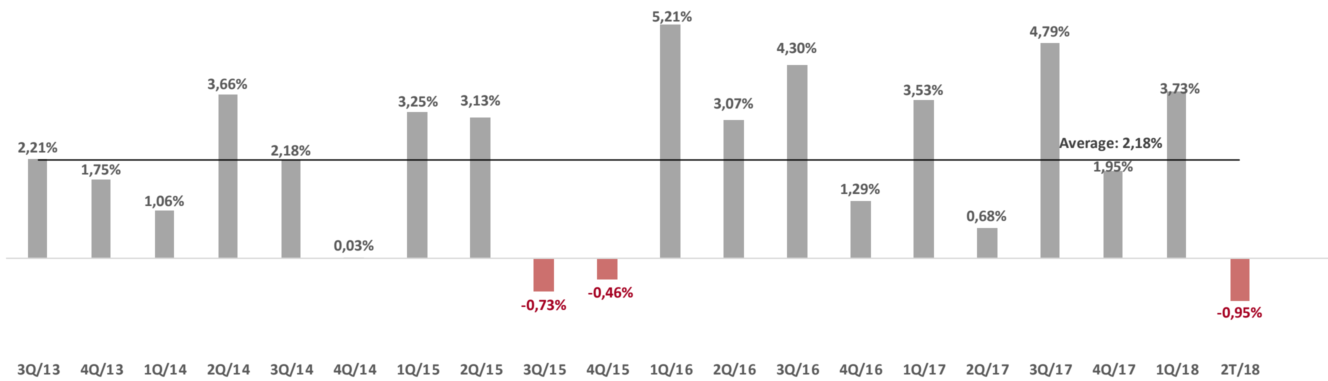
Period	CDI[2]	IMA General[4]	Ibovespa[3]	TMA/TJP[1]	Pension Funds*
2004	16,16%	10,89%	17,82%	12,50%	21,07%
2005	19,00%	18,19%	27,73%	11,35%	19,05%
2006	15,03%	17,53%	32,93%	8,98%	23,45%
2007	11,87%	12,63%	43,65%	11,47%	25,88%
2008	12,38%	12,69%	-41,22%	12,87%	-1,62%
2009	9,88%	12,90%	82,66%	10,36%	21,50%
2010	9,77%	12,98%	1,04%	12,85%	13,26%
2011	11,58%	13,65%	-18,11%	12,44%	9,80%
2012	8,40%	17,72%	7,40%	12,57%	15,37%
2013	8,06%	-1,42%	-15,50%	11,63%	3,28%
2014	10,82%	12,36%	-2,91%	12,07%	7,07%
2015	13,26%	9,32%	-13,31%	17,55%	5,22%
2016	14,01%	20,99%	38,94%	13,60%	14,56%
2017	9,93%	12,82%	26,86%	8,86%	11,36%
jul/2018	0,54%	1,41%	8,88%	0,77%	2,06%
2018	3,73%	3,89%	3,69%	6,70%	4,86%
12 months	7,08%	7,48%	20,18%	10,44%	10,44%
Accumulated	414,19%	472,87%	256,38%	425,48%	497,97%
Accumulated per year	11,88%	12,71%	9,11%	12,05%	13,05%



(1) TMA -> Maximum Actuarial Rate (until dec/14) according to CNPC Resolution n.9 from 11/29/2012.
TJP -> Parameter Interest Rate (CPI + upper limit of 5.65 % pa considering a duration of 10 years - according to IN No. 19/2014 and Decree No. 197 from 04.14.2015 PREVIC until dec/15); (CPI + upper limit of 6.59 % pa considering a duration of 10 years - according to Decree No. 186 from 28.04.2016 PREVIC); (CPI + upper limit of 6.66 % pa considering a duration of 10 years - according to Decree No. 375 from 17.04.2017 PREVIC); (CPI + upper limite of 6.39% pa considering a duration of 10 years - according to Decree No. 363 from 26.04.2018 PREVIC)
(2) CDI -> Interbank Deposit Rate
(3) Ibovespa -> Stock Index
(4) IMA General -> ANBIMA Market Index
*Estimated

Source: ABRAPP / BACEN / IPEADATA

VIII. PENSION FUND QUARTERLY RESULTS - AGGREGATE

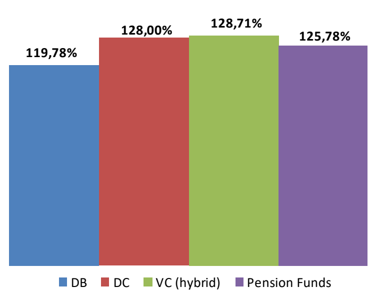


IX. AGGREGATE PORTFOLIO ALLOCATION BY PLAN TYPE

Segment	Defined Benefit			Defined Contribution			Variable Contriibution		
	BRL millions	% Modality	% Segment	BRL millions	% Modality	% Segment	BRL millions	% Modality	% Segment
Fixed Income	335.065	66,6%	56,3%	98.241	91,1%	16,5%	162.361	83,1%	27,3%
Variable Income	113.685	22,6%	81,0%	7.141	6,6%	5,1%	19.477	10,0%	13,9%
Structured Investments	9.813	1,9%	72,4%	652	0,6%	4,8%	3.084	1,6%	22,8%
Real Estate	28.201	5,6%	88,4%	449	0,4%	1,4%	3.244	1,7%	10,2%
Transactions with Participants	13.037	2,6%	63,2%	1.059	1,0%	5,1%	6.523	3,3%	31,6%
Others	3.496	0,7%	77,1%	276	0,3%	6,1%	761	0,4%	16,8%
Total	503.297	100,0%	62,4%	107.818	100,0%	13,4%	195.449	100,0%	24,2%

Note: Are considered the investments of the pension plans

X. ESTIMATED RETURN BY PLAN TYPE

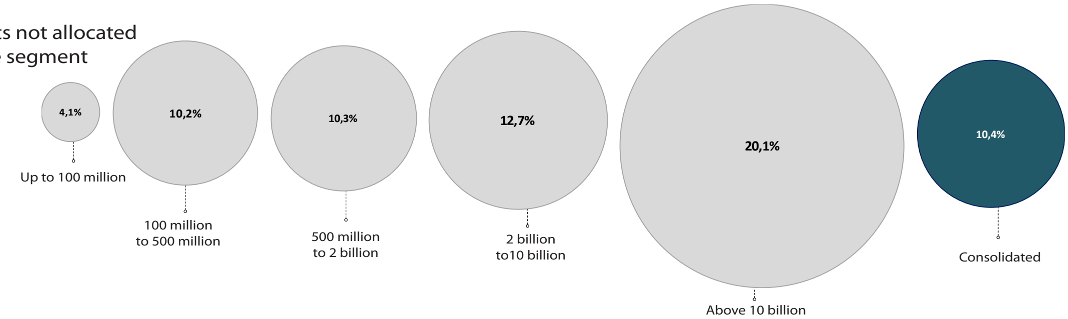


Period	Defined Benefit	Defined Contribution	Variable Contriibution	Pension Funds
2010	13,79%	9,76%	11,67%	13,26%
2011	10,04%	8,62%	9,96%	9,80%
2012	15,38%	14,90%	15,56%	15,37%
2013	3,96%	0,66%	1,52%	3,28%
2014	6,15%	10,22%	8,78%	7,07%
2015	3,15%	10,69%	9,32%	17,55%
2016	14,10%	16,40%	15,23%	14,56%
2017	11,68%	11,95%	10,36%	0,77%
jul/18	2,25%	1,55%	1,90%	2,06%
2018	4,89%	3,99%	4,98%	4,86%
Accumulated	119,78%	128,00%	128,71%	125,78%

XI. AVERAGE ALLOCATION (ARITHMETIC)BY TOTAL ASSETS UNDER MANAGEMENT

TOTAL ASSETS (in BRL)	Number of Pension Funds	Fixed Income	Variable Income	Structured Investments	Real Estate	Transactions with Participants	Others
Up to 100 million	33	95,9%	1,3%	0,0%	0,7%	0,2%	1,9%
100 million to 500 million	86	89,8%	5,8%	0,5%	1,5%	0,9%	1,5%
500 million to 2 billion	84	89,7%	5,7%	0,9%	1,9%	1,3%	0,5%
2 billion to 10 billion	52	87,3%	6,8%	1,7%	2,1%	1,6%	0,5%
Above 10 billion	12	79,9%	10,9%	2,0%	4,2%	2,5%	0,4%
Consolidated	267	89,6%	5,6%	0,9%	1,8%	1,2%	1,0%

Percentage of Assets not allocated in the Fixed Income segment



XII. TOP 15 LARGEST PENSION PLANS

DEFINED BENEFIT

	Plan	Pension Fund	Investments (BRL thousand)
1	PB1	PREVI	166.539.444
2	REG/REPLAN	FUNCEF	47.734.033
3	PPSP	PETROS	37.035.308
4	PLANO BD	REAL GRANDEZA	13.810.323
5	PBS-A	SISTEL	11.458.771
6	PLANO BD	VALIA	11.151.483
7	PLANO PETROS DO SIST. PETROBRÁS	PETROS	10.405.180
8	PSAP/ELETROPAULO	FUNCESP	8.994.435
9	PAC	FUNDAÇÃO ITAÚ UNIBANCO	7.848.934
10	PLANO V	BANESPREV	6.610.014
11	A	FORLUZ	5.980.974
12	PBB	CENTRUS	5.968.614
13	PLANO BANESPREV II	BANESPREV	5.870.994
14	PLANO UNIFICADO BD	FUNDAÇÃO COPEL	5.679.622
15	PSAP/CESP B1	FUNCESP	5.525.455

DEFINED CONTRIBUTION

	Plan	Pension Fund	Investments (BRL thousand)
1	PLANO ITAUBANCO CD	FUNDAÇÃO ITAÚ UNIBANCO	10.162.328
2	VISÃO TELEFÔNICA	VISÃO PREV	4.962.044
3	IBM - CD	FUNDAÇÃO IBM	4.182.890
4	PLANO DE APOS.SANTANDERPREVI	SANTANDERPREVI	3.645.510
5	PLANO	ODEBRECHT PREVIDÊNCIA	3.111.472
6	PLANO CD GERDAU	GERDAU PREVIDÊNCIA	3.102.936
7	CEEEPREV	ELETROCEEE	2.772.699
8	VIVAPREV	FUNDAÇÃO VIVA DE PREVIDÊNCIA	2.754.860
9	EMBRAER PREV	EMBRAER PREV	2.735.098
10	01-B	PREVINORTE	2.669.404
11	PAI-CD	FUNDAÇÃO ITAÚSA	2.514.233
12	PLANO PRECAVER	QUANTA - PREVIDÊNCIA	2.510.473
13	PLANO DE APOSENTADORIA	UNILEVERPREV	2.345.588
14	PREVDOW	PREVDOW	1.935.854
15	CD ELETROBRÁS	ELETROS	1.847.264

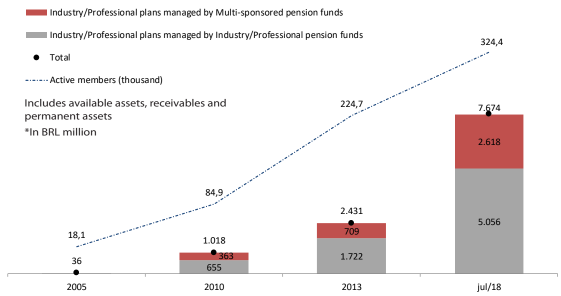
VARIABLE CONTRIBUTION

	Plan	Pension Fund	Investments (BRL thousand)
1	PLANO PETROS-2	PETROS	19.886.249
2	NOVO PLANO	FUNCEF	14.183.772
3	PREVI FUTURO	PREVI	13.092.573
4	B	FORLUZ	9.529.278
5	PLANO VALE MAIS	VALIA	8.428.968
6	TELEMARPREV	FUNDAÇÃO ATLÂNTICO	4.951.092
7	PPCPFL	FUNCESP	4.898.325
8	PCV I	TELOS	4.588.098
9	PLANO	PREVI-GM	4.244.560
10	PLANO III	FUNDAÇÃO COPEL	4.213.526
11	PLANO RFFSA	FUNDAÇÃO REFER	3.654.206
12	PS-II	SERPROS	3.253.189
13	PACV	INFRAPREV	3.172.441
14	CD	FACHESF	2.968.178
15	TCSPREV	FUNDAÇÃO ATLÂNTICO	2.710.369

INDUSTRY/PROFESSIONAL FUNDS

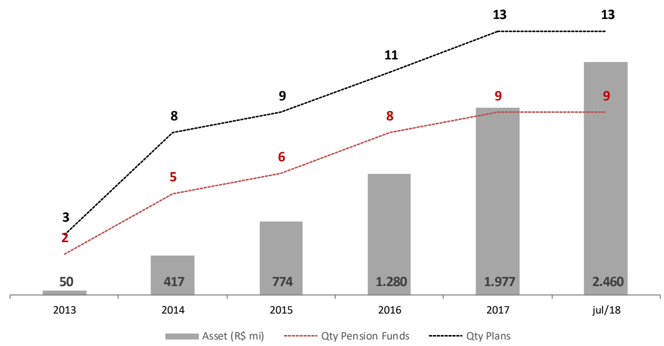
	Plan	Pension Fund	Investments (BRL thousand)
1	PLANO PRECAVER	QUANTA - PREVIDÊNCIA	2.510.473
2	UNIMED-BH	MULTICOOP	793.412
3	SICOOB MULTI INSTITUÍDO	SICOOB PREVI	702.228
4	OABPREV-SP	OABPREV-SP	684.531
5	ANAPARPREV	PETROS	547.541
6	PBPA	OABPREV-PR	327.982
7	PLANJUS	JUSPREV	205.447
8	PBPA	OABPREV-MG	169.704
9	PBPA	OABPREV-SC	160.135
10	ACRICELPREV	MULTIBRA INSTITUIDOR	139.387
11	PREVCOOP	QUANTA - PREVIDÊNCIA	131.366
12	COOPERADO	MULTICOOP	110.571
13	TECNOPREV	BB PREVIDÊNCIA	100.570
14	ADV-PREV	OABPREV-GO	99.118
15	PLANO DE BENEFÍCIOS II	MÚTUOPREV	98.713

XIII. INDUSTRY/PROFESSIONAL PENSION FUNDS ASSET EVOLUTION*



Industry/Professional plans	2005	2010	2013	2017	jul/18
Industry/Professional plans managed by Industry/ Professional pension funds (Qty)	18	18	22	22	22
Industry/Professional plans managed by Multi-sponsored pension funds (Qty)	-	28	34	37	39

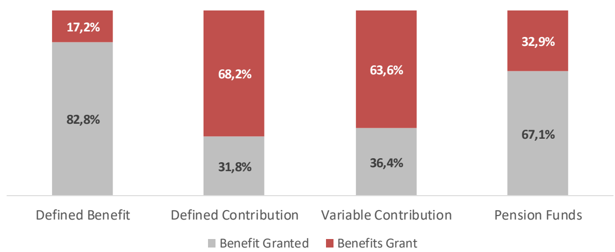
XIV. PUBLIC EMPLOYEES PENSION FUNDS ASSET EVOLUTION*



* In BRL million

XV. LIABILITIES

Percentage values of Mathematical Reserves



Percentage of Pension Funds and Pension Plans
% of Mathematical Reserves committed to Present Benefit Obligations

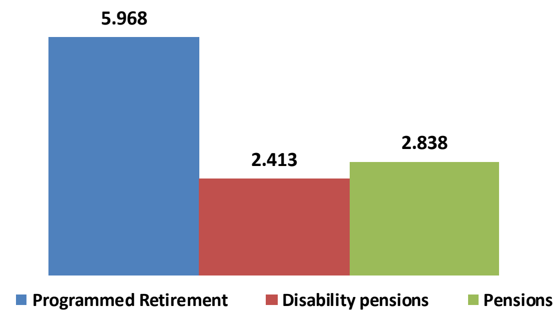
Type	Number of Plan	Up to 25%	25% to 50%	50% to 75%	75% to 100%
Defined Benefit	266	3,8%	11,3%	21,1%	63,9%
Defined Contribution	386	75,4%	15,0%	6,5%	3,1%
Variable Contribution	299	44,1%	31,1%	17,7%	7,0%
Pension Funds	263	28,1%	27,8%	27,8%	16,3%

* Only Pension Funds with available data were considered

XVI. BENEFIT STATEMENT

Type of Benefit	Total amount[1] (in BRL thousand)	Average Monthly Benefit Values[2] (in BRL)
Programmed Retirement	18.072.792	5.968
Disability pensions	668.819	2.413
Pensions	2.570.907	2.838

Note: The amount of benefits paid , while also considering the Continuous Cash aid , annuities and other benefits of Continuous Cash was in BRL 48.5 billion (dec 17) and 25,6 billion (jun 18).

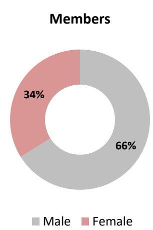


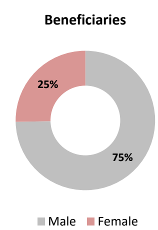
[1] Accumulated as of Jun 2018, considering a sample with 168 Pension Funds
[2] Accumulated average until Jun 2018 (in BRL).

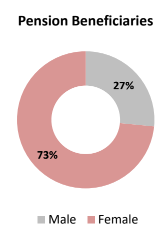
XVII. POPULATION STATISTICS*

AGE	Members		Beneficiaries		Pension Beneficiaries	
	Male	Female	Male	Female	Male	Female
Up to 24	5,9%	3,7%	0,1%	0,1%	3,2%	3,3%
25 to 34	20,4%	11,8%	0,1%	0,1%	1,1%	1,8%
35 to 54	31,9%	14,4%	10,0%	3,8%	5,0%	13,0%
55 to 64	5,8%	2,6%	30,2%	13,7%	5,0%	18,0%
65 to 74	1,3%	0,9%	23,5%	5,5%	5,5%	19,2%
75 to 84	0,5%	0,4%	8,9%	1,6%	4,7%	13,1%
Over 85	0,2%	0,1%	1,8%	0,4%	2,0%	5,1%
Total	66,1%	33,9%	74,7%	25,3%	26,5%	73,5%

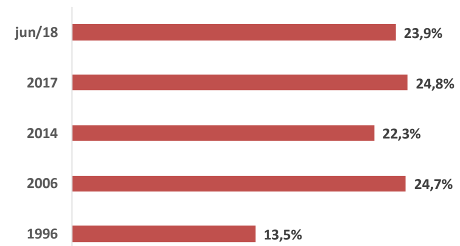
*Data from 2014 / Sample of 246 pension funds and more than 3,2 million people





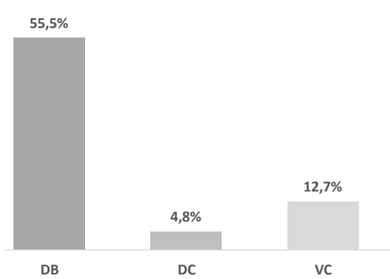


Pension Fund Maturity* - Evolution



*Number of benefit (retirees and pension beneficiaries) divided by the sum of active and retired members

Maturity Level by Plan Type



Percentage of Pension Funds and Plans according to Maturity

Type	Number of Pension Funds/ Plan	Up to 25%	25% to 50%	50% to 75%	75% to 100%
Defined Benefit	288	17%	13%	18%	53%
Defined Contribution	390	89%	7%	2%	2%
Variable Contribution	326	73%	14%	7%	6%
Pension Funds	313	59%	20%	12%	9%

XVIII. PENSION FUND RANKING

	PENSION FUNDS	INVESTMENTS (in BRL thousand)	ACTIVE MEMBERS	DEPENDENTS	BENEFICIARIES	Reference Year Population
1	PREVI	181.022.125	89.669	246.307	104.787	2018
2	PETROS	72.056.159	71.476	305.442	74.498	2018
3	FUNCEF	64.126.492	100.848	199.549	55.392	2018
4	FUNCESP	28.401.089	16.082	48.404	32.070	2018
5	FUND. ITAÚ UNIBANCO	26.492.848	34.981	2.562	19.742	2018
6	VALIA	22.431.967	74.929	298.489	23.143	2018
7	SISTEL	18.261.210	1.673	24.956	23.508	2018
8	BANESPREV	17.026.899	3.325	22.789	25.741	2018
9	FORLUZ	15.558.961	6.796	30.503	15.107	2018
10	REAL GRANDEZA	15.139.711	3.543	18.195	9.210	2018
11	FUNDAÇÃO ATLÂNTICO	10.680.745	11.026	46.933	15.249	2018
12	FUNDAÇÃO COPEL	9.975.977	10.992	9.014	8.394	2018
13	PREVIDÊNCIA USIMINAS	8.981.241	17.257	52.679	20.667	2018
14	TELOS	7.887.386	6.754	24.804	7.089	2018
15	MULTIBRA	7.262.956	58.126	96.122	9.473	2018
16	CENTRUS	6.917.540	525	1.608	1.534	2018
17	CERES	6.795.734	14.246	22.862	7.389	2018
18	FACHESF	6.745.261	5.390	16.170	9.715	2018
19	BB PREVIDÊNCIA	6.267.622	129.996	72.319	2.995	2018
20	VISÃO PREV	6.184.891	13.160	14.881	5.633	2014
21	ECONOMUS	6.082.464	10.485	19.394	8.749	2017
22	ELETROCEEE	6.056.331	6.674	13.541	9.261	2018
23	MULTIPREV	5.545.350	47.131	44.138	2.079	2018
24	SERPROS	5.435.131	9.641	24.664	4.512	2017
25	FUNDAÇÃO REFER	5.236.015	4.342	37.678	26.396	2018
26	CBS PREVIDÊNCIA	5.201.780	20.345	30.811	13.626	2018
27	FUNDAÇÃO IBM	4.906.804	10.877	13.044	1.314	2018
28	FUNDAÇÃO BANRISUL	4.694.860	10.891	16.289	7.521	2018
29	ELETROS	4.628.867	3.306	7.696	2.345	2017
30	CAPEF	4.491.344	6.956	14.072	5.253	2018
31	FUNBEP	4.384.437	701	7.931	5.696	2018
32	PREVI-GM	4.246.722	23.248	8.228	3.027	2017
33	GERDAU PREVIDÊNCIA	3.847.466	14.398	21.597	2.836	2016
34	PREVINORTE	3.834.511	5.478	6.342	1.709	2018
35	FIBRA	3.664.382	1.404	4.026	1.821	2018
36	SANTANDERPREVI	3.651.154	41.940	1.325	1.235	2017
37	BRF PREVIDÊNCIA	3.509.307	45.903	74.568	6.729	2018
38	INFRAPREV	3.343.558	9.029	14.405	4.318	2017
39	BRASLIGHT	3.283.738	4.369	11.860	5.620	2018
40	FUNDAÇÃO LIBERTAS	3.209.734	16.379	2.133	4.418	2018
41	CITIPREVI	3.133.958	8.531	-	1.192	2018
42	ODEBRECHT PREVIDÊNCIA	3.120.410	15.983	-	716	2018
43	ELOS	3.071.910	1.631	4.292	2.980	2016
44	UNILEVERPREV	3.067.165	13.229	681	1.498	2018
45	NUCLEOS	2.975.580	3.292	6.108	1.506	2018
46	FUNSSEST	2.954.901	6.327	-	2.919	2018
47	MULTIPENSIONS	2.946.465	40.088	56.842	1.706	2018
48	FUNDAÇÃO VIVA DE	2.818.849	60.103	145.553	-	2014
49	VWPP	2.811.007	46.503	58.998	1.963	2017
50	FUNDAÇÃO ITAÚSA	2.760.111	8.206	11.319	1.099	2018
51	FUNEPP	2.752.236	27.387	19.194	5	2014
52	EMBRAER PREV	2.739.492	17.902	12.168	953	2016
53	QUANTA - PREVIDÊNCIA	2.725.747	67.033	130.945	326	2018
54	ITAÚ FUNDO MULTI	2.723.998	29.116	6.817	822	2014
55	SABESPREV	2.680.378	13.023	36.987	7.725	2018
56	CELOS	2.545.106	3.525	7.743	5.284	2018
57	REGIUS	2.462.508	4.325	4.163	1.255	2018
58	METRUS	2.391.973	9.401	18.783	3.278	2018
59	ICATUFMP	2.370.955	43.268	37.124	1.825	2017
60	PREVIRB	2.352.955	502	1.741	1.572	2018
61	FUSESC	2.318.744	2.238	9.520	5.094	2018
62	MÚLTIPLA	2.021.603	23.123	18.221	666	2014
63	PREVDOW	1.936.970	3.340	5.003	715	2018
64	PREVIBAYER	1.854.327	6.459	-	2.054	2017
65	FUNSEJEM	1.835.117	21.776	25.048	818	2018
66	FAELBA	1.820.661	3.614	11.245	2.438	2018
67	INSTITUTO AMBEV	1.772.857	4.984	942	1.850	2014
68	JOHNSON & JOHNSON	1.744.873	5.749	6.842	973	2018
69	ENERPREV	1.732.728	4.498	9.460	1.984	2014
70	BANESES	1.624.789	509	530	-	2018
71	FUNDAÇÃO PROMON	1.578.159	1.619	4.628	764	2018
72	FASC	1.576.834	6.165	7.697	780	2018
73	FUNDAÇÃO CORSAN	1.563.336	5.388	10.811	3.770	2017
74	PREVI-SIEMENS	1.493.616	6.357	9.331	1.412	2017
75	FUSAN	1.468.136	6.741	13.835	2.800	2018
76	GEBSA-PREV	1.462.743	7.554	11.345	227	2014
77	PRHOSPER	1.424.941	3.244	2.467	1.560	2014
78	PREVDATA	1.373.969	3.133	7.634	1.731	2018
79	FIPECQ	1.366.537	1.585	4.670	446	2018
80	HP PREV	1.364.231	3.623	163	383	2018
81	FACEB	1.354.277	935	2.875	1.529	2018
82	PRECE	1.345.438	2.884	8.721	4.726	2018
83	FORD	1.341.126	12.625	20	698	2014
84	PREVI-ERICSSON	1.336.763	2.734	643	884	2018
85	FAELCE	1.280.552	1.063	3.906	2.411	2018
86	BASF	1.263.381	3.576	6.168	573	2018
87	SÃO BERNARDO	1.256.332	13.061	8.293	1.430	2017
88	PREVISC	1.238.126	13.797	21.932	1.372	2018
89	ACEPREV	1.217.747	4.093	7.205	1.891	2018
90	CIBRIUS	1.182.239	2.996	4.091	2.008	2017
91	SYNGENTA PREVI	1.119.841	2.799	4.782	291	2018
92	BRASILETROS	1.106.085	1.158	4.942	2.613	2016
93	PREVUNIÃO	1.104.970	4.901	8.356	759	2017
94	CARGILLPREV	1.096.719	8.873	12.682	278	2018
95	SÃO RAFAEL	1.086.486	1.156	2.407	761	2018
96	WEG	1.081.725	19.442	13.503	519	2018
97	PREVI NOVARTIS	1.063.451	2.765	-	530	2017
98	ISBRE	1.058.949	411	1.191	510	2018
99	IAJA	1.020.937	5.619	10.147	1.066	2017
100	FUNPRESP-EXE	1.006.084	58.276	-	27	2018
101	DESBAN	997.189	341	1.017	572	2018
102	ABRILPREV	988.938	5.792	7.937	616	2018
103	SP-PREVCOM	974.458	23.575	10.555	301	2018
104	MULTICOOP	972.149	8.015	12.087	62	2018
105	PREVIBOSCH	950.635	9.565	11.968	1.131	2018
106	BASES	947.109	408	1.063	1.510	2018
107	AGROS	938.701	5.496	6.584	811	2018
108	ECOS	910.740	72	908	728	2018
109	PLANEJAR	900.763	4.720	7.080	543	2018
110	MBPREV	895.416	11.886	2.299	781	2017
111	CELPOS	894.870	1.665	4.585	3.391	2017
112	PREVSAN	888.791	2.649	12.881	1.856	2018
113	FUNDAMBRAS	840.864	7.622	1.272	938	2018
114	DUPREV	818.107	2.784	431	255	2014
115	ULTRAPREV	812.990	9.458	2.763	170	2014
116	CYAMPREV	809.357	nd	nd	nd	2018
117	SEBRAE PREVIDÊNCIA	808.286	6.846	6.916	266	2018
118	COMPESAPREV	792.293	2.811	5.553	2.513	2018
119	SICOOB PREVI	792.000	99.203	32.823	497	2018
120	COMSHELL	782.463	1.411	2.516	525	2018
121	SERGUS	777.120	925	1.530	578	2018
122	ALCOA PREVI	735.589	6.110	12.226	160	2014
123	FUND. SÃO FRANCISCO	731.092	1.356	1.972	854	2018
124	OABPREV-SP	723.418	47.713	77.090	168	2018
125	FASCEMAR	712.234	3.919	4.864	1.508	2018
126	CAPAF	699.661	1.834	3.291	2.150	2018
127	ELETRA	683.451	1.188	3.174	1.252	2018
128	PREVICAT	668.475	1.878	-	862	2018
129	FABASA	667.399	4.247	14.751	718	2018
130	VIKINGPREV	642.946	3.819	87	307	2018
131	PREVICOKE	635.487	851	39	167	2017
132	PREVIPLAN	631.345	2.301	5.484	478	2014
133	PREVHAB	631.205	6	365	612	2017
134	FACEAL	620.069	1.190	-	710	2018
135	MSD PREV	615.317	1.154	1.774	212	2018
136	PREVEME	614.147	2.340	19	688	2018
137	MAIS VIDA PREVIDÊNCIA	603.398	1.386	2.078	76	2017
138	PORTOPREV	564.076	5.893	12.185	167	2018

XVIII. PENSION FUND RANKING

	PENSION FUNDS	INVESTMENTS (in BRL thousand)	ACTIVE MEMBERS	DEPENDENTS	BENEFICIARIES	Reference Year Population
139	PREVMON	563.592	2.945	5.017	87	2018
140	FGV-PREVI	560.776	2.227	2.482	139	2017
141	ENERGISAPREV	547.574	4.676	9.136	1.005	2018
142	PREVIM-MICHELIN	538.752	5.463	8.195	256	2018
143	MULTIBRA INSTITUIDOR	517.830	3.062	4.740	309	2018
144	INDUSPREVI	496.120	2.714	3.970	600	2017
145	FAPERS	488.748	1.630	2.857	815	2018
146	GOODYEAR	488.055	5.116	7.673	431	2017
147	BUNGEPREV	482.391	10.617	15.931	277	2018
148	SEGURIDADE	475.889	1.722	698	369	2018
149	SUPREV	472.215	3.747	2.977	1.064	2018
150	DERMINAS	470.295	5.969	-	4.074	2018
151	ABBPREV	464.989	4.233	2.137	230	2018
152	FACEPI	459.700	946	1.665	972	2018
153	GASIUS	458.971	30	685	1.058	2018
154	FAPA	445.752	847	2.382	302	2014
155	CP PREV	430.617	3.875	5.855	119	2018
156	FUTURA	420.840	1.119	1.678	398	2018
157	PFIZER PREV	417.110	2.383	1.022	157	2017
158	MENDESPREV	414.554	51	652	458	2018
159	CASFAM	410.210	5.380	2.925	920	2018
160	PORTUS	406.447	1.344	13.537	8.328	2018
161	CAPESESP	402.470	46.186	11.612	694	2017
162	CIFRÃO	387.591	594	1.203	1.053	2018
163	PREVCUMMINS	384.834	2.196	41	211	2018
164	PREV PEPSICO	380.762	10.269	14.771	120	2018
165	UNISYS PREVI	380.036	948	2	44	2017
166	PREVISCÂNIA	374.936	4.432	6	214	2017
167	RANDONPREV	374.316	9.946	17.718	252	2018
168	PREVINDUS	373.849	7.624	5.160	1.118	2017
169	POUPREV	373.076	1.236	1.877	90	2017
170	LILLY PREV	368.397	848	1.312	259	2018
171	P&G PREV	367.929	4.871	7.221	190	2017
172	ALPAPREV	366.448	28.749	35.502	205	2017
173	PREVIP	366.217	4.236	7.538	109	2017
174	CABEC	362.382	39	1.609	1.150	2018
175	VOITH PREV	347.439	2.047	3.058	118	2014
176	FAECES	337.993	1.010	2.116	955	2018
177	KPMG PREV	336.657	5.374	8.042	64	2014
178	MAUÁ PREV	335.228	2.702	4.052	109	2014
179	OABPREV-PR	329.855	14.996	19.866	98	2018
180	DANAPREV	328.558	4.781	7.169	129	2018
181	FASERN	325.648	792	1.979	523	2018
182	RAIZPREV	321.443	29.479	44.137	36	2018
183	TETRA PAK PREV	306.840	2.093	3.235	64	2018
184	EATONPREV	298.661	4.763	6.517	170	2014
185	SOMUPP	279.124	-	-	130	2018
186	CASANPREV	275.211	1.483	3.432	502	2018
187	PREVEME II	269.748	3.924	6.883	180	2018
188	RBS PREV	263.610	7.811	5.775	149	2017
189	PREVICEL	261.248	851	1.187	156	2018
190	MERCERPREV	259.098	1.846	2.771	30	2018
191	TEXPREV	250.088	528	792	202	2018
192	SUPRE	249.437	465	1.261	411	2018
193	MERCAPREV	245.879	1.387	2.071	73	2014
194	AVONPREV	241.554	4.772	759	109	2018
195	FUCAP	237.636	1.160	1.773	295	2018
196	FUNPRESP-JUD	236.200	10.312	1.348	-	2018

	PENSION FUNDS	INVESTMENTS (in BRL thousand)	ACTIVE MEMBERS	DEPENDENTS	BENEFICIARIES	Reference Year Population
197	CAPOF	232.786	89	440	415	2018
198	ROCHEPREV	230.141	1.237	1.600	58	2017
199	BOTICÁRIO PREV	221.143	8.020	11.226	32	2018
200	CARBOPREV	220.103	515	772	172	2018
201	INSTITUTO GEIPREV	218.653	74	240	299	2018
202	PREVIHONDA	214.385	829	450	143	2018
203	TOYOTA PREVI	213.041	5.281	7.897	40	2018
204	FIOPREV	210.295	64	113	95	2018
205	JUSPREV	206.041	2.842	4.632	10	2014
206	CAGEPREV	191.067	1.371	1.801	79	2018
207	FAÇOPAC	184.032	1.392	1.692	180	2018
208	OABPREV-MG	173.013	8.743	15.085	106	2017
209	ALPHA	171.370	1.032	2.190	192	2014
210	FAPECE	164.693	290	-	155	2018
211	TRAMONTINAPREV	163.631	7.352	8.379	44	2018
212	OABPREV-SC	161.877	8.204	13.413	88	2018
213	FUMPRESC	154.734	560	1.152	388	2018
214	PREVBEP	144.704	33	181	155	2018
215	PREVISTIHL	137.656	nd	nd	nd	nd
216	SIAS	133.267	7.317	5.248	790	2018
217	VISTEON	130.022	2.309	17	88	2017
218	RECKITTPREV	125.577	1.648	12	64	2018
219	FUNASA	124.779	892	2.378	1.516	2017
220	PREVYASUDA	106.031	854	536	97	2018
221	FUNDO PARANÁ	103.353	5.033	6.529	21	2018
222	MÚTUOPREV	102.603	nd	nd	nd	nd
223	OABPREV-GO	100.273	5.071	12.151	43	2017
224	OABPREV-RS	95.524	8.111	15.939	48	2018
225	DATUSPREV	83.573	319	376	56	2018
226	ALBAPREV	83.312	190	465	10	2018
227	MONGERAL	80.901	3.499	5.391	19	2017
228	INERGUS	77.248	444	2.054	606	2017
229	PREVCHEVRON	73.208	121	245	51	2017
230	FUTURA II	63.118	4.991	7.486	8	2018
231	MM PREV	60.420	6.192	6.462	31	2018
232	FUNCASAL	60.246	860	1.588	656	2018
233	RJPREV	55.024	757	-	-	2014
234	PREVUNISUL	49.805	955	1.037	117	2018
235	SBOT PREV	46.765	nd	nd	nd	nd
236	PREVES	44.218	2.715	-	1	2018
237	ALEPEPREV	39.071	183	201	19	2017
238	SILIUS	38.322	15	282	322	2018
239	UNIPREVI	28.322	5	34	23	2014
240	CNBPREV	28.221	828	1.394	5	2018
241	OABPREV-NORDESTE	23.056	348	588	148	2014
242	ANABBPREV	21.590	936	1.703	3	2014
243	RS-PREV	12.283	317	-	-	2018
244	FUNDAÇÃO FECOMÉRCIO	7.632	466	630	2	2018
245	FUCAE	6.166	nd	nd	nd	nd
246	MAPPIN	6.096	3.463	2.895	35	2014
247	PREVCOM-MG	4.935	109	-	-	2016
248	PREVBAHIA	4.305	311	167	-	2018
249	SCPREV	2.849	184	150	-	2018
250	ORIUS	960	-	25	47	2014
251	ACIPREV	809	405	669	-	2018
252	FFMB	125	250	237	115	2014

TOTAL ESTIMATED

Investments (in BRL thousand)	820.741.979	Active members	2.681.192	Dependents	3.943.741	Beneficiaries	842.008

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