PENSION NOTES

No. 25 - MAY 2018

Investment Portfolios of the Latin American Pension Funds

EXECUTIVE SUMMARY

There are significant differences between the investment portfolios of the Latin American Pension Funds (PF) (see Table and Graph No. 1). Colombia, Chile and Peru, the first 3 countries that implemented individually funded systems, have more diversified investments per instrument categories (between 40% and 60% in Fixed Income (FI) and Equity (EQ), while the Dominican Republic, Uruguay, El Salvador and Costa Rica, countries with lower levels of maturity in their individually funded systems, have more than 85% of their portfolios invested in FI instruments.

Investment in government instruments fluctuates between a minimum of 19% of the portfolio in Chile and a maximum of 80.2% in El Salvador.

Investment in domestic companies, in both FI and EQ, fluctuates between 1.3% in Costa Rica and 31.6% in Mexico. Mexico leads FI investments in domestic companies with 25.7%, and Peru, Colombia and Chile lead the region with investments exceeding 10% of the total of their portfolios in EQ, while there is no investment in domestic stocks in El Salvador, Costa Rica and the Dominican Republic.

Investment in the domestic financial sector ranges from a minimum of 1.9% in Mexico to a maximum of 21.3% in Chile.

Peru leads foreign investment in both fixed and Equity with 43.3% of the portfolio, followed by Chile (42.9%) and Colombia (35.7%). The Dominican Republic is at the other end of the scale, with no foreign investment. Peru leads in E with 40.9% and Chile in FI with 13.6%.

Despite the large differences in the PF investment portfolios, almost all of them have high real annualized historical returns (since their respective inceptions), with Chile leading the ranking at 8.2%, followed by Uruguay at 7.9%, Colombia 7.8% and Peru 7.7%. The poorest performance, though always positive and of significant magnitude, occurs in the individually funded systems of countries that have low or zero investment in equity instruments.

The biggest differences in the investment portfolios of the PFs of the Latin American countries can be explained by the following: age of the individually funded pension systems, regulation of investments, development of the domestic capital markets, and the existence of Multifunds.

Regarding the regulation of pension fund investments, the application of the maximum limits stipulated in the regulations has an impact on the diversification of the PF portfolios, the following limits, which would appear to be restrictive, have been observed:

- 15% on bank deposits and bonds in Costa Rica.
- Between 5% and 10% on corporate bonds in Peru, depending on the Multifunds.
- 0% on corporate bonds in Uruguay for the most conservative multifund.

- 46% on foreign investment in Peru. It is worth mentioning that this limit was increased from 42% in December 2017.
- 20% on foreign investment in Mexico, considering that investment by the PFs in investment funds was only recently authorized.
- 0% on foreign investment in the Dominican Republic.

The minimum investment limit in government bonds in El Salvador is a special case. It does not seem reasonable that the savings of workers should mandatorily finance the Government, since there is a risk that it would be at subsidized interest rates, as has indeed occurred historically in this country.

However, it seems that the lack of development of the local capital markets has been the main cause of lower diversification of the PFs in some smaller countries. For example, in El Salvador, Costa Rica and the Dominican Republic the PFs do not hold shares of domestic companies, although they are authorized to do so.

Finally, when comparing the PF investment portfolios over time, it is evident that countries have generally advanced towards more diversified portfolios, increasing foreign investment, reducing investment in government instruments, and increasing investment in domestic companies.

INTRODUCTION

Pensions are currently a burning issue. Increased life expectancy and reduced birth and fertility rates are aging populations worldwide. These demographic changes are negatively affecting the financing of the health and pension systems, and the situation will be even more dire in future.

Governments in countries with PAYGO systems have been forced to adopt unpopular measures, such as reducing pension amounts, increasing the retirement age, increasing contributions and/or raising the requirements for accessing pensions, all aimed at addressing their lack of financing and avoiding bankruptcy.

In demographic terms, the individually funded pension systems are only affected by the increase in life expectancy since accumulated savings must finance a longer pension payout period. However, the pension amounts that people will receive depend on many other factors, namely: the age at which they started working, the number of years of contributions, the amounts contributed (wages and contribution percentage), the returns of the PFs, the retirement age, and the composition of their family group.

The AFPs directly affect only one of these factors, the returns of the PFs.

This study conducts a comparative analysis of the investment portfolios of the PFs of Colombia, Costa Rica, Chile, El Salvador, Mexico, Peru, Dominican Republic and Uruguay.

INVESTMENT PORTFOLIOS

Table No. 1 shows the pension fund portfolios of the Latin American countries with mandatory individually funded contributory systems at the end of 2017, sorted (left to right) according to the year they started operating.

TABLE No. 1

PENSION FUND PORTFOLIOS TO 31/12/2017	CHILE	PERU	COLOMBIA	URUGUAY	MEXICO	EL SALVADOR	COSTA RICA	DOMINICAN REPUBLIC
Commencement	**1981**	**1993**	**1994**	**1996**	**1997**	**1998**	**2000**	**2003**
GOVERNMENT	**19.0%**	**21.7%**	**34.4%**	**72.6%**	**46.4%**	**80.2%**	**69.2%**	**74.4%**
CORPORATE	**16.8%**	**22.2%**	**14.2%**	**13.9%**	**31.6%**	**6.6%**	**1.3%**	**4.6%**
FI	6.3%	6.5%	2.0%	8.9%	25.7%	6.6%	1.3%	4.6%
EQ	10.4%	15.6%	12.2%	4.9%	5.9%	0.0%	0.0%	0.0%
FINANCIAL SECTOR	**21.3%**	**13.1%**	**13.3%**	**5.4%**	**1.9%**	**6.8%**	**18.5%**	**19.6%**
FI	20.0%	11.2%	6.8%	5.4%	1.9%	6.8%	15.4%	19.6%
EQ	1.3%	1.9%	6.5%	0.0%	0.0%	0.0%	3.1%	0.0%
FOREIGN	**42.9%**	**43.3%**	**35.7%**	**7.2%**	**17.4%**	**4.5%**	**9.7%**	**0.0%**
FI	13.6%	2.5%	6.6%	7.2%	1.1%	4.5%	0.1%	0.0%
EQ	29.4%	40.9%	29.1%	0.0%	16.3%	0.0%	9.6%	0.0%

Source: FIAP based on the official statistics of each country.
Note: FI: Fixed Income; EQ: Equities.

Investment in government instruments fluctuates between a minimum of 19% of the portfolio in Chile and a maximum of 80.2% in El Salvador.

Investment in domestic companies, in both FI and E, fluctuates between 1.3% in Costa Rica and 31.6% in Mexico. When separately analyzing FI investments in domestic companies, Mexico’s leading position at 25.7% is particularly noteworthy. Peru, Colombia and Chile lead the region in E, with investments exceeding 10% of their portfolio totals. PFs in El Salvador, Costa Rica and the Dominican Republic do not invest in domestic corporate shares.

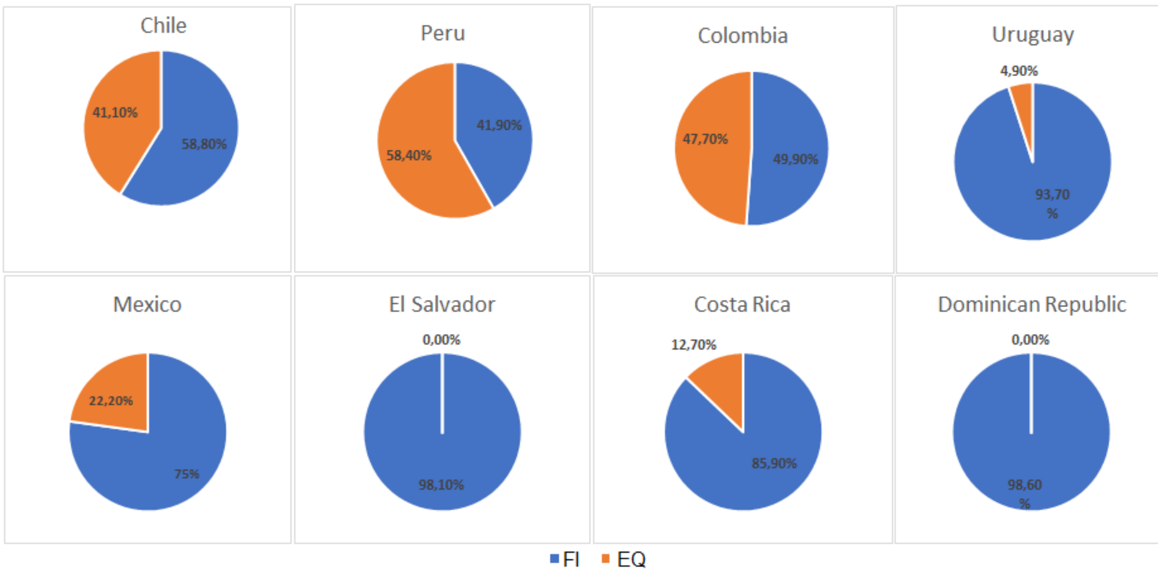
Investment in the local financial sector ranges from a minimum of 1.9% in Mexico to 21.3% in Chile. Chile leads FI investments in the domestic financial sector, with 20% of the portfolio, followed very closely by the Dominican Republic (19.6%), while Columbia leads the ranking in EQ investments, i.e. bank shares.

Peru leads foreign investment in both FI and EQ with 43.3% of the portfolio, followed by Chile (42.9%) and Colombia (35.7%). The Dominican Republic is at the other end of the scale, with no foreign investment. On separating FI and EQ investments, Peru leads strongly in foreign EQ with 40.9%, and Chile in foreign FI with 13.6%.

Graph No. 1 shows the proportion of the pension fund portfolios invested in FI and EQ instruments. Peru leads investments in EQ (58.4%), followed by Colombia (47.7%) and Chile (41.1%). The Dominican Republic (98.6%), El Salvador (98.1%), Uruguay (93.7%) and Costa Rica (85.9%) lead the region in FI investments.

Another way of analyzing the situation is that three countries, Chile, Peru and Colombia have more diversified investments by instrument categories - between 40% and 60% in FI and EQ, while the Dominican Republic, Uruguay, El Salvador and Costa Rica have more than 85% of their portfolios invested in EQ instruments.

GRAPH No. 1
PENSION FUND PORTFOLIOS TO 31/12/2017



Source: FIAP based on the official statistics of each country.

DIFFERENCES IN INVESTMENT PORTFOLIOS

An analysis of the PF investment portfolios in the Latin American countries studied shows that they haven significant differences, probably due to the following variables:

- **Age of the pension systems.** The evidence shows that countries that started operating earlier have more diversified portfolios than those that started more recently. This, in turn, may be due to two other factors that will be addressed below, namely the easing of investment rules and regulations as experience is acquired, and a greater development of the capital markets favored by the growth of the pension funds.

- Regulation of investments. The regulation of the pension fund investments in all countries, with the application of the maximum limits per type of instrument, issuer and groups of instruments, has a bearing on the diversification of their portfolios. As mentioned in the previous point, this variable would appear to be correlated with the age of the pension systems, since the PFs are usually only allowed to invest in domestic FI at the outset and in domestic and foreign EQ and alternative assets, etc. later on.

When comparing the investment portfolios with the limits per type of instrument of the different countries, one can see that there are certain limits that would appear to be more restrictive and that hinder greater diversification:

- 15% on bank deposits and bonds in Costa Rica.
- Between 5% and 10% on corporate bonds in Peru, depending on the Multifunds.
- 0% on corporate bonds in Uruguay, for the most conservative multifund.
- 46% on foreign investment in Peru. It is worth mentioning that this limit was increased from 42% in December 2017.
- 20% on foreign investment in Mexico, after investment in Asset Investment Funds was recently approved.

- 0% on foreign investment in the Dominican Republic.

It is worth mentioning that there are also restrictions on the investment of the Pension Funds by issuer, or other provisions included in the extensive regulations of each country, but they are not included in this analysis due to their complexity.

The minimum investment limit in government bonds in El Salvador is a special case. Although the 2017 reform reduced this limit from 45% to 38% of the PF, this minimum limit should simply not exist, since it does not seem reasonable that the savings of workers must mandatorily finance the governments of their countries, because there is considerable risk that it would be at subsidized interest rates. This is precisely what has occurred historically in El Salvador, as evidenced by the significant increase in the interest rate such instruments accrue, between 2.5% and 6%, as contemplated in the 2017 reform.

One of the reasons for encouraging investment in government bonds is to facilitate the transition from a PAYGO to an individually funded pension system. During this transition, part of the contributions of active workers finance the pensions of the former public PAYGO system. The fact that pension funds acquire government bonds can smooth the transition to an individually funded system in the short term, but if this policy continues to be applied in the medium and long term, the benefits of switching to an individually funded system are reduced (for example, total savings, economic growth and the development of capital markets).

- **Development of Domestic Capital Markets.** In addition to the restrictions imposed by the regulation of investments, another important factor that explains the lack of diversification in some countries is the low level of development of the domestic capital markets. This usually occurs in the smaller countries. For example, it is noteworthy that the PFs of El Salvador, Costa Rica and the Dominican Republic do not hold domestic corporate shares, even though they are authorized to do so.

Table No. 2 shows the main indicators of the EQ stock market. On analyzing the Stock Market Capitalization (SMC) indicators and the Domestic Share Transaction Amounts, it can be concluded that the stock markets in Uruguay, El Salvador and Costa Rica were very small in 2016, and non-existent in the Dominican Republic.

TABLE No. 2

CAPITAL MARKETS (in millions of dollars) to Dec./2016				
	Market Capitalization	No. of Domestic Companies Listed	Domestic Share Transaction Amounts	No. of Investment Funds
CHILE	209,076	214	24,864	483
PERU	79,662	217	2,574	8
COLOMBIA	102,851	68	13,257	
URUGUAY	936	8	50	14
MEXICO	352,754	137	109,401	664
EL SALVADOR	10,111	74	1	
COSTA RICA,	2,850	10	36	28
DOMINICAN REP.*	0	0	0	8
Source: FIAB (Ibero-American Federation of Stock Exchanges)				
(*) Obtained directly by FIAP in the respective countries, 2016				

On comparing the PFs (Table No. 4) with Stock Market Capitalization, we can see that it fluctuates between 47% (Mexico) and 103% (Chile), with the exception of 3 countries: Costa Rica, Uruguay and the Dominican Republic (where there are no stock markets).

Furthermore, if we analyze the ratio between domestic share transaction amounts and the pension funds, we can see that, in the cases of Uruguay, El Salvador, Costa Rica and the Dominican Republic, it does not amount to even 1% of the PFs, compared to significantly higher figures in the remaining countries, which evidences the need to boost their domestic stock markets.

- **Multifunds.** The evidence suggests that those countries that have them are more diversified than those that do not have them and manage a single fund (or two funds). This makes sense, since a greater range of instruments is required for constructing different investment portfolios. Nonetheless, this variable appears to be related to the previous ones. Another aspect worth mentioning is that when Multifunds are available, the workers are the ones who decide how to invest their pension savings, assuming greater or lesser risk levels, so it would seem to be essential for the AFPs to provide them with the information for them to be able to make informed decisions.

RETURNS OF THE PENSION FUNDS

Table No. 3 shows the real annualized returns in national legal tender of the funds in each one of the countries within two time periods: the year 2017, and from the outset or commencement of the system.

TABLE No. 3

Real returns in domestic legal tender								
	CHILE	PERU	COLOMBIA	URUGUAY	MEXICO	EL SALVADOR	COSTA RICA	DOMINICAN REPUBLIC
2017 (1)	7.8%	10.3 %	9.9%	16.9%	2.3%	3.4%	4.1%	6.4%
Historical (2)	8.2%	7.7%	7.8%	7.9%	4.7%	3.2%	4.9%	5.2%
(1) Weighted average of each one of the Multifunds, when pertinent.								
(2) From the commencement of each one of the systems of the initial fund.								

Source: FIAP based on the official statistics of each country.

On comparing the 2017 returns, it is particularly noteworthy that the Uruguayan PFs have the highest returns, considering that 93.7% of their portfolios are invested in FI instruments and 72.2% in government bonds. These high returns are mainly explained by the significant reduction of 300 basic points of the sovereign curve in Indexed Units (IU)[1] dropping 5.5% to 2.5% between December 2016 and December 2017, which when applied to a portfolio with a duration of 5.09 years, explains most of the aforementioned annual return.

Apart from the specific situation in Uruguay, the most profitable funds were those of Peru (10.3%), Colombia (9.9%) and Chile (7.8%). These are the countries that have the highest percentages invested in equities (58.4%, 47.7% and 41.1%, respectively). One must bear in mind that exchanges worldwide performed well in 2017.

On analyzing the real annual returns from the outset of each one of the systems (bearing in mind that we are considering different periods, namely 36 years in the case of Chile, and at the other end of the scale, 14 years in the Dominican Republic), the highest returns where achieved in Chile (8.2%), Uruguay (7.9%), Colombia (7.8%) and Peru (7.7%) and the poorest performance, although always positive and of significant magnitude, occurred in countries that have low or zero investment in equity.

The historical performance of the four countries with the highest investment in government bonds (more than 70% of the portfolio) deserves special attention: Uruguay (7.9%), Dominican Republic (5.2%), Costa Rica (4.9%)) and El Salvador (3.2%). Note that the returns of the former more than double the returns of the latter. This is due to the requirement of minimum investment in government securities in El Salvador, and the low interest rates historically accrued by such instruments. FIAP has persistently opposed the existence of these minimum investment limits, which are particularly dangerous when applied to government bonds. There is a clear political risk in setting non-market conditions for PF investments, especially when fiscal accounts are in deficit. In this context, would the priority of the authorities be to minimize the cost of their debts or maximize the returns of the PFs? On the other hand, the Uruguayan case is noteworthy, since even though it has strong investment in government bonds, it has historical returns that are similar to those of countries with greater investment in EQ instruments.

SIZE OF THE PENSION FUNDS

Tables Nos. 4 and 5 show the size of the pension funds expressed in US dollars and their comparison with national GDP.

[1] The Indexed Unit (UI) is an accounting unit that is readjusted in accordance with the inflation measured by the Consumer Price Index. This unit varies daily, so that at the end of the month it accumulates a variation with respect to the value of the IU of the previous month.

TABLE No. 4

PENSION FUNDS (in millions of dollars) to Dec./2017			
	MANDATORY	VOLUNTARY	TOTALS
CHILE	210,512	5,830	216,342
PERU	47, 731	542	48,273
COLOMBIA*	68, 276	3,522	71,798
URUGUAY	16,207		16,207
MEXICO	164,176	2,258	166,434
EL SALVADOR	10,166		10,166
COSTA RICA*	8,682	562	9,244
DOMINICAN REP.*	8,478		8,478
Source: FIAP (*) to Sept./2017			

TABLE No. 5

	CHILE	PERU	COLOMBIA	URUGUAY	MEXICO	EL SALVADOR	COSTA RICA	DOMINICAN REP.
PF/GDP	74.9%	22.4%	24.9%	30.9%	14.3%	37.0%	16.5%	11.0%

Source: FIAP based on the official statistics of each country.

If we keep in mind that the countries are listed according to the commencement date of their individually funded pension systems, the PF/GDP ratio of Table No. 5 should be decreasing towards the right, since countries have increasingly fewer years of accumulated pension savings. Therefore, the low PF/GDP ratios of Peru, Colombia and Mexico are noteworthy. They are due to the reduced coverage of the pension systems in those countries, caused by the pronounced informality of the labor market.

In absolute terms, the size of the funds accumulated by Mexico in 20 years is remarkable and is mainly due to the fact that the number of current contributors more than triples the number of contributors in the country following it, so that in another couple of years it should have the largest pension funds in the region.

EVOLUTION OF THE PENSION FUND PORTFOLIOS

Table No. 6 shows the PF portfolios at the end of 2015, i.e., two years ago. On comparing them to the current PF portfolios (Table No. 1, 2017) it is evident that countries have generally advanced towards more diversified portfolios. In fact, most countries increased their foreign investment (except for Chile and El Salvador), reduced investment in government bonds (except for El Salvador, the Dominican Republic and Uruguay) and increased investment in domestic companies (except for Costa Rica and Peru). Equal numbers of countries have either increased or reduced their investments in the financial sector.

TABLE No. 6

PENSION FUND PORTFOLIOS TO 31/12/2015

	CHILE	PERU	COLOMBIA	URUGUAY	MEXICO	EL SALVADOR	COSTA RICA	DOMINICAN REPUBLIC
GOVERNMENT	22.9%	17.8%	35.3%	59.4%	47.1%	79.4%	73.3%	69.8%
CORPORATE	14.6%	22.7%	13.2%	13.3%	31.4%	6.9%	1.2%	2.5%
FINANCIAL SECTOR	17.9%	19.0%	15.3%	3.7%	2.0%	5.4%	14.7%	27.7%
FOREIGN	44.2%	40.2%	32.7%	9.9%	16.4%	6.8%	6.4%	0.0%
AVAILABLE ASSETS & OTHERS	0.4%	0.3%	3.6%	13.7%	3.0%	1.4%	4.4%	0.0%
TOTAL	100.0 %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: FIAP based on the official statistics of each country.

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