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Abstract[*]

Using an impact evaluation methodology for interrupted time-series and the IDB Pension Projection Model, this study estimates that the COVID-19 pandemic could have notably effects on the private pension system in El Salvador as a consequence of the relaxation of requirements to repay early withdrawals that was established in the context of the pandemic. This fact could negatively affect passive coverage rate, system incomes, short-run system surplus and replacement rates, generating an increase in the fiscal cost. The problems of the Salvadoran pension system are structural, and the COVID-19 pandemic has exacerbated them. Consequently, although it is possible to discuss policies to reduce these effects, it is necessary to frame this discussion in the context of a comprehensive reform of the system.

JEL classifications: C22, G28, H55, J14, J32, J33
Keywords: COVID-19, Salvadoran pension system, Early Withdrawals, Impact evaluation, Pension reform

[*] In Latin America and The Caribbean, there is very little research to date about the impact of COVID-19 on pension systems. In this context, the Department of Research and Chief Economist (RES), through the Latin American and Caribbean Research Network, together with the Labor Market and Social Security Division (LMK), through the Network for Pensions in Latin America and the Caribbean (PLAC Network), launched a research project to evaluate the impact of COVID-19 on pension systems in the region. This project analyzes the pandemic's impact on key aspects of pension systems such as replacement rates, contribution density, intergenerational equity, financial sustainability, and pension fiscal expenditure, among others. The study was applied in four countries of the region—Argentina, Chile, El Salvador, and Peru—and it addressed both defined benefit and defined contribution pension systems.

To carry out these studies and guarantee the homogeneity of the analysis methodologies for the different countries, a standard pension projection model developed by the PLAC Network was provided for the different country studies. Since 2015, the PLAC Network supports regional efforts for improving the institutional and technical capacity of pension entities.

The specific objectives for each country study were to: i) generate country-specific evidence on the impact of COVID-19 on pension systems, addressing the effect on key indicators; ii) calculate the pre-COVID and the short and long-term fiscal pressures stemming from the crisis; and iii) evaluate political implications and policy recommendations for the region.

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1. Introduction

In El Salvador, the contributory pension system was founded in 1969 based on a pay-as-you-go scheme with public administration, so the pension institutes assumed payment obligations and longevity risks. In 1996, El Salvador embarked on the process of a structural reform of the pension system, which implied a change towards a privately administered individual capitalization scheme, which promised to restore the financial sustainability of the system, expand coverage and increase the benefits of pensions. The objectives set with the 1996 reform and subsequent reforms were not achieved, and the main problems of the Salvadoran pension system remain.

The effects of the COVID-19 pandemic extended beyond public health. Restrictions on economic activities and policies designed to alleviate consumption needs could have considerable effects on pension systems, which will deepen the challenges—demographic aging, low profitability, employment and salary insecurity, etc.—that they face regardless of the operating scheme (OECD, 2021). The economic, health and social crisis due to COVID-19 will likely hold down future economic growth levels, interest rates, and returns, which will affect the savings and profitability of pension funds (OECD, 2021). In the context of the pandemic, pension systems have shown a decrease in their coverage of active contributors, especially in the countries most exposed to unemployment and informality, and this has directly affected the collections of the system and the density of contributions, which would imply a reduction in benefits in amount and/or access (Arenas de Mesa, 2020).

In the case of El Salvador, the loss of formal jobs or the suspension of employment contracts has generated a break in the employment and pension trajectory of workers, possibly affecting contributions in the short term and benefits in the long term (Gil and Delgado, 2021). COVID-19 impacted the pension system in the following ways: i) 79,990 workers stopped contributing to the private system between March and June 2020; ii) the coverage (actives) of the pension system decreased 1.3 percent between 2019-2020; iii) the monthly aggregated contribution was reduced from US$ 80.3 million in February 2020 to US$ 68.9 million in June 2020; and iv) the accumulated assets of the pension funds was reduced by US$ 121.5 million in March and April 2020, although at the end of that year they were higher than in 2019 (SSF, various years). Additionally, the relaxation on requirements for early withdrawals, designed to face short-run consumption needs in the context of COVID-19, has led to an acceleration of withdrawals.

Although there is some anecdotal evidence on the effects of the COVID-19 pandemic on the pension system in El Salvador, the objective of this study is to carry out a rigorous and systematic measurement of these effects, focusing on the private pension system. For this objective, this paper first presents a theoretical and empirical literature review about the ways in which pandemic could affect pension systems. The paper then briefly describes the Salvadoran labor market and subsequently characterizes the Salvadoran pension system and the related policies designed to face the pandemic. The paper next presents the methodology to estimate quantitatively the impact of COVID-19 on the private pension system using the Inter-American Development Bank Pensions (IDB) Projection Model, then presents and analyzes the results. Finally, the paper presents the conclusions and public policy recommendations.

2. Literature Review

From a theoretical perspective, it is possible to discuss the channels through which the COVID-19 pandemic, the movement restrictions and social distancing policies—which were undertaken to contain its spread—have generated effects on the labor market and in pension systems. The movement restrictions and social distancing policies have in practice represented a restriction on economic activity, since people cannot travel to their workplaces or meet together, thus paralyzing the productive process and the income sales flow (Wilkinson, 2020).

The restrictions on economic activity as a result of the COVID-19 pandemic have had a particularly important effect on small businesses, as these are characterized by high financial fragility and limited access to the formal credit market. Thus, in the context of the pandemic, the interruption of the income sales flow leads small businesses to a scenario of economic losses associated with the payment of fixed costs and liquidity problems (Apedo-Amah et al., 2020; De Vito and Gómez, 2020; Schivardi and Romano, 2020).

In this context, companies seek to adopt measures that guarantee their financial sustainability, such as dismissal of workers and reduction of wages. In this way, restrictions on economic activity cause negative effects on the labor market: higher unemployment and underemployment and lower wages, which in turn causes a drop in private consumption and, therefore, disincentives to invest and to create employment (Carranza et al., 2020).

In relation to the pension systems, the interruption of labor trajectories caused by the dismissal is directly correlated with two facts: on the one hand, the increase in applications for

early withdrawals and, on the other, the reduction in contributions, both of which affect the accumulated individual balance. Workers who lose their jobs or who are looking for one may enter the informal sector, causing the reduction of the coverage of the pension system and the probability to obtain an old-age pension in the future. This implies, in cases with state guarantee pensions, an additional fiscal cost (Bosch et al., 2020; Gil and Delgado, 2021; Weller, 2020).

Evidence on the effects of the pandemic on the labor market has been documented in high-income countries through quantitative research using real-time data and administrative data, while relatively little evidence exists for developing countries (Schotte et al., 2021). However, the magnitude of the effects depends on the characteristics of the labor market, the pension system and the public policy measures implemented to mitigate them (Casarico and Lattanzio, 2020).

There is empirical evidence, for example, suggesting that the effects of the pandemic have been more detrimental to those workers with occupations or in industries in which the tasks are more difficult to perform virtually or must be performed in person but without social distancing, in comparison with those who, due to the nature of the activity or industry, can telecommunicate or work in person without physical proximity to others (Bick and Blandin, 2020; Borjas & Cassidy, 2020; Fasani and Mazza, 2021; Montenovo et al., 2020; von Gaudecker et al., 2020).

On the other hand, the empirical evidence also shows that, unlike what happened with other economic recessions, the impact of the COVID-19 pandemic on female employment has been greater. Basically, there are two reasons why women are more affected: because they make up a greater share of workers in occupations and sectors of economic activity that have suffered a greater impact and because the closure of schools and nurseries increased the need for home child care (Albanesi and Kim, 2021; Del Boca et al., 2021; Lyttelton et al., 2022; Sevilla and Smith, 2020), a burden that falls disproportionately on women.

There is very little empirical evidence on the effects of COVID-19 on the labor market in El Salvador. Only Webster, Khorana and Pastore (2021) investigated the phenomenon jointly with other Central America countries, using the microdata bases of the World Bank Enterprise Survey. In El Salvador, round 1 (R1) of this survey was conducted in 2016, while rounds 2 and 3 (R2 and R3) were conducted in July and December 2020, respectively. Nearly 60 percent of Salvadoran companies experienced decreases in liquidity, especially small (69.5 percent) and medium-sized (60.4 percent) companies. Employment fell 8.9 percent in R2 and 11.6 percent in R3 compared to R1, although the decrease in female employment was greater in R2 (-9.1 percent) than in R3 (-7.0

percent). 25.4 percent of Salvadoran companies reduced wages (28.3 percent of small companies), while 32.5 percent reduced the number of hours worked (38.1 percent of large companies).[1]

3. A Brief Characterization of the Labor Market in El Salvador[2]

According to data from *Encuesta de Hogares de Propósitos Múltiples 2019* (EHPM19), in 2019 there were 4.99 million in the working-age population (WAP) in El Salvador, equivalent to 74.5 percent of the total population; 45.5 percent were men and 54.5 percent women. Furthermore, 36.6 percent of working-age men and 33.3 percent of working-age women were 29 years old or younger, while 33.6 percent and 34.1 percent, respectively, were between 30 and 49 years old. The gender and age distribution of the WAP remained, as expected in the short term, relatively constant in 2020, according to data from EHPM20.

The global participation rate also remained relatively constant between 2019 and 2020, at around 51 percent. However, there exists a gender gap, since in 2019 the global participation rate of men was 64.6 percent, while that of women was 39.2 percent. Although it is observed that participation increases as the schooling level is higher, the gender gap persists, a fact that is due to the assignment of gender roles and the sexual division of labor, which disproportionally burdens women with tasks such as unpaid care work and household production.

Moreover, data from EHPM19 and EHPM20 reveal that the average schooling of women in the Economically Active Population (EAP) is higher than that of men by between 0.3 and 0.4 years. In addition, in 2019, 93.7 percent of the EAP was employed, while 6.3 percent was unemployed. This was slightly higher for men (6.9 percent) than for women (5.4 percent), but schooling level does not correlate with this variable, which is explained by the higher levels of female underemployment.

The gender distribution of the employed population between groups of economic activity remained constant between 2019 and 2020. Data from EHPM19 show, for example, that women are mostly employed in shops, hotels, and restaurants (44.5 percent), manufacturing industries (18.4 percent), domestic work (11.2 percent) and health services (9.1 percent), while men are

[1] Being a panel survey, it faces an attrition problem, that is, a loss of surveyed units between rounds. This fact is exacerbated in the context of the pandemic, since it is presumable that several of the companies that "disappear" in the follow-up rounds closed as a result of COVID-19 effects, so the estimates, which are based on the changes experienced by companies that have "survived," may be underestimating the real impact.
[2] A more detailed characterization of labor market indicators is presented in Annex 1.

mostly employed in agriculture and livestock (22.7 percent), shops, hotels and restaurants (21.9 percent), manufacturing industries (14.6 percent) and construction (10.8 percent).

In 2019, 55.4 percent of the employed EAP worked as dependents (permanent or temporary employees), while 28.4 percent did so as independents (with or without premises), 4.4 percent were employers and 11.8 percent were in some other category (unpaid family work, domestic work, etc.). However, the occupational distribution by gender exhibited dissimilar patterns: for example, it is observed that 64.9 percent of men worked as dependents, compared to 41.7 percent of women.

Officially, in El Salvador the informality rate is only estimated for workers in urban areas, defining as "informal" the following: i) wage earners employed in establishments with fewer than five workers; ii) self-employed workers; iii) family workers; and iv) employers with less than five workers. Under this definition, the total informality rate is 43.7 percent (40.0 percent among men and 49.0 percent among women). Using an alternative definition, in which informality is understood as working without contributing to the pension system, the informality rate is 59.6 percent in urban areas (55.0 percent among men and 65.2 percent among women) and 83.2 percent in rural areas (81.9 percent among men and 85.9 percent among women).

The average monthly labor income in El Salvador was US$ 343 in 2019, and this is positively correlated with schooling level for both men and women. For example, those who had between 1 and 3 years of schooling obtained an average labor income of US$ 242, while those who completed at least some level of higher education obtained US$ 614. However, the average labor income of women was equivalent to 82.3 percent of that of men.

According to data from *Instituto Salvadoreño del Seguro Social* (ISSS), in 2019 there were 856,014 workers, and the mean wage was US$ 504.18, however, in 2020 when the pandemic peaked, the number of workers fell to 830,047, and the mean wage to US$ 498.31. In 2021 the values increased even above those of 2019, with 877,202 workers and a mean wage of US$ 534.77, but the latter figure was affected by a 20 percent increase in the minimum wage.

4. Evolution and Diagnosis of the Pension System in El Salvador

4.1. Institutional Context of the Salvadoran Contributory Pension System

The Pension System in El Salvador was created in 1969 with the contributory scheme for Disability, Old Age and Death (IVM, in Spanish) of *Instituto Salvadoreño del Seguro Social*

(ISSS), a public institution created in 1954 to manage the Illness, Maternity and Professional Risks Program, which covered workers in the private sector. In 1975, *Instituto Nacional de Pensiones de los Empleados Públicos* (INPEP) was created for administrative public sector employees through a pension program that covered IVM risks, incorporating teachers in 1978. In 1981, *Instituto de Previsión Social de la Fuerza Armada* (IPSFA) was created to manage the military's retirement, disability, and survival pension funds.[3]

The systems had a pay-as-you-go financial regime and defined benefit. Due to their characteristics, they were based on an intergenerational social arrangement, where active workers financed pensioners, since contributions went to a common fund from which the pensions were paid to those who met the requirements. Actuarial studies, however, determined that the pay-as-you-go system would be financially unsustainable, because the benefits granted did not match the contributions to the system. In addition, the support ratio[4] was deteriorating, falling from 30 contributors for each pensioner to 6 for 1 between 1980 and 1996 (SSF, 2015).

In 1996, El Salvador embarked on the process of a structural reform of the pension system,[5] which implied a change towards an individual capitalization scheme, *Sistema de Ahorro para Pensiones* (SAP), which promised to restore the financial sustainability of the system, expand coverage and increase benefits. After two years into the reform process, the system based on individual capitalization came into force and the administration passed into private hands, *Administradoras de Fondos de Pensiones* (AFP), although with temporary public administration, since the pay-as-you-go scheme did not allow new affiliations.[6]

In addition to the change in the pension scheme, this reform involved associated parametric changes such as an increase in the contribution rate,[7] an increase in the minimum contribution time[8] and a revision of the formula for calculating benefits. Later, during the reform's implementation, new reforms were applied to the system that were motivated to correct elements

[3] ISSS, INPEP and IPSFA constitute the *Sistema Público de Pensiones* (SPP).
[4] Understood as the relationship between active and passive contributors.
[5] A summary of the main reforms to the pension system is presented in Annex 2.
[6] Affiliation is mandatory for all workers entering the workforce for the first time and for all workers under 36 years. Workers who were over 36 years, but under 50 for women and under 55 for men, could choose between public or private system.
[7] There were differentiated contribution rates in the public institutes. For example, in ISSS it was 3.5 percent, while in INPEP, the rates were 9 percent for the administrative sector and 12 percent for teachers. With the enforcement of the *Ley del Sistema de Ahorro para Pensiones* (SAP Law), the rate was standardized to 14 percent for the entire contributor population of the SPP.
[8] For old-age pensions it was increased from 15 to 25 years.

that were not foreseen—such as the prompt depletion of the technical reserves[9] of the public institutes—or, alternatively, to face exogenous shocks[10] that affected the profitability of the fund or benefits, among other considerations. These events implied commitments by the State that had to be financed with its own funds or with debt, generating a serious fiscal problem.

Since the approval of the SAP Law in 1996, different reforms have been made to the original design of the pension system, among them those established by Legislative Decree (LD) No. 1217 (2003) and LD No.100 (2006), both applicable to affiliates who opted for the SAP. Through these decrees, it was established that those pensioners who opted for the private system should receive pensions equivalent to those they would have received in the public system, forcing the State to assume the cost of this measure. In 2006, *Ley del Fideicomiso de Obligaciones Previsionales* (FOP) was also approved to obtain resources for the payment of social security obligations by the State, through the issuance of *Certificados de Inversión Previsional* (CIP) that had to be purchased with the funds managed by the AFPs.

In 2017, a new reform of the pension system was approved (LD No.787), as one more attempt to solve the great financial and quality challenges of the system, as well as the sustainability of public finances. The private individual capitalization scheme was maintained, but important parametric and institutional strengthening changes were introduced, such as the following:

1. The creation of a financing mechanism—*Cuenta de Garantía Solidaria,* CGS—for the payment of the benefits of the opted SAP population for the SAP and the coverage of the guarantee of the minimum pensions, as well as to keep the pensions of those forced into the SAP stable over time, through the figure of the longevity pensions.
2. An increase in the contribution rate, from 13 percent to 15 percent, changing the distribution of this percentage in three categories: the contributions that will be capitalized in the individual account (from 8.05 percent in 2019, gradually reaching 11.1 percent in 2050), the financing of the CGS (5 percent in 2019, gradually reaching 2 percent in 2050) and the commission (including

[9] They were estimated at US $ 338.7 million at the end of 1997 (SSF, 2015) and were ended in 2001. From 2001 to 2006 the government resorted to borrowing with Eurobonds.
[10] The enforcement of the Monetary Integration Law (2001) and the international financial crisis (2008-2009).

insurances) to be paid to the AFPs (1.95 percent in 2019, declining to 1.90 percent as of 2020).

3. The benefits for the opted SAP population were reduced, since the scheme for determining replacement rates was changed by 35 percent for the first 10 years plus 1 percent for each year contributed up to a maximum of 55 percent. In addition, a maximum pension of US$ 2,000 was established for this group. For old-age pensioners who opted for the SAP, a special contribution to the CGS that is deducted from the pension was set, varying from 3 percent to 10 percent depending on the amount of the pension.
4. Affiliates are allowed to early withdraw up to 25 percent of the individual account balance, with the penalty that, if they do not repay the withdrawn amount, they will have to defer the retirement age up to a maximum of five years.
5. New types of benefits were incorporated (*Beneficio Económico Temporal*, BET and *Beneficio Económico Permanente*, BEP) for those who reach retirement age but have not reached 25 years of contributions: i) reimbursements remain mandatory for those who contribute less than 10 years; ii) BET is paid monthly by the individual balance account, until the balance runs out; iii) BEP is calculated by distributing the individual balance account over 20 years (it can be less than the minimum pension), and when the balance runs out it is financed by the CGS (longevity benefit).

1.1. The Non-Contributory Pension

In addition to the contributory pension system, El Salvador has a non-contributory pension component for older adults, *Pensión Básica Universal* (PBU), that arises within the framework of *Programa Integral de Cuidado del Adulto Mayor* set forth in *Plan Quinquenal de Desarrollo 2009-2014*, and as part of *Sistema de Protección Social Universal*. This program was created under the coordination of *Secretaría de Inclusión Social* (SIS), and the execution and administration of *Fondo de Inversión Social para el Desarrollo Local* (FISDL). The PBU is a bimonthly non-contributory pension for adults over 70 years of age or disabled persons who do not receive a

contributory pension. The per capita amount of the transfer is equivalent to US$ 50 per month (Mesa-Lago and Rivera, 2020).

PBU is focused on adults living in the 100 municipalities of severe and high extreme poverty in El Salvador, although the number of municipalities has been progressively increasing since 2009 (Martínez, Pérez and Tejerina, 2015). A way to understand the benefits granted by the PBU is through public expenditure analysis. During the first years of operation the program steadily increased expenditure as a percentage of GDP, reaching 0.08 percent in 2013; it has since then remained around that level. Furthermore, the absolute value of expenditure decreased between 2014 and 2017, thereafter recovering to slightly exceed the maximum observed in 2014.[11]

Although the number of beneficiaries increased steadily during the first years of operation of the program, going from 6,487 to 29,085 between 2009 and 2013 (Martínez, Pérez and Tejerina, 2015), since then the evolution has been oscillating: according to EHPM microdata the program had 25,089 beneficiaries in 2016 and 28,587 in 2020, but it was only 19,386 in 2017 and 22,939 in 2018. In line with this, PBU coverage is very low, whether it is calculated as a proportion of the total number of adults over 70 years of age or only in relation to those living in poverty and extreme poverty: in 2019, the coverage rate was 6.1 percent in the first case and 10.6 percent in the second.

An impact evaluation conducted by Martínez, Pérez and Tejerina (2015) "show that the delivery of the PBU generates an increase in the average non-labor income of the households of older adults (…) by $40.75 dollars. This increase (…) reduces the probability that a participating household is below the extreme poverty line by 12% (…), increase their average monthly consumption level by almost $5 dollars per capita, (…) [and] also reduces by half the probability that the older adult performs some dependent activity." This result reinforces the idea that the non-contributory pension scheme functions as a social protection program, which is not integrated with the contributory pension system.

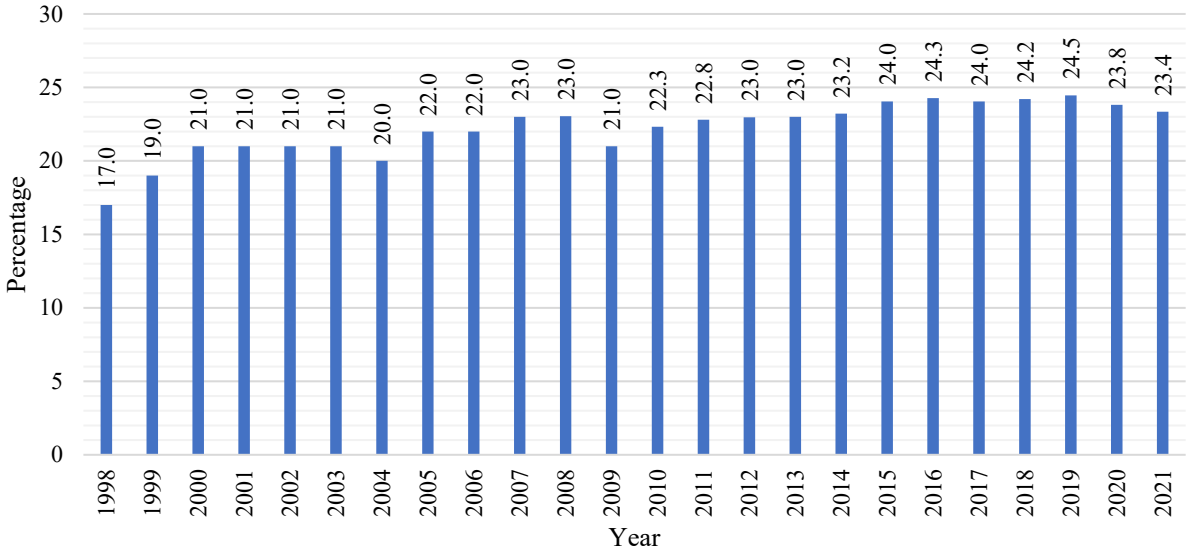
1.2. Indicators of the Salvadoran Pension System

As research has demonstrated it, the objectives set with the 1996 reform and even with all the reforms implemented were not achieved, and the main problems of the Salvadoran pension system remain.

[11] See Annex 3.

- **Pension coverage** has remained around 24 percent in recent years (SSF, various years), and despite the fact that this represents an improvement as compared to the beginning of the SAP, low coverage continues to be one of the main problems of the system (Figure 1). This is even more serious if we highlight that coverage is positively correlated with the income level of individuals (Arenas de Mesa, 2019), as shown in Figure 2.

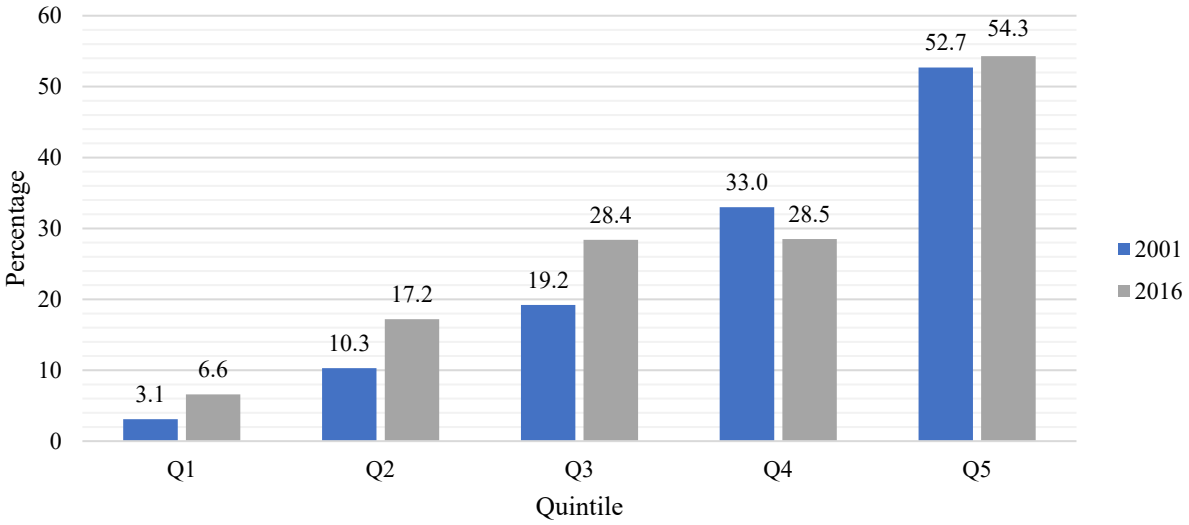
Figure 1. Active Contributors' Coverage (related to the EAP), 1998-2021
(Percentage)



Source: SSF, various years.

Figure 2. Active Contributors' Coverage (related to the EAP), by Income Quintile, 2001 and 2016

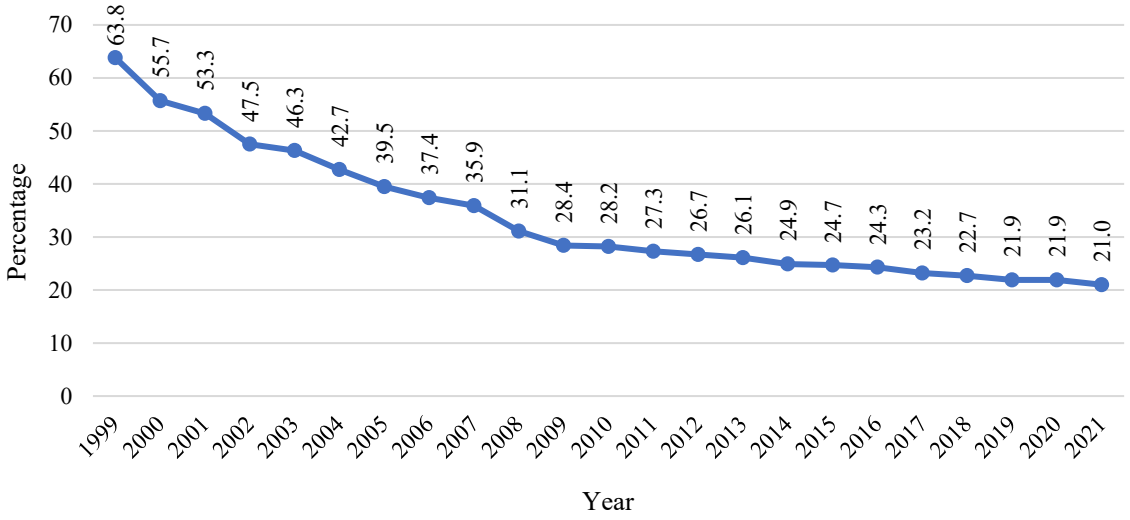
(Percentage)



Source: Arenas de Mesa (2019).

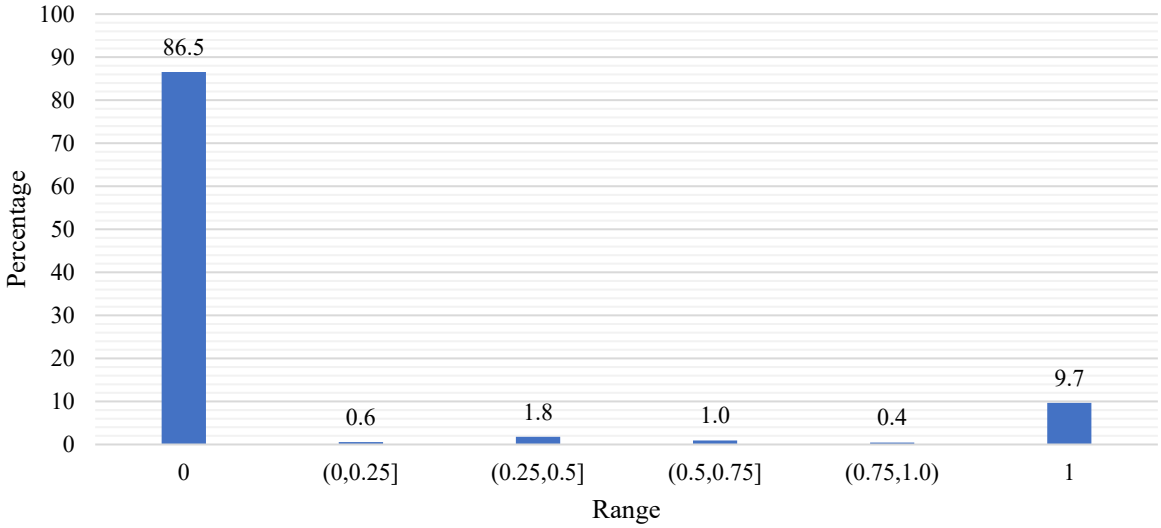
- In El Salvador, **contribution density** is low, regardless of the definition used. According to the criteria of *Superintendencia de Pensiones* (SP), contribution density is understood as the ratio between the total number of contributors and the total number of affiliates, while other definitions refer to the ratio between the number of periods contributed and the number of potentially quotable periods. According to the official definition it has decreased steadily since the structural reform of the pension system (in force since 1998), going from 63.8 percent in 1999 to 21.0 percent in 2021 (SSF, several years), as shown in Figure 3. On the other hand, Argueta et al. (2015) estimated that the individual contribution density calculated on the basis of working life is 23 percent (25 percent for men and 22 percent for women). Our estimates using the last definition and data from *Encuesta Longitudinal de Protección Social* (ELPS) for the period January 2011 to December 2012, calculate an individual contribution density of 12.6 percent (13.2 percent for men and 12.0 percent for women), but most affiliates (86.5 percent) have never contributed (Figure 4).

Figure 3. Contribution Density Evolution, 1999-2021
(Percentage of Active Contributors related to Affiliates)



Source: SSF, various years.

Figure 4. Individual Contribution Density Distribution between January 2011 – December 2012, by groups
(Percentage of months contributed)



Source: Authors' calculations based on ELPS (2013).

- Total contributory and non-contributory **coverage of retired persons** has displayed a growing trend between 1998 (23.4 percent) and 2018 (35.4 percent), reaching its minimum in 2000 (21.8 percent) and its maximum in 2014 (36.4

percent). However, non-contributory coverage has prevented a drop in total coverage, since it increased from 1.4 percent in 2009 (starting year) to 5 percent in 2018, a period in which contributory coverage has remained stagnant at around 30 percent after registering its maximum of 35.8 percent in 2007 (Mesa-Lago & Rivera, 2020). Considering the low levels of total coverage, non-contributory pensions should be a key component of providing protection to the population living in poverty.

- The current **minimum old-age pension** is US$ 304.17 per month, equal to the minimum wage.[12,13] According to SSF (unpublished document), approximately 45 percent of pensioners received a minimum pension, and it was estimated that with the increase in the minimum wage, the percentage would rise to 70 percent.
- The **replacement rates** in the pension system are differentiated according to the affiliation group. The contributors obligated to the SAP, both those who had contributed to the SPP and those who had never contributed to it, are the ones who receive the lowest replacement rates and where the affiliates are concentrated. In the SAP, for any affiliate group, there is a gender gap detrimental to women.

Table 1. Average Replacement Rates, by Group of Affiliates and Sex, 2016
(Percentage)

System	Group	Women	Men	% of affiliates
SPP	Opted	63	63	7
	Obligated	69	69	
SAP	Opted A	71	77	10
	Opted B	68	70	
	Obligated A	**39**	**43**	**83**
	Obligated B	**37**	**41**	

Source: *Ministerio de Hacienda* (unpublish document).

[12] The minimum wage was adjusted in august 2021 to US$ 365 monthly.
[13] See Annex 4.

- In the SAP, low contribution densities limit access to pensions for those who are forced to receive reimbursements. In 2012, 62 percent of old age pension applications ended in reimbursements. To address this situation, two new benefit modalities were introduced into the system: *Beneficio Económico Temporal* (BET) and *Beneficio Económico Permanente* (BEP). However, in practice, these have not been used to provide partial coverage to affiliates with fewer years of contributions (less than 10 years), whose withdrawals are low, do not have the option of partial coverage and receive a reimbursement. Moreover, most people choose to receive a reimbursement and not a partial benefit, the amount of which may be less than the minimum pension, but could provide access to the health system.

Table 2. Number of Persons and Amounts Granted, by Type of Benefit Chosen, January-June 2018

(Individuals and amounts in USD)

	Benefit chosen[a]			
Category	**Reimbursement**	**BET**	**BEP**	**Total**
Individuals				
<10 years contributed	2,512	0	0	2,512
>= 10 y <=20 years contributed	1,882	3	0	1,885
>20 y <25 years contributed	662	0	8	670
Total	**5,056**	**3**	**8**	**5,067**
Amount				
<10 years contributed	7,666,633.1	0.0	0.0	7,666,633.1
>= 10 y <=20 years contributed	20,181,859.2	1,349.8	0.0	20,183,209.0
>= 20 y <=25 years contributed	12,813,164.6	0.0	7,400.3	27,849,842.1
Total	**40,661,656.9**	**1,349.8**	**7,400.3**	**40,670,406.9**

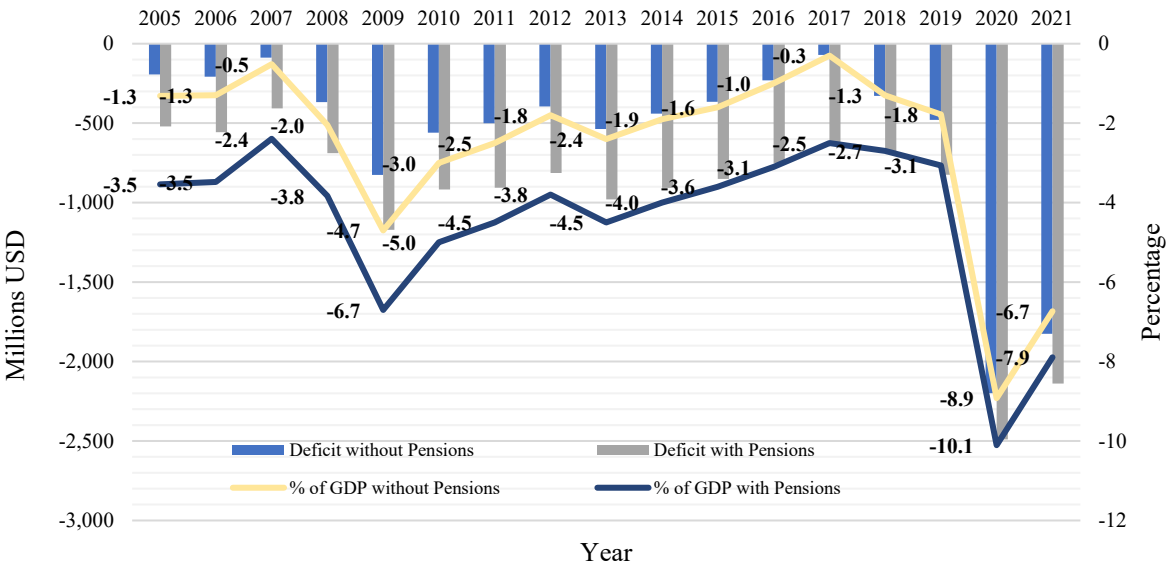
Source: SSF (unpublished data).
Note: [a] Individuals can only choose between reimbursement or any of the benefits (temporary or permanent) when they have more than 10 and less than 25 years of contributions.

- Another relevant issue of the pension system is **financial sustainability**, which requires state intervention to finance pensions through debt (Eurobonds and CIP). According to the actuarial valuation study from SSF (2021), the investment portfolio of the pension fund is concentrated in public instruments (61 percent, equivalent to US$ 7,864 million), and the system has an estimated actuarial deficit of US$ 22,174 million (77.2 percent of GDP).[14] Finally, it was estimated that as of 2031, the income of the CGS will not be sufficient to cover the expenses attributed to the fund, which could mean a greater cost for the State.
- The financial sustainability of the pension system has a direct impact on public finances. According to the Ministry of Finance, pre-pandemic data reflect that around 50 percent of the fiscal deficit and a quarter of the debt are generated by the State's pension commitments, and the 2017 reform provided relief for public finances by reducing those commitments by approximately 0.7 percent of GDP. Before 2017, the annual expenditure on pensions represented close to 2.0 percent of GDP, averaging 1.3 percent of GDP in subsequent years (Figure 5). The financing needs to meet the State's social security commitments have been growing, representing an annual average of 20 percent of GDP in the last five years (Figure 6).

[14] US$ 8,408 million (29.3 percent of GDP) corresponds to the CGS and US$ 13,766 million (47.9 percent of GDP) to direct responsibilities of the State (mainly for the payment of pensions).

Figure 5. Fiscal Deficit with and without Pensions, 2005-2021

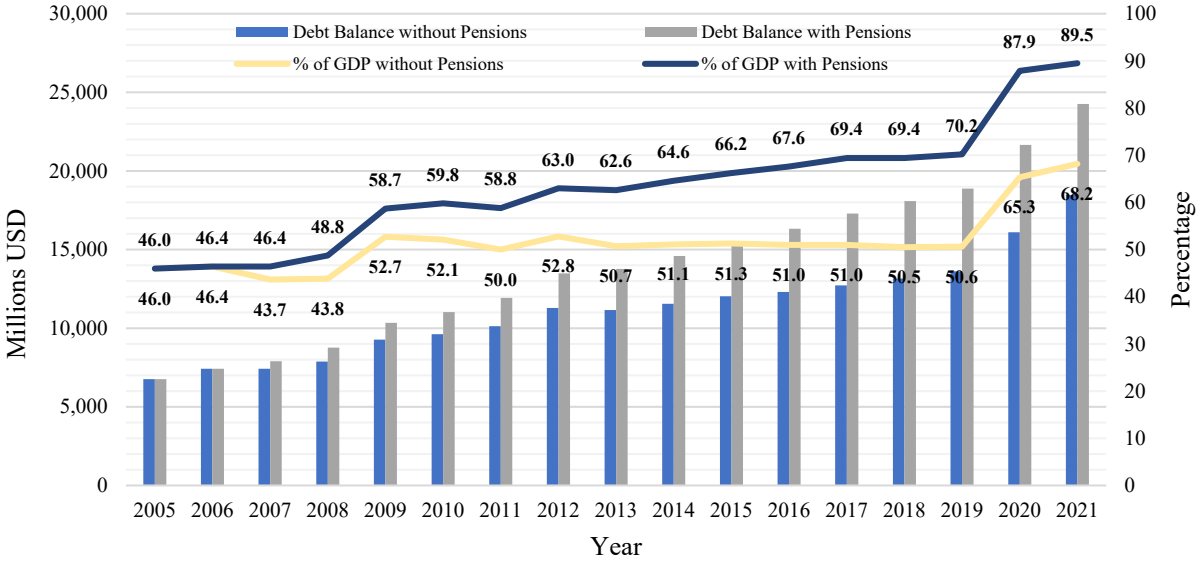
(Millions of USD and as a percentage of GDP)



Source: Ministerio de Hacienda.

Figure 6. Debt Balance with and without Pensions, 2005-2021

(Millions of USD and as a percentage of GDP)



Source: Ministerio de Hacienda.

The review of the indicators of the pension system indicates that structural problems existed prior to the COVID-19 pandemic. Despite the reforms implemented after the entry into force of the SAP Law, which changed the pension model to an individual capitalization scheme, a variety of difficulties persist. These include low coverage rates and insufficient benefits for contributors without pensions or with low pensions. There is also financial pressures on the system, which are transferred to public expenditure and generate commitments on the part of the State, even in a scenario in which non-contributory pensions are far from becoming universal.

5. Proactive Policies to Minimize the Economic Downturn in El Salvador

5.1 A Brief Summary of Public Policies

In the context of the COVID-19 pandemic, governments implemented public policies to help people and firms to manage the shock. In general, the strategies adopted by each government responded to the need for immediate attention during confinement, to gradual economic reactivation (short-term) and to economic recovery (medium and long-term). Under this logic of intervention, public policies were oriented to protect the health of workers and minimize contagion through the implementation of teleworking and reduced working hours; provide income to workers and the most vulnerable population through transfers; preserve employment by granting companies subsidies, credits, tax and social security facilities; and monitoring compliance with labor rights (IDB, 2020).

In March 2020, the Salvadoran government implemented a mandatory home-quarantine oriented to reduce the risk of spreading COVID-19, including mobility and meeting restrictions. The mandatory home-quarantine turned into a voluntary mechanism in June 2020, while economic activity was progressively restarting, fully normalizing at it the end of August 2020.[15] During the COVID-19 crisis, the Salvadoran government implemented policies to alleviate the economic impact of the pandemic. For households, government established the temporary payment suspension of basic services and loans and transferred US$ 300 bonuses to the most vulnerable households. The main macroeconomic policies were the reduction of banks' legal reserve requirements for new loans and the foundation of a US$ 600 million fund (*Fideicomiso para la*

[15] Data about COVID-19 main indicators in El Salvador are provided in Annex 5.

Recuperación Económica de las Empresas Salvadoreñas, FIREMPRESA) to provide loans and subsidies to companies.[16]

In this context, reforms to the SAP Law were approved during 2020. LD No. 692 aimed to provide contributors with access to their pension savings in cases of contingencies and allowed contributors to opt for the reimbursement if they meet the legal age to retire (60 years for men and 55 for women, Art. 104 c) and if they register less than 25 years of continuous or discontinuous contributions, even when they have requested an early withdrawal and have not repaid it; LD No. 739 accelerates processes to requests reimbursements from non-pensioned Salvadorans who reside permanently abroad. LD No. 766 exempts from repayment those affiliates who made use of early withdrawals and who meet the requirements to retire, but cannot continue to work due to unemployment, disability or illness. In the short run, these policies guaranteed income to individuals, but in the long run promoting early withdrawals or exempting repayment could imply a risk in the adequacy and financial sustainability of the pension system, generating more reimbursements or lower pension benefits and adding fiscal costs to the financing of pension commitments.[17]

The policy measures outlined reveal the absence of automatic stabilizers against external shocks, specifically in the labor market and social security. In the context of COVID-19, in the absence of unemployment insurance, income protection actions were implemented, such as monetary transfers, temporary suspension in the payment of basic services, and deferral in the payment of taxes, among other measures. Additionally, the relaxation of the criteria for accessing early withdrawals in the pension system has served as a kind of "unemployment insurance" to provide temporary income to the affiliated population, affecting the adequacy of the pension system and increasing future fiscal costs.

[16] *Ley de Protección al Empleo Salvadoreño* (LD No. 641) established a subsidy to finance up to 50 percent of the companies' monthly payroll during 2 months, a credit program to SMEs and a credit program for the informal sector. Other policies were promoted to guarantee the right to work (LD No. 661); to protect workers in a vulnerable medical condition against COVID-19, ensuring job stability and perception of income (LD No. 774); and to protect workers in the workplace, through the approval of the *Ley de Regulación del Teletrabajo*, which seeks to promote and implement telework as an instrument for job creation and the modernization of public and private institutions (LD No. 620).

[17] Moreover, Congress approved the increase, for fiscal year 2021, of the minimum old-age pension through *Ley de Presupuesto General del Estado*, moving it from US$ 207.60 to US$ 304.17 per month, as well as an increase from US$ 145.32 to US$ 210 in the minimum pension for partial disability. Certainly, this increase is a contribution to improve the benefit received by the retired population but will impact the financial sustainability of the system and public finances.

5.2 A Review of Early Withdrawals Mechanism in El Salvador

The early withdrawals in the Salvadoran pension system are a benefit that was included in the 2017 reform (LD No. 787), prior to compliance with certain requirements established in the law and with the obligation to repay withdrawals, including interest. The SAP Law dictates that early withdrawals could be requested progressively, according to age groups and gender, following the scheme shown in Table 3.

Table 3. Age Authorized to Withdraw

Year	Men	Women
2017	58 years or more	53 years or more
2018	56 years or more	51 years or more
2019	54 years or more	49 years or more
2020	52 years or more	47 years or more
2021	50 years or more	45 years or more
2022	46 years or more	41 years or more
2023	42 years or more	All
2024	All	--

Source: SAP Law.

The analysis of early withdrawals can be done according to the moment in which the individuals were authorized to request them. According to data from *Asociación Salvadoreña de Administradoras de Fondos de Pensiones* (ASAFONDOS), among those who request early withdrawals, most do so in the year in which they were authorized, both men and women, which could be attributed to a "novelty bias." In addition, among women it is observed that the average amount withdrawn by "new" authorized individuals is lower compared to the amount withdrawn by those who had been authorized in previous years, which is consistent with a greater availability of funds as contribution time increases. In the case of men, the opposite is observed, a fact that could be explained by a "present bias," since "new" authorized individuals are further away from the time of retirement.

Table 4. Early Withdrawals, by Authorization Moment, 2018-2020
(Active contributors and amounts in USD)

		Women		Men	
		New authorized to withdraw	Previously authorized to withdraw	New authorized to withdraw	Previously authorized to withdraw
2018	Active contributors	3,931	2,251	3,077	813
	Average amount	$5,759	$6,188	$6,192	$5,176
2019	Active contributors	5,734	3,596	5,759	2,085
	Average amount	$5,762	$6,158	$6,590	$6,262
2020	Active contributors	6,762	5,341	7,811	3,904
	Average amount	$5,640	$6,153	$7,106	$17,458*

Source: ASAFONDOS (2022).
Note:* The average amount withdrawn by 54-year-old men in 2020 appears to be an outlier, outside the range observed for other ages. When this value is excluded, the average amount withdrawn is US$ 7,121.8.

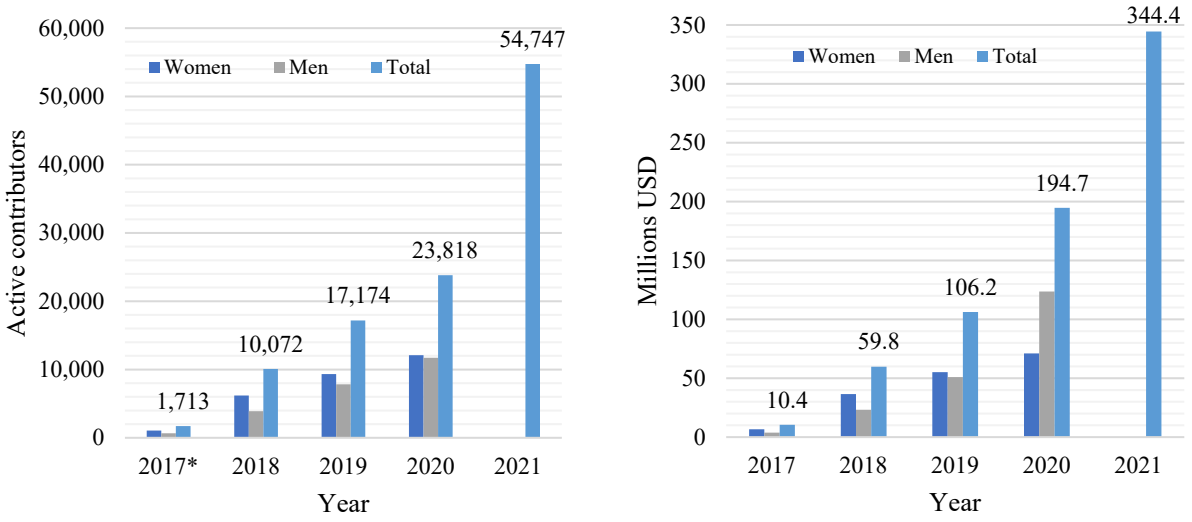
The previous analysis is relevant to understand the alternative behavior of men and women, but it is also necessary to identify changes in the dynamics of early withdrawals before and during the pandemic. In the first two years (2018 and 2019), prior to the COVID-19 pandemic, US$ 59.8 million and US$ 106.2 million were granted and benefited 10,072 and 17,174 contributors, respectively. The promotion and relaxation of early withdrawals as a result of COVID-19 increased the use of this mechanism. As of December 2020, it was reported that 23,818 individuals benefited and an aggregate amount of US$ 194.7 million was granted. These figures increased even more during 2021, as approximately 50 percent of total early withdrawals were requested in that year. US$ 344.4 million were withdrawn, and around 55 thousand contributors used the benefit.

During 2018 and 2019, more women than men requested early withdrawals, but this difference leveled off in 2020. Although there is not enough evidence to affirm it categorically, this behavior could be related to the fact that the first group authorized to early withdraw were those closest to retirement age and that the probability of access to an effective pension is lower for women, so the withdrawal is, in practice, just a preview of what will be a reimbursement in the future. As individuals further from retirement age are authorized, however, the "present bias" prevails, and the probability of withdrawal is distributed uniformly.

In regard the average amount withdrawn, the explanation seems to be the same: the average withdrawal by women is very similar in 2018-2020 (around US$ 5,900), while the average

withdrawal by men grows (US$ 5,900 in 2018, US$ 6,500 in 2019 and US$ 10,500 in 2020), which supports the idea that women withdraw the maximum percentage authorized because they foresee that they will not have a pension in the future, while men who are further from retirement realize withdrawals for larger amounts as a result of a "present bias."

Figure 7. Early Withdrawals, by Sex, 2017*-2021
(Active contributors and amounts in million USD)



Source: ASAFONDOS (2022).
Note: * The pension reform was approved in September 2017, so the figures represent the withdrawals requested in November and December of that year.

6. Methodology to Evaluate the Impact of COVID-19 on the Salvadorean Pension System

Estimating the impact of the COVID-19 pandemic on the private pension system in El Salvador requires a methodology that permits identifying changes in relevant variables of the system as a consequence of the policies implemented to prevent the spread of the virus and to reactivate the economic activity. In particular, this study seeks to estimate labor market effects—employment and wages—resulting from the relaxation of the early withdrawals mechanism[18].

A valuable instrument for achieving this objective is the Pensions Actuarial Projection Model, developed by the Latin American and Caribbean Pensions Network (PLAC Network) with

[18] It is possible that the COVID-19 pandemic has affected the dynamics of the labor market as a result of an increase in the migratory flow, which could have consequences for the pension system. Annex 6 briefly discusses the migratory phenomenon in El Salvador and argues why these effects are unlikely to occur.

financing from the Inter-American Development Bank (IADB). This model allows us to project the pension system's flow of incomes and expenditures based on the projection of the annual stock of active and passive population and the wages and pensions associated with these stocks. To make these projections, the model uses as inputs, for each age and sex, the population, the stock of actives, the stock of passives, the rate of entry into actives, the rates of transition from actives to passives (for old age, disability, and death), the average wage, the average pension, and other parametric variables of the system.

Given that the objective is to estimate the impact of the COVID-19 pandemic, the IDB pension projection model is estimated in two different scenarios. The first, which is called the "Counterfactual Model," uses data from "what would have been observed if the pandemic had not occurred." The other, called the "Base Model," uses ASAFONDOS data from 2020, which reflects the effects of the pandemic on the private pension system. However, some clarification must be made regarding the way in which variables are included in both models.

The usual way to estimate what would have been observed if an intervention had not occurred is to use experimental or quasi-experimental techniques with control groups, but there is no control group in cases where there is a "general" intervention, potentially affecting all units, like the COVID-19 pandemic. An alternative approach to solving this problem is to use information from the variable of interest with data prior to the intervention, using a time series model to identify the data generating process—the mathematical function underlying the observed data—and then to estimate coefficients to project the series forward. In this way, the impact of the intervention is given by the difference between each of the projected values of the series and the values observed after the treatment.

Interrupted Time Series Analysis (ITSA) is a useful methodology to estimate impacts in the absence of a control group. The ITSA methodology estimates the impact of an intervention without the need to build a control group, using the pre-treatment linear trend to project what would have happened in the absence of the treatment and comparing this result with the observed post-intervention trend. Both trends are estimated using the ordinary least squares method. Thus, the standard ITSA regression model assumes the following form (Linden, 2015):

$$Y_t = \beta_0 + \beta_1 T_t + \beta_2 X_t + \beta_3 X_t T_t + \varepsilon_t$$

Y_t is the aggregated outcome variable measured at each equally spaced time point t, T_t is the time elapsed since the first data time, X_t is a dummy variable that takes value 0 for pre-

intervention periods and value 1 for post-intervention periods, and $X_t T_t$ is an interaction term. β_0 represents the starting level of the outcome variable, β_1 is the slope of the outcome variable until the intervention, β_2 represents the change in the level of the outcome that occurs immediately following the intervention, and β_3 shows the difference between pre-intervention and post-intervention slopes. Thus, β_2 indicates an immediate treatment effect and β_3 indicates a treatment effect over time.

As previously described, the ITSA methodology can be used to analyze the effect of the COVID-19 pandemic on the labor market. For this purpose, we used monthly data between January 2016 and October 2021 on the total number of formal workers and the average wage, which are contained in the ISSS database. The analysis of both variables tries to capture the impact generated by the pandemic and the reactivation policies on the demand for labor, but in two different aspects: the first, in relation to the number of workers, and the second in relation to changes in working hours.

However, a precision must be made to the ITSA methodology applied to the impact of the COVID-19 pandemic on employment and wages: the ITSA model assumes the existence of a single treatment, a single shock, which generates a change in the level and trend of the impact variable. In this case, there are two big shocks: the quarantine and the public policies that were gradually implemented during the pandemic to avoid its effects. The way to solve this problem is through a simplifying assumption: the breaking point will not be the beginning of the quarantine (March), but the time at which the first public policy was implemented to counteract the economic effects of the pandemic (June). Thus, the first months of quarantine (March–May) will be artificially considered as a single temporary observation, thus measuring the impact of the quarantine through the change in the intercept, while the change in the slope will measure the aggregate impact of the economic reactivation policies

ITSA estimated results are used to feed the Counterfactual Model, since it includes the stock of actives and the average wage in 2020 adjusted according to the results of the ITSA model. The average wage is adjusted directly by adding the estimated effect as a result of the pandemic, while the stock of actives is adjusted according to the following procedure: the ratio (number of workers formally employed in 2020) / (number of workers contributing to the pension system in 2020), which is used to divide the number of workers that would have been observed in the absence of the pandemic (adding the effect on employment estimated with the ITSA model), resulting in

the number of active contributors in the counterfactual scenario. Both variables are used to calculate the future flow of actives, passives, and wages.

Another two relevant elements are reimbursements and early withdrawals. Given that a portion of passives do not receive a contributory pension, but rather a reimbursement, the passives' flow projection is adjusted by weighting it with the effective pension rate, while the reimbursements are included as expenditures in the period in which the individual retires. Early withdrawals represent short-run expenditures when they are delivered, but medium-run income when they are repaid, without affecting the accumulated balance in the account.

As for the Base Model, it includes the stock of actives and the average wage observed in 2020, but the flows projected with the Counterfactual Model are from the period when the ITSA model shows that the effect of the pandemic disappears, so from there future flows must be equal to those that would have been observed if the pandemic had not occurred. In addition to this setting, the most important adjustment made in the Base Model is that related to early withdrawals: given the relaxation of the mandatory repayment requirement, the amounts withdrawn are greater than in the Counterfactual Model, with more expenditures, without future incomes from repayment and with lower accumulated balances and benefits.

To obtain an approximation of the impact of COVID-19 on the private pension system in El Salvador, the results of the two models are compared: i) the Base, which represents the future situation of the system including the effects of COVID-19; ii) the Counterfactual, which estimates the future situation of the system assuming that the COVID-19 pandemic had not occurred. Specifically, two Base Models are proposed, which correspond to different scenarios: the first (Base Model A) assumes that the entire effect of the early withdrawals translates into a reduction of future benefits; the second (Base Model B) assumes that the entire effect of early withdrawals translates into an increase in the percentage of individuals who receive a reimbursement.

7. Results

7.1. ITSA Model

The results of the estimation of the ITSA model using total employment as the dependent variable (Model 1) show that the strict quarantine implemented during the months of March, April and May 2020 caused an "immediate" loss of 64,411 jobs, but the public policies implemented to reactivate the economy led to an accelerated recovery, with a higher level than that observed before the

pandemic. The results of the estimation of Models 2 and 3—which use private employment and public employment, respectively, as dependent variables—show effects in opposite directions: while 70,878 jobs were lost in the private sector, in the public sector employment grew by 6,466. As indicated in the methodological section, these impacts are calculated in comparison with what would have happened in a scenario without the pandemic.

Table 5. Impact of COVID-19 Quarantine and Reactivation Policies on Employment
(Number of workers)

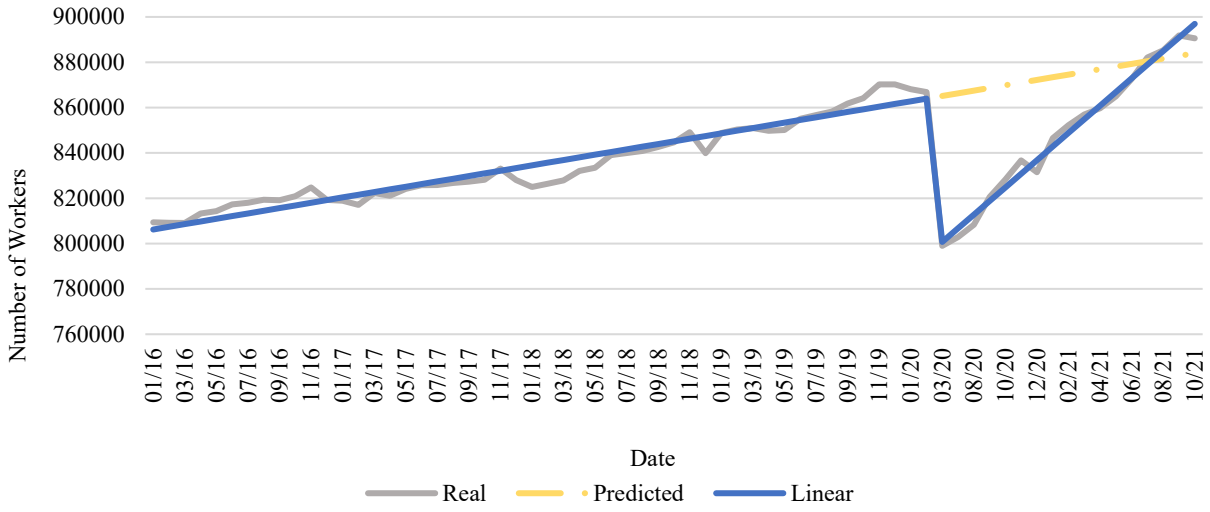
	Model 1	Model 2	Model 3
	Employment*	Private Employment*	Public Employment*
Starting Level	806,219.60	643,035.80	163,183.80
Immediate Level Change	-64,411.60	-70,877.80	6,466.20
Pre-pandemic slope	1,178.30	1,020.60	157.6
Post-pandemic slope	10,848.30	9,547.20	1,299.10

Source: Authors' calculations based on ISSS data.
Note: * Statistically significant effects at 95% confidence level.

Figure 8 shows three relevant elements: the real evolution of total employment, the most efficient linear representation of that evolution, and the linear estimate of what would have happened to employment in a situation without a pandemic, based on the coefficients estimated in Model 1. In addition to the negative impact of the measures designed to prevent the spread of contagion, it is observed that the recovery of employment was relatively fast, since it took approximately 13 months to reach the level that would have been observed if the pandemic had not occurred.

Figure 8. Total Employment Monthly Evolution, 2016-2021

(Number of Workers)

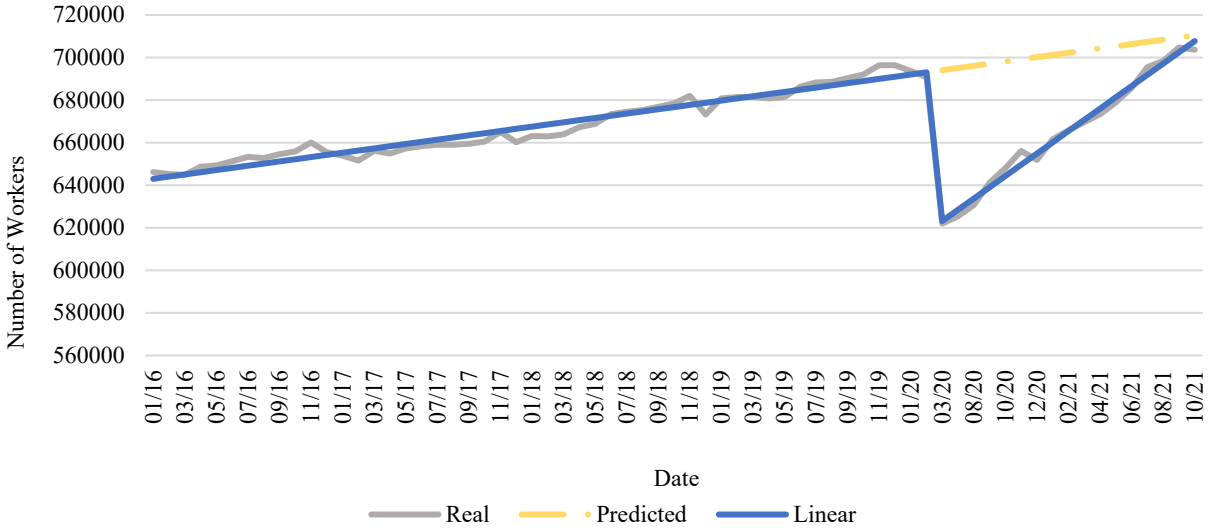


Source: Authors' calculation based on ISSS data.

Despite what has been pointed out previously regarding total employment, Figure 9 shows that private employment had not yet reached the level it would have been in a situation without a pandemic, which reinforces the idea that public employment has been an important part of the post-pandemic economic recovery process, as ITSA Model 3 reveals.

Figure 9. Private Employment Monthly Evolution, 2016-2021

(Number of Workers)



Source: Authors' calculations based on ISSS data.

The results of the estimation of the ITSA model using total mean wage as the dependent variable (Model 4) show that pandemic restrictions during March, April and May 2020 caused an "immediate" loss of US$ 26 in wages, but the government policies implemented to alleviate the economy led to an accelerated recovery, as in the case of employment. The results of the estimation of Models 5 and 6, which use private wages and public wages as dependent variables, respectively, show negatively correlated effects: while wages decrease US$ 44 in the private sector, in the public sector wages grew US$ 4.

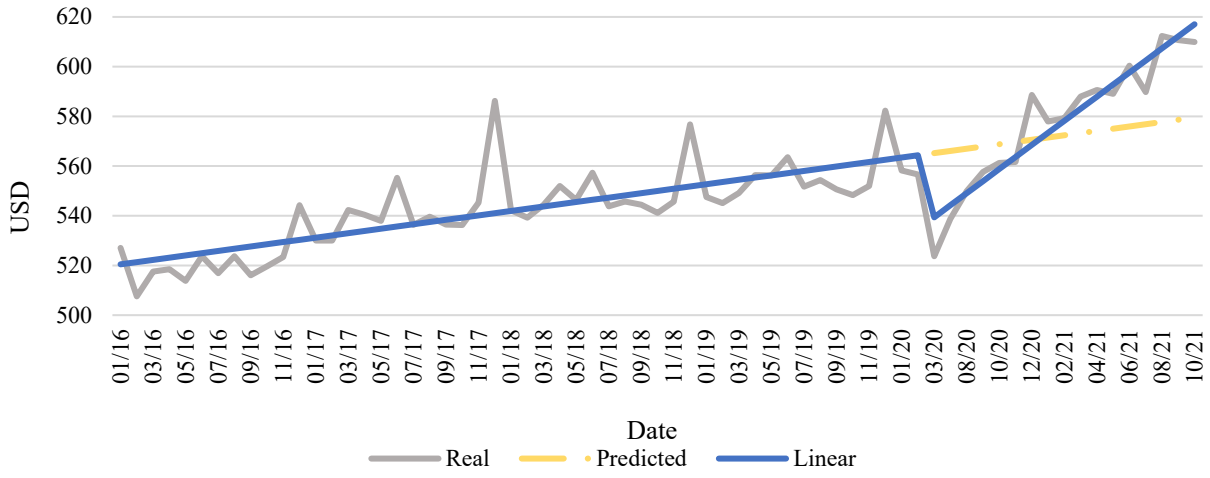
Table 6. Impact of COVID-19 Quarantine and Reactivation Policies on Employment
(USD)

	Model 4	**Model 5**	**Model 6**
	Wage*	**Private Wage***	**Public Wage***
Starting Level	520.5	501.1	774.5
Immediate Level Change	-25.8	-44.2	4.3
Pre-pandemic slope	0.89	1.15	0.93
Post-pandemic slope	8.81	9.73	6.11

Source: Authors' calculations based on ISSS data.
Note: * Statistically significant effects at 95% confidence level.

Analogous to previous employment estimation, Figure 10 shows the real evolution of total mean wage, the most efficient linear representation of that evolution, and the linear estimate of what would have happened to mean wage in a situation without a pandemic, based on the coefficients estimated in Model 4. Even faster than employment, after eight months the wage reached the level that would have been observed if the pandemic had not occurred.

Figure 10. Total Mean Wage Monthly Evolution, 2016-2021
(USD)

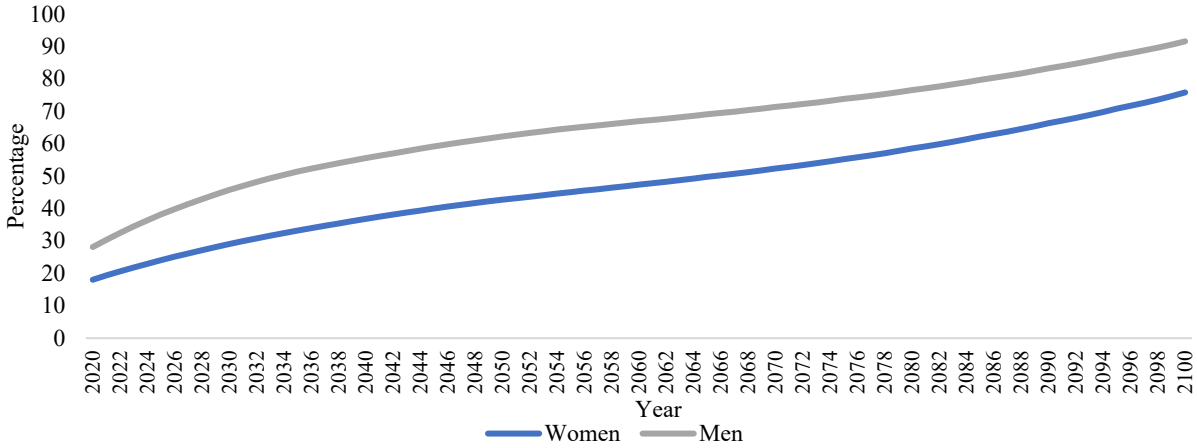


Source: Authors' calculations based on ISSS data.

7.2. Counterfactual Model

The estimation of the Counterfactual Model simulates the situation of the pension system in the absence of the COVID-19 pandemic. It allows us to obtain relevant information on the coverage of the private pension system in El Salvador. The model predicts a continuous increase in the actives coverage rate of the system in year to come. This dynamic occurs for both men and women, although this causes a widening of the gender gap detrimental for women (see Figure 11).

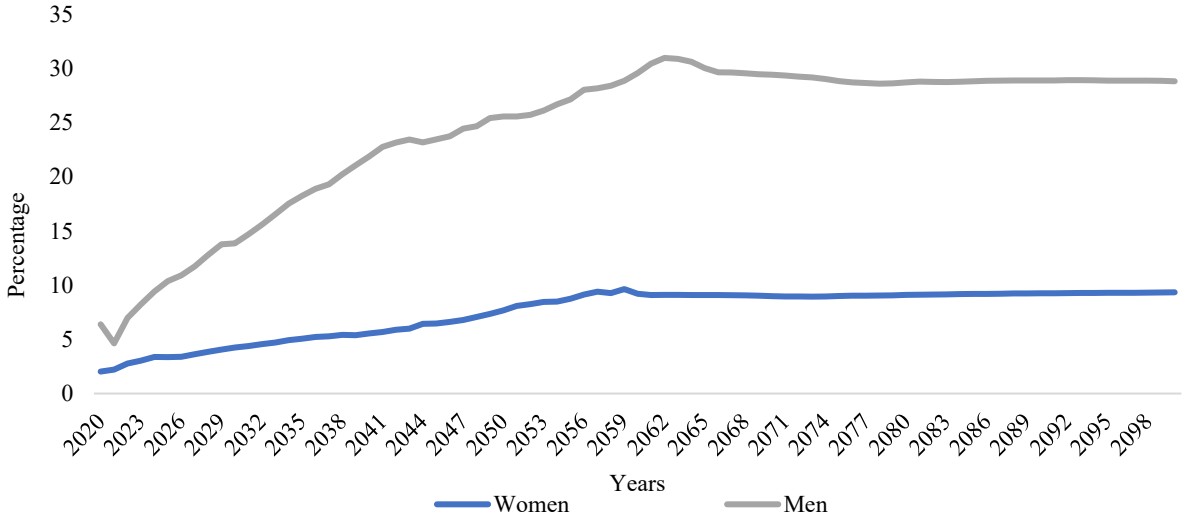
Figure 11. Actives Coverage Rate, by Sex
(Percentage)



Source: Authors' calculations based on IDB Model.

The dynamics observed in the actives coverage rate are consistent with the projected behavior of the rate of beneficiaries of the private system one year after the legal retirement age (55 in the case of women and 60 in the case of men). In Figure 12, the passives coverage rate increases for both genders, but the gap widens over time. This result indicates that, under the SAP's current operating scheme—and even without COVID-19—the problem of low coverage will be persistent, particularly for women.

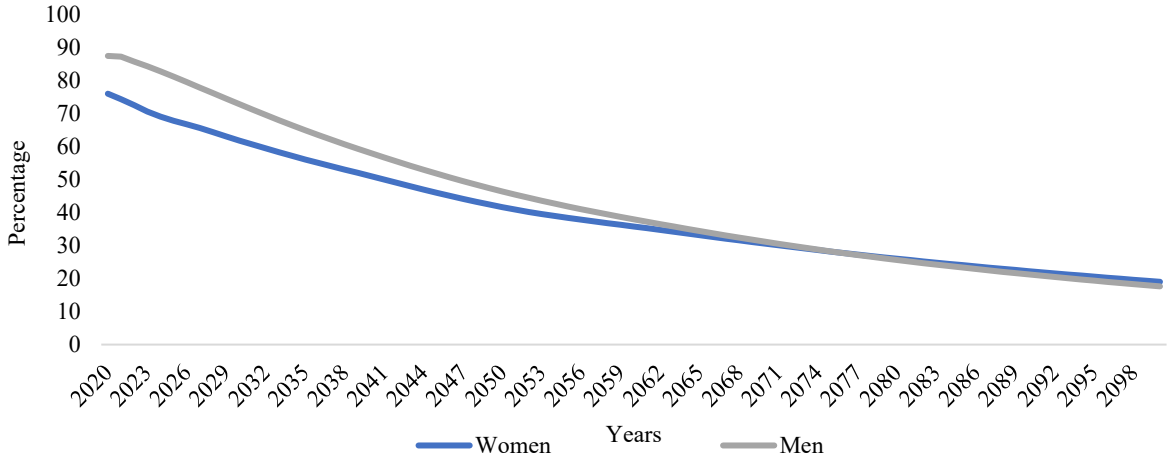
Figure 12. Passives Coverage Rate, by Sex
(Percentage)



Source: Author´s calculation based on IDB Model

A relevant indicator to approximate the adequacy of the private pension system is the ratio between the average benefits of pensioners and the average wages of the contributors to the system, as a proxy for a replacement rate. Figure 13 shows a downward trend for both men and women in this ratio, which suggests that contributory pensions, even if the COVID-19 pandemic had not occurred, will be increasingly insufficient to cover the cost of living in the future, assuming that wages are a proxy of this cost. In addition, in the long run the gender gap is closed, that is, women's pensions would cover the cost of living in the same proportion as men's pensions as a consequence of a more accelerated growth of women wages.

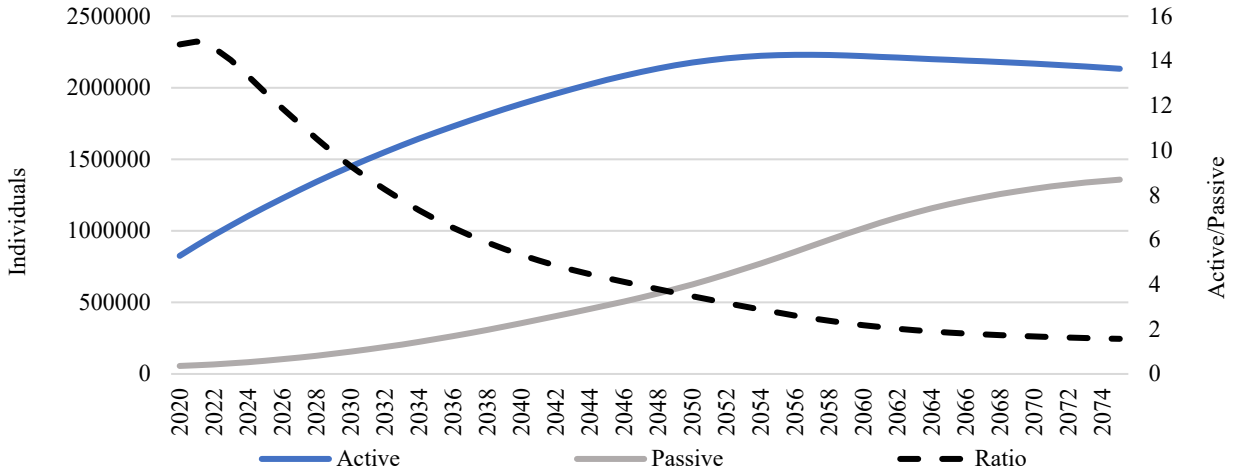
Figure 13. Replacement Rate (Mean Pensions over Mean Salaries), by Sex
(Percentage)



Source: Authors' calculation based on IDB Model.

The Counterfactual Model projections presented in Figure 14 indicate that the stock of actives in the private pension system exhibits a growing trend over the next 30 years and will stabilize thereafter. On the other hand, the stock of passive is always growing, which explains the drop in the actives/passives ratio. This behavior could indicate a future problem in the sustainability of the system, as the number of individuals who will require social security benefits will be increasing in relation to the number of individuals who contribute to the system.

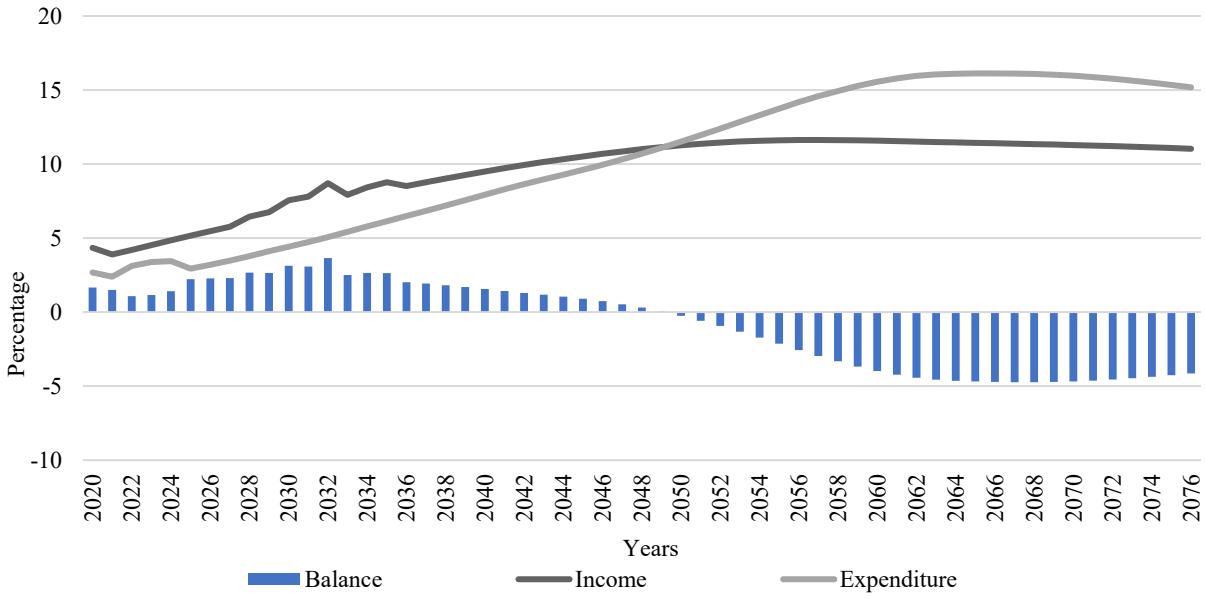
Figure 14. Rate of Active over Passive Population
(Individuals and Percentage)



Source: Authors' calculation based on IDB Model.

The previous idea about the future sustainability of the system is reinforced when observing the financial flows of incomes and expenditures. As can be seen in Figure 15, income take a similar path to that of actives, increasing during the following three decades and stabilizing thereafter. It can also be seen that expenditures (pension payments, reimbursements, and withdrawals) will grow over the next 45 years and then gradually decline. The most relevant fact is that, as a result of the trends described in incomes and expenditures, the private pension system, in the absence of COVID-19 pandemic, will pay more benefits than incomes it will receive from contributions in approximately 30 years.

Figure 15. Financial Flows of the Pension System: Incomes and Expenditures
(As Percentage of GDP)



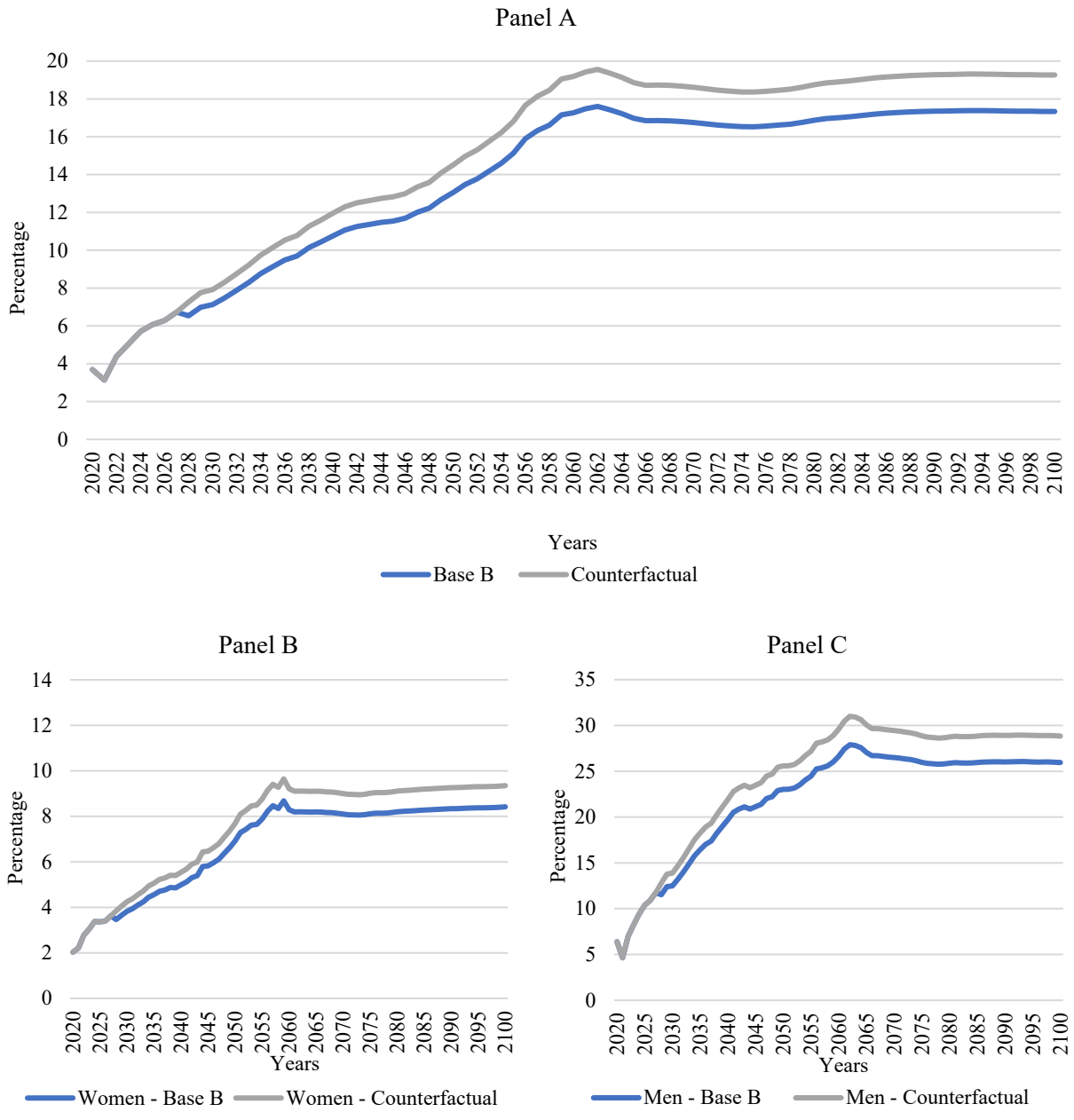
Source: Authors' calculation based on IDB Model.

7.3. Impact

The first impact of the COVID-19 pandemic on the private pension system is observed in the passive coverage rate. By definition, Base Model A is identical to the Counterfactual Model in terms of the flow of passives, since it is assumed that the lower balances in the individual accounts caused by early withdrawals will only affect the amount of future pensions—and not the reimbursements. In this sense, the difference between the Counterfactual Model and Base Model B shows the maximum possible impact of the pandemic on passives coverage as a result of early withdrawals. As can be seen in Figure 16 (Panel A), the consequence of the pandemic is a

progressive and permanent drop of around 2 percent in the passives coverage rate. This effect, beyond the differences in magnitude, is very similar between women (Panel B) and men (Panel C).

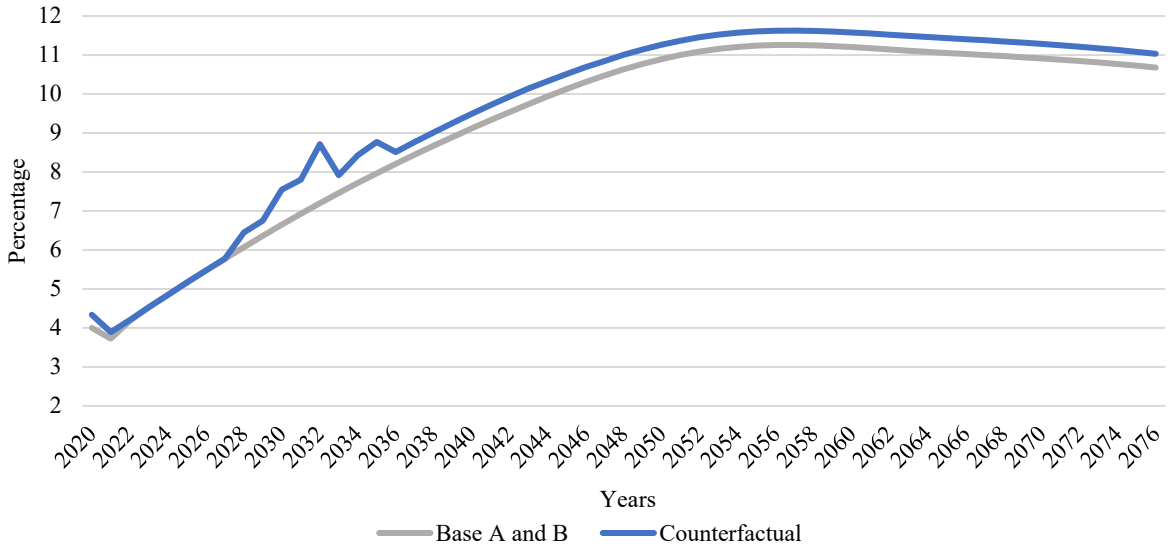
Figure 16. Impact of COVID-19 Pandemic on Passive Coverage Rate, Global and by Sex
(Percentage)



Source: Authors' calculation based on IDB Model.

Furthermore, the impact on the financial flows of the private pension system is estimated through the projection of incomes and expenditures. Incomes follow a growing trend in all models and scenarios, although they are higher in the Counterfactual Model (see Figure 17), which means that the COVID-19 pandemic has had a negative effect on incomes, mainly caused by loosening requirements on repayment of early withdrawals; remember that the effect on employment and, therefore, on active contributors, was very short-term. It should be noted that the gap between projected income in the situations with and without COVID-19 increases during the 2028-2036 period, which is due to the assumption that individuals who early withdraw balances do so in the year they are authorized and, therefore, the flow of repayments is concentrated in those years.

Figure 17. Income of the Pension System
(As percentage of GDP)

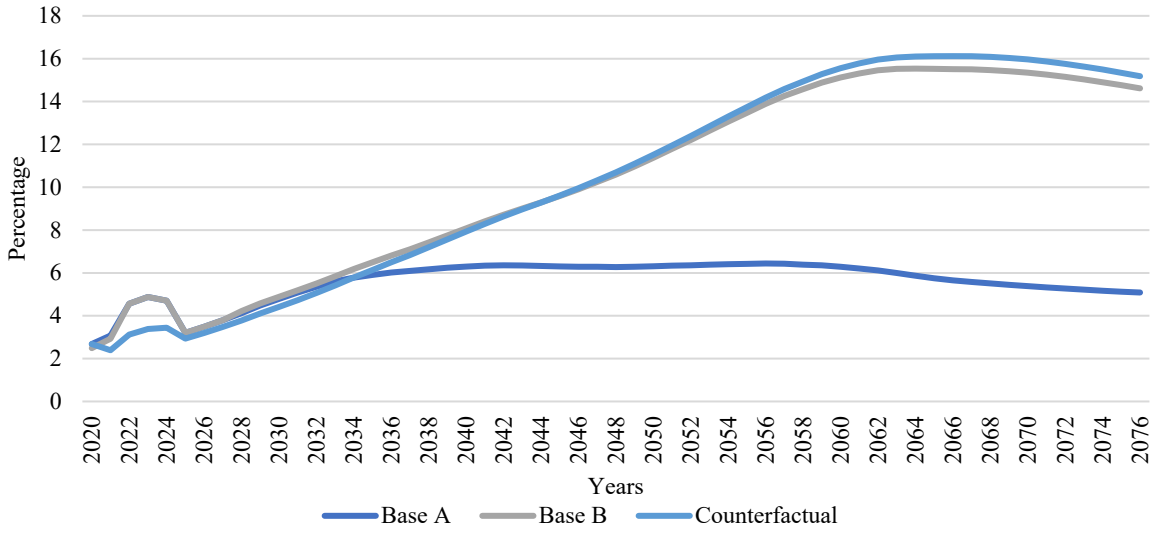


Source: Authors' calculation based on IADB Pension Projection Model.

On the expenditure side, all models and scenarios projected an increase in the short and medium term. In the short run, the effect of the COVID-19 pandemic is a substantial increase in expenditure as a result of a greater demand for early withdrawals caused by the relaxation of repayment requirements. In the long run, the impact on expenditure depends on the assumptions of two scenarios: i) if early withdrawals translate into lower benefits—and not reimbursements—(Base Model A), expenditures will remain relatively constant until 2060 and will then gradually decrease, falling below the counterfactual scenario; ii) if early withdrawals translate into more reimbursements—and not loss of benefits—(Base Model B), expenditures will experience a very

similar trend to those that would have occurred without the pandemic, although they are slightly lower (see Figure 18). Since these two scenarios are extreme situations, it is highly likely that the impact will be somewhere between them.

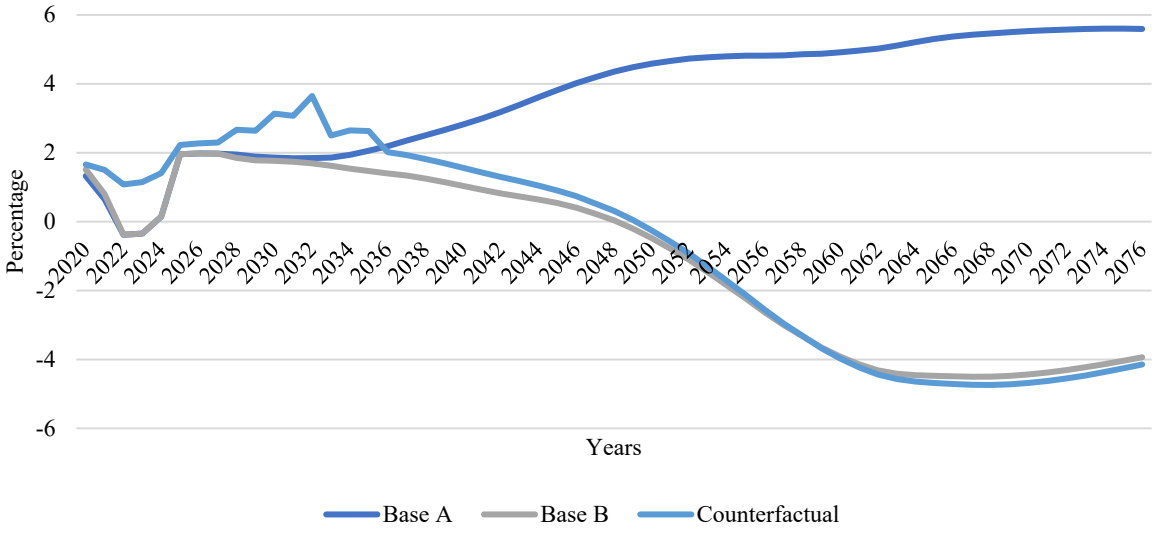
Figure 18. Expenditure of the Pension System
(As percentage of GDP)



Source: Authors' calculations based on IDB Pension Projection Model.

The dynamics of incomes and expenditures are useful to understand the financial pressures to which the private pension system could be exposed. As shown in Figure 19, the system would have expenses greater than incomes around 2050. In scenario B, where it is assumed that the effect of early withdrawals occurs only on reimbursements, the COVID-19 pandemic does not have a significant effect on the financial balance flow. Alternatively, in scenario A, where it is assumed that the effect of early withdrawals occurs only on future benefits, the COVID-19 pandemic causes a positive and growing long run balance of the private pension system. Additionally, in both COVID-19 scenarios, the relaxation of early withdrawals conditions—as a palliative measure to provide actual income to active contributors—exerts short run pressure on the resources required to meet the expenditures.

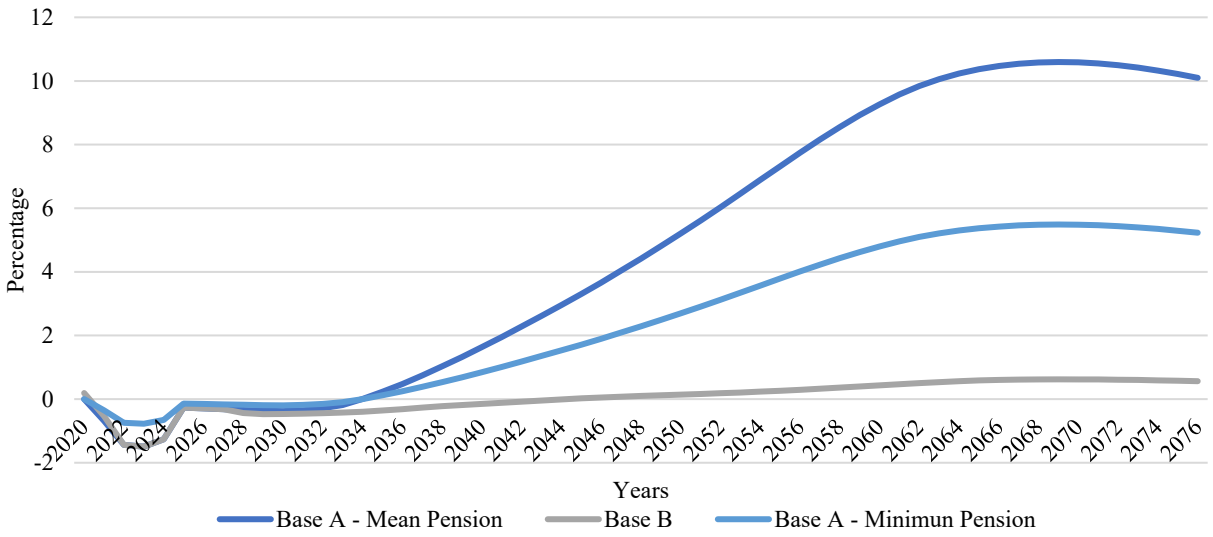
Figure 19. Balance of the Pension System
(As percentage of GDP)



Source: Authors' calculation based on IADB Pension Projection Model.

An approach to the additional public expenditure needs to finance private pension commitments caused by the COVID-19 pandemic is to calculate the difference between expenditure in the situation without COVID-19 and each of the scenarios with COVID-19, assuming that it will be necessary to appeal to a compensatory expenditure that equals the one that would have occurred, so that the benefits of the passives are exactly the same. A more realistic scenario is one in which public expenditure finances only the cost of the minimum pension. In this way, it is estimated that annual public expenditure to fully compensate—by financing the mean pension—the effect of the pandemic should grow progressively from 2035 to 2069, going from 0.23 percent to 10.6 percent of GDP. Partially compensating it—by financing the minimum pension—would increase the fiscal cost from 0.12 percent to 5.5 percent of GDP in the same period.

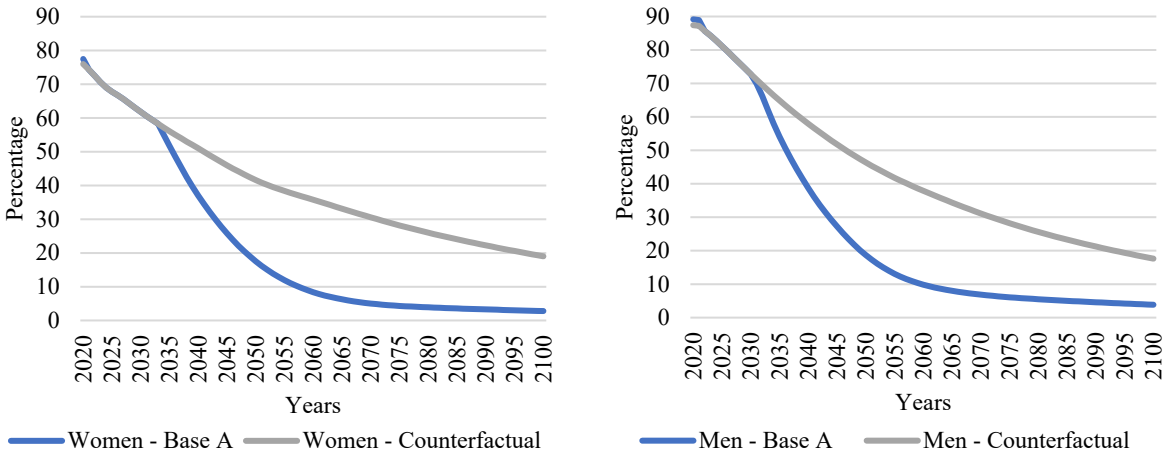
Figure 20. Fiscal Cost to Compensate the Effect of the COVID-19 Pandemic on Pensions
(As percentage of GDP)



Source: Authors' calculations based on IDB Pension Projection Model.

In relation to the replacement rates, the result of Base Model B is, by definition, not different from that observed in the Counterfactual Model, since it is assumed that the entire effect of early withdrawals is strictly manifested in reimbursements and not in futures benefits. On the other hand, Base Model A presents lower future benefits—nearly 28 percent as the highest impact, around 2060—since it is based on the assumption that the early withdrawals are not repaid and, therefore, the balances of the individual accounts are lower than those that would have been observed in a situation without COVID-19. It should be noted that this impact is theoretical in the sense that it is the maximum effect that would occur in a situation without state intervention.

Figure 21. Replacement Rate (Mean Pensions over Mean Salaries), by Sex
(Percentage)



Source: Authors' calculations based on IDB Pension Projection Model.

8. Conclusions and Recommendations

Reforms to the Salvadoran pension system, both structural and parametric, have failed to solve the main problems of coverage, adequacy of benefits and financial sustainability. The reforms have generated commitments for the State—payment of pensions from the SPP, subsidies for the payment of pensions from the SAP, payment of the minimum pension, increases in public debt, budget contributions, etc.—and have modified these responsibilities over time.

Since the creation of the *Sistema de Ahorro para Pensiones* (SAP) in 1998, the system has not been provided with sufficient resources to be able to cover the actuarial deficit of both the old public system and the private one. In this sense, the different governments have appealed excessively to public debt to finance pension expenditure, causing pension debt to reach 21.3 percent of GDP in 2021. This represents, in terms of the fiscal deficit for 2021, approximately 1.2 percent of GDP.

The COVID-19 pandemic has exposed the vulnerabilities of the Salvadoran pension system and social protection mechanisms, forcing the government to implement policies to minimize the short-run effects on the income of actives, using pension system as a funding source to alleviate consumption needs. The estimations show that the pandemic caused short-run effects on employment and wages, which as of July and January 2021 had already recovered, respectively, so these elements do not seem to have an impact on the private pension system.

The greatest impact on the Salvadoran private pension system is associated with the use of early withdrawals, specifically with the relaxation of conditions to repay them. Using the IDB Pension Projection Model, we can conclude that the impact of the COVID-19 pandemic on the private pension system is:

1. A possible drop in passive coverage assuming that the effect of early withdrawals is distributed between an increase in reimbursements and a drop in future benefits. Since the extreme scenarios with COVID-19 estimate an impact of 0 percent and 2 percent, the real effect will be within that range for both women and men.
2. A negative effect on incomes as a result of non-compulsory to repay early withdrawals. The higher effect will be observed during the 2028-2036 period, reaching a maximum of 1.51 percent of GDP in 2032, and standing between 0.36 percent and 0.40 percent of GDP thereafter. The effects of the drop in employment and wages are negligible because they were very short-lived.
3. A short run increase on expenditures—a maximum of 1.49 percent of GDP in 2023—as a consequence of higher demand for early withdrawals in line with the relaxation of repay requirements. The magnitude of the long-run effect depends on the assumption about where early withdrawals translate—lower benefits or higher reimbursements. According to the results estimated from the extreme scenarios, expenditures would increase progressively since 2045, reaching a maximum of 10.6 percent (Base Model A) and 0.62 percent (Base Model B) of GDP in 2069, so it is likely that the impact will be somewhere between both.
4. A negative short-run effect of a maximum of -1.49 percent of GDP on the system's annual balance as a result of higher demand of early withdrawals caused by the relaxation of repayment conditions, exerting more pressure on the resources required to attend the expenditures. In the long run, there is not a clear effect, since the direction of the impact depends on the assumption about where early withdrawals translate—into lower benefits or higher reimbursements—moving from a situation of sustainability to one of unsustainability.

5. An increase in fiscal cost to finance private pension commitments caused by the COVID-19 pandemic. The increase is negligible when it is assumed that the early withdrawals translate into reimbursements, while it is significant when it is assumed that the effect is transferred to benefits. In the latter case, the magnitude of the annual cost is estimated at a maximum of 5.5 percent of GDP, when the State assumes the payment of minimum pensions. As in the previous cases, the likely fiscal cost will be below this value.
6. A reduction in replacement rates compared with Base Model A. Even if this is a theoretical impact because it estimates the maximum effect that would occur in a situation without state intervention, it is calculated that the replacement rate could drop to 28 percent for both men and women. As in the previous cases, it is very likely that the real impact will be less, especially if it is noted that state intervention is expected to guarantee minimum pensions.

The COVID-19 pandemic could exacerbate some of the structural challenges of the Salvadoran pension system, mainly the pillar of adequacy in benefits, which is already low. In theory, a pension system should provide individuals with a retirement pension when they end their active working life. As discussed above, however, the Salvadoran pension system suffers from low passive coverage, a phenomenon that could have been exacerbated by the pandemic. Behind low coverage, which is an indicator of the distortion of the pension system, are the early withdrawals and reimbursements.

The early withdrawals fulfill a function other than that of the pension system, which is to provide social protection during active working life. In the absence of a comprehensive social protection system in El Salvador—unemployment insurance, job training, labor intermediation, conditional transfers, etc.—early withdrawals are a mechanism, in the best of cases, of consumption smoothing for those households exposed to short-run shocks, and in others, a consumption anticipating strategy at the cost of lack of protection during passive years. In this way, although early withdrawals affect the adequacy of future benefits granted by the pension system, their elimination cannot obviate the discussion of the design of a comprehensive social protection system.

Reimbursements are also a mechanism contrary to the theoretical ideal of a pension system, since in practice the system operates only as a mandatory savings mechanism during active

working life, without this translating into a permanent income during the passive stage. Given that the reimbursements originate from insufficient accumulated funds in the individual account, and that this is a consequence of the structure of the Salvadoran labor market—characterized by high informality and low wages—part of the solution to the pension system problem lies in the design of productive and labor policies that generate incentives for the creation of formal and better paid jobs, and the transversal introduction of the gender approach to guarantee the participation of women in equal conditions in the labor market. Until the structural problems of the labor market are solved, it is necessary to implement a non-contributory pillar in the pension system with an incentive structure that guarantees universal protection during old age and financial sustainability.

Attention to policies aimed at improving the pension system requires an increase in public expenditure, so it is essential to include sustainable financing sources. In this regard, the introduction of mechanisms aimed at increasing tax collection for the financing of the contributory and non-contributory pension system could be discussed, oriented to the improvement of tax collection efficiency (e.g., evasion control and tax simplification), the expansion of the tax base (e.g., a special contribution), and a change in rates (e.g., increases in income tax and VAT). However, a tax reform should not only guarantee greater collection, but also increase the progressivity of the system.

Finally, it is also possible to think of financing strategies for the pension system that originate in the system itself and that act in a complementary way to the public resources used to guarantee financial and social sustainability. An alternative that could be studied is to increase the pension contribution of individuals with higher incomes and design a cross-subsidy mechanism, accumulating in a common fund that will be used in the future to pay more and better pensions for those workers who did not accumulate enough funds in their individual accounts. The 2017 reform has already introduced the *Cuenta de Garantía Solidaria* as a financing mechanism for the system, and it is possible to think of other parametric adjustments related to retirement age, mortality tables, and administration costs, among other considerations.

As can be deduced from the discussion presented in this document, and repeatedly pointed out, the Salvadoran pension system has structural problems that the COVID-19 pandemic has aggravated. In this sense, a comprehensive reform of the pension system is required, focused on the objectives of coverage, adequacy and sustainability, which goes beyond partial and short-run

discussions, and which involves all political and economic actors with an interest in finding a comprehensive and long-run solution to the pension system problems.

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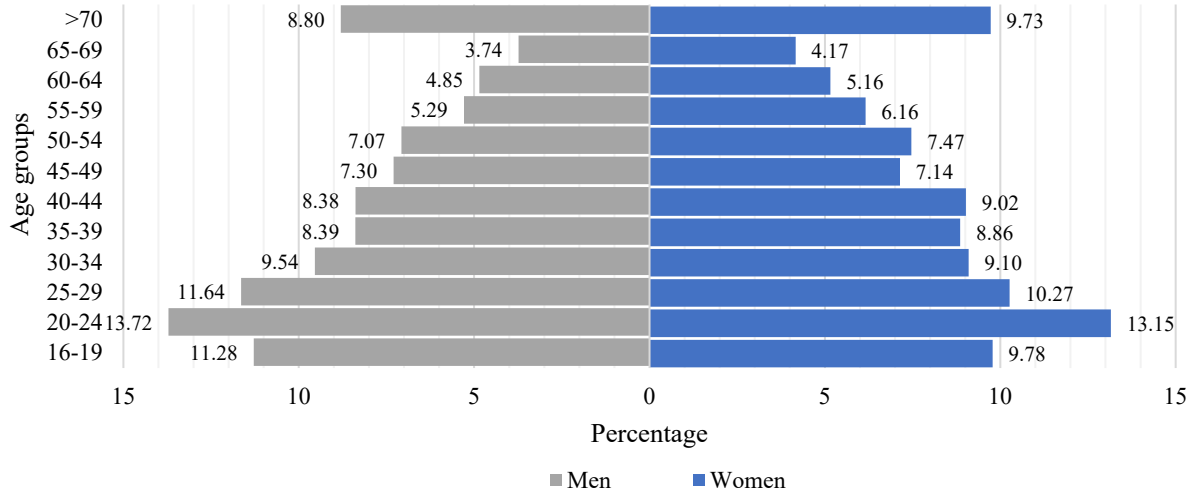
Annexes

Annex 1. Labor Market Indicators

Working-age Population Distribution, by Sex, 2019

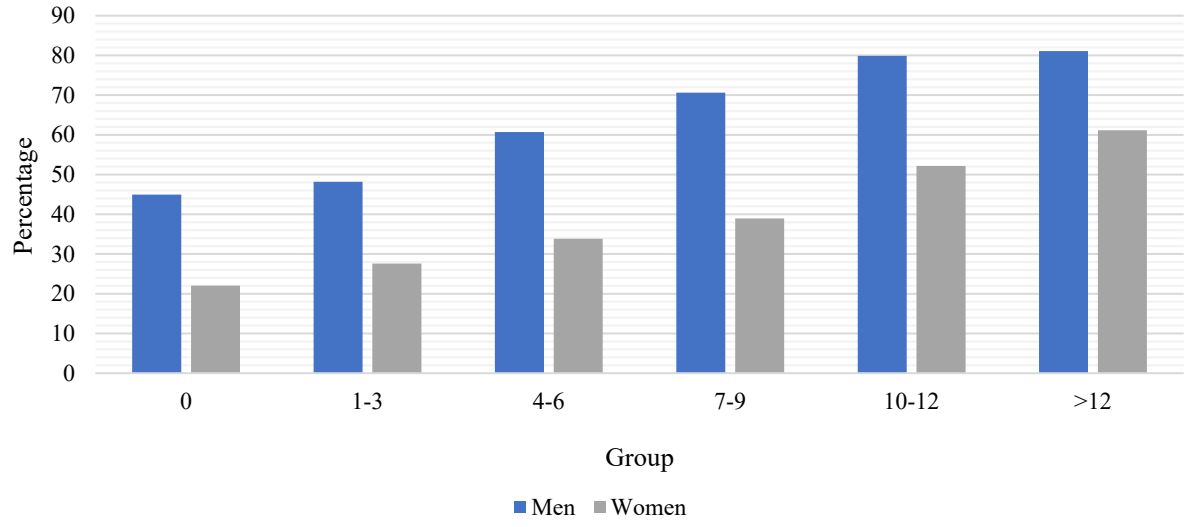
(Percentage)



Source: Authors' calculations based on EHPM19 microdata.

Global Participation Rate, by Sex and Schooling Level Groups, 2019

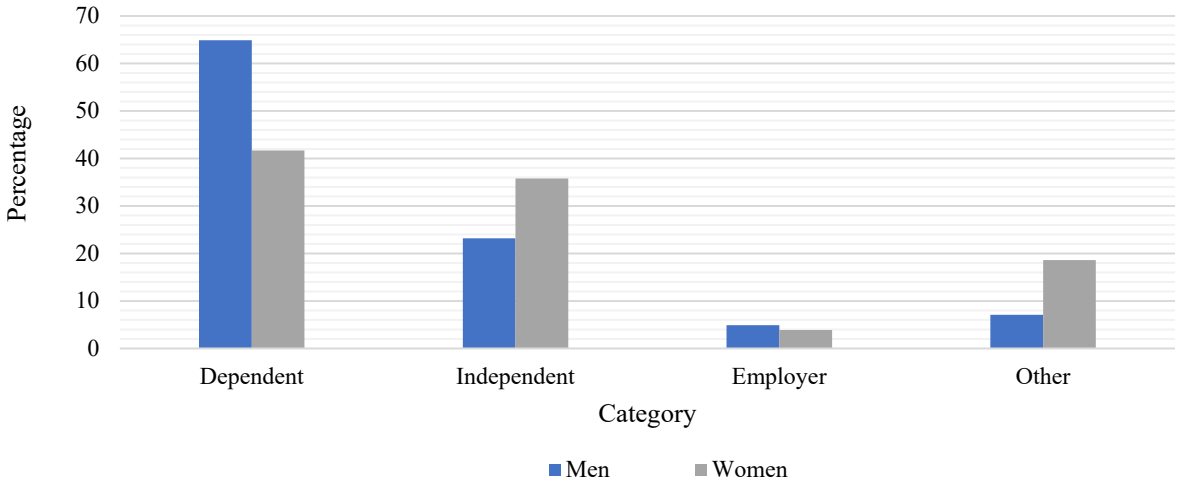
(Percentage)



Source: Authors' calculations based on EHPM19 microdata.

Employment Distribution, by Sex and Category, 2019

(Percentage)



Source: Authors' calculations based on EHPM19 microdata.

Informality Rate, by Sex and Definition, 2019

(Percentage)

	Official Definition			Alternative Definition		
	Men	Women	Total	Men	Women	Total
Urban	40.0	49.0	43.7	55.0	65.2	59.6
Rural	-	-	-	81.9	85.9	83.2

Source: Authors' calculations based on EHPM19 microdata.

Average Wage, by Sex and Schooling Level Groups, 2019

(USD)

	Total	**Men**	**Women**
0	202.0	220.4	184.4
1-3	241.5	259.8	221.4
4-6	261.0	286.2	228.3
7-9	283.7	312.3	235.4
10-12	348.7	379.2	304.4
>12	613.7	666.7	555.4
Total	**342.7**	**371.1**	**305.3**

Source: Authors' calculations based on EHPM19 microdata.

Minimum Wage

(USD)

Sector	Before August, 2021	+20% Variation	After August, 2021
Industry, commerce and services	304.17	60.83	365.00
Maquila, Textile and Clothing	299.30	59.86	359.16
Coffee benefit and sugarcane harvesting	227.22	45.44	272.66
Other agriculture harvesting	202.88	40.58	243.46

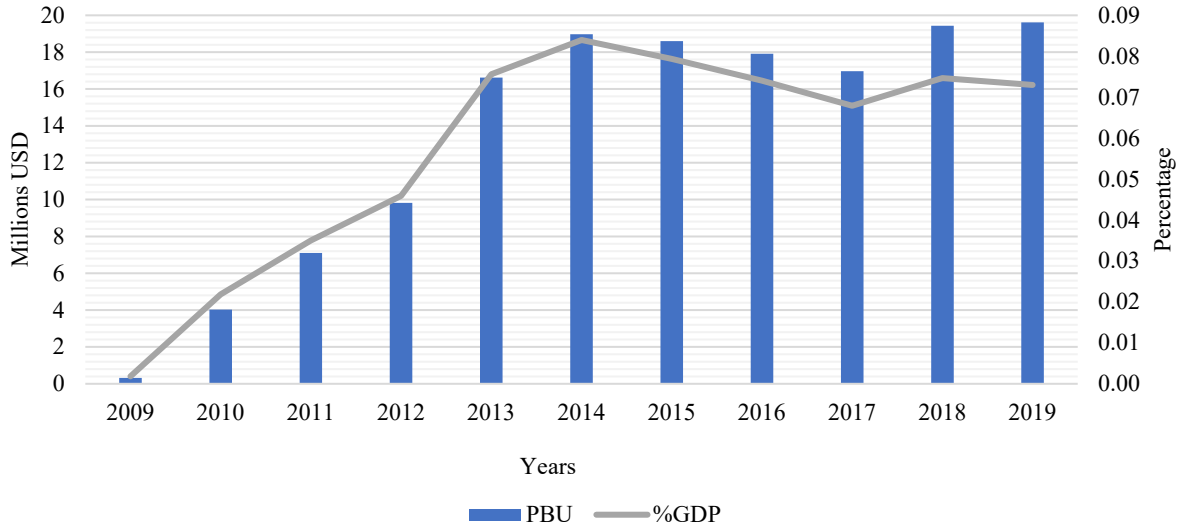
Source: Ministerio de Trabajo y Previsión Social.

Annex 2. Summary of Main Salvadoran Pension System Reforms, 1998-2020

1998	AFPs start managing the pension fund that was previously public.
	Contributors are divided between Obliged and Opted depending on age.
2000-2001	The technical reserves of the Public Pension System were exhausted
	Modification to the form of payment of the *Certificados de Traspaso (CT)* —recognition bonus for the time quoted to the old system—, from a single payment to 15 installments due annually and same.
2003	Decree 1217 was approved
2006	FOP was created
	Decree 100 was approved
	The stock of the *Certificados de Traspaso* (CT) was paid by the CIP B with a 25-year term and each CT and CTC was replaced by that type of title.
	The obligatory purchase of CIP A was at 35%, but B has no limit.
2008-2009	The global financial crisis occurs, and the CIP rate falls to levels of 1%
2012	The Congress approved an increase in the limit of the obligatory comply of the CIP A, going from 35% to 45% of the Fund.
2014	The *Corte Suprema de Justicia* declared that the interest rate that what the Government paid for CIPs was unconstitutional and asked the Congress to establish a market rate.
2017	The contribution rate was increased from 13% to 15%
	The *Cuenta de Garantía Solidaria* was created.
	The advance of up to 25% of the pension savings balance was approved.
	The creation of an Actuarial Committee and a Risk Committee was approved.
	The calculation of pensions for "pure" affiliates was redefined in order to improve their pension and give them a lifetime benefit.
	The CIP was restructured to extend the term to 50 years to increase the interest rate.
2020	The minimum pension was increased to $304.17
	Special conditions were approved so that people could retire without repaying their balance advance.
	The operation of voluntary pension savings products began.
	The return of balance for Salvadorans living abroad was approved.
	Modifications were approved so that the contributor designates a pension beneficiary.

Source: Authors' compilation based on official sources.

Annex 3. Non-Contributory Expenditure:* Pensión Básica Universal (PBU), *2009-2019
(Millions of USD and as a percentage of GDP)



Source: Mesa-Lago and Rivera (2020) and BCR (2022).

Annex 4. Minimum Old-Age and Disability Pension, 1998-2021
(USD and Percentage)

	Old age pension		Disability Pension	
Year	**US$**	**Variation**	**US$**	**Variation**
1998	80.0	--	56.0	--
2002	92.0	15	64.4	15
2003	100.0	8.7	70.0	8.7
2004	114.0	14	79.8	14
2007	119.7	5	83.8	5
2009	143.6	20	100.6	20
2011	207.6	44.5	145.4	44.5
2021	304.17	46.5	210.0	44.4

Source: SSF (2015) and MH (2021).

Annex 5. COVID-19 Summary Table, from March 30, 2020 - June 22, 2022

Cumulative confirmed COVID-19 cases	169,646 26,025 per million people
Cumulative confirmed COVID-19 deaths	4,139 635 per million people
Total COVID-19 test per 1,000 people	293.36
Test conducted per new confirmed case of COVID-19	9.4%
Cumulative number of people with a complete initial protocol (two doses)	4.32 million
Share of people with a complete initial protocol (two doses)	66%
Cumulative number of people only partly vaccinated (one doses)	295,233
Share of people only partly vaccinated (one dose)	4.5%

Source: Official data collected by Our World in Data (2022).

Annex 6. Migration and Pensions in El Salvador

International migration from El Salvador is a longstanding phenomenon. Between 1920 and 1970, Salvadorans migrated mainly to Honduras and other Central American countries, although smaller flows to the United States were also observed, driven by the demand for labor in the midst of World War II (Winschuh, 1997). In the 1970s, the new geopolitical situation, coupled with adverse socioeconomic conditions and the existence of support networks and migratory facilities, generated incentives for migration to the United States, a process that was encouraged between 1980 and 1991, during the Internal Armed Conflict (UNDP, 2005).

The signing of the *Acuerdos de Paz* in 1992, the agreement to end the civil war, created the legal conditions for many Salvadorans to return to El Salvador, but socioeconomic conditions had not changed substantially. In this sense, Salvadoran migration became even more dynamic during the following decade, reinforcing the growing migratory pattern towards the United States, although unauthorized migratory movements predominated in this period (Sermeño, 2006). According to figures from the OAS (2015), between 2009 and 2012 around 100 thousand people migrated from El Salvador, of whom approximately 77 percent went to the United States. The World Bank (2017) states that the stock of Salvadoran migrants in 2017 was 1.56 million, of which 1.39 million (88.9 percent) lived in the United States—approximately a quarter of the country's population.

Salvadoran migration is an important phenomenon not only because of the number of people living outside the country, but also because of its contribution to the income of many Salvadoran families. Yang (2011) shows that Salvadoran migrants to the United States are those who send the largest share of their earnings (37.2 percent) to relatives, averaging annual remittances of US$5,314. According to official statistics, nearly 350 thousand Salvadoran households received family remittances in 2014. Likewise, the *Banco Central de Reserva* reported that in 2015 El Salvador received US$4,256 million in remittances (18.2 percent of GDP), while in 2020 that figure was US$ 5,930 million (24.1 percent of GDP).

Ayala (2022) states that "despite civil violence being particularly cruel in El Salvador (…), and in spite of recent attention brought to the topic by international media and renowned politicians (…), economic drivers seem to be by far the main reasons for emigration. Unemployment, underemployment, or income gaps have been historical incentives for Salvadorans to migrate abroad. Specifically, these economic indicators registered an evident worsening throughout 2020

due to the COVID-19 pandemic." Unfortunately, there is no monitoring information on the migratory flow during the pandemic, so it is not possible to say whether these incentives have actually resulted in migratory increases.

Migration is a relevant element for the Salvadoran pension system in the sense that migrants who contributed to the private pension system and who have legal residence status in another country can request the return of the balance they accumulated while working in the formal sector in El Salvador. In the long run, incremental migratory flows could put pressure on the liquidity of the private pension system, but this is unlikely for three reasons: i) more than half of all Salvadoran migrants in the United States are in an irregular situation, and 53 percent report having entered the US as "undocumented;" ii) Salvadoran migrants are young, with an average age of 32 years; and iii) the majority of Salvadoran migrants were unemployed or working informally in El Salvador (IDB, 2017).