PENSION NOTES

No. 43 – March 2020

Mechanisms for providing social security protection to the self-employed

Executive Summary

Self-employed workers account for a significant percentage of the total workforce in Latin America. According to estimates by the International Labor Organization (ILO) for 2017-2018, they make up approximately 40% of the total workforce, and more than 50% in some countries (Colombia, Peru, Honduras and Bolivia). Thus, their inclusion in the pension systems is crucial for them to receive the same degree of protection in old age as dependent workers.

The evidence justifies mandatory contributions to the pension systems. By way of example, in Mexico and Peru only 2.1% and 6.5% of the total number of self-employed workers contributed to the private pension systems in 2018. In Uruguay, on the other hand, where pension contributions are mandatory, it is estimated that 26% of self-employed workers contributed to the pension system in 2011.[1]

Despite the efforts by different countries to incorporate self-employed workers (Colombia and Peru), political pressure has made it difficult to first legislate and then enforce mandatory contribution. FIAP deems it crucial to incorporate this group of workers into the pension systems, making contribution mandatory only for those independent workers who are able to contribute. Low-income self-employed workers should preferably be covered by non-contributory programs financed from taxes.

There are means of providing social security protection for the self-employed other than incorporating them into the mandatory pension systems. Such proposals include different mechanisms for encouraging long-term savings in this segment, such as: (i) Implement simplified savings mechanisms and tax incentives, together with financial and social security education strategies for self-employed workers capable of paying contributions; (ii) Link pension contributions to tax returns and the granting of licenses, permits etc. (e.g. in activities requiring municipal permits, the permit could be subject to the payment of social security contributions); (iii) Conduct behavioral intervention to increase pension savings, combining automatic enrollment with savings programs, active choice incentives and engagement mechanisms, simplification of decisions, simple reminders, and the offering of incentives (targeted subsidies or increased liquidity of savings); and (iv) Introduce financial innovation (new products that cater to the needs of self-employed workers[2]) and technology (innovations that reduce transaction costs by, for example, the use of mobile phones or new digital applications, allowing savings in the same place where self-employed workers charge for their services, consume, or pay utility service providers).

[1] This result may also be due to other relevant factors that encourage contribution by the self-employed or enable better control of such contributions. Some of the more important factors in Uruguay could be short-term family allowance benefits, subsidies and insurance covering illness and maternity benefits provided by the BPS, or the creation of the simplified tax regime for small businesses and, among the latter, the large volume of citizens' information managed by the BPS, the extent of its activities and cross-checking with other agencies.

[2] For example, one could consider an automatic savings system designed for self-employed workers, that is conditional to their income and prevents withdrawals when balances of very low.

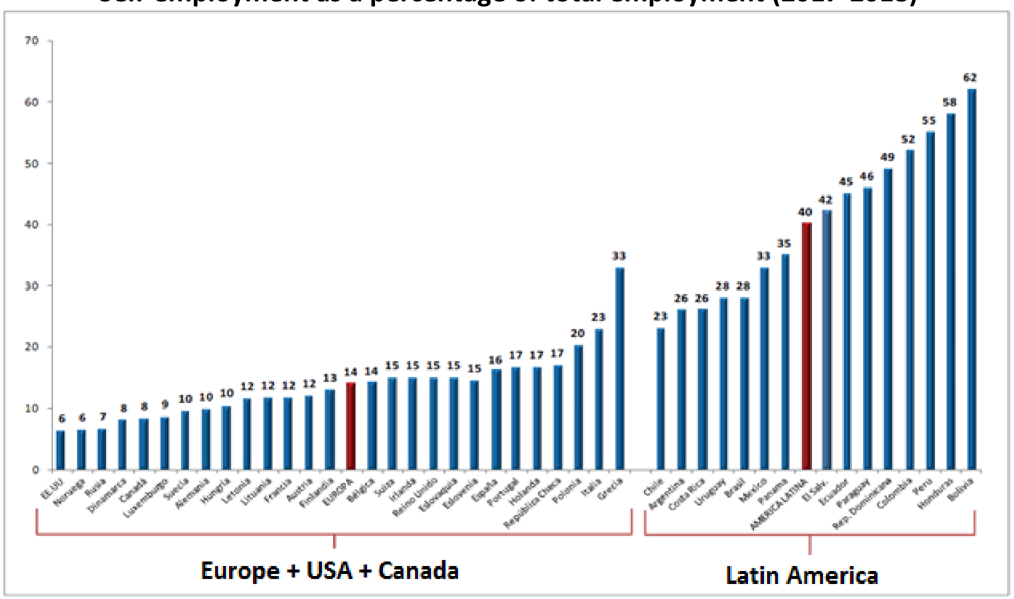
Who are the self-employed and what is their share of total employment?

The International Labor Organization (ILO, 1990) defines self-employed workers as all those who work on their own, or as employers (owners of companies that have not been incorporated as such, and in which they themselves work).

According to the ILO (2019), the share of self-employment in total employment is generally negatively correlated with the level of development of the country. In fact, as shown in Figure 1, this share is significantly higher in Latin America than in Europe, the US and Canada. The simple average of the Latin American group is 40%, whereas the simple average of the second group (Europe + USA + Canada) is 14%.

While only 6% of workers are self-employed in the US, in Bolivia and in Honduras this type of employment accounts for approximately 60% of total employment.

Graph 1
Self-employment as a percentage of total employment (2017-2018)



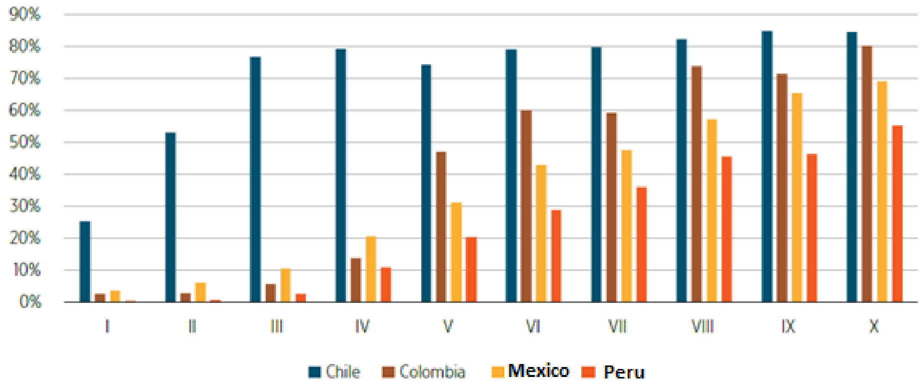
Source: ILO (2019).

Pension systems in Latin America are designed for salaried formal sector employees, generally marginalizing the self-employed

A primary aspect of the original design of the pension systems in the region is that pension insurance was aimed at dependent workers. Due to the importance of the self-employed workers' category in overall employment in the region, (see Graph 1), there is growing concern in the different countries regarding the mechanisms for providing social protection for this group of workers, who are often excluded from the Social Security contributory systems.

According to the IDB (2019), since the pension systems in the region are designed to cover formal dependent employment, the dynamics of that segment of the labor market determine the pension savings volumes of the systems. Scarce formal employment offers in Colombia, Mexico and Peru, are reflected in the low coverage of their pension systems. For example, according to national surveys, the percentage of workers who paid contributions to a pension system in 2015 was 42% in Colombia, 35% in Mexico and 25% in Peru (see Graph 2, the average percentage of workers who pay contributions to a pension system in the different income deciles).

Graph 2
Dependent workers as a percentage of total employment, by income decile

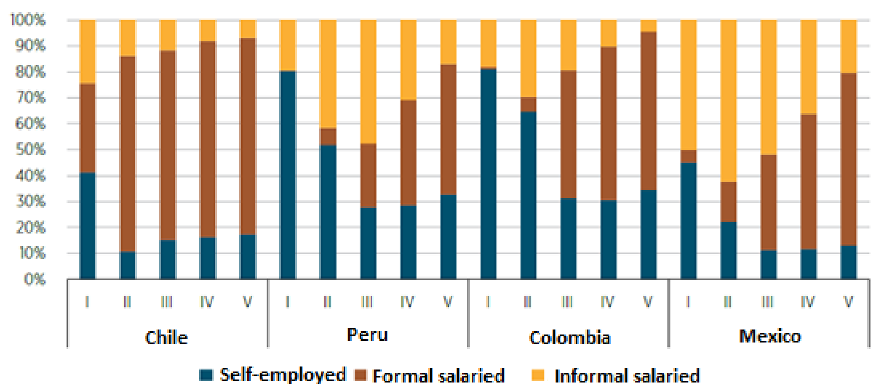


Source: IDB, 2019.

Most dependent workers are informal and the low-income population is mostly self-employed

As shown in Graph 3, formal salaried employment is virtually nonexistent in the first four deciles of income in Colombia, Mexico and Peru, since it accounts for less than 20% of employment. In these countries, the low-income population is employed in informal jobs with no social security coverage. The only exception is Chile, since more than half of the low-income population is protected against risks such as unemployment, accidents, illness, old age and disability.

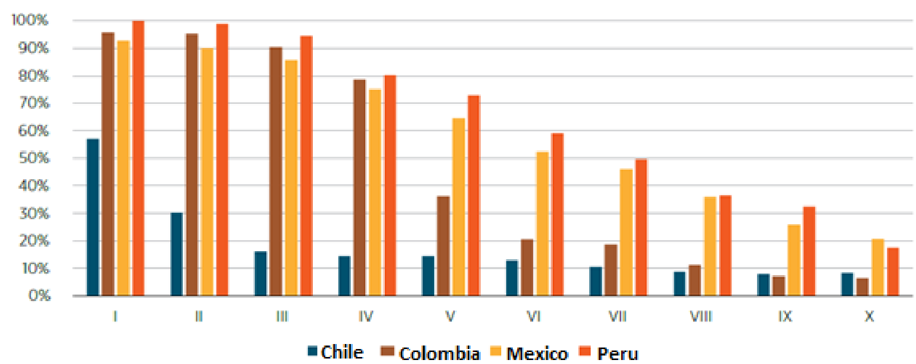
Graph 3
Workers by type of occupation and income quintile



Source: IDB, 2019.

Nearly 50% of employees in Mexico, Peru and Colombia work informally (this percentage increases to 90% for low-income workers; see Graph 4). This can be explained by insufficient human capital and the low standards of education of the low-income population, giving rise to low productivity that prevents them from accessing formal well-paid employment, forcing them to work in the informal sector.

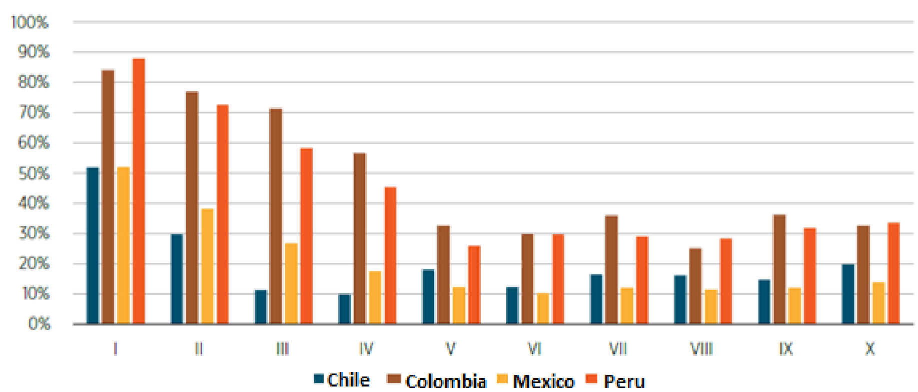
Graph 4
Self-employed workers as a percentage of the total number of salaried employees, by income decile



Source: IDB, 2019.

As can be seen in Graph 5, the lower-income population is mostly self-employed (about 30% in Chile and Mexico, and more than 60% in Colombia and Peru), compared to the higher income sectors (about 15% in Chile and Mexico, and 30% in Colombia and Peru).

Graph 5
Self-employed workers as a percentage of employed persons, by income decile



Source: IDB, 2019.

Should it be mandatory for self-employed workers to contribute?

The obligation to contribute to pension systems worldwide is basically justified by what in the literature is known as "intertemporal myopia." In other words, individuals are unable to anticipate their needs in old age (passive stage) during their active working lives, and therefore do not voluntarily save, because they have a preference for present consumption. By making contribution mandatory, the pension systems seek to protect them from this lack of foresight, providing them with sufficient and stable income to avoid poverty in old age, as well as preventing or reducing the likelihood of them being a burden to the State in the passive stage.

However, mandatory insurance and pension savings in some countries exclude certain groups, which, due to their occupational characteristics, makes it difficult to enforce mandatory contribution. This is the case of self-employed workers.

According to Bertanou and Vasquez (2006) it has been observed that contribution is mandatory for self-employed workers in developed countries with more mature pension systems, such as the United States, Canada[3] and France[4].

It is also important to bear in mind that many workers switch between dependent and self-employed status throughout their working lives. In Chile, for example, it is estimated that individuals spend, on average, 40% of their working lives as dependent employees, 30% inactive, 17% self-employed, 8% as employees without a contract (informal) and 6% unemployed[5]. Given these variations in working conditions, there are extended periods of time in which individuals do not contribute to the pension system. In this context, it is important to effectively obligate and encourage self-employed workers to contribute, since this increases the coverage of the pension systems, but above all, increases contribution densities and pension amounts.

Those who believe that contributions should not be mandatory for self-employed workers, argue that their condition affects their ability to save, especially in the long-term. This is due to several factors. First, there is a strong correlation between low income and self-employment, which means less disposable income, which in turn limits the ability to save (Bertranou and Vasquez, 2006; IDB, 2019). Second, the self-employed have to face contingencies, since they are not covered against occupational hazards[6], so they may prefer to keep their savings in liquid funds to enable them to face eventualities. And third, the income of the self-employed fluctuates, making it difficult for them to plan and save. Furthermore, unlike salaried employees, self-employed workers do not have an employer who automatically deducts a pension savings amount from their wages, making it very difficult to supervise their appropriate contribution to the system (IDB, 2019).

Rules and regulations governing the mandatory contributions of self-employed workers in Latin America

Uruguay and Chile are currently the only Latin American countries with individually funded programs in which it is mandatory for self-employed workers to pay in pension contributions that provide protection similar to that of salaried workers (as of 2018). In other countries, such as Bolivia, Costa Rica, El Salvador, Mexico and Peru, self-employed workers can contribute to the pension system on a voluntary basis. In general, voluntary enrolment is very low and self-employed workers are therefore wholly or partially unprotected at the time they exit the labor market. This is evident, for example, in the cases of Mexico and Peru, where the percentage of self-employed workers who pay pension contributions was 2.1% and 6.5%[7] in 2018, respectively. In Costa Rica, there is also a voluntary pension contribution system through the Disability, Old Age and Death system (public PAYGO system).

[3] https://www.canada.ca/en/services/benefits/publicpensions/cpp/contributions.html

[4] http://www.cleiss.fr/docs/regimes/regime_france_independants_en.html

[5] Estimates of the Office of the Undersecretary for Social Security (2013), based on the employment statistics of the 2002, 2004, 2006 and 2009 Social Protection Surveys.

[6] This does not necessarily have to be that way. For example, mandatory contributions by the self-employed in Chile include the coverage of labor risks.

[7] Self-employed workers who contribute to the private pension system.

In the Dominican Republic, the self-employed do not have the option of making social security contributions, even on a voluntary basis, despite the fact that law 87-01, which introduced the division funded system, included mandatory enrollment of the self-employed in the Subsidized Contributory Regime. This regime should include self-employed professionals, technicians and workers with average incomes at least equal to the national minimum wage. However, after 15 years of the implementation of the pension reform, this regime is still not operating, due to failure to approve the respective regulations (see Table 1).

Table 1
Mandatory contribution to the individually funded system by self-employed workers

País	Obligatoriedad de aportar al programa de capitalización individual	Posibilidad de afiliación voluntaria	Afiliación a un programa de pensiones alternativo
Bolivia	No	Yes	No
Chile	Yes (*)	Yes	No
Colombia	No	Yes	No
Costa Rica	No	Yes	Yes
El Salvador	No	Yes	No
Mexico	No	Yes	No
Peru	No	Yes	No
Dominican Republic	No	No	No
Uruguay	Yes	Yes	No

Source: FIAP, Compared Regulations Compilation, Table 8.1.
(*) It has been mandatory for self-employed workers who issue fee slips to contribute to the social security system since 2018, paying approximately 3% of their annual taxable income in 2018, and increasing to 10% by 2028[8]).

Chile

Law 21.133, which requires self-employed workers who issue fee slips to contribute to the social security system, came into effect in Chile on February 2, 2019. Table 2 summarizes the main aspects of the law.

According to data provided by the National Institute of Statistics and the Chilean Pensions Commission, 27% of employed people in December 2018 (2,288,371 people) were self-employed; only 5.6% of them (128,959 persons) contributed to the pension system.

The evolution of the number of contributors to the pension system, by type of worker, for the 2010-2018 period, is shown in Graph 6. One can observe a positive trend in the total number of contributors, mainly explained by the increase in dependent contributors. However, a significant increase in self-employed contributors can be observed as of mid-2012, which could be explained in part by the gradual mandatory nature of contributions applicable to this group of workers. There is a drop in the number of self-employed contributors as of 2016, which can be explained in part by the deteriorating economic situation.

[8] This percentage depends on whether the self-employed worker opts for full or partial contribution.

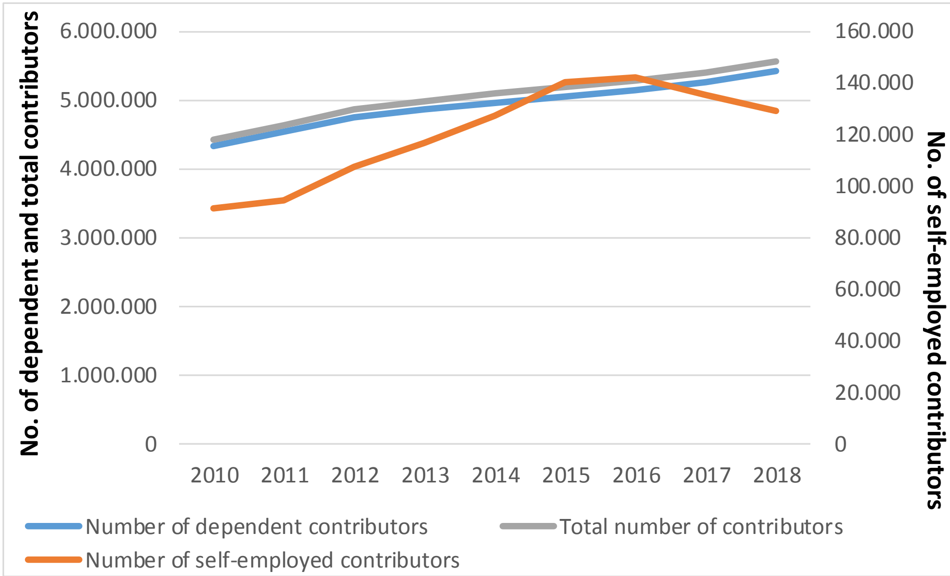
Table 2

Chile: Aspects of the mandatory nature of social security contributions of independent workers who issue fee slips

1. Contributions to all social security systems are mandatory for male self-employed workers below the age of 55, and female self-employed workers below the age of 50, who issue fee slips for 5 or more monthly minimum wages (US$ 1.5 million) per calendar year, as of January 1, 2018.
2. The Taxable Base income on which contributions to the different social security systems are calculated, will be 80% of Annual Gross Income.
3. It will be mandatory to pay contributions to all social security systems in the Annual Tax Return in April each year, on the basis of the income received during the previous year. Due mandatory contributions are paid directly from the amounts withheld on fees during the previous year by companies or institutions that received the services of self-employed workers. The annual payment of contributions in April each year will provide coverage for all pension systems between July in the year in which the contributions were paid, and June of the following year (12 months). Thus, the obligation is based on the 2019 tax return on the 2008 revenue, providing coverage from July 2019 to June 2020.
4. In order to comply with the obligation to contribute, the new law will gradually increase the withheld amount of 10% on fee slips in 2019, by 0.75% per year as of 2020, 1% in the ninth year, and up to 17% by 2028.
5. By increasing withheld amounts from 10% to 17% of income (21.25% of taxable income), self-employed individuals will be expected to be able to pay 100% of pension contributions. However, this will not be so during the transition, so an order of payment has been established: Disability and Survival Insurance (SIS); Work Accident and Occupational Diseases Insurance (ATEP); Child Accompaniment insurance (Law SANNA); Health; and Pensions.
6. This will enable access to Health, Sanna Law and ATEP benefits, and all pecuniary benefits associated with these laws, on 100% of the taxable base income, which translates into: Subsidies for common medical leave, maternity leave, SANNA Law, ATEP; Pensions and allowances covered by Law 16.744 (ATEP); Pensions covered by the SIS.
7. The pension contribution is last in the order of payments and will gradually increase. Its amount is calculated as the difference between the withheld amount and payment to the different pension regimes mentioned previously, which are paid first. Workers who opted for full coverage (see next item) only paid about 3% of taxable income in pension contributions in 2018. Pension contributions will rise parallel to the increased withheld amount, reaching 10% plus the corresponding Pension Fund Manager’s commission in the tenth year. These workers will be 100% covered by I&S, SANNA Law, ATEP and health Insurance as of the first year, while pension savings gradually increase.
8. The new law includes two coverage options: (i) Complete, explained in the foregoing paragraph; and ii) Partial, designed for those who are unable or unwilling to pay the entire amount of their withheld taxes to pension contributions as of 2019. This transitory alternative consists in being able to pay pensions and health contributions at a lower percentage of taxable income, which will also increase annually, starting with contributions on about 5% of taxable income in the first year, 17% in the second, and reaching 100% in the tenth year after publication of the law. Thus, 2.69% of fee income will be withheld for social security payments in the first year, returning 7.31% to the worker. Contributions will increase yearly as withheld amounts increase and the returned amount decreases. Pension and health coverage will be calculated on the taxable income on which it was effectively paid, which will affect the benefits received in these programs.

Prepared by FIAP

Graph 6
Chile: Evolution of the number of contributors in the pension system by type of worker (2010-2018)



Source: FIAP based on Chilean Pension Commission data.

Colombia

In Colombia, Law 1753 of June 2015 expressly states that self-employed workers with a monthly income equal to or higher than one minimum wage must pay Social Security contributions based on a minimum of 40% of their total monthly income. However, this obligation has not been enforced to date. Furthermore, according to the Ministry of Labor, 44% of workers earn less than the minimum monthly wage, and are therefore excluded from mandatory contribution to the pension system.

Peru

According to the IDB (2019), Law 30.082, aimed at encouraging the participation of independent workers in the pension system, was passed in Peru in September 2013, introducing gradual mandatory contributions for self-employed workers. This law came into effect in August 2014, considering a contribution rate of 5%, and increasing to 13% as of August 2017. However, the unpopularity of mandatory contributions for the self-employed led to its repeal in September 2014. This measure had a negative effect on old age protection for this group of Peruvian workers, who, accounted for 39% of employed workers (49% in the case of employed women) in 2018, according to the National Institute of Statistics and Information Technology. Only 6.5% of them paid pension contributions in 2018.

Uruguay

Uruguay is an interesting case, since the law has required the self-employed to contribute to the pension system for some time now. According to National Institute of Statistics data[9], 23.3% of employed workers were self-employed in the third quarter of 2018.

The self-employed are covered by three regimes: (i) the General Regime for Self-Employed Individuals, managed by Banco de Protección Social (BPS); (ii) the General Simplified Tax, which incorporates a group of workers and micro-entrepreneurs; and (iii) the Mides Simplified Social Tax Regime (MSM), which can be accessed by homeless people living below the poverty line, or in a vulnerable socioeconomic situation.

In addition to these three systems, university professionals who exercise their professions independently, can contribute to the University Professionals Retirement and Pension Fund, or the Notary Public Social Security Fund (in the case of notaries public), both regulated by the Central Bank of Uruguay (BCU).

The Simplified Regime was created by Law 17.296 in 2001. It is a tax on small-scale business activities, whereby eligible companies pay a sole tax substituting all national taxes (excluding import duties) and contributions to the social security system. These workers are entitled to access Social Security benefits, including the pension system.

Some amendments to Law 18,083 were made in 2007, aimed at making the conditions set out in the regulations more flexible, for the purpose of achieving greater inclusion of self-employed workers. The amendments included, for example, the elimination of restrictions regarding the place where the activity is performed (only those working in public spaces were included previously, and now those working in small workshops were also included); the extension of the type of activities considered (formerly covered only companies with marketing activities, now also included small manual-type artisanal producers).

Finally, the Mides Simplified Social Tax Regime (MSM), approved in December 2011 (Law 18,874), constitutes a special regime for personal or joint entrepreneurship, which can be accessed by homeless people living below the poverty line, or in a vulnerable socio-economic situation.

Tables 3 and 4 show the evolution of the number of special tax regime companies with payrolls and the number of employees declared by such companies (contributors), for the general and Mides Simplified Social Tax (MSM) regimes, respectively. As can be seen, the changes introduced over the years have been successful. On the one hand, the growth of General Tax Regime companies in the 2006 - August 2018 period was very high, rising from 2,566 to 25,199 enterprises, peaking in 2008, to then continue to grow. That growth in 2008 can be attributed to the passing of Law 18.083. As of 2012, the MIDES Simplified Social Tax Regime companies were incorporated, reaching a total of some 5,695 companies in August 2018. Thus, the General and MIDES Simplified Social Tax Regime companies increased by slightly more than 12 times between 2006 and August 2018 (from 2,566 to 30,894 companies). On the other hand, contributors in both regimens increased by a similar amount (from 2,925 to 33,792 people).

[9] http://www.ine.gub.uy/documents/10181/30865/ECH+Setiembre+2018/ae073ee0-7f03-48b3-802e-e6dbd1ee1605

Table 3
Uruguay: Number of Simplified Tax Regime companies with payrolls (to December of each year)

Year	Simplified Regime	Mides Simplified Social Tax Regime	Total
2006	2,566	0	2,566
2007	6,217	0	6,217
2008	10,259	0	10,259
2009	13,061	0	13,061
2010	15,625	0	15,625
2011	19,108	0	19,108
2012	20,998	393	21,391
2013	22,825	709	23,534
2014	23,878	1,252	25,130
2015	25,046	2,194	27,240
2016	25,076	3,223	28,299
2017	26,287	4,626	30,913
2018 (*)	25,199	5,695	30,894

(*) Data to August 2018.
Source: Banco de Protección Social (BPS), Uruguay.

Table 4
Uruguay: Number of employees declared in the payrolls of the Simplified Tax Regime companies (to December each year)

Year	Simplified Regime	Mides Simplified Social Tax Regime	Total
2006	2,925	0	2,925
2007	6,753	0	6,753
2008	11,320	0	11,320
2009	14,347	0	14,347
2010	17,356	0	17,356
2011	21,132	0	21,132
2012	23,145	460	23,605
2013	25,139	788	25,927
2014	26,213	1,389	27,602
2015	27,240	2,426	29,896
2016	27,516	3,515	31,031
2017	28,900	4,999	33,899
2018 (*)	27,705	6,087	33,792

(*) Data to August 2018.
Source: Banco de Protección Social (BPS), Uruguay.

According to estimates by Amarante and Perazzo (2013), 26% of the self-employed in Uruguay were covered by one of the systems mentioned above, in 2011. Although the coverage of self-employed workers is still not as high as that observed for dependent workers, it is remarkable that it is more than four times the coverage observed in countries where contribution by self-employed workers is voluntary.

Mechanisms for providing social security protection to the self-employed

The main mechanisms that would enable providing pensions to the self-employed, proposed in recent literature, are described below:

1. **Mandatorily incorporate self-employed workers into the pension system**

The most obvious measure that would provide social protection to the self-employed is to mandatorily incorporate them into the pension system. However, it is clear that incorporating this group into the pension system is a complex undertaking, and sometimes with significant political costs, due to the refusal of self-employed workers themselves to be forced to contribute to the pension system.

As a starting point, contribution should only be mandatory for those self-employed workers capable of contributing. Forcing very low-income self-employed workers to contribute would certainly be counterproductive. It would be more reasonable for low income self-employed workers to be covered by non-contributory programs financed with general tax resources.

In this regard, according to the IDB (2019), the pension systems must be very carefully designed, because if the non-contributory solidarity pillars are not adequately integrated with the contributory systems, distortions are generated that discourage participation in the formal retirement savings system among low-income workers. Hence, it is crucial for non-contributory Social Security to be financed with general taxes and not by taxing work, and that the benefits of the different social programs be designed to minimize disincentives to contributing to the formal pension systems.

2. **Implement simplified mechanisms and tax incentives, together with financial and pension education**

According to Bertanou and Vasquez (2006), the self-employed can be Incorporated through the implementation of tax incentives and simplified mechanisms. Tax simplification can be an effective tool for capturing a greater number of self-employed workers, using the simplified tax regime operating in Uruguay as an example. The implementation of tax incentives could also favor the incorporation of self-employed workers. In countries with tax incentives for encouraging savings, many self-employed workers with savings capacity do not take advantage of them due to lack of information regarding their existence and the functioning of social security instruments. Thus, financial and pension education strategies are crucial for the incorporation of a larger number of self-employed workers with savings capacity.

3. **Link contributions to the pension system with tax returns and the granting of licenses, permits etc.**

Since a large number of self-employed workers pay income tax, it makes sense to link the contribution to the pension system with their tax returns. This requires proper coordination between the tax collection agency and the pension fund managers. Canada and the United States use the annual tax return as an instrument for social security contributions by self-employed workers. This collection mechanism was the one designed in Chile in the 2008 Pension Reform.

Two matters must be clarified to assess this possibility: (i) Internal revenue Services are not mandated to collect contributions, so incorporating this mandate would entail a greater burden for the State; and (ii) Self-employed workers do not want to pay taxes, and if forced to do so through their tax returns, higher levels of evasion could be generated in the tax system.

Martínez and Puentes (2011), propose that in the Chilean case, mandatory contribution should be extended over time to all self-employed workers, and not just to those issuing fee slips. They especially suggest using the General Treasury of the Republic to collect contributions from other self-employed workers who pay income tax. They propose linking contributions to the granting of licenses, permits etc. For example, in activities requiring municipal permits, the permits could be subject to the payment of social security contributions, or else higher scores could be assigned to companies bidding on projects, that can demonstrate a certain number of contributions to the pension system.

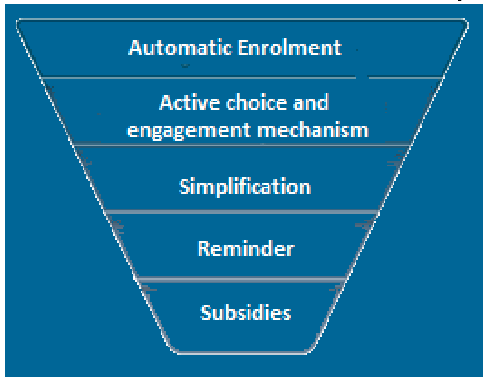
4. Conduct behavioral interventions to increase retirement savings

According to the IDB (2019), measures based on behavioral sciences are crucial for increasing retirement savings. There are multiple behavioral biases and cognitive limitations that complicate retirement savings, so public policies must be designed to counter them. Thus, behavioral interventions use behavioral biases to facilitate savings instead of complicating them. Interventions can be designed to counter these behavioral biases among workers, facilitating increased retirement savings. These include:

(i) Introduce automatic enrollment in savings programs. Automatic enrollment involves the introduction of a predetermined option favorable to saving, that simplifies it and contributes to forming prior commitments. These tools typically reduce transaction costs by reducing steps for saving.
(ii) Encourage active choice and engagement mechanisms. Such tools seek to use precommitment to advantage and provide a scenario that is simple and easy to understand for workers, leading them to consider specific aspects of their futures, thus reducing uncertainty and excessive optimism.
(iii) Simplify. Starting from a model of an individual with limited processing capacity, simplifying decisions is an essential tool, especially in cases perceived as complex. Simplification also reduces the “mental” costs of the transaction.
(iv) Simple reminders. Reminders are intended to help maintain long-term savings among everyday priorities.
(v) Provide liquidity to the system, along with other incentives to savings (e.g. means tested subsidies). This type of intervention can be a very important element to encourage savings among low-income self-employed individuals.

International evidence shows that these tools vary in their levels of effectiveness to increase the number of people who save for retirement and the amounts they save. Measures that help people to overcome inertia, such as predetermined options favorable to savings, have proven to be the most effective. However, measures that help simplify information and remember the importance of saving, are intermediately effective. Predisposition to present circumstances would appear to be one of the most difficult behavioral barriers to overcome. Thus, measures such as subsidies or matching contributions are less effective. The following diagram ranks each one of them according to their effectiveness reported in the literature.

Effectiveness of behavioral economics tools for improving savings



Source: Madrian (2013).

According to the IDB (2019), it is important to bear in mind that behavioral economics function in the mid and long term, to the extent that they help people to do something that they acknowledge is important, but which they failed to do because of their biases. For example, if the inertia of people is strong and the default savings option is pre-registration, they will look for a way to opt out of the plan. It is therefore important for people to be aware of the importance of retirement saving and the implications of not saving. The importance of financial and pension education is once again evident in this scenario, since it strengthens the effectiveness of the behavioral economics measures by improving people's understanding of how savings instruments work, and helps people to understand why it is important to start saving when they are young and why they should save consistently throughout their working lives.

It is worth mentioning that a key factor of all these tools is that they respect the personal freedom to decide. Unlike other policies, such as mandatory saving, behavioral tools consider the possibility that some people would like to save, but do not do so because of their behavioral biases. These tools are therefore useful for helping people who see their savings diminish due to behavioral barriers, but not for those who see their savings diminish due to other types of barriers, such as the inability to save or accessing long-term savings products suitable to their needs.

5. Implement financial and technological innovations for increasing long-term savings

Financial innovations

According to the IDB (2019), sometimes the problem is not that people do not want to save, but rather that it is impossible, very complicated or expensive to do so. Thus, a necessary condition for savings to occur is the existence of a viable savings product for the population, especially the lower income population, which requires financial innovations. For example, a financial services provider that seeks to integrate self-commitment options in its products, could produce a savings product that prevents the withdrawal of savings until a goal proposed by the saver himself is reached. Likewise, an automatic savings system designed for a low income self-employed worker could be conditional to his income, regardless of the date on which it is received, preventing withdrawals when balances are very low. For example, the Colombian government created the BEPS program for lower income workers as an alternative, voluntary old age savings system (not retirement savings, since pensions cannot be less than one legal minimum wage in Colombia), that enables savings with irregular incomes of less than one minimum wage, without establishing a minimum number of weeks of contributions[10].

Technological innovations

Finally, according to the IDB (2019), another key element for increasing retirement savings is technological innovation for reaching a public increasingly immersed in a digital world. For example, using technological progress and the high penetration of mobile telephony, people can now pay from their cell phones. In countries such as Bangladesh, India and in some African countries, the use of cell phones for performing banking transactions has had positive results.

On investigating cell phone applications that drive savings, we found examples in the Übank platforms in Chile, Mexico and Colombia and the AforeMóvil and "Millas para el Retiro" platforms in Mexico (FIAP, 2018). On the one hand, Übank, a Chilean start-up based in Mexico, allows people to save automatically based on a self-defined set of rules that seek to reward or punish them based on their behavior (such as, for example, the consumption of certain goods or guilty pleasure). Thus, the application transforms the lifestyle of its users into savings to fulfill their dreams and goals. The first step consists in showing people that they can travel or buy a cell phone with their savings, and the second step is to convince them to save for long-term projects and retirement. The results are promising: the pilot program, applied to 500 BancoEstado users in Chile since September 2017, managed to increase savings by an average of 116% per user, compared to the control group.

Aforemovil in Mexico, on the other hand, is an application created by the regulator (with the participation of several AFORES) to familiarize the population with the pension system in an easy and accessible way. The application helps overcome the main barriers limiting retirement savings. For example, it is user-friendly, offers automatic enrollment in an individual account with digital security, and enables viewing the account statement, making savings tangible; it sends personalized pension projections, and provides geo-referenced information on how and where to save. Another promising application in Mexico is "Millas para el Retiro," (Miles for Retirement) also created by the controller, which facilitates voluntary savings through the monthly consumption of workers with their debit or credit cards (a certain optional percentage is deducted), thus linking spending patterns and consumption to a new pension savings habit.

In this context, technology becomes an essential tool for reaching people in new ways and in the most relevant moments with savings suggestions. Technological innovations also reduce transaction costs, allowing savings in the same place where self-employed workers charge for their services, consume, or pay utility service providers or the State. Inserting long-term savings into the daily lives of people makes saving accessible to lower income people (who do not save

[10] This program also offers a 20% subsidy on the total amount saved on reaching the minimum retirement age, but the funds accumulated in this program cannot be withdrawn at any time prior to retirement.

partly due to high transaction costs). This best fits the reality of low-income self-employed workers. Technological innovations are also useful for accessing regions disconnected from traditional savings systems, expanding collection networks in a cost-effective manner (IDB, 2019).

Bibliographic References

- Amarante, Verónica and Ivone Perazzo (2013), *Trabajo por cuenta propia y monotributo en Uruguay* (*Self-employment and the Simplified Tax Regime in Uruguay*), Work Documents Series DT 4/13, Institute of Economy, Universidad de la República.
- Bertranou, Fabio and Javiera Vásquez (2006), *Trabajadores independientes y el sistema de pensiones en Chile* (*Self-employed workers and the pension system in Chile*), ILO Notes No. 1.
- IDB (2019), *Cómo fomentar el ahorro para el retiro entre los trabajadores de bajos ingresos e independientes. Los casos de Chile, Colombia, México y Perú (How to encourage retirement savings among low-income self-employed workers*. *The cases of Chile, Colombia, Mexico and Peru),* Labor Markets Division, Technical Note No. (IDB-TN-1777).
- FIAP (2018), *The role of technology and behavioral economics in increasing pension savings: recent experiences in Chile, Colombia, Mexico and Peru* - Pensions Note No. 30.
- Madrian, B. C. (2013), *Matching Contributions and Savings Outcomes: A Behavioral Economics Perspective*.
- Martinez, Claudia & Esteban Puentes (2011), *Trabajadores independientes: identificación y características de los distintos grupos y medidas para aumentar su incorporación al sistema de pensiones y densidad de cotizaciones (Self-employed workers: identification and characteristics of the different groups and measures for increasing their incorporation into the pension system and contribution densities).*
- ILO (1990), *Promoción del empleo por cuenta propia (Promoting self-employment)*, Report VII, International Labor Conference, 77th Session, Geneva.
- ILO (2019), *Rotación ocupacional e informalidad laboral: El caso de los trabajadores independientes en América Latina* (*Occupational rotation and labor informality: The case of self-employed workers in Latin America),* ILO Office for the Southern Cone of Latin America, 2019 (ILO Southern Cone Technical Reports, No. 10).