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The Impacts of Pension Privatization in Latin American: A Cross-Country Comparison of Pension Reforms and the Introduction of Individual Accounts. An analysis modeled after the six guiding core principles of Social Security

Victoria Le Fraga
Bard College, vl9284@bard.edu

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The Impacts of Pension Privatization in Latin American:
A Cross-Country Comparison of Pension Reforms and the Introduction of Individual Accounts

An analysis modeled after the six guiding core principles of Social Security

Senior Project Submitted to
The Division of Social Studies
of
Bard College

By
Victoria Le Fraga

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To my parents and grandparents, you are everything.

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Victoria Le Fraga

Abstract

Latin America was the world's pioneering nation in the privatization of pensions. In 1981, Chile's pension system underwent a reform making it the first country to replace a public defined-benefit pay-as-you-go pension scheme with a fully funded defined-contribution pension scheme based on individual accounts. This project assesses the impacts and results of pension privatization in Chile, Mexico and Uruguay. As indicators of a prosperous system, my analyses are made using the six core guiding principles of Social Security: i) Coverage; ii) Equal Treatment and Social Solidarity; iii) Gender Equity; iv) Adequacy of Benefits; v) Administrative Costs; vi) and, Financial Sustainability¹. This project uses historical data from the three countries, including periods before the reform, in order to adequately compare the two systems and determine which has proven to be more efficient. The main findings of this paper are the positive impacts associated with pensions privatization with respect to the six core guiding principles of Social Security.

¹ Mesa-Lago, *Reassembling Social Security: A Survey of Pensions and Health Care Reforms in Latin America*, 2008

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Introduction and Methodology

Pension systems in Latin America have been evolving since 1981, when Chile guided the movement towards pension privatization, replacing its public defined-benefit pay-as-you-go system with a fully funded, defined-contribution system of individual accounts. Since then, several countries have followed in Chile's footsteps, either replacing their existent public pension schemes entirely or incorporating aspects of privatization through reforms. Among these countries are Mexico and Uruguay. In 1997, Mexico reformed its pension system, replacing its previous pay-as-you-go scheme with a system based on individual accounts. This new system shifted the burden of funding workers' retirements from the collective population to the individual worker. In 1995, Uruguay transformed its pension system from a public pay-as-you-go scheme to a multi-pillar system composed of a public pillar and a private pillar of individual accounts. This paper sets out to measure the impacts and effectiveness of the Chilean, Mexican and Uruguayan pension reforms based on the six core guiding principles of Social Security: i) Coverage; ii) Equal Treatment and Social Solidarity; iii) Gender Equity; iv) Adequacy of Benefits; v) Administrative Costs; vi) and, Financial Sustainability².

In my project, the social security guiding principles are incorporated in the following ways. Coverage is measured by the percentage of the labor force and/or percentage of the total population contributing (either actively contributing or affiliated) towards a pension. This measurement demonstrates what proportion of the labor force or population will become eligible for a pension once they reach the age of retirement. An additional measure of coverage is the proportion of the elderly population (65 years old and above) that is currently receiving pensions.

² Mesa-Lago, *Reassembling Social Security: A Survey of Pensions and Health Care Reforms in Latin America*, 2008

This measurement gives us insight on the effectiveness of the program by looking specifically at the demographic it targets. Equal treatment is measured by comparing benefits across different occupational groups to determine whether there are any inconsistencies in these findings that point to a particularly favored group. Social solidarity is measured by the availability of social programs targeting people who cannot or do not contribute to a pension throughout their lives, falling below government-mandated requirements for pension eligibility by the time they reach the age of retirement (typically attributable to women, low-income earners or informal-sector workers). An additional measure of social solidarity is the percentage of the total elderly population benefiting from such programs. Gender equity determines discrepancies between male and female contributors and beneficiaries of the system. It is measured first by understanding the labor participation rates of both male and female workers which provides insight when calculating the percent of contributions and pensioners by sex. Adequacy of benefits are determined by comparing the pre- and post-reform benefits offered by the different systems and determining whether these benefits have improved in the long-run. Administrative costs, the fees imposed by private pension fund management companies on workers, show what percentage of a worker's salary will be deducted in exchange for the services provided by these companies. Financial sustainability is indicated by the diversity of investment portfolios of these private pension fund management companies and their annual real net returns, in order to ensure pensioners will not be losing contributions because of irresponsible investments.

Chapter 1: Chile

Introduction

In 1981, Chile replaced its public, defined-benefit pay-as-you-go pension scheme with a pension system based on Individual Retirement Accounts (IRAs). This shift towards privatization, notably the first of its kind, subsequently served as the pioneering model for other Latin American countries. In the 1990s through the 2000s, what became known as the “Chilean Model”, had noticeably influenced other countries in the Latin America region to make similar shifts toward privatization. Although Chile served as the inspiring force behind these movements, not all countries made complete transitions. In some cases, IRAs were added to the pre-existing pay-as-you-go schemes, transforming these pension systems into multi-pillar schemes composed of both a public and private system. To understand the motivation and effects of similar reforms in other Latin American countries, it is important to first look at Chile, as this model paved the way toward the evolution of pension systems throughout Latin America, and drew the attention of the entire world while doing so.

The Structure of the Pre-Reform Chilean Pension System

In the 1920s, Chile’s social security system came to fruition. This system was composed of several social benefits, including financial security for older retired workers by way of post-retirement income; old-age pensions. Since the system’s inception, there were clear distinctions between retirement benefits given to white collar versus blue collar workers (Mesa-Lago, 2011).

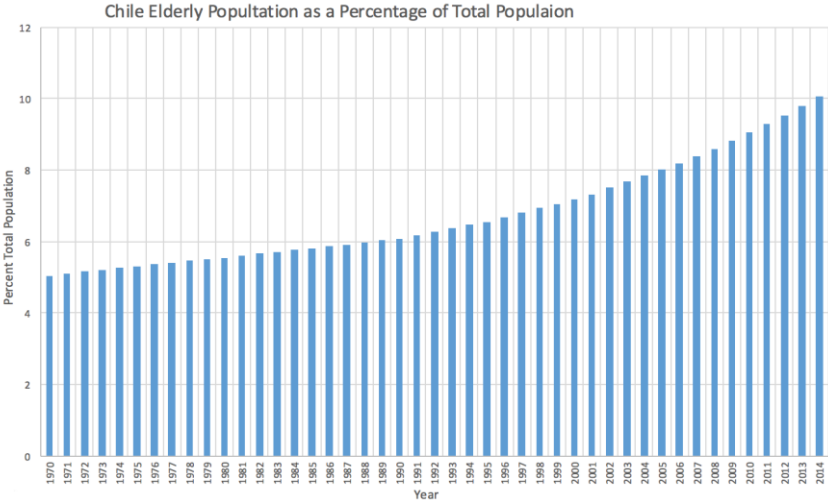
As time passed, social pressures rose from different professional groups and a variety of pension funds began to emerge, individualizing benefits based on pensioner's sector of work. This gave rise to the formation of several *cajas*, or public pension funds. By 1979, there were 3 major pension funds in Chile (defined by the amount of contributors and the net fund balances within them) however, there were 32 total *cajas* in operation. The three major *cajas* that made up 94% of all contributions were the *Servicio de Seguro Social* (SSS), which consisted primarily of blue-collar workers, the *Caja de Prevision de Empleados Particulares* (EMPART) and the *Caja Nacional de Empleados Públicos y Periodistas* (CANAEMPU), a fund catered to public employees and journalists (Cerde, 2008).

These different *cajas* were created in order to distribute benefits to specific occupational groups. For example, one *caja* would cover fishermen, another would cover lawyers, another would cover writers etc. This growth in individualized pension funds meant greater disparities and growing inequalities between the benefits received by workers. Although different pension funds were made to target different workers, all pensions operated under the public pay-as-you-go (PAYG) system. A PAYG pension scheme is one in which you make monthly contributions that are deducted from your paycheck towards your retirement. The contributions made by current participants, fund the retirement of past participants of the program. In Chile, the PAYG system was public and associated with public finances through portfolio management.

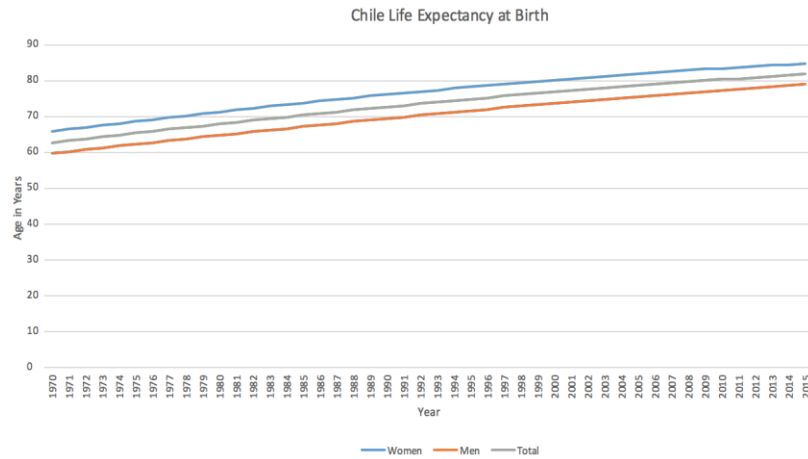
The push to use the PAYG system's surplus on the improvement of benefits was inspired by the people's desires to create more social assistance programs like maternity subsidies and

overall increases in the real value of pensions (Ibid.). Before the reform of 1981, a large portion of individuals contributing to a *caja* were eligible to receive retirement benefits with a minimum contribution of 35 years, this meant that if you started contributing at 18 years old and continued your contributions for 35 years, you could receive benefits as early as 53 years of age. Without the implementation of a strict retirement age, pressures on fiscal expenditure increased since a person could retire at a relatively young age and be eligible to receive benefits until their death, so long as they met the contribution requirement of 35 years.

In conclusion, the pre-reform pension scheme was organized in a way that propagated inequality between beneficiaries. The existence of many different *cajas* meant inconsistent retirement income and consequent disparities in the standards of living among the retired and elderly population. The redistributive aspect of the system would begin to be a problem as the system worried about an ageing population which could result in fewer current contributors funding the retirement of many current retirees (see Table 1 and Table 2).



(Table 1. Source: OECD)



(Table 2. Source: World Bank)

Growing Problems with the PAYG System

Throughout the first few decades of the PAYG system, the ratio of many contributors to few beneficiaries generated a surplus within the system. These results led to an optimistic mentality about the system, which ultimately led to the reallocation of the system's surplus towards the improvement of benefits offered to its beneficiaries. These improved benefits however, would be unsustainable as the ratio of contributors to beneficiaries would change; in 1955 there were 12.2 contributors for every pensioner whereas by 1980 this figure fell to 2.5 contributors for every pensioner (OECD, 1998).

In response to the shift from the system's surplus to its deficit, the government decided to increase contribution rates. Additionally, the fact that the system had set a legal minimum contribution created more problems. As time passed, contributors began to contribute only the minimum indicated by the system and eventually, many workers began to evade their social

security contributions entirely. Besides that, the steep increase in unemployment rates between 1972 and 1975, wherein the rates were 3.3% and 14.9% respectively, contributed to the declining participation in the system (Ibid.). Due to these problems that created possibilities for contributors to contribute as little as possible or nothing at all, as the program's deficit grew, contribution rates had to grow simultaneously.

Preparing for the Reform

In 1973, 79% of all formal-sector workers were contributing to the pension system, the highest coverage rate in Chile's pension system history. However, this coverage rate would go down as the country executed a strict fiscal plan in order to finance the privatization of its public pension system. The Chilean government decided to finance this shift by reducing public spending, increasing contribution rates and increasing the retirement age by five years for both male and female employees (making the age of eligibility for retirement 60 for women and 65 for men) (Gil et al., 2005). This motivation came from the need to generate enough funds to pay out the last generation of contributors affiliated with the PAYG program that would be carried over to the new system. In 1974, the program's contribution rate peaked at 50% of the contributor's salary. Even though the contribution rate went down (33.5% being the lowest contribution rate between 1974 and 1980) from that point until 1980, these high percentages created more incentive for people to decrease or evade their contributions. The Chilean government's plan to increase contribution rates in order to fund the privatization of the new

system to pay-out the last generation of PAYG participants backlashed as overall coverage rates decreased.

Reasons for the Reform and The Chicago Boys

The Chicago Boys were a group of Chilean economists who studied under Milton Friedman and Arnold Harberger during the 1950s to the early 1970s. These boys received their economic training at the University of Chicago, funded by the U.S. government, who initiated this program in 1950 as a way of influencing economic thought in Chile. These boys returned to Chile with economic values grounded in Friedman's monetarist approach. They effectively spread these monetarist economic values, including deregulation and large-scale privatization, under Pinochet's dictatorship, when they were afforded the power to do. Ultimately, it was this new wave of economic thought, spurred by the return of the Chicago Boys, that guided the privatization of pensions in Chile (Undurraga, 2015).

A principle reason for the reform of 1981 was the growing concern of shifting demographics that would create a financial burden on future generations supporting past generations. The main concern with this is having a disproportionately small labor force funding the retirement of a much larger retired generation. The hope for the transition towards individual accounts was to exterminate the deficits of the public system in the long run. Of course, the cost of the transition was considered to delay the positive impacts of the new private system as the government had to recognize contributors of the past PAYG system by paying them recognition

bonds. These recognition payments would have to continue until the last person who had contributed to the PAYG system retired. While the option for past PAYG contributors to continue contributing to the PAYG program remained after the reform, the Chilean government decreased the incentive to do so by making the contribution rates of the individual accounts (IAs) lower (17% in its introduction year) than the contribution rate of the PAYG scheme.

Approximately 75% of workers affiliated with the PAYG by 1981 decided to immediately transfer to the new IA system upon its introduction (Bertranou et al., 2005).

The Structural Reform of Chile's Pension System: How the New System Worked

As of 1981, the Chilean pension system was composed of three tiers: a poverty prevention tier, an individual account tier, and a voluntary savings tier (Table 3). The first tier of the new system, known as the poverty prevention tier, was meant to provide basic social assistance to elderly people who had not participated in the PAYG system, and to retired people whose accumulated contributions to the system did not meet a certain minimum by the time they reached the age of retirement. The second tier of individual accounts, was mandatory for every formal sector employee. Contribution rates were 10% of worker's monthly salaries. The third tier, voluntary savings, was a motivational tier for workers to accumulate additional savings, in addition to their contributions towards an individual account (Kritzer et al., 2011).

The mandatory 10% contributions made by workers under the second tier go to one private pension fund management company of their choice. These companies are called

Administradora de Fondos de Pensiones (AFP) or Pension Fund Administrators. These AFPs function like mutual funds and invest participant's contributions in securities like government or corporate bonds. The pension system is regulated by the government-run institution called the *Superintendencia de Pensiones*, the Superintendency of Pensions, that is in charge of supervising the system, ensuring the compliance of AFPs to certain investment rules (diversification and reduced risk) and protecting contributor's rights (Wiatrowski, 1998).

While formal sector employees are required to contribute 10% of their salaries to an AFP, independent workers' participation is voluntary. Second tier contributors pay two premiums, set competitively between AFPs, in addition to their monthly contributions; one is the AFP's administrative cost and the second is a disability and survivor insurance. The average sum cost of these two premiums is approximately 3% of the contributor's salary (Rofman et al., 2008). Therefore, a contributor's total contribution comes out to be roughly 13% of their monthly salary, a rate that is much lower than the past rates of the PAYG system.

Pension fund administrators have a range of functions; not only do they manage a contributor's funds by investing them in a variety of assets but they also provide and distribute particular retirement benefits. A contributor is allowed to switch between AFPs up to six times a year if they are unhappy with their returns or the premiums they are paying (Ibid.). Unlike the PAYG system, the contributions made by participants to an AFP go directly into their individual accounts, where the money is managed until the contributor reaches the age of retirement,

becoming eligible to accept their retirement income and benefits. This new structure of pension system weeded out the redistributive features of the previous public system.

Table of Requirements and Benefits for Three Tiers of the Pension System

	Tier 1: Poverty Prevention	Tier 2: Individual Accounts	Tier 3: Voluntary Additional Saving
Requirements	<ol style="list-style-type: none"> 65+ y/o to be eligible Live in Chile for at least 20 years* Pass a means test** 	<ol style="list-style-type: none"> Contribute 10% of salary* Mandatory for employers to pay employee premiums for survivor and disability insurance Mandatory for all formal sector workers to contribute 	<ol style="list-style-type: none"> Contributors may make monthly payments of up to \$1,123
Benefits	<ol style="list-style-type: none"> Basic Solidarity Pension is issued to individuals who are not affiliated to an AFP and have not made contributions to an IA. They receive a monthly income of approximately \$154 Pension Solidarity Complement is issued to individuals who have contributed to an IA but fall below the benchmark of \$523 in monthly retirement income. For pensioners who chose to annuitize their pensions, the PSC is issued as the difference between the minimum benchmark amount of \$523 and the amount financed by their annuity. For pensioners who make programmed withdrawals from their accounts, the PSC is issued once there are no more funds within that account. 	<ol style="list-style-type: none"> Programmed Withdrawals: The beneficiary's AFP manages and distributes these retirement payments by calculating monthly annuity amounts based on the size of the pensioners fund. This income is inflation-adjusted. The fund is placed in one of three more conservative funds in order to avoid early depletion of the account. Life Annuity: The beneficiary chooses an insurance company to issue their retirement income and survivor pension. These monthly incomes are inflation-adjusted. The beneficiary transfers proprietorship of the account to the company. Once a beneficiary chooses this option, they cannot take it back. Temporary income with Deferred Life Annuity: The beneficiary enters into a contract with an insurance company wherein the company will issue temporary/programmed monthly payments. At some point after retirement, the insurance company will claim ownership of the account at which point it will begin to pay a life annuity to the beneficiary. This option allows the pensioner to retain ownership of their account under their AFP until the life annuity issued by the insurance company begins. Immediate Annuity Plus Programmed Withdrawals: This option was introduced in 2004 where a part of the pensioner's account balance is used to purchase an immediate annuity and the remaining portion is used as paid out programmed withdrawals 	<ol style="list-style-type: none"> Voluntary contributions to an additional savings account receives tax preferences. The worker can choose to make contributions from its pre-taxed income wherein the contributions will be taxed upon withdrawal or make contributions from taxed income wherein withdrawals will be tax free.
	<p>*and for at least 3 of the past 5 years</p> <p>**calculated at the household level this means test determines whether an individual does not belong in the top 40% of the Chilean population based on income from salary and pensions, by employee</p>		

(Table 3. Source: CRS, 2012)

Retirement

Upon reaching the age of retirement, 60 years old for women and 65 for men, a contributor is faced with four options. The first, is the option to purchase a pension annuity from a private insurance company (Barrientos, 1997). If the pensioner chooses this option, they receive fixed annual payments funded by the accumulated funds and returns on their past contributions. This option cannot be changed once chosen and in the case of a pensioner's death, whatever funds are leftover do not go to the dependants of the deceased (OECD, 1998). The second option a pensioner faces is to set up programmed withdrawals. In this case, the funds within a pensioner's account continue to earn returns as they receive retirement income and in the event of a pensioner's death, the remaining funds within the individual account go to the deceased's estate and dependents. The other two options were introduced later on and are explained in (Table 3).

The Government's Role in the Introduction of the Private System

Although the successful execution of the new scheme depended in part on competition between AFPs, government guarantees and regulations allowed the system to prosper. The imposition of government regulation during the pension system's transitional period helped establish the new private scheme at the time of its introduction.

While AFPs have a range of investment and management strategies, the government closely regulated the companies by supervising the AFPs "as regards their financial health,

investment portfolio, commission charges, and information flows to affiliates.” (Barrientos, 1997). Additionally, the government made guarantees to contributors in order to ensure security within the system. The three main guarantees included: i) a minimum pension guarantee for contributors that have met the minimum contributory requirements but whose accumulated funds are less than the minimum pension by the time they reach retirement; ii) the guarantee of a pension annuity plan in the event that an insurance company that had setup programmed withdrawals with a beneficiary fails to properly deliver its services; iii) no taxation on contributions or returns within an individual account until the withdrawal period (Rofman and Oliveri, 2012).

After the period of record-high contribution rates in the 1970s, meant to fund the transition between the public and private system, the government decided to decrease these rates at the introduction of the new system in order to create greater incentive for workers to contribute. These lowered rates were set out to increase coverage amongst formal-sector workers in Chile, and would be funded by the additional five years of contribution workers would make due to the increased age of retirement.

Finally, in order to recognize the contributions that workers made to the PAYG pension scheme, government-issued “recognition bonds” were allocated in the accounts of past participants and would mature once the worker reached the age of retirement (OECD, 1998).

The Re-Reform of 2008 and Other Changes to the 1981 Pension Structure

In 2008, the Chilean pension system underwent another reform. The main purpose of this additional reform was to increase coverage rates, reduce the administrative costs charged by AFPs and to reinforce the first poverty prevention tier (Shelton, 2012). The re-reform went about strengthening the poverty prevention tier by introducing a basic non-contributory welfare pension (Basic Solidarity Pension or PBS) that would be financed by the national budget (Ibid.).

At the start of the individual account pension system, there was only one kind of fund in which contributors could make their monthly retirement payments. This characteristic of the second tier meant that a contributor's level of risk-aversion was not considered with regards to the management of their accounts. In other words, the management of each affiliate's account was not individualized based on their age, wealth and degree of risk aversion. The initial structure of AFPs made average investments of 72.46% in fixed income and 27.45% in equity as of December 1997, yielding a real average annual net return of -1.14% in 1998 (Mesa-Lago 2009). This kind of return sparked the need for funds with different levels of distribution across equity and fixed income investments. Thus in October 1999, Fund E was introduced. This fund, concentrating its investments entirely on fixed income, catered to people who were approaching the retirement age and could not risk the possibility of incurred losses on risky investments. In 2002, three more funds A, B and D were introduced into the system. These funds are distinguishable by their minimum and maximum levels of investment in equity instruments; A is

the riskiest fund, B is less risky, C (the original fund) sits between risky and safe, D is conservative and E is the most conservative of all five (Ibid.).

If you are close to the age of retirement, you are not allowed to be contributing to Fund A. This rule is enforced 10 years before the age of retirement. Therefore, if you are a 50 year old woman or 55 year old man, you can no longer transfer the funds of your individual account to Fund A. If you had been a contributor to Fund A, by the time you reach 50 years old for a woman or 55 for a man, your account funds will be automatically transferred to Fund B at a rate of 20% per year until no funds remain in Fund A (Hormazábal, 2010). The explanation for such strict limitations unto older participants stems from the state's concern in limiting public spending. If a person close to the age of retirement allocated his contributions in Fund A and incurred losses in response to the high level of equity investments, the state would have to increase public spending on the welfare pension program (Ibid.).

In 2012, it became mandatory for all self-employed workers to contribute to an individual account.

Data Analysis

Coverage

Measuring coverage is a way of measuring how many workers in the formal labor sector are contributing to the existent social security system. Additionally, this measurement is telling of how many people will be covered by the social security system, in this case, old-age pensions, by the time they reach the age of retirement.

The difference between affiliates and contributors to the Chilean pension system, lies in that affiliates have a retirement fund managed by an AFP, but may not be currently employed or currently contributing to their fund. Meanwhile, contributors are members of the workforce who are currently and actively contributing to their pension funds.

The Chilean rate of coverage reached an all-time high in 1973 of 79%. Between 1973 and the reform of 1981, the lowest coverage rate was 33.5%. This could be attributed to the increased contribution rates mandated by the state to finance the transition from the public PAYG system to the private fund system. By 1982, one year after the introduction of the privatized pension scheme, the percentage of contributors was 29% while the percentage of affiliates was 39% (Table 4). Although these rates are impressively lower than the 79% seen in 1973, both of these rates would steadily increase from 1982 onward. The coverage rate represented by affiliates increased quickly after the reform of 1981. By 1984, the rate of affiliates as a percentage of the workforce had increased by 12 percentage points to 51% from the preceding year's rate of 39%. Ten years later, the rate of affiliates of the pension system doubled to 102% of the workforce,

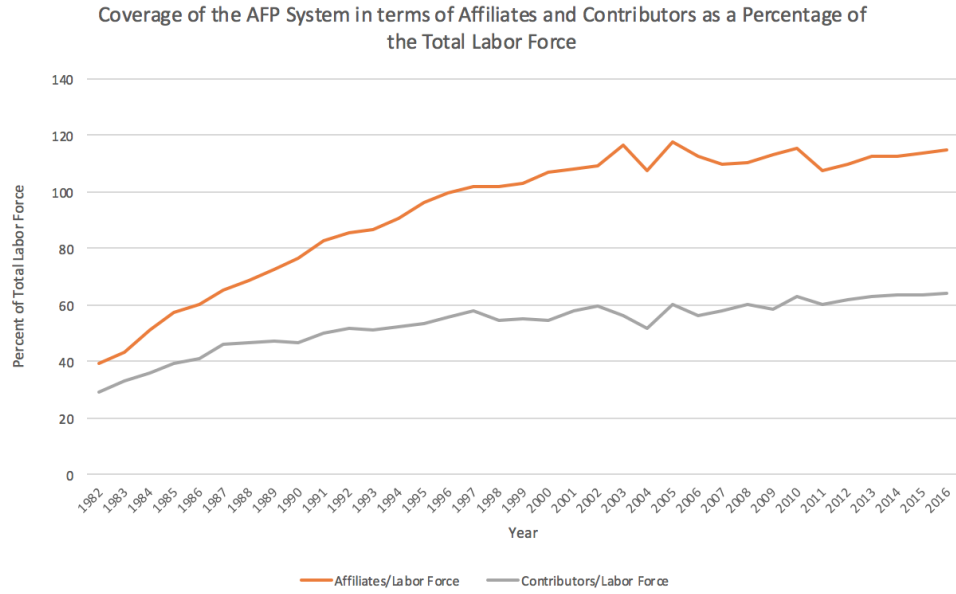
demonstrating that even people that have been unemployed for long enough to not be considered participants of the labor force had a retirement fund.

The coverage rate measured by active contributors as a percentage of the workforce, increased simultaneously although not as drastically. In 1982, one year after the reform, the rate of contributors as a percentage of the workforce was 29%. By 1985, the rate of contributors increased by 10 percentage points to 39%. Between 1982 and 2016, there has been an overall average increase in the percentage of the workforce that contributes to an AFP of 2 percentage points, reaching 64% in 2016.

The rate of contributors declined by 5 percentage points from 2003 to 2004, where it dropped from 56% to 51% respectively. By 2005 however, the rate of contributors increased to 60% but declined again in 2006 to 56%. These declines in the rate of contributors were coincidental with times of high rates of unemployment (Table 5). Between 1986 and 2017 the average rate of unemployment was 8.16% however the rates of unemployment were above the three-decade long average in 2003, 2004 and 2005 when the rates were 9.54%, 10.01% and 9.4% respectively.

With the strengthening of the poverty prevention tier in 2008, expanding coverage to those who were not eligible for basic retirement benefits, and the new requirement as of 2012, for all self-employed workers to contribute to an AFP, the rate of contributors increased to 62.9% by 2013.

Coverage, in terms of affiliates and contributors as a percentage of the labor force, has increased substantially since the reform of 1981, however, there are still ways in which to improve coverage of the elderly population in Chile. In a report released in September of 2015 by the Chilean Presidential Commission, they mention the need to expand eligibility of the Basic Solidarity Pension (PBS) from the current rate of 60% to 80% of the most impoverished households in the country upon passing a means test. Expanding access to the PBS will increase coverage among workers that may not have passed the means test when the benchmark for eligibility had been drawn at 60% of the most impoverished households. Increasing this benchmark to 80% will cover many more individuals that would not have been eligible for the Basic Solidarity Pension. (Mesa-Lago, 2009) By imposing fines on self-employed workers and formal-sector-employed workers that are evading contributions altogether, coverage may increase as both self-employed and regular formally-employed workers will be less inclined to accumulate evasion fees (Ibid.).



(Table 4. Source: Superintendencia de Pensiones)



(Table 5. Source: OECD)

Equal Treatment and Social Solidarity

While equal treatment is a foundational aspect of a successful social security system, Chile's system has failed to comply with this guiding principle since its reform in 1981. It is critical to offer standardized benefits to all workers, even those in powerful occupations, with the exception of workers engaged in abnormally physically-demanding or dangerous jobs.

The military government that implemented the original pension reform in 1981, was able to weed out a lot of inequality within the system. Given that prior to 1981, benefits and contribution rates were individualized based on a worker's occupation. However, the 1981 reform which brought together all programs catering to specific occupational groups, formed one system of privatized accounts which failed to include the police and armed forces. These two groups continue to receive individualized treatment with better conditions of eligibility and superior benefits to other workers. 90% of these superior benefits and superior conditions of eligibility are state-financed. The subsidy these particular occupational groups cost the country is 0.9% of its annual GDP, almost double the state's spending on the re-reforms of 2008-2012. (Mesa-Lago 2016). Although these two occupational groups continue to receive greater state-subsidized pensions, they are justified given the risk of their jobs.

Social solidarity is difficult to attain in a privatized pension system. In 2001, the International Law Commission stated: "In pension systems with defined benefits based on pay-as-you-go (PAYG), the risk is collectively assumed but in systems of individual saving accounts

(fully funded), persons assume the risk. While this option exists, it should not weaken solidarity systems which spread risks throughout all members” (ILO, 2001).

In the re-reform of 2008, the state added two state-funded programs that would increase social solidarity to the new system of individual retirement accounts. These programs included the Basic Solidarity Pension (PBS), for people who were not a part of the top 40% income-earners in the country and who passed a means test, and the second was the Basic Solidarity Complement, for individuals who had contributed to an individual account their whole lives but did not reach the minimum monthly retirement income of \$523 (2016 U.S. dollars) by the age of retirement (Mesa-Lago and Bertranou, 2016). It is predominantly the PBS program that influenced the increase in coverage over the elderly population (seen in the graph of coverage for the elderly population 65+) Both of these programs have boosted social solidarity within the system and the potential expansion of the PBS program’s conditions of eligibility will continue to expand coverage.

Gender Equity

Gender equality is essential in the labor market in order to obtain equal levels of coverage amongst male and female workers. This means hiring as many female workers as male workers and paying equal salaries. If there are more male workers than female workers in the formal labor sector, it will be impossible to cover them both at a similar rate.

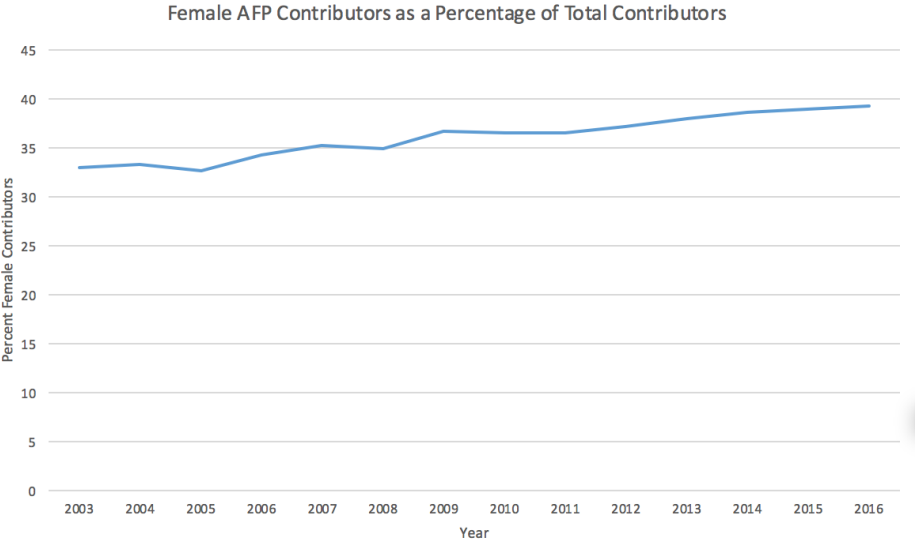
In 2003, there were both low rates of female AFP contributors as a percentage of total AFP contributors, 32.8%, and low rates of females in the labor force as a percentage of the total labor force, 36.35% (see Table 6 and 7). The female composition of the Chilean labor force has grown since 2003, reaching its highest point of 40% in 2015, but has fluctuated between the years. From 2003 to 2005, the rate of females in the total labor force increased to 38.7%. By 2006, however, it declined to 35%, where it remained relatively consistent until 2008, at which point it began to increase again, reaching 40% by 2009. This rate declined to 38% in 2010, and has increased slightly, but consistently ever since. The rate of female AFP contributors on the other hand, has increased relatively consistently since 2003, with minor fluctuations between 2004 and 2008. It reached its highest rate in 2016, of 39%.

The reform of 1981 did not help the coverage rates of women in the labor market. Firstly, there were no incentives put in place to increase female participation in the labor force, which is critical to qualify for the types of benefits offered by the system's second tier. Secondly, it did not offer benefit programs targeting women specifically. The re-reform of 2008, did however, include the addition of a maternity voucher, the first kind of benefit to explicitly cater to women. This maternity voucher would be deposited into a woman's individual account upon the birth of a child (one voucher per child born alive). This voucher collects annual returns and becomes effective upon the retirement of the voucher holder (Ibid.). In addition to this added benefit, by 2008, housewives became eligible to voluntarily open individual accounts in which their income-earning partners would contribute on their behalves. The premium and disability insurance

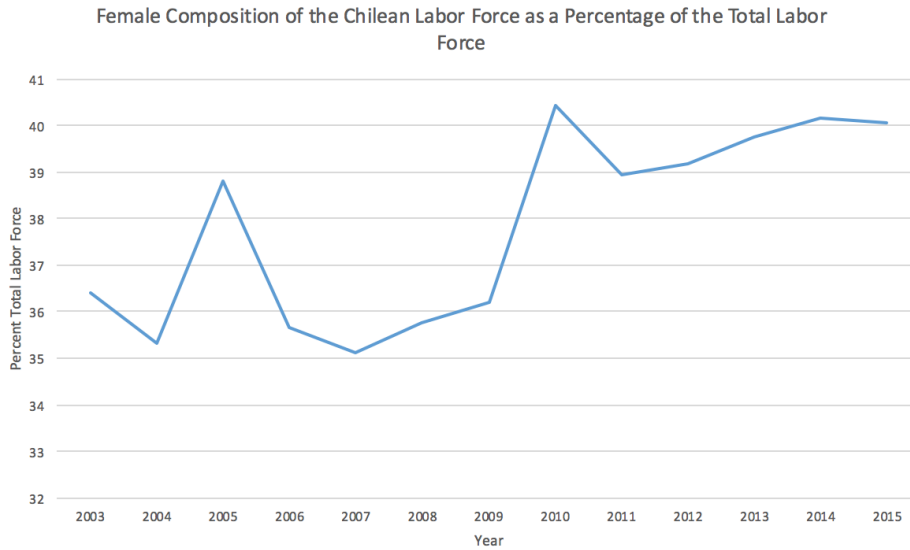
premium became identical for both men and women. Both of these added benefits had positive effects on the coverage of female workers in the workforce, as the rates of female contributors from 2003 to 2008, which had consistently fluctuated between 32% and 35%, began to increase steadily from 2008 through 2016.

The number of female beneficiaries increased from 162,287 in 2004 to 769,402 in 2017 (Table 8). While the amount of male beneficiaries was 365,544 in 2004 and 740,110 in 2017.

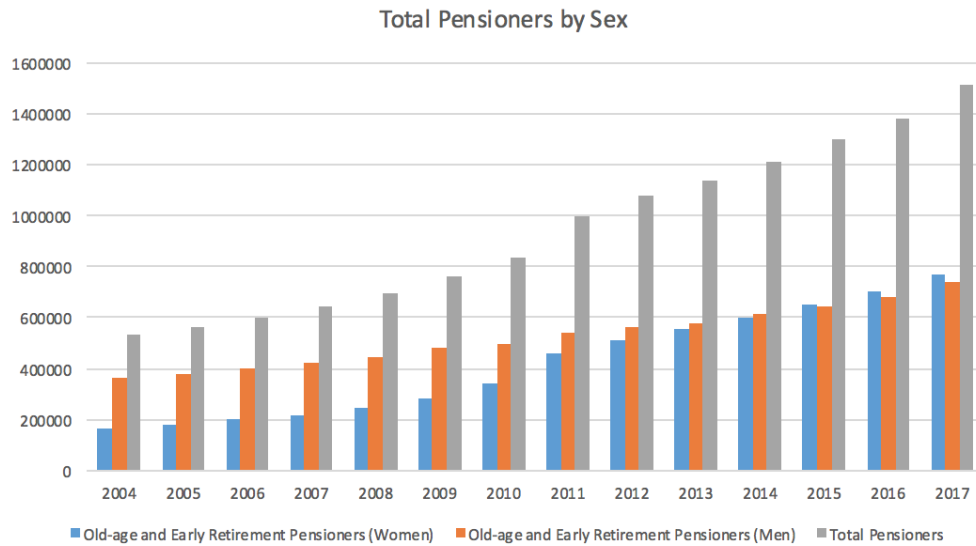
While the amount of beneficiaries increased for women and men during this time period, it increased significantly for women. Presently, the amount of retired women receiving pensions exceeds the amount of men receiving pensions, which could be attributable to the average female life expectancy exceeded the average male life expectancy by seven years.



(Table 6. Source: World Bank, Superintendencia de Pensiones)



(Table 7. Source: World Bank)



(Table 8. Source: Superintendencia de Pensiones)

Adequacy of Benefits

Prior to the reform of 1981, there existed a non-contributory pension program called PASIS, for which eligibility was determined by a means-test. While this program continued after

the 1981 reform, a cap on the number of beneficiaries was put in place, creating long waiting lists, and entry became subject to the availability of fiscal funds (Ibid.). The reform of 1981, increased by 20 years, the number of mandatory years of contribution needed to become eligible for a minimum pension, for all participants of the previous public system. However, a minimum pension was guaranteed to people in the private system who met the necessary amount of contributory years but still lacked the financing at the time they reached retirement (Kritzer et al., 2011).

The introduction of the Basic Solidarity Pension (PBS) and the Basic Solidarity Complement (APS) in the re-reform of 2008, were beneficial for affiliates who not only did not qualify for the minimum pension but also did not qualify for the non-contributory pension offered by PASIS. The minimum pension guarantee was equal to approximately 62% of minimum wage income in 2007. By 2015, the average monthly Basic Solidarity pension (adjusted annually to the CPI) for old-age beneficiaries was approximately \$132 which was more than 50% higher than the minimum pension offered by PASIS (Mesa Lago, 2016). The amount of annual benefits paid out to beneficiaries since the inception of the PBS and APS programs have increased since 2008, with greater increases from the APS program (Table 9).

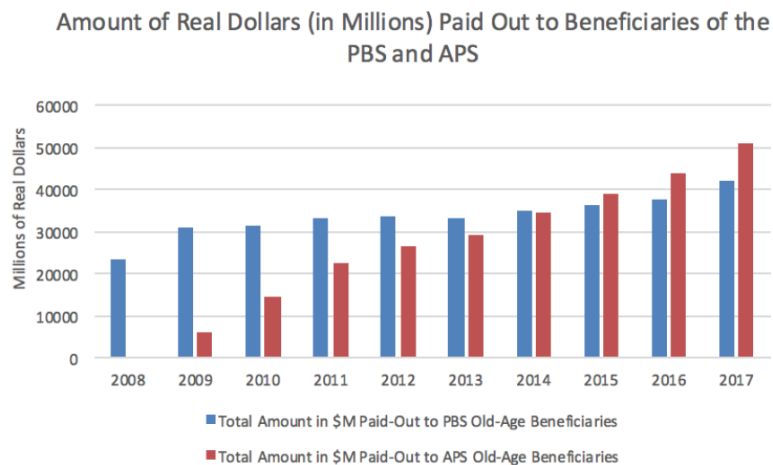
Since 2008, the year that the Basic Solidarity Pension was introduced, to 2017, the number of total old-age beneficiaries of the program increased from 358,445 to 399,317 respectively (Superintendencia de Pensiones, 2017). While the amount of female beneficiaries increased within this time period, from 244,815 in 2008 to 291,749 in 2017, the number of male

beneficiaries actually decreased from 113,630 in 2008 to 107,568 in 2017 (Table 10). This program predominantly benefits the old-age pension income of women.

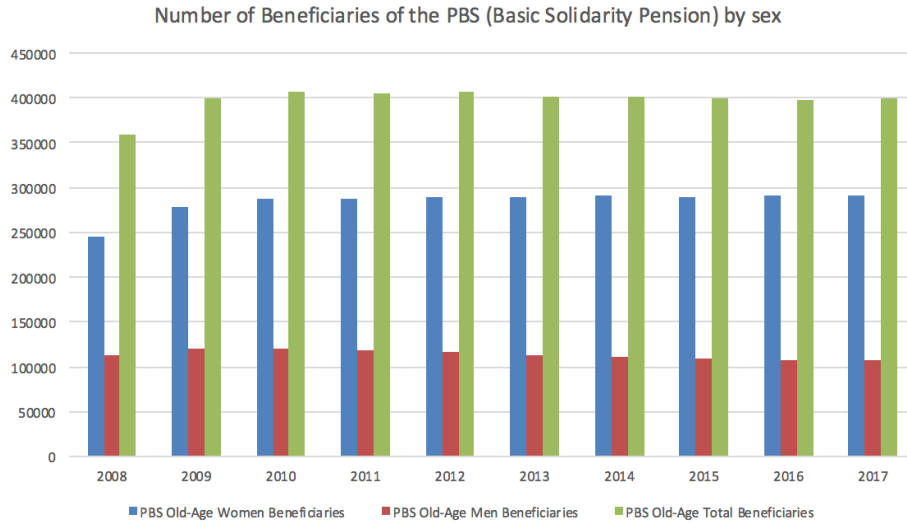
The Basic Solidarity Complement, on the other hand, increased substantially from 237,978 total beneficiaries in 2009 to 754,760 in 2017 (Table 11). While the number of female and male beneficiaries increase at a similar rate from the 2009 to 2017 period, females are the main beneficiaries of this program as well. In 2009, there were 137,544 female beneficiaries compared to 100,434 males. In August of 2017, there were 436,895 females receiving this supplemental pension, and 317,865 males. Elderly poverty decreased by 2.7 percentage points from 2008 to 2015. (Mesa Lago, 2016)

The OECD and ILO placed a minimum pension replacement rate of 45%, based on the insured person's average salary. This means that a pensioner's retirement income should be at least 45% of their average salary throughout the contributory period of their lives. CASP (The Presidential Advisory Commission on the Pension System, 2016) found that the average replacement rate of pensioners was below this minimum. They found that using the median replacement rate of pension replacement rates was more instructive than the average as there were huge disparities between pensioners. CASP found that median replacement rates for men was 48% while it was 24% for women, yielding a total median replacement rate of 34% for the time period of 2007 to 2014. The introduction of the Basic Solidarity Complement in 2008 increased the total median replacement rate to 45% by 2014 (Superintendencia de Pensiones, 2015).

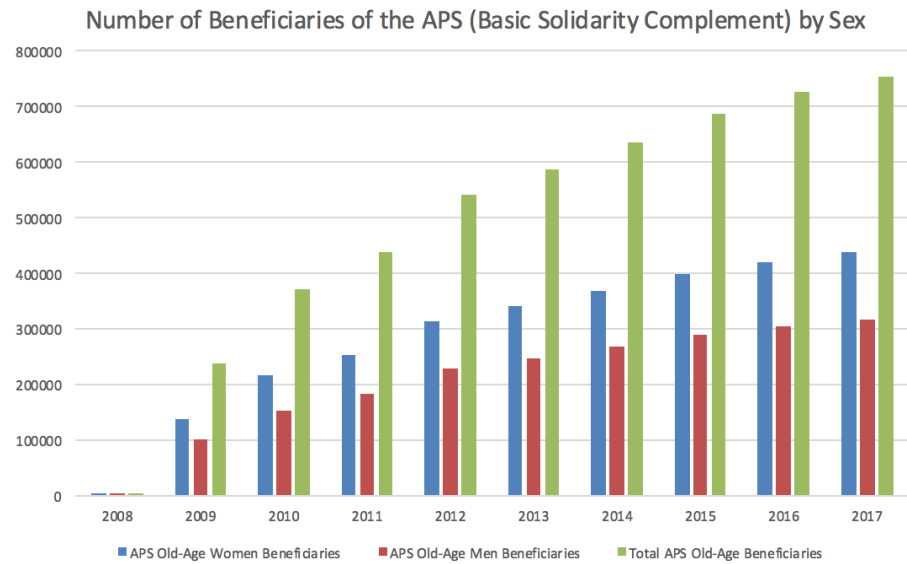
Overall, the adequacy of benefits matters most for people that may not be able to fund their own retirement. For this reason, the introduction of the Basic Solidarity Pension and the Basic Solidarity Complement were critical additions to the post-reform Chilean pension system. The increases in benefits, in terms of the real amount of annual payments distributed by these programs, far exceed the income distributed by the PASIS program. Overall, the introduction of these social assistance programs, has contributed to the decline in elderly poverty. These programs stress the importance of the state in expanding coverage and improving elderly standards of living.



(Table 9. Source: Superintendencia de Pensiones)



(Table 10. Source: Superintendencia de Pensiones)



(Table 11. Source: Superintendencia de Pensiones)

Administrative Costs

In 1981, there were 12 total AFPs in operation. This number rose to 21 by 1994, and then declined to 6 in 2011 (Boletín, 2017). Principal motivations for the reform of 2008 were to reduce administrative costs, make the fee structure more comprehensible for workers choosing

between AFPs and to increase competition. The latter was accomplished by introducing a biennial bidding process. As of 2008, AFPs would enter a bidding process occurring every other year, wherein the AFP with the lowest administrative cost would be chosen as the fund manager for all new workers entering the labor force that year. It was mandatory for these new participants to remain in whatever AFP they were placed into for a minimum of 2 years, after this period, the contributor could move their accumulated funds to an AFP of their choosing (Boletín, 2017).

AFPs' costs of marketing and sales had a big impact on the determination of administrative costs during the first years of the new pension system. In the 1990's it was estimated that marketing and sales costs composed more than one third of AFP total costs. The growth of the AFP sales force during this time period is also worth noting. Between 1990 and 1995, the AFP sales force more than quadrupled in size, going from 3,500 in 1990 to 15,000 in 1995 (Mesa-Lago and Bertranou, 2016). The salespeople working for AFPs concentrate mostly on transferring people from one AFP to another. Taking this into consideration, restricting the number of times contributors transfer AFPs effects decreases in administrative costs. However, severely limiting the number of times contributors can make these transfers might risk competition across AFPs.

While average administrative costs went up drastically in the initial years of the structural reform, they steadily declined. Administrative costs reached their peaks in 1984 when the average administrative cost of AFPs was 8.69% of taxable income (Table 12). By 1988, average

administrative costs began to decline. During the twenty-year period of 1990-2010, average AFP administrative costs stayed around 3%. By 2014, average administrative costs were down to 2.4% of taxable income. Lowering this cost even further continues to be an objective of the Chilean pension system.

Administrative Costs as a % of Taxable Income

Year	Old-age fee	Disability and Survivor Premium	Total Administrative Cost
1981			2.44
1982			5.1
1983			8.27
1984			8.69
1985			6.68
1986			6.05
1987			5.49
1988			4
1989			3.54
1990			3.15
1991			3.1
1992			3.07
1993			3.07
1994			3.06
1995			3.06
1996			3.05
2007	1.71	0.73	2.4
2008	1.74	0.94	2.68
2009	1.55	1.87	3.42
2010	1.49	1.49	2.98
2011	1.48	1.49	2.97
2012	1.41	1.26	2.67
2013	1.39	1.26	2.65
2014	1.14	2.4	2.4

(Table 12. Source: Superintendencia de Pensiones)

Financial Sustainability

The structural reform of the Chilean pension system shifted the financial responsibility from the employers' and the state in the public scheme, to the contributors in the individual accounts scheme.

The real annual rate of return of the system was highest in 1982, reaching a rate of 28.5%. By 1984, this rate dropped to 3.5%. Increasing again in 1999 to 16.3% (Table 13). The real annual return rates of the system fluctuate substantially during the period spanning from

1982 to 2014. In 2008, the pension system saw its first negative return rate at -18.9%, attributable to the global financial crisis.

Although the real annual return rates of the pension system fluctuated substantially between 1982 and 2014, the accumulated capital of the system as a percentage of GDP increased steadily, from 2000 to 2014, with certain annual exceptions. In 2014, the accumulated capital of the individual account funds was its highest in terms of real value and as a percentage of GDP; \$165.4 billion U.S. dollars and 69.5% of Chile's GDP for that year. The individual account funds were at their lowest percentage of GDP in 2008: 52.8% (Superintendencia de Pensiones). From 2009 to 2014, the accumulated capital in the private pension system in addition to its portion of GDP increased steadily from a real value of \$118 billion U.S dollars making up 61.3% of GDP in 2009, to a real value of \$165.4 billion U.S. dollars making up 69.5% of GDP in 2014 (Ibid.). Every year, the concentration of AFP investment in specific financial instruments varies depending on the amount of contributors choosing different fund types varying by riskiness. These financial instruments include government securities, financial institutions, enterprise investment and foreign investment (Ibid.).

In 2002, the pension system introduced 5 different kinds of funds; A-E, ranging from riskiest to most conservative. This would allow contributors to choose a fund based on the amount of risk they wanted to take on, based on their ages, wages and other factors. Fund A is allowed to invest in much riskier financial instruments like shares in publicly traded corporations

and publicly traded real-estate corporations, that the most conservative Fund E cannot invest in (Table 14).

The global financial crisis of 2008 affected the returns of each type of fund uniquely. The real return rate of the riskiest fund A was -48.46% in November of 2008, -37.19% in Fund B, -24.35% in Fund C, -13.08% in Fund D and -6.88% in Fund E (Table 13). This demonstrates the conservative characteristics in investment options taken by Fund E. Given that it targets workers nearing the age of retirement who cannot take on as much risk as younger people entering the workforce, the funds are invested in safer financial instruments than Fund A.

The transitional costs from the PAYG system are entirely state financed. In 1982, this cost was 6.4% of GDP. It decreased from this point through the early 2000s, where it was 6% of GDP in 2000 and 5.4% of GDP in 2004. By 2011, these transition costs only made up 3.5% of GDP and are continuously decreasing every year (Mesa-Lago and Bertranou, 2016) (Superintendencia de Pensiones, 2005) Mesa-Lago and Bertranou noted the following about financial sustainability:

“The long-term financial sustainability of the re-reform is ensured by: a) a solidarity PAYG pension fund with a reserve to finance new benefits; b) triennial actuarial studies of the fund and solidarity systems that allocate fiscal funds according to the budget law, and elaborates annual reports on needed resources; c) quinquennial actuarial studies to assess the effects of demographic, financial and behavioural variables of affiliates upon RR and financial needs; d) an advisory board of experts

monitors the solidarity pension, its fiscal impact, sustainability and the need for possible adjustment; and e) the Commission of Users annually evaluates the financial status (CCP, 2011, 2013; CUSP, 2011, 2012, 2014). The first actuarial study in 2010 showed that the system will fulfil its obligations until 2030 (CCP, 2011). The second in 2013 confirmed the fund's sustainability in all scenarios (even in one of extreme crisis), as contributions (on average) exceed pension costs.” (p. 41)

Portfolio Diversification					
Year	Accumulated Capital (in Millions of US \$)	Real Return Rates	Financial Institutions (mortgage bonds, bank deposits, financial bonds) as a % of Total Managed Funds	Enterprise Investment (share, bonds, investment funds, commercial effects) as a % of Total Managed Funds	Foreign Investment as a % of Total Managed Funds
1982	600	28.5	73.3	0.6	--
1984	1,200	3.6	55.6	1.8	--
1999	3,501	16.3	33.2	12.4	13.4
2000	3,886	4.4	35.1	11.6	10.9
2001	3,461	6.7	32.5	10.6	13.1
2002	3,515	3	34.2	9.9	16.2
2003	4,690	10.6	26.3	14.5	23.7
2004	6,799	8.9	28.5	15.7	26.8
2005	74,750	4.6	28.9	14.7	30.2
2006	88,632	15.8	26.3	17	32
2007	111,037	5	30.3	14.5	35.6
2008	74,313	-18.9	29.7	13.8	28.5
2009	118,053	22.5	18.9	13.9	43.9
2010	124,726	12	16.6	14.6	45
2011	134,962	-3.8	17.5	24.5	36.4
2012	162,016	4.6	17.9	22	38.2
2013	162,988	4.7	17.4	18.6	42.3
2014	165,432	9	17.6	16.8	44

(Table 13. Source: Superintendencia de Pensiones, 2015; Mesa-Lago et al., 2016)

Maximum Investment Limit by Type of Fund					
Type of Security	Fund A (Riskiest)	Fund B (Risky)	Fund C (Intermediate)	Fund D (Conservative)	Fund E (Most Conservative)
Government Securities	40%	40%	50%	70%	80%
Term deposits, bonds and other securities representing issues by financial institutions	40%	40%	50%	70%	80%
Securities guaranteed by financial institutions	40%	40%	50%	70%	80%
Letters of credit issued by financial institutions	40%	40%	50%	60%	70%
Public and private corporate bonds	30%	30%	40%	50%	60%
Public and private corporate convertible bonds	30%	30%	10%	5%	-
Shares in publicly traded corporations and publicly traded real-estate corporations	60%	50%	30%	15%	-
Shares in publicly traded corporations, units in investment funds and units in mutual funds that do not require approval from the Risk Classification Commission	3%	3%	1%	1%	-
Units in domestic investment funds and mutual funds	40%	30%	20%	10%	-
Commercial paper issued by companies with a maturity of no more than on year, non-renewable	10%	10%	10%	20%	30%
Investment in foreign currency without foreign exchange hedging	40%	25%	20%	15%	10%
Source: AFP Superintendency and BBVA research					

(Table 14. Source: Superintendencia de Pensiones)

Conclusion

In Chile, the average income of people over the age of 60 is typically lower than the rest of the population, this is attributable to their gradual withdrawal from the labor market. If we look at 2013 data from CASEN, only considering personal income, people aged 65 and older make up 67% of the Chile's entire population's income. If we include subsidies in the form of monetary income, this rate increases to 70%. Additionally, 91% of the Chilean population 60 years and older receive some kind of income either from their personal income or from subsidies. A predictor of higher income individuals and better quality of life is level of education. People 60 years or older in 2013 received an average of 7.6 years of schooling, whereas the rest of the population received an average of 11 years of schooling (CASEN, 2013). The elderly population of Chile does not compose the majority of the impoverished population; in 2013, CASEN demonstrates that 3.9% of the impoverished population was elderly, while 10.3% of the entire population lives in poverty. If we measure poverty through dimensions of education, health, work, housing and social security, 8.5% of the elderly population lives in poverty while 15% of the total population lives in poverty (Ibid.).

Overall, the structural reform of 1981, and the re-reform of 2008, have had positive impacts on each individual guiding core principle of social security. Contributors as a percentage of the total labor force increased from 29% in 1982 to 64% in 2017. Affiliates of an AFP as a percentage of the labor force increased from 39% in 1982 to 115% in 2016. Contributions made

by women increased from 37% of all contributions in 2003, to 42% in 2016, getting closer to equal rates of contributions amongst male and female workers. Social solidarity was improved with the introduction of the Basic Solidarity Pension and the Basic Solidarity Complement. The number of women beneficiaries of the Basic Solidarity System was 244,815 in 2008 and 291,749 by 2017. This program is especially beneficial for women, as the number of beneficiaries per year is consistently more than double for women than it is for men. In 2008, 113,630 men were receiving the Basic Solidarity Pension and by 2017, this number decreased to 107,568.

In 2008, 3,251 women and 1,234 men were beneficiaries of the Basic Solidarity Complement, the figure for women rose drastically by 2017 to 436,895 and less drastically to 317,865 for men. While both the BPS and APS increased their coverage by gender group since 2008, women have continuously been the principal beneficiaries of both new programs, helping bridge the gap of gender inequality amongst pensioners.

The expansion of the poverty prevention tier in 2008, played a big role in alleviating income poverty. 60% of people who have access to a solidarity pension fall below the poverty line. Of this group 28% of beneficiaries belong to a family group receiving no income (CASEN, 2011). It is estimated that without these programs, the poverty rate of people aged 65 years and older would have been 9.6% in 2011, instead of the actual rate of 7.5% (CASEN Survey, 2011). Additionally, these social assistance programs have helped alleviate extreme poverty in the population aged 65 and older, where it was estimated that without these programs, extreme

poverty would have reached 2.1% in 2011 instead of the actual rate of 1.6% (Comision Presidencial de Pensiones, 2013).

The total number of pensioners receiving standard retirement income increased from 529,831 (164,287 women and 365,544 men) in 2004 to 1,509,512 (769,402 women and 740,110 men) in 2017. While the number both men and women pensioners increased substantially between 2004 and 2017, the number of women pensioners increased much more drastically, eventually exceeding the amount of men pensioners by 2017.

While the average AFP administrative costs in 1981 and 2014 were 2.44% and 2.4% respectively, of a worker's taxable income, the re-reform of 2008 mandated that employers pay workers' disability and survivorship premiums, which reduces the net costs incurred by workers.

Financial sustainability has improved due to the varying levels of risk offered by five different types of funds. This has also stabilized the returns for older contributors who are moved to the most conservative fund in order to safeguard their retirement income.

Overall, the structural reform of 1981 and the re-reform of 2008 have positively influenced the Chilean pensions system based on the six core guiding principles of social security. While there are improvements that can still be made, like expanding social programs to a greater percentage of the population by increasing the minimum income for entry to the BPS, the results of the 1981 reform and 2008 re-reform have proven to yield very positive overall results.

Chapter 2: Mexico

Introduction

In 1997, Mexico's pension system underwent a reform, replacing its previous public defined benefit pay-as-you-go pension system, implemented in 1944, with a fully funded privatized system of individual accounts. The old system was managed by two major Institutional groups; the Social Security Institution of Mexico (IMSS; *Instituto Mexicano del Seguro Social*) for employees working in the private sector, and the Social Security Institution's Living Fund for Public Employees (ISSSTE; *Fondo de la Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores de Estado*) for employees working in the public sector (IMSS). By 1992, the system of retirement savings, SAR (*Sistema de Ahorro para el Retiro*), was added as a complement to the pay-as-you-go system. It functioned as a fully funded system created on the basis of individual retirement accounts for contributors to the IMSS or ISSSTE (OECD, 2016).

In a pay-as-you-go system, employees and employers make monthly contributions towards social security. The contributions made by current workers, are redistributed toward current retirees (past contributors), funding their retirement. Around the time of the 1997 reform, payroll taxes were very high (31.5%) (Ibid.). This tax was increased gradually over time to sustain the level of benefits distributed to the retired population in the form of old-age pensions. The system continuously ran deficits which resulted in an overall reduction of benefits for beneficiaries.

Similarly to Chile, prior to Mexico's reform of 1997, there were different retirement programs for different occupational groups. While all programs for private-sector and independent employees contributing to social security were managed by the IMSS, there were

differences in received benefits across these groups. These inequalities created several problems. In some cases, a worker who changed jobs, even if his new job remained in the private-sector, faced the risk of losing all benefits accrued over the span of his previous years of contribution under his former employer (Ibid.). Old age benefits received upon the retirement of a contributor, depended on the worker's average base salary during the last five years of work, divided by the minimum wage. Additionally, workers' contributory history affected retirement income. However, overall benefits accumulated could not exceed the worker's average earned income over his last five years of contribution (Grandolini and Cerda, 1998).

The IMSS system distributed several benefits including old age, disability, life insurance and severance at old age. Contributions to the IMSS were mandatory for employees who were current participants of the formal sector workforce. Additionally, contributions were voluntary for self-employed persons. Contributions were split up between the employee (25%), employer (70%) and the government (5%) (Comisión Nacional del Sistema de Ahorro para el Retiro). If a worker earned minimum wage, their total contribution was made on behalf of their employer. By 1996, the average contribution rate for formal sector employees amounted to 8.5% of the worker's contractual salary (Ibid.). While administrative costs represent roughly 0.6% of contributions, at the time of eligibility, the worker's total contributions were redistributed as 3% on old age and severance at old age, 3% on disability and life, 1.5% on healthcare for retirees and 0.4% on social assistance (Villagómez y Hernández, 2009).

In order to qualify for an old age pension, the contributor had to have contributed for a minimum of 500 weeks (roughly 9.6 years, over the course of their working lives) with a minimum age of 65 or 60 for severance at old age (Ibid.).

There was a government guarantee put in place in 1992 by the *Sistema de Ahorro para el Retiro* (SAR) that minimum pensions would not be less than the minimum wage at the beneficiary's time of retirement (CONSAR). The SAR system of 1992, was implemented as a mandatory complement to the public pay-as-you-go system. It is defined-contribution, fully funded and rooted in individual accounts wherein contributions by IMSS or ISSSTE affiliates are compulsory. The contributions made to SAR are separate and additional to the contributions made to the PAYG system. SAR incorporates two sub-accounts to workers' individual accounts; one for housing and another for retirement. Contributions to SAR go into these sub-accounts and are made by employers at 5% of the worker's base salary towards housing and 2% towards retirement (CONSAR).

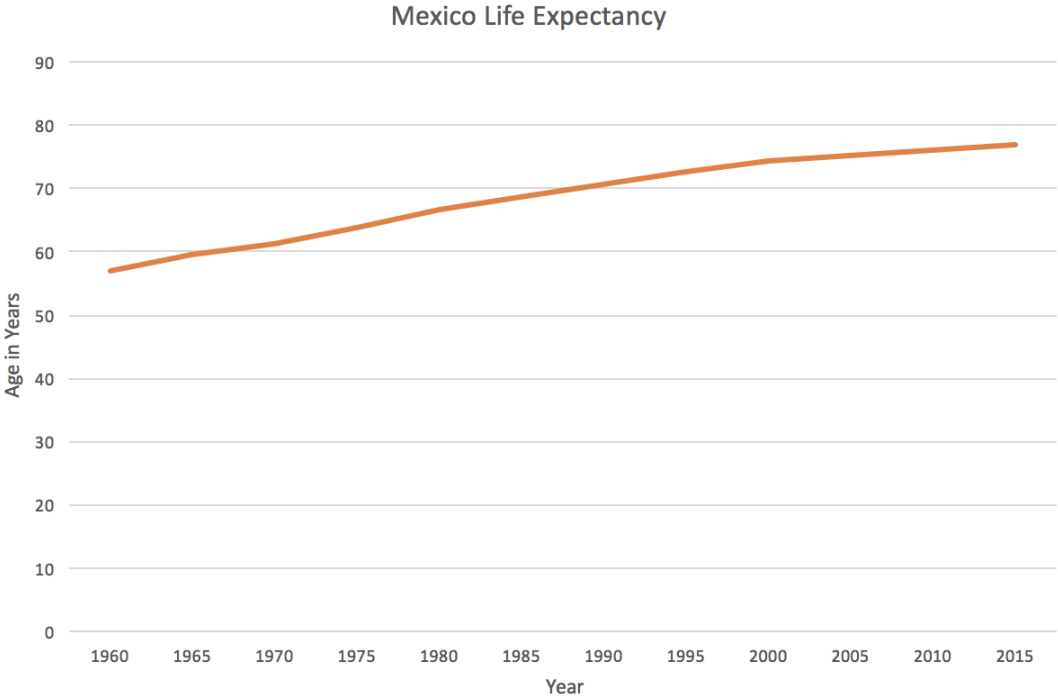
Problems with the PAYG System

While there were many factors contributing to the demise of the public pay-as-you-go system, some have been more significant than others. The decrease in fertility rates mixed with an increase in life expectancy had prominent effects on old-age pensions. While the life expectancy at birth in Mexico was 57.07 years old (59 for women and 55 for men) in 1961, it increased to 72.74 (75 for women and 69 for men) by 1995 (see Tables 15 and 16). Fertility rates have simultaneously decreased substantially from 6.77 in 1960 to 3.05 in 1995 (Table 17).

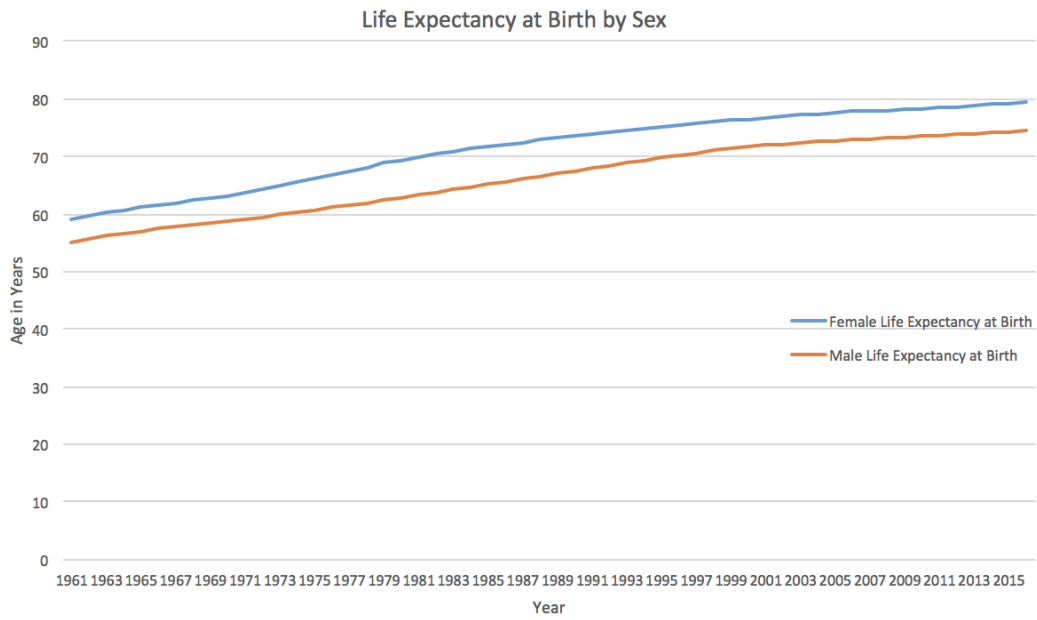
These demographic trends contributed to the unsustainability of the pay-as-you-go system, attributable to the disproportionately small working population contributing towards the retirement of a rapidly growing retired population. In 1950, there were 67 workers per retiree, by 1994 this number dropped to 8 workers per retiree (Rodríguez, 1999).

The management of the social security trust fund was questionable before the reform. A big portion of the funds were spent on improvements in the national healthcare program, also

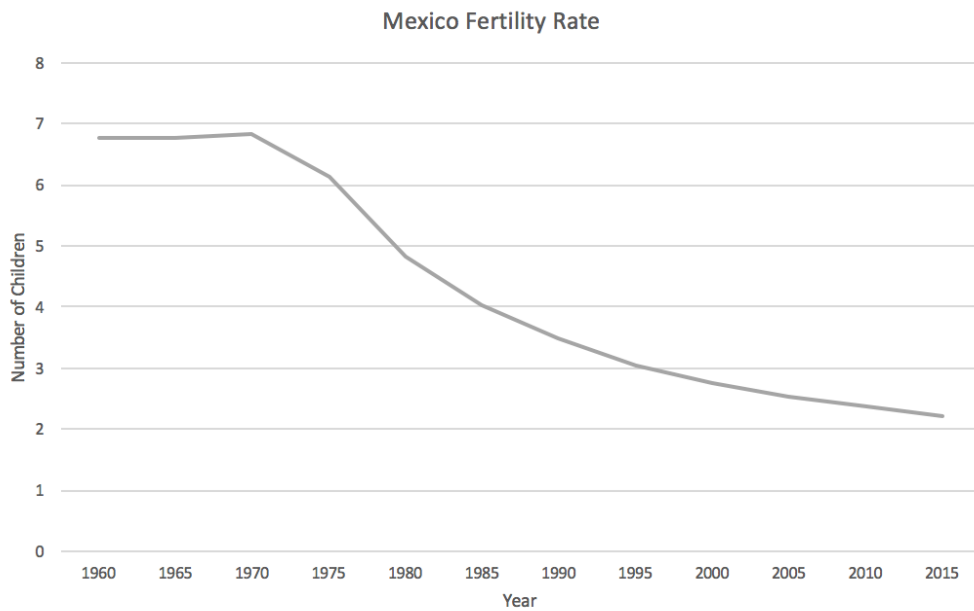
managed by the IMSS. While government projections expected the social security trust fund to equal 11% of the country's GDP in 1994, it only made up 0.4% (Villagómez y Hernández, 2009).



(Table 15. Source: World Bank)



(Table 16. Source: World Bank)



(Table 17. Source: World Bank)

The Reform of 1997

The reform of 1997 concentrated its efforts on the IMSS and the social services it provided. Under the new system, workers had to contribute 11.5% of their monthly salaries to their individual accounts (SSA). The government contributes 5% of the minimum wage salary to each worker's individual account equal to an average monthly contribution of 13.5% of an average worker's total payroll (Ibid.).

Workers can open an additional voluntary savings sub-account for the purpose of retiring early or obtaining a larger pension by retirement, in which both employees and employers may contribute. These contributions, and the accumulated earnings within the accounts are tax deductible. The funds within these additional voluntary savings sub-accounts can be withdrawn before retirement with a cap on one withdrawal every six months (Villagómez y Hernández, 2009).

The individual accounts of private-sector workers are administered and managed by AFOREs, *Administradoras de Fondos para el Retiro*, private pension fund management companies. The contributions made towards an AFORE go into one of three sub-accounts under an individual account; Retirement, Severance in Old Age and Old Age, Housing and Voluntary Savings (Gobierno de México, Glossario). These private institutions administer accounts and manage the funds in them. While there is a requirement for these AFOREs to invest at least 65% of worker's funds in government instruments, the range of possible investments exclude equity and foreign instruments (CONSAR).

SIEFORES, *Sociedades de Inversión Especializada en Fondos para el Retiro*, are the mutual funds in which AFOREs invest individual account funds. There are different investment limits for each SIEFORES, ranging by the risk-level of each fund (Gobierno de México).

In order to reduce the possibility of rising administrative costs, workers are only allowed to switch AFOREs once a year. The only exception to this time restriction is if the AFORE chosen by a worker changes administrative costs or investment structure. In this case, the worker is allowed to switch out of that AFORE as soon as the changes are implemented (CONSAR).

CONSAR, the National Commission of Savings for Retirement, is the regulating entity of AFOREs and SIEFORES. Additionally, CONSAR supervises them to make sure they are acting in accordance with proper financial, administrative and legal practices that are set forth by CONSAR. They also make sure that the AFOREs and SIEFORES enforce certain investment rules. While AFOREs administer and manage the pension funds for each individual worker, workers contributions are made to the IMSS where the funds are then allocated in the worker's chosen AFORE.

Once a worker reaches retirement at the age of 65, they are faced with two options; the first is to buy a lifetime annuity from a private insurance company, the second is to keep the funds in their individual accounts and make programmed withdrawals depending on their life expectancy. Since workers have property ownership over their individual accounts, in the case of a worker's death, all remaining funds within their individual account are redistributed to the inheritors of the deceased's estate (Rodríguez 1999).

Since the reform, a worker is eligible for a government guaranteed minimum pension if they contributed to an AFORE for a minimum of 25 years. If a worker chooses to retire early, or before the age of 65, the funds accumulated in their retirement account must be able to purchase an annuity with a value of at least 30% higher than the legally mandated minimum pension (equal to the minimum wage at that particular point in time). Workers choosing early retirement

are not eligible for the government's minimum pension guarantee, even if they have met the contributory minimum of 25 years (Ibid.).

Unlike post-pension-reform Chile, Mexican workers who were contributors under the pay-as-you-go system, were not given the choice to stay in the public system past 2001 (Grandolini and Cerda, 1998). By 2001, if a worker had not chosen an AFORE for themselves, the government chose one for them. The Mexican government does not offer recognition bonds (government-issued bonds allocated in a worker's individual accounts, recognizing their contributions to the past pension system) to workers transitioning from the public to private system, they do however, offer a "life-switch" option. This option allows workers who were formerly part of the public system the choice to receive benefits calculated under the pre-reform system. Workers would be able to choose whichever option yielded a larger pension. This "life-switch" option will continue until every worker's retirement, specifically those who had participated in the public system, is paid out in full (Dion, 2006).

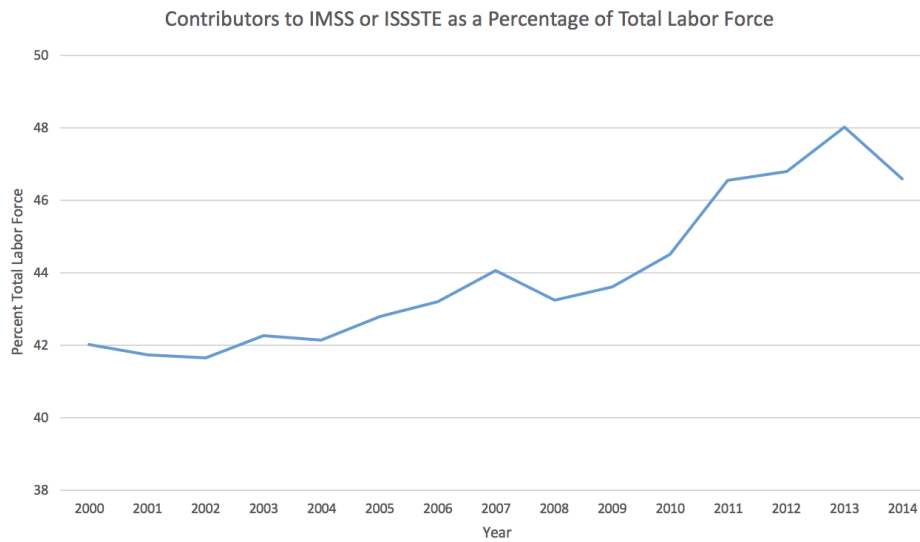
Data Analysis

Coverage

As mentioned previously, coverage indicates what percentage of formal-sector workers are covered by the existent social security system. While this measure provides insight on the benefits a worker will receive upon retirement, whether they contribute as private-sector workers to the IMSS, or public-sector workers to the ISSSTE, it also allows us to see how many people will be eligible specifically for old-age pensions.

In this section, coverage will be measured by the percentage of workers contributing to IMSS and ISSSTE, as a percentage of the total labor force. In 2000, just three years after the reform, 41.99% of members within the labor force were contributing either to the IMSS or ISSSTE. This was a significant increase from the 1995 rate of 35% (Gobierno de México). The Chilean coverage rate was stagnant for a few years from 2000 to 2002, but picked up again. By 2008, contributions made to the IMSS and ISSSTE as a percentage of the labor force grew to 43.19% in 2006 and 46.56% by 2014 (Table 18).

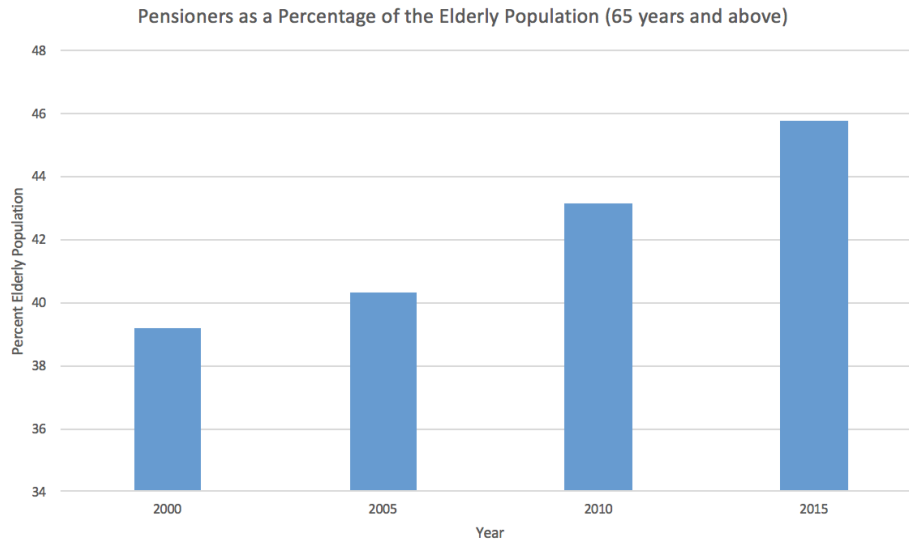
Another way of measuring coverage, focusing specifically on the elderly population, is seeing what percentage of the total elderly population (65 years and above) is already receiving a retirement pension (see Table 19 and 20). In 2000 only 39.17% of the elderly population was receiving a retirement pension. This percentage has increased gradually but consistently since then. By 2005, 40.32% of the elderly population was receiving a retirement pension. From 2010 and 2015, the percentages of the elderly population receiving a retirement pension were 43.14% and 45.76% respectively. While a significant portion of the elderly population is still not covered by retirement income, the ratio of pensioners to the elderly population seems to be growing consistently.



(Table 18. Source: Gobierno de México)



(Table 19. Source: Gobierno de México)



(Table 20. Source: Gobierno de México)

Equal Treatment and Social Solidarity

The reform of 1997 introduced a social quota; a government subsidy to individual worker's retirement accounts. The monthly contributions by these government subsidies are determined by the worker's salary. There are five income ranges with corresponding social quotas; i) A worker earning minimum wage receives a social quota equivalent to 7.11% of their salary, ii) A worker with a salary between 1.01 and 4 times the minimum wage receives a social quota equivalent to 1.70% of their salary, iii) A worker earning a salary between 4.01 and 7 times the minimum wage, receives a social quota that equals 0.93% of their income, iv) A worker earning a salary between 7.01 and 10 times the minimum wage, receives a social quota of 0.62% of their salary, v) A worker earning between 10.01 and 15 times the minimum wage, receives a social quota of 0.39% of their salary (OECD, 2016). Workers earning more than 15 times the minimum salary do not receive a social quota, however, they do receive a monthly flat rate government contribution of 0.225% of their salaries (Ibid.). The social quota aspect of the new pension system was added in order to avoid workers falling below a minimum pension by

the time of retirement. This social quota complement demonstrated positive impacts on contributors' pensions; by 2014 80% of IMSS pensioners had their retirement pensions topped-off by the government to reach the legal minimum pension at the time of their retirement (Gobierno de Mexico). The social quota gives workers, especially low income-earners, incentive to contribute towards an individual account due to the government's guarantee to grant workers (who have met all contributory and age requirements) a minimum pension, if their accumulated funds fall under the state-mandated minimum pension by retirement.

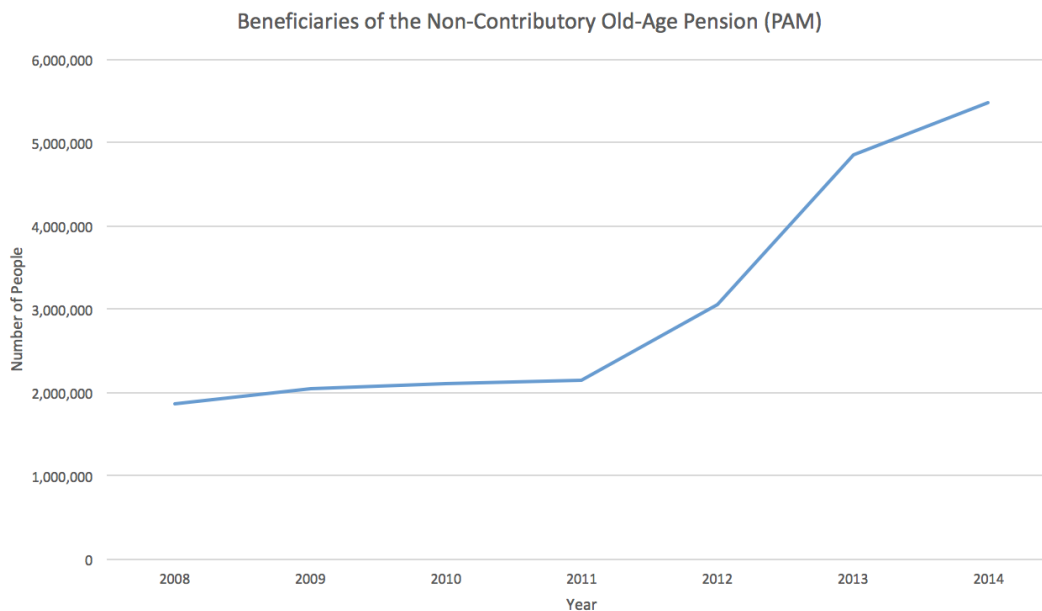
Workers in the public-sector contribute 6.125% of their base salaries to the ISSSTE, and are matched by a government subsidy of 5.175% of their basic salary which equates to a 11.3% average contribution rate (OECD, 2016). This is a greater contribution rate than private-sector employees whose monthly contribution rates (including employer, employee and government contributions) result in 6.5% of taxable income. While private-sector employees receive government subsidies that equal 0.225% of their taxable income, private-sector employees receive government subsidies of 5.175% of their basic salaries.

By 2001, all private-sector employees were forced to switch from the previous PAYG system to the private system. Public-sector employees however, were allowed to continue in the PAYG system even after 2001. By 2007, new incentives were created for public-sector employees to switch to the new system. Public-sector workers choosing to start an individual account, would receive a recognition bond, recognizing their years of contributions to the public system. The recognition of past contributions, and the option to continue under the public system were two options that were not afforded to private-sector employees after 2001 (IOPS, 2017).

In 2001, the Mexican government introduced a non-contributory old-age pension program, *Programa de Pensión para Adultos Mayores* (PAM). In its introductory years, this

pension was provided to people that were 70 years or older, living in a town with 30,000 inhabitants or fewer (CONEVAL) By 2013, the program expanded to the entire population of individuals 65 years and above, who were ineligible for retirement pensions due to a lack of contributions during a worker's lifetime (typically attributable to informal labor participants). While this program had 1,863,945 beneficiaries in 2008, this number increased significantly to 4,851,025 beneficiaries in 2013, one year after decreasing the age of eligibility by five years to 65 years and older (Ibid.). By 2014 there were 5,487,664 beneficiaries of the program (Table 21). Females are the principal beneficiaries of the non-contributory old-age pension; in 2012 and 2013, 2,837, 574 and 3,221,475 beneficiaries were female while 2,013,445 and 2,225,157 were male respectively (Ibid.). In 2012, 27.8% of people 65 years and older were covered by pensions from the funds accumulated in their individual accounts, while 34.2% of the same age group's population was covered by the PAM program (Ibid.). This program extends government support to people who would otherwise not be receiving old-age pensions due to lack of contributions throughout their lifetimes.

Social solidarity plays an important role in the prosperity of the Mexican old-age pension system. The social quota, adjusted for different income brackets, makes it easier for workers to be guaranteed a minimum pension by the time of retirement. If, by retirement, a worker's pension still falls below the government-mandated minimum pension, the government makes up this difference. The PAM program provides additional social assistance, extending coverage to the elderly population that would otherwise not be able to receive retirement income.



(Table 21. Source: CONEVAL)

Gender Equity

Gender equity within the labor force is critical in achieving equal living standards during working years and equal benefits throughout retirement. Unequal labor force participation rates will translate into unequal rates of individual account holders in addition to inequality amongst post-retirement beneficiaries across genders.

In Mexico, a woman has a life expectancy that is, on average, 5 years older than a man. In 2016, at birth, a woman was expected to live 80 years and a man was expected to live for 74 (World Bank) (Table 16). The difference in life expectancies between men and women, has been relatively constant since 1961. These demographic trends, in addition to sharp declines in Mexican fertility rates over the past 50 years, are transforming Mexico into a country with an aging, particularly female, population. In 1990, females made up 53% of the population aged 65 years and older. This percentage has increased gradually to 55% in 2016 (Table 22). A growing ageing population of women in Mexico, makes the need for gender equality in the labor force

even more pressing. Women, living longer than men, will need greater retirement income to compensate for these additional years of life.

In 1990, the participation rate of women in the labor force was 29.8% (Table 23). Due to the family culture in Mexico, many women are left home taking care of big families while men are the ones to enter the labor force. The participation rate of women in the labor force, did however, increase consistently between 1990 to 2016. By 1997, the year of the Mexican pension reform, the participation rate of women in the labor force grew to 33%. This rate grew slowly but continuously since then to a rate of 37.07% in 2016. While it is important to achieve higher levels of labor force participation by women in Mexico, it is also important to consider average wages by gender as these figures will ultimately determine the retirement income of contributors working in the formal sector. In 2005, the average hourly female wage was 94.7% of a male's average hourly wage (Table 24). This rate increased from 2005 to 2013, reaching an all-time-high in 2013, when a female's average hourly wage was actually 102% of a male's average hourly wage. By 2017, a woman's average hourly wage was 98.6% of a man's average hourly wage. It is important to understand the discrepancy between male and female average hourly wages as these wages will determine the contributions workers make throughout their working lives towards their individual retirement accounts. In 2002, the average monthly pension for a woman was \$285 (adjusted to inflation in 2016) while for men it was \$401 (OECD). In 2000, 34% of IMSS contributors were women. By 2015, female contributors increased by 36.5% of total contributors to the IMSS (Table 25).

Although the reform hasn't caused a notable increase in the percentage of contributions by women to the IMSS, or in the participation rate of women in the labor force, there have been

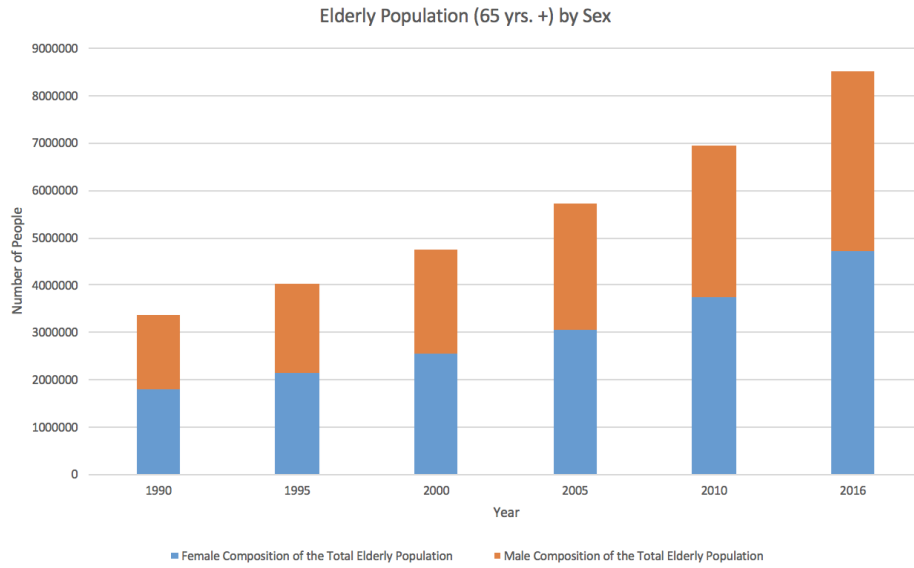
new programs put in place since the reform of 1997 that have helped women receive retirement income.

Firstly, the reform of 1997 expanded benefits to entire households. It is typical for a household receiving at least one pension to have that pension equal more than half of the household's total income (Mesa-Lago et al., 2016). In this way, benefits for pensioners can be enjoyed by their dependents and spouses. Included in these benefits is health care, provided by the IMSS, it covers the spouse and parents of a pensioner. There is also a survivorship pension that is granted to the spouse of a deceased contributor. Since a contributor has property rights over the funds in their individual account, if the contributor is to pass away before depleting the funds within the account, the rest of the pension is given to the pensioners dependents and/or spouse (Ibid.). In 2000, there were 459,747 pensions granted to widows. By 2015, this number increased to 724,473 (Table 26). The pension granted to widows provides financial security to women who might have depended on their spouse's' income throughout their lives.

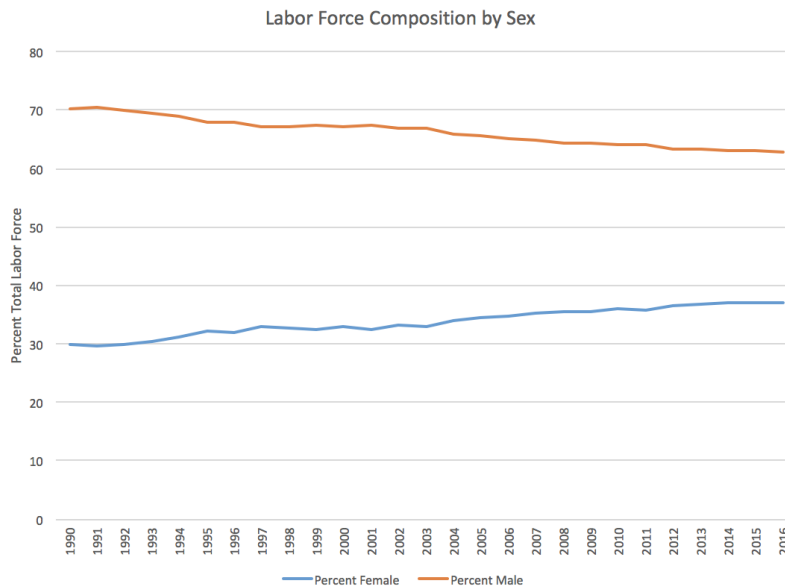
Lastly, the introduction of the non-contributory pension for older adults (PAM) in 2001 has shown to have a greater beneficial impact on elderly women than men. In 2012, 34.2% of the elderly population of Mexico was covered by this non-contributory pension. In 2013, 58% of the beneficiaries of this program were women and by 2014, 60% of the beneficiaries of this program were women (CONEVAL).

Since the pension reform of 1997, there have been negligible increases in the rate of female contributions to the IMSS. However, there have been increases in female average hourly salaries (as percentages of male's), in survivorship pensions granted out to widows and in female beneficiaries of the PAM program. The expanded coverage of one pensioner's benefits to other members of that household are helping provide income for women who are not working, but

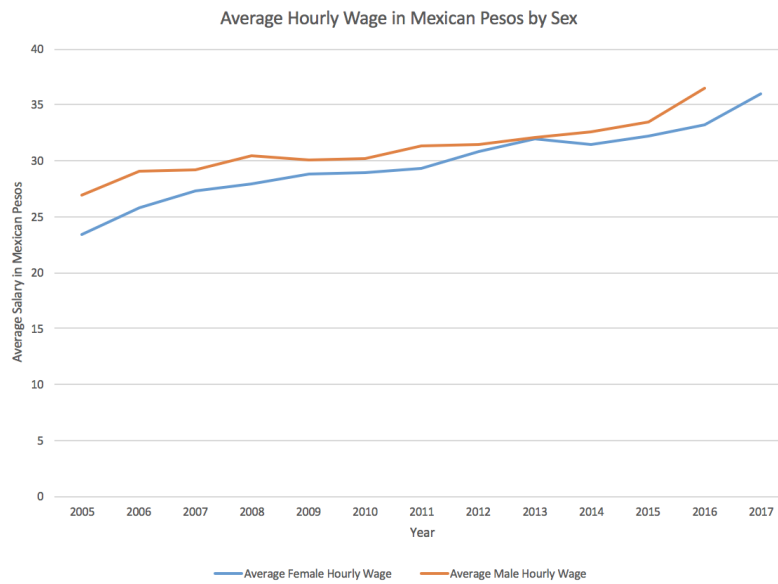
there still needs to be greater incentive for women to join the formal labor sector and save for their own retirement.



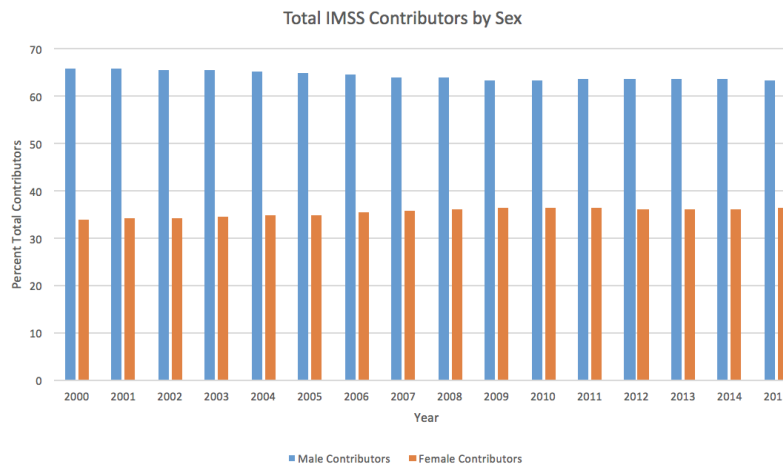
(Table 22. Source: INEGI)



(Table 23. Source: World Data)



(Table 24. Source: Gobierno de México)



(Table 25. Source: INEGI)



(Table 26. Source: INEGI)

Adequacy of Benefits

Once a worker reaches the age of retirement, they are faced with the choice of purchasing an annuity from a private insurance company or making programmed withdrawals. It is mandatory for a pensioner with a spouse to purchase a joint annuity so that in the case of the pensioner’s death, the remaining funds may be paid out to the surviving spouse on a monthly basis (Rodríguez, 1999). The old-age benefits received upon retirement in the form of pension income depend on the amount of time a worker has contributed towards their individual retirement account and their salary. The government-subsidized social quota is intended to decrease the likelihood of pensions falling under the legal minimum wage (which is equal to the legal minimum pension) at the time of retirement. If, however, the pension is less than the legally mandated minimum wage at a pensioner’s time of retirement, the government makes up the difference. Therefore, a worker who has met all contributive and age requirements, will not receive a pension under the legally mandated minimum wage at the time of their retirement due to the two government assistance programs stated above.

The pension program for older adults (PAM) is offered to elderly people (65 years and above) who have not participated in the formal labor sector throughout their lives or who have

not contributed towards individual accounts for long enough. At the time of its inception in 2001, the program had strict geographical limitations with an age of retirement of 70 years old (5 years older than the normal retirement age). By 2007, the program dropped the geographical restriction and expanded its coverage to all Mexicans 70 and older, who did not have retirement income and who passed a means-test. By 2013, the program decreased the age of eligibility to 65. This non-contributory program is a government funded way of providing retirement income (adjusted to inflation) to the elderly population that would not have received any retirement income otherwise. In 2012, the program granted its beneficiaries monthly incomes of 500 pesos (adjusted to inflation in 2015) (approximately \$26.43). By 2013, this income increased to 525 pesos a month (adjusted to inflation in 2015) (approximately \$27.75). From 2014 to present, the monthly income has remained constant at 580 pesos (adjusted to inflation 2017) (approximately \$30.66) (CONEVAL).

Administrative Costs

In 1997, when AFORES became the private institutions to manage pension funds in Mexico, the administrative costs were set at 1.9% of the worker's monthly earnings. This administrative cost remained constant until 2001. It decreased to 1.4% in 2005 and increased slightly to 1.5% in 2006. In 2008, AFORES got rid of their administrative costs and replaced them with commissions from returns. This lowered competition between AFORES in a sense, because people were not faced with the immediacy of a salary reduction impacted by administrative costs. Instead, the new commission that the AFORES would collect would be taken from the funds already in the individual account which would affect future benefits rather than immediate income (Gobierno de México). In 2009, the average administrative fees of the

AFORES was 1.87% of accumulated earnings on investments. This fee has gone down since then to a 1.03% average fee in 2017 (Table 27).

The government has created competitive incentives amongst AFORES by choosing two AFORES per year, with the lowest commission fees. Every year, the new participants of the labor force would be placed into either one of these two AFORES if they did not choose an AFORE for themselves.

Year	Administrative Cost (Percent of worker's salary)	Administrative Comission (Percent of Annual Returns)
1997	1.90%	-
1998	1.90%	-
1999	1.90%	-
2000	1.90%	-
2001	1.90%	-
2002	-	-
2003	-	-
2004	-	-
2005	1.40%	-
2006	1.50%	-
2007	-	-
2008	-	-
2009		1.87%
2010		-
2011		1.70%
2012		1.63%
2013		1.65%
2014		1.30%
2015		-
2016		1.06%
2017		1.03%

(Table 27. Source: AIOS, 2005; OECD, 2016; James et al., 2000 and 2001)

Financial Sustainability

The new structure of the Mexican pension system after 1997 shifted the financial burden of retirement from the collective population, to the individual worker. The glossary of the *Gobierno de México* (The Government of Mexico) defines SIEFORES (*Sociedades de Inversión Especializada en Fondos para el Retiro*) as “the mutual funds where the AFORES invest the worker’s resources in order to generate yields. There exist 4 different SIEFORES according to the age of each worker, namely: SB1 for 60 and older workers, SB2 for workers from 46 to 59

years old, SB3 for workers from 37 to 45 years old and SB4 for workers 36 years old and younger.”

Since the inception of the new system until present, there have been many changes in the investment structure of SIEFORES. In 1997, SIEFORES were only allowed to invest in debt and currencies (Table 27). The differences between the four SIEFORES are based on the limits placed on individual investment instruments. By 2007, in addition to debt and currencies, SIEFORES were allowed to invest in equity, Mexican private equity funds and real estate trusts and structured assets. By 2017, commodities, swaptions and REITs were added to the list of investment possibilities for SIEFORES (CON SAR).

Each SIEFORE faces a different level of risk in terms of its investment structure. The riskiest SIEFORE SB4, is offered to the youngest age group of workers, as they can afford to take on more risk than older workers. In 2017, the limit on investment in equity was 40% for the riskiest fund SB4 and 5% for the safest fund SB1. The medium-risk fund SB2 and riskier medium-risk fund SB3 had limits of 25% and 30% respectively. Similarly, the limit on investment in commodities is 10% for SB4 and 0% for SB1 (Table 29). These numbers show the limit on risky investments in the safest fund SB1. The reason for sticking with safer investment strategies for workers that are aged 60 years and older, is because workers in this age group do not have many working years left in them before retirement. If these accounts were to face negative returns, they would not have as much time as a worker within the SB2 age group to compensate for the bad investment. Instead of trying to maximize returns under SB1, the investments are structured in such a way to maximize account stability instead.

Average annual nominal return rates for each SIEFORE are consistently at different levels but the trends among all four types of SIEFORES, from 2009 to 2017, seem to vary

simultaneously showing that despite investment caps on certain risky investments, all four SIEFORES are similarly affected by market conditions. In March of 2009, SB1 was the only SIEFORE to have a positive average nominal annual return of 5.07% (Table 30). SB2, SB3 and SB4 all experienced negative returns of -0.18%, -1.89% and -3.90% respectively. The order of the returns for that year were ordered lowest (SB4) to highest (SB1), demonstrating the success of the safer fund SB1’s intentions to keep the accounts of older workers safe.

In February 2010, all funds experienced high rates of return (SB3; 21.27%, SB2; 18.06%, SB1; 12.95%) but SB4 experienced its highest return rate to date of 24.63%. SB3 and SB2 experienced their highest return rates in November 2009 of 21.27% and 18.49% respectively. In April of 2013, SB1 experienced its highest return rate of 15.54%.

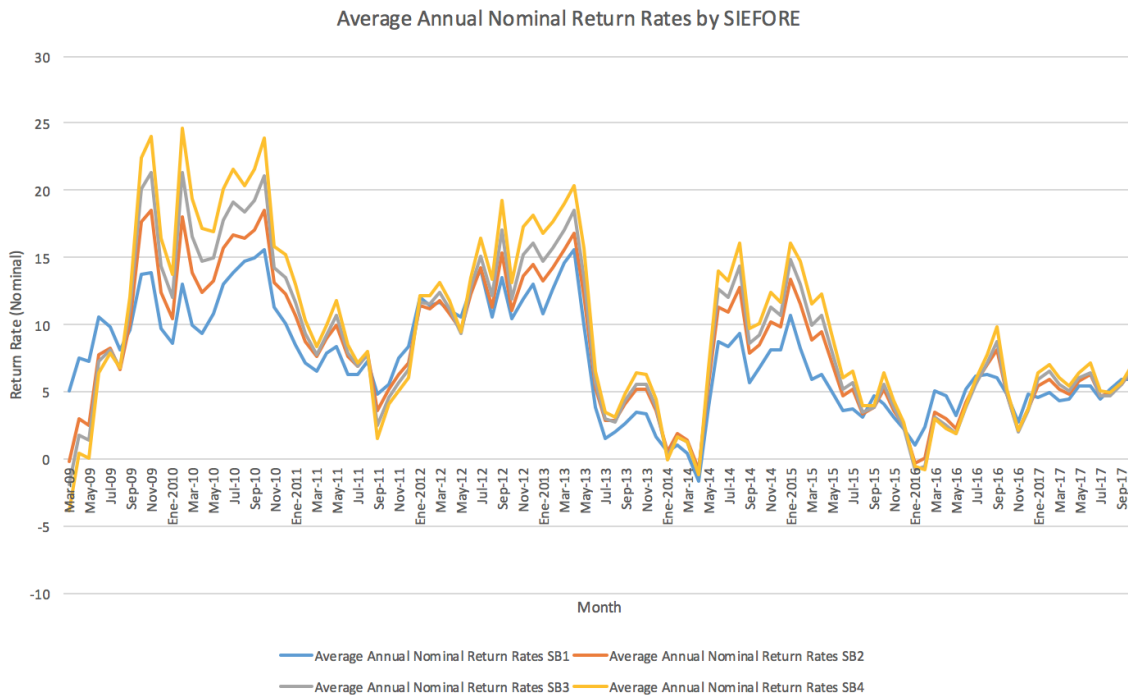
The financial sustainability aspect of these funds seems to have been positive so far. There have been short periods of negative returns (March 2009, April 2014 and January 2016) that have recovered quickly keeping the system afloat. For the most part these funds have experienced positive nominal rates of return.

	SIEFORE'S Investment Regime		
	1997	2007	2017
Debt	Allowed	Allowed	Allowed
Currencies	Allowed	Allowed	Allowed
Equity		Allowed	Allowed
Mexican Private Equity Funds and Real Estate Trusts		Allowed	Allowed
Structured Assets		Allowed	Allowed
Commodities			Allowed
Swaptions			Allowed
REITs			Allowed

(Table 28. Source: CONSAR)

		Investment Structure and Limits by SIEFORE Type			
		SB1	SB2	SB3	SB4
Mark and Liquidity Risks	Value at Risk	0.70%	1.10%	1.40%	2.10%
	Difference of the Conditional Value at Risk	0.30%	0.45%	0.70%	1.00%
	Liquidity Coverage Ratio	80%	80%	80%	80%
Risk by issuer and/or counterparty	Debt from mxBBB to mxAAA or int'l currencies BB to AAA	5%	5%	5%	5%
	Subordinated debt mxBBB+ to mxBBB- or int'l currencies B+ to BB-	1%	1%	1%	1%
	Foreign Securities from BBB- to AAA from one issuer or counterparty	5%	5%	5%	5%
	Holding of a single issuance	Maximum: 35%; \$300mdp			
Asset class Limits	Foreign Securities	20%	20%	20%	20%
	Equity	5%	25%	30%	40%
	Foreign Currency	30%	30%	30%	30%
	Securitizeds	10%	15%	20%	30%
	Structured Securities	5%	15%	20%	30%
	Infrastructure or housing	NA	10%	13%	13%
	Others	NA	5%	7%	7%
	Inflation Protected Securities	Yes	No	No	No
Conflict of Interest	Commodities	0%	5%	10%	10%
	Securities by related entities	15%	15%	15%	15%
Vehicles and Derivatives	Securities by entities with patrimonial affiliation with the AFORE	5%	5%	5%	5%
	Investment and mandates	Yes	Yes	Yes	Yes
	Derivatives	Yes	Yes	Yes	Yes

(Table 29. Source: CONSAR 2017)



(Table 30. Source: CONSAR)

Conclusion

The Mexican pension reform of 1997 has demonstrated positive impacts on most aspects of the social security core guiding principles. Coverage is not the only thing to have improved since the inception of the new system. With the introduction of a minimum pension guarantee and a government-subsidized social quota, retired workers are not living off less than the legally mandated minimum pension at the time of their retirement. This translates into better financial conditions for the retired population that would not have accrued enough funds in their accounts to equal a minimum pension under the old system. The creation of the PAM program has also extended coverage to the elderly population that would not have received any retirement income by the age of retirement under the old system. Administrative costs were low until 2008 when the pension fund managers decided to change this fee to a commission they collected based on the net annual returns on individual worker's accounts. This switch in fee structure makes it so that low-wage earners do not have to face immediate decreases in their wages in the form of payments to pension fund managers. The financial sustainability of the program is positive, based on each fund's trends from March 2009 to September 2017. The most pressing issue seems to be the lack of incentive for women to enter the workforce. If more women enter the workforce then more women will be covered by their own pensions by the time they reach the age of retirement. Although the benefits offered by the social security system and the pension system can cover a pensioner's entire family, it is important to strive for universal coverage which can only be achieved by increasing the number of women working in the formal labor sector.

Chapter 3: Uruguay

Introduction

In Uruguay, the first law to provide social security to all private-sector employees was passed in 1919. A welfare system developed in conjunction throughout the 20th century. Until 1967, the extended welfare system was managed by independent funds. The Bank of Social Protection (BPS) was the main administrator of pensions and other benefit plans including health care, unemployment and family allowances (World Bank, 2012). In 1979, the military government implemented some changes to the administrative body of social security and the benefits offered by the system. The BPS was replaced by the General Directorate of Social Security under the Ministry of Labor and Social Security. The General Directorate of Social Security was in charge of the retirement funds of public workers, professionals (people with a university degree), and workers in manufacturing and trade industries (Ibid.). It was also in charge of other programs such as for family allowances, healthcare and the distribution of unemployment and maternity benefits. Before the changes of 1979, the retirement age had been 50 years old for men and 45 years old for women. After 1979, there was a ten-year increase to 60 years old for men and 55 years old for women. The military government also increased the minimum years of contribution to 30 years (Papadópulos, 1992).

The democratic political system in Uruguay was re-established in 1984. The National Conciliatory Program, in charge of transitioning the country from the autocratic regime, took measures in changing the structure of social security put in place by the military government in 1979. The measures taken by the National Conciliatory Program involved re-establishing the Bank of Social Protection, adjusting pensions to inflation (previously adjusted to the Average Salary Index), and to increase pensions that were below the minimum wage to the level of minimum wage (Mosconi, 1997). While BPS was the main provider of social security benefits

across Uruguay, there were five additional groups that provided special benefits to the following five occupational groups; police, professionals (people who graduated from universities), public notaries, military and bank employees. (World Bank, 2007) By 1996, if a formal-sector worker was not contributing to a fund, they would be placed under the BPS. The benefits received by old-age retirees in the pre-reform system were calculated as a percentage of the “basic retirement wage”; the pensioner’s averaged salary over the last three years of work (adjusted to inflation) (Ibid.).

Problems with the PAYG System

The PAYG system faced challenges as demographic trends in Uruguay changed over time. In 1960, the average life expectancy at birth was 68 years old. By 1994, two years before the reform, it had increased to 73 years (Table 31). This positive trend, combined with a gradually decreasing fertility rate (Table 32) made Uruguay a country with an ageing population. This became difficult in terms of the PAYG system because a smaller working population had to support the retirement benefits of a growing elderly population; in 1980, there were 1.4 contributors for every pensioner and in 1995 there were 1.1 contributors for every pensioner (Papadóulos, 1992). In 1963, the elderly population (65 years and older) equaled 19.3% of the working population and has increased substantially year to year. By 1994 the elderly population was as big as 29% of the working population, and has stayed stable ever since (28.30% in 2016) (Ibid.).

The consequences of an ageing population manifested themselves as increased government expenditures on retirement benefits with simultaneous declines in the real values of pensions over the thirty-year time-frame spanning from 1962 to 1991 (World Bank, 2007). The real value of pensions declined by 30% by 1991 (Ibid.).

In addition to these problems, the public system did not have a good way of certifying the number of years a worker had contributed because registered workers were measured vaguely and inconsistently. Some workers were able to benefit from this aspect of mismanagement, in 1999, 23% of BPS expenditures were made out to individuals who had no contributory history at all (Bérgolo, 2013)

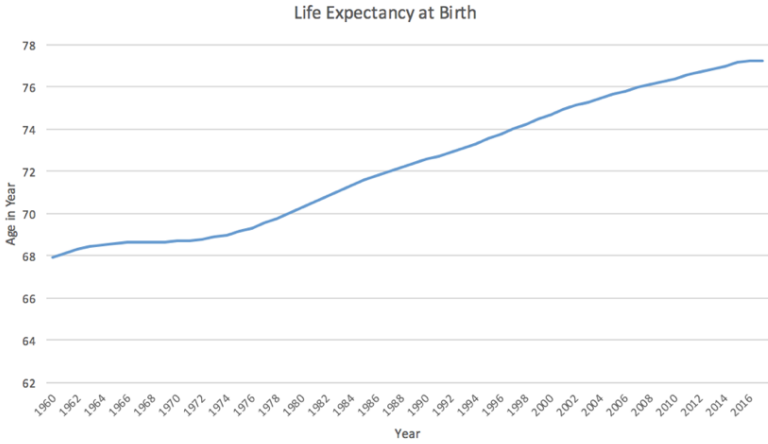
The Reform of 1995

The reform of 1995 involved the addition of a new pillar of social security, transforming the social security system into a multi-pillar scheme. The first pillar of this new system was carried over from the pre-reform; a defined-benefit PAYG system administered by the Bank of Social Protection. The second pillar of the new scheme was a system of individual accounts, administered and managed by private fund managers. These private institutions are called *Administradoras de Fondos de Ahorro Previsional* (AFAPs). The third pillar is a voluntary savings pillar for workers earning above \$15,000 pesos (Uruguayan pesos adjusted to inflation in 2000) (SSA 2011).

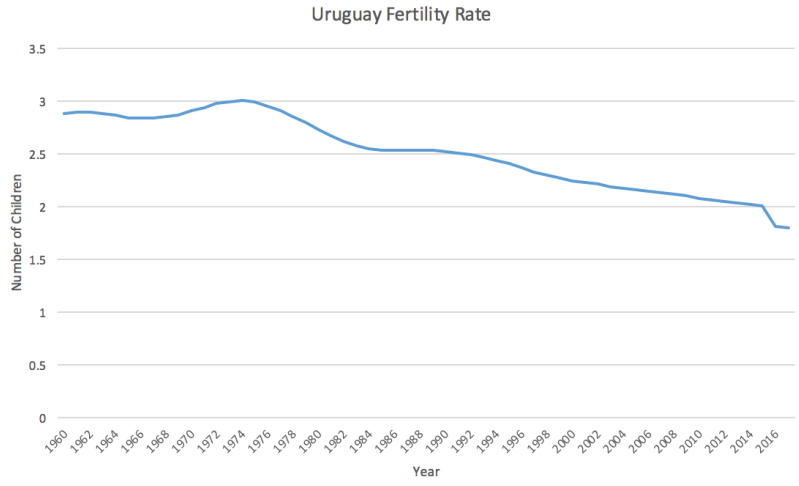
First pillar contributions are made by employers and employees earning a maximum monthly salary of \$5,000 pesos (Uruguayan pesos adjusted to inflation in 2000) (Ibid.). This pillar receives specific taxes, granting first-pillar contributors financial assistance when necessary. Contributions to the second pillar of the multi-pillar system are mandatory for workers earning between \$5,000 and \$15,000 pesos (Uruguayan pesos adjusted to inflation in 2000). These workers are only required to contribute an amount that exceeds the minimum \$5,000 pesos. Additionally, it requires participation from all active members of the labor force who are under 40 years old starting in 1996. Workers who are under 40 years old and do not earn salaries greater than \$5,000 pesos are not required to contribute to the second pillar (Ibid.).

However, in this situation, a worker contributing half of his contribution to the second-pillar would be granted a bonus that equaled 50% of the base salary calculated under the first pillar. This option would create incentive to participate in the private scheme. The third pillar of the new system was offered to workers earning monthly salaries greater than \$15,000 pesos. These workers have the option of making additional contributions to their individual accounts.

Upon retirement, the funds within workers’ individual accounts are moved from the AFAP to an insurance company that the worker chooses, at which time annuities from both the first, second and third pillar are granted to workers. Age and gender are the determinant factors of the minimum annuity paid out to workers. The Superintendency of Insurance functions as the administrative and regulative body of first pillar. The Central Bank of Uruguay is in charge of regulating and supervising insurance companies and the private companies that manage workers’ individual accounts (Forteza, 2005).



(Table 31. Source: FRED)



(Table 32. Source: FRED)

Data Analysis

Coverage

Until 1996, contribution rates were 13% of a worker's gross salary, and private-sector employer contributions were 24.5%. Public-sector employer contributions fell between the range of 19.5% and 24.5% (Bertranou, 2004). The maximum benefit equaled a salary of roughly \$800 a month (adjusted to inflation in 2002). Additionally, another ceiling was implemented for beneficiaries receiving benefits from more than one fund at 15 times the minimum salary (this was enforced regardless of the number of jobs a worker had). The system's replacement rate up until 1996, was set at 70% of the worker's average salary during their final three years of working (Ibid.).

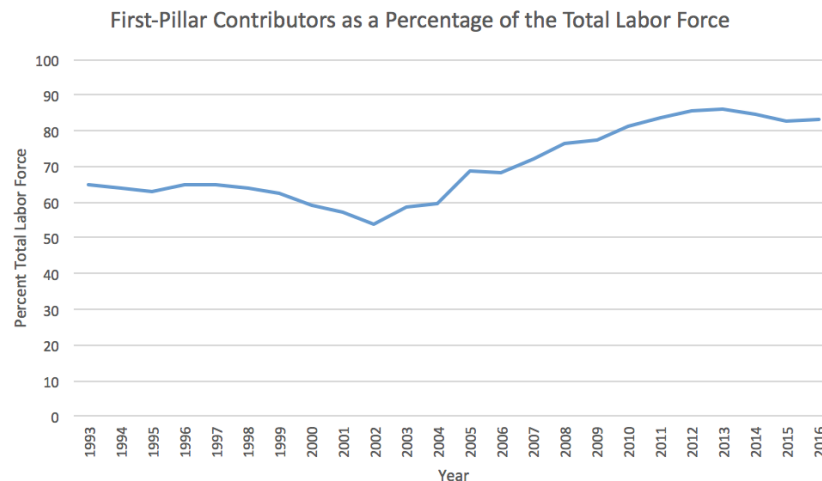
After the reform, these numbers changed. Worker contribution rates increased to 15% of their total monthly salaries up to \$24,709 pesos (Uruguayan pesos adjusted to inflation in 2011) and 7.5% of covered payroll by the employer (World Bank). A worker contributing to both the first and second pillar contributed 15% of their first \$24,709 pesos earned (Uruguayan pesos adjusted to inflation in 2011) to the first pillar and 15% of the amount exceeding \$24,709 pesos toward the second pillar. No contributions are made from the part of the employer under the second pillar. If the worker is enrolled in the second pillar voluntarily, then they contribute 7.5% of their total monthly salary (SSA, 2011).

By 1993, 65% of the labor force was contributing to the BPS under the PAYG system. This rate remained relatively consistent until 1999, when there were decreases in contributors, with the lowest rate of the period being 53% in 2002 (Table 33). By 2003, the percentage of the labor force contributing to the first pillar of the new system was 58%. By 2005, it had increased

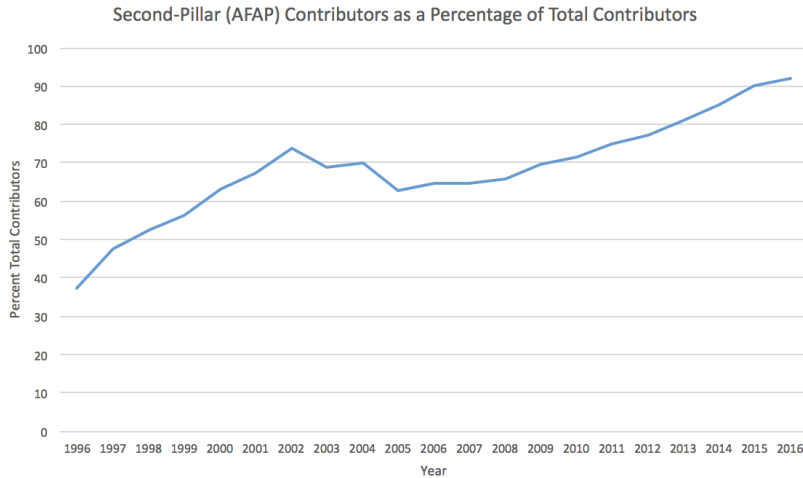
substantially to 69%. Ever since the decreases in contributions from 1999 to 2002, there has been a steady increase in coverage of the labor force. In 2016, 83% of labor force participants were contributing toward the first-pillar of the new system.

In 1996, 37% of contributors contributing to the BPS were also contributing to an individual account (Table 34). In just one year, contributors to the second-pillar of the system increased to 47% of total contributors. This number has increased steadily with a minor decrease between 2003 and 2005 where second-pillar contributors made up 68% and 62% of total contributors respectively. From 2005 onward, the amount of second-pillar contributors has continuously risen with drastic increases between 2009 and 2016. In 2009, 69% of total contributors had an individual account. By 2013, this rose to 81% and in 2016 it reached its highest rate to date of 92% of total contributions.

The elderly population receiving some sort of pension has increased from 75% in 1994, to 88% in 2016 demonstrating a positive trend in elderly coverage since the reform of 1995.



(Table 33. Source: AIOS, 2017; BPS Boletín, 2003 and 2017)



(Table 34. Source: AIOS, 2017; BPS Boletín, 2003 and 2017)

Equal Treatment and Social Solidarity

In the post-reform pension system, inequality persists. Altogether, pensions to civil servants, professionals, military workers, police, and trade and manufacturing workers, make up approximately 22.8% of total pensions (BPS Boletín 2017). This number however, has decreased since 1996, when the total amount of “special pensions” was 26% of total pensions. In 1996, a civil servants average monthly pension was worth 1.3 times a regular worker’s average monthly pension, a professional’s average monthly pension during this time was worth 2.2 times an average worker’s pension (Table 35). By 2006, a civil servants average monthly pension increased slightly to 1.4 times a regular worker’s average monthly pension. A professional’s average pension remained constant at 2.2 times a regular average pensioner. Since then, civil servant’s average pensions have remained constant, still consisting of 1.4 times a regular average pension. Professionals’ average pensions have decreased to 2 times an average regular pension by 2016.

There continues to be inequality in the administration of benefits toward pensioners under the reformed Uruguayan pension system. These inequalities exist due to the superior benefits

given to the five special occupational groups (civil servants, professionals, military, police and workers in manufacturing and trade) that also received special benefits before the reform. In brief, the reform of 1995 did not help bridge inequality across average pensioners and members of the five special groups.

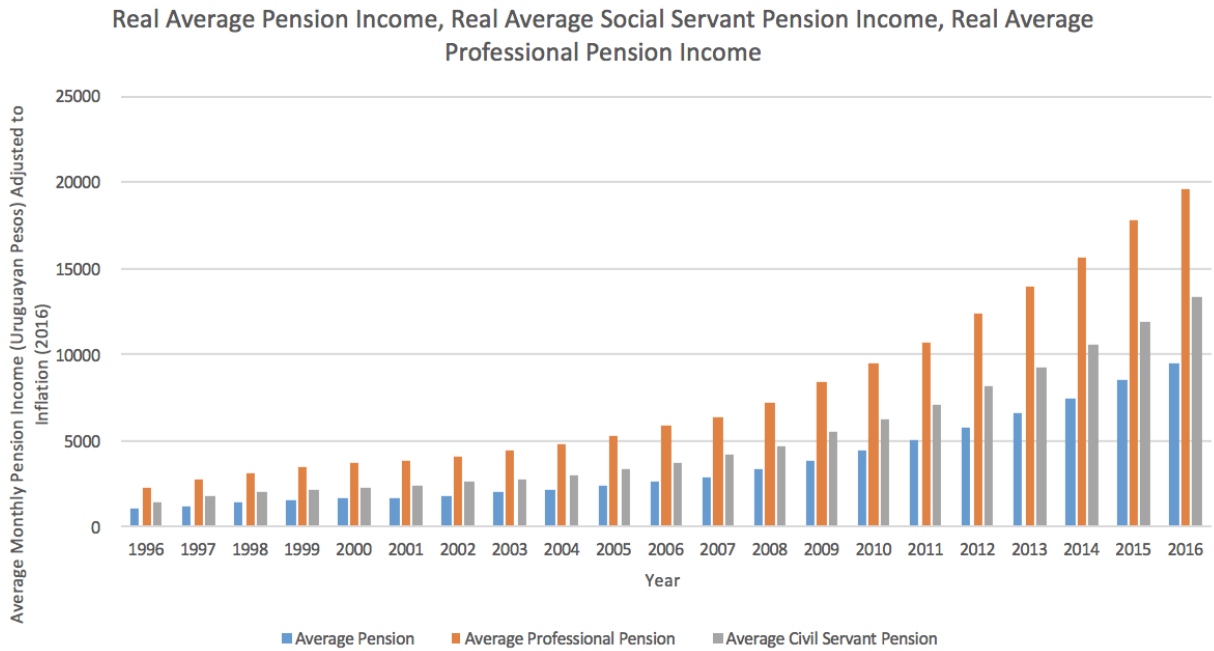
Before the pension reform, there existed a social assistance program that targeted low-income elderly people. A retiree's eligibility was assessed by a means-test. If the person fell below a certain income, they would receive monthly retirement income financed by the state. The reform of 1995 continued to offer this non-contributory social assistance program provided by the BPS, however, the eligibility age increased by five years to 70 years of age for both men and women. In 1994, the average pension income for a beneficiary of the non-contributory old-age pension was \$688.94 current Uruguayan pesos (approximately \$23.27 USD) (Table 36). By 1996, the value of an average non-contributory pension almost doubled to \$1237.56 current Uruguayan pesos per month (approximately \$43 USD). It has consistently increased, reaching \$2567 current Uruguayan pesos in 2006 (approximately \$88.56 USD) and \$8252.2 current Uruguayan pesos in 2016 (approximately \$284.62 USD). The transition to the multi-pillar program has proven to have positive effects on the real value of non-contributory old-age pensions.

The Uruguayan social assistance pension program has helped expand coverage of the elderly population (70 years and above) in Uruguay. In 1993, 14.5% of the elderly population was being covered by the non-contributory pension program (Table 37). By 2006, the program saw a slight increase in beneficiaries to 15.3%. As of 2006, the percentage of the elderly population benefiting from this program has stayed within this range with very little fluctuation between years. By 2009, this rate increases to 16.8%, and reached its highest point of 18.03% in

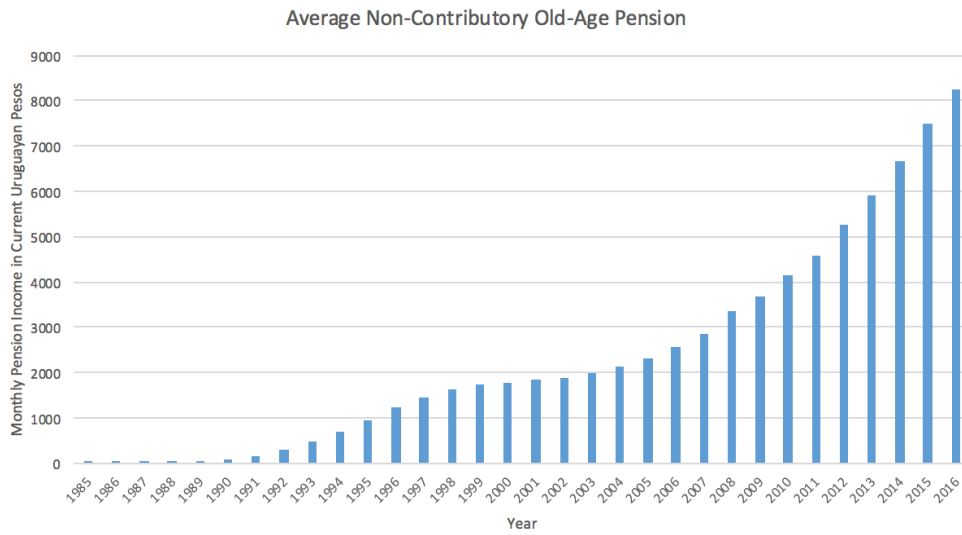
2016. Although there have been very subtle and gradual increases in coverage of the elderly population by the non-contributory pension program over the past two decades, it has shown to be moving in a positive direction since the reform.

We can also examine the coverage of the social assistance program by seeing what percentage of total pensioners are beneficiaries of the non-contributory pension program (Table 38). In 1993, 22% of total pensioners were beneficiaries of a non-contributory pension. This rate remained constant throughout the year of the reform. After the reform in 1995, the percentage of total pensioners receiving a non-contributory pension remained relatively consistent at a rate of 23% until 2005 at which point it reached 24%. Since then, this rate has increased more drastically. By 2010, this rate increased to 30% and in 2015, the social assistance program reached its peak coverage of total pensioners at 34%. This rate has since decreased mildly to 33.9% in 2016.

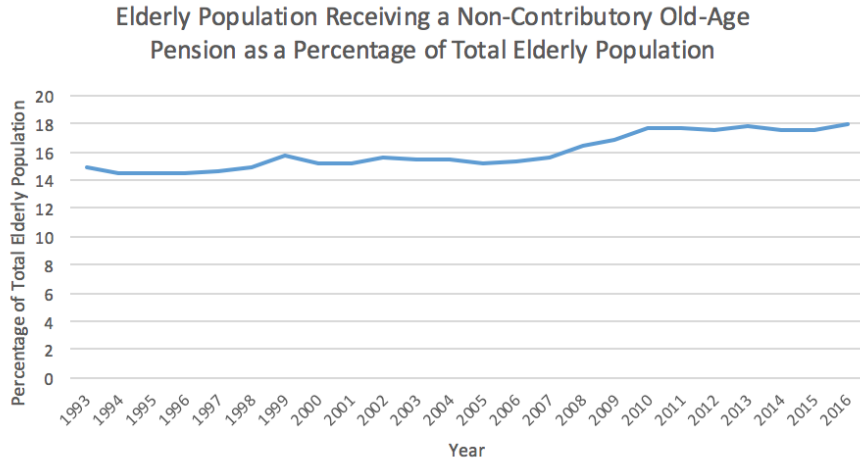
The social assistance non-contributory pension program offered by the BPS has expanded coverage since the reform of 1995. The real values of these pensions have continuously grown since the pre-reform era, leaving the low-income elderly population in a better post-retirement financial position than before the reform.



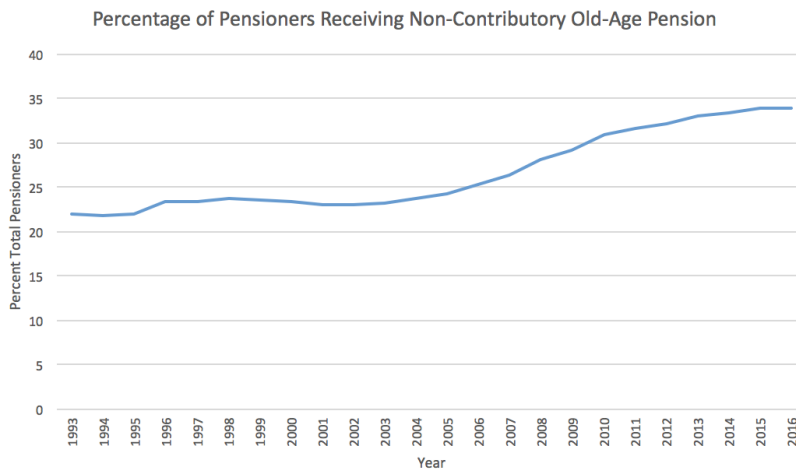
(Table 35. Source: BPS Boletín, 2003 and 2017)



(Table 36. Source: BPS Boletín, 2003 and 2017)



(Table 37. Source: BPS Boletín, 2003 and 2017)



(Table 38. Source: BPS Boletín, 2003 and 2017)

Gender Equity

Gender equity within a pension system is critical in order to achieve equal levels of benefits and quality of life across genders in the retired population. In 2016, the life expectancy at birth for a woman was 80.5 years old and 74.1 for men (FRED 2016). In Uruguay, since women have a greater life expectancy than men, retirement income is especially important for them.

In order for women to receive pension benefits under the multi-pillar pension system, they must participate in the labor force. In 1993, the female composition of the total labor force was 40.3% (Table 39). This rate reached 41% during the year of the reform. While this rate has increased slowly, by 2016, the female composition of the total labor force was 44.5%. Compared to Chile and Mexico, Uruguay has the highest female participation rate in the labor force. In terms of the elderly population of Uruguay, females have consistently outnumbered men. In 1960, 55% of the population aged 65 and older was female (Table 40). This rate has only increased since then; by 1990 the female elderly population was 58% of the total elderly population and by 1995 it was 59%. This rate reached its highest point in 2010, when it was 61.3% and has remained relatively stable since then decreasing slightly to 61.15% in 2016.

While females are not the predominant participants of the Uruguayan labor force, they are the principal beneficiaries of old-age pensions in the country. In 1993, 55% of total pensioners were female and little has changed since then (Table 41). During the time period spanning from 1993 to 2016, the lowest and highest rates of female pensioners to total pensioners were in 2008 and 2015 when they were 54.20% and 55.20% respectively. This rate was 55.18% in 2016. The number of total pensioners includes pensioners of the non-contributory old-age pension, explaining why females are the primary beneficiaries even though they do not compose the greater portion of the labor force.

In 1993, 57.75% of beneficiaries of the non-contributory old-age pension were female, this was the highest rate between 1993 and 2016 (Table 42). This number has since decreased, nearing a level of equality amongst male and female beneficiaries of the social assistance program. By 1996, this rate was 56%, reaching its lowest rate in 2015 of 53.21%. By 2016,

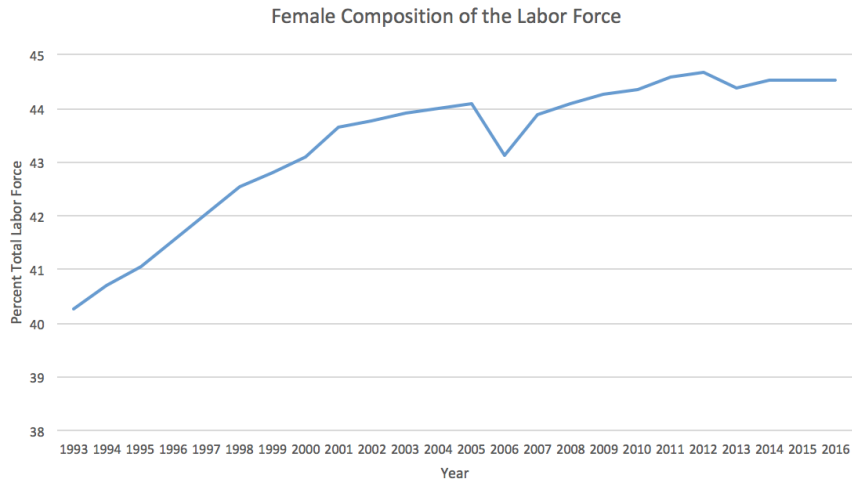
female beneficiaries of the non-contributory pension made up 53.28% of total beneficiaries of the program.

Female affiliation to the second-pillar of the multi-pillar pension system has demonstrated a positive trend since 2003 when 41.8% of total AFAP affiliates were female (Table 43). In 2009 and 2010 this rate increased to 42.3% and 43.2% respectively. Throughout this period, the only declines in female affiliation to AFAPs were in 2006 and 2007 where the rates fell from 41.7% in 2005 to 41.5% for the two following years respectively. By 2016, this rate had reached its highest point of 44.6%.

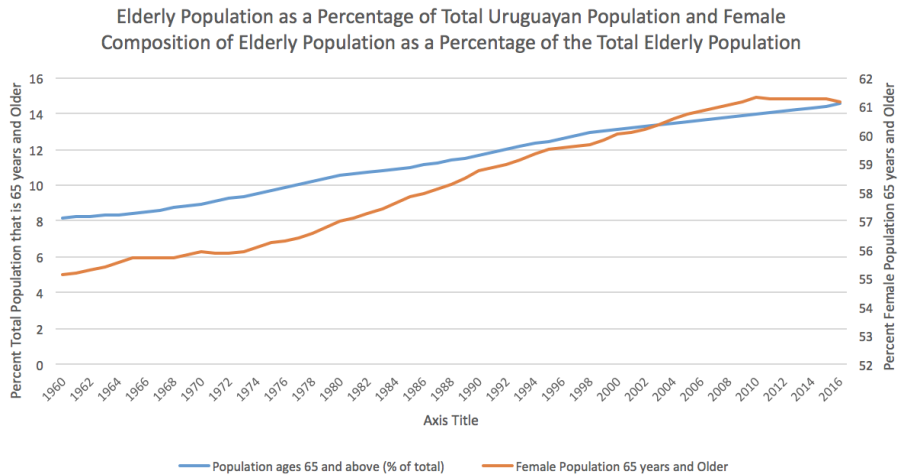
The new multi-pillar pension system in Uruguay has not had a substantial effect on gender equity in the pension system. The rate of female pensioners as a percentage of total pensioners has remained practically unchanged since 1993. Facing few and minor fluctuations between 2001 to 2010. The non-contributory old-age pension program has faced the greatest change in gender composition from 1993 to 2016, going from a female composition of 57.75% to 53.2% respectively. The decrease in female beneficiaries to the non-contributory program is approaching an equal rate of pensioners across genders. Female affiliation to AFAPs has evolved slightly but positively since 2003, where it went from 41.8% to 44.6% in 2016. This steadily increasing participation rate of females in the individual account pillar of the system is nearing an equal rate of affiliates across genders.

Inequality within the pre-reform Uruguayan pension system was not as severe as in Chile or Mexico's pre-reform systems. Even though female participation in the labor force is not perfectly equal, women have been the principal beneficiaries of old-age pensions, which was not the case in pre- or post-reform Chile and Mexico. Going forward, Uruguay should aim to attain higher gender equality within the labor force in order for both men and women to obtain equal

benefits during their working lives, in addition to their post-retirement lives. The non-contributory program that has favored women since 1993 should continue to increase its coverage of low-income elderly males in order to reduce poverty rates across this demographic. Overall, among Mexico and Chile, Uruguay is the country that has demonstrated trends moving towards near-perfect levels of gender equity after its reform.



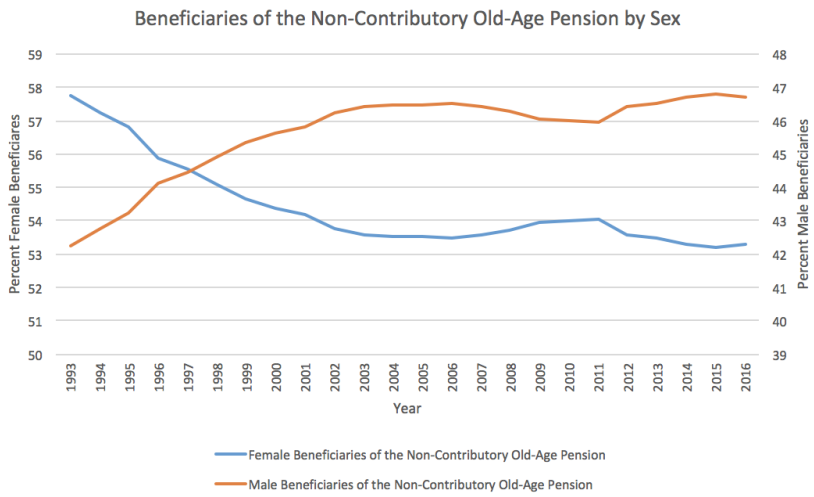
(Table 39. Source: FRED, 2016)



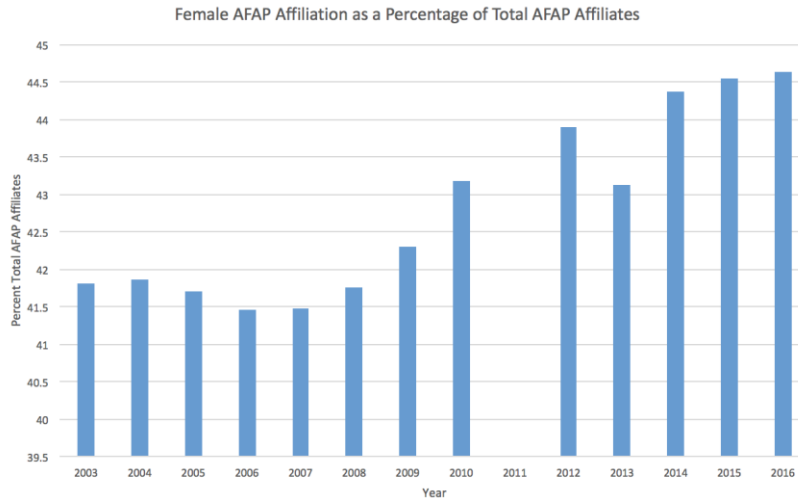
(Table 40. Source: World Bank)



(Table 41. Source: BPS, 2017)



(Table 42. Source: BPS, 2017)



(Table 43. Source: FIAP, 2017)

Adequacy of Benefits

Before 1979, the age of retirement was 55 for women and 60 for men. The military government increased these ages to 65 for women and 70 for men. Additionally, under the autocratic regime, both the layoff and maternity benefits were eliminated. Once democracy was re-established in 1984, benefits were inconsistent. There were five different groups, in addition to the BPS, that distributed benefits to workers of different occupations. At this time, the age of eligibility for old-age benefits was 70 years old, although it would soon drop again to 65 (SSA, 2011). The BPS provided maternity allowances, old-age pensions, health and unemployment benefits. Old-age retirement benefits were calculated based on a percentage of the average salary (adjusted to inflation) of the worker's last three years of work (World Bank, 2007).

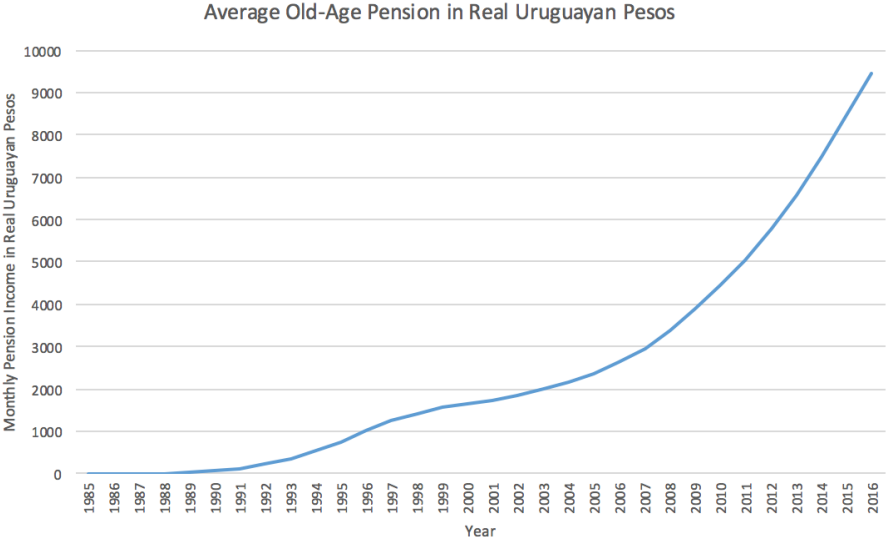
After the reform of 1995, the benefits of the system and the eligibility age for old-age pensions changed. The age of eligibility for an old-age pension under the first pillar fell to 60 years with a minimum of 30 years of contributions. Under the second pillar of individual accounts, the age also declined to 60 years old with a minimum of 30 years of contributions. Women are granted one year of contribution for each child they have with a maximum of five

credited years (Ibid.). Workers in dangerous occupations are afforded similar assistance in that they can be credited for contributory years depending on the level of hazard they face in their jobs (SSA, 2011).

Benefits under the first pillar are calculated as 45% of the beneficiary's average monthly salary over the last 10 years of work or 45% of 105% of the beneficiary's average monthly salary in 20 of their highest-earning years. The pensioners retirement income is decided based on whichever calculation is lowest. For every additional year worked over the mandatory 30 years, there is a 1% increase in real pension value, up to a total of 35 years. Afterward, there is a 0.5% annual increase in real pension value for every additional year worked over 35 years until this percentage reaches 2.5%. Workers who have not met the contribution minimum of 30 years under the first pillar are granted a 2% annual increase in pension for every year worked after the age of 60. This assistance is granted until the beneficiary completes the requirement of 30 years of contribution, or until the beneficiary reaches the age of 70 (BPS Boletín, 2017). Under the second pillar, the accumulated funds within a worker's individual account is used to purchase an annuity from an insurance company of their choice. In 2011, the minimum pension, paid out on a monthly basis was \$3,339 pesos (Uruguayan pesos adjusted to inflation in 2011) and the maximum pension paid out to members contributing to the first and second pillar was \$30,145 pesos (Uruguayan pesos adjusted to inflation in 2011).

The real values of average old-age pensions have improved since 1995. In 1994, the value of an average old-age pension was \$539 Uruguayan pesos (adjusted to inflation in 2016, approximately \$18 US dollars) (Table 44). By 1996, just one year after the reform, the value of the average old-age pension increased to \$1,029.68 Uruguayan pesos (adjusted to inflation in 2016, approximately \$32.50 US dollars). Since the creation of the new multi-pillar pension

system, the real value of the average old-age pension increased constantly, reaching its highest value of \$9,466.90 Uruguayan pesos (adjusted to inflation in 2016, approximately \$326.61 US dollars) in 2016. The reform of 1995 has positively affected the real value of average Uruguayan pensions, consequently increasing the monthly retirement income and overall financial standing of elderly people receiving old-age pensions in Uruguay.

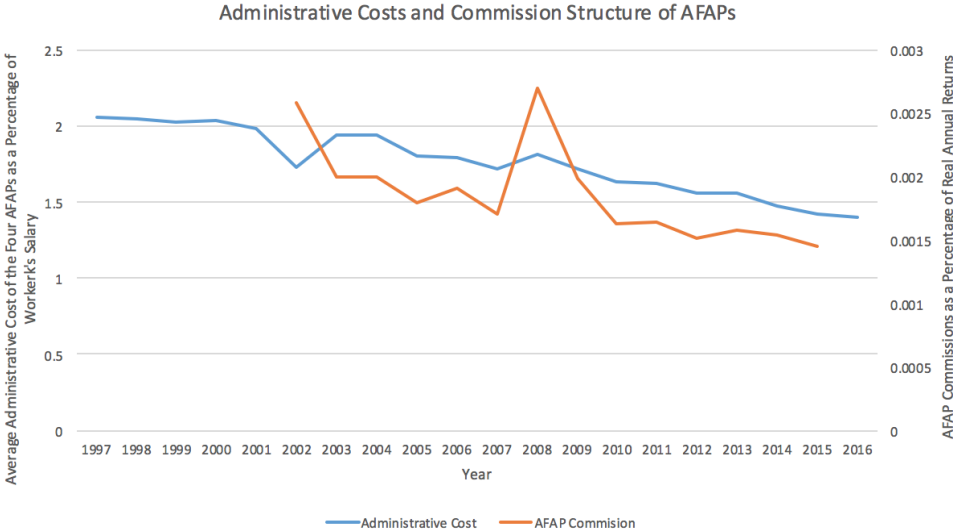


(Table 44. Source: BPS Boletín, 2003 and 2017)

Administrative Costs

When the multi-pillar structure of the pension system was implemented in 1995, the pillar of individual accounts introduced an administrative cost that would be paid by the worker. Administrative costs are the fees charged by private fund managers for their services. In 1997, the average fee charged by the four AFAPs was 2.05% of a worker’s monthly salary (Table 45) since then, this cost has decreased. By 2002, the administrative cost of AFAPs was 1.73%. In 2003, the cost increased slightly to 1.94% where it remained constant until 2005 when it went back down to 1.8%. The administrative cost of AFAPs has decreased consistently reaching its lowest cost in 2016 of 1.4% of a worker’s salary.

In 2002, AFAPs introduced an additional cost to be paid by the worker; a commission based on the annual real returns within worker’s individual accounts. While this commission was very low from its inception, the idea is that the profits made from these commissions accumulate and increase as the funds in worker’s individual accounts increase. In 2002, the average commission charged was 0.0025% of worker’s individual account’s annual real returns (Table 45). By 2007, this commission fell to 0.0017%. However, it increased in 2008 to 0.0027%. Since then, AFAP average commissions have fallen consistently, reaching their lowest commission fee in 2015 of 0.0014%.



(Table 45. Source: FIAP)

Financial Sustainability

Under the new Uruguayan pension system, workers’ individual account funds are managed by private management companies called *Administradora de Fondos de Ahorro Previsional* (Administrators of Provisional Saving Funds), AFAPs. AFAP responsibilities include investing workers’ funds in safe but profitable instruments to yield positive annual returns for workers. While limits on investment instruments are put in place by the regulatory

body, The Central Bank of Uruguay, of the system, to ensure stability of accumulated funds, an AFAP is financially sustainable if it is at least maintaining the level of funds contributed by the worker so that by retirement a worker is receiving at least as much as he contributed.

Since the inception of the system's second pillar, there have been four AFAPs in charge of managing funds contributed to the private pension system. The accumulated net assets under management of these four AFAPs have increased substantially since the creation of the multi-pillar system. In 1996, there were \$51 million US dollars (adjusted to inflation in 2017) worth of net assets under AFAP management (Table 46). This number nearly quadrupled by 1997, reaching \$191 million US dollars. The AFAPs only showed negative changes in net assets from one period to another in 2002, 2008 and 2015. In 2001, there were \$1.45 billion assets under management, this figure declined to \$839 million US dollars by 2002. After this period, net assets under management increased until 2008, when they declined again from \$3.4 billion US dollars in 2007 to \$2.9 billion US dollars. The latest decline in net assets under management occurred in 2015, when the assets declined from the 2014 figure of \$11 billion US dollars to \$10.61 billion real US dollars. Since 2015, the net assets managed by AFAPs have increased to \$15.2 billion US dollars in the third quarter of 2017.

The investment portfolios of these four AFAPs have evolved and diversified over time. In 2001, AFAPs were predominantly making fixed-income investments. These kinds of investments earn returns on a fixed schedule while the rate of return can vary from one payment period to another (Fidelity). The fixed-income investments made by the AFAPs in 2001 were in government bonds (state fixed-income), corporate bonds (corporate fixed-income), financial fixed-income and liquid assets. The average of all four AFAPs investment in these instruments was 61.23% in government bonds, 6.01% in corporate bonds, 21.69% in financial fixed-income

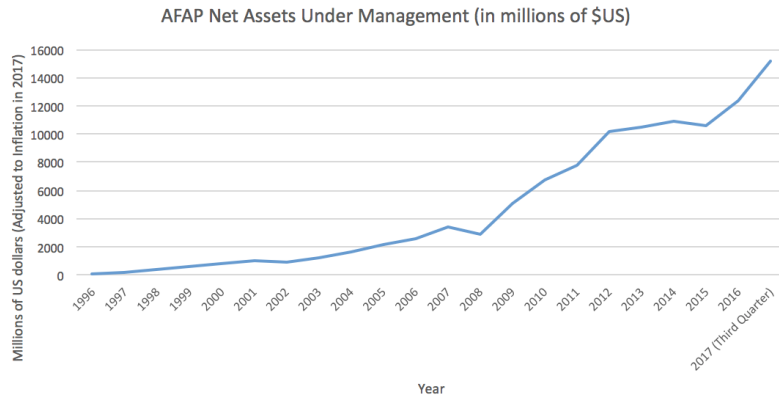
instruments and 11.07% in liquid assets (Table 47). In 2005, the investment portfolio of these AFAPs included other assets instead of liquid assets. During this year, investment in government bonds increased to 83.37%, financial fixed-income investment decreased to 8.82%, corporate fixed-income investment decreased slightly to 4.29% and investment in other assets was at 2.53%. By 2010, the AFAP investment portfolio expanded its diversification to include corporate equity, foreign fixed-income and liquid asset investments. State fixed-income investments continued to be the principal investment instrument of AFAP funds, comprising 83.85% of total investments, while corporate fixed-income was 7.94% of total investments, corporate equity was 0.10%, financial fixed-income was 1.12%, foreign fixed-income was 6.14% and liquid assets were 0.86%. In 2015, the average investment portfolio of the four AFAPs were as follows: 61.85% in state fixed-income, 9.01% in corporate fixed-income, 4.37% in corporate equities, 6.44% in financial fixed-income, 10% in foreign fixed-income and 8.34% in liquid assets. Table 47 provides snapshots of the evolving diversification of AFAP investment portfolios over 15 years. While state fixed-income, corporate fixed-income and financial fixed-income investments are consistent throughout AFAP investment portfolios throughout this period, other investments such as corporate equity, foreign fixed-income and liquid assets are not consistent investment instruments chosen by AFAPs.

Although the AFAPs yielded positive real net returns in 2001, 2005, 2010 and 2016 of 20.27%, 4.77%, 17% and 0.2% respectively, the private management companies have seen years of negative real net return rates (Table 47 and Table 49). In 2008, AFAPs saw their first, and greatest, negative net real return rate of -20.81%. The investment portfolio of this year included state fixed-income (81.80%), corporate fixed-income (6.89%), corporate equities (0.16%), financial fixed-income (3.55%), foreign fixed-income (4.17%) and liquid assets (3.43%) (Table

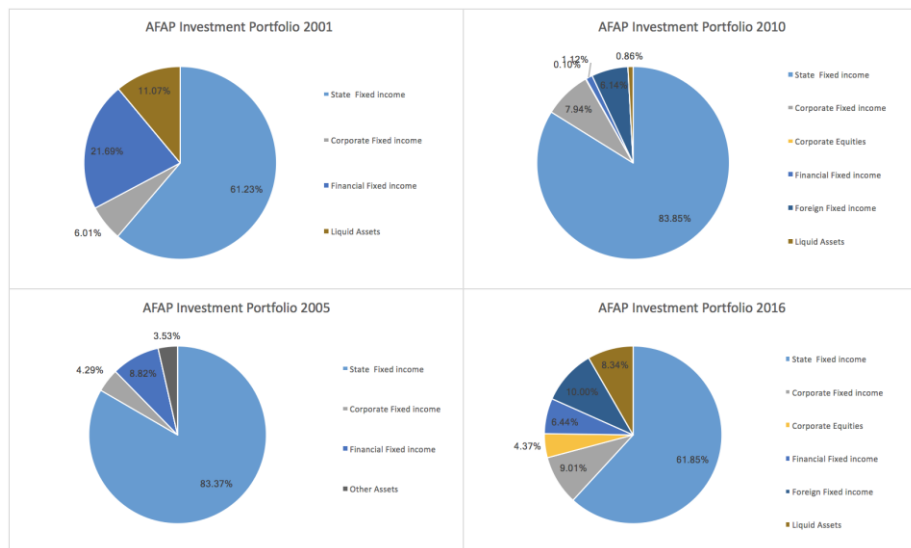
48). In 2011 and 2013, AFAPs saw much small negative real return rates of 0.34% and -2.8% respectively. Throughout the time period spanning from 1997 to 2016, the AFAP saw its greatest real net return rate in 2009, when it reached 29.33% just after having yielded the lowest real return rate of -20.91% in 2008. There are no consistencies or noticeable trends in AFAP net real return rates from year to year (Table 49). For example, in 2002 the AFAP net real return rate was 14.22%, it subsequently increased in 2003 to 26.58% and then fell back down in 2004 to 5.68%. These inconsistent and, occasionally extreme fluctuations in return rates could be attributable to lack of strict investment limits, and too-frequent changes in investment portfolio structure.

Overall, AFAPs have mostly seen periods of positive real net return rates on investments. While the only substantial negative return rate occurred in 2008, the private companies have seen three periods of average negative real return rates since 1997. In order to decrease discrepancies between annual real return rates, stricter investment limitations must be implemented. Additionally, there should be different investment structures catered to workers based on age and risk. Unlike Chile or Mexico, the older working population that is nearing retirement and contributing to an individual account, is not granted as much security when it comes to the management of their individual accounts as there exists no “less-risky” or “more-risky” management sub-funds within the AFAPs. Therefore, all workers, regardless of age and risk-aversion, face the same risk under the post-reform second pillar system of individual accounts. The older working population will not have as much time as the younger working population to compensate for negative returns on failed, risky investments. In order to create a greater sense of security and financial stability of the individual account system in Uruguay, there must be different management funds within each AFAP that vary by risk and age so that workers receive

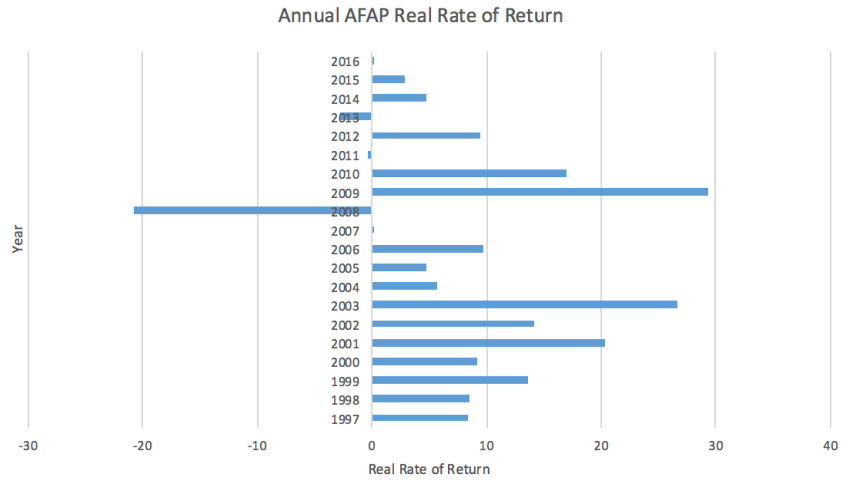
a retirement income that is at least equivalent to the contributions they made out during their working lives.



(Table 46. Source: FIAP, 2017)

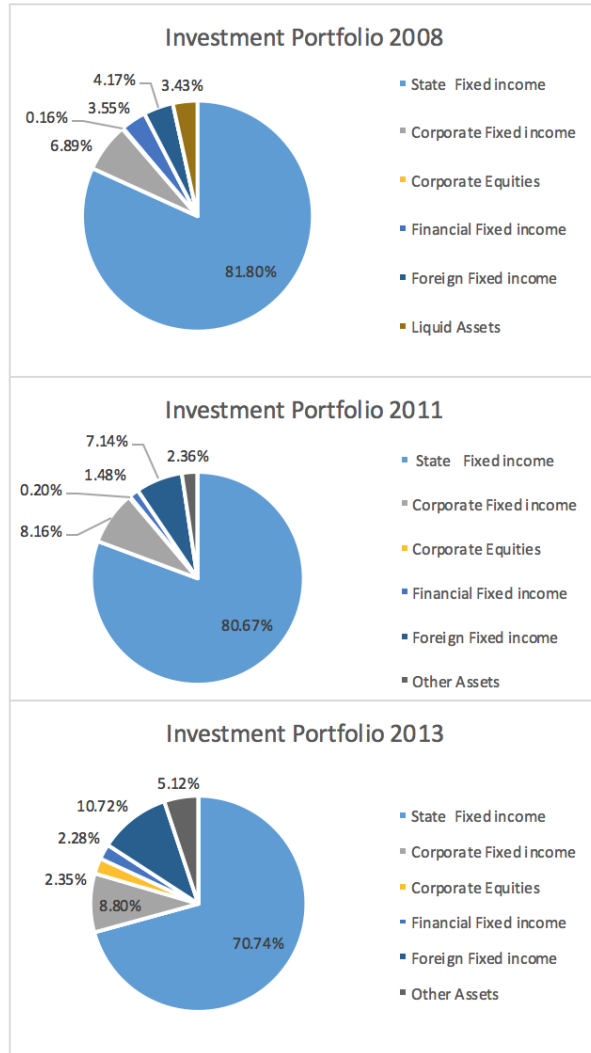


(Table 47. Source: FIAP, 2016)



(Table 48. Source: FIAP, 2016)

Four AFAPs Average Investment Portfolio During Years Yielding Negative Annual Real Rates of Return



(Table 49. Source: FIAP)

Year	Net Real Return Rate
1997	8.38
1998	8.51
1999	13.57
2000	9.12
2001	20.27
2002	14.22
2003	26.58
2004	5.68
2005	4.77
2006	9.78
2007	0.24
2008	-20.813906
2009	29.3319903
2010	17.0037935
2011	-0.3444103
2012	9.47
2013	-2.8021743
2014	4.75337342
2015	2.89858578
2016	0.20495695

(Table 50. Source: FIAP, 2017)

Conclusion

Since its inception, the post-reform pension system in Uruguay has demonstrated positive changes in terms of the six guiding core principles of social security. Not only has coverage expanded in terms of contributors to the new system but coverage of the retired population has also increased since 1995. This, in addition to higher real values of the average old-age pension will have a positive effect on the elderly population's quality of life. Although gender equity was high before the reform of 1995, the levels of non-contributory pensioners has begun to equalize through increases in male beneficiaries. The level of female affiliates to AFAPs has also been rising steadily, approaching levels of perfect gender equality within the second-pillar of the new system. Since the reform, administrative costs have decreased, making it less expensive for contributors of the second pillar to have individual accounts. Overall, the reform has seen positive effects in coverage, gender equity, adequacy of benefits, administrative costs and social solidarity. Equal treatment amongst pensioners has not improved much since the pre-reform pension system, as the same occupational groups that were favored then continue to be favored now. The financial sustainability aspect of the multi-pillar system also faces challenges, and requires some reforming in order to minimize investment risk for older and risk-averse workers.

Final Remarks

Overall, the pension reforms that swept Chile, Mexico and Uruguay yielded positive results based on the six guiding core principles of social security. While all countries experienced higher coverage rates after the reforms, there were mixed results across countries with regards to gender equity, administrative costs, and financial sustainability. Every country, however, had a larger rate of coverage amongst the elderly population, either through the implementation of the new private system or the introduction of new social assistance programs, in the post-reform era. This demonstrates that the population targeted by old-age pensions, has not only benefitted from the increased coverage of the system, but also from the increased real values of pensions throughout the post-reform period resulting in better retirement conditions for the aging populations of Chile, Mexico and Uruguay.

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