

Bosch, Mariano; Guajardo, Jarret

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Labor market impacts of non-contributory pensions: The case of Argentina's moratorium

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Labor Market Impacts of Non-Contributory Pensions

The Case of Argentina's Moratorium

Mariano Bosch
Jarret Guajardo

November, 2012

Inter-American Development Bank
Labor Markets and Social Security Unit

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Inter-American Development Bank
1300 New York Ave. N.W.
Washington, D.C. 20577

Mariano Bosch (mbosch@iadb.org); Jarret Guajardo (jguardo@savechildren.org)

Labor Market Impacts of Non-Contributory Pensions: The Case of Argentina's Moratorium

Mariano Bosch (*Inter-American Development Bank*)

Jarret Guajardo (*Save the Children*)

November 2012

Abstract: Argentina had traditionally enjoyed one of the highest elderly coverage rates in Latin America. However, since the mid-1990s coverage rates started a steady decline, especially for low income workers. In response, the Argentine government implemented a series of sweeping reforms in the mid-2000s. Central to these reforms was a program known as the 'Moratorium,' which allowed workers of retirement age to receive a pension regardless of whether they had completed the full 30 years of required social security contributions through formal employment. The difference between the amount of completed contributions and the 30-year benchmark would be reconciled by discounting their "debt" from their pension benefit (with a substantial reduction). In two years, two million pension recipients were added and elderly coverage rate rose from 68% in 2003 to nearly 90% in 2010. This paper studies the labor market effects of this reform. Using Argentina's Continuous Permanent Household Survey (EPHC), we employ a difference-in-difference technique to compare elderly individuals just above and below the retirement age, before and after the pension reform. We find that the moratorium generated a fall in employment of 5 percentage points (pp) and 4.5pp for men age 65-69 and women age 60-64 respectively. We also find that it generated a 2.5 pp fall in formal employment among women, indicating that the moratorium caused women in formal jobs to retire, when they would have otherwise continued to contribute to the system. Similarly, we observe a large increase of the share of workers in the informal sector receiving a pension, implying that a substantial fraction of the benefits of the moratorium went to active workers that continued working above the eligibility age outside the formal sector.

JEL codes: H55, J32, O17

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Introduction

For decades, Latin American pension systems, like their advanced countries counterparts, had allocated pension benefits primarily to those who have been able to demonstrate a relatively long history of contributions to social security or privately defined contribution plans. However, due to high levels of informality, many Latin American workers who find themselves in the informal sector throughout their active working life had no choice but to continue working well beyond the official retirement age and remain vulnerable to negative health or employment shocks. In the face of increasing old age poverty levels, in recent years Latin American policymakers have experimented with a variety of non-contributory pension schemes to address the long-term challenges posed by the exclusion of large segments of population of an income sources at old age.

Although those non-contributory pensions programs have dramatically improved the coverage rates there is little evidence on the response of the labor market to such profound changes in the incentives to contribute. This paper studies the effects on the labor market of one such program: the Argentinian moratorium.

Until the mid-1990s, Argentina had enjoyed one of the region's highest elderly coverage rates. However, the turmoil from the economic crisis of 1999-2002 and rising unemployment and informality saw coverage rates decline, especially for the poor. In response, the Argentine government passed a bundle of sweeping reforms in the mid-2000s. Central to these reforms was a program known as the 'Moratorium,' which allowed workers of retirement age access to receive a pension regardless of whether they had made the full 30 years of required social security contributions through formal employment. The difference between the amount of completed contributions and the 30-year benchmark would be reconciled by discounting their debt from their pension benefit. The program was "de facto" a noncontributory pension scheme for workers (or non-workers) that had never made contributions to the system and it allowed workers with insufficient contributions to retire immediately if they were above the minimum retirement age. The program achieved remarkable results – an additional two million pension recipients were added in only a couple of years and elderly coverage rose from 68% in 2003 to nearly 90% in 2010.

While the moratorium undoubtedly increased elderly pension coverage, questions remain as to the labor market effects of such a large expansion of a non-contributory pension scheme and the fiscal sustainability of the measure. Economic theory suggests that granting unconditional access to pensions may create perverse incentives for contraction of the formal sector and labor market participation in general. Assuming leisure is a normal good, unconditional receipt of a pension effectively reduces the opportunity cost of leisure and thus may decrease labor supply through retirement or fewer hours worked.

While evidence regarding social protection programs supports a zero income elasticity of leisure among the poor in general, non-contributory pensions have been found to have significant effects in the labor supply of workers close to retirement (Bosch & Manacorda, 2011). Investigating a 1991 pension reform in Brazil, Evangelista and Filho (2008) find a nonzero income elasticity of leisure for the elderly—pension eligibility decreases the probability of working by 38 percentage points, and decreases average hours worked by 22.5 hours. Aguila, Kapteyn, Robles, and Weidmer (2011) also find the elderly in the Yucatan significantly reduce their labor supply in response to a non-contributory scheme. Other evidence, however, is mixed; in Mexico, both Juarez (2010) and Galiani and Getler (2009) fail to find a significant labor supply impact, although the latter do find evidence for some substitution away from paid to unpaid family work.

Another potential impact of non-contributory pension expansion could be a substitution of labor away from the formal sector toward the informal sector. As informal-sector benefits are increased relative to the formal sector, more workers may choose to avoid taxation through informal work. Economic efficiency may be curtailed as a result if the growth of firms is hindered by their efforts to conceal increased informal employment (Levy, 2008).

Argentina's pension reform was exceptional in two ways. First, it was not contingent on income or any other stipulation save having reached retirement age. Second, the reform was quickly and quietly enacted largely without public awareness. Thus, as an unconditional and unanticipated policy change vastly increasing the scope of Argentina's non-contributory pension scheme, the Moratorium program presents a unique opportunity to explore the labor market

impact of such a large-scale program. With an increasing number of Latin American governments either introducing non-contributory pension schemes or considering their introduction or expansion (including pressures to reedit the Argentinean moratorium), an enhanced understanding of the associated labor market effects will help inform how these schemes could be modified or complemented with additional measures to better achieve policy goals.

We draw on the ‘Continuous Permanent Household Survey’ (EPHC) conducted by the Argentine National Statistics and Census Institute (INDEC). This paper will utilize a difference-in-difference strategy to estimate the labor market effects of the moratorium on elderly men and women up to five years past the retirement age, before and after the pension reform. We find that the Moratorium had large effects on the labor supply of those affected. According to our estimates the moratorium engineered a fall in employment rates of 5.5pp and 4.5pp for men and women just above the retirement respectively. However, while the reduction for men was concentrated among the self-employed, the largest reduction in employment for women occurred among formal sector workers.

Furthermore, we observe a large increase in pension recipients among active informal workers indicating that a large part of the benefits were channeled to working individuals outside the formal sector. In the end, the fall in employment (and labor income) exceeds the increase in pension benefits for men and we observe a fall in average total income (labor and non-labor) for men just above the retirement age. For women just above the retirement age, however, we find an increase in total average income since a very large proportion of the recipients were women already outside the labor market and hence receiving zero income previous to the reform. This prompted the nickname “housewife’s pension” for the program.

This paper will first describe the political and economic background leading to the Moratorium reform in Section I, detailing the chronology and results of the reform process in terms of elderly pension coverage. Section II will describe the data. Section III explains the difference-in-difference method used in this study, and Section IV presents the results. Section V concludes.

I. The Moratorium: The Central Component of Argentina's Pension Inclusion Plan (PIP)

Figure 1 illustrates the evolution of pension coverage among the elderly aged 65 or above in Argentina from 1992 to 2010¹. Traditionally, Argentina had sustained one of the highest pension coverage rates in Latin America (See Rofman, Fajnzylber & Herrera, 2008). However, throughout the 1990s Argentina had lost this lead (Cufre, 2010). While about 78% of all retirement-age elderly were estimated to receive pensions in 1995, by 2003 that number had fallen to 70%. This drop was especially large for men (from 87% to 73%). In the mid-2000s, the Argentine government embarked on a series of ambitious reforms to promote inclusion for the increasing percentage of retirement-age elderly (age 60 or above for women and age 65 or above for men) excluded from the pension system. The previous decade of declining pension coverage rates for retirement-age elderly provided the impetus for this 'Pension Inclusion Plan' (PIP). Low coverage disproportionately affected groups such as women and the poor, due to their low contribution densities. While the highest income quintile was able to maintain coverage rates of about 80% through 2003, the lowest income quintile had plummeted from its 1992 level of 63% to about 43% by 2003 (Rofman, Fajnzylber, & Herrera, 2008).

The PIP policy response consisted of a series of reforms enacted between 2003 and 2005 with the objective of increasing old age pension coverage.² The most important of them all in terms of increasing pension coverage was the Moratorium program.³ This program allowed, for a brief period of time, immediate retirement for anyone of retirement age who had completed less

¹ This is calculated using Continuous Permanent Household Survey (EPHC) described in next section. The discontinuity in 2003 is due to a change in survey and sampling.

² First, limits on non-contributory pensions were abolished in August 2003. Previously, the only non-contributory pension scheme in Argentina was a program to transfer a flat amount of money to designated groups of the elderly aged over 70 with no other sources of income. With the previous restrictions removed, the number of non-contributory beneficiaries doubled between 2003 and 2006 (Rofman, Fajnzylber, & Herrera, 2008). Second, in December 2004 Law 25.994 (art. 2) allowed the elderly who had achieved the minimum vesting period of 30 years of documented contributions to retire up to five years early (age 55 for women and age 60 for men). These early retirees would receive a benefit level of 50% of their due pension until reaching retirement age, when the benefit level would increase to 100%. From June 2005 to December 2008, less than 50,000 Argentines joined this early retirement plan (Arza, 2009)

³ Law 25.994 (art. 6) and Decree 1454/2005 (which modified Law 24.476) instituted a 'Moratoria' program

than or none of the 30 years of the required social security contributions. Under the Moratorium, these retirees who had not made the contribution requirements would reconcile their outstanding contributions through up to 60 installments deducted directly from their pension payments. Enrollment in the pensioners' health insurance program (PAMI) would also be included in their benefits. While the policy was meant to target 'independent workers,' in practice anyone over retirement age was eligible, constituting a "de facto" universal pension system for everyone above the eligibility age, albeit limited in time. Over time, the program became known as the 'housewives pension' because nearly 90% of beneficiaries were female (Argentina: Income Support Policies toward the Bicentennial, 2009). Enrollment in the Moratorium program was originally scheduled to close in December 2006. However, the enrollment period was later extended until April 2007. After the closing date, only contributions before September 1993 could be paid back into the system. This meant an end to the access to a pension without any contribution for those individuals born after 1945, but still allowed retirement for a substantial number of workers with low contribution densities.⁴ As the mainstream program closed in April 2007, about two-thirds of these new beneficiaries joined between July 2006 and April 2007.

One remarkable aspect of these policy changes is that they took place with little debate or public attention. The government discussed and passed law 25.994 in one day, December 16, 2004. The new measures did not come into effect until November 2005, when regulations to initiate the process were introduced (Rofman, Fajnzylber, & Herrera, 2008). Even then, due to little media coverage and few government efforts to promote awareness of the program, the moratorium saw fewer than 100,000 new beneficiaries through June 2006. After that point, public knowledge of the program reached critical mass and nearly 1.9 million new beneficiaries enrolled through December 2008.

By 2010, the Moratorium had resulted in dramatically increased coverage, once again making Argentina the country with highest coverage in Latin America. Figure 1 shows how from the 2003 elderly coverage rate of 62%, coverage had risen to 77% in 2007, 85% in 2008, and

⁴ For example, a female born in 1945 (aged 62 in 2007) could justify up to 30 years of contributions – those occurring between the individual's 18th birthday in 1963 and the cutoff date of 1993. However, subsequent cohorts of workers would find it increasingly difficult to retire without low density contributions. A female turning 60 in 2010 (born in 1950), could justify 25 years of contributions up to 1993, (from 1968 to 1993) and hence she would need at least 5 years of contributions after 1993, to be able to retire through the moratorium program.

finally about 90% in 2010, with Moratorium beneficiaries representing over 40% of total pension recipients. The number of pension recipients rapidly increased from 3.1 million in 2005 to 5.6 million by 2010 (Cufre, 2010). Because the amount deducted from the pension depended on the level of pension received, benefit levels were usually very low as most Moratorium retirees chose to enroll in the minimum pension category (Argentina: Income Support Policies toward the Bicentennial, 2009). This created a wedge between the previous average benefit level and minimum benefit level, primarily for women.

Benefits for those who enrolled in the Moratorium ranged between 60-67% of the minimum wage (Arza, 2009). In 2010, those who retired through the Moratorium were receiving on average AR\$700 per month, or about US\$180 (Bertranou & Vezza, 2010). Many of the female recipients who enrolled were also receiving a survivor's pension. This unprecedented increase in pension coverage came, however, at a cost. It is estimated that the moratorium represented a cost of 1.5-2% of GDP (Argentina: Income Support Policies toward the Bicentennial, 2009).

II. Data and Sample Selection

To explore the labor market impacts of the Moratorium, the Continuous Permanent Household Survey (EPHC), conducted semiannually by the Argentine National Statistics and Census Institute (INDEC), provides the most useful range of data. The data used for this study cover the years 2004 through 2010. The EPHC was administered in 28 urban centers of at least 100,000 residents in May and October of every year, with the exception of 2003, for which the survey was conducted in October only. The EPHC consists of both an individual survey and a household survey. The sample size ranges from 13,832 to 28,494 households containing 53,670 to 113,401 individuals. The survey is administered to people of all ages, but we confine our study to individuals within a five-year age bracket of the official retirement age (males ages 60 – 69 and females ages 55 – 64).

As the only official source of regular labor market data, the survey also includes sections on income as well as education and migration. The EPHC does not include information on

living conditions, and thus does not include information on fixed assets, financial status, expenditures and certain transfers such as remittances.

Although the ‘Permanent Household Survey’ (EPH) has been conducted as far back as 1973, many survey questions changed significantly in October 2003, when it became the ‘Continuous Permanent Household Survey’. There seem to be some issues regarding the weights and non-income responses in the October 2003 wave. We thus use only the data from May 2004 onward for consistency.

Table 1 shows the descriptive statistics of the data used in the paper. A few comments merit attention. There are 117,579 individual observations in our sample. Of these, 42,924 are men ages 60-69, and 64,655 are women ages 55-64, of which around 33% are receiving a pension. We define several variables regarding the labor market status. In our sample, participation is 52%, being substantially higher for men (62%) than for women (46%). Unemployment (as a share of total population) is relatively low at 3% (which corresponds to a 6.5% unemployment rate) indicating a period of relatively high growth.

We divide the employed in three main categories, self-employed, formal salaried and informal salaried. To distinguish between formal and informal salaried employees, we use the definition of formality as either contributing to Argentina’s social security system via a salary deduction or voluntary contribution. This question is not answered by the self-employed so we are unable to distinguish formality among the self-employed. For men (women), about 20% (10%) are self-employed, 22% (19%) are formal salaried employees, and 9% (12%) are informal salaried employees.

The rest of table 1 shows standard individuals and household characteristics. The men in our sample have worked on average 23 hours per week over the time span we examine, with an average of four employees at their firm. The women have worked an average of 14 hours per week with five employees per firm. Men have on average 9.3 years of education, and women 9.6, and the vast majority of both genders are married. Both live in houses with about three family members and about three rooms on average.

III. Identification Strategy: Difference-in-Difference

To estimate the labor market impact of the Moratorium reform, we exploit the reform's sole stipulation of having reached the minimum retirement age as well as the reform's timing for a difference-in-difference technique for men and women separately. In general, a difference-in-difference approach compares two groups – a treatment group and a control group – over two time periods. For this study, our treatment group is that affected by the Moratorium reform; men of ages 65-69 and women of ages 60-64. The control group is composed of men ages 60-64 and women ages 55-59. We use 'pre-reform take-up' (May 2004 – October 2006) as our first time period, and the 'reform take-up' period (May 2007 – October 2010) as the second. The advantage of the difference-in-difference strategy is that this technique controls for initial differences between the treatment and control groups. This is a valuable advantage in this case because we expect labor-market indicators to naturally vary between those just under the retirement age and those just over.

The key assumption for difference-in-difference estimation is that the trajectory of the control group in terms of outcome variables of interest would be similar to the trajectory of the treatment group over time in the absence of the treatment. That is, we make the assumption that if not for the Moratorium reform, men and women just above and just below the retirement age would react similarly to changing environmental conditions over time. We assume the Moratorium reform represents the only major stimulus that would cause the treatment group to behave differently from the control group on average over time. This is why we use only the narrow band of observations five years below the retirement age and five years above; except for the initial differences caused by retirement eligibility the two groups are close enough in age that we would expect them to have similar reactions to external factors that affect both groups, such as economic expansion and contraction, for example.

Thus, we estimate the following regression,

$$Y = \alpha + \rho Z + \theta T + \delta Z \times T + \beta X \quad (1)$$

Where Y is a vector of labor market outcome variables of interest such as participation, unemployment, employment, occupational choice and income, Z is a dummy for having reached the minimum retirement age (and thus controls for initial treatment-control differences), T is a dummy denoting the time period after which reform enrollment reached a critical mass (thus controlling for changes over time common to both treatment and control groups), X is a vector of control variables including years of education, age, marital status, number of household members under six years old, number of household members over 65 years old, total number of household members, amount of social subsidies received in the household, and number of rooms in the household. The coefficient estimate δ for the interaction of dummies Z and T represents the estimated differences in differences impact of the Moratorium on labor market outcome variable Y .

The minimum retirement age for men, and thus our own threshold for our dummy Z , is 65 for men and 60 for women. Thus, $Z = 0$ for men ages 60-64 and women ages 55-59 and $Z = 1$ for men ages 65-69 and women ages 60-64. As for the timing of our 'reform take-up' dummy T , as previously mentioned although the law enacting the Moratorium was passed in late 2004, due to lack of public awareness the number of Moratorium beneficiaries remained only a trickle until late 2006 at the earliest. In our own data, we do not observe a significant increase in pension beneficiaries until the May 2007 survey period. Thus, we choose to split our data into the 'pre-take-up' period before May 2007, and the 'take-up' period from May 2007 onward.

Before presenting our estimation results we illustrate the main variation exploited in the data with several graphs. Figure 1a and 1b show the evolution of the share of pension recipients for men and women just above and below the retirement age between 2004 and 2010. A few comments merit attention. For both men and women, there is a large difference in the share of pension recipients for those two groups reflecting the fact that there is substantial retirement at or after the retirement eligibility age. Second, before 2006, the gap between those two shares remains fairly constant. After May 2006 there is a significant increase in the access to a pension for those men and women at or above the eligibility age with very little change for those below. In particular, the share of men between 65-69 receiving pension increased 15 pp between 2006 and 2010. For women, the increase was even more dramatic (30 pp).

Hence, as expected, there was a large increase in pension recipients, especially among women. A large proportion of these new recipients were women who had few or no contributions and made up for that lack of contributions through a discounted pension. Figure 2 illustrates this. It shows the log of pension payment densities for 2006 and 2007, one year before the large surge in pension recipients due to the moratorium and right after the end of the moratorium. For males, there is very little difference in the pension other than maybe inflation adjustments in the 2007 pension payments. However, for women there is a large mass of pension recipients below the minimum pension that emerges in 2007, indicating that a large share of new women retirees chose the discounted pension to compensate for their lack of contributions.

This change in the access to a pension prompted important changes in labor market decisions. Figures 3a and 3b show the evolution of participation and employment for both men and women below and above the eligibility age. There is a clear downward trend in both participation for men and women above the eligibility age coinciding with the rapid increase in pension beneficiaries in Figure 1. Similarly, figures 4a and 4b show the employment trends with very similar patterns, a steady fall after the large surge of pension recipients. Next section looks in detail at the change in employment patterns for those just above and below the retirement age.

IV. Difference-in-Difference Estimates

We now estimate equation (1) to unveil the main labor market effects of the moratorium. Table 2 shows the main results of the paper. We show the diff in diff estimator for a series of labor market outcomes. We report results of estimating the differences in difference between men and women just above and below the eligibility age with no controls other than year and semester dummies, and with controls that include years of education, age, marital status, number of household members under six years old, number of household members over 65 years old, total number of household members, amount of social subsidies received in the household and number of rooms in the household. The results are very similar, indicating that there were not any important compositional effects in the sample across the implementation period. Column (1) and (2) show the effect of the Moratorium on the access to a pension for men and women

respectively. Consistent with Figure 1 the Moratorium vastly increased the number of elderly pension recipients. Coverage among men ages 65-69 increased by nearly 16.4 percentage points, and coverage among women ages 60-64 increased by a remarkable 27.3 percentage points.

The subsequent columns show the effect of the increase in pension access on the labor market decisions of men and women just above the retirement age. Columns (3) and (4) suggest a fall in participation of about 5.3 percentage points for men and 4.4 percentage points for women. Most of this fall in participation stems from a decrease in employment rather than a drop in the unemployed – the percentage of employed men drops by about 5.7 percentage points (Column 5) and that of women falls by 4.5 percentage points (Column 6). Accordingly, we also observe a fall in average hours worked per week of about 2.7 hours for men and 1.5 hours for women (Columns 9 and 10). We do not observe any effect on the share of unemployed for either sex.

There were, however, important differences in how men and women reacted to the availability of retirement opportunities depending on their occupations in the labor market. Table 3 explores the fall in employment across the three major labor market statuses: formal salaried, informal salaried and self-employment. Most of the decrease in employment for men occurred among the self-employed (4 percentage points), while most of the decrease in employment for women took place among formal salaried workers (2.5 percentage points). The latter is not surprising. Women tend to have lower contribution densities that did not allow them to retire before the moratorium. The moratorium opened the door for women holding formal jobs but with insufficient contribution histories to retire immediately with a discounted pension. In a way, the moratorium reduced the number of women who were working formally beyond the eligibility age.

Another widespread phenomenon that occurred after the moratorium was the fact that many pension recipients continued working, especially in the informal sector. Table 4 shows the effect of the moratorium on the share of workers who were simultaneously pension recipients for the formal, informal salaried and self-employed. For both men and women, there was a substantial increase in this practice. Working men (women) receiving pension above the

retirement age increased by 6.2 pp (5pp). Most of this increase came from increases in the share of informal salaried workers and self-employed receiving pensions, while we observe only minor (and barely significant increases) for formal workers. Hence, a substantial part of the benefits went to workers who continued working and receiving benefits, primarily in the informal sector where labor income could be hidden from the authorities.

The availability of an access to a pension and the subsequent labor market effects reshaped the income generation of those affected by the reform. Table 5 shows the effects of the Moratorium on total labor and non-labor income for both men and women at the individual and household level.

A few comments merit attention for a clear interpretation of the results. On average, as workers arrive at the pension eligibility age they retire and this involves an income loss, since the pensions received do not fully compensate the loss in labor income. The estimations presented here capture the fact that more men and women retired after the moratorium and hence generated an additional average income loss. Individually (columns 1 to 6), after the moratorium men aged 65-69 experienced a drop in average income with respect to men aged 60-64 of around 280 pesos. This fall was essentially due to the fact that the fall in labor income of 515 on average was only partially compensated by the increase in non labor income (which includes pensions) of around 233 pesos. For women, on the other hand, the fall in labor income was mostly compensated by the increase in non labor income and hence there was not an average fall in total individual income.

Columns 7 to 12 on Table 5 report the same calculation but using the household income as the dependent variable. At the household level, the effects are magnified since eligible women are more likely to be married with eligible men. Hence, the fall in total household income amounts to 406 for households where there is an eligible men and 168 in those households where there is an eligible woman.

In all, our results point to three important phenomena. First, as expected, the availability of early retirement increased the share of pension recipients dramatically, by around 15 percentage points for men and 27 percentage points for women. Second, this generated a reduction in the labor supply of both men and women of around 5 pp. While this mostly implied

the retirement of self-employed men, it also withdrew a significant number of formal women workers that otherwise would have continued contributing to the system. Third, we observe an increase in the share of informal salaried and self-employed workers who continued to work beyond the eligibility age and received pension benefits (around 6pp and 5pp for men and women respectively).

V. Conclusions

In recent years there has been a surge of non-contributory pensions in Latin American countries. This has been the response to the lack of coverage generated by dysfunctional labor markets with large informal sectors. This paper documents the labor market effects of one such program: the Argentinean Moratorium.

The possibility of a retirement with few or no contributions prompted several reactions in the labor market. First, some men and women just above retirement age withdrew from the labor market. The effect was more intense within self-employed men and formal salaried women. Second, this reallocation generated a fall in labor income that more than compensated the increase in non-labor income for men but not for women. Third, a substantial number of workers claimed pension benefits and continued working in the informal sector, which highlights the problem of enforcing labor status conditionalities in labor markets with large informal sectors.

The advent of noncontributory pensions to the Latin American region is a fact. By now 12 out of 26 countries have some sort of non-contributory or complementary system in place. (See Bosch and Manacorda, 2011). Non-contributory pension schemes like the moratorium, or similar programs such as the rural pensions in Brazil, the universal Dignity Income (*Renta Dignidad*) in Bolivia or Seventy and More (*70 y más*) in Mexico can very rapidly increase the coverage rate. In a matter of months, Argentina increased the old-pension coverage rate from 68 to 90%.

However, these programs, depending on the generosity of the program, tend to be costly. In particular, the cost of this policy for the Argentinean government was around 2 points of GDP.

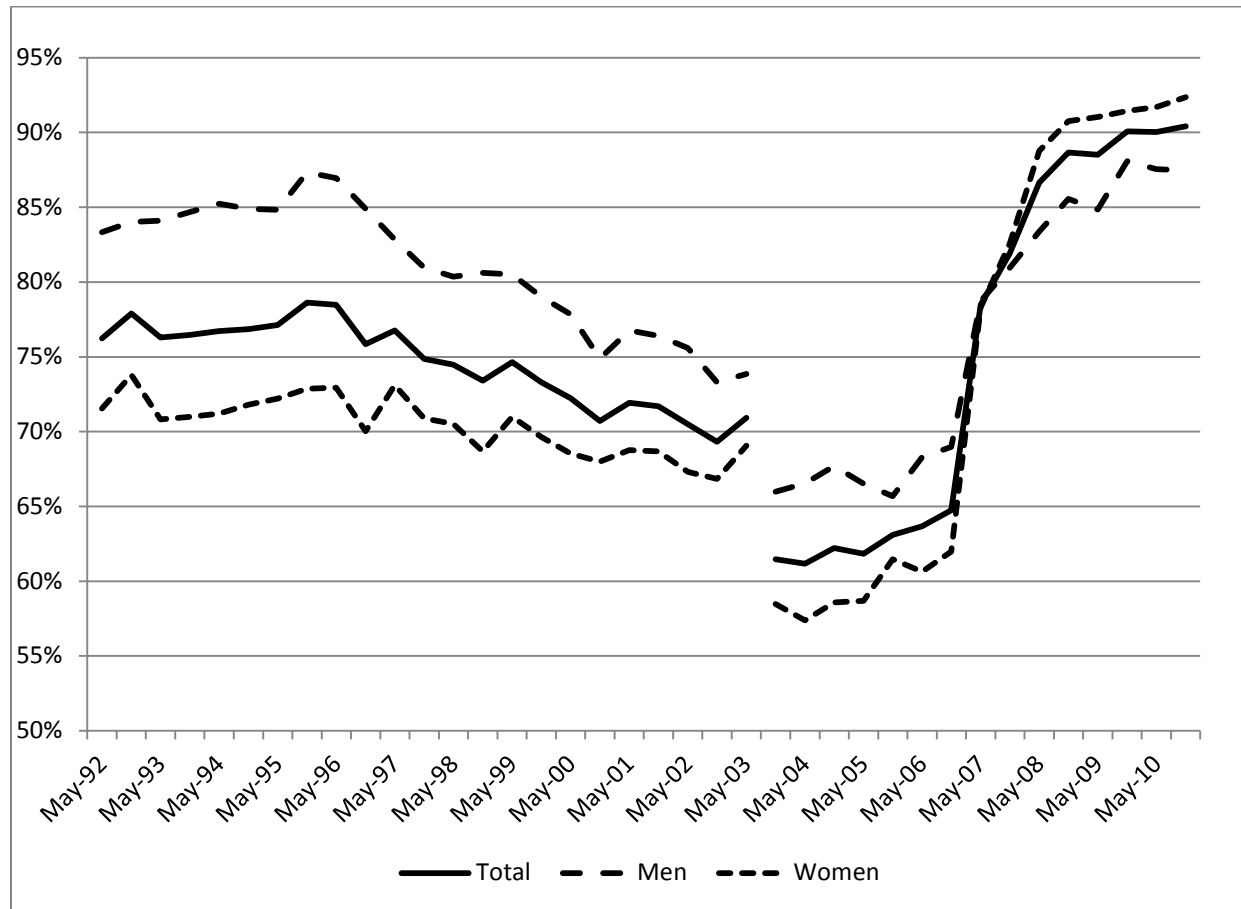
The costs are likely to increase and potentially make them unsustainable for at least three reasons.

First, as we have seen in this paper, the non-contributory pensions not only generated more liabilities for the system (as it added the new retirees) but also retired women that, otherwise, would have continued to contribute to the system. Second, the political economy of these benefits is extremely delicate, and pressures to grant higher benefits or extend coverage will mount for politicians. We have seen these in Brazil, Bolivia and Mexico. There are voices now asking for an extension of the full moratorium (that allows to claim potential contributions for work before 1993) since many women arriving at retirement age are no longer eligible to claim a pension without having contributed at all to the system. And, finally, there are concerns (although the evidence is scarce as of now) that the new generation of workers will reduce their presence in the traditional contributory schemes and rely on the non-contributory schemes to finance their old age.

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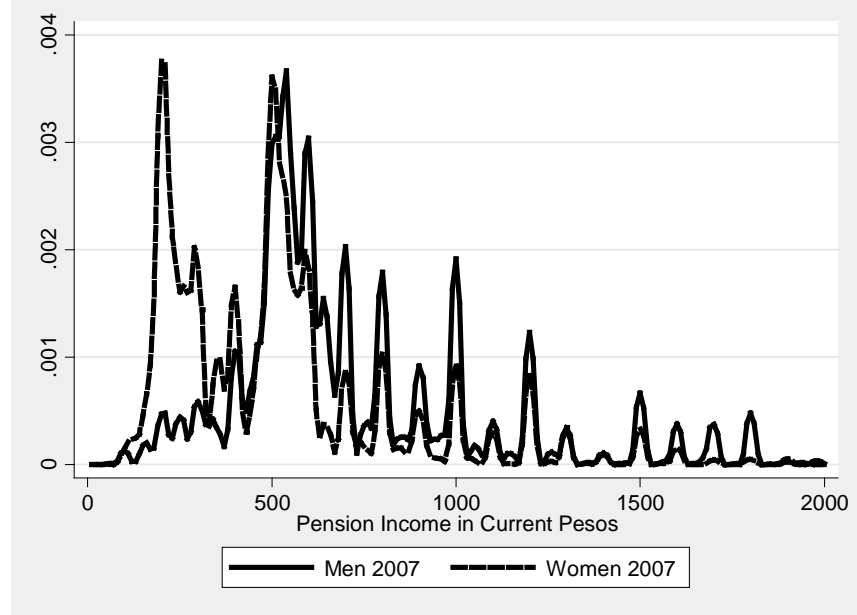
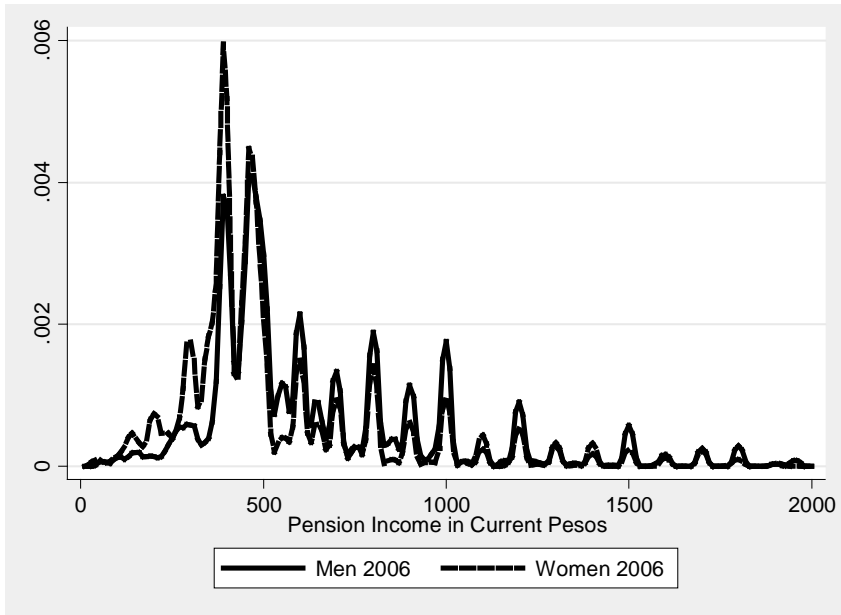
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Figure 1: Share of individuals aged 65 or more with pension income: 1992-2010



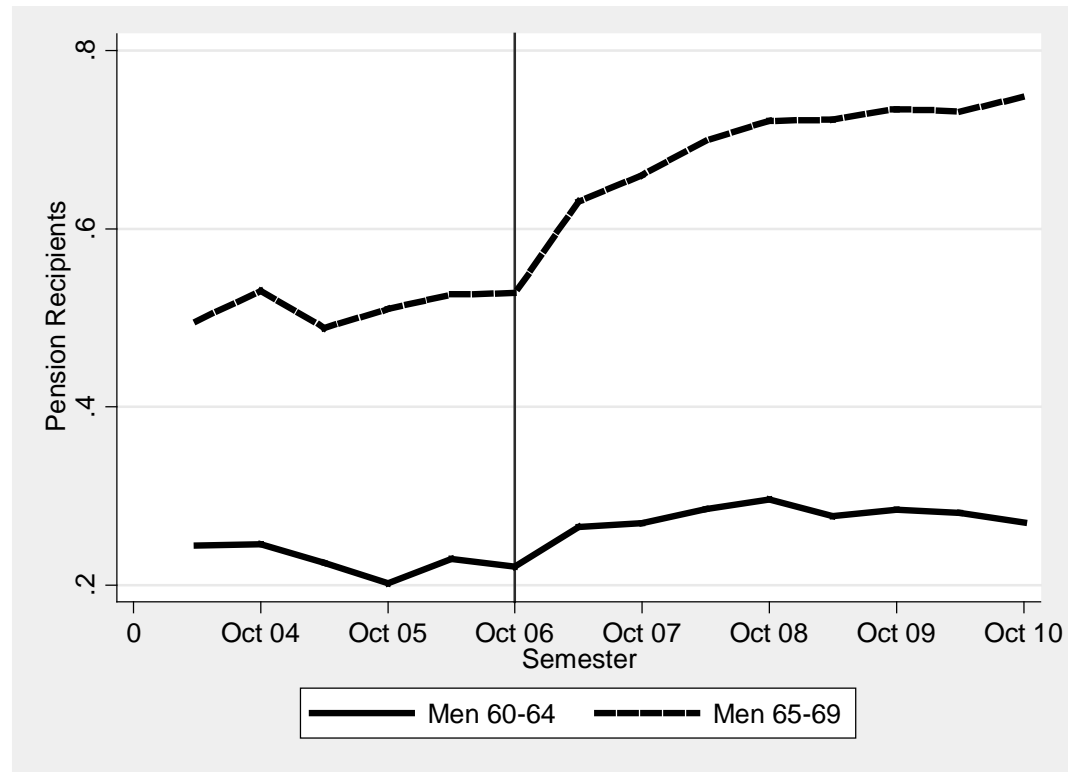
The figure above displays the percentage of individuals aged 65 and over who received any pension or retirement income, calculated by semester between May 1992 and October 2010. The graph is disaggregated by men and women. The discontinuity in 2003 corresponds to a change in the survey.

Figure 2: Pension Income Densities for Men and Women: 2006-2007



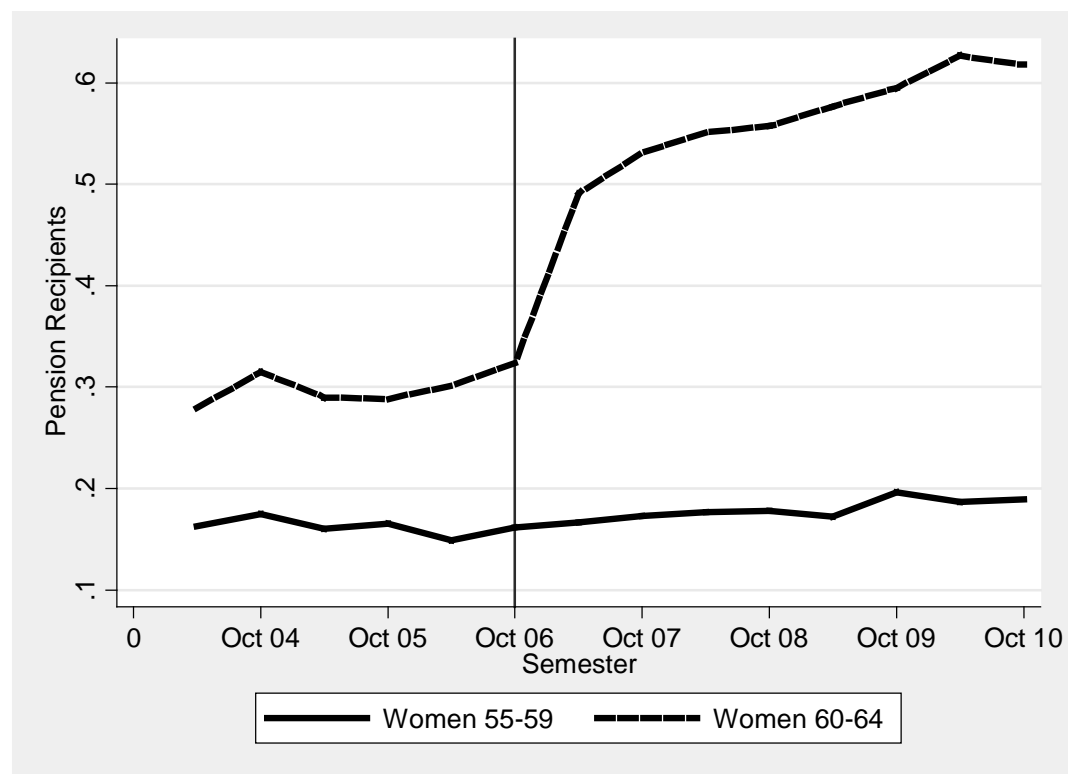
Notes: The figure shows the density of pension income in current pesos for men and women in 2006 and 2007

Figure 3a: Share of males (control and treatment group) receiving a pension:2004-2010



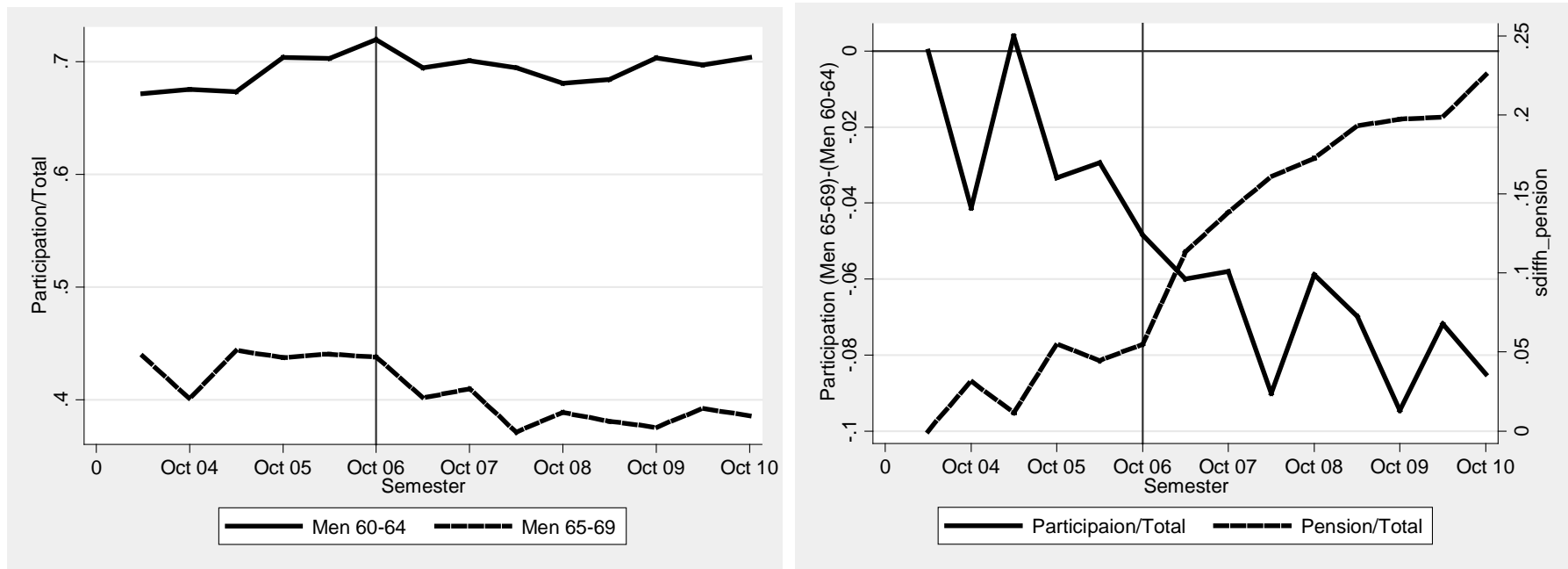
The figure above displays the percentage of men ages 60-69 who received any pension or retirement income, calculated by semester between May 2004 and October 2010. The graph is disaggregated into those five years before retirement age (60-64) and thus ineligible for the program, and those five years after retirement age (65-69) and thus eligible. The vertical red line represents the last survey point before the major upsurge in take-up of the Moratorium program.

Figure 3b: Share of females (control and treatment group) receiving a pension:2004-2010



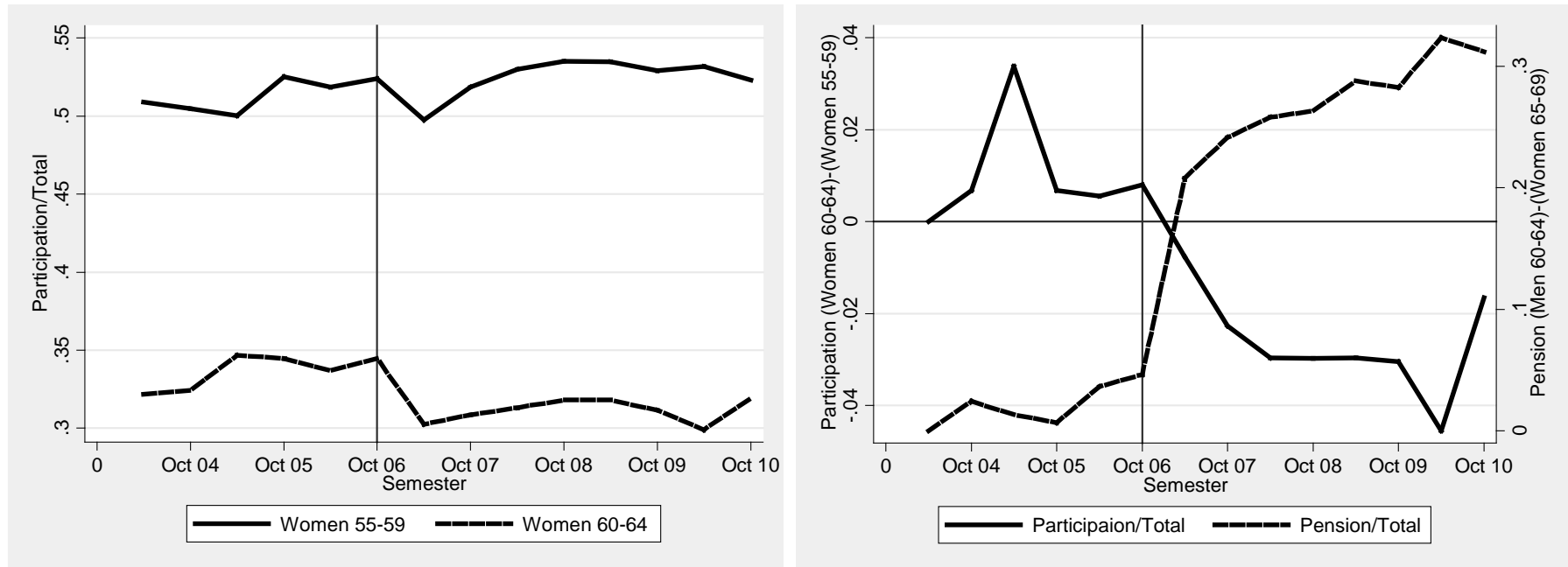
The figure above displays the percentage of women ages 55-64 who received any pension or retirement income, calculated by semester between May 2004 and October 2010. The graph is disaggregated into those five years before retirement age (55-59) and thus ineligible for the program, and those five years after retirement age (60-64) and thus eligible. The vertical red line represents the last survey point before the major upsurge in take-up of the Moratorium program.

Figure 4a: Share of males participating in the labor market:2004-2010



The figure above (left panel) displays the percentage of men ages 60-69 who were participating in the labor market (either employed or unemployed) at the time of the survey. Employment is defined as either having worked at least one hour during the previous week or not having worked for reasons including vacation, personal reasons, strike, paid suspension, or other causes for which the individual would return to work within the month. Unemployment is defined as able to work and either actively seeking employment during the previous 30 days, or not seeking employment for reasons including temporary suspension or waiting to begin a new job. The data is calculated by semester between May 2004 and October 2010. The graph is disaggregated into those five years before retirement age (60-64) and thus ineligible for the program, and those five years after retirement age (65-69) and thus eligible. The vertical red line represents the last survey point before the major upsurge in take-up of the Moratorium program. The right panel show the evolution of the differences in participation and pension access between men aged 65-69 and men aged 60-64.

Figure 4b: Share of females participating in the labor market:2004-2010



The figure (left panel) above displays the percentage of women ages 55-64 who were either employed or unemployed at the time of the survey. Employment is defined as either having worked at least one hour during the previous week or not having worked for reasons including vacation, personal reasons, strike, paid suspension, or other causes for which the individual would return to work within the month. Unemployment is defined as being able to work and either actively seeking employment during the previous 30 days, or not seeking employment for reasons including temporary suspension or waiting to begin a new job. The data is calculated by semester between May 2004 and October 2010. The graph is disaggregated into those five years before retirement age (55-59) and thus ineligible for the program, and those five years after retirement age (60-64) and thus eligible. The vertical red line represents the last survey point before the major upsurge in take-up of the Moratorium program. The right panel show the evolution of the differences in participation and pension access between women aged 60-64 and men aged 55-59.

Table 1: Descriptive statistics: men aged 60-69, women aged 55-64.

	Men	Women	Total
Observations	42924	64655	107579
Pension Beneficiaries	0.39	0.29	0.33
Participation	0.62	0.46	0.52
Unemployment	0.04	0.03	0.03
Employment	0.58	0.44	0.49
Self-employed	0.20	0.10	0.14
Formal Salaried	0.22	0.19	0.20
Informal Salaried	0.09	0.12	0.11
Others	0.06	0.02	0.04
Hours worked	23.52	14.21	17.92
Non labor Income (AR Pesos)	520	302	389
Labor Income (AR pesos)	920	513	675
Years of Education	9.31	9.58	9.47
Age	64.15	59.26	61.21
Household size	3.14	3.18	3.16
Children <6 in the household	0.12	0.14	0.13
Elderly over 65 in the household	0.68	0.65	0.66
Number of bedrooms	3.29	3.29	3.29

Notes: The table shows the averages of the variables used in the analyses.

Table 2: Labor Market Effects of the Moratorium

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Pension Recipients		Participation		Unemployment		Employment		Hours Worked	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Without Controls	0.160*** (0.0125)	0.275*** (0.00923)	-0.0494*** (0.0133)	-0.0430*** (0.0114)	0.00392 (0.00641)	0.000590 (0.00428)	-0.0534*** (0.0137)	-0.0436*** (0.0114)	-2.405*** (0.696)	-1.477*** (0.482)
With Controls	0.164*** (0.0121)	0.273*** (0.00899)	-0.0538*** (0.0129)	-0.0443*** (0.0111)	0.00405 (0.00644)	0.000789 (0.00426)	-0.0578*** (0.0133)	-0.0451*** (0.0111)	-2.669*** (0.681)	-1.515*** (0.470)
Observations	42,924	64,655	42,924	64,655	42,924	64,655	42,924	64,655	42,924	64,655

Notes: Cells contain the difference-in-difference coefficient estimates for moratorium eligibility during the reform take-up period (men ages 65-69 interacted with the period May 2007 - October 2010 and women ages 60-64 interacted with the period May 2007 - October 2010). Control variables include years of education, age, marital status, number of household members under six years old, number of household members over 65 years old, total number of household members, amount of social subsidies received in the household, number of rooms in the household, year dummies, semester dummies, and dummies for rough income quartile of the ratio of the average income of the urban center to the overall median income for that year. Standard errors given in parentheses. All dependent variables are measured in logged AR pesos as recorded at the time of each biannual survey. Labor income includes income from primary occupation only. Sample contains men ages 60-69. and women ages 55-64)

Table 3: Employment changes of the moratorium

	(1)	(2)	(3)	(4)	(5)	(6)
	Formal		Informal		Self-Employed	
	Men	Women	Men	Women	Men	Women
Without	-0.0106	-0.0234***	0.00192	-0.0132*	-0.0447***	-0.00238
Controls	(0.0114)	(0.00874)	(0.00848)	(0.00800)	(0.0114)	(0.00720)
With	-0.0115	-0.0255***	0.00241	-0.0115	-0.0467***	-0.00272
Controls	(0.0111)	(0.00834)	(0.00843)	(0.00782)	(0.0114)	(0.00717)
Observations	42,924	64,655	42,924	64,655	42,924	64,655

Notes: Cells contain the difference-in-difference coefficient estimates for moratorium eligibility during the reform take-up period (men ages 65-69 interacted with the period May 2007 - October 2010 and women ages 60-64 interacted with the period May 2007 - October 2010). Control variables include years of education, age, marital status, number of household members under six years old, number of household members over 65 years old, total number of household members, amount of social subsidies received in the household, number of rooms in the household, year dummies, semester dummies, and dummies for rough income quartile of the ratio of the average income of the urban center to the overall median income for that year. Standard errors given in parentheses. Sample contains men ages 60-69. and women ages 55-64

Table 4: Changes in the share of workers receiving pensions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Total		Formal		Informal		Self-Employment	
	Men	Women	Men	Women	Men	Women	Men	Women
Without Controls	0.0624*** (0.00810)	0.0502*** (0.00537)	0.00586* (0.00330)	0.00505* (0.00266)	0.0131*** (0.00453)	0.0189*** (0.00350)	0.0311*** (0.00555)	0.0237*** (0.00313)
With Controls	0.0624*** (0.00806)	0.0493*** -0.00534	0.00572* (0.00330)	0.00454* (0.00265)	0.0136*** (0.00454)	0.0188*** (0.00349)	0.0309*** (0.00554)	0.0234*** (0.00312)
Observations	42,924	64,655	42,924	64,655	42,924	64,655	42,924	64,655

Notes: Cells contain the difference-in-difference coefficient estimates for moratorium eligibility during the reform take-up period (men ages 65-69 interacted with the period May 2007 - October 2010 and women ages 60-64 interacted with the period May 2007 - October 2010). Control variables include years of education, age, marital status, number of household members under six years old, number of household members over 65 years old, total number of household members, amount of social subsidies received in the household, number of rooms in the household, year dummies, semester dummies, and dummies for rough income quartile of the ratio of the average income of the urban center to the overall median income for that year. Standard errors given in parentheses. Sample contains men ages 60-69. and women ages 55-64

Table 5: Changes in Income following the moratorium.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Total		Labor		Non-Labor		Total (Household)		Labor (Household)		Non-labor (Household)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Without Controls	-272.3*** (61.00)	-19.90 (33.06)	-501.6*** (43.41)	-284.0*** (24.85)	229.3*** (44.00)	264.1*** (22.75)	-378.1*** (83.02)	-142.2** (63.13)	-697.3*** (66.80)	-517.5*** (54.50)	319.3*** (50.42)	375.3*** (34.14)
With Controls	-281.8*** (56.78)	-29.57 (31.06)	-515.7*** (40.83)	-292.0*** (23.43)	233.9*** (42.52)	262.5*** (22.38)	-406.5*** (74.94)	-168.0*** (56.39)	-717.0*** (59.67)	-550.9*** (48.21)	310.4*** (49.82)	382.9*** (33.42)
Observations	42,924	64,655	42,924	64,655	42,924	64,655	42,924	64,655	42,924	64,655	42,924	64,655

Notes: Cells contain the difference-in-difference coefficient estimates for moratorium eligibility during the reform take-up period (men ages 65-69 interacted with the period May 2007 - October 2010 and women ages 60-64 interacted with the period May 2007 - October 2010). Control variables include years of education, age, marital status, number of household members under six years old, number of household members over 65 years old, total number of household members, amount of social subsidies received in the household, number of rooms in the household, year dummies, semester dummies, and dummies for rough income quartile of the ratio of the average income of the urban center to the overall median income for that year. Standard errors given in parentheses. All dependent variables are measured AR pesos as recorded at the time of each biannual survey. Labor income includes income from primary occupation only. Sample contains men ages 60-69 and women ages 55-64.