

CAN INFORMATIONAL INTERVENTIONS BE EFFECTIVE POLICY TOOLS? AN INITIAL ASSESSMENT OF THE SOCIAL SECURITY STATEMENT

by Barbara A. Smith*

The Social Security Administration employs an informational intervention—mailing Social Security Statements—to inform workers about their potential benefits. I use linear probability models and agency administrative data to analyze the effect of Statement receipt on the age at which workers claim their Social Security retirement benefits. I compare results for individuals who received one or multiple Statement mailings by age 62 with those who received none during the 1975–2007 study period. I find that workers who received multiple Statement mailings were significantly more likely to claim retirement benefits at later ages than were other workers, and that Statement receipt is positively associated with employment at ages 62–70. I also compare the relative effects of an educational outreach (Statement mailings) and a direct policy change (involving the full retirement age) on claiming behavior and find that the magnitudes of the two effects are similar.

Introduction

Recent research suggests that retirement-related informational interventions may influence worker behavior. For example, when workers at a university were provided with retirement-income projections and plan enrollment information, they increased their annual contributions to employer-provided retirement accounts (Goda, Manchester, and Sojourner 2014). Offering employees of credit unions an online financial education program increased reported retirement plan participation, emergency savings, and budget use (Collins and Urban 2016). Sending informational nudges to state government workers approaching retirement age resulted in increased contributions to their retirement savings plans (Clark and others 2017).

In this study, I assess the effect of providing information about an important benefit that most workers will receive—the Social Security retirement benefit. The *Social Security Statement* (or, simply, the *Statement*) is a major outreach initiative of the Social Security Administration (SSA). It provides workers with estimates of the benefits they can expect

to receive if they claim at age 62 (the earliest age of eligibility), their full retirement age (FRA), or age 70 (when delayed retirement credits stop accruing). When SSA began mailing earnings and benefit statements to workers in 1995, one of the primary purposes was to provide workers with information on their Social Security benefits to help them plan their financial futures. The *Statement* has been widely acknowledged as one of the federal government’s most important public communications (Jackson 2005). It stands as the largest customized mailing ever undertaken by a federal agency (SSA, n.d.)

Selected Abbreviations

BLS	Bureau of Labor Statistics
CWHS	Continuous Work History Sample
FICA	Federal Insurance Contributions Act
FRA	full retirement age
HRS	Health and Retirement Study
LPM	linear probability model

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Selected Abbreviations—Continued

PIA	primary insurance amount
RET	retirement earnings test
SSA	Social Security Administration

Providing this information is important because the calculation of Social Security retirement benefits depends on complex rules that are not easy to understand. Those rules include factors such as individuals' marital histories, their work histories, and the age at which they choose to receive benefits. Many individuals are not aware that the benefit amount is affected by the age at which they claim. Claiming before FRA results in permanently reduced monthly benefits, and delaying claiming until after FRA permanently increases the monthly amount. The *Statement* provides detailed information on important program aspects, such as the reduction in benefits for early claiming, that might alter claiming behavior.

My research suggests that receipt of the *Statement* has a significant effect on the age at which workers claim their retirement benefits. Previous research found that receipt of the *Statement* increases knowledge of Social Security (Mastrobuoni 2011; Smith and Couch 2014a). This study is the first to find that receipt of the *Statement* has a statistically significant effect on behavior in addition to its effect on knowledge. I find that receipt of one *Statement* has no significant effect on the likelihood of claiming benefits at age 62, but it does significantly increase the likelihood of claiming at ages 64 and 65. In addition, I find that the receipt of two or more *Statements* has a statistically significant negative effect on the likelihood of claiming at age 62 and a statistically significant positive effect on the likelihood of claiming at ages 64 and 65. I also find that the effect of *Statement* receipt varies by race, sex, and earnings level; and that receiving a *Statement* has statistically significant effects on the likelihood of employment at ages 62 through 70.

The effects of two policy changes coincided with the implementation of *Statement* mailings. The first policy change established higher FRAs for workers born after 1937. Although it was enacted in 1983, this change began to affect workers reaching the earliest eligibility age of 62 in 2000, the same year the *Statement* was first sent to all eligible workers aged 25 or older. The FRA for each birth cohort from 1938 through 1943 is 2 months higher than that of the

preceding cohort.¹ With higher FRAs, the permanent reduction for a monthly benefit claimed at age 62 increases. Such additional reductions are likely to encourage workers to claim later in order to receive a larger monthly benefit.

The second policy change eliminated the retirement earnings test (RET), effective 2000, for Social Security retired-worker beneficiaries once they attained FRA. The RET reduces monthly benefit amounts for individuals who claim benefits, continue to work, and earn more than a specified limit; until 2000, it applied even after FRA. Eliminating a reduction in benefits at FRA would likely increase the prevalence of claiming at FRA. My study addresses these two policy changes in different ways, discussed later.

My analysis draws on the rich administrative data in SSA's Continuous Work History Sample (CWHS). The CWHS is a 1 percent sample that allows me to examine Social Security benefit claiming behavior from 1975 through 2007. I also exploit the fact that SSA initially limited *Statement* mailings to selected age groups of older workers in a given year. These phased mailings allow me to distinguish recipients from nonrecipients and thereby assess the effect of one-time and multiple *Statement* receipt.

Background

This section summarizes the history of the *Statement* and reviews previous research on its effects.

Statement Implementation

The *Statement* traces its origins to the Omnibus Budget and Reconciliation Act of 1989, which amended the Social Security Act to require SSA to issue estimated-benefit and earnings-history statements beginning in 1995.² The legislation mandated that SSA mail these statements annually to workers aged 60 or older in fiscal year 1995 and, in fiscal years 1996 through 1999, to workers turning 60 during those years. The legislation also required SSA to send annual estimated-benefit and earnings-history statements to all eligible workers aged 25 or older beginning in fiscal year 2000. "Eligible workers" were defined as those with a Social Security number and having wages or net earnings from self-employment. SSA accelerated the legislated mailing schedule to include increasingly younger recipients during fiscal years 1996 through 1999.³ As shown in Table 1, this modification enabled the agency to increase the volume of mailings gradually over time.

Table 1.
Statement mailings in fiscal years 1995–2002

Fiscal year	Statements mailed	Recipients' ages	Recipients' birth years
1995	7.0 million	60 or older	1935 or earlier
1996	5.5 million	58–60	1936–1938
1997	12.4 million	53–58	1939–1944
1998	20.7 million	47–53	1945–1951
1999	26.6 million	40–47	1952–1959
2000	134.7 million	25 or older	1975 or earlier
2001	135.6 million	25 or older	1976 or earlier
2002	137.9 million	25 or older	1977 or earlier

SOURCE: Smith and Couch (2014b).

NOTE: The fiscal year begins in October of the previous year. For example, fiscal year 1995 began on October 1, 1994, and ended on September 30, 1995.

Workers born in 1937 or earlier would have received one *Statement*, in either fiscal year 1995 or fiscal year 1996, before attaining age 62. Workers born in 1938 or later would have received at least two *Statements* before attaining age 62: one in the 1990s, as a member of one of the age groups designated to receive *Statements*; and the second (and any subsequent ones) beginning in fiscal year 2000, when *Statements* were mailed to all eligible workers aged 25 or older.

SSA staggered the *Statement* mailings throughout each year, with workers receiving their *Statements* about 3 months before their birthdays. In fiscal year 2010, the last full fiscal year of mailings to all eligible workers aged 25 or older, SSA sent more than 151 million *Statements*. That worked out to about 12.5 million *Statements* mailed each month and about 420,000 delivered each day. Fewer *Statements* have been mailed in the fiscal years since 2010. In March 2011, the agency suspended *Statement* mailings for budgetary reasons. Beginning in September 2014, SSA resumed *Statement* mailings, targeting workers reaching ages 25, 30, 35, 40, 45, 50, 55, and 60 or older in the year; but effective January 2017, mailings were restricted to workers aged 60 or older who had not created an online *my Social Security* account, which provides access to the *Statement* electronically.

Prior to SSA's *Statement* mailings, the only way for workers to find out what they would receive if they claimed benefits was to call SSA's toll-free phone number for information or make an appointment to visit an SSA field office. For several years, the *Statement* provided information on benefits automatically and annually to all eligible workers, freeing them from potentially waiting on the phone or going into a field office.

Legislation determines the content of the estimated-benefit and earnings-history statements. The Omnibus Budget and Reconciliation Act of 1989 specified that *Statements* must contain the worker's earnings history and Social Security and Medicare taxes paid; estimated retirement benefits payable if claimed at the earliest eligible retirement age (62), FRA, and age 70; estimated disability and survivor benefits payable on the worker's earnings record; and a description of the benefits payable under Medicare. The Social Security Protection Act of 2004 further mandated that the *Statement* include sections on the Windfall Elimination Provision (WEP) and the Government Pension Offset (GPO) beginning in 2007. The WEP and the GPO may reduce Social Security benefits for workers and spouses, respectively, if the workers receive pensions from employment not covered by Social Security.⁴ Over time, the design, content, and placement of information in the *Statement* have undergone slight changes. Appendix A presents a facsimile *Statement* from 2006.⁵

Statement Effect on Knowledge and Behavior

Smith and Couch (2014a) analyzed the *Statement's* effect on the Social Security knowledge of younger workers, using data from surveys commissioned by SSA. That study compared workers who did not receive a *Statement* in 1998 with those who did receive a *Statement* in 2001. The authors compared the percentages of respondents who correctly answered each of three questions about Social Security program aspects and three questions addressing Social Security benefits. Both before and after *Statement* receipt, younger workers' knowledge was stronger in program-level aspects than in benefit-specific aspects. In 2001,

after distribution of the *Statement*, close to 90 percent of younger workers knew about SSA's programs, the financing of program benefits, and the relationship between benefits and earnings. However, even after *Statement* receipt, only about 70 percent of respondents knew that FRAs are higher for members of later birth cohorts, and less than 50 percent knew that benefits are inflation-indexed. Smith and Couch concluded that the gap in knowledge about benefits poses potential risks for the retirement security of younger workers and suggested several ways SSA could direct their outreach efforts.

Biggs (2010) used data from the 1994 through 2008 waves of the Health and Retirement Study (HRS) to analyze the effectiveness of the *Statement* in improving the public's knowledge of their Social Security retirement benefit levels. The HRS asks participants either to estimate their future retirement benefit amounts (if they have not yet claimed) or to report their actual benefit levels (if they are current beneficiaries). Biggs measured the accuracy of the estimated benefits when compared with realized benefits before and after the 1995 implementation of the *Statement*. He found that the initial mailings of the *Statement* did not result in more accurate estimates of retirement benefit levels but suggested that receipt of additional *Statements* might do so.

Mastrobuoni (2011) used data from the 1992 through 2000 HRS waves to study how the receipt of one's first *Statement* affected Social Security knowledge and the retirement behavior of workers aged 55 to 70. The author used HRS questions about expected retirement age and expected Social Security benefits (for workers) and retirement age and benefit levels (for retirees). Following respondents over time, Mastrobuoni compared the expectations with the actual outcomes for those who received a *Statement* and those who did not. He found that older workers who had not previously contacted SSA about their benefits were 20 percentage points more likely to be able to provide an estimate of their future retirement benefits if they had received a *Statement* than if they had not. However, he found no statistically significant changes in benefit claiming ages following receipt of the *Statement*. Mastrobuoni stated that his results called into question the likelihood that an informational intervention can affect behavior. He concluded that the information provided in the *Statement* was not sufficient to change workers' claiming patterns and called for more research on the *Statement's* effect on behavior.

In another related study, Liebman and Luttmer (2015) conducted a randomized field experiment that provided information on Social Security (not duplicative of the information in the *Statement*) to 2,500 workers aged 60 to 65. The authors provided information on longevity, how benefits increase with claiming age, and the effect of the RET. They examined whether this informational intervention affected employment and benefit claiming. The intervention included an informational mailing and a 15-minute online tutorial. A year later, respondents answered a follow-up survey. The authors found that the individuals who received the intervention, which pointed out potential advantages of working longer and delaying claiming, were 4.2 percentage points more likely to be working at the 1-year follow-up. They found no statistically significant effect of the information on the likelihood of claiming benefits.

My research extends Mastrobuoni's study by examining the effect of receiving multiple *Statements*, rather than just one, on behavior. My data source, the CWHS, has much larger samples than the HRS and covers the years 1975 through 2007. Thus, I am able to study a larger number of individuals over a longer period. I extend the Liebman and Luttmer (2015) study by looking in depth at the effect of one aspect of their intervention—an informational mailing, which in this case is the *Social Security Statement*.

Data and Study Variables

This study uses longitudinal data from the CWHS, a major source of Social Security program statistics and workforce data. It is the oldest major longitudinal sample data source in the Federal statistical system. It evolved from the recordkeeping system created to meet the requirement in a 1939 amendment to the original Social Security Act that eligibility for benefits be determined based on quarters of coverage, an earnings-based measure of employment duration.

The CWHS is a 1 percent sample of the agency's administrative data. It can be described as a stratified-cluster probability sample of all possible Social Security numbers (SSNs). The population from which the 1-percent sample is selected consists of the 1 billion possible nine-digit SSNs. The SSNs are stratified geographically (with place of application for the SSN indicated by the first three digits) and chronologically by date of SSN assignment (the fourth and fifth digits). The last four digits in the SSN are random serial numbers. The actual sample is selected on the basis of specified numbers in positions six through nine of the SSN (Smith 1989).

The CWHS is selected from workers whose earnings are reported to SSA. Thus, the CWHS contains Federal Insurance Contributions Act (FICA)-covered summary earnings from 1937 to the present; and annual detailed earnings, Medicare taxable compensation, and total compensation from 1978 to the present. It also contains demographic information such as birth and death dates, place of birth, race, and sex. Most relevant for this project, it contains information related to the administration of SSA's retirement and disability programs, such as benefit application and entitlement dates, benefit amounts, and payment status. Once selected for inclusion in the CWHS, an individual remains in the sample for life.

The CWHS is well suited to address my research questions about the effect of *Statement* receipt on benefit claiming and employment because it provides a large and accurate source of longitudinal data on Social Security retirement benefits and on earnings, which are used to determine employment status. It also contains the exact date of entitlement for Social Security benefits. The exact date is important because this project examines the effect of *Statement* receipt on age at claiming of Social Security benefits. There are some disadvantages, however, to the use of administrative data. For example, the CWHS has no information on health status, education, or family characteristics. Of concern for this project, it also contains no information on *Statement* receipt.

Demographic and Economic Variables

Because the administrative data do not include many demographic or economic variables, this study uses dummy variables to account for other factors that might influence the age at which workers claim their Social Security retirement benefits. For instance, I use dummy variables to control for year effects. Year dummies, in theory, capture demographic and economic changes in the year of benefit claiming that might have affected the claiming decision. Year dummies can also capture policy and program changes that were occurring in the year when benefits were claimed.

Policy and Program Variables

As mentioned earlier, two notable policy changes took effect in 2000, when the *Statement* was first mailed to all eligible workers aged 25 or older. Workers who reached age 62 (the earliest age of eligibility to claim retired-worker benefits) in 2000 were members of the first birth cohort whose FRA is higher than 65. Also beginning in 2000, the RET was eliminated for beneficiaries on attaining their FRA.

Variable Representing Receipt of the *Statement*

Because there is no variable in the administrative data indicating whether a worker received a *Statement*, this study assumed receipt or nonreceipt based on birth-dates. *Statement* receipt was assumed for any individual of an age cohort that was scheduled to receive one in the implementation phase from fiscal year 1995 through fiscal year 1999, and for all individuals in fiscal year 2000 and later when all eligible workers aged 25 or older were sent one.⁶ For example, workers born 1939–1944 are assumed to have received a *Statement* in fiscal year 1997, when the agency plan called for mailing one to all eligible workers aged 53 through 58. According to the distribution schedule, workers born from 1933 through 1937 would have received just one *Statement* before age 62, during the implementation phase. Workers born in 1938 or later would have received two or more *Statements* before age 62. For workers born before 1960, one of the *Statements* would have been received during the implementation period. To account for receipt of the *Statement*, this study created a variable that was set equal to 1 if workers would have received a *Statement* based on their date of birth and 0 otherwise.

Depending on the estimation model, workers who received a *Statement* were placed in one of three groups:

- those who received at least one *Statement* before age 62 and were born from 1933 through 1945,
- those who received only one *Statement* before age 62 and were born from 1933 through 1937, or
- those who received two or more *Statements* before age 62 and were born in 1938 or later.

Workers who did not receive a *Statement* before age 62 were born from 1913 through 1932. This group is the same across all models.

Variables Representing the Varying FRAs

The differing FRAs for workers in the 1938 and later birth cohorts first began to affect benefit-eligible workers in 2000. The Social Security Act of 1935 had established a universal FRA of 65. In 1983, Congress enacted amendments—including the introduction of gradually increasing FRAs for later birth cohorts—to extend the financial stability of the Social Security program. The FRA rises in 2-month increments for successive birth cohorts, beginning with the 1938 cohort and reaching 66 for the 1943 cohort—thus affecting workers reaching age 62 in 2000 through 2005. When retirement benefits are claimed prior to a worker's FRA, they are reduced by an actuarially fair

amount to account for the additional time over which they will be received. The maximum monthly benefit reduction for early claiming is larger for workers with higher FRAs. For example, claiming at 62, the earliest age of eligibility, results in a 20 percent reduction in “full” monthly benefits (that is, benefits claimed at FRA) for a worker whose FRA is 65 but a 25 percent reduction for a worker whose FRA is 66. The larger monthly benefit reductions faced by workers with higher FRAs might result in declines in pre-FRA claiming if workers want to ensure a certain level of monthly benefits in retirement. Thus, as the higher FRAs have begun affecting retirement-age workers, we might expect to see declines in claiming at the earlier eligibility ages of 62 and 63 and increases in claiming at ages closer to FRA, such as 64 and 65.

This study uses a dummy variable for each FRA affecting the study sample members, from 65 and 2 months to 66. These dummies are represented as follows:

- $FRA65_2_{it} = 1$ if the individual was born in 1938, for whom the FRA is 65 and 2 months; else 0.
- $FRA65_4_{it} = 1$ if the individual was born in 1939, for whom the FRA is 65 and 4 months; else 0.
- $FRA65_6_{it} = 1$ if the individual was born in 1940, for whom the FRA is 65 and 6 months; else 0.
- $FRA65_8_{it} = 1$ if the individual was born in 1941, for whom the FRA is 65 and 8 months; else 0.
- $FRA65_10_{it} = 1$ if the individual was born in 1942, for whom the FRA is 65 and 10 months; else 0.
- $FRA66_{it} = 1$ if the individual was born during 1943 through 1954, for whom the FRA is 66; else 0.

The Effect of Eliminating the RET at FRA

The Senior Citizens Freedom of Work Act of 2000 eliminated the RET for Social Security beneficiaries who have attained FRA. The RET reduces monthly Social Security benefits for current beneficiaries with work earnings exceeding specified amounts; however, any benefits withheld are credited back once the beneficiary attains FRA, resulting in a permanent increase in monthly benefits. The elimination of the RET at the FRA affected workers aged 65 or older in our study. Evidence suggests that the 2000 RET reform resulted in beneficiaries claiming benefits earlier than they would have without the reform (Olsen and Romig 2013). Therefore, we should expect to see some increase in benefit claiming at age 65. The overall effect on earlier benefit claiming is likely to be small, however, because most individuals in the 65–69

age group apply for benefits before reaching FRA. Also, the RET directly affects only about 5 percent of retired-worker beneficiaries each year because the majority of those individuals who are still working earn less than maximum specified by the RET (Olsen and Romig 2013). Research that examined how the elimination of the RET at FRA affected expected claiming age found that this effect was not significant among men aged 51–61 (Michaud 2008). For the reasons listed above and because of the limited covariates in the administrative data, this study does not control for the effect of the RET on benefit claiming.

Sample Size

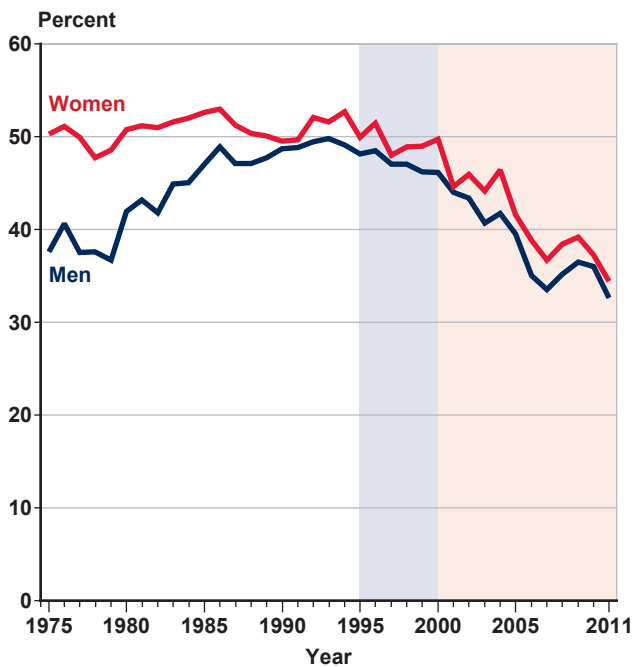
The analysis looks at how *Statement* receipt affects claiming behavior for workers overall, by sex, by race (white, black), and by earnings level (low, high). The sample size for all workers aged 62 to 70 is 586,415. The sample sizes for male and female workers are 323,846 and 262,569, respectively. The sample size for non-Hispanic white workers is 510,197 and for non-Hispanic black workers is 52,797. The sample size for both low and high earners is 292,969.

Methodology

I begin by calculating the percentage of fully insured workers born 1913–1949 who claimed a retirement benefit on their own earnings record at age 62. Fully insured workers have at least 10 years of earnings and are therefore eligible to receive retirement benefits. Chart 1 plots the pattern of these age-62 claiming rates for 1975–2011. The rate increased for men until around the mid-1990s and afterward began to decline. Starting around 2000, the decline appears to become steeper. SSA began sending out the *Statement* to selected groups of older workers in 1995 and to all eligible workers aged 25 or older in 2000. Thus, there appears to be a correlation between *Statement* mailings and the decline in retirement benefit claiming at age 62.

I then estimate the effect of *Statement* receipt on claiming behavior and employment using a linear probability model (LPM). The LPM allows me to compare the probability of claiming (or being employed) at ages 62 through 70 for workers who received a *Statement* and those who did not. The dependent variable in this analysis is binary, equaling 1 if the worker claimed (or was employed) at a given age and equaling 0 otherwise. The advantage of using the LPM is that the coefficients are easy to interpret. For example, the coefficient on the dummy variable for receipt of the

Chart 1.
Fully insured workers who claim retired-worker benefits at age 62, by sex: 1913–1949 birth cohorts (in percent)



SOURCE: Author's calculations using data from the CWSHS.

Statement can be interpreted as the change in the probability or likelihood of claiming at a given age—say, 62—if a *Statement* has been received.

I use three variations of the LPM:

- Model 1 estimates the effect of *Statement* receipt on the likelihood of claiming benefits at a given age, controlling for year effects.
- Model 2 estimates the effect of *Statement* receipt on the likelihood of claiming benefits at a given age, controlling for the varying FRAs.
- Model 3 estimates the effect of *Statement* receipt on the likelihood of employment, controlling for the varying FRAs.

For each model, I look at the effect of *Statement* receipt first for all workers and then separately by sex and race. For Model 2, controlling for the varying FRAs, I also look at the effect of *Statement* receipt by earnings level.

This project focuses on workers aged 62–70 in the years 1975–2007. This study period begins 20 years prior to the introduction of the *Statement* mailings and follows sample members who turned 62 in 1995, after receiving the first *Statement* mailing, for more

than 10 years. I follow individuals through age 70 because monthly Social Security retirement benefits increase with each month the worker delays claiming, up to age 70. I use data only through 2007 to avoid possible complications arising from the Great Recession and the suspension of *Statement* mailings in 2011. Nonetheless, I am able to look at responses for the first 13 years of mailings.

Estimating the Effect of the *Statement* on Benefit Claiming

For Models 1 and 2, I use a separate equation for each year of age at which Social Security retirement benefits can be claimed, 62 through 70, using data for the calendar years 1975 through 2007. I set the binary dependent variable for each equation equal to 1 if retirement benefits were claimed at that age and 0 otherwise. I do not make distinctions by month within a claiming year. For example, I assume that claiming at age 62 and 0 months and at age 62 and 11 months are the same. Independent variables include the dummy variable for *Statement* receipt as well as dummy variables to capture the effects of demographic and economic factors that might influence when workers claim their retirement benefits.

In Model 1, I am able to compare the two periods of the *Statement*'s implementation. In the first period, from 1995 to 1999, workers in selected age groups received just one *Statement* before age 62. In the second period, from 2000 to 2007, all workers aged 25 or older received annual *Statements*, and thus received multiple *Statements* before age 62. Therefore, I am able to compare the effects of receiving one and multiple *Statements* on claiming behavior. This LPM is written as:

$$\text{Claim}_{it}^j = \alpha + \beta_1 \text{SSS1}_{it} + \beta_2 \text{SSS2}_{it} + \beta_3 \text{YR}_{it} + \varepsilon_{it} \quad (1)$$

where

- $\text{Claim}_{it}^j = 1$ if the individual claimed benefits at this age; else 0, for $j = \text{ages } 62 \text{ through } 70$.
- $\text{SSS1}_{it} = 1$ if the individual received only one *Statement* before age 62 (birth years 1933 through 1937); else 0.
- $\text{SSS2}_{it} = 1$ if the individual received two or more *Statements* before age 62 (birth years 1938 through 1945); else 0.
- YR_{it} (dummy for year effects from 1975 through 2007) = 1 in the year the individual turns 62; else 0.

In this model, the dummies representing varying FRAs would be collinear with the dummies representing year effects, so I omit the FRA dummies.

In Model 2, I specifically control for the incremental variation in the FRAs from 65 to 66, which began to affect potential age-62 claimants in the sixth year of *Statement* mailings (2000). Including these dummy variables for the FRA in the estimations, along with the dummy variable for receipt of a *Statement*, allows me to separate the effect of the mailings from that of the varying FRAs. I am not able to look separately at receipt of one and of multiple *Statements* because the varying FRAs and the periods in which workers would have received multiple *Statements* coincide, so that the dummy variables would be collinear. Nonetheless, I think this specification provides useful estimates of the *Statement*'s effect on benefit claiming as well as the responsiveness of claiming to changes in the FRA. The LPM is written as:

$$\text{Claim}_{it}^j = \alpha + \beta_1 \text{SSS}_{it} + \beta_2 \text{FRA65_2}_{it} + \beta_3 \text{FRA65_4}_{it} + \beta_4 \text{FRA65_6}_{it} + \beta_5 \text{FRA65_8}_{it} + \beta_6 \text{FRA65_10}_{it} + \beta_7 \text{FRA66}_{it} + \varepsilon_{it} \quad (2)$$

where

- $\text{Claim}_{it}^j = 1$ if the individual claimed benefits at this age; else 0, for $j =$ ages 62 through 70.
- $\text{SSS}_{it} = 1$ if the individual received at least one *Statement*⁷ before age 62 (birth years 1933 through 1945); else 0.
- $\text{FRA65_2}_{it} = 1$ if the individual was born in 1938, for whom the FRA is 65 and 2 months; else 0.
- $\text{FRA65_4}_{it} = 1$ if the individual was born in 1939, for whom the FRA is 65 and 4 months; else 0.
- $\text{FRA65_6}_{it} = 1$ if the individual was born in 1940, for whom the FRA is 65 and 6 months; else 0.
- $\text{FRA65_8}_{it} = 1$ if the individual was born in 1941, for whom the FRA is 65 and 8 months; else 0.
- $\text{FRA65_10}_{it} = 1$ if the individual was born in 1942, for whom the FRA is 65 and 10 months; else 0.
- $\text{FRA66}_{it} = 1$ if the individual was born during 1943 through 1954, for whom the FRA is 66; else 0.

Estimating the Effect of the *Statement* on Employment

Claiming Social Security retirement benefits and deciding to work are separate and independent decisions. Individuals have four options with respect to claiming benefits and working.⁸ They can either:

- Claim benefits and continue to work,
- Claim benefits and stop working,
- Delay claiming benefits and continue to work, or
- Delay claiming benefits and stop working.

With Model 3, I examine whether individuals continued to work in response to the mailings or stopped working. For this portion of the analysis, I use an equation similar to equation (2) above, substituting a binary dependent variable that equals 1 for those who have earnings at each age 62 through 70 (and are therefore employed), and 0 if they do not, for EMP_{it}^j . I use the same independent variables: dummies controlling for *Statement* receipt and dummies controlling for the varying FRAs. The LPM is written as:

$$\text{EMP}_{it}^j = \alpha + \beta_1 \text{SSS}_{it} + \beta_2 \text{FRA65_2}_{it} + \beta_3 \text{FRA65_4}_{it} + \beta_4 \text{FRA65_6}_{it} + \beta_5 \text{FRA65_8}_{it} + \beta_6 \text{FRA65_10}_{it} + \beta_7 \text{FRA66}_{it} + \varepsilon_{it} \quad (3)$$

where

- $\text{EMP}_{it}^j = 1$ if the individual was employed at this age; else 0, for $j =$ ages 62 through 70.
- $\text{SSS}_{it} = 1$ if the individual received at least one *Statement* before age 62 (birth years 1933 through 1945); else 0.
- $\text{FRA65_2}_{it} = 1$ if the individual was born in 1938, for whom the FRA is 65 and 2 months; else 0.
- $\text{FRA65_4}_{it} = 1$ if the individual was born in 1939, for whom the FRA is 65 and 4 months; else 0.
- $\text{FRA65_6}_{it} = 1$ if the individual was born in 1940, for whom the FRA is 65 and 6 months; else 0.
- $\text{FRA65_8}_{it} = 1$ if the individual was born in 1941, for whom the FRA is 65 and 8 months; else 0.
- $\text{FRA65_10}_{it} = 1$ if the individual was born in 1942, for whom the FRA is 65 and 10 months; else 0.
- $\text{FRA66}_{it} = 1$ if the individual was born during 1943 through 1954, for whom the FRA is 66; else 0.

I use FICA earnings data reported in the CWHS to create my employment variable. For each birth year from 1916 through 1945, I create an earnings variable for ages 62 through 70 that is equal to recorded FICA earnings. For younger birth cohorts (born from 1938 through 1945), I am not able to create an earnings variable for all ages from 62 through 70, given that members of these cohorts had not reached age 70 by my last year of analysis (2007). If my earnings variable is positive, I assume the individual was employed. For example, if the earnings variable for an individual aged 62 is positive, then I set EMP_{it}^j equal to 1 when $j = 62$.

Results

As noted earlier, the percentage of workers claiming benefits at age 62, the most popular age to claim Social Security retirement benefits, has been declining since the mid-1990s. The mid-1990s is also when the *Statement* was first mailed automatically to selected age groups of older workers. Beginning in 2000, the *Statement* was sent to all eligible workers aged 25 or older. The estimates I present here are intended to measure the effect that receiving the *Statement*, with its information about claiming age and benefit amounts, had on workers' claiming and employment decisions. Because delaying claiming and working longer would lead to larger monthly benefits for the rest of their lives, evidence that workers altered their decisions in this way would imply that the information they received informed their choices. Coefficient values for the independent variables range between 0 and 1 in value. For ease of interpretation, they are presented as percentages.

Effect of Statement Receipt on Benefit Claiming

Table 2 shows the estimated effects of the *Statement* mailings, controlling for year effects (Model 1) and for the varying FRAs (Model 2). In both models, *Statement* receipt is associated with a significantly greater likelihood of claiming at age 65: by 2.68 percentage

points when controlling for the varying FRAs, and by 2.31 percentage points and 4.64 percentage points—depending on the number of *Statements* received—when controlling for year effects.⁹ Also in both models, receipt of the *Statement* was associated with significantly decreased claiming at younger ages. Model 2, controlling for the varying FRAs, showed a decrease in the likelihood of claiming at age 63 of 0.90 percentage point and a decrease in the likelihood of claiming at age 64 of 2.18 percentage points. Model 1, controlling for year effects, showed a decrease in the likelihood of claiming at age 62 of 3.36 percentage points for those receiving multiple *Statements*. Both models suggested that workers were less likely to claim at earlier ages following receipt of the *Statement* and more likely to claim at age 65, although the patterns of timing differ somewhat across the models. For ages 66 through 70, there was no clear pattern of effect of the mailings between the two models.

As a final note, in Model 2, at age 63, the magnitude of the *Statement's* negative effect was larger, at 0.90 of a percentage point, than that of any of the FRA dummies, whose absolute values ranged from 0.05 to 0.46. At ages 64, 65, and 67, the magnitude of the *Statement* effect was at the lower end of the range of magnitudes for the FRA dummies, with values of -2.18, 2.68, and 0.18, respectively. At ages 69 and 70, the magnitude

Table 2.
Effect of *Statement* receipt and FRA on the probability of claiming a retirement benefit at a given age:
All workers

Variable	62	63	64	65	66	67	68	69	70
Model 1: Controlling for year effects only									
Intercept	50.22	6.08	10.24	11.98	1.17	2.01	0.51	0.46	0.68
One <i>Statement</i> received	-1.83	-0.08	2.82***	2.31***	-0.45	-1.45***	0.04	0.05	0.16
Multiple <i>Statements</i> received	-3.36***	0.27	1.64***	4.64***	-0.34	-1.25***	0.01	0.03	0.15
Model 2: Controlling for the varying FRAs									
Intercept	48.95	7.16	13.76	11.94	1.04	0.73	0.55	0.60	0.52
At least one <i>Statement</i> received	-0.44	-0.90***	-2.18***	2.68***	0.15	0.18***	-0.10	-0.12***	0.35***
FRA									
65 and 2 months	-1.65***	0.09	0.31	1.99***	-0.37	0.20	0.06	0.01	-0.03
65 and 4 months	-3.54***	0.19	-0.98**	4.12***	-0.19	0.11	0.01	0.20	0.24
65 and 6 months	-4.48***	-0.11	-2.54***	6.43***	-0.12	0.12	0.23***	0.09	0.27***
65 and 8 months	-5.62***	0.05	-3.14***	7.34***	0.13	0.44***	0.03	0.01	0.54***
65 and 10 months	-5.99***	-0.38	-3.38***	8.30***	0.79***	0.51***	0.09	0.18	0.71***
66	-8.74***	0.46*	-3.52***	-3.25***	14.33***	0.72***	0.06	-0.27***	-0.61***

SOURCE: Author's calculations using data from the CWHS.

NOTES: Estimates are from an LPM. Number of observations = 586,415.

* = statistically significant at the $p = 0.05$ level; ** = statistically significant at the $p = 0.02$ level; *** = statistically significant at the $p = 0.01$ level.

of the *Statement* effect was, at -0.12 and 0.35 respectively, somewhere in the middle of the range of effects for the FRA dummies. I cite these comparisons simply to note that estimates of the effect of the mailings on behavior are similar to those of changing policy by raising FRAs for later birth cohorts.

Estimating the Effect of the Statement on Benefit Claiming by Sex and Race

Whereas Table 2 shows the *Statement*'s effect on the likelihood of benefit claiming for all workers, Table 3 shows its effect on the likelihood of claiming benefits separately for men and women, again controlling for year effects and for the varying FRAs. The results for men and women in Model 1 were similar to those for all workers in magnitude and sign. However, receipt of the *Statement* was associated with a smaller change in the likelihood of claiming benefits for women than for men at claiming ages 62 and 65. For example, receipt of multiple *Statements* was associated with a reduction in the likelihood of claiming at age 62 by 3.81 percentage points for men and by 2.90 percentage points for women. Receipt of multiple *Statements* was associated with an increase in the likelihood of claiming at age 65 by 5.32 percentage points for men and 3.94 percentage points for women. However, receipt of one *Statement*

was associated with a larger increase in the likelihood of claiming at age 64 for women (3.08 percentage points) than for men (2.60 percentage points).

The Model 2 results provide a possible explanation for the insignificant effect of *Statement* receipt on the likelihood of benefit claiming for all workers at age 62. For men, receipt of at least one *Statement* was associated with a significant and positive effect on the likelihood of claiming benefits at age 62, by 2.18 percentage points. For women, receipt of the *Statement* was associated with a reduction in the likelihood of claiming at age 62 by 3.99 percentage points. In this model, as in the model controlling for year effects, the *Statement*'s effect on the likelihood of benefit claiming was smaller for women than for men for most ages. The effect of the *Statement* was also less likely to be significant for women than for men.

There are several possible explanations for why women's claiming may be less affected by *Statement* receipt than men's. For example, many of the women in my study are likely to be married. Studies show that married women tend to retire from the labor force when their husbands do, with the result that they might be less influenced by the *Statement*'s estimates of their benefits (Johnson 2004). Other studies suggest that

Table 3.
Effect of *Statement* receipt on the probability of claiming a retirement benefit at a given age, by sex

Variable	62	63	64	65	66	67	68	69	70
Model 1: Controlling for year effects only									
<i>Men</i>									
Intercept	49.41	6.80	10.96	13.78	1.26	2.32	0.42	0.31	0.18
One <i>Statement</i> received	-2.35	-0.52	2.60***	3.11***	-0.49	-1.85***	0.00	0.04	0.15
Multiple <i>Statements</i> received	-3.81***	-0.08	1.81**	5.32***	-0.43	-1.67***	0.03	0.10	0.12
<i>Women</i>									
Intercept	51.19	5.24	9.39	9.87	1.06	1.64	0.61	0.64	1.28
One <i>Statement</i> received	-1.23	0.78	3.08***	1.40	-0.40	-0.99***	0.08	0.06	0.16
Multiple <i>Statements</i> received	-2.90**	0.69	1.49	3.94***	-0.24	-0.77***	-0.02	-0.06	0.17
Model 2: Controlling for the varying FRAs									
<i>Men</i>									
Intercept	45.13	7.87	15.00	14.02	1.14	0.77	0.55	0.60	0.37
At least one <i>Statement</i> received	2.18***	-1.37***	-2.86***	2.93***	0.20	-0.25***	-0.19***	-0.28***	-0.08
<i>Women</i>									
Intercept	53.96	6.23	12.14	9.23	0.91	0.67	0.55	0.59	0.71
At least one <i>Statement</i> received	-3.99***	-0.26	-1.23***	2.61***	0.10	-0.08	0.02	0.08	0.85***

SOURCE: Author's calculations using data from the CWHS.

NOTES: Estimates are from an LPM. Number of observations = 323,846 men, 262,569 women.

** = statistically significant at the $p = 0.02$ level; *** = statistically significant at the $p = 0.01$ level.

the real or perceived relative advantages of various retired-worker and spousal benefit claiming scenarios might encourage wives to retire early and thus be less influenced by *Statement* receipt to delay claiming (Munnell and Soto 2005). Finally, women are more likely than men to be a caregiver for an elderly or sick family member and thus be less likely to have the option to delay claiming.

Table 4 shows the effect of *Statement* receipt on the likelihood of claiming benefits for white and black workers, controlling for year effects and for the varying FRAs. Because white workers constitute a large majority of the study sample, their results were, not surprisingly, similar to those for all workers.¹⁰ In Model 1, the results for white workers are almost identical to those for all workers overall in sign, magnitude, and significance. For black workers, receipt of the *Statement* had a significant effect only at age 67, when it reduced the likelihood of claiming by 1.43 percentage points if one *Statement* was received and by 1.23 percentage points if multiple *Statements* were received.

In Model 2, the results for white workers are also very similar in sign, magnitude, and significance to those for all workers. The effect of *Statement* receipt on the likelihood of claiming for black workers is

negative and significant at ages 63 and 64, and positive and significant at age 65.

Health status and socioeconomic factors might explain why *Statement* receipt has no significant effect on claiming for black workers at ages 62, 64, and 65 in Model 1 and why the negative effect on claiming at age 63 in Model 2 is so much smaller for black workers than for white ones. Older black workers are more likely than older white workers to have higher rates of diabetes, hypertension, and obesity—chronic conditions that can lead to disability. Black Americans also have lower life expectancy than white Americans (Martin and Murphy 2014). A higher prevalence of chronic health conditions and higher mortality is likely to result in early benefit claiming and a reduced likelihood of delaying claiming. On average, black workers also have lower educational attainment and lower earnings than white workers (Bureau of Labor Statistics [BLS] 2018). Individuals with lower earnings are less likely to have additional sources of retirement income to complement the benefits they receive from Social Security. Thus, black workers will be less financially likely to have the option to delay claiming of benefits—both because they are less likely to be able to continue to work and because they are less likely to have alternative sources of retirement income.

Table 4.
Effect of *Statement* receipt on the probability of claiming a retirement benefit at a given age, by race

Variable	62	63	64	65	66	67	68	69	70
Model 1: Controlling for year effects only									
<i>White</i>									
Intercept	51.36	6.10	10.55	11.88	1.01	1.88	0.47	0.40	0.72
One <i>Statement</i> received	-1.54	0.11	2.74***	2.27***	-0.50	-1.47***	-0.03	0.06	0.08
Multiple <i>Statements</i> received	-3.28***	0.16	1.70***	4.76***	-0.32	-1.31***	-0.14	0.02	0.12
<i>Black</i>									
Intercept	44.37	6.07	7.48	11.12	1.54	2.37	0.64	0.70	0.32
One <i>Statement</i> received	1.03	0.21	2.18	0.86	-0.31	-1.43***	-0.23	-0.41	0.44
Multiple <i>Statements</i> received	-1.02	1.37	1.33	2.28	-0.62	-1.23**	0.21	-0.19	0.14
Model 2: Controlling for the varying FRAs									
<i>White</i>									
Intercept	49.82	7.09	14.03	12.00	0.93	0.65	0.48	0.56	0.49
At least one <i>Statement</i> received	0.09	-0.86***	-2.29***	2.51***	0.11	-0.21***	-0.09	-0.17***	0.35***
<i>Black</i>									
Intercept	42.87	7.86	10.89	10.31	1.79	1.17	0.93	0.73	0.64
At least one <i>Statement</i> received	1.45	-0.18**	-1.84***	2.34***	-0.18	-0.29	-0.49***	-0.23	0.18

SOURCE: Author's calculations using data from the CWHS.

NOTES: Estimates are from an LPM. Number of observations = 510,197 white, 52,797 black.

** = statistically significant at the $p = 0.02$ level; *** = statistically significant at the $p = 0.01$ level.

Estimating the Effect of the Statement on Benefit Claiming by Earnings Level

The effect of *Statement* receipt on benefit claiming varies across earnings levels. As a proxy for earnings, I use the primary insurance amount (PIA), which is the monthly retirement benefit workers receive if they claim at their FRA. The PIA is directly linked to earnings: As an individual's lifetime earnings increase, so does the PIA.¹¹ I calculated the median PIA and then used Model 2, controlling for the varying FRAs, to estimate the *Statement*'s effect on claiming age for all workers, for those with a PIA less than the median, and for those with a PIA greater than the median.

Receipt of at least one *Statement* by age 62 had different effects on the two earnings groups (Table 5). For those with PIAs below the median, receipt of the *Statement* was associated with a decrease in the likelihood of claiming at age 62 by 4.07 percentage points. For those with PIAs above the median, receipt of the *Statement* was associated with an increase in the likelihood of claiming at age 62 by 3.36 percentage points.

These differing results might be explained by the relationship between earnings level and the likelihood of having other retirement savings. Higher earners have greater access to both defined benefit and defined contribution retirement plans than do lower earners (BLS 2017). Higher earners also participate in available employer-provided plans at higher rates than do lower earners. Further, higher earners are more likely to have personal retirement savings in addition to their employer-offered retirement plans. Given these other sources of retirement income, higher earners, who are also likely to receive higher Social Security benefits, might decide to claim early and let their 401(k) and personal saving investments appreciate. Lower earners, on the other hand, are less likely to have other sources of retirement income. Because they will be more dependent on Social Security benefits for their retirement income, lower earners may be more likely to continue to work and delay claiming to increase the amount of the Social Security benefits they will receive.

Table 5. Effect of *Statement* receipt and FRA on the probability of claiming a retirement benefit at a given age, by own PIA relative to the median: Model 2 (controlling for the varying FRAs)

Variable	62	63	64	65	66	67	68	69	70
Workers whose PIA is greater than the median									
Intercept	42.74	8.44	17.81	16.76	1.23	0.85	0.62	0.70	0.50
At least one <i>Statement</i> received	3.36***	-1.58***	-4.09***	3.00***	0.08	-0.43***	-0.34***	-0.42***	0.14***
FRA									
65 and 2 months	-1.63	0.10	0.62	2.17***	-0.63	0.07	0.10	0.08	0.02
65 and 4 months	-2.95***	0.35	-1.93***	5.09***	-0.52	0.06	0.06	0.14	0.30*
65 and 6 months	-3.58***	-0.45	-4.27***	8.21***	-0.29	0.32	0.23	0.28*	0.34***
65 and 8 months	-5.31***	-0.23	-5.27***	10.46***	-0.03	0.40***	0.20	0.16	0.82***
65 and 10 months	-6.42***	-0.88	-6.15***	11.40***	0.84***	0.65***	0.29***	0.42***	1.15***
66	-8.58***	0.02	-6.01***	-6.05***	20.42***	0.96***	0.19**	-0.13	-0.63***
Workers whose PIA is less than the median									
Intercept	55.21	5.88	9.68	7.11	0.85	0.60	0.49	0.49	0.54
At least one <i>Statement</i> received	-4.07***	-0.27	-0.43	1.94***	0.20	0.10	0.17***	0.19***	0.57***
FRA									
65 and 2 months	-1.46	0.03	-0.24	1.32***	-0.07	0.37*	0.04	-0.05	-0.07
65 and 4 months	-4.09***	-0.02	0.01	2.79***	0.19	0.16	-0.04	0.28	0.18
65 and 6 months	-5.40***	0.25	-0.68	4.20***	0.06	-0.09	0.24	-0.11	0.19
65 and 8 months	-6.14***	0.39	-0.81	4.67***	0.31	0.46***	-0.14	-0.17	0.24
65 and 10 months	-5.77***	0.18	-1.31***	5.63***	0.74***	0.36***	-0.12	-0.08	0.25
66	-9.12***	0.96***	-0.84***	0.00	8.25***	0.46***	-0.09	-0.43***	-0.62

SOURCE: Author's calculations using data from the CWHS.

NOTES: Estimates are from an LPM. Number of observations = 585,938 (all workers), with 292,969 workers each with PIAs greater and less than the median (sample omits 477 workers with PIAs at the median).

* = statistically significant at the $p = 0.05$ level; ** = statistically significant at the $p = 0.02$ level; *** = statistically significant at the $p = 0.01$ level.

This offsetting difference by earnings level might explain why I find the overall effect of *Statement* receipt on claiming at age 62 to be insignificant. As noted above, the effect of *Statement* receipt on the likelihood of claiming at age 62 was positive for workers with a PIA above the median (3.36 percentage points) and negative for those with a PIA below the median (-4.07 percentage points).

The effect of *Statement* receipt on the likelihood of claiming at age 65 was positive for workers with a PIA above the median (3.00 percentage points) as well as for those with a PIA below the median (1.94 percentage points). Although the effect of *Statement* receipt on the likelihood of claiming at ages 63 and 64 was negative for workers with PIAs both above and below the median, it was significant only for those with PIAs above the median (-1.58 percentage points at age 63 and -4.09 percentage points at age 64). For those with PIAs below the median, receipt of the *Statement* had a small but significant positive effect on the likelihood of claiming at ages 68, 69, and 70 (0.17 percentage point, 0.19 percentage point, and 0.57 percentage point, respectively). For workers with PIAs above the median, receipt of the *Statement* had a small but significant negative effect on the likelihood of claiming at ages 67, 68, and 69, and an even smaller positive and significant effect on claiming at age 70.

Estimating the Effect of the Statement on Employment

Based on a broader CWHS sample, Table 6 shows the estimated effect of *Statement* receipt on the probability of being employed. I find that receipt of at least one *Statement* was associated with a significant increase in

the percentage of individuals working. The estimates suggest that, at each age, the likelihood of working increased between 5 percentage points and 7 percentage points as a result of receiving a *Statement*. In other words, *Statement* receipt was associated with increased likelihood of being employed at ages 62 through 70. All of the FRA dummies were significant but the magnitude was less than half that of the *Statement* dummy. I also looked at the effect of *Statement* receipt on the likelihood of working by sex and race. What was true for all workers was also true for men and women and for black and white workers: Receipt of the *Statement* was associated with a 4–7 percentage point increase in the likelihood of working (not shown).

Robustness Results

The models I use contain a limited number of covariates, such as sex and race, and I used those covariates to separate the sample into different groups of interest. To determine if my results may have been driven by unobserved factors, I tested three different specifications to check the robustness of the effect of *Statement* receipt on claiming. The first specification included adding a trend term to my models to provide an additional control for exogenous changes in my dependent variable that are not explained by other variables. Second, to test whether the estimation framework itself might result in spurious results, I randomly assigned receipt of the *Statement* to individuals who never could have received one. The third specification added a variable to control for changes in the economy that might have affected when workers claimed their Social Security retirement benefits.

Table 6.
Effect of *Statement* receipt and FRA on the probability of being employed at a given age: All workers, Model 3 (controlling for the varying FRAs)

Variable	62	63	64	65	66	67	68	69	70
Intercept	38.40	32.53	28.32	25.21	21.10	18.32	16.43	14.73	13.21
At least one <i>Statement</i> received	5.11***	5.70***	6.22***	6.40***	6.72***	6.69***	6.24***	5.85***	5.45***
FRA									
65 and 2 months	2.10***	1.74***	1.14**	1.08**	1.47***	1.68***	1.76***	1.76***	0.00
65 and 4 months	2.22***	1.69***	1.60***	1.75***	2.55***	2.58***	2.38***	0.00	0.00
65 and 6 months	1.85***	2.31***	2.46***	2.57***	3.21***	2.80***	0.00	0.00	0.00
65 and 8 months	2.48***	3.12***	3.31***	3.28***	-3.71***	0.00	0.00	0.00	0.00
65 and 10 months	2.72***	3.40***	3.78***	3.75***	0.00	0.00	0.00	0.00	0.00
66	4.01***	4.95***	5.16***	0.00	0.00	0.00	0.00	0.00	0.00

SOURCE: Author's calculations using data from the CWHS.

NOTES: Estimates are from an LPM. Number of observations = 836,415.

** = statistically significant at the $p = 0.02$ level; *** = statistically significant at the $p = 0.01$ level.

When I added a trend term to the model with year dummies, I found that the direction of the *Statement's* effect on the likelihood of claiming was the same as in the original model: a negative effect at ages 62 and 67 and a positive effect at ages 64 and 65 (Table 7). However, the magnitude of the effect of the *Statement* increased. For example, the effect of receipt of one *Statement* before age 62 on the likelihood of claiming at age 62, which was insignificant in the original model, was significant and negative in the model with the trend term. In addition, the effect of receiving multiple *Statements* on the likelihood of claiming at age 62 was -3.36 percentage points in the original model but -4.57 percentage points in the model with the trend term.

Adding a trend term to model 2 (controlling for varying FRAs) resulted in some changes in sign from the original specification of the *Statement's* effect on the likelihood of claiming at ages 62 through 70 (Table 8). However, the overall pattern of a reduction in early claiming and an increase in later claiming remained. For example, the effect of the *Statement* on the likelihood of claiming at age 65 was 2.68 percentage points in the original model and 2.94 percentage points in the model with the trend term. Without the time-trend term, controlling for the varying FRAs led to an insignificant effect on claiming at age 62; but controlling for the time trend led to a negative and significant reduction in claiming of 4.27 percentage points. Thus, including the trend term

Table 7.
Effect of receiving one versus multiple *Statements* on the probability of claiming a retirement benefit at a given age, controlling for year effects: Robustness tests with alternative estimation models

Model	62	63	64	65	66	67	68	69	70
One Statement received before age 62									
Original estimates	-1.83	-0.08	2.82***	2.31***	-0.45	-1.45***	0.04	0.05	0.16
Alternative estimates									
Trend term	-2.84***	0.59	4.24***	2.91***	-0.62	-1.87***	0.00	-0.01	0.03
Randomized	0.24	-0.10	-0.19	0.00	-0.03	0.00	0.00	0.01	0.03
Per capita income	-0.13	-0.83*	0.30	1.24***	-0.16	-0.70***	0.11	0.15	0.38***
Multiple Statements received before age 62									
Original estimates	-3.36***	0.27	1.64***	4.64***	-0.34	-1.25***	0.01	0.03	0.15
Alternative estimates									
Trend term	-4.57***	0.87	3.35***	5.36***	-0.54	-1.76***	-0.04	0.04	0.00
Randomized	0.24	-0.10	-0.19	0.00	-0.03	0.00	0.00	0.01	0.03
Per capita income	-1.72**	-0.64	-0.89	3.54***	-0.05	-0.51***	0.08	0.13	0.38***

SOURCE: Author's calculations using data from the CWHS.

NOTES: Original estimates are from an LPM.

* = statistically significant at the $p = 0.05$ level; ** = statistically significant at the $p = 0.02$ level; *** = statistically significant at the $p = 0.01$ level.

Table 8.
Effect of receiving at least one *Statement* on the probability of claiming a retirement benefit at a given age, controlling for the varying FRAs: Robustness tests with alternative estimation models

Model	62	63	64	65	66	67	68	69	70
Original estimates	-0.44	-0.90***	-2.18***	2.68***	0.15	0.18***	-0.10	-0.12***	0.35***
Alternative estimates									
Trend term	-4.27***	0.10	2.07***	2.94***	-0.22	-0.64***	-0.44***	-0.12***	-0.19***
Randomized	0.24	-0.10	-0.18	0.00	-0.03	0.00	0.00	0.01	0.03
Per capita income	-0.52	-0.92***	-2.20***	2.66***	0.15	-0.18***	-0.10	-0.12***	-0.35***

SOURCE: Author's calculations using data from the CWHS.

NOTES: Original estimates are from an LPM.

*** = statistically significant at the $p = 0.01$ level.

generally resulted in larger estimated reductions in early claiming.

The second robustness test involved randomizing receipt of the *Statement*. By randomly assigning mailings to individuals prior to the time when *Statements* were actually mailed, I tested whether the estimation approach employed in the analysis inappropriately found implementation effects.

As noted earlier, there was no variable in the administrative data I used that indicated whether a worker had received a *Statement*; but using workers' birth dates and the *Statement* implementation schedule, I was able to estimate which workers were likely to have received one and which were not. I assumed that workers who were the appropriate ages to receive a *Statement* according to SSA's implementation schedule actually received one.

To test the validity of my estimation approach, I randomly assigned and coded workers to have received a *Statement* in periods when they would not have, based on the implementation schedule and their birth year. Forty-four percent of all individuals in the sample potentially received a mailing; so, among those who could not, I randomly assigned 44 percent to the category of having falsely received a mailing. I then added a variable to my models that captured the effect of the random falsely received *Statement*. Tables 7 and 8 show the results of including a randomized variable representing the effect of receiving a falsely targeted *Statement* in the models controlling for year effects and the varying FRAs, respectively. The effect of the random falsely targeted *Statement* mailings was not significant in any of the models.

The third robustness test involved adding a variable to capture the effect of changes in the economy that occurred during the period when SSA was sending out the *Statement*. I tested the effect on benefit claiming of changes in four macroeconomic variables: the unemployment rate, the inflation rate, the interest rate on 3-month certificates of deposit, and the percentage change in per capita personal income. The values of these variables were for the year in which the worker turned 62. I derived the unemployment rate and inflation rate values using BLS data, the interest rate values using data from the Federal Reserve Bank of St. Louis, and the personal income values using data from the Bureau of Economic Analysis.¹²

All four variables had a similar effect on the relationship between receipt of the *Statement* and the likelihood of claiming at given ages. For simplicity,

I limit the discussion to the effects of the change in per capita personal income.

Table 7 shows the effect of adding a macroeconomic variable to Model 1 (controlling for year effects). Receipt of the *Statement* still had a negative (but insignificant) effect on the likelihood of claiming benefits at age 62 and a significant positive effect on the likelihood of claiming benefits at age 65, but in both cases the magnitude of the effect was reduced. This suggests that the age at which benefits were claimed was also affected by what was happening in the larger economy. In fact, the macroeconomic variables had direct negative impacts on the likelihood of benefit claiming at both age 62 and age 65, with the magnitude varying between 1 and 2 percentage points in most cases.

Table 8 shows the effect of adding a macroeconomic variable to Model 2 (controlling for the varying FRAs). Receipt of the *Statement* still had a negative effect on the likelihood of claiming benefits at age 62 and a significant positive effect on the likelihood of claiming benefits at age 65. In this model, the magnitude of the *Statement*'s effect on benefit claiming is similar to that of the original specification and the specification including the trend term. Also, in the FRA model, the magnitude of the direct effect of the macroeconomic variables on claiming at ages 62 and 65 was very small, less than 0.5 percentage point in most cases.

Discussion

This study is the first empirical analysis to demonstrate that *Statement* mailings had a statistically significant effect on the age at which workers claim their Social Security retirement benefits. Evidence herein suggests that workers who received a *Statement* were less likely on average to claim retirement benefits at age 62, the earliest claiming age, and more likely to claim at ages 64 or 65 than workers who did not receive a *Statement*. The effect of the *Statement* mailings on benefit claiming varied across demographic groups, being greater for men than for women, for white workers than for black workers, and for higher earners than for lower earners. Workers who received a *Statement* were also more likely to remain employed at older ages than workers who did not receive a *Statement*.

Mastrobuoni (2011) found that receipt of one *Statement* did not have a significant effect on benefit claiming behavior. I extended that research to look at the

effect of receiving multiple *Statements*. I also found that receipt of one *Statement* did not have a significant effect on the likelihood of claiming benefits at 62, the age at which the largest number of people claim. However, I found that receipt of multiple *Statements* had a significant negative effect on the likelihood of claiming at age 62.

Liebman and Luttmer (2015) found that a one-time experimental intervention with several aspects—including informational mailings, online tutorials, specific information about Social Security, and vignettes—increased the likelihood that individuals were still working 1 year later by more than 4 percentage points. Yet the authors were unable to identify which of these aspects was the most important to that behavioral response. I extended their research by focusing on a single aspect of their intervention, an informational mailing: in this case, the *Social Security Statement*. I found that an informational mailing by itself can affect behavior. I also found statistically significant effects of the *Statement* on employment, similar in magnitude to those found by Liebman and Luttmer.

My results suggest that informational interventions could be a policy tool for promoting retirement security, along with complementary approaches such as tax incentives to encourage retirement saving and automatic enrollment in state-administered individual retirement accounts for workers whose employers do not offer retirement plans. I found that the *Statement* mailings increase the likelihood that recipients delay the claiming of retirement benefits, which results in a higher monthly benefit for the rest of the claimant's life. (Social Security benefits represent a significant proportion of the retirement income of all but the highest lifetime earners.) I also found that receipt of the *Statement* increased the likelihood of employment at ages 62 through 70. More time spent working results in more years of earnings and, consequently, increased Social Security retirement benefits. One implication of my findings is that low-cost informational interventions, in addition to direct policy levers, might be effective in increasing the retirement security of older Americans, by both raising the level of their retirement benefits through delayed claiming and increasing their employment at older ages.

Currently, SSA mails the *Statement* only to workers aged 60 or older who have not created a *my Social Security* account with which to access the *Statement* electronically. My findings on the effect of the *Statement* on benefit claiming suggest that the agency might consider outreach efforts to encourage more workers to sign up for a *my Social Security* account and, for those who have already created an online account, to check it more regularly. Whereas the agency sent *Statements* to more than 151 million workers in the last full year of mailings in 2010, only about 50 million workers had created a *my Social Security* account as of June 2020.

Limitations and Future Directions

A major limitation of the administrative data I use is the absence of information on health status, education, and family characteristics, and limited information on nonearnings income. Any of these variables might affect the age at which workers claim. Another limitation of my research is that I do not control for a major policy change: the elimination of the RET at FRA.

These limitations suggest several directions for future work. One obvious extension of this research would be to control for the change in the RET. Another extension would involve constructing a control variable for earnings. Possible examples of such a control variable might be lifetime earnings or average earnings for ages 45–55. Another extension could involve developing a way to control for compositional changes in the cohorts I study. These compositional changes might include education, race/ethnicity, the share of workers who are immigrants, and marital history.

Future work might include extending my analysis of how earnings levels are associated with the effect of *Statement* receipt on benefit claiming by looking at deciles or quintiles rather than the two broad categories of above and below the median PIA. This article examines how *Statement* receipt changes the claiming age from, for example, 62 to 63. Future work could focus on how *Statement* receipt affects the number of months by which claiming was delayed. In this article, if a worker delayed claiming from age 62 and 0 months to 62 and 11 months, we would not see any change in claiming age. Looking at ages in terms of months rather than years might reveal an even larger effect of the *Statement* on claiming.

Prevent identity theft—protect your Social Security number



Your Social Security Statement

Prepared especially for Susan J. Jones

October 2, 2006

www.socialsecurity.gov

See inside for your personal information



FF F 0001 000000001 01 SP 0.390
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 6300 SECURITY BLVD
 BALTIMORE MD 21235

What's inside...

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(Para Solicitar Una Declaración en Español)

What Social Security Means To You

This *Social Security Statement* will help you understand what Social Security means to you and your family. This *Statement* can help you better plan for your financial future. It gives you estimates of your Social Security benefits under current law. Each year, we will send you an updated *Statement* including your latest reported earnings.

Be sure to read this *Statement* carefully. If you think there may be a mistake, please let us know. That's important because your benefits will be based on our record of your lifetime earnings. We recommend you keep a copy of this *Statement* with your financial records.

Social Security is for people of all ages...

It can help you whether you're young or old, male or female, single or with a family. It's there for you when you retire, but it's more than a retirement program. Social Security also can provide benefits if you become disabled and help support your family when you die.

Work to build a secure future...

Social Security is the largest source of income for most elderly Americans today. It is very important to remember that Social Security was never intended to be your only source of income when you retire. Social Security can't do it all. You also will need other savings, investments, pensions or retirement accounts to make sure you have enough money to live comfortably when you retire.

About Social Security's future...

Social Security is a compact between generations. For more than 60 years, America has kept the promise of security for its workers and their families. But now, the Social Security system is facing serious future financial problems, and action is needed soon to make sure that the system is sound when today's younger workers are ready for retirement.

Today there are almost 36 million Americans age 65 or older. Their Social Security retirement benefits are funded by today's workers and their employers who jointly pay Social Security taxes — just as the money they paid into Social Security was used to pay benefits to those who retired before them. Unless action is taken soon to strengthen Social Security, in just 11 years we will begin paying more in benefits than we collect in taxes. Without changes, by 2040 the Social Security Trust Fund will be exhausted.* By then, the number of Americans 65 or older is expected to have doubled. There won't be enough younger people working to pay all of the benefits owed to those who are retiring. At that point, there will be enough money to pay only about 74 cents for each dollar of scheduled benefits. We will need to resolve these issues soon to make sure Social Security continues to provide a foundation of protection for future generations as it has done in the past.

Social Security on the Net...

Visit www.socialsecurity.gov on the Internet to learn more about Social Security. You can read our publications, use the *Social Security Benefit Calculators* to calculate future benefits, apply for retirement, spouse's or disability benefits, or subscribe to *eNews* for up-to-date information about Social Security.

Jo Anne B. Barnhart
 Commissioner

* These estimates of the future financial status of the Social Security program were produced by the actuaries at the Social Security Administration based on the intermediate assumptions from the Social Security Trustees' Annual Report to the Congress.

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Your Estimated Benefits

*Retirement	You have earned enough credits to qualify for benefits. At your current earnings rate, if you stop working and start receiving benefits... At age 62, your payment would be about \$ 661 a month If you continue working until . . . your full retirement age (66 years), your payment would be about \$ 1,000 a month age 70, your payment would be about \$ 1,403 a month
*Disability	You have earned enough credits to qualify for benefits. If you become disabled right now... Your payment would be about \$ 888 a month
*Family	If you get retirement or disability benefits, your spouse and children also may qualify for benefits.
*Survivors	You have earned enough credits for your family to receive survivors benefits. If you die this year, certain members of your family may qualify for the following benefits: Your child \$ 683 a month Your spouse who is caring for your child \$ 683 a month Your spouse who reaches full retirement age \$ 910 a month Total family benefits cannot be more than \$ 1,454 a month Your spouse or minor child may be eligible for a special one-time death benefit of \$255.
Medicare	You have earned enough credits to qualify for Medicare at age 65. Even if you do not retire at age 65, be sure to contact Social Security three months before your 65th birthday to enroll in Medicare.

***Your estimated benefits are based on current law. Congress has made changes to the law in the past and can do so at any time. The law governing benefit amounts may change because, by 2040, the payroll taxes collected will be enough to pay only about 74 percent of scheduled benefits.**

We based your benefit estimates on these facts:

Your date of birth March 4, 1948
Your estimated taxable earnings per year after 2005 \$28,072
Your Social Security number (only the last four digits are shown to help prevent identity theft) XXX-XX-9876

How Your Benefits Are Estimated

To qualify for benefits, you earn “credits” through your work — up to four each year. This year, for example, you earn one credit for each \$970 of wages or self-employment income. When you’ve earned \$3,880, you’ve earned your four credits for the year. Most people need 40 credits, earned over their working lifetime, to receive retirement benefits. For disability and survivors benefits, young people need fewer credits to be eligible.

We checked your records to see whether you have earned enough credits to qualify for benefits. If you haven’t earned enough yet to qualify for any type of benefit, we can’t give you a benefit estimate now. If you continue to work, we’ll give you an estimate when you do qualify.

What we assumed — If you have enough work credits, we estimated your benefit amounts using your average earnings over your working lifetime. For 2006 and later (up to retirement age), we assumed you’ll continue to work and make about the same as you did in 2004 or 2005. We also included credits we assumed you earned last year and this year.

Generally, estimates for older workers are more accurate than those for younger workers because they’re based on a longer earnings history with fewer uncertainties such as earnings fluctuations and future law changes.

These estimates are in today’s dollars. After you start receiving benefits, they will be adjusted for cost-of-living increases.

We can’t provide your actual benefit amount until you apply for benefits. **And that amount may differ from the estimates stated above because:**

- (1) Your earnings may increase or decrease in the future.
- (2) Your estimated benefits are based on current law.

The law governing benefit amounts may change.

- (3) Your benefit amount may be affected by **military service, railroad employment or pensions earned through work on which you did not pay Social Security tax.** Following are two specific instances. You can also visit www.socialsecurity.gov/mystatement to see whether your Social Security benefit amount will be affected.

Windfall Elimination Provision (WEP) — If you receive a pension from employment in which you did not pay Social Security taxes and you also qualify for your own Social Security retirement or disability benefit, your Social Security benefit may be reduced, but not eliminated, by WEP. The amount of the reduction, if any, depends on your earnings and number of years in jobs in which you paid Social Security taxes, and the year you are age 62 or become disabled. To estimate WEP’s effect on your Social Security benefit, visit www.socialsecurity.gov/WEP-CHART. In 2006, the maximum monthly reduction is \$328. For more information, please see *Windfall Elimination Provision* (Publication No. 05-10045) at www.socialsecurity.gov/WEP.

Government Pension Offset (GPO) — If you receive a pension based on federal, state or local government work in which you did not pay Social Security taxes and you qualify, now or in the future, for Social Security benefits as a current or former spouse, widow or widower, you are likely to be affected by GPO. If GPO applies, your Social Security benefit will be reduced by an amount equal to two-thirds of your government pension, and could be reduced to zero. Even if your benefit is reduced to zero, you will be eligible for Medicare at age 65 on your spouse’s record. To learn more, please see *Government Pension Offset* (Publication No. 05-10007) at www.socialsecurity.gov/GPO.

Your Earnings Record

Years You Worked	Your Taxed Social Security Earnings	Your Taxed Medicare Earnings	Years You Worked	Your Taxed Social Security Earnings	Your Taxed Medicare Earnings
1966	\$ 1,620	\$ 1,620	1990	\$ 2,365	\$ 2,365
1967	3,237	3,237	1991	5,664	5,664
1968	3,451	3,451	1992	16,662	16,662
1969	4,255	4,255	1993	18,648	18,648
1970	4,285	4,285	1994	9,166	9,166
1971	915	915	1995	18,966	18,966
1972	134	134	1996	24,304	24,304
1973	415	415	1997	18,388	18,388
1974	977	977	1998	18,238	18,238
1975	0	0	1999	23,491	23,491
1976	182	182	2000	25,542	25,542
1977	4,484	4,484	2001	30,522	30,522
1978	4,485	4,485	2002	28,645	28,645
1979	0	0	2003	3,097	3,097
1980	0	0	2004	21,838	21,838
1981	0	0	2005	28,072	28,072
1982	0	0			
1983	0	0			
1984	1,760	1,760			
1985	8,680	8,680			
1986	9,221	9,221			
1987	7,519	7,519			
1988	6,238	6,238			
1989	8,208	8,208			

Total Social Security and Medicare taxes paid over your working career through the last year reported on the chart above:

Estimated taxes paid for Social Security:	Estimated taxes paid for Medicare:
You paid: \$21,861	You paid: \$5,033
Your employers paid: \$21,861	Your employers paid: \$5,033

Note: You currently pay 6.2 percent of your salary, up to \$94,200, in Social Security taxes and 1.45 percent in Medicare taxes on your entire salary. Your employer also pays 6.2 percent in Social Security taxes and 1.45 percent in Medicare taxes for you. If you are self-employed, you pay the combined employee and employer amount of 12.4 percent in Social Security taxes and 2.9 percent in Medicare taxes on your net earnings.

Help Us Keep Your Earnings Record Accurate

You, your employer and Social Security share responsibility for the accuracy of your earnings record. Since you began working, we recorded your reported earnings under your name and Social Security number. We have updated your record each time your employer (or you, if you're self-employed) reported your earnings.

Remember, it's your earnings, not the amount of taxes you paid or the number of credits you've earned, that determine your benefit amount. When we figure that amount, we base it on your average earnings over your lifetime. If our records are wrong, you may not receive all the benefits to which you're entitled.

Review this chart carefully using your own records to make sure our information is correct and that we've recorded each year you worked. You're the only person who can look at the earnings chart and know whether it is complete and correct.

Some or all of your earnings from **last year** may not be shown on your *Statement*. It could be that we still

were processing last year's earnings reports when your *Statement* was prepared. Your complete earnings for last year will be shown on next year's *Statement*. **Note:** If you worked for more than one employer during any year, or if you had both earnings and self-employment income, we combined your earnings for the year.

There's a limit on the amount of earnings on which you pay Social Security taxes each year. The limit increases yearly. Earnings above the limit will not appear on your earnings chart as Social Security earnings. (For Medicare taxes, the maximum earnings amount began rising in 1991. Since 1994, all of your earnings are taxed for Medicare.)

Call us right away at 1-800-772-1213 (7 a.m.–7 p.m. your local time) if any earnings for years **before last year** are shown incorrectly. If possible, have your W-2 or tax return for those years available. (If you live outside the U.S., follow the directions at the bottom of page 4.)

Some Facts About Social Security

About Social Security and Medicare...

Social Security pays retirement, disability, family and survivors benefits. Medicare, a separate program run by the Centers for Medicare & Medicaid Services, helps pay for inpatient hospital care, nursing care, doctors' fees, and other medical services and supplies to people age 65 and older, or to people who have been receiving Social Security disability benefits for two years or more. Your Social Security covered earnings qualify you for both programs. For more information about Medicare, visit www.medicare.gov or call 1-800-633-4227 (TTY 1-877-486-2048 if you are deaf or hard of hearing).

Here are some facts about Social Security's benefits:

Retirement — If you were born before 1938, your full retirement age is 65. Because of a 1983 change in the law, the full retirement age will increase gradually to 67 for people born in 1960 and later.

Some people retire before their full retirement age. You can retire as early as age 62 and take your benefits at a reduced rate. If you continue working after your full retirement age, you can receive higher benefits because of additional earnings and special credits for delayed retirement.

Disability — If you become disabled before full retirement age, you can receive disability benefits after six months if you have:

- enough credits from earnings (depending on your age, you must have earned six to 20 of your credits in the three to 10 years before you became disabled); and
- a physical or mental impairment that's expected to prevent you from doing "substantial" work for a year or more *or* result in death.

Family — If you're eligible for disability or retirement benefits, your current or divorced spouse, minor children or adult children disabled before age 22 also may receive benefits. Each may qualify for up to about 50 percent of your benefit amount. The total amount depends on how many family members qualify.

Survivors — When you die, certain members of your family may be eligible for benefits:

- your spouse age 60 or older (50 or older if disabled, or any age if caring for your children younger than age 16); and
- your children if unmarried and younger than age 18, still in school and younger than 19 years old, or adult children disabled before age 22.

If you are divorced, your ex-spouse could be eligible for a widow's or widower's benefit on your record when you die.

Receive benefits and still work...

You can continue to work and still get retirement or survivors benefits. If you're younger than your full retirement age, there are limits on how much you can earn without affecting your benefit amount. The limits change each year. When you apply for benefits, we'll tell you what the limits are at that time and whether work would affect your monthly benefits. When you reach full retirement age, the earnings limits no longer apply.

Before you decide to retire...

Think about your benefits for the long term. Everyone's situation is different. For example, be sure to consider the advantages and disadvantages of early retirement. If you choose to receive benefits before you reach full retirement age, your benefits will be permanently reduced. However, you'll receive benefits for a longer period of time.

To help you decide when is the best time for you to retire, we offer a free booklet, *Social Security — Retirement Benefits* (Publication No. 05-10035), that provides specific information about retirement. You can calculate future retirement benefits on our website at www.socialsecurity.gov by using the *Social Security Benefit Calculators*.

There are other free publications that you may find helpful, including:

Understanding The Benefits (No. 05-10024) — a general explanation of all Social Security benefits;

Your Retirement Benefit: How It Is Figured (No. 05-10070) — an explanation of how you can calculate your benefit;

Windfall Elimination Provision (No. 05-10045) — how it affects your retirement or disability benefits;

Government Pension Offset (No. 05-10007) — an explanation of a law that affects spouse's or widow(er)'s benefits; and

Identity Theft And Your Social Security Number (No. 05-10064) — what to do if you're a victim of identity theft.

We also have other leaflets and fact sheets with information about specific topics such as military service, self-employment or foreign employment. You can request Social Security publications at www.socialsecurity.gov or by calling us at 1-800-772-1213.

If you need more information— Visit www.socialsecurity.gov/mystatement on the Internet, contact any Social Security office, call 1-800-772-1213 or write to Social Security Administration, Office of Earnings Operations, P.O. Box 33026, Baltimore, MD 21290-3026. If you're deaf or hard of hearing, call TTY 1-800-325-0778. If you have questions about your personal information, you must provide your complete Social Security number. If your address is incorrect on this *Statement*, ask the Internal Revenue Service to send you a Form 8822. We don't keep your address if you're not receiving Social Security benefits.

Para solicitar una *Declaración* en español, llame al 1-800-772-1213

Notes

Acknowledgments: I thank Jason Brown, Steve Robinson, Irena Dushi, Chris Tamborini, and Erica Ciccotto for their thoughtful and substantive comments and suggestions.

¹ The FRA for workers born in 1943–1954 is 66. For each birth cohort from 1955 through 1960 it is 2 months higher than that of the preceding cohort. The FRA is 67 for workers born in 1960 or later.

² This section summarizes the detailed history of the *Statement* presented in Smith and Couch (2014b).

³ Note the relationship between fiscal year mailings and calendar year age thresholds. SSA times the *Statement* mailing for 3 months before the worker's birthday. Thus, *Statements* targeted to workers reaching a targeted age in a given calendar year—for example, 1999—were actually mailed in fiscal year 1999 (October 1998–September 1999).

⁴ For more information, see Social Security Advisory Board (2009, 8).

⁵ The 2006 sample is representative of the format of the *Statements* mailed from 1995 through 2007. Although the *Statement* underwent minor formatting and wording changes in that period, the information on estimated benefits and the earnings record remained the same.

⁶ See note 3.

⁷ In this model, receipt of more than one *Statement* overlapped the years in which the varying FRAs affected newly eligible claimants. Thus, it was not possible to use two dummies for *Statement* receipt, as is done in the model with year dummies, to control for the effect of *Statement* receipt.

⁸ For detailed descriptions, see <https://www.ssa.gov/benefits/retirement/matrix.html>.

⁹ All changes described as “significant” in this article refer to statistical significance.

¹⁰ I also calculated model estimates for Hispanic workers. The results were very similar to those for black workers and are not shown here.

¹¹ For example, for a worker reaching age 62 in 2018, the PIA would equal the sum of 90 percent of the first \$10,740 of average annual wage-inflation-adjusted earnings, plus 32 percent of average annual wage-inflation adjusted earnings from \$10,741 to \$64,764, plus 15 percent of average annual wage-inflation-adjusted earnings exceeding \$64,764.

¹² For the underlying unemployment rate data, see <https://www.bls.gov/cps/cpsaat01.pdf>. For a tabulation of the underlying inflation rates based on BLS data, see https://inflationdata.com/Inflation/Inflation_Rate/HistoricalInflation.aspx. For the underlying interest rate data, see <https://fred.stlouisfed.org/series/IR3TCD01USQ156N>. For a tabulation of the underlying per capita personal income values based on data from the Bureau of Economic Analysis, see https://united-states.reaproject.org/analysis/comparative-trends-analysis/per_capita_personal_income/tools/0/0/.

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- SSA. See Social Security Administration.